

entire lot, and expense of conditioning divided equally between Buyer and Seller.

**Questions Over Actual and/or Invoice Weight** must be adjusted by Buyer notifying Seller that he wishes the lot rebilled to him conditioned weight plus the customary 2 per cent. for Japan Silks, China Steam Filatures and Canton Filatures, and plus 2½ per cent. for China Rereels and Canton Rereels, and Buyer must then send at least two original bales out of every five bales (or less) of the lot, to be conditioned at Conditioning House in New York, in accordance with the rule for "Conditioned Weight." Result shall be accepted by Buyer and Seller, whether to their benefit or loss, and conditioning costs borne by losing party. Unless false or fraudulent weights can be shown, conditioning tests by Buyer, or his agent, before notifying Seller that conditioned weight will be accepted, cancels Buyer's claim to weight adjustment, and evidence that such prior conditioning tests have not been made must be furnished, if desired.

**Japan Silks, China Steam Filatures, Canton Filatures** are sold New York conditioned weight plus 2 per cent., or actual weight, or invoice weight, or conditioned weight.

**China Rereels, Canton Rereels** are sold New York conditioned weight plus 2½ per cent., or actual weight, or invoice weight, or conditioned weight.

**European Silks** are sold conditioned weight, and European Conditioning House tests must be accepted, unless Buyer chooses, at his own expense, to have the silk reconditioned in New York. Should the result be ½ of one per cent. less than European conditioned weights, Seller must accept the New York conditioned weights and pay costs of the reconditioning; each bale to be treated individually.

**Tussahs** are sold invoice weights, or actual weights carrying no guarantee of loss in weight by conditioning.

**Spun and Schappe Silks** are sold Seller's invoice weights, but such weight shall not exceed conditioned weight.

**Bale Weights.** A contract calls for the delivery of a number of bales or pounds varying on the average not more than 5 per cent. from the following usual bale weights:

Europeans .....	220	pounds	net
Japans .....	135	"	"
Shanghais .....	135	"	"
Tussahs .....	135	"	"
Cantons .....	106%	"	"

Variation in weight beyond the allowed 5 per cent., shall not be cause for cancellation of contract, but may be adjusted with Seller at market rates at the time of delivery.

**ADULTERATION.** Shanghai Rereels and Native Filatures are guaranteed by Seller not to lose more than 22 per cent. by boil-off at Conditioning House in New York. Buyer and Seller may have as many tests made as they see fit, at their own expense, and the average of all such tests shall govern.

**VARIATION OF SIZE.** The average size under contract shall not vary more than given below for different classes and grades of silk. In cases of dispute, Buyer and Seller shall arrange to have sizing tests made at the Conditioning House in New York, computed on the conditioned weight of the sizing skeins; such tests are limited to five per bale and their average shall determine the size of the silk in the bale. For Asiatics, the average of all bales of a lot

shall determine the average of the lot, and if more than one-third of the bales in each individual lot are of wrong size, such entire lot may be rejected; otherwise, only the incorrect bales may be rejected. European bales are treated individually. Test skeins must be drawn from the bales by the Conditioning House, and the total expense of such tests must be borne by the losing party.

**European Silks.** European Conditioning House sizing tickets shall be final, unless demonstrated to be wrong by Conditioning House at New York. EXTRA CLASSICAL TO NO. 1 INCLUSIVE 11/12 AND FINER shall not vary more than  $\frac{3}{8}$  denier either way from the average given on each and every bale.

From 11/13 to 15/17 .....	$\frac{1}{2}$ denier either way is allowed
From 16/18 to 19/21 .....	" " " " "
From 20/22 to 24/26 .....	$\frac{7}{8}$ " " " " "
From 25/27 to 28/30 .....	1 " " " " "

Fuller, the variation is by agreement.

**Japans.** Seller's sizing tests, or Yokohama Conditioning House sizing tickets shall be final, unless demonstrated to be wrong by Conditioning House at New York. FANCY AND DOUBLE EXTRA are governed by the same rule as Europeans. FILATURES AND REREELS, EXTRA TO NO. 1-1 $\frac{1}{2}$  INCLUSIVE, AND BEST EXTRA KAKEDAS, 14/16 AND FINER, shall not vary more than  $\frac{1}{2}$  denier either way for the lot, and 1 denier for each bale, from the average given. FILATURES AND REREELS NO. 1 $\frac{1}{2}$  TO NO. 2 INCLUSIVE AND KAKEDAS EXTRA TO NO. 1 INCLUSIVE 14/18 AND FINER, shall not vary more than 1 denier either way for the lot, and 1 $\frac{1}{2}$  denier for each bale, from the average given. LOWER GRADES carry no guarantee of size.

SIZE 16/18 AND COARSER IN FILATURES NO. 1 AND HIGHER GRADES shall not vary more than the European allowances for the lot, and  $\frac{1}{2}$  denier additional for each bale, from the average given. COARSE SIZES below No. 1 carry no guarantee of size.

**China Steam Filatures.** Seller's sizing tests shall be final, unless demonstrated to be wrong by Conditioning House at New York. FILATURES FIRST CATEGORY are governed by the rule for Europeans. FILATURES SECOND CATEGORY 14/16 AND FINER shall not vary more than  $\frac{1}{2}$  denier either way for the lot, and 1 denier for each bale, from the average given. FILATURES THIRD CATEGORY 14/16 AND FINER shall not vary more than  $\frac{3}{4}$  denier either way for the lot, and 1 denier for each bale, from the average given.

Shanghai Rereels, Native Filatures and Tussahs carry no guarantee of size.

**Canton Filatures.** Seller's sizing tests shall be final, unless demonstrated to be wrong by Conditioning House at New York. DOUBLE EXTRA AND EXTRA 14/16 AND FINER shall not vary more than  $\frac{3}{4}$  denier either way for the lot, and 1 $\frac{1}{4}$  denier for each bale, from the average given. 16/20 to 28/32 shall not vary more than 1 $\frac{1}{2}$  denier either way for the lot, and 2 deniers for each bale, from the average given. FILATURES NO. 1-14/16 AND FINER shall not vary more than 1 denier either way for the lot, and 1 $\frac{1}{2}$  denier for each bale, from the average given.

Canton Filatures No. 2 and lower, and Canton Rereels, carry no guarantee of size.

**Spun and Schappe Silks.** In case of dispute, Buyer and Seller shall arrange to have sizing tests made at the Conditioning House in New York, computed on the conditioned weight of the sizing skeins.

Contracts for a given "count" or "number" of yarn require a delivery not more than 2½ per cent. over or under the specified "count" or "number."

**REJECTIONS AND REPLACEMENTS.** Any bales or lots rejected for proper cause must be replaced by Seller and accepted by Buyer within 15 days of rejection agreed to by Seller or established by arbitration. But where a lot of contract brand or quality and size is not obtainable on the New York market, the question shall be adjusted by arbitration. In case of a specified uninspected lot on a primary market—of which all or a portion shall prove upon inspection not of the stipulated quality and/or size—Seller must immediately notify Buyer, who shall have the option of cancelling such incorrect portion of the contract, or of instructing Seller to accept it with any allowance that he may be able to collect, or of giving the necessary time for replacement.

**CLAIMS FOR DIFFERENCE IN QUALITY AND/OR SIZE.** Seller's obligations to deliver raw-silk of contract quality and size is clearly defined. Buyer is under equal obligations to examine and test silk received, or tendered for delivery under contract, and promptly pass upon its quality and size as **raw-silk in the bale**. This can be determined by testing sample skeins of the lot or one entire bale; Buyer must then accept, or immediately notify Seller of intention to reject the balance of the lot. All claims must be made within fifteen days after delivery, or original tender of delivery, in accordance with terms of contract, even if the actual delivery of the silk be deferred by request of buyer. (Notice to this effect shall be inserted on contract or notice of tender of delivery.) After the above period of fifteen days, no claim shall be admissible unless false or fraudulent packing can be shown. In no case can the Seller be held as guaranteeing the working of the silk, or its suitability to produce certain results, unless by special agreement.

**ARBITRATION.** All differences arising between Buyer and Seller must be submitted to the Arbitration Committee of the Silk Association of America.

**SELLING TERMS.**

The recognized rate of discount in the silk trade is 6 per cent. per annum when not otherwise stated or agreed.

Offers of silk when not otherwise stated imply:

6 months basis for Asiatics.

60 days basis for Europeans.

**Six Months' Notes, 4 Months' Notes, 3 Months' Notes, or 60 Days' Notes.** Such sales convey no right to discount. Within 30 days from date of bill, Buyer must give his note for the period specified, bearing same date as bill, drawn to his own order, blank endorsed and payable at discretionary points as defined by New York Clearing House.

**Six Months' Notes, or Cash Less 3 Per Cent.** implies the right of Buyer to pay his bill within 10 days (which are not discountable) by deducting 3 per cent. from the face thereof; otherwise he must give 6 months' notes from date of bill as above provided.

**Four months' Notes, or Cash Less 2 Per cent.** are governed in principle by the above terms.

**Ninety Days' Notes, or Cash Less 1½ Per Cent.** are governed in principle by the above terms.

**Ninety Days, Sixty Days, or Thirty Days**—requires that the bill must be paid within the time specified.

**Six Months' Basis, Payment Within 30 Days, or 60 Days or 90 Days** (as written) requires payment at any time within period stated, with discount for unexpired portion of the six months.

**Six Months' Basis, Settlement by Note or Cash Within 30 Days, or 60 Days, or 90 Days** (as written) gives Buyer the option of paying (at any time within the stipulated period for settlement) in cash less discount for unexpired portion of the six months, or giving (at any time within the stipulated period for settlement) his six months' note from date of bill.

**Cash Sales** less a stipulated discount require immediate payment of the bill less the specified discount.

**Bankers' Credit Sales** require the Buyer to immediately furnish approved Credits at the usance agreed upon in the transaction. For such sales the Seller takes no responsibility for arrival, damage, loss or pilferage en route. Seller's failure to demand the Letter of Credit shall not be cause for voiding the contract.

**F. O. B.**—Free on Board, is the Shipper's invoice cost of the silk placed on board ship at port of original export; Buyer must provide and pay for marine insurance and freight.

**C. & F. Cost and Freight**, is the Shipper's invoice cost including freight.

**C. F. & I.**—Cost, Freight and Insurance, is the Shipper's invoice cost including freight and marine insurance.

## RULES AND REGULATIONS

### To Govern Transactions in Throwing Silk.

Approved by the Board of Managers of the Silk Association of America February 13, 1907, and amended August 14, 1907.

**Article I. Winding**—Raw-silk is single thread as reeled from the cocoons and known as raw-silk with knotted ends. It is understood to be a continuous thread from beginning to end of the skein and as a rule this class of silk must be such that one winder can attend to one hundred swifts with a thread speed of sixty yards per minute.

**Article II. Soaking**—Only such ingredients shall be added in soaking the silk as will boil out easily in the ordinary process of dyeing, and only such amounts as shall be necessary for the proper throwing of the silk, but not to exceed 5 per cent. gain in weight.

**Article III. Twist**—An average variation of 10 per cent. on orgazine (20 test skeins) either way from the twist as ordered is permissible. On tram two and one-half to three turns per inch, a variation of one-half turn either way may be allowed.

**Article IV. Size**—The fineness of silk is determined by the size. The size is the number of deniers which a skein of a certain length weighs. The legal denier is a skein of silk four hundred and fifty metres long, wound in four hundred turns on a reel of one hundred and twelve and one-half centimetres in circumference and weighed by a unit of five centigrams (called denier).

To establish the size of a lot of silk, ten skeins are taken from every bale and from different parts of the bale, and from each skein two test skeins are reeled off, on Japan silks, one inside and one outside skein. The weight of these test skeins is to be reduced to conditioned weight

in case either of the parties to the transaction desires. On raw-silk up to twenty deniers a margin of one-half denier average, above or below, is permissible; coarser sizes are treated as special articles.

The regularity (evenness) of the thread of different grades shall be such that the difference between the finest and the coarsest test skeins shall not be more than is decided by the rules of the Silk Association of America.

Article V. Reeling into Skeins—An average variation of 5 per cent. shall be allowed from the number of yards per skein, as ordered for thrown silk. The minimum number of test skeins is twenty. The procedure is similar to that for sizing silk. Conditioning House rules to apply.

Article VI. Price, Terms, Etc.—The price for throwing is net cash, final settlement to be made on the average date of the return delivery of the product. The throwster is entitled to payment on account in proportion to his deliveries, and on completion of work when held for orders.

Weights for throwing silk shall be estimated upon invoice weights, in no case less than conditioned weight plus two (2) per cent., or upon conditioned weight, when given, plus two (2) per cent.

Conditioned weight, as here used, is found by adding eleven (11) per cent. to absolute dry weight, determined from samples by customary methods.

Article VII. Payment of Transportation, Etc.—The consignee pays the transportation charges on receipt of the raw-silk; the consignor pays the transportation charges on the return of the thrown silk.

Article VIII. Liability for Silk—A commission throwster who accepts a lot of raw-silk for the manufacture of tram or organzine or any other operation, is responsible to the owner for the full value of the silk as long as it remains in his possession. The throwster must cover by insurance the loss of silk against fire while in his immediate possession.

Article IX. Determination of Loss—In order to establish a claim against a throwster for excess of loss in working, the whole parcel of raw-silk to be thrown should be sent to the Conditioning House to be tested for the conditioned weight, where skeins of the raw-silk should be retained. The entire quantity of the thrown silk should be returned to the Conditioning House to be reweighed for conditioned weight. The boil-off tests of the raw skeins so retained and the skeins of thrown silk should be tested simultaneously in the same process, and the boil-off established in this manner by the identical process; as the matter of boiling-off is involved in much uncertainty if done at different times.

Five skeins of the raw-silk should be retained from each bale, and three skeins of the thrown silk from each one hundred pounds for the boiling-off test.

This is the generally accepted practice in Europe and the matter of the amount of loss to be allowed in the actual working of a given silk (to be arrived at as above stated) is universally a matter of agreement between the manufacturer and the throwster. The throwster is responsible at the price agreed upon on receipt of the silk for an excess of loss above the amount agreed, and the owner is to pay the throwster at this price when any less loss is made than the amount as agreed.

The manufacturer is to furnish a description of the raw-silk, giving the origin, classification and grading, and is responsible to the throwster for a proper delivery of the raw-silk as agreed upon. Duplicate tickets of all tests to be supplied to the throwster.

**PRICES CHARGED FOR TESTING BY THE UNITED STATES  
CONDITIONING AND TESTING CO.**

New York, 1912.

CONDITIONING raw or thrown silk, per bale .....	\$1.50
BOILING-OFF from 60 skeins .....	2.50
"    "    from 10 skeins .....	1.00
SIZING, REGULAR, 10 skeins, 30 tests of 450 metres each .....	1.00
CONDITIONED SIZE, in addition to above .....	0.50
SIZING, COMPOUND, from 20 skeins, 20 tests of 4,500 metres each conditioned .....	2.00
WINDING, 10 skeins, one hour .....	1.00
MEASURING:	
10 skeins, 20,000 yds. ....	1.00
15 "    15,000 "    .....	1.00
20 "    10,000 "    .....	1.00
(Dyed silk, one-half the above number of skeins.)	
ELASTICITY AND TENACITY, 10 skeins, 10 tests .....	0.75
TWIST, 10 skeins, 10 tests .....	0.75
INSPECTION TEST, 5 bales or less .....	5.00
COMBINATION TEST, for 5 bales (each extra bale, \$3.50).....	17.50
NET WEIGHING (with detailed tare) .....	0.75
WEIGHING, raw, in shirt .....	0.50
Sampling raw-silk for inspection (10 cards) per bale .....	0.50
Handling charge for silk withdrawn without testing, package .....	0.25
Reeling charge on retained boil-off samples withdrawn without test..	0.50
Storage on bales waiting for instructions over one day, and over three days after testing, per bale and per day .....	0.05
Extra packing charge on European raw, Tussah raw, Bengal raw, and other loosely packed bales, per bale .....	1.00
Additional copies of certificates, in double .....	0.10

*Sizing Tests for Silk.*

All raw-silks, particularly those not reeled with the greatest care, such as is the case with much of the Asiatic product, are subject to considerable variations in size. The ordinary sizing tests, such as have been customarily used, show very well the degree of this unevenness, but are not so reliable as a guide to the length, or yardage per pound, of the silk.

A new sizing test, in which continuous long lengths of the silk are reeled, which has been introduced by the United States Conditioning and Testing Company, of New York, and which is known as the "Compound Sizing Test," has proved of great value in showing, with a very fair degree of accuracy, the real size of the silk, though it does not pretend to show the extremes of variation in size, as is done by the old method.

Both sizing methods should, therefore, be made use of.

*European Conditioning House Certificates.*

European silks are brought into this market on a conditioned weight basis, and have the European testing house documents with them. It

is customary for manufacturers here to accept these papers as correct, without further testing. This is not to say that it would not be desirable to have the weights again checked off here.

*Conditioning and Boil-off Tests.*

One feature of conditioning, of the utmost importance, is that it enables a manufacturer, if he will take the proper steps, to learn exactly how much waste his throwster is making, and how much soap, oil, or kindred substances, he is adding to the silk.

Silk, in what has been determined to be its normal condition, contains of moisture 11 per cent. more than its absolute dry weight. The conditioned weight arrived at by the Conditioning House is the dry weight plus this 11 per cent. Silk also contains a soluble gum—sericin—which is usually boiled out of it previous to dyeing.

This gum, which, by the way, has a slightly greater affinity for moisture than the boiled-off silk itself, varies in amount in different classes of silk and in different lots of the same class, yellow silks having more than white silks. Thus, yellow Italian or Cevennes silks may lose, on the average, about 24% in boiling-off; North China silks about 19%; Cantons about 22%; white Levantine silks about 22½%; and Japans about 18%, while good quality Chefoo tussahs boil off about 14½%.

To check off the throwster's waste, careful boil-off tests are required as well as conditioning tests.

*Waste in Throwing and its Causes.*

Among throwsters, as among other people, there are the good, the indifferent, and the bad. The badness of the bad may be due to inattention to their business, to carelessness, to ignorance, and often to the impossibility of getting a proper supply of trained help in the places where the mills are located. Some people also talk freely of the dishonesty of throwsters, and, for that matter, of manufacturers and raw-silk men, and sometimes names are mentioned. Most people, however, desire to be honest, and most people are or try to be; and if a manufacturer sends his silk to be thrown to any firm of decent reputation, and does not expect a price that will show a loss to the throwster, he has little to fear from intentional dishonesty.

The waste question in throwing is a vexed one. A frame or two with good help, and on first-class silk, and run under the eye of the management, can be operated with wonderfully little waste. It would not be fair to expect such results from a whole floor. Good silk will make less than poor; good help less than inexperienced help; good management and machinery less than bad. No throwster desires to make undue waste in running his customers' silk, even if, according to the custom of the trade, he does keep and sell such waste as a by-product; yet all throwsters make at times more waste than they desire. It may not be right, but they cannot help themselves.

Help may be scarce in their vicinity, and when help is scarce it is usually careless, indifferent, and independent, and if a girl were sharply taken to task on the waste question, she would promptly leave and get a job inside of an hour somewhere else, and then the spindles would stand until some one else could be found and broken in for the work. Thus, gross waste would go on as the least of two evils. As, however, the throwster originally located where he did to get cheap help, which was then plentiful, and has profited by it in the past, it hardly seems fair that his customer should be mulcted in the waste made later on when conditions had changed.

Again, a high-class throwster, with several mills, starts a new mill where all the workers are inexperienced. It goes without saying that, during the period when they are being educated, they will make poor work and lots of waste. A certain silk that might be thrown with a waste of 2% at one of the old mills, might suffer 6% in waste in the new mill. If the customer was allowed to become aware of this, would he tolerate it? On your life, he would not.

Ignorance and indifference of foremen, poor and cheap machinery or good machinery neglected, poor bobbins and poor methods will all assist in filling the waste bags. Whether it be his fault or his misfortune, no throwster desires to let his customer into these little secrets. It would be too embarrassing.

*Mistaken Viewpoint of Manufacturers.*

The manufacturer, too, is often expecting the impossible. Every manufacturer tries to impress his throwster with the idea that he buys none but the very highest grades of silk, when often quite the reverse is the case. He may thus send some No. 1 Japan filatures to be thrown into organzine, and then profess great surprise at the poor report he gets on the working of the silk; he says he really cannot understand it; and then he complains because it turns out poor organzine; but he would complain more if he knew how much waste it had made. Meantime, the cost of throwing to the throwster may be 10 to 20% more than if the lot had been proper organzine stock.

*Illogical Basis for Throwsters' Charges.*

The custom of throwing different grades of silk at the same price, only making differences in price for different sizes, is wrong. If lower prices were made on high grades, and higher prices on low grades, it would be fair to the throwster and an encouragement to the manufacturer to buy the better qualities. This illogicality is recognized, but silks fluctuate so much in quality from season to season that classifying them into exact grades is difficult.

*Manufacturers' Inconsistent Demands.*

Some manufacturers, again, object strenuously if they do not get back just as much weight of thrown silk as they sent out in the raw,



or more. In fact, if a silk was run without any soaking whatever, and if the waste was held down to  $1\frac{1}{2}\%$ , so that the customer got back 985 pounds out of 1,000, he would very likely come down upon the throwster with a claim for the other 15 pounds, and would feel himself very badly used at not getting it.

*The Soaking Bath, and What it Covers Up.*

When silk is soaked in a bath containing such reasonable amount of soap and oil in the water as is required for softening the gums and assisting the working of the silk, it may have added to its weight in this way, say, 2 or 3%. In the throwing of such silk, if of fair quality, the waste made may run up to 2 or 3%. Thus, in practice, the one offsets the other, and the weight of the thrown silk would be not far from the weight of the raw-silk, and this is what is looked for.

When excessive waste has been made, or if some of the silk has been lost, damaged or stolen, a shortage would be apparent, and the easiest way to avoid any controversy is to add to the soaking bath such quantity of soap, oil, or other substance as will bring the weight up to the normal. This is customarily done. The customer is not getting back as much silk as he should, and he does not know it; and the only way he can know it is by the assistance of the Conditioning House.

*How the Throwing Waste is Determined.*

To determine the exact amount of waste made by the throwster, it is necessary to ascertain four facts: the conditioned weight of the raw-silk; the conditioned weight of the thrown silk; the percentage of boil-off of the raw-silk; and the percentage of boil-off of the thrown silk.

All of the silk, therefore, both before and after throwing, should be tested at the Conditioning House for weight and for boil-off.

After the raw-silk has been tested for weight, the Conditioning House reserves certain skeins for boil-off, and then ships the lot to the throwster.

When the silk has been thrown, it is sent back to the Conditioning House, where the weight is again tested, and then samples from skeins of the thrown silk, and also from the reserved skeins of the raw-silk, are boiled-off together, and the boil-off of each is ascertained. If the boil-offs are not made together, inaccuracies may result.

The boil-off report on the raw-silk will shew the percentage of gum that it contains, and the test on the thrown silk will show, in addition, the loss due to soap and oil added by the throwster.

*Insoluble Substances in Soaking Baths.*

Some unscrupulous throwsters, to conceal excessive waste which they may have made, will introduce into the soaking bath certain substances for the silk to take up which will not boil out in the testing.

This is contrary to the rules of the Silk Throwsters' Association, and is a most reprehensible practice, and one which should be punishable legally.

*Rule for Figuring the Throwing Waste.*

The following Rule will show the proper method of figuring the throwing waste:

*From the conditioned weight of the raw-silk deduct the percentage of the boil-off in the raw, and the remainder will be the conditioned weight, boiled-off, raw-silk, (pure fibre).*

*From the conditioned weight of the thrown silk, deduct the percentage of the boil-off of the thrown silk, and the remainder will be the conditioned weight, boiled-off, thrown silk, (pure fibre).*

*From the conditioned weight, boiled-off, raw-silk, deduct the conditioned weight, boiled-off, thrown silk, and the remainder will be the amount of the conditioned weight, boiled-off, waste made, (pure fibre).*

*The relation that the weight of this waste bears to the weight of the conditioned weight, boiled-off, raw-silk, will be the percentage of loss made in the throwing.*

*Regarding Claims Against Throwsters.*

Properly substantiated data on the above lines are absolutely necessary to maintain a claim for excessive waste against a throwster, and failure to supply such evidence would compel an arbitration committee to decide against a manufacturer. Most arbitrations, where manufacturers claim damages from dyer, finisher, throwster, or raw-silk merchant, are almost uniformly decided against the manufacturer, and the fault is nearly always his; whatever the merits of his contention, he does not produce the proper evidence.

*Interesting Determinations Yet to be Made.*

There are many interesting questions in conditioning that are not yet determined, and which, it is to be hoped, the testing houses will some day arrive at. One of them is the different degree of receptiveness to moisture of silk in its different states. It is agreed to add 11% for raw-silk. As, however, the gum seems to have the superior absorbing power, a silk with heavy gum should normally have more moisture than a silk with light gum. Then, there is thrown silk, carrying soap and oil; silk in its boiled-off state; when pure dyed; when weighted (and with different weighting agents); when weighted and dyed; also when dyed in souples; all of these may have, and probably do have, different hygroscopic qualities. The amount of twist, also, in a thread will probably affect its absorbing power.

Again, there is the action of moisture on cloth. We all know how much better a piece of red silk feels than a piece of gray or beige. The manner in which the dye-stuff feeds the fabric will, of course, account for some of this difference, but how much is due to the superior moist-

ure absorbing power of the red, or of the mordant used in dyeing it?

It would be interesting if the Conditioning House would secure from some manufacturer, say, twenty one-yard lengths of representative shades of some standard fabric, and test them for the benefit of the trade to see if such an influence affected any of the colors materially.

In conclusion, I might say that a good maxim for all silk manufacturers would be "Cultivate the Conditioning House habit."

#### *Important Points to Bear in Mind.*

I will close this with a few extracts from "The Value of Conditioning," published by the United States Conditioning and Testing Co., a book of which I am pleased to say that a very substantial part was written by myself.

"The real value of all silk is, and must be, based on the Conditioned Weight, Boiled-Off, Thrown Silk. This is what you get, though few will compare costs to ascertain this only Real Value."

#### VARIATION IN TESTS.

"As the whole principle of conditioning is based on removing small samples from a large amount of silk, and putting these samples through various tests, a slight variation will occur, as the samples cannot be assumed to exactly represent the whole lot to be tested."

"These variations in any case will be slight. Difference in conditioned weights should not exceed  $\frac{1}{8}$  of 1%, in boil-off tests  $\frac{3}{4}$  of 1%, and in sizing tests variation will be greater as the quality becomes lower."

"Elasticity and tenacity (strength) are greatly affected by variations in moisture, nature, size, etc."

"In making twisting tests, a variation may be shewn in places where spindles have been started up, or have slipped, or when there is greater stretching due to tension."

"In measuring skeins the variation of the tension or stretch, etc., may make a difference of perhaps 1%."

"In rainy weather, the same silk will automatically increase in weight as much as THREE per cent. over its weight in ordinary dry weather. Because of its power to absorb moisture its weight CAN be still further increased, through artificial means, as much as thirty (30) per cent."

"To buy silk without having it sized at the Conditioning House means a variation of perhaps five per cent. or more in the cost of your merchandise, due to heavier or lighter goods, the requiring of more or less picks, etc."

#### ELASTICITY AND TENACITY

"The following table gives approximately, for general guidance, the Elasticity and Tenacity to be reasonably expected for the different grades of silk.

##### Elasticity.

25% average stretch is a.....	very good result
20% average stretch is a.....	good result
18% to 20% average stretch is a.....	fair result
Under 18% average stretch is a.....	poor result

**Tenacity (Breaking Strength).**

The average size in deniers multiplied

by 4 is a.....very good result  
 by 3½ is a.....good result  
 by 3 is a.....fair result  
 Under 3 is a.....poor result  
 One metre (39.37 inches) is tested: Elasticity in millimetres and Tenacity in grams."

"Don't believe in any testing, unless made by persons properly trained, and with accurate instruments."

THE VALUE OF CONDITIONING.

- FOR WEIGHT. You know exactly how many pounds you should pay for.
- FOR VARIATION IN SIZE AND FOR AVERAGE SIZE. You are shewn the regularity of the silk and the average yardage per pound.
- FOR ELASTICITY AND TENACITY. Enables you to select the right lots for different fabrics, thus helping production. Even the best silks, and of the same mark, vary widely.
- INSPECTION TEST. Is a guide in examining quality before acceptance.
- BOIL-OFF TEST. Shews returns and clearances from the throwing. Shews the proper amount of weighting to order from dyer.
- FOR TWIST. Shewing if your silk has been twisted as ordered.
- MEASURING TEST. Tells if your skeins are of proper length.
- COMBINATION TEST. Automatically keeps you posted in several important directions."

## XIV

### THE COSTING OF BROAD SILKS AND RIBBONS.

There is no point more important for the manufacturer to know about than the cost of his goods, and on no question does he feel more uncertainty. In fact, it is only after the annual balance sheet has been made that he can arrive at fairly exact conclusions.

#### *Difficulties in the Way.*

The reasons for this are various, one of the principal ones being that the question of the volume of the product of a mill is closely interwoven with the cost of that product, and no one can tell in advance, for reasons that will be stated hereafter, how much the output will fall short of the normal; while, on the other hand, a maximum limit on the product is set by the number of looms operated, and the speeds at which they can be run.

Again, some lines of goods, such as novelties, are sure to involve heavy losses in case of cancellations of orders; and usually, in such cases, more or less cancellations for late delivery, or defective workmanship, or because the buyer concludes he does not want them, are inevitable. Who can say what should be figured against on this score?

The fluctuations of the raw material market, the varying expenses of the mill, the percentage of seconds produced, the amount of waste made, the changes in the cost of labor, or of dyeing, or throwing, and many other causes, all of which affect the costs of the goods in process, and none of which can be determined in advance, are also reasons why it is impossible to say what the exact cost of any fabric will be.

Among all the mills in the trade, it would probably be hard to find two which costed their goods in exactly the same way. The personal views taken by managers as to the best method to be pursued vary widely, and the character of the goods made, the limitations of the

plant, and the way in which the business is done, will all have their influence.

*Undercosting by Mill Managers.*

A factor not to be overlooked is the desire of the average mill man to figure a cost low enough to show his employers a profit at the market price of the fabric, and fortunes may be lost in this way if his employers lack the knowledge necessary to check off his figures. See how easy it is for the following to happen:

A firm, whether a new concern or one turning onto new lines of goods, engages a superintendent and sends him out to their mills. They then send him samples of various fabrics which are either on the market, or which, if brought out, would command a given price. The superintendent—allowing that he be a man of experience and knowledge—calculates them properly and reports back costs that would show a loss at the market prices. More samples, and yet again more, are sent him, and still no profit can be figured. His employers are unable to believe that their mills, as to equipment or in other respects, are inferior to those of their competitors, or they may actually know that they are better than most of them, and they cannot understand why there should be a loss on fabrics made at their mills at prices that other houses are eager to book business at. Being usually salesmen, and not manufacturers, it is impossible to make them believe in the reality of this every-day condition, and of course the mill management is blamed for lack of knowledge of how to make goods as well, and as cheaply, as their competitors.

At this stage of the game, the new superintendent is likely to be told that when they hired him they thought he knew his business; that if he did, he would be able to make goods as cheaply as the other fellow; and that, as he figures nothing but a loss on everything submitted to him, they will dispense with his services and look for some one who knows how to make a profit.

Under prevailing conditions, the fear of such an outcome is ever present with the new man, and, after reporting too high a cost on a few fabrics, he feels that he must do something. He therefore tries hard to squeeze out a profit by figuring that a lower grade of silk than usual will do the work; that he will get a larger product than he ordinarily figures, even if it be necessary to speed his looms beyond the limits of good practice; that he will save a little on this and on that, and finally he gets the cost where he wants it. That is, he hopes that his cost will be 5 or 10 per cent. less than his experience would justify.

Some other and bolder spirit may adopt the much simpler process of deliberately undercosting the goods to the extent desired, knowing well that his principals will not know the difference, and hoping that other and profitable work may come to the mill that will cover up the losses. Even if the losses would show up at the end of the year, a

judicious overcosting of the stock at the mill would conceal them, and if a rising raw-silk market helped the process, and the mill was large enough, it might be two or three years, even if running largely on undercosted fabrics, before his employers (using such mill accountings as are commonly to be found in use), would be aware of what a hole there was in their assets. They would have lost a lot of money if they had done a large business on the goods, and a large business is likely to be done on undercosted goods, and if the superintendent was in their employ at the time of the exposé, he would lose his position. If able to do so, however, he would have probably secured a position with some other firm before he came to the end of his rope, the big business he was doing for the first firm being a help to him in securing the second post, and the same tactics would be repeated with them if necessity demanded.

*Necessity for Principals to Know How to Cost Their Goods.*

It is therefore of the first importance that some member of every firm, whose pocket is affected by the loss or profit at a mill, should have, or should acquire sufficient knowledge to enable him to ascertain the approximate correctness of all cost sheets.

The desirability of having all manufacturers able to cost their goods properly is apparent when it is considered how seriously a whole trade can be hurt by a few mills offering goods at less than their real cost, and no competition is worse than that of some large, solvent, and respectable concern that is offering its goods on that basis without knowing it. Such concerns may make a profit in other directions which keeps them solvent, or they may finally fail, and when they do so it seems as if there were a dozen more to take their place, and meantime the damage to the trade has been large. Be this as it may, there is not a season passes without many lines of goods appearing on the market which the best-equipped and best-managed mills in America could not make at the price and get out whole.

*Desirability of Standard Cost Sheets.*

*It would seem to be desirable if, for the various classes of silk fabrics, some standard forms, to be followed in the making up of costs, could be worked out by the united efforts of representative firms or associations, and thus new and inexperienced firms would have the benefit of such guidance. There would, of course, be nothing altruistic about such a policy, as it would have for its sole object the prevention of injury to the trade by the ignorance of firms undercosting their goods.*

*In any event, it is desirable to have a carefully printed form for filling in, covering all the items of cost, so that none can be overlooked.*

*The Ribbon Manufacturers' Cost Sheet.*

NOTE.—This article, with the foregoing suggestions, was originally

published in "Silk," in January, 1908, and the writer has since urged, in many ways, the necessity of a standard cost sheet.

The value of these recommendations has at last been recognized, for, in the autumn of 1912, the Silk Ribbon Division of the Silk Association of America found it advisable to adopt this exact policy which had been thus outlined nearly five years before.

As a result, a well considered form of cost sheet (in the preparation of which the writer lent his assistance), was adopted, and the use of the same was recommended to the trade.

The necessity of this was made clear by the fact that large numbers of the ribbon manufacturers were hopelessly ignorant of how their goods should be costed. This was demonstrated by the furnishing to a considerable number of them certain samples for calculation, all of the details for making the costs being stated, with the result that figures were handed in running from 30% below cost, by slow gradations, up to 32% above cost.

It is very desirable that the broad silk interests should move in the matter also.

#### *What May Happen if No Form be Used.*

A failure to use a printed form may have a result such as in a case that I heard of, where a velvet-cap manufacturer was selling his goods so cheap that a brother manufacturer expostulated with him. He claimed, however, to be making a good profit, and volunteered to show his cost sheet, which, when produced, was found to have every item of cost carefully set down—except the velvet of which the caps were made.

#### *The Main Elements of Cost.*

The main elements of cost in a fabric are the raw materials and their preparation—throwing, dyeing, etc.; the labor directly applied to the goods, such as weaving, warping, twisting, picking, etc.; the finishing, or piece dyeing; and the general expense, which item should cover interest on capital and all other interest, depreciation, all labor not directly applied to the goods, rentals, power, mill expenses and supplies of every kind, salaries of partners, officers and clerks, and every other expense entailed upon the business and not specifically provided for on the cost sheet.

#### *Expenses that are Well Defined.*

Certain parts of the cost are quite accurately known. Thus the throwster makes a specific charge for his work (though you may be unaware of how much waste he makes), and so does the dyer, and likewise the finisher. If these processes, or any of them, are done in the mill, the cost sheet should be charged with exactly the same price that would be paid for them if done outside, any profit made on the process going to the credit of the account of that department.

The prices to be paid for the warping, beaming, twisting or drawing in, winding, doubling, quilling, and picking, are either fixed by the mill price lists or, if there is anything special about them, they can be figured out with fair accuracy.



*Estimating the Price for Weaving.*

Estimating the price to be paid for weaving demands careful thought, however, as it is largely dependent upon the product that can be got out. This will depend upon the quality and size of the silk that is to be used, and the care with which it is thrown, dyed, and warped; the density of the warp and how it is reeded; the character and weave of the cloth; the width of the fabric and picks per inch; the character and condition of the looms and their speed, or the speed at which they may be run for the goods under consideration; the organization of the mill, on which depends the having warps ready to follow on with, and the prompt putting of the same in the looms and starting them up to follow those that are run out; the length of the warps; the continuity of work, which depends on the success of the selling force; the policy of the mill in regard to quality of work, as where certain imperfections will not pass muster at the examining table and so, if they occur in the weaving, the weaver must stop his loom and pick out his filling back to the imperfection; and lastly, the average ability and experience of the weavers themselves.

It is generally desirable to fix a rate at which a weaver can earn fair wages. Any man who cannot earn such wages should be let go, for, even if he were willing to work along at a pittance, the mill would be suffering on account of his looms not turning out their proper quota of goods.

If, bearing all the foregoing conditions in mind, a proper rate should have been fixed, it will be found that after the goods are well started on the looms the majority of the weavers will be making their average rate of pay, and all will be well. If, however, the product has been overestimated, the rate fixed will be found to be too low, and in a few days the weavers will demand a higher rate to bring them out where they should be. This will mean an increase of cost, both for weaving and for general expense (on account of reduced output), and that, too, after the line of goods is on the market and its price fixed.

On the other hand, if the product is extra large, it is, in practice, very difficult to cut down, during the season, the rate of pay on an article once established, unless it is going to be run continuously, and so the mill suffers by paying out more for weaving than should have been necessary.

Three of the main elements of cost are not fixed quantities. I refer to the amount of silk that enters into the fabric, the cost of that silk, and the proper charge for the general expense.

*Variation in Size of Silk from Take-up in Twist.*

No matter what care is used in the selection and preparation of silk, it will vary considerably in size. Also, in the throwing of the silk there is a take-up in twist, on which subject much misconception exists. The writer has heard many different opinions expressed on this matter by

supposedly competent men, in some cases this take-up being estimated as high as 7 per cent. for organzine, and in other cases belief was expressed that there was no loss in length at all, as their practice was not to dry out the silk after soaking, but to wind it while damp, and, being in that state easily stretched, it gained as much in stretch, while going through the various processes, as the take-up in twist would amount to, though at the expense of the elasticity of the silk.

The percentage of these take-ups will vary with the number of turns of twist, the number of threads, the size of the silk, and the tension under which it is worked, etc.

After ordinary twists are exceeded, the shortening increases rapidly, and, for the same twist, the take-up is greater in coarse sizes than in finer ones.

The reverse, or second-time, twisting in organzine, or in any yarns of two or more ply, untwists the turns put into the single thread in the first-time twisting.

Taking 13/15 denier silk as a basis, and allowing that it be thrown into 2-thread organzine, with 16/12 to 16/14 turns per inch, wound dry, and put through all processes under normal tension, the best opinions agree upon a take-up of from 3 to 4 per cent. This is in line with the writer's own determinations, the average of many careful tests made on 2-thread organzine, thrown from 13/15 denier silk, with 16/12 turns per inch, being 3.60 per cent.

Many manufacturers believe that the take-up in twist of tram is negligible, but this is by no means so.

For certain twists and sizes (not including hard twists), it may run up to 2 per cent., or again it may be as low as  $\frac{1}{2}$  per cent.

Under ordinary conditions it might therefore be well to calculate on a take-up of  $3\frac{1}{2}$  per cent. for organzine and 1 per cent. for tram.

A European method, sometimes followed in this country, is to allow 3 per cent. on both warp and filling, but throwing is conducted under somewhat different conditions over there.

When figuring the dramage of the thrown silk from the size of the raw, this increase in thickness, due to the twist, should always be allowed for.

#### *Modifying Construction to Compensate for Difference in Size.*

The number of ends that should go into the warp, and the way they should be reeded, having been carefully thought out, it would not be convenient or desirable to change this to suit any ordinary variations in the size of the silk.

Still, if the warp is heavier than usual, the attempt may be made to balance it by reducing the number of picks, or by using a little finer filling than usual, and the reverse of this if the warp is on the fine side. It may well happen, and frequently does, that both warp and filling run heavy at the same time, and then the goods are almost sure to get

more material in them than calculated, and, if they are both fine, so many extra picks will be required to bring up the weight that more weaving wages may have to be paid. Also, in case of warp and filling not balancing, a remnant of one or the other will remain at the end of the work, which will have to be used up, or sold, at a loss.

*The Take-up in Weaving.*

The loom take-up, or amount that the warp shortens in weaving, must always be allowed for. It varies with different weaves and the calculation has to be modified to suit. The limits for ordinary fabrics will mostly be between the extremes of 6 per cent. for a satin duchesse, and 10 per cent. for a closely woven taffeta.

If 100 yards of cloth are woven on the loom at the normal tension, this amount, when rolled off loosely and handled, will be found to have crept up till it measures no more than perhaps 96 to 99 yards, according to whether it is a loose weave or a close weave.

*Allowance for Waste.*

In estimating the amount of silk required, the waste must be allowed for. Waste is made in all processes, but particularly in weaving. With good silk, good preparation, and good management, this item should not be large, though with the reverse conditions it may be distressing. A very customary allowance to make is 4 per cent. for warp and 7 per cent. for filling, an average of  $5\frac{1}{2}$  per cent. if equal quantities were used.

These figures, while none too high for fancies—and not high enough in certain cases—are rather large for a plain goods production in which, on close calculations, figures of 3 per cent. for warp and 5 per cent. for filling should suffice. Raw-silk warps, again, may be worked within a 2 per cent. wastage.

The writer's experience has been that, on steady work, with an output of two-thirds plain fabrics and the rest fancies, using high-class silk and with skillful help, the waste actually made can be kept down to an average of  $2\frac{3}{4}$  per cent. right along. To this should be added something to cover the losses, made in the sale or in the working up of any remnant lots left on the bobbins.

*Filling Figured on Width in Reed.*

In calculating the filling required, the length of the picks should be taken as being the same as the width that the goods are in the reed. Careful tests show that it is very slightly in excess of this, but so little as generally to be negligible.

The ends used in the selvages of the goods should be included in the warp requirements.

As each of the foregoing points will affect the amount of material that must be provided for a given quantity of goods, it is evident, as

previously stated, that it is impossible to say exactly how much will be required.

*Raw-silk Prices.*

A very grave question is the price at which the silk shall be figured in at, and different mills, making the same or similar fabrics, may treat this subject so differently that their asking prices may vary considerably in consequence.

Now, the most important costs are those of plain fabrics of large sale, on which the competition is therefore very sharp, and on which it is hard to secure any but the most meagre profit. When prices are once fixed for the season on such a line, and the goods well distributed, it is generally impossible to secure any advance even if costs go up, for a demand for an increased price on later orders would only result in stopping the sales, some competitor always standing ready to book business at the old figure.

A failure on the part of a mill to price its goods on as low a level as the average market price made by other firms for similar goods—which, perhaps, may not even be quite so good but which answer the purpose, will result in very little business being booked, and one is then confronted with the alternative of a great loss by the stoppage of looms, and consequent disorganization and shortage of production at the mills, (always an unknown quantity, but always very large), or a probably smaller loss by accepting business at the ruling market rate, which may be less than cost. The latter alternative is frequently accepted, as no house wishes to lose its customers, even for a season, or to have its goods pushed out by those of its rivals, for when once out it is a difficult and expensive matter to get back in the swim again. The stock of silk provided for the season's business has also got to be considered, for, if not worked up, it will lock up capital, eat up interest, and, if the market goes off, it may depreciate heavily in price.

Some mills, too, are under the military necessity of keeping running, as they are financially so weak that to stop production would mean liquidation, and liquidation would mean insolvency. They must run, as they must have the advances from their commission houses, on goods coming forward, to take care of maturing payments, and to make stock goods for advances would mean a much heavier loss when they were cleaned up than what doing an order business even at a cent or two less than cost would be.

All of this emphasizes the vital importance of properly determining the raw-silk costs, and the fear of figuring the goods too high leads frequently to the giving away to customers, in the shape of too low prices, handsome profits that the mill should have reaped from large purchases of raw material made at a much lower level than the ruling market.

*Losses Caused by Fluctuations in Raw Material Prices.*

This is one of the reasons why goods will be so slow to advance even when higher silk has increased the costs largely, as some mills will have a lot of cheap silk contracted for, but, owing to the pressure put on them by their customers and their own salesmen, they are bluffed out of getting the increase that they should, and take orders at old prices so long as their cheap silk lasts, not making any serious effort to get an advance till they have to go into the market for new silk. Meantime, other houses, not so well situated in the matter of raw material, are forced to meet the old prices and to accept business on an unprofitable basis.

If, on the other hand, the silk market falls sharply, or shows signs of great weakness, there are always some houses, short of silk, who discount the situation by offering to book orders at a lower level, trusting to cover themselves with silk, when it is needed, at a satisfactory price. They often profit handsomely by this policy, but those who are long of silk, or of stock goods, suffer severely by the increased depreciation caused by these bear tactics. Whichever way it goes, the buyer is favored, and every season, when prices fluctuate much, some or other of the mills are heavy losers.

*How Cancellations Affect the Manufacturers.*

This is entirely apart from the loss that comes home to mills when they have to buy higher priced silk than figured on to fill their orders, or the loss that falls on them by the practice of nominally respectable dry-goods, or cutting-up, houses, welching on their contracts when the market falls heavily, and to fill which contracts manufacturers have provided the silk necessary to make them.

These manufacturers have got to keep their contracts to the letter with the raw-silk houses from whom they have ordered their supplies of raw materials, and, consequently, on such silk they are left to swallow a loss of a dollar or two a pound by the disreputable and dishonest acts of those merchants who consider themselves most respectable and most honest.

In such a difficult and complicated business as silk manufacturing, in which so many unforeseen emergencies arise, every mill must suffer more or less from those cancellations that the buyer is quite justified in making, such as for late delivery, faulty construction, inferior quality, off shades, or failure to produce goods commercially up to the sample from which they were sold. Such cancellations are legitimate, and a part of the game, and the manufacturer must lay out his work and make his goods so as not to incur the risk of them, and for such as are unavoidable, he must grin and bear it.

The other sorts of cancellations, however, are simply an indirect form of larceny, particularly in view of the fact that, if the market for raw-silk has advanced, every buyer will demand the delivery of every piece

bought and at the price arranged for, no matter what it costs the manufacturer to provide the silk. These cancellations are very bitter pills, but are swallowed by the sellers as the least of two evils, as no one feels like having to sue the majority of his customers. In any other trade, a house that deliberately repudiated its contracts, because it seemed profitable to do so, would be kicked out of the company of its associates, and it is an interesting question how long the textile manufacturers will consent to be robbed in this way, or if they will ever organize themselves in such an effective manner as to compel the houses ordering their goods to practice common honesty.

*How Should the Raw-silk be Figured?*

Having in mind the importance of this matter of not making any mistake in pricing the silk on the cost sheet, how should one proceed?

If the market is firm and steady the current quotations for the quality of the silk needed may be taken; or the average cost of such suitable silk as a mill has on hand (whether bought lower or higher than the ruling price) may be averaged up with whatever quantity of new silk will be needed for the season's business; or the view may be taken that the market is likely to be a rising one, and a guess made as to how much extra to allow to cover this contingency; or, conversely, if the market is thought to be weak, a lower cost basis may be made in the hope of covering at lower prices.

Such views as these, or perhaps other ones, may prevail, and as one or the other may best suit the interest of the various mills, there can, of course, be no concert of action in such cases, no matter how desirable it might be. The question is further complicated by the policy of the different mills, some using a Best No. 1, some an Extra, and some an Extra Classical, for the same work, and by the fact that these grades vary in merit from season to season, so that one year an Extra will do the work that required an Extra Classical the year before. It may safely be said, however, that a manufacturer is seldom justified in pricing his silk at a less cost than he has reason to believe he can replace it at during the season.

A point often lost sight of is that of the terms on which the silk is bought. Between a 10-day purchase and a 6-months' one, there is a difference of 3 per cent., and, between a silk bought on a conditioned weight basis and an Asiatic silk bought on invoice weight there may be a difference of 2 per cent. This should be allowed for. Some firms, who discount their bills, may put in the silk at the net price and other firms who take the time will figure on the gross price.

Of course, if the net discounted price on the raw-silk is used, the item of general expense will be correspondingly higher, as the money used to pay the bill must bear interest, whether borrowed or not, and the interest included in the general expense will be just that much greater.

*The General Expense Item.*

We now come to the important point of the proper figure to allot for general expenses. This is a very vexed question and hardly any two people handle it in exactly the same way.

The experience of a mill as to its annual expenses (which should be carefully tabulated at the end of every year) will furnish a fairly accurate estimate as to the money that it will cost to take care of the many items of mill cost, such as power, light, heat, water, rentals, supplies, mechanical labor, and other labor paid for by the week and not included in the cost sheet, salaries, clerk hire, insurance, taxes, interest charges, depreciation, office expense, delivery and transportation expense, etc. These costs may increase or diminish from year to year (they generally increase) but the record of each year is a guide to the next. Any rentals to be paid are known. So are the salaries of officers, or partners. The various items will amount to a large sum of money.

*Losses from "Seconds."*

Another thing not to be forgotten is an allowance to cover the losses arising from seconds. Some seconds there always will be, and their amount will depend on the class of goods made, the skill of the help, the character and methods of the management, and a certain amount of sheer luck. Losses from this cause should be accurately tabulated and included in the estimates.

*Figuring the Depreciation of Plant.*

Then comes the important item of depreciation of machinery and plant. The depreciation is a real thing. Replacements must be provided for, and whatever is set aside for this purpose should be withdrawn annually from the active uses of the business, in cash, and invested as a sinking fund, to the end that when new equipment is needed the cash will be within reach to pay for it and not, as is commonly the case, melted in with the general assets of the business where it cannot be reached.

Various views of depreciation are taken. Some firms write off 10% of the original value annually, so that at the end of ten years they have no more to write off. Others write off 10% on the yearly diminishing amount, till it is reduced to from 25 to 40% of the original cost, and then stop writing off, figuring that in selling the machinery as second hand it would realize that sum. Others write off 25 to 50% immediately on the installation of the machinery, and then 5 to 10% a year thereafter. On no subject are views and methods more diverse, or so often illogical. I know an owner of great cotton mill interests, who, wishing to keep the rate of dividends steady, does his writing off according to circumstances. In a good year he will write off 15 to 20%; in a bad year, nothing. If there are enough good years to keep the average right, there is some-

thing to be said in favor of this way of charging the profits with the amount of depreciation expenses that they will stand.

My own opinion is that the sum of money to be set aside annually, should be about  $7\frac{1}{2}\%$  on the new cost of textile machinery, if the same is constantly kept in the best kind of repair;  $2\frac{1}{2}\%$  on good brick buildings, well kept up, and 10% on boilers, engines, etc. Engines, properly cared for, do not wear out in practice, and boilers have a longer life than ten years, yet, if a business grows, they have to be replaced from time to time by larger units, and when removed will hardly sell for the cost of handling them.

#### *Expenditures on Interest Account.*

The interest paid out for loans from banks or commission houses is easily arrived at. The expense account of the business, too, is properly chargeable with legal interest on the net value of the assets, that is, the value of the capital invested in the business. This is a sum that will probably change from time to time as money is made or lost, and interest should be charged up accordingly. Here an interesting point comes up:

"A," "B," and "C" are partners, "A" contributing the capital, say \$500,000, and the others the experience. The business is charged with \$30,000 a year interest due "A" for the use of his capital, and this sum has to be earned before any profits are made for the partners as a firm. Later the concern is incorporated, "A" taking shares for his capital. He now ceases to receive his 6 per cent. interest directly, and the earnings of the concern as a corporation will appear to be \$30,000 a year greater than as a private firm, and what is of real importance, this \$30,000 will no longer be included in the expenses of the business and will make the item of general expenses that much less. If the mill had an output of 2,000,000 yards a year the apparent cost of the goods made by the corporation would be  $1\frac{1}{2}$  cents a yard less than the cost of the same goods made by the firm.

#### *Designing Expenses.*

In the costing of figured goods, where the expense for designs and cards runs up to a large amount, or in printed and print-warp goods, where big sums are paid for designs, rollers, and sampling, the proper expressing of these expenses on the cost sheet is most difficult. The number and cost of the patterns that must be provided for the amount of business done is absurd, and the two horns of the dilemma are that if you do not offer a big collection to the trade you get but few orders, while if you base your costs with a view to being recouped for these expenses, it lands you at a price where you can do no business at all.

Gentlemen from the dress-silk end of the trade, who have branched out into the neck-tie silk trade have learned something on this score.



This neck-tie silk trade has huge expenses special to it, among which may be mentioned the enormous number of styles on which the business is done; the considerable stock of warps and dyed silk that has to be carried to make the short time deliveries demanded in that trade; the very short warps and the special designs ordered, and the consequent great expense for the labor and material required to make them; and among the many other difficult features may be mentioned the curse of having to make advance samples, when, for quite a period, much of the mill will be running on sample warps at great expense, for which next to nothing is received. Many who have invaded that field have realized the truth of the saying that the cobbler should stick to his last.

*Partners' Salaries.*

Regardless of what the salaries of partners, or Corporation officers, actually are, the expense account should properly carry only fair charges for this item, that is, such sums as these officials might be worth if they hired themselves out elsewhere. If they are much overpaid in the shape of salary, it is an injustice to the shareholders, and, by increasing the cost of the goods, renders the mill less able to meet competition.

*How to Apportion the General Expense.*

The annual expense being in a measure approximated, how should it be allotted to the fabrics being made? Very many people add a percentage to the total of the other items of the cost—a most misleading and defective way, as it takes no account of whether the goods weave fast or slowly, and, as silk goes up or down, the allowance for expense will be raised or lowered, while really it should remain relatively constant.

The truth is that the cost per yard for general expense depends upon the amount produced. The product again is a most variable quantity. The theoretical product is easily figured and proper allowance can be made for stoppage of looms due to changing shuttles, piecing up broken ends, putting in new warps, and what not. There are many elements that cannot so be gauged, which cut down the production, such as absence of weavers from sickness or other causes, engine or other breakdowns, smashes, scarcity of help, inexperienced help, very hot or cold weather, inferior silk, or silk poorly thrown or dyed, or delays in receiving silk from the throwster or dyer. These are the every-day mill troubles and are quite apart from such special drawbacks as floods, fires, strikes, or lack of orders.

In plain-goods mills, 70 per cent. of the theoretical product may be regarded as very good practice, though in mills making only one or two articles and using very long warps and extra size quills, or on blacks only, or making easy weaves with high-class silk, this percentage can be largely increased. In fancy-goods mills it will be less.

A very satisfactory way is to figure that each loom must earn its share of the annual expense. Thus, if the total annual expense for 500 looms was \$120,000, it would mean that each loom must earn \$240 of that sum, and dividing this by fifty loom weeks per annum it means that \$4.80 a week must be earned by each loom. If, now, a certain cloth is estimated at a product of 60 yards a week, it would carry an expense of 8 cents a yard, or if 80 yards a week could be got off, then the expense would be only 6 cents a yard. Special circumstances may make occasional modifications necessary, but not to any extent.

As the weavers' wages per yard are also based on this assumption of a given product, it follows that there is an approximate ratio between such wages and the expenses per yard, and many people figure the expense by taking a percentage of the amount paid for weaving.

The apportionment of expense to the looms may be varied, charging different amounts to the wide or the narrow, the fancy or the plain, and this may properly be done, providing that the total of the allotments equals the expense to be met.

There are other methods of handling this important question, but there is one most incorrect way of dealing with it, already noted, and that is by adding for expenses a percentage of the cost. Figures so obtained are seldom right and are often grossly wrong and misleading.

#### *Steadiness of Operation an Important Factor.*

Another important consideration is the fact that it is very rarely that a mill is kept sold up all the time, or if sold up, that nothing interferes to prevent its operation at the maximum of efficiency.

The records of the experience of a mill in the matter of production must be used in figuring the general expense.

Thus, if 70 per cent. of the theoretical production was being got off by the looms in operation, and it was shewn by the mill records that only 80 per cent. of the plant had been actually operated in past practice, then the real per cent. of the theoretical that is being produced is only 70 per cent. of 80 per cent., or 56 per cent. actual, and the expense must be figured accordingly.

#### *Illustrative Cost Sheets.*

On the following pages are presented three forms for use in the making of cost calculations, and which were originated by the writer, one for Broad Silks, and the others for Ribbons, which are correct in principle, and which have worked well in practice. It is believed that a careful study of these forms, and of the explanations regarding them, will be of interest and profit to all silk manufacturers.

In the article which follows this (Cost Sheets and Tables of Weights) another and more amplified form of cost sheet, also devised

by the writer, is presented, but the methods of costing employed in both cases are identical.

If preferred, the items in these forms can be re-arranged so as to group together, first, all the costs connected with the warp, that is, the raw-silk, throwing, dyeing, winding, warping, beaming, and twisting, including provision for take-ups and wastes.

In a second group would come the cost of the filling, worked out in like manner, and including the quilling.

Then would follow the other items of the cost.

If considered desirable, the charges for winding, doubling, and quilling can be figured on the dyed weight basis instead of the raw weight, and, in that case, what the dyed weight of warp and filling would be figured out, and multiplied by the prices actually paid for labor on the dyed material. Working from a raw weight basis is the better method, however.

#### *Systems of Counts for Numbering Silks.*

Before considering the cost sheets themselves, it may be well to state that, in figuring out the weights of silk required for warp and filling, it is necessary to clearly understand the systems employed to express the numbers, or counts, of the yarns. The following explanation will make this clear.

The denier system of counts is used for raw-silks.

The dram system of counts is commonly used, in the United States, for thrown silks.

A 1 denier silk (there is no such thing in practice) measures 4,464,528 yards per pound, figuring from the length of the European metre, taken as 39.370432 inches. An 11/13 denier silk, averaging 12 deniers, will measure one-twelfth of this, or 372,044 yards per pound; a 14/16 denier size, averaging 15 deniers, will be one-fifteenth of it, and so on.

A 1 dram silk measures 256,000 yards per pound. A 2 dram silk is one-half this, or 128,000 yards; a 5 dram silk is one-fifth of it, and so on.

#### *Rules for Determining the Counts.*

*From these data we derive the following rules:*

1. *To find the yardage per pound of any given denierage, divide 4,464,528 by the deniers.*
2. *To find the size in deniers of any given yardage per pound, divide 4,464,528 by the yardage.*
3. *To find the yardage per pound of any given dramage, divide 256,000 by the drams.*
4. *To find the size in drams of any given yardage per pound, divide 256,000 by the yardage.*
5. *To reduce any given denierage to drams, divide the deniers by 17.44.*

6. To reduce any given dramage to deniers, multiply the drams by 17.44.

*Note.* When figuring out the size, or dramage, of thrown silk, always be careful to make due allowance for increase of weight due to the soap and oil added to it by the throwster, and for the take-up in twist in the throwing.

If accurate sizing tests have been made, the size of the thrown silk may be worked out from the size of the raw, making proper allowance for take-up in twist, but paying no attention to additions to the weight made by the throwster.

The following remarks will present in detail a full explanation as to how the figures are arrived at. The heavy-faced type is used to represent what is written in.

#### REMARKS CONCERNING USE OF THE COST CALCULATION FORM FOR BROAD SILK SHOWN HEREWITH.

This form is for 100 yards finished cloth. A length of 110 yards of warp is assumed as enough to cover take-up in weaving, unwoven ends of warp, and headings. This can be modified for goods with more or less take-up.

The size, or dramage, of organzine and tram should be figured from Conditioning House tests, and should include an average take-up in twist of about  $3\frac{1}{2}\%$  for organzine and 1% for tram.

The weight of silk for warp and filling should include waste in weaving and preparatory processes, and is here assumed as 4% for warp and 7% for filling, a very full figure if for plain goods. This can be modified according to experience but is an item that is often underestimated. Weights should be figured on Raw Conditioned basis.

##### *Figuring the Weight of the Organzine.*

The figures for organzine are arrived at as follows: The size of the raw-silk, in this case, has been found, by the Compound Sizing Test of the Conditioning House, to be 14.32 deniers. Doubling this, for 2-thread organzine, makes it 28.64, and adding  $3\frac{1}{2}\%$  per cent. for take-up in twist brings it up to 29.64. Reducing this to drams, by dividing it by the constant 17.44, we get a dramage of 1.70 for the silk, soap and oil not included.

Next, divide 256,000 yards—the length of 1 pound of a 1 dram silk—by this 1.70 drams, and we get a yardage of 150,588 per pound.

We then multiply 6,524 ends by 110 yards, and find that the warp will require 717,640 yards of silk. To this we add 4 per cent. for waste, or 28,706 yards, making a total of 746,346 yards to be provided.



Divide this by the yardage per pound of the silk, 150,588, and the weight of the organzine to be provided for the warp, 4.95 pounds, is arrived at.

*Calculating the Tram.*

For the tram in this example, the size of the raw-silk has been similarly found to be 14.79 deniers, and this, in 3-thread tram will be 44.37 deniers, to which must be added 1 per cent. for take-up in twist, making a size of 44.81 deniers. Reducing this to drams, by dividing it by the constant 17.44, we get a dramage of 2.57.

Next, divide 256,000 yards by this 2.57, and we get a yardage of 99,611 per pound.

There are 88 picks per inch, each 36 inches wide in the reed, requiring 88 yards of filling per inch, equal to 3,168 yards per yard, and 316,800 yards for the 100 yards. To this we add 7 per cent. for waste, equal to 22,176 yards, making, in all, 338,976 yards of tram required for the filling.

Divide this amount by the 99,611 yards per pound, and the weight of the tram needed for filling, 3.41 pounds, is arrived at, soap and oil not included.

*The Value of Warp and Filling Tables.*

To avoid this complicated figuring, it is a useful plan to prepare carefully worked out filling tables for one or more widths of goods, covering all the ordinary ranges of picks per inch, and warp tables for all ordinary ranges of ends per warp, all of them being calculated for 100 yards of cloth. Such tables, of my own composition, will be found elsewhere in this book.

*Allowances for Take-Ups and Wastes.*

The weights so set forth can include a standard weaving take-up of the warp of 10 per cent., an allowance for waste of warp of 4 per cent., and an allowance for waste of filling of 7 per cent., or any other percentages desired.

The take-up in twist in the throwing, averaging  $3\frac{1}{2}$  per cent. for organzine, and 1 per cent. for tram, should be included in the dramage, or size, of the silk when figuring the same from the denier sizes as shown by the Compound Sizing Tests of the Conditioning House, so this allowance should not be included in such tables.

*How the Details of the Cost Are Worked Out.*

Continuing our remarks on the calculation before us, we note that the estimated waste in throwing is filled in under "Particulars of Cost of Silk": it should be figured on the value of the silk plus the throwster's charge, instead of on the silk alone. The exact amount of the waste can be ascertained by Conditioning and Boil-off tests.

The dyer's charge is made on thrown weight of silk, that is, raw weight plus soap and oil. These additions to the weight usually run

from 2 to 4%. Therefore the figure calculated for dyeing must be the dyer's net price plus this percentage.

The winding and quilling costs are figured on the raw-silk weights.

The filling is calculated on the full width of the warp in the reed.

The warping cost is based on a price for 100 ends of 100 metres (about 110 yards) length, a very common method. Mills paying on another basis can use a different factor.

The length of warp will yield about 300 yards of cloth, so the twisting cost is divided by 3 to give the cost for 100 yards. In other length warps use a different divisor. Any extra drawing-in or reeding expenses should here be included.

Weaving, picking, clipping, and cleaning are taken as 99 yards, because this length, or less, is all that is paid for, as the goods, when relieved from the loom tension, will creep up in length at least 1 per cent. for a taffeta, and perhaps as much as 3 or 4 per cent. in the case of loosely bound satins. This shrinkage is recovered in the finishing and is thus only a regain, and not a gain as many suppose.

In figured goods, where loose threads float on the back, or in plaids where there are loose ends at the edges, which have to be clipped, the cost of this may be paid for separately, or may be included with the picking. Sometimes the weaver is required to clip the edges of plaids, with or without extra pay as the case may be.

When cleaning expenses have to be made for a line of goods, experience shews what proportion of the pieces will need cleaning, and thus an average cost per yard can be arrived at.

Where mills do their own throwing, dyeing, finishing, or silk printing, the market prices for such work should appear in the cost sheets, the profit or loss therefrom to the mill being shewn in the departmental accounts. The finishing is here charged at the market rate.

"Pattern Expense" can be filled in according to the character and design of the fabric, and the mill practice.

#### *What the General Expense Should Include.*

"General Expense," as already stated, should include every charge upon the mill (exclusive of selling expense), that is not otherwise specifically provided for. It should cover interests on investment, bonds, and loans from banks, commission houses and others; depreciation on buildings, machinery, and power plant; fire, boiler, accident and other insurances; taxes and assessments; fuel, water and other power-house expenditures; all labor not otherwise allotted; salaries of management; office expenses, transportation charges, supplies, incidentals, and, in brief, every kind of charge from watering the street to legal expenses.

In apportioning this expense, the view here taken is that each loom must pay its share of the total annual expense, as previously explained, and the figure given is worked out by this method.

*Other Items of the Cost.*

The cost of beaming has been included in the general expense, but may be figured separately if desired. Frequently it is part of the warping charge.

If piece-dyed goods lose in length, see that proper allowance is made on the cost sheet. Some tussah fabrics shrink heavily.

The "Weaving before Printing" item is the weaving in of the necessary binding picks every yard or so, to preserve the pattern.

In certain goods, umbrella silks, moirés, grenadines, etc., there may be some special elements of cost that must be included.

*Weights and Weighting.*

The dyed weight of the 100 yards of cloth is found by deducting from the weights of the warp and filling the allowances made for waste (4% and 7%), and then reducing each to the dyed weight corresponding with its ounces of weighting.

In deciding what weightings to order, boil-off Conditioning House tests should be carefully studied, so that the proportion of weighting to actual silk fibre will be neither more nor less than desired.

*Further Remarks.*

Prices of raw-silks, bought on different terms or on different bases of weights, should be reduced to a uniform basis. If desired, all cost sheets can be made on a settled basis of prices for raw materials, and additions to, or subtractions from, the costs so obtained can be made as required, according to market fluctuations.

Selling cost is arrived at by dividing net mill cost by .85, experience shewing the selling expenses and discounts of the average mill to approximate 15%, when goods are sold through a commission house.

The heavy faced type represents the written-in calculation, the other is the printed form.

The various cost figures given therein are assumed simply for the purpose of illustration, but are quite in line with customary rates.

It is needless to say that preliminary calculations should always be checked back and verified by actual results.

Note carefully that the principal items of cost are silk, weaving, and general expense. Therefore, the selection of proper raw-silk, with the best throwing and dyeing, improves the product, increases the output, and reduces the cost.

To take any chances with these important factors, for some nominal saving in cost, invites the risk of poor goods; excessive waste, increased labor cost, and diminished production, with correspondingly higher charges for general expense.

It may further be said that, even with the most careful and conservative figuring, it will generally be found that goods cost more and not less than the estimates.



## THE COSTING OF RIBBONS.

The foregoing explanations and remarks will also apply to the cost calculation forms for Ribbons which follow. An arbitrary figure of \$12.00 per week, per loom, has been here assumed as sufficient to cover the general expenses.

One of these forms is arranged for 100 yards of single ribbon, which has the advantage in that errors in calculation are much more easily noticed.

The other is made out to cover the cost of the entire loom-full of ribbons, which is the more customary way.

The principles and methods, however, remain the same.

*Analyses of the Cost Sheets.*

It is often very instructive to analyze the cost sheets, and to see just how much of the cost is made up of raw material, how much of labor, and so forth.

I present here such a subdivision of the foregoing calculations of Broad Silks and of Ribbons.

ANALYSIS OF BROAD SILK COST.			ANALYSIS OF RIBBON COST.		
Percentages of Cost.			Percentages of Cost.		
	\$	%		\$	%
Raw-Silk .....	32.76	.498	Raw-Silk .....	3.76	.459
Throwing .....	4.66	.071	Throwing .....	.54	.066
Th. Waste .....	.87	.013	Th. Waste .....	.10	.012
Dyeing .....	9.21	.140	Dyeing .....	.88	.108
Winding .....	1.25	.019	Winding .....	.15	.018
Quilling .....	.51	.008	Quilling .....	.06	.007
Warping .....	1.96	.029	Warping .....	.23	.028
Twisting .....	.54	.008	Twisting .....	.06	.007
Weaving .....	6.93	.106	Weaving .....	.99	.121
Picking .....	.75	.011	Picking .....	.08	.010
Finishing .....	1.00	.015	Finishing, Blocking and Boxing .....	.45	.055
General Expense ....	5.33	.082	General Expense ....	.89	.109
	<u>65.77</u>	<u>1.000</u>		<u>8.19</u>	<u>1.000</u>

## RIBBON COST CALCULATION.

(For 100 Yards=10 ten-yard pieces.)

Date, **January 1, 1908.**

Pattern..... Quality, **X. L.**.....100 Yards. Width, **45 Lignes.**  
Description, **Black Taffeta.** Spaces, **18.** Reeding, **60/3.** Width, **4 Inches.**

WARP	726 Ends Organzine	1.70 Drams	.58 Raw lbs.	@ \$5.65	\$ 3.28
110 Yds	" 2 Thd. 13/15 Den. Jap. Ex. Fil.		"	@	\$
	"		"	@	\$
	"		"	@	\$
Selvages	48-24/2				

Total .. 774 Ends

FILLING	88 Picks Tram	2.57 Drams	.38 Raw lbs.	@ \$5.81	\$ 2.21
100 Yds.	" 1 End 3 Thd. 13/15 Den. Jap. Fil. No. 1.		"	@	\$
	"		"	@	\$

Total .... 88 Picks

Warping, 110 Yards.	774 Ends @ 3 per C.M.	\$ .23
Twisting, 750 Ends	@ 25 per M.	\$ .18+3 \$ .06
Weaving, 1.80 per cut+18 spaces+10.	99 Yards @ .01	\$ .99
Picking, 3/4 per piece	99 Yards @ .075	\$ .08
Clipping	99 Yards @	\$
Cleaning	99 Yards @	\$
General Ex., \$12.00 per week+18 spaces+75 Yds.=	100 Yards @ .89	\$ .89
Pattern Expense	100 Yards @	\$
Special Harness Expense	100 Yards @	\$
Finishing, Blocking and Boxing	100 Yards @ .45	\$ .45
Piece Dyeing, or Printing	100 Yards @	\$
Print Warp, Weaving before Printing	110 Yards @	\$
" " Filling for same	— lbs. @	\$
" " Loom Exp. for same	110 Yards @	\$
" " Printing—Colors	110 Yards @	\$
" " Re-beaming and spacing	110 Yards @	\$
" " Re-twisting — Ends	@ per M. \$ +3.	\$
Special Expense	@	\$
"	@	\$

Net cost of 100 Yards	\$ 8.19
Net cost of 10 Yards	\$ .82
Cost per Ligne	.82÷45 = \$ .0182

Weight per 100 Yards Raw, .91 lbs. Dyed, 1.42 lbs.  
Organzine weighted to 20/22 oz. Tram weighted to 30/32 oz.

4% is included in above weights for waste of warp.  
7% is included in above weights for waste of filling.  
3½% is included in above damage for twist take-up of organzine.  
1% is included in above damage for twist take-up of tram.

### PARTICULARS OF COST OF MATERIALS.

	ORGANZINE	TRAM	COTTON, ETC.
Raw Silk	\$4.00	\$3.80	\$
Throwing	\$.70	\$.35	\$
Thr. Waste	\$.10=2%	\$.11=2½%	\$
Dyeing	\$.70	\$1.25	\$
Winding	\$.15	\$.15	\$
Doubling	\$	\$	\$
Quilling	\$	\$.15	\$
<b>Total</b>	<b>\$5.65</b>	<b>\$5.81</b>	<b>\$</b>

### CONCLUSIONS.

Net mill cost per piece	\$ .82
Net store cost per piece,	
.82÷.85	\$ .9647
Net mill cost per ligne	\$ .0182
Net store cost per ligne,	
.0182÷.85	\$ .0214
Regular selling price, per piece	\$ 1.10
Less Com. & Discount, 15%	\$ .165
Net estimated return	\$ .935
Less net mill cost	\$ .820
Estimated profit per piece	\$ .115
Weekly product per loom, 18 spaces×75 yds.	135 Pieces
Profit per loom, per week	\$15.52

## RIBBON COST CALCULATION.

(For full warp.)

Date, **January 1, 1908.**

**Quality X. L.** ..... Description, **Black Taffeta.** ..... Yards, **300.** ..... Spaces, **18**  
 Reeding, **60/3.** Width, **45 lignes.** Width in reed, **4 inches.** Total width, **72 inches.**

**WARP 13068** Ends Organzine, 1.70 Drams... 31.32 Raw lbs. @ \$5.65... \$176.95  
 330 Yds. .... " 2 Thd. 13/15 Den. Jap. Ex. Fil. " @ ..... \$ .....  
 " " " " " " " " " " " " @ ..... \$ .....  
 " " " " " " " " " " " " @ ..... \$ .....  
 Selvages 864=24/2 x 18 .....

Total.... 13932 Ends

**FILLING 88** Picks Tram. 2.57 Drams 20.52 Raw lbs. @ \$5.81... \$119.22  
 300 Yds. .... " 1 End 3 Thd. 13/15 Den. Jap. Fil. No. 1. " @ ..... \$ .....  
 " " " " " " " " " " " " @ ..... \$ .....

Total.... 88 Picks Loom speed 100 picks per minute.

Warping 13932 Ends 330 Yards ..... @ 3c. per C.M. ... \$ 12.54  
 Twisting 13500 " ..... @ 25c. per M. .... \$ 3.38  
 Weaving 1 Shuttle, 6 Harnesses, 1 Beam..... 30 Cuts @ \$1.80 \$ 54.00  
 Picking ..... 540 Pieces @ .0075 \$ 4.05  
 Clipping ..... " @ ..... \$ .....  
 Cleaning ..... " @ ..... \$ .....  
 General Ex. \$12.00 per wk. ÷ 75 yds per wk. = 16c... 300 Yards @ .16... \$ 48.00  
 Pattern Expense ..... " @ ..... \$ .....  
 Special Harness Expense ..... " @ ..... \$ .....  
 Finishing, Blocking and Boxing..... 540 Pieces @ .045 \$ 24.30  
 Piece Dyeing, or Printing ..... lbs. or pcs. @ ..... \$ .....  
 Print Warp, Weaving before Printing..... Yards @ ..... \$ .....  
 " " Filling for same..... lbs. @ ..... \$ .....  
 " " Loom Exp. for same..... Yards @ ..... \$ .....  
 " " Printing..... Colors " @ ..... \$ .....  
 " " Re-beaming and spacing..... Hours @ ..... \$ .....  
 " " Re-twisting..... Ends @ ..... cts. per M. \$ .....  
 Special Expense ..... @ ..... \$ .....

Net cost of 300 Yards ..... \$442.44  
 " " per 10-Yard piece..... \$ .82  
 " " per ligne ..... \$ .0182  
 Raw weight (less waste), 49.30 lbs. Dyed weight, 76.69 lbs.  
 Organzine weighted to 20/22 oz. Tram weighted to 30/32 oz.  
 4% is included in above weights for waste of warp.  
 7% is included in above weights for waste of filling.  
 3½% is included in above drainage for twist take-up of organzine.  
 1% is included in above drainage for twist take-up of tram.

PARTICULARS OF COST OF MATERIALS.			CONCLUSIONS.	
			Net mill cost per piece ....	\$ .82
			Net store cost per piece,	
			.82 ÷ .85 .....	\$ .967
Raw Silk ...	\$4.00	\$3.80	Net mill cost per ligne.....	\$ .0182
Throwing ..	\$.70	\$.35	Net store cost per ligne,	
			.0182 ÷ .85 .....	\$ .0214
Thr Waste..	\$.10=2%	\$.11=2½%	Regular selling price, per	
Dyeing ....	\$.70	\$1.25	piece .....	\$ 1.10
Winding ...	\$.15	\$.15	Less Com. & Discount, 15%.	\$ .165
Doubling ..	\$....	\$....	Net estimated return .....	\$ .935
Quilling ....	\$....	\$.15	Less net mill cost.....	\$ .820
Total .....	\$5.65	\$5.81	Estimated profit per piece....	\$ .115
			Weekly product per loom, 18	
			spaces × 75 yds. = Pieces	135
			Profit per loom, per week...	\$15.52

## XV

### COST SHEETS AND TABLES OF WEIGHTS

To arrive at the cost of even the simplest piece of silk goods is quite a complicated matter, while with most of the fancy fabrics it is a very involved process, and one that no one but an expert could work out with any degree of accuracy.

The number of things that have to be taken into account in a cost calculation is remarkable. There are the varying percentages of wastes, and take-ups, etc.; the careful and judicious approximating of the production, and the consequent allowance for weaving and for general expense; the question as to what kinds and qualities of raw-silk and other materials will be required, the quantities needed, and at what prices they should be figured; the cost of the various sorts of labor that have to be put upon the fabric; the prices to be paid for processes done outside of the mill, etc., etc.

The principles underlying the proper costing of fabrics have already been gone over in a previous chapter, so they need not be discussed in detail here.

#### *Amplified Cost Calculation Form.*

I am presenting herewith another calculation form, of my own devising, differing somewhat from the one already presented in the previous chapter, in its being more amplified. On it is figured out the cost of a 24 inch, rep and ombré satin stripe, tie-silk.

When cost calculations are sent to the selling office, it is particularly desirable that every possible element that may affect the cost shall be clearly set forth, so that there may be no uncertainties in the matter, and, by providing blanks to be filled up for every item that may have to be considered, there will be nothing to be taken for granted, and if anything is omitted, which ordinarily is liable to hap-



pen, the omission can be detected at once, even by those with but little experience.

It was for the especial purpose of making it easy to understand and check off cost sheets at the selling department, that the more detailed form was devised.

*Tables of Weights and Their Uses.*

I am also presenting some original tables of weights for warp and filling of broad silk goods, which may be of assistance in arriving at correct calculation weights, and the use of which should save much time and labor.

Certain standard allowances for waste, take-up, etc., have been introduced, these standards being about the maximum that might have to be allowed for, but the figures shewn can be readily modified as may be desired.

Working from standards insures uniformity of calculation, and, in the close figuring of the costs of fabrics to which some other factors might apply, any such modifications of the figures in the tables can be made as the circumstances may demand.

To the end that every feature of this cost sheet may be made entirely clear, the details may be explained as follows:

*Allowance for Take-up in Weaving.*

The calculation being for 100 yards of finished goods, an allowance of 110 yards of warp is made to cover the take-up in weaving, the unwoven ends of the warp, and the headings of the pieces. In many fabrics the take-up will not be so great, but it is better to figure on a standard basis, as it will not be an exact figure, anyway, and, if 2 or 3 per cent. more warp has been allowed than is necessary, this can be borne in mind when considering the selling price, or the calculation can be modified to suit.

Closely woven taffetas, with many picks of full sized silk, will take up all of the 10 per cent.; cotton-back satins, or other eight-shaft satins, may only take up 6 per cent.; messalines and other five-shaft satins may take up 7 per cent., etc., etc.

*Figuring the Size of the Silk.*

The dramage of the thrown silks should, when much exactness is desired, be figured from the size of the raw-silks as shown by the valuable Compound Sizing Test introduced by the United States Silk Conditioning and Testing Company. In this test, 20 skeins of about 5,000 yards each are sized from each bale, and the exactness of the results, when compared with actual practice, is most gratifying.

On the other hand, the experience of the mill may shew that the silks customarily used by it may average up at about certain dramages, and these sizes may be used whether the silks of which the goods are to be made are running coarser or finer.

When figuring the thrown size of the silk from the raw size in deniers, it is proper to add to the dramage of the organzine about  $3\frac{1}{2}$  per cent., and to that of the tram 1 per cent., to cover the take-up in twist for silks of ordinary sizes and in ordinary twists.

*Percentage of Waste.*

In addition to the 10 per cent. allowed for weaving take-up, there may also be included in the weights of the material required for warp a further allowance of 4 per cent. for waste, and, for the filling, 7 per cent. may be allowed. These standard allowances are rather high for plain goods, but for fancies, or where the product of a mill is subject to much change, they are none too great. The amount of waste made is very commonly underestimated. Low levels of waste on plain goods might be put at 3 per cent. for dyed warp, 5 per cent. for dyed filling, and 2 per cent. for raw-silk warp.

*Calculating the Weight of the Warp.*

The weight of the silk should be figured from the raw, conditioned weight, basis.

The organzine is figured as follows: The compound sizing test shews the silk, in this case, to be 14.30 deniers. Doubling this for 2-thread organzine, and adding  $3\frac{1}{2}$  per cent. for take-up in twist, gives us 29.60 deniers. Divide this by 17.44, to reduce it to drams, and we get 1.70 as the dramage. Divide 256,000 yards (the length per pound of 1 dram silk) by 1.70, and we find the yardage per pound to be 150,588.

We then multiply 1,920 ends by 110 yards, and find that the warp will require 211,200 yards of organzine, and to this we add 4 per cent. for waste, making a total of 219,648 yards. Dividing this by 150,588 yards per pound, we get 1.45 pounds as the weight of organzine required.

The cotton warp has 1,900 ends, so 110 yards of warp will require 209,000 yards of yarn, and with 4 per cent. for waste added, the amount will be 217,360 yards.

The cotton size of  $2/120$  equals  $1/60$ , and, as there are 840 yards to a number, the yardage per pound of this size will be 50,400.

Dividing 217,360 yards by 50,400, we get a weight of 4.31 pounds as the amount of the cotton yarn required.

*Calculating the Weight of the Filling.*

Turning to the tram, which should always be figured on the width in the reed, we find that the compound sizing test shews the size to be 14.63 deniers, which in 4-thread would be 58.54 deniers, and this, with 1 per cent. added for take-up in twist, is increased to 59.14 deniers.

This size, divided by 17.44 to reduce it to drams, equals 3.39 drams.

Divide, now, 256,000 yards (the length per pound of 1 dram silk) by 3.39, and we get a yardage per pound of 75,516.

Multiplying next 130 picks per inch by 25 inches of width in the reed, we get 3,250 yards of tram for each yard of cloth, equal to 325,000 yards for the hundred yards. Seven per cent. for waste added to this raises the amount to 347,750.

Dividing this by 75,516 yards per pound, we find that the weight of tram we require will be 4.61 pounds.

#### *Modifications Due to Soap and Oil.*

In these calculations the weight of soap and oil, added in the throwing, is not considered. These additions should be ascertained by proper boil-off tests, and due allowance should be made for them in calculating the weight of thrown silk that must be put in dyeing, and which can be checked off by the number and length of the skeins.

#### *Waste Made in Throwing.*

The waste in throwing is filled in under the "Particulars of Cost of Material," and is here assumed as 2 per cent. for organzine and 3 per cent. for tram. The throwing waste for good organzine should generally not exceed 2 per cent.; good tram stock not over 2 to 3 per cent.; good Cantons 4 to 5 per cent.; and good Tussahs 5 per cent. China silks, on account of their harder gums, will usually make more waste than Japans.

As the throwster's bill is based on the weight of raw-silk sent to him, and as throwing is therefore charged both on the waste made and the silk thrown, it follows that the percentage of "waste-in-throwing" figured should be on this cost of the silk plus the cost of the throwing of it.

#### *Dyers' Prices Based on Thrown Weights.*

The net price for dyeing is used, and, as the dyer's charge is based on the weight of the thrown silk, a percentage must be added equal to the percentage of soap and oil added by the throwster to the weight of the raw-silk. It is here assumed as 2 per cent., though frequently much greater.

#### *Sundry Labor and Other Expenses.*

Winding, doubling, and quilling should be reduced to a raw-silk basis, and so calculated.

The columns for "Particulars of Cost of Material" are arranged in the form most generally useful.

The warping cost is based on the price for warping 100 ends for 100 yards. Mills paying on another basis can use a different form.

As the warps, in this case, are 330 yards long, to make 300 yards of cloth, the twisting cost is divided by three to get at the cost for



100 yards. For other length warps use a different divisor. Extra drawing-in expenses can be here included.

The pattern expense can be filled in according to the mill practice and the character of the goods. Sometimes, as in this case, it is included in the general expense.

Special harness expense, or loom mounting, should not be overlooked, and a space is provided for this item.

The weaving, picking, clipping and cleaning are based on a length of 99 yards, as the cloth, when relieved from the loom tension, generally creeps in at least 1 per cent. or more, this shortening being recovered in the finishing, so that the apparent gain there is not really a gain, but only a regain.

#### *Shrinkages in Length.*

Certain goods, cotton-back satins, for instance, may run up 2, 3, or even 4 per cent., in the unfinished state.

Mills selling such goods in the grey should be keenly alive to this.

As the operative's pay is always based on this contracted measure, the constant of 99 yards will almost always be on the conservative side.

#### *How to Apportion Certain Costs.*

If cleaning expenses are incurred, experience will show what percentage of the pieces need treating, and thus an average cost per yard can be arrived at.

When mills do their own throwing, dyeing, finishing or printing, the regular market prices of such work should appear on the cost sheet, the profit or loss to the mill thereby appearing in the department accounts.

#### *The General Expense and What It Includes.*

The general expense item should include every charge upon the mill, exclusive of the specific items here provided for. It should include interest charges of every kind, depreciation and, in fact, everything except selling expense. Each loom should earn its share of the annual expense of the mill, and whatever way this expense be divided among the looms, the total charge on them should equal the total expense.

In the case before us, the loom is charged with \$7.50 per week, and, the production being 60 yards a week, we thus get an expense per yard of 12½ cents. If the production were 75 yards a week, the charge would be 10 cents a yard, and so on.

#### *Other Factors in the Cost.*

The cost of beaming is here included with the warping, but, if desired, it can be figured separately if paid for separately.

Should piece-dyed goods lose in length, and they often do, be careful to allow for it.

The "Weaving Before Printing" item is the weaving in of the necessary binding picks, every yard or so, to preserve the pattern.

As the time of a loom is occupied in this work, the expense of it (including such profit as it should make if weaving goods) should be charged against the printed warps, so a space is provided for this.

*Things which Affect the Cost of Weaving.*

In the calculation, spaces are left, in connection with the weaving, for the number of shuttles, the number of harnesses, the number of beams, and the loom speed, all of which affect materially both the weaver's pay and the production of the loom, and consequently affect the General Expense.

*Additional Points of Importance.*

To arrive at the weight that the goods should be when finished, the increase by weighting should not only be allowed for, but the percentages included for waste should be deducted from the weights.

When schappe or spun silks, or fine cotton yarns, on cops are used, about 4 per cent. should be added to their costs to cover the weight of the tubes charged for as yarn. On coarser cottons the tubes may weigh as high as 7 per cent. of the total, or even more.

To decide what weightings to order, boil-off, conditioning house tests should be carefully studied, so that the proportion of weighting to actual silk fibre may be neither more nor less than desired.

The "Selling Cost" might also be termed "Store Cost." It is the figure at which, after deducting discounts and selling expense, neither loss nor profit is shewn.

*Scope of the Tables of Weights.*

To avoid such complicated figuring as was shown to be necessary in determining the weights of material required, with the consequent risk of serious error, the writer has worked out the following tables for warp and filling, as already stated.

These cover the ordinary range of silk sizes and the usual proportions of ends and picks, and other, or intermediate figures can readily be arrived at by additions or divisions of them. The filling table is for 20-inch width, from which other widths can be readily figured.

It is not altogether desirable to have tables for a variety of widths, as the wrong table is very apt to be used by mistake. The width of 20 inches has been here adopted as being the most convenient for figuring from.

Explanations have already been made regarding the take-up of the warp, and the percentages of waste for warp and filling that are allowed for in these tables, viz.: 4 per cent. waste of warp, 7 per cent. waste of filling, and 10 per cent. take-up in weaving.

**SILK WARP TABLE.**

Raw weights for 110 Yards of Warp, including 4% waste.

Number of ends in the warp.	Yardage required, including 4% waste.	Drams, and yards per pound of each.						
		256,000	243,809	232,727	222,609	213,333	204,800	196,923
	1.	1.05	1.10	1.15	1.20	1.25	1.30	
1,800	205,920	.80	.84	.88	.92	.96	1.00	1.05
2,000	228,800	.89	.94	.98	1.02	1.06	1.11	1.16
2,200	251,680	.98	1.03	1.08	1.13	1.17	1.22	1.28
2,400	274,560	1.07	1.13	1.18	1.23	1.28	1.32	1.39
2,600	297,440	1.16	1.22	1.28	1.33	1.39	1.44	1.51
2,800	320,320	1.25	1.32	1.38	1.44	1.50	1.56	1.63
3,000	343,200	1.34	1.41	1.47	1.54	1.61	1.68	1.75
3,200	366,080	1.43	1.50	1.57	1.65	1.72	1.79	1.86
3,400	388,960	1.53	1.60	1.68	1.75	1.83	1.91	1.98
3,600	411,840	1.62	1.70	1.78	1.86	1.93	2.01	2.09
3,800	434,720	1.70	1.79	1.87	1.96	2.04	2.12	2.21
4,000	457,600	1.79	1.88	1.97	2.06	2.15	2.24	2.33
4,100	469,040	1.83	1.92	2.01	2.11	2.20	2.29	2.39
4,200	480,480	1.88	1.97	2.07	2.16	2.26	2.35	2.44
4,300	491,920	1.92	2.02	2.11	2.21	2.31	2.40	2.50
4,400	503,360	1.97	2.06	2.17	2.27	2.36	2.46	2.55
4,500	514,800	2.01	2.11	2.21	2.32	2.42	2.51	2.61
4,600	526,240	2.06	2.16	2.26	2.37	2.47	2.57	2.67
4,700	537,680	2.10	2.21	2.31	2.42	2.53	2.63	2.74
4,800	549,120	2.15	2.26	2.36	2.47	2.58	2.69	2.79
4,900	560,560	2.19	2.30	2.41	2.52	2.63	2.74	2.85
5,000	572,000	2.23	2.34	2.45	2.56	2.68	2.79	2.90
5,100	583,440	2.28	2.39	2.50	2.61	2.73	2.85	2.96
5,200	594,880	2.32	2.44	2.55	2.66	2.78	2.90	3.02
5,300	606,320	2.37	2.49	2.60	2.72	2.84	2.96	3.08
5,400	617,760	2.41	2.53	2.65	2.77	2.89	3.01	3.14
5,500	629,200	2.46	2.58	2.70	2.82	2.95	3.07	3.20
5,600	640,640	2.50	2.63	2.75	2.87	3.00	3.13	3.25
5,700	652,080	2.55	2.68	2.80	2.93	3.06	3.19	3.31
5,800	663,520	2.59	2.72	2.85	2.98	3.11	3.24	3.37
5,900	674,960	2.64	2.77	2.90	3.03	3.16	3.30	3.43
6,000	686,400	2.68	2.82	2.95	3.08	3.22	3.35	3.49
6,200	709,280	2.77	2.91	3.05	3.19	3.33	3.46	3.60
6,400	732,160	2.86	3.01	3.15	3.29	3.43	3.57	3.72
6,600	755,040	2.95	3.10	3.25	3.39	3.54	3.69	3.84
6,800	777,920	3.04	3.19	3.34	3.49	3.65	3.80	3.95
7,000	800,800	3.13	3.29	3.44	3.60	3.76	3.91	4.07
7,200	823,680	3.22	3.38	3.54	3.70	3.86	4.03	4.19
7,400	846,560	3.31	3.48	3.64	3.80	3.97	4.14	4.32
7,600	869,440	3.40	3.57	3.74	3.91	4.08	4.25	4.43
7,800	892,320	3.49	3.67	3.84	4.01	4.19	4.36	4.54
8,000	915,200	3.58	3.76	3.94	4.11	4.29	4.47	4.65
8,200	938,080	3.66	3.85	4.03	4.21	4.39	4.58	4.77
8,400	960,960	3.75	3.94	4.13	4.31	4.50	4.69	4.88
8,600	983,840	3.84	4.03	4.22	4.41	4.60	4.80	4.99
8,800	1,006,720	3.93	4.13	4.32	4.52	4.71	4.91	5.11
9,000	1,029,600	4.02	4.22	4.42	4.62	4.82	5.02	5.23
9,200	1,052,480	4.11	4.32	4.52	4.73	4.93	5.14	5.35
9,400	1,075,360	4.20	4.41	4.62	4.83	5.04	5.25	5.46
9,600	1,098,240	4.29	4.51	4.72	4.93	5.14	5.36	5.58
9,800	1,121,110	4.38	4.60	4.82	5.03	5.25	5.47	5.69
10,000	1,144,000	4.47	4.70	4.92	5.14	5.36	5.59	5.81

**SILK WARP TABLE—(Continued).**

**Raw weights for 110 Yards of Warp, including 4% waste.**

Number of ends in the warp.	Yardage required, including 4% waste.	Drams, and yards per pound of each.						
		189,630	182,857	176,552	170,667	165,161	160,000	155,152
		1.35	1.40	1.45	1.50	1.55	1.60	1.65
1,800	205,920	1.09	1.13	1.17	1.21	1.25	1.29	1.33
2,000	228,800	1.21	1.25	1.30	1.34	1.39	1.43	1.47
2,200	251,680	1.33	1.37	1.42	1.47	1.52	1.57	1.62
2,400	274,560	1.45	1.50	1.55	1.61	1.66	1.72	1.77
2,600	297,440	1.57	1.62	1.68	1.74	1.80	1.86	1.92
2,800	320,320	1.69	1.75	1.81	1.88	1.94	2.00	2.06
3,000	343,200	1.81	1.87	1.94	2.01	2.08	2.15	2.21
3,200	366,080	1.93	2.00	2.07	2.14	2.22	2.29	2.36
3,400	388,960	2.05	2.12	2.20	2.28	2.35	2.43	2.51
3,600	411,840	2.17	2.25	2.33	2.41	2.49	2.57	2.65
3,800	434,720	2.29	2.37	2.46	2.54	2.63	2.72	2.80
4,000	457,600	2.41	2.50	2.59	2.68	2.77	2.86	2.95
4,100	469,040	2.48	2.57	2.66	2.75	2.84	2.93	3.02
4,200	480,480	2.54	2.63	2.72	2.82	2.91	3.00	3.09
4,300	491,920	2.59	2.69	2.79	2.88	2.97	3.07	3.16
4,400	503,360	2.65	2.75	2.85	2.95	3.05	3.15	3.24
4,500	514,800	2.72	2.82	2.92	3.02	3.12	3.22	3.32
4,600	526,240	2.77	2.87	2.98	3.08	3.19	3.29	3.39
4,700	537,680	2.85	2.95	3.05	3.15	3.25	3.36	3.46
4,800	549,120	2.90	3.00	3.11	3.22	3.33	3.43	3.53
4,900	560,560	2.95	3.07	3.18	3.28	3.39	3.50	3.61
5,000	572,000	3.01	3.12	3.24	3.35	3.46	3.57	3.68
5,100	583,440	3.08	3.19	3.30	3.45	3.53	3.65	3.76
5,200	594,880	3.14	3.25	3.37	3.49	3.61	3.72	3.83
5,300	606,320	3.20	3.31	3.42	3.56	3.67	3.79	3.91
5,400	617,760	3.27	3.38	3.50	3.63	3.74	3.86	3.98
5,500	629,200	3.32	3.44	3.56	3.69	3.81	3.93	4.05
5,600	640,640	3.38	3.50	3.63	3.75	3.87	4.00	4.12
5,700	652,080	3.44	3.56	3.69	3.82	3.95	4.08	4.20
5,800	663,520	3.50	3.63	3.76	3.89	4.02	4.15	4.27
5,900	674,960	3.56	3.69	3.82	3.95	4.09	4.22	4.34
6,000	686,400	3.62	3.75	3.89	4.02	4.15	4.29	4.42
6,200	709,280	3.74	3.88	4.02	4.16	4.30	4.43	4.57
6,400	732,160	3.86	4.00	4.15	4.29	4.43	4.58	4.72
6,600	755,040	3.98	4.13	4.28	4.42	4.57	4.72	4.86
6,800	777,920	4.10	4.25	4.40	4.56	4.71	4.86	5.01
7,000	800,800	4.22	4.37	4.53	4.69	4.85	5.01	5.16
7,200	823,680	4.35	4.51	4.67	4.83	4.99	5.15	5.31
7,400	846,560	4.46	4.62	4.79	4.96	5.13	5.29	5.45
7,600	869,440	4.58	4.75	4.92	5.09	5.26	5.43	5.60
7,800	892,320	4.71	4.87	5.04	5.23	5.40	5.58	5.75
8,000	915,200	4.83	5.00	5.18	5.36	5.54	5.72	5.89
8,200	938,080	4.95	5.13	5.31	5.50	5.68	5.86	6.04
8,400	960,960	5.07	5.25	5.44	5.63	5.82	6.01	6.19
8,600	983,840	5.18	5.37	5.57	5.76	5.96	6.15	6.34
8,800	1,006,720	5.31	5.50	5.70	5.90	6.09	6.29	6.48
9,000	1,029,600	5.43	5.63	5.83	6.03	6.24	6.44	6.64
9,200	1,052,480	5.55	5.75	5.96	6.17	6.37	6.58	6.78
9,400	1,075,360	5.67	5.88	6.09	6.30	6.51	6.72	6.92
9,600	1,098,240	5.79	6.00	6.22	6.43	6.65	6.86	7.07
9,800	1,121,110	5.91	6.13	6.35	6.57	6.79	7.01	7.22
10,000	1,144,000	6.03	6.25	6.47	6.70	6.92	7.15	7.37

**SILK WARP TABLE—(Continued).**

Raw weights for 110 Yards of Warp, including 4% waste.

Number of ends in the warp.	Yardage required, including 4% waste.	Drams, and yards per pound of each.						
		150,588	146,286	142,222	138,378	134,737	131,282	128,000
		1.70	1.75	1.80	1.85	1.90	1.95	2.00
1,800	205,920	1.37	1.40	1.45	1.49	1.53	1.57	1.61
2,000	228,800	1.52	1.56	1.61	1.65	1.70	1.75	1.79
2,200	251,680	1.67	1.72	1.77	1.82	1.87	1.92	1.97
2,400	274,560	1.83	1.88	1.94	1.99	2.04	2.09	2.15
2,600	297,440	1.98	2.03	2.09	2.15	2.20	2.26	2.32
2,800	320,320	2.12	2.18	2.25	2.31	2.37	2.44	2.50
3,000	343,200	2.28	2.34	2.41	2.48	2.54	2.61	2.68
3,200	366,080	2.43	2.50	2.57	2.64	2.71	2.79	2.86
3,400	388,960	2.59	2.67	2.75	2.82	2.90	2.98	3.06
3,600	411,840	2.74	2.83	2.92	3.00	3.08	3.16	3.24
3,800	434,720	2.89	2.97	3.06	3.15	3.23	3.32	3.40
4,000	457,600	3.04	3.13	3.22	3.31	3.40	3.49	3.58
4,100	469,040	3.11	3.20	3.29	3.38	3.47	3.58	3.66
4,200	480,480	3.18	3.27	3.37	3.47	3.56	3.66	3.75
4,300	491,920	3.26	3.36	3.46	3.55	3.65	3.75	3.84
4,400	503,360	3.34	3.44	3.54	3.63	3.73	3.83	3.93
4,500	514,800	3.42	3.52	3.62	3.71	3.80	3.91	4.02
4,600	526,240	3.49	3.59	3.70	3.80	3.90	4.00	4.11
4,700	537,680	3.57	3.67	3.78	3.89	3.99	4.09	4.20
4,800	549,120	3.64	3.75	3.86	3.97	4.07	4.18	4.29
4,900	560,560	3.72	3.83	3.94	4.05	4.16	4.27	4.38
5,000	572,000	3.79	3.90	4.02	4.13	4.24	4.36	4.47
5,100	583,440	3.87	3.98	4.10	4.22	4.33	4.45	4.56
5,200	594,880	3.95	4.06	4.18	4.30	4.41	4.53	4.65
5,300	606,320	4.03	4.15	4.27	4.39	4.50	4.62	4.74
5,400	617,760	4.10	4.22	4.35	4.47	4.59	4.71	4.83
5,500	629,200	4.18	4.30	4.43	4.55	4.67	4.80	4.92
5,600	640,640	4.25	4.38	4.51	4.63	4.76	4.88	5.01
5,700	652,080	4.33	4.45	4.58	4.71	4.83	4.96	5.09
5,800	663,520	4.40	4.53	4.66	4.79	4.92	5.05	5.18
5,900	674,960	4.47	4.60	4.74	4.87	5.00	5.14	5.27
6,000	686,400	4.55	4.68	4.82	4.95	5.09	5.23	5.36
6,200	709,280	4.71	4.80	4.99	5.12	5.26	5.40	5.54
6,400	732,160	4.86	5.00	5.15	5.29	5.43	5.58	5.72
6,600	755,040	5.01	5.16	5.31	5.46	5.60	5.75	5.90
6,800	777,920	5.16	5.31	5.47	5.62	5.77	5.92	6.08
7,000	800,800	5.32	5.47	5.63	5.89	5.94	6.10	6.26
7,200	823,680	5.47	5.68	5.80	5.96	6.12	6.28	6.44
7,400	846,560	5.62	5.78	5.95	6.12	6.28	6.45	6.61
7,600	869,440	5.77	5.94	6.11	6.28	6.45	6.62	6.79
7,800	892,320	5.92	6.09	6.27	6.44	6.62	6.80	6.97
8,000	915,200	6.07	6.25	6.43	6.61	6.79	6.97	7.15
8,200	938,080	6.23	6.41	6.60	6.78	6.96	7.15	7.33
8,400	960,960	6.38	6.57	6.76	6.95	7.13	7.32	7.51
8,600	983,840	6.53	6.72	6.92	7.11	7.30	7.50	7.69
8,800	1,006,720	6.68	6.88	7.08	7.28	7.47	7.67	7.87
9,000	1,029,600	6.84	7.04	7.24	7.44	7.64	7.84	8.04
9,200	1,052,480	6.99	7.19	7.40	7.61	7.81	8.02	8.22
9,400	1,075,360	7.14	7.35	7.56	7.77	7.98	8.19	8.40
9,600	1,098,240	7.29	7.50	7.72	7.94	8.15	8.37	8.58
9,800	1,121,110	7.44	7.66	7.88	8.10	8.32	8.54	8.76
10,000	1,144,000	7.59	7.81	8.04	8.26	8.49	8.72	8.94

**SILK FILLING TABLE.**

Raw weights, for 100 yards of goods—20 inches wide—including 7%  
for waste. Fillings should be figured from widths in the reed.

Picks per inch.	Yardage required, including 7% waste.	Drams, and yards per pound of each.					
		102,400	98,462	94,815	91,429	88,276	85,333
60	128,400	1.26	1.30	1.35	1.40	1.45	1.50
62	132,680	1.30	1.34	1.39	1.44	1.50	1.56
64	136,960	1.34	1.39	1.44	1.49	1.55	1.61
66	141,240	1.38	1.43	1.48	1.54	1.60	1.66
68	145,520	1.43	1.47	1.53	1.59	1.65	1.71
70	149,800	1.47	1.52	1.58	1.64	1.70	1.76
72	154,080	1.51	1.56	1.62	1.69	1.75	1.81
74	158,360	1.55	1.60	1.67	1.74	1.80	1.86
76	162,640	1.59	1.65	1.71	1.78	1.85	1.91
78	166,920	1.63	1.69	1.76	1.83	1.90	1.96
80	171,200	1.68	1.74	1.80	1.87	1.94	2.01
82	175,480	1.72	1.78	1.85	1.92	1.99	2.06
84	179,760	1.76	1.82	1.89	1.97	2.04	2.11
86	184,040	1.80	1.87	1.94	2.02	2.09	2.16
88	188,320	1.84	1.91	1.98	2.06	2.14	2.21
90	192,600	1.88	1.95	2.03	2.11	2.19	2.26
92	196,880	1.93	2.00	2.07	2.15	2.23	2.31
94	201,160	1.97	2.04	2.12	2.20	2.28	2.36
96	205,440	2.01	2.09	2.17	2.25	2.33	2.41
98	209,720	2.05	2.13	2.21	2.30	2.38	2.46
100	214,000	2.09	2.17	2.26	2.35	2.43	2.51
102	218,280	2.14	2.22	2.30	2.39	2.48	2.56
104	222,560	2.18	2.26	2.34	2.43	2.52	2.61
106	226,840	2.22	2.30	2.39	2.48	2.57	2.66
108	231,120	2.26	2.35	2.44	2.53	2.62	2.71
110	235,400	2.30	2.39	2.48	2.57	2.67	2.76
112	239,680	2.34	2.43	2.52	2.62	2.72	2.81
114	243,960	2.38	2.48	2.57	2.67	2.77	2.86
116	248,240	2.43	2.52	2.62	2.72	2.82	2.91
118	252,520	2.47	2.57	2.67	2.77	2.87	2.96
120	256,800	2.51	2.61	2.71	2.81	2.91	3.01
122	261,080	2.55	2.66	2.76	2.86	2.96	3.06
124	265,360	2.59	2.70	2.80	2.90	3.01	3.11

**SILK FILLING TABLE—(Continued).**

**Raw weights, for 100 yards of goods—20 inches wide—including 7% for waste. Fillings should be figured from widths in the reed.**

Picks per inch.	Yardage required, including 7% waste.	Drams, and yards per pound of each.					
		82,581 3.10	80,000 3.20	77,576 3.30	75,294 3.40	73,143 3.50	71,111 3.60
60	128,400	1.55	1.60	1.66	1.71	1.76	1.81
62	132,680	1.61	1.66	1.71	1.76	1.81	1.87
64	136,960	1.66	1.71	1.77	1.82	1.87	1.93
66	141,240	1.71	1.77	1.82	1.88	1.93	1.99
68	145,520	1.76	1.82	1.88	1.94	1.99	2.05
70	149,800	1.81	1.87	1.93	1.99	2.05	2.11
72	154,080	1.87	1.93	1.99	2.05	2.11	2.17
74	158,360	1.92	1.98	2.04	2.11	2.17	2.23
76	162,640	1.97	2.03	2.10	2.16	2.22	2.29
78	166,920	2.02	2.09	2.15	2.22	2.28	2.35
80	171,200	2.07	2.14	2.21	2.28	2.34	2.41
82	175,480	2.12	2.19	2.26	2.33	2.39	2.47
84	179,760	2.18	2.25	2.32	2.39	2.45	2.53
86	184,040	2.23	2.30	2.37	2.44	2.51	2.59
88	188,320	2.28	2.35	2.43	2.50	2.57	2.65
90	192,600	2.33	2.41	2.48	2.56	2.63	2.71
92	196,880	2.38	2.46	2.54	2.62	2.69	2.77
94	201,160	2.44	2.51	2.59	2.67	2.75	2.83
96	205,440	2.49	2.59	2.65	2.73	2.81	2.89
98	209,720	2.54	2.62	2.70	2.79	2.87	2.95
100	214,000	2.59	2.67	2.76	2.85	2.93	3.01
102	218,280	2.64	2.72	2.81	2.90	2.99	3.07
104	222,560	2.69	2.78	2.87	2.96	3.04	3.13
106	226,840	2.74	2.83	2.92	3.01	3.10	3.19
108	231,120	2.80	2.89	2.98	3.07	3.16	3.25
110	235,400	2.85	2.94	3.04	3.13	3.22	3.31
112	239,680	2.90	3.00	3.09	3.19	3.28	3.37
114	243,960	2.96	3.05	3.15	3.25	3.34	3.43
116	248,240	3.01	3.10	3.20	3.30	3.39	3.49
118	252,520	3.06	3.16	3.26	3.36	3.45	3.55
120	256,800	3.11	3.21	3.31	3.41	3.51	3.61
122	261,080	3.16	3.27	3.37	3.47	3.57	3.67
124	265,360	3.21	3.32	3.42	3.53	3.63	3.74

**SILK FILLING TABLE—(Continued).**

Raw weights, for 100 yards of goods—20 inches wide—including 7%  
for waste. Fillings should be figured from widths in the reed.

Picks per inch.	Yardage required, including 7% waste.	Drams, and yards per pound of each.					
		69,189	67,368	65,641	64,000	62,439	60,952
		3.70	3.80	3.90	4.00	4.10	4.20
60	128,400	1.86	1.91	1.96	2.01	2.06	2.11
62	132,680	1.92	1.98	2.03	2.08	2.13	2.18
64	136,960	1.98	2.04	2.09	2.14	2.19	2.25
66	141,240	2.04	2.10	2.16	2.21	2.26	2.32
68	145,520	2.10	2.16	2.22	2.28	2.33	2.39
70	149,800	2.17	2.23	2.28	2.34	2.40	2.46
72	154,080	2.23	2.29	2.35	2.41	2.47	2.53
74	158,360	2.29	2.35	2.41	2.48	2.54	2.60
76	162,640	2.35	2.42	2.48	2.54	2.60	2.67
78	166,920	2.41	2.48	2.54	2.61	2.67	2.74
80	171,200	2.47	2.54	2.61	2.68	2.74	2.81
82	175,480	2.54	2.61	2.67	2.74	2.81	2.88
84	179,760	2.60	2.67	2.74	2.81	2.88	2.95
86	184,040	2.66	2.73	2.80	2.88	2.95	3.02
88	188,320	2.72	2.80	2.87	2.95	3.02	3.09
90	192,600	2.78	2.86	2.93	3.01	3.08	3.16
92	196,880	2.85	2.93	3.00	3.08	3.15	3.23
94	201,160	2.91	2.99	3.06	3.14	3.22	3.30
96	205,440	2.97	3.05	3.13	3.21	3.29	3.37
98	209,720	3.03	3.11	3.19	3.28	3.36	3.44
100	214,000	3.09	3.18	3.26	3.35	3.43	3.51
102	218,280	3.16	3.25	3.33	3.41	3.50	3.58
104	222,560	3.22	3.31	3.39	3.48	3.56	3.65
106	226,840	3.28	3.37	3.45	3.54	3.63	3.72
108	231,120	3.34	3.43	3.52	3.61	3.70	3.79
110	235,400	3.40	3.50	3.59	3.68	3.77	3.86
112	239,680	3.46	3.56	3.65	3.75	3.84	3.94
114	243,960	3.52	3.62	3.71	3.81	3.91	4.01
116	248,240	3.59	3.69	3.78	3.88	3.98	4.08
118	252,520	3.65	3.75	3.85	3.95	4.05	4.15
120	256,800	3.71	3.81	3.91	4.01	4.11	4.21
122	261,080	3.77	3.87	3.97	4.08	4.18	4.28
124	265,360	3.84	3.94	4.04	4.15	4.25	4.36



**SILK FILLING TABLE—(Continued).**

Raw weights, for 100 yards of goods—20 inches wide—including 7%  
for waste. Fillings should be figured from widths in the reed.

Picks per inch.	Yardage required, including 7% waste.	Drams, and yards per pound of each.					
		59,535	58,182	56,888	55,652	54,468	53,333
		4.30	4.40	4.50	4.60	4.70	4.80
60	128,400	2.16	2.21	2.26	2.31	2.36	2.41
62	132,680	2.23	2.28	2.33	2.39	2.44	2.49
64	136,960	2.30	2.36	2.41	2.46	2.51	2.57
66	141,240	2.37	2.43	2.49	2.54	2.59	2.65
68	145,520	2.44	2.50	2.56	2.62	2.67	2.73
70	149,800	2.52	2.58	2.63	2.69	2.75	2.81
72	154,080	2.59	2.65	2.71	2.77	2.83	2.89
74	158,360	2.66	2.72	2.78	2.85	2.91	2.97
76	162,640	2.73	2.80	2.86	2.93	2.99	3.05
78	166,920	2.80	2.87	2.93	3.00	3.06	3.13
80	171,200	2.88	2.95	3.01	3.08	3.14	3.21
82	175,480	2.95	3.02	3.08	3.15	3.22	3.29
84	179,760	3.02	3.09	3.16	3.23	3.30	3.37
86	184,040	3.09	3.16	3.23	3.31	3.38	3.45
88	188,320	3.16	3.24	3.31	3.39	3.46	3.53
90	192,600	3.24	3.32	3.39	3.47	3.54	3.61
92	196,880	3.31	3.39	3.46	3.54	3.61	3.69
94	201,160	3.38	3.46	3.54	3.62	3.69	3.77
96	205,440	3.45	3.53	3.61	3.69	3.77	3.85
98	209,720	3.52	3.61	3.69	3.77	3.85	3.93
100	214,000	3.59	3.68	3.76	3.85	3.93	4.02
102	218,280	3.67	3.75	3.84	3.92	4.01	4.10
104	222,560	3.74	3.83	3.91	4.00	4.09	4.18
106	226,840	3.81	3.90	3.99	4.08	4.17	4.26
108	231,120	3.88	3.97	4.06	4.15	4.24	4.33
110	235,400	3.95	4.05	4.14	4.23	4.33	4.42
112	239,680	4.03	4.12	4.21	4.31	4.40	4.50
114	243,960	4.10	4.20	4.29	4.39	4.48	4.58
116	248,240	4.17	4.27	4.36	4.46	4.56	4.66
118	252,520	4.24	4.34	4.44	4.54	4.64	4.74
120	256,800	4.31	4.41	4.51	4.61	4.71	4.82
122	261,080	4.38	4.49	4.59	4.69	4.79	4.90
124	265,360	4.46	4.56	4.66	4.77	4.87	4.98

**SILK FILLING TABLE—(Continued).**

Raw weights, for 100 yards of goods—20 inches wide—including 7%  
for waste. Fillings should be figured from widths in the reed.

Picks per inch.	Yardage required, including 7% waste.	Drams, and yards per pound of each.					
		52,245	51,200	50,196	49,231	48,302	47,407
		4.90	5.00	5.10	5.20	5.30	5.40
60	128,400	2.46	2.51	2.56	2.60	2.66	2.71
62	132,680	2.54	2.59	2.64	2.69	2.75	2.80
64	136,960	2.62	2.67	2.72	2.78	2.84	2.89
66	141,240	2.71	2.76	2.81	2.86	2.92	2.98
68	145,520	2.79	2.85	2.90	2.95	3.01	3.07
70	149,800	2.87	2.93	2.98	3.04	3.10	3.16
72	154,080	2.95	3.01	3.07	3.12	3.19	3.25
74	158,360	3.03	3.09	3.15	3.21	3.28	3.34
76	162,640	3.11	3.18	3.24	3.30	3.37	3.43
78	166,920	3.19	3.26	3.33	3.38	3.46	3.52
80	171,200	3.28	3.35	3.41	3.49	3.55	3.61
82	175,480	3.36	3.43	3.49	3.56	3.63	3.70
84	179,760	3.44	3.51	3.58	3.64	3.72	3.79
86	184,040	3.52	3.59	3.66	3.73	3.81	3.88
88	188,320	3.60	3.68	3.75	3.82	3.90	3.97
90	192,600	3.68	3.76	3.84	3.91	3.99	4.06
92	196,880	3.77	3.85	3.92	4.00	4.08	4.15
94	201,160	3.85	3.93	4.01	4.09	4.16	4.24
96	205,440	3.93	4.01	4.09	4.17	4.25	4.33
98	209,720	4.01	4.10	4.18	4.25	4.34	4.42
100	214,000	4.10	4.18	4.26	4.35	4.43	4.51
102	218,280	4.18	4.26	4.35	4.44	4.52	4.60
104	222,560	4.26	4.35	4.43	4.52	4.61	4.69
106	226,840	4.34	4.43	4.52	4.61	4.70	4.78
108	231,120	4.42	4.51	4.60	4.70	4.78	4.87
110	235,400	4.51	4.60	4.69	4.78	4.88	4.97
112	239,680	4.59	4.68	4.77	4.87	4.96	5.05
114	243,960	4.67	4.76	4.86	4.96	5.05	5.14
116	248,240	4.75	4.85	4.94	5.04	5.14	5.23
118	252,520	4.84	4.94	5.03	5.13	5.23	5.33
120	256,800	4.92	5.02	5.12	5.22	5.32	5.42
122	261,080	5.00	5.10	5.20	5.30	5.40	5.50
124	265,360	5.08	5.18	5.28	5.39	5.49	5.59

**SILK FILLING TABLE—(Continued).**

**Raw weights, for 100 yards of goods—20 inches wide—including 7% for waste. Fillings should be figured from widths in the reed.**

Picks per inch.	Yardage required, including 7% waste.	Drams, and yards per pound of each.					
		46,545	45,715	44,912	44,138	43,390	42,667
		5.50	5.60	5.70	5.80	5.90	6.00
60	128,400	2.76	2.80	2.85	2.90	2.95	3.00
62	132,680	2.85	2.90	2.95	3.00	3.06	3.12
64	136,960	2.94	2.99	3.05	3.10	3.16	3.22
66	141,240	3.04	3.09	3.15	3.20	3.26	3.32
68	145,520	3.13	3.18	3.24	3.30	3.36	3.42
70	149,800	3.22	3.28	3.34	3.40	3.46	3.52
72	154,080	3.31	3.38	3.44	3.50	3.56	3.62
74	158,360	3.40	3.47	3.54	3.60	3.66	3.72
76	162,640	3.49	3.56	3.63	3.70	3.76	3.82
78	166,920	3.59	3.66	3.73	3.80	3.86	3.92
80	171,200	3.68	3.75	3.82	3.89	3.96	4.02
82	175,480	3.77	3.84	3.91	3.98	4.05	4.12
84	179,760	3.86	3.94	4.01	4.08	4.15	4.22
86	184,040	3.95	4.03	4.11	4.18	4.25	4.32
88	188,320	4.05	4.12	4.20	4.28	4.35	4.42
90	192,600	4.14	4.22	4.30	4.38	4.45	4.52
92	196,880	4.23	4.31	4.39	4.47	4.55	4.62
94	201,160	4.32	4.40	4.48	4.56	4.64	4.72
96	205,440	4.41	4.50	4.58	4.66	4.74	4.82
98	209,720	4.51	4.60	4.68	4.76	4.84	4.92
100	214,000	4.60	4.69	4.77	4.86	4.94	5.02
102	218,280	4.69	4.78	4.87	4.96	5.04	5.12
104	222,560	4.78	4.87	4.96	5.05	5.14	5.22
106	226,840	4.87	4.96	5.05	5.14	5.23	5.32
108	231,120	4.97	5.06	5.15	5.24	5.33	5.42
110	235,400	5.06	5.15	5.25	5.34	5.43	5.52
112	239,680	5.15	5.24	5.34	5.44	5.53	5.62
114	243,960	5.24	5.34	5.44	5.54	5.63	5.72
116	248,240	5.33	5.43	5.53	5.64	5.73	5.82
118	252,520	5.43	5.53	5.63	5.73	5.83	5.92
120	256,800	5.52	5.62	5.72	5.82	5.92	6.02
122	261,080	5.61	5.71	5.81	5.91	6.01	6.12
124	265,360	5.70	5.80	5.90	6.00	6.11	6.22

These tables have been made with great care, and have been all carefully cross-checked, and they are believed to be entirely reliable. Should any errors be detected, the writer will be greatly obliged if they are brought to his notice.

Tables may also be arranged to advantage, according to the needs of the mill, for two-ply cotton warps; two-ply and single cotton fillings; two-ply schappe or spun silk warps, and two-ply and single fillings; as well as for worsteds, mohairs, artificial silks, etc., etc.

In fact, whenever the work would be facilitated in any direction, tables should always be worked out and used.

## XVI

### VERIFICATION OF COSTS

In a very large number of instances, those persons having the principal ownership in textile mills do not make their headquarters at the mills. They visit them, of course, more or less frequently, but for many reasons find that it suits them better to be at the selling end rather than at their manufactories.

Here their time is entirely taken up by the detail work of the day, and the constant problems that are ever arising. They have to oversee the selling of their goods, the bringing forward of new qualities and styles and the fixing of the prices, the buying of raw materials, the providing of the necessary money for the conduct of their operations, and the conferring with all sorts of people on all sorts of matters.

#### *Doubt as to Returns for Money Paid Out.*

The costs of their fabrics have been figured out with the greatest care and judgment, and, so far as they are aware, these costs should represent the outlays really being made. At the same time, as they are, month by month, pouring out huge sums for labor, materials and expenses (amounts which do not by any means correspond with the value of the merchandise arriving from the mills), these responsible owners cannot but, at times, feel uneasy as to their position, and as to the drift of their business. The fluctuations in the costs of their materials, in the volume of their production, and in the prices being brought by their finished merchandise, not to mention a host of other causes, may be sufficiently great to profoundly affect the results of the season's business.

#### *Difficulty of Investigating.*

In spite of this, these principals can find little opportunity for digging into figures and into the mass of detailed expenditures, even

if they were competent to do so, and, should they attempt it, they will generally find themselves baffled by a perfect maze of complex conditions, which can only be unraveled by a great expenditure of time, patience and effort.

Of course, almost all concerns have accounting systems, of more or less merit, for the purpose of keeping control over the ordinary fiscal operations of their business, but as to those classes of accounts which will show the money-making, or money-losing factors in the business, the fact is that they are too often hopelessly neglected. The principals may not have the time, or the technical ability, to organize a proper system and see that it is followed up, and their ordinary office subordinates have not the necessary manufacturing knowledge to enable them to know what is wanted.

The consequence is, that, in the case of mills whose operations are anyway large, the proprietors at stock-taking time may have no idea within tens of thousands of dollars as to the profit or loss which will be shown on the closing of their books.

It is the purpose of this article to discuss the situation described, with the intention of pointing out the various factors in the problem, and suggesting means whereby they may be analyzed and recorded, and that, too, in a manner involving but little labor and which will give thoroughly reliable results.

#### *Disturbing Factors in the Situation.*

There are many causes at work which are constantly changing the cost, and the profit, on the goods. Some of the factors that tend to confuse the situation are as follows: First, the differences in the stock at the mills, between one period and another, these differences being in the kinds, qualities, sizes and condition of the silks, or other materials, the prices paid for the same, and their varying quantities. The manner in which they are priced at different stock-takings will greatly affect the result.

Then, there is the fluctuation in raw material prices through the season, creating cost differences of large dimensions. The variation in the volume of the product from the looms, both in its aggregate amount and in the case of individual kinds or qualities of goods, will have a profound effect on the cost of the fabrics.

Next, there are the prices realized from the sale of the goods to be considered. Certain prices are put on goods at which they are supposed to be sold, and different prices may be made to retailers or others from the figures that jobbers get them at. The pressure to sell often results in the cutting of prices, or, at any rate, the making of special prices in special cases; trade discounts and extra datings are given; seconds or irregular goods are sold at an off price; and then there is always a closing out of left-over goods at a smart loss. The result is that very hazy ideas often prevail as to what actual profit

is being made on a line of goods, and often the sellers are quite pleased with the prices they are getting, when, if everything was considered and allowed for, it would be found that they were doing the business at a loss.

The extra dating, so often and so freely given, is not an inconsiderable item by any means, and helps to eat quite a hole in the profits.

In the cost of selling the goods there may be great variation from year to year. The amount of business done by the selling staff, the traveling and other expenses, the salaries, the advertising—all fluctuate. If a concern is carrying its own credits, the losses from bad debts must also be considered.

The interest account, which will vary with the amount of stock that is carried, and with the prompt or slow marketing of goods, is always considerable and must be studied.

Mill expenses will vary greatly, and, when looms are being changed over constantly, and many widely varying fabrics are to be made, great sums of money can disappear in harnesses, labor, impaired product, and what not.

Sampling and designing are generally grossly underestimated as to their cost, and very few proprietors care to look this sampling expense fairly in the face. If they did, and if they then put into the costs of their fancy goods a proper sum to pay for the sampling, they would often find that they would have to ask a price that the goods would not bring. They, therefore, generally cover the whole sampling cost into the general expense, with the result that they overcost their plain goods and undercost their fancies.

At stock-taking time, there has to be a writing-off from the values of many materials at the mills, and also a writing-off from the values of stock goods at the store, thus further complicating matters.

If raw materials run extra coarse or extra fine in size, and if greater or less amounts of waste are made in the throwing, weaving, and other operations, differences will result.

Bad warps in the looms cause unforeseen increases in labor cost and diminished production, and inability, at times, to obtain all the trained help that may be required will be another drawback.

Such calamities as fires, floods, and strikes, being in their nature exceptional, we will omit from our consideration.

The proposition before us is to keep track of all these various conditions from the selling end, to have the record at all times in such shape as to show clearly the conditions prevailing, and to do this so that results will be shown automatically, and with but little labor, and all this without bothering the regular staff at either the mill or the store.

*Necessary Features in a Proper System of Control.*

The main features of a workable scheme are to treat the mill as a separate concern, keeping ledger accounts with it covering weights and values of all materials furnished, and setting forth all moneys provided for various purposes; the using of a standard series of basic values for all the materials entering into the goods during the period under survey, not only for the cost calculations but for the pricing of the stock of materials at the mill as well; and the figuring of all weights and prices on a raw-silk basis and not on a weighted basis.

It is really a great convenience to employ the same standard prices for all raw materials, year after year, making, at the end of each cost calculation, any correction needed to bring it in line with the prices of the day.

Then, there is the treating of the sales department as another separate concern, and the keeping of accounts to shew how it exceeds, or keeps within, its allotted selling expense; the keeping of an account with each quality of goods manufactured, so that every month the goods received and returned, goods sold, stock on hand, and the average price realized will be presented, and also the profit or loss on the sales, as compared with the nominal profit that the regular selling price should give, will be shown.

Furthermore, there must be an adjustment account to take care of the fluctuations, and consequent profits or losses, in the raw material purchases.

*Working Out of the System.*

We start with a mill stock in various stages of manufacture—raw, thrown, dyed and of various weightings, wound, warped, woven, etc. Then we have cottons, spun silks, worsteds, and all sorts of materials. According to the work and uses of the mill, it will be desirable to separate these yarns into groups, such as silk of this or that size for raw-silk weaving, organzine stock, tram stock, Canton tram stock, etc., etc.

Purchases may have been made of different grades of tram stock, for instance, running from best Japan Rereels to No. 1 Italian, but, after all, they all go into tram, and as such may be woven indiscriminately into the season's goods, and if so they may all be priced at the same figure when taking stock.

The prices put on the materials should be the same as will be used on the cost sheets for the following six months, and these prices should be what it is estimated the average costs may be for the season.

From these bases, the value of the stock at the mill is worked out in the usual manner, by the addition of the expenditures for labor, dyeing, throwing, etc., and we are then also able to present the mill stock in the form of so many pounds of such and such raw materials, plus so much for throwing done on it, so much for dyeing done on it,

and so much for mill labor applied to it, as well as its share of the mill expense.

As we work on fixed values for raw materials, and as the throwster's and dyer's charges may vary little, if any, it may sometimes be found more convenient to carry the raw materials, throwing, and dyeing in the one account.

#### *Standard Bases for Cost Sheets.*

We now have fresh cost sheets made up, on the new bases of raw material costs, for all the qualities in work at the mill, and, of course, for all new qualities as they come forward. These cost sheets are afterwards analyzed, and subdivided on separate sheets into their several elements, as "raw material, throwing and dyeing" (giving raw weights as well as values); "allotted labor"; "general mill expense"; "piece dyeing, printing and finishing"; "selling expense," and calculated "profit," this profit being based on the assumed regular selling price of the goods.

By "allotted labor" is meant the labor outlay, at so much a pound or yard, directly applied to the goods; the unallotted labor, which includes all other labor expense, being covered into the general expense.

This "allotted labor" may be shewn on the cost analysis slip in its separate forms, if desired, as winding, warping, weaving, etc., etc.

#### *Analysis of the Cost of Each Quality.*

I present herewith a cost analysis of the broad silk calculation shown in the chapter on the "Costing of Broad Silks and Ribbons."

There is no need of making one for every calculation made, but only for those from which goods have actually been woven.

#### *Records of Sales and Price Fluctuations.*

We now consider the stock of goods at the store. Many of them will be taken in stock at their full value, and many (even while the prices have not been broken) at less than their nominal value, and many styles, which will not be made again, at a low price as jobs.

Part of the essence of this system consists in regarding the nominal selling price as a fixed figure at one end of the calculation, just as fixed raw material prices are used at the other end, the prices obtained for the goods, above or below this limit, showing a profit or a loss, thus adjusting the profit account.

Accounts are now opened in a special loose-leaf book—a full page or more for each—with each quality of goods in stock at the beginning of the period, and fresh ones are opened as required. All entries should be made by yards, and the number of pieces disregarded. Columns for profits and losses are provided.

In these accounts are then entered the yards on hand, at the store, of each kind, and, if the prices at which the goods have been taken in stock are lower than the regular asking prices, the difference will appear



## ANALYSIS OF COST

Quality J. 6. Width 36 Price 82 1/2

Black Taffeta Date July 1<sup>st</sup> 1908

ITEMS	Raw Lbs. per 100 yds.	Cents per yd.	
Silk Warp (Inc'l Thr'g & Sk. Dy'g)....	4.95	28	56
"    Filling.....    "    .....	3.41	18	79
Schappe Warp.....    "    .....			
"    Filling.....    "    .....			
Cotton Warp.....    "    .....			
"    Filling.....    "    .....			
.....Warp.....    "    .....			
.....Filling..    "    .....			
Allotted Labor.....		12	09
Mill Expense.....		5	33
Dyeing, Printing & Finishing.....		1	00
Selling Expense.....		12	38
Profit.....		4	35
<u>Allotted Labor.....</u>			
Winding 1.40			
Warping 1.94			
Twisting .54			
Reeling .51			
Weaving 6.93			
Picking .75			
<u>Total 12.09</u>			
TOTAL.....		82	50

as a profit to start with, as the nominal asking price is the basis. Thus, if one thousand yards of quality No. 200 were in stock, the asking price of which was 75 cents, and they were taken in stock at 65 cents, then there would appear in the profit column a gain of \$100—being 10 cents a yard on one thousand yards. If, subsequently, they were all sold at 75 cents, the profit so noted, over the stock-taking price, would have been realized. If they brought 70 cents, a loss of 5 cents a yard, equal to \$50, would appear as an offset in the loss column, and if 65 cents was what they went for, the 10 cents a yard difference between that and the nominal price would appear as a loss, and exactly offset the gain originally figured. In this way the confusion arising from varying prices put on goods in stock is avoided. Claims and allowances are entered as a loss at their money value, no note being taken of any yardage allowance, as it does not affect the stock.

The nominal profits and losses thus shown on the different sheets are grouped together each month, and the difference is carried to the profit account in the ledger, where it stands as an offset against the nominal profit with which the mill has been credited on the shipments made.

Invoices of goods are now coming forward from the mills, and sales are being made, with their accompanying claims and returns. Day by day, these receipts, etc., are tabulated on special sheets, showing qualities, quantities and prices at which sold. At the end of the month the additions of these are transferred to monthly detail sheets and to the book of qualities.

In writing up the latter, the receipts from the mill, and any goods returned from customers, are separately added to the stock on hand at the beginning of the month, and the sales are deducted, the net stock of every quality being thus shown every month. The sales, in another column, are grouped by prices, and the average price is figured out. Thus, if the quality was an 85-cent article, of which 5,000 yards had been sold, the items might appear as 1,000 yards at 82½ cents; 1,000 yards at 85 cents, less 1 per cent.; 2,700 yards at 85 cents; and 300 yards at 87½ cents. In the loss column would then appear the amount of 1,000 yards at 2½ cents, and 1,000 yards at 1 per cent. of 85 cents, and in the profit column would be 300 yards at 2½ cents. The 2,700 yards sold at 85 cents, being at the regular price, would shew in neither profit nor loss column. The price for the month would thus average 84.48 cents.

Goods returned are handled in the same way. Thus, if the 1,000 yards of 85-cent goods, sold at 82½ cents, were returned, they would show as a profit of 2½ cents a yard in the column of gains, thus offsetting the loss originally laid against the sale.

*Value of the Records to the Sales Manager.*

The value of these records as a guide to the sales management must

be apparent, as they show, month by month, just how the stock has been moving or accumulating; the proportion of goods returned; the volume of sales and at what prices; the average prices realized during the month and the average also of the sales of all the months of the period; the amount of claims that had been allowed on each line; and, above all, this information should come up automatically and in complete form by, at the latest, the third day of each month, so that these important matters are thus brought regularly to the sales manager's notice, without any investigation on his part.

In addition, it draws attention sharply to which lines of goods are most profitable, and which are least so, so that the manager can govern himself accordingly.

*Tabulations to be Made.*

As has been stated, the goods that have been arriving day by day from the mills will have been tabulated, and the total yardage of each quality will, at the end of the month, be transferred to the monthly detail sheet of mill shipments.

Credits for these shipments will then be given the mill in the several ledger accounts which have been opened. To properly distribute the amounts, it is necessary to subdivide the cost of each quality received according to the analysis of cost for that quality, and to work out all the qualities, received during the month, in this way on the detail sheets.

Thus, if 1,000 yards of quality No. 200 were received, valued at 75 cents, gross selling price, per yard, we would turn to the analysis of that quality and, multiplying, by 1,000, each of the amounts set down for raw material, throwing and dyeing, allotted labor, general mill expenses, piece dyeing, printing or finishing, selling expense, and profit, we would enter these amounts under their several columns, the total aggregating 1,000 times 75 cents, or \$750. The raw weight of the materials should also be entered in separate columns.

*How the Figures are Handled in the Ledger.*

The additions of these columns are next transferred to the ledger accounts. When, for instance, on the account for allotted labor, the mill is credited with the amount represented by that element in the month's shipments, it will, on the other hand, be charged with the money furnished for that part of its payroll which applies to such labor.

It is true that the labor in the shipments received is not the same labor as just then paid for in the payroll, but it averages up as the weeks and months succeed each other.

This allotted labor may be divided into its different classes, and it is desirable that this be done, as it enables exact comparisons to be made with what the payroll should have been for the goods made (as worked out from the cost sheets), and what it actually is.

*Prompt Ascertainment of Discrepancies.*

This is of great importance, for, if there is a serious difference, it can be detected and stopped while there is yet time to remedy it, instead of only learning it a month or two after the books have been closed at the end of the season.

An excess outlay, over the calculation figures, may be due to some temporary and non-recurrent cause; or it may be some leakage, or robbery through the payroll, or what not, which can be investigated and stopped; or it may be, and usually is, an actual undercosting on the cost calculation sheets, which, when the errors are thus brought to light, will then be corrected to conform to the facts.

It may also be that goods have been overcosted, and that business is being declined which, if the real costs were known, would be accepted. The demonstration of this is also most important.

*Apportioning the General Expense.*

In the general expense account in the ledger, the mill will be likewise credited for this item, with its proper share of the value of the goods received: on the other hand, it will be charged with outlays for unallotted labor, supplies, mill maintenance, salaries, and expenses of all kinds, together with the monthly portion of such overhead charges as insurance, taxes, depreciation of plant, interest on capital, etc.

The general expense outlay can be subdivided to any extent desired, and the more it can be shown in detail, the more useful the record will be.

*Raw Materials, and Work Done on Commission.*

In the raw material column will appear the amounts paid out for raw-silk, cotton, etc., and with these, if desired, may be included the charges for throwing and dyeing; credits against goods received are made on the other side of the account.

The throwing and dyeing accounts can also be handled separately, if preferred.

The piece dyeing, printing and finishing accounts are treated in similar fashion. Claims made on the firms doing such work should also be entered up, as they form an offset to allowances which would doubtless appear in the sales sheets against the goods so damaged, etc.

*Analyzing the Selling Expense.*

The selling expense account will be charged with customer's discount, both regular and for any extra time allowed; with the discount for any extra days' time that the commission house exacts, under pretense of time taken in making collections; all expenses, salaries, commissions to salesmen and to department manager; traveling expenses; any advertising expenses; and any charges in addition, necessitated by the merchandising of the goods, no matter how or where incurred.

*Interest on Stock a Selling Expense.*

As all sales managers will protest that they cannot do business with empty shelves, and as the underlying stock that they seem to require may amount to one or two months' product of the mill, it follows that, as the mill has got to furnish the money to provide these stock facilities, the interest on the average amount of unsold stock carried is properly chargeable to the sales department, and should be so apportioned.

If sales managers were rigorously compelled to stand this interest charge as part of their expense, many of them would be slower about ordering goods for stock.

To the credit of the selling expense account will be placed the 15 per cent., or other percentage, allowed on the calculation, as figured out on the monthly detail sheets.

*Losses from Bad Debts.*

If a mill is carrying its own credits, losses in connection with bad debts must be provided for, and this is a charge against the selling expense.

Such losses and expenses may be charged to the sales department as they occur, but a preferable way is to charge on all sales, as an offset for bad debts, such a percentage as experience has shown to be reasonable, and to carry this to a sinking fund to make the losses good when they do occur.

*Calculated Profits.*

The profit account carries on one side the calculated profits on the monthly mill shipments, and, on the other side, the losses or gains (nearly always losses) shown by the individual quality sheets, thus showing the real profit if the cost sheets are otherwise correct. For this reason, it is apparent that the selling prices affixed to the different qualities cannot, if priced too high or too low, affect the result. If too high, and thus showing a larger nominal profit on the shipments, the profit will be cut down by whatever the goods sell below their nominal prices, as shown on the quality sheets in the form of losses on sales; and, conversely, if the prices have been made too low.

*Raw Material Adjustment Accounts.*

Then, there is the raw material adjustment account, and pages are provided for silk, cotton, schappe, etc. Purchases are entered here, and the amounts above or below the calculation base prices are entered in loss and gain columns. Charges for interest appearing on bills, for time silk has been carried, go into the loss column.

Unfilled contracts are not entered in these accounts, but only goods which have been actually delivered.

The differences between the loss and gain columns of these raw material accounts, when grouped, represents the correction to be made,

in the result of the season's manufacturing operations, for losses or gains due to market fluctuations.

*Excess Labor Costs Due to Poor Materials.*

It might also be proper to have the mill report any excess labor costs, or other losses, due to inferior raw material, and carry this as a loss into the raw material adjustment account, for, if better, and presumably dearer, silk had been furnished, the losses would not have occurred, and such losses should not be melted in with the mill's ordinary expenses.

*Clearances of the Weights.*

The calculated raw weights of goods received are also entered to the credit of the mill, and the actual weight of each kind of material sent is charged against it, each class being kept separate.

The assembling of all these figures will show, at the end of every month, the total raw weights of each sort of material that should be at the mill, being the result of adding to the stock on hand at the beginning of the period, the raw weights of all materials sent there since, and the deducting of the calculated raw weights of the goods received, allowing also for the standard percentages calculated for waste.

If these waste allowances have been on the conservative side, the mill stock should show a little gain over the calculation.

*Value of Stock Always Ascertainable.*

There will also be shown the total value of the stock at the mill, each month, this being the value of the initial stock plus the raw material sent, the throwing and dyeing paid for, and the value of the labor applied to the same, during the month, together with the proper apportionment of overhead and other expenses, from which will be deducted the mill-cost value of the goods received from the mills during the period.

The stock at the store, of each quality of goods, will be shown, as well as how the goods have been moving, and the average prices they have been fetching.

*Actual and Calculated Expenditures.*

Then, there will be presented the differences between the various outlays for mill account, and what they should have been if in line with the cost calculations, as figured against the goods shipped in.

*Other Losses, Profits, and Expenses Shown.*

On raw material purchases there will be shown the losses and gains made during the period.

The actual cost of selling the goods will be shown, and in detail, as compared with the percentage apportioned for this work.

The proportion of the calculated profits actually realized is set forth,

and the actual gain or loss on each of the qualities and styles can also be segregated if desired.

*Transfer of Records to Ledger.*

The various accounts can now be drawn off from the ledger, and a balance struck, which will represent the profit or loss resulting from the month's operations.

Theoretically, if the cost calculations had been absolutely true, each expense made for mill or store account should, in time, be exactly balanced by the goods received, etc, and the profit should stand alone as the only unbalanced factor.

Such, of course, could never be the case, but, by this means of presentation, every profit and every loss entering into the total of the results is seen at a glance, and any serious discrepancy can at once be inquired into.

*Full Detailed Exhibit Each Month.*

As this is done each and every month, anything seriously wrong will be promptly noted and rectified, while ordinarily it might have gone on unperceived for any length of time.

With these figures carefully made, and all tabulations and accounts kept right up to date, it should be possible to tell at the end of each month very near to what figures the books should close at, and without taking stock either at the mill or in the store.

*Writing-off at Stock-taking.*

These figures will be modified, at stock-taking time, by whatever amounts the management decides to write off the values of the stock at the mill, and the goods in the store.

*Differences to be Adjusted.*

Some differences will, of course, exist, due to varying sizes of raw materials and fluctuating amounts of waste, but they should not run into large figures.

Should any great differences be found, when the accounts are made up, they can be easily and accurately located by this method of analysis.

Some questions of detail may arise, such as when unfinished goods are sent in by the mill, and which undergo some change in length in the finishing; but, with a little thought, adjustments can be readily made to cover such cases.

*Control of Records from Sales Department.*

It will be observed that all of these analyses, records, and deductions can be made from the market end of the business just as well as at the mills, and made, too, without having to put a question to the mill, except when explanations of discrepancies had to be asked for.

*Cost of Keeping Up the System.*

Each mill will have its own methods and peculiarities, and most mills will, no doubt, have devised systems which seem fairly to meet their requirements. The writer, however, knows of none so good as the one here set forth. While there is quite a little preliminary work to do in getting up the forms and blanks, and starting the accounts, the labor required to keep it going is most moderate.

This labor cost is small, as the tabulations, according to the size of the mill, can be made by one or two, (and, in very big mills, perhaps more) young men or women, at a cost of, perhaps, from \$7.00 to \$10.00 a week each.

Then, the work of some one in the office, of greater experience, will be needed for two or three days at the beginning of each month, to apportion the expenses, work out the amounts, and post the figures into the ledger, as well as figuring out the sales, etc., on the quality sheets, and drawing off the monthly balance.

Whatever the labor required, it is a very small matter when the importance of the reports that it produces is considered.

I recommend this method to the careful study of anyone who is interested:



## XVII

### ANALYSIS OF THE RELATIVE COSTS OF PLAIN AND FANCY GOODS.

When a mill is engaged in the production of fabrics of widely differing character, the question as to what is the real cost of each of the various lines of goods is one of the greatest moment. The success of the business will be, in a great measure, dependent upon a correct solution of this problem, for, when goods are costed unduly high, business with a profit in it may be declined, while, for such goods as are costed too low, an actual loss may be made, when all the time the manufacturer thinks he is making money on them.

#### *Different Elements of Cost.*

The elements of cost, entering into woven silk fabrics, are the raw materials, together with the preparation of the same—throwing, dyeing, etc.; the applied labor such as winding, warping, beaming, quilling, twisting, weaving, picking, cleaning, etc.; the designing and pattern expenses; the finishing, piece dyeing, or printing; and the general expenses, which include interest, depreciation, power, light and heat, clerk hire, miscellaneous labor, expenses of management, mill supplies, taxes, insurance, and a host of other things.

Many of these items are quite easily apportioned, but the proper allotment of some of them is a most difficult and puzzling matter. What makes the matter more serious is that correct estimates in these matters have to be made in advance of the manufacture and sale of the goods.

A mill may be making plain or figured piece-dyes, plain yarn-dyed fabrics, ordinary simple fancies such as stripes, checks, barrés, etc., or novelty goods running all the way from plaids to printed warp, tinsel filled, brocades.

The market prices on most lines of goods of large general sale are fixed by the quotations of big mills which specialize on them, and it may well be that a moderate sized mill, by too great a diversification of its product, may so increase the cost of all its goods that in no direction can it compete successfully.

*Subdivision of Expenses.*

In an analysis of expense, one of the first steps to take is a careful subdivision of the expenditures by departments. Thus, the money paid out for the winding processes will be kept separate, and this will include the foreman and assistants, bobbin carriers, etc., etc., in addition, of course, to the wages paid for the actual winding. Any transferring can be included here also.

The quilling will be handled in the same manner and any doubling can be included with it.

The warping and beaming can be taken together or separately, according to the practice of the mill, but the sample warping should not be here included.

Into the twisting and entering department expenses will go, together with the regular wages, all work done in connection with the care of the reeds and harnesses, the reeding, back-reed making, etc., etc. Work done for sampling, always a big item in this department, should be recorded separately.

The harness building, French, English, or Jacquard, can be treated also as a department if desired.

With the weaving outlay will go the salaries of loom fixers and foremen, shuttle fixers, etc., etc.

The designing and pattern department will include the designers, card cutters, lacers, etc., and here may also be included the wages of pattern weavers, and the warping, twisting, and other expenses incidental to sample work.

The labor in connection with the picking, clipping, and cleaning of the pieces can be also combined, and the examining, measuring, folding, recording, weighing and shipping of the goods may be treated as another department.

*Relation of Equipment to Labor Cost.*

It is well, also, to have all the expenses for supplies, repairs and maintenance, charged to the respective departments for which they have been incurred, as such expenses have a very intimate connection with the labor costs; a false economy in the upkeep of the machinery, or in the quantity or character of the supplies furnished, may mean a heavy addition to the wages in many directions.

These records can be written up fortnightly, or at whatever intervals coincide with the pay days.

Then, by preparing a record of the yardage of each class of goods woven during the pay, and by figuring out for each department the

amounts called for on the cost sheets for such work, it can be seen, with approximate correctness, from period to period, whether the pay roll is exceeding the estimate in any direction, and, if so, prompt investigation can be made.

#### *Departmental Costs.*

It is desirable to figure up against each department its proper proportion of the overhead expenses, such as a charge for space occupied, power, heat and light used, insurance, depreciation, superintendence, and what not. This is seldom done but it gives most valuable information.

For instance, if the total amount of the warping cost for such goods as were being made was arrived at in this way, and if this cost was found to be higher than what commission warpers in the vicinity were willing to do the work for, and do it well, the inference would be obvious that too much was being paid out in some directions, and inquiries, looking to greater economy, would be instituted.

If, however, the cost could not be reduced, then most of the work might be sent outside to be done, and the space devoted to warping could be put to some more profitable use.

#### *Apportionment of Plain and Fancy Goods Expenses.*

In properly dividing the expenses between the plain and fancy goods, one is confronted by the fact that their relative proportions are not constant, but are fluctuating all the time and often greatly.

The records of the preceding years must therefore be consulted with a view to arriving at an average, and, if no guide is to be had, some basis must be assumed as a working hypothesis, to be corrected later in the light of actual experience.

We will assume that a mill has 500 looms, and that 100 are running on grège warp fabrics for piece dye, 200 on yarn dyed plain goods, 25 on simple stripes and checks, and 175 on Jacquard fancies. All but the Jacquard fancies we will therefore consider as the plain goods end of the business.

As the plain goods are always the most competitive, having the largest sale, and earning the smallest profits, it is therefore necessary to find out just what they would cost to make if not intertwined with the fancies, and then to charge them with this amount only, the remainder of the expenses going on the novelties.

#### *Different Methods of Apportionment.*

Two view points can here be taken. The organization may be considered as two separate mills of 325 and 175 looms respectively, and the expenses can be worked out on that basis, or the expenses may be figured on the assumption that the whole 500 looms might run on plain goods, and the pro rata amount of this be assigned to the 325 looms actually so running, the fancies being charged with all of the

difference between that and the actual expense. The latter method will make the expense on the plain goods less and on the fancies more.

Proceeding on the first method, let us see what expenses are entailed upon the business that would not be if no fancies were made.

*Expenditures Necessitated by the Production of Fancy Goods.*

The organization being more complex and the manufacturing problems more difficult, it follows that the manager should be a man of unusually large experience and of exceptional judgment. Such a man will cost more money than an ordinary man. Thus, if the mill were on plain goods, a satisfactory manager might be hired for \$3,000 a year, equal to \$6.00 a loom. With the novelty end of the business to be looked after, a proper man might cost \$5,000 a year. Hence, the 175 fancy looms should not only be charged \$6.00 a year each—or \$1,050.00—on this account, but should also carry the additional \$2,000 a year entailed by the necessity of a higher priced man.

The manager will generally need the assistance of an expert on fabric construction—a man with taste and ingenuity—whose business it largely is to create new fabrics and evolve ideas, to direct the designing department, and to see that such designs and patterns as are brought forward are such as will weave well in the looms. In most cases the service of such a man—and he would not be a cheap man by any means—would not be required were it not for the fancy goods. Therefore these goods should carry all or most of this expense.

*Pattern Work and Harness Expenses.*

The designing department entails a huge expense. There are sketches to be made, and many are purchased outside. Then, these are to be painted in on the design paper. The cards must be cut, laced and wired, and many sets have to be repeated.

The necessary Jacquard harnesses have to be built in the looms, and there are constant repairs to be made to these harnesses, and changes to be made in the tie-ups, and the loss of the time that these looms are so stopped must be considered.

An immense amount of pattern weaving has to be done, with its great attendant expense for warping, twisting, drawing-in, and loom mounting and fixing. The quantity of material used up in this way is also most considerable.

The labor cost is further increased by the fact that a loom-fixer cannot care for more than half or two-thirds the number of fancy looms that he could of plain looms.

*Costs in Connection with Printed Warps.*

If printed warps are made, there is the cost of the preliminary weaving in of the binding picks every yard or so to preserve the

pattern, and, apart from the cost of the process, there is the expense of these looms to be allowed for when they are taken off their regular productive work for this purpose. This should be figured in the cost calculation, along with the other expenses attendant upon the warp printing, but is very often overlooked.

*Loom Stoppage, Sampling Material, and Waste.*

The loss from the stoppage of fancy looms for necessary changes is most serious. Jacquard looms must stand while warps are being twisted in, and the harnesses, and Jacquard machines, are always in need of some attention, and, of course, at such times the looms stand. The amount of money that has also to be spent for cords, threads, lingoos, mails, compass boards, etc., etc., is very great.

Fancy sampling requires the having on hand, and the constant purchasing of, small lots of silk and other materials of a wide variety of kinds. The bulk of these lie dead in the stock afterward, eat up interest, and give constant trouble in connection with their storage, handling, and recording.

The amount of waste made in fancies far exceeds the percentages on the plain goods, and the increased complications of the business make it more difficult to follow up and record all the wastes, with the consequent effect that, as less exactness of control is possible, the waste on the plain goods also has a tendency to grow to greater proportions than it should.

*Other Causes of Increased Expense.*

In every mill there are many general employees such as carpenters, machinists, shuttle fixers, bobbin boys and girls, sweepers, etc., etc. The pay of all those people whose employment is the direct result of the fancy business should be charged to that branch, and also the proper proportion of the other labor that would have to be employed.

In getting out a novelty production there has to be much conference between store and mill, and if the two are at some distance apart the travelling expense account bulks up into a large item and must be taken notice of and properly apportioned.

Where a lot of highly paid Jacquard weavers are weaving in the same mill as people on plain goods, the latter cannot see why they should not be allowed to earn as much as the others, and the difficulty of getting the plain goods woven at a low cost is much increased. This is an expense that can hardly be loaded on the fancies, but it is often a very real and a very large one.

The orders for fancies are of a scattering nature, and many are the warps that must be made and twisted that are shorter than the average upon which the calculations are based. This additional outlay should be examined into and allowed for, and it is by no means small.

*How Necessary Equipment Increases Overhead Charges.*

A fancy loom requires more space than a plain one. As two or more beam work is to be expected the floor space allotted must be greater, and, for Jacquards, considerable head room is needed, together with the timbering to support the machines. These things increase the size of the building that must be provided, and add to the cost of the goods in greater interest and depreciation charges, and more expense for heating, lighting, cleaning, etc.

Much special machinery is also required, such as card cutting, lacing, and repeating machines, etc., and these must be charged with their interest, depreciation, and upkeep. The space used by the designing, sampling, and card cutting departments should also be charged for, as well as the heating and lighting of the same.

As the fancy looms generally require more power to run them than plain looms, and as the special machinery connected with fancy work also takes power, a reasonable amount should be charged for this added expense.

A large amount of space is required for the storage of Jacquard cards, and much labor is needed in connection with the handling of them. See that these expenses are duly tabulated and charged for.

All these things make quite a long list, and in each mill there will be still other things to provide for.

*Presenting the Expenses on the Cost Sheets.*

The annual outlay for expenses in connection with the fancy goods having been segregated, the question arises as to how it should be apportioned on the cost sheets.

Some manufacturers try to determine what the expenditure for patterns and sampling has been, and then charge on the cost sheets what they think right for this item (a very uncertain matter) and put the rest of the outlay into the general expense. Others let the general expense carry all of the pattern and sampling costs.

The outlay for entering, twisting, etc., in a mill, particularly in a fancy mill, always greatly exceeds the calculation figures. A convenient method of handling this matter is to take the yardage produced in a year, see how many 300 yard warps this would make (if that is the basis of figuring); calculate the average ends per warp, and then figure what this would represent in twisting. Subtract this from the amount actually paid out and carry the remainder into the general expense.

*Allotment of Expenses per Loom.*

Having ascertained the total sum of the expense for the fancy looms, and experience showing the average production to be expected from them, the sum to be made up may be divided among them pro rata, or some differences may be made according to the width and

character of the looms, but, however allotted, the total amount figured for expense must equal the total outlay.

*Cancellations, Interest Charges, and Production.*

Not to be overlooked is the fact that fancy goods are very subject to cancellation for late delivery, or on other grounds, and seconds are plentiful, and mistakes in colors and patterns are not unknown. Very considerable losses must be expected from these causes, and the profit asked on the goods must be sufficiently liberal to offset them.

In making goods for piece dye, as the material comes into the shape of finished merchandise much more quickly than does the skein dye, there is quite a saving of the expense for interest.

Where the work runs plain and steady, shuttles with extra long cops or quills can be used, thus helping the production. This is not of so much moment with the fancies.

To make all these necessary tabulations, and to keep the records posted up, takes some clerical help, but any necessary expenditure in this direction is money well spent.

*Daily Expense to be Borne by Each Loom.*

When the amount that the fancies must earn has been determined, it should be subtracted from the total expense and the remainder distributed among the plain looms.

According to the size of the plant, the nature of the work, and the manner in which the product is kept sold up, it will probably be found that, on a basis of running full, the daily amount that each plain loom will have to earn to pay its share of the expense will be from 45 to 75 cents, and the fancies may have to earn from \$1.00 to \$1.50 per day.

Continuous full running, however, is not to be expected, and to these figures, when arrived at, should be added such reasonable percentage as would cover the average limitation of production that must be expected.

This sort of an analysis should be made year after year, and in time it will result in a very correct knowledge of what the expense of running each loom really is.

If manufacturers really appreciated what an expense their fancy goods production entails upon them, there would be fewer of them making fancies and more of them making money.

## XVIII

### THE RELATIONS BETWEEN MILLS AND THEIR OPERATIVES.

No producing industries are more complex in their organization than textile mills, and in none is a higher general average of skill required, if a full production of perfect goods is to be obtained.

#### *Difficulty of Creating a Mill Organization.*

To get together a first-class force in a good-sized mill will take years, during which time an endless sifting and weeding out process is going on in every department, involving troubles and annoyances of the most temper-trying kind, many imperfect goods, and immense waste of time, wages, and material.

That such organizations are finally got together speaks volumes for the knowledge and patience of the mill superintendents, and it is largely owing to the realization of what it means to have created such a force, and the ease with which it can be broken up and scattered in case the mill does not have steady work and first-class materials, that manufacturers are so insistent with their market representatives to supply them with advance orders at almost any price, and which leads them so frequently to manufacture goods for stock when orders cannot be had, so as to keep the people together, in spite of the fact that they fully realize the risk that they are running of heavy losses on the stock goods.

#### *Losing Good Help a Serious and Expensive Matter.*

Good all-round operatives of any kind, are not created in a day or a year. When, following a strike or a complete or partial shut-down, many of the old and experienced hands have drifted away and it is necessary to employ relatively inexperienced ones or to break in learn-



ers, it may well be that in a few weeks or months, as the case may be, these are turning out a moderate quantity of not very bad goods, if the work is of a simple character.

When, later on, other fabrics of a distinctly different character are wanted, or goods of complicated construction, the weakness of the force becomes painfully apparent. The old hands would have understood how to weave nearly everything that might be called for, and would produce, almost from the outset, their full quota of well-made goods, while the new hands would have to painfully learn how to handle each new job, and in so doing would be the cause of much loss to their employers.

This is one of the most serious evils entailed by a protracted strike, and its ill effects may be felt for years afterward.

*Tact Needed in Handling Help.*

To handle the large working force in a mill, composed as it is of people of all ages and many nationalities and of both sexes, is a problem requiring the greatest tact, judgment, and firmness on the part of the mill superintendent. Each person is a separate individual and may have untold peculiarities of character which have to be considered. Justice to all and favoritism to none must be the foundation stone, but the amount of finesse that is required to keep good, but crotchety, people satisfied with their jobs is immense.

When new styles, or different materials, are put in work, there is bound to be widespread complaint as to the character of the material, the rate of pay, etc., etc. It is true that, in a few days, when they have got their hands in, everything will probably be running smoothly, and the rate of pay assigned for the work will be found to be fair and sufficient; but this is not always apparent to them at the outset, and the task of their superior is to reason with and encourage them, so as to get them to use their best and most willing efforts, but not to raise the price fixed, unless it should prove later on to be really insufficient, as it is very hard to reduce prices once made without inviting trouble.

Many complaints are more or less just, and when made should receive proper attention and redress, but these are the small minority, as intelligent managers always try to arrange matters in every direction so that no valid cause for complaint may exist.

Then, there are many unruly and disorderly workpeople who bluster and threaten, and these must be treated with a firm hand and be put promptly in their places or summarily dismissed. Any temporizing with insolence or insubordination would make chaos in a mill in a week.

America may or may not be for the Americans, but a textile mill certainly seems to be for the foreigners, and it would require a polyglot to grapple with the names on the ordinary payroll.

This confusion of tongues makes it very troublesome to explain, when there is any explaining to do, and adds much to the difficulty of the situation.

*Beggars on Horseback.*

The employers who ignore elementary principles of fairness in dealing with their help, and many do, and who try to ride roughshod over their people, with no respect for their peculiarities, habits, or rights, will always suffer severely in the pocket, in the long run, on account of such arbitrary and ill advised methods.

The explanation of their attitude may be found in the fact that such employers are generally sprung from the very lowest classes (or else their parents were), and it is proverbial that no one makes so tyrannical a master as one who has been a servant himself.

Every worker has his or her rights, both as an individual and as an employee, and a proper respect for their rights will always be shewn by every man of sense, even under most trying circumstances.

*Impossibility of Personal Acquaintance.*

A good deal of gratuitous advice is offered to manufacturers, as to how they should deal with their operatives, by those who little realize the conditions. They are told that they should treat them as friends and equals, take an interest in them, know them by name, etc., etc., and that then labor troubles would be very infrequent.

Vain illusion!

To begin with, no manufacturer conducting a mill of any size, and who has the calls on his time and thought, outside of the mill work, that all manufacturers have, can know very many of his ordinary operatives by name, or in many cases by sight, even if his headquarters were at the mills, and for those stationed in New York it would be still more impossible.

Furthermore, the ability to remember faces and names so well as to be able to identify scores or hundreds of people at sight, is a very rare gift, and without it no manufacturer could begin to have a personal acquaintance, to any extent, with the rank and file of his force.

It is the superintendent and his foremen, by reason of their daily intimate contact with the people at their work, who alone can have a knowledge of the individuality of these people, and it is largely to them that the employer must look to see that equity is done, and peace, order, and efficiency maintained.

That matters in factories go on as smoothly as they do, is a high testimonial to the faithfulness, tact, and justice of the mill superintendents.

*Latent Suspicion of Operatives.*

Now it is sad, but true, that the habit of mind of the ordinary mill operatives towards their employers is one of latent suspicion. They seem to have inherited an idea that the man who pays them their

wages is a potential enemy, and when any troublesome questions arise this mental attitude becomes at once apparent.

Any sane and decent employer, even if under no compulsion by the law, would see to it that his people were fairly treated, and that the places and conditions of their work were clean, safe, and sanitary. Let him go beyond that, and engage, to a greater or less extent, in what is known as "welfare work," and he will see what thanks he gets. While the benefits offered may or may not be accepted, he will be fortunate if he escapes being regarded as an enemy in consequence, and, whether it comes to his ears or not, he may be absolutely certain that his motives will be discussed throughout the mill in a hostile manner, and every kind of distorted view taken of them.

This, of course, should not prevent the steady pursuing of desirable ends in such directions, but it will illustrate how little it can serve in helping to preserve industrial peace.

#### *Wages and Conditions of Living.*

Rates of wages, whether for day work or for piece work, will vary with the locality. The basis of all such compensation is that it shall suffice to support the operative in the condition in which others of his class in that community live.

Circumstances will vary widely. Thus, a weaver may earn \$12.00 a week; his wife may also work in the mill as weaver, warper, twister, or what not, or may do picking at home. She may earn another \$12.00, and they may have a boy and a girl in the mill, earning respectively \$5.00 and \$7.00 a week, making a total for the family of \$36.00 a week, or \$1,800 a year, a sum sufficient to support them very comfortably.

Another weaver may also earn his \$12.00, but his wife may know nothing of mill work, or any money producing work, and his children may be young. In that case the family has nothing but his own wages, and the struggle for existence is a hard one, and it is impossible to save anything.

#### *Underpaid Employees Unprofitable.*

Intelligent employers will take care to see that their employees on piece work get off enough product to earn for themselves a fair average wage. If they fail to do this, it means that the machinery under their charge is not sufficiently productive, and that, in consequence, the expense chargeable against its output is a higher unit than it should be, and that the workman earning such very low wages must be in a state of chronic dissatisfaction, and, if there are many such, trouble may be looked for sooner or later.

When, therefore, it is seen that an operative is falling much short in earnings, when others, on the same work and under the same conditions, are doing well, the cause must be looked for, and, if there be no cause except the lack of effort or ability on the part of the oper-

ative, he must be told that if he cannot bring up his product to about what it should be, within a reasonable time, he will have to make room for some one who can.

There are always a few workmen whose earnings will ever be well above the average, and there are others who will constantly fall below, but a low limit should be set on each class of work, and no person should be continued in employment who cannot do that, or better.

It may sometimes happen that poor warps, or other materials, may get put in work, and if such things do occur, the overseer should take special pains to see that the bad work is fairly divided, and that a man does not get two bad jobs in succession.

Every pay day, the manager should have before him not only the current pay roll, but a table showing the average earnings of every operative up to date. By this means the ones whose averages are too low can be accurately located.

#### *Strikes and Their Causes.*

It is a singular thing to see what trifling causes may provoke a strike if the situation be stupidly or arrogantly handled, and when people are once out, no matter what the cause, it is no easy matter to get them back.

Most labor unions have acquired a habit of calling strikes, even when no dissatisfaction as to conditions exists, and very often just at the times when the workers are anxious to keep at work and are trying to save something.

Many of the mill workers belong to unions, but far more do not, and the strikes are called by the noisy 10 per cent. of the membership of the unions, because the 90 per cent. of quiet people, who want to stay at work, are afraid to oppose them at the meetings—a familiar example of collective cowardice.

#### *"Recognition of the Union."*

If a strike is for "recognition of the union"—that fatal millstone which labor agitators ever seek to hang about the necks of the employers—the manufacturers must fight it to the bitter end, for no honest man has a right to abdicate his liberty and put himself under the domination of irresponsible outsiders, any more than he would have a right to sell his vote, or auction off his children as slaves. Better give up a business than conduct it under such intolerable conditions.

If the demands deal with rates of wages, or with matters that may properly be the subject of bargain between employer and employee, a settlement may be more readily arrived at.

The best way to avoid strikes is to treat all the people fairly and firmly, pay fair wages, give steady work, and keep the mill free from labor agitators.

*Strike Violence, and the Fear of It.*

It is singular to note that, when a strike is called, the non-union people usually all go out also. They explain that they are quiet people, and that if they kept at work they might be attacked and beaten, and that their wives and children and themselves would be called "scabs" and jeered at for years thereafter. This is no light penalty to pay for faithfulness to their employer, so they must not be blamed too much for their action.

*Where Popular Government Breaks Down and Freedom Ceases.*

It is on occasions of this kind that popular government breaks down, and the name of Freedom becomes a farce. Those who want to earn an honest living are not free to do so, but strikers are free to intimidate, maim, or kill, and of the countless number of crimes committed by strikers, what a pitiful number are punished, even in the most trivial way!

The local authorities are often useless for preserving order, or worse than useless. So long as governors, sheriffs, magistrates, and other officials, whose duty it is to preserve the peace, are elective officers, they will continue to refuse to deal promptly, courageously, and effectively, with the violence commonly attendant upon strikes, as, by so doing, it might be necessary to shoot some of their constituents in order to preserve the rights, the liberties, and the persons of those innocent and peaceable people who desire to work. The strikers and their friends number many votes, while the employers are a negligible quantity in that respect.

The sheriff of a county has very great powers, and any sheriff who intended at all hazards to see that the peace was kept could settle any incipient trouble in a day. Persons who brutally attack inoffensive workers are not usually endowed with a very high variety of courage, and when they realize that deputies, armed with rifles, are about to use them as targets, they take to cover instantaneously. The putting two or three ringleaders of a disturbance out of business right at the start—as should be done—would save scores of innocent people from grave injury, or death, at the hands of any ruffians among the strikers.

It may be taken as axiomatic that any strike, called for the usual trivial reasons, would not have the ghost of a chance of success except for violence or the threat of violence, and this threat is, at all times, the most effective weapon that the strikers have.

The manufacturers, paying heavy taxes, but not receiving the protection they are entitled to under the law from the officials whose salaries they help to pay, have, therefore, a hard time of it when labor disturbances are prevalent.

*Necessity for Means of Defense.*

It may thus be a desirable thing, when new mill buildings are being

planned, to consider their defensive possibilities in this connection.

For instance, all lower story windows could be well grated, and high and strong fencing might surround the property, with strong gates.

At intervals, along the external sides of the various buildings, bays could be built out, say, about five feet wide, and extending outwardly a foot or two.

These bays, on every floor, could have grated windows looking out in each direction. In them would rise the stand pipes for fire protection, and the coils of hose for each floor would hang in them. Then, when strike disturbances prevailed, and rioting and breaches of the peace were taking place, the entire space about the mill could be effectively cleared by the use of the hose.

*How Those Willing to Work Can be Protected.*

Again, in the centre of a square, surrounded by mill buildings, could be erected a two or three-story building, large enough to house a considerable number of people. There could be kept on hand a good supply of cots and other equipment necessary for the purpose.

Then, in case of violence attendant upon a strike, people who might be engaged elsewhere, or persons from the vicinity who might wish to work, could be brought into the premises in a well-protected covered motor van, their numbers and their persons being entirely concealed from hostile eyes. Once in, there would be no necessity of their leaving the mills during the continuance of the trouble. The arrangements to house, feed, and amuse them would all have been prepared for, and so they would not be exposed to violence, as would people who had to pass backward and forward to their homes twice a day.

By this means, a new force could be steadily and surely assembled, for it is relatively easy to get hands when they are absolutely exempt from molestation.

*Right of the Individual to Defend Himself and His Dependents.*

As the State so signally fails to protect the manufacturer and those desirous of working for him, he must then exercise his inalienable right to protect himself and his dependents, and, to do so effectively, he must make his preparations in advance.

At ordinary times this building could be used for storage, or as a club house for the employees, or it could be used for welfare work. Lessons in cooking, and dressmaking could be given to the women for a small charge, and the foreigners could be taught English, and lecture courses could be given.

*Employment of Minors.*

The employment of children in mills, and the age at which they may be permitted to work, has received much attention of late years, and deservedly so. There are many features of interest in this ques-

tion which I cannot discuss here, but it is quite apparent that employing children, who have not come to an age where they realize what responsibility is, must mean excessive waste, and, with a material so costly as silk, it would prove a very expensive matter for the employer.

*Profit Sharing an Aid to Efficiency.*

The general efficiency of a mill organization may be greatly promoted by letting the more important employees share in the profits. Thus, a certain percentage of the net profits, or the dividends from certain shares of stocks, might be set aside to an extent that, when the business was doing well, would give them a bonus equal to, say, 15 to 25 per cent. of their annual salary.

This could go to superintendents and their assistants, to head designers, head loom-fixers, chief engineers, and possibly to department foremen. It would be well to pay it only to those who had been with the concern as much as a year, and to divide it into quarterly payments, as, in that way, it would have a more continuously stimulating effect. Other good plans, looking to the same result, could easily be worked out.

*Criticism from the Selling End.*

In conclusion, it may be remarked that, at the selling end, criticisms are at all times freely passed upon the mills and their managements, and there is usually no one there to defend them. If they do not produce the qualities of goods that the salesmen want and be willing to sell them at the bottom prices quoted anywhere, and produce every yard perfect and every order on time, no matter how short the time allowed for its execution, they will assuredly be blamed. The real wonder is how they ever can accomplish as much as they do.

It is, however, useful to reflect that the best informed men in the trade recognize the fact, and are free to state it, that for one mill that goes to the wall on account of inferior manufacturing ability there are five or ten that are put out of business by inefficient salesmanship.

## XIX

### QUESTIONS RELATING TO MILL HELP.

In order to get together a thoroughly trained staff of mill employees, a period of years is generally required. For each employee who is permanently retained, many others have been tried and found wanting.

#### *Effect on the Personnel of Continuity of Work.*

Continuity of work, week in and week out, and year after year, is one of the greatest helps in the upbuilding of such an organization. If it is either a feast or a famine, running overtime one month, and with half the machinery shut down the next, it is obvious that there must be a great shifting of help, old employees finding work elsewhere, when laid off, and new ones having to be hired to take their places when the mill starts up again. A large proportion of the new hands will usually prove so unsatisfactory that a weeding-out process is necessitated, and, by the time a fairly good force is secured, slack work comes again with a repetition of the same trouble.

The effect upon both the quantity and the quality of the output of the mill, under such conditions, is disastrous.

#### *Some Causes for the Shifting of Help.*

Apart from this, there is always some change in the personnel going on, for many reasons. Some will fall ill, families may move away, and some may desire to revisit, or return to, their old homes in Europe, or elsewhere; occasionally, also, there is a not unnatural desire for a change of surroundings or climate on the part of some of the people; others may think that they have been unfairly or arbitrarily treated by those in authority over them, and frequently such is the case; and then there are people who leave without notice and for no apparent reason, some of them, possibly, having got on the wrong side of the law in one way or another.



In some localities, a good deal of the female help will take flight at certain seasons of the year, whether to act as waitresses at summer hotels, to work in the canneries, to go hop picking, or what not, much to the loss and inconvenience of their regular employers.

*Tramp Weavers.*

Then there are the "tramp weavers," usually thoroughly skilled men, who may have worked in mills in every state in the Union. These move from place to place as the seasons change, or as the fancy strikes them. They may work a week, or a month or two, then drop out when a pay closes, and, without saying a word, come back on pay day to collect their pay—if they have not assigned it to some one else—and are gone.

They are doubtless philosophers, who only do work enough to give them money for their modest needs, and as they travel the country they see new scenes, and can go south or north as the season dictates, just as their rich fellow citizens do. Even if, as the years roll on, they find themselves empty of pocket, they will reflect that most of their fellows who stayed at home with their noses to the grindstone are not a whit better off than what they are.

*Causes for Dismissal.*

Many workers, too, will have to be discharged. These are the incompetent, and those who are hopelessly slow; some who are quarrelsome, some drunken, some insubordinate, and others who are trouble makers, and there may be occasional instances of dishonesty.

*The Problem of Securing Help.*

All this goes to shew that, even in those mills which have steady work at all times, the securing of needed help has always to be considered, while, with those mills that run intermittently, or with those that are situated where help is scarce, it is one of the most serious problems confronting the administration.

*Rates of Wages a Local Condition.*

The question is seldom one of wages. That is more or less of a local condition as regards each district, and, in fact, as regards each mill, and the cost of living in the vicinity is also a controlling factor. Sometimes the rate of wages for piece work, in two mills near to one another and running on exactly the same goods, may vary considerably—and properly so.

One of the two may have high-class machinery that can be run at maximum speeds; its raw material may be the best obtainable, and the preparation and dyeing of it may be done by first-class houses; its mill organization may be superb; and it may be backed up by successful selling at the distributing end.

In the other mill, the reverse of these conditions may obtain, and,

with poor machinery, material, mill organization, and selling talent, the situation may be deplorable.

The result, so far as the operative on piece work is concerned, will be, that, in the first mill, his annual product will be so greatly in excess of what it could be in the second mill, that even at a considerably lower piece-work rate, his annual earnings will be much higher.

Each mill, according to its circumstances, has got to fix its rates on a basis fairly satisfactory to the help, and, within limits, these rates will vary from factory to factory.

*Variation of Wages and Hours in Different Localities.*

It is a very different matter when the prices paid for labor in one manufacturing district, and the hours that that labor works, vary materially from the conditions that prevail in another district, for, under these circumstances, the district paying the highest wages and working the shortest hours, finds it almost impossible to compete successfully with its better situated competitor.

Such conditions are constantly arising, and heavy and long continued losses in some sections are the result, ending either in a readjustment of wage rates that will somewhat equalize matters, or in the industry dying out where the labor cost is too high.

Meantime, such differences in rates invite strikes for higher wages or shorter hours in the districts where wages are low.

*The Silk Throwing Strike of 1907.*

In 1907, a serious strike broke out in the silk throwing mills located in Lackawanna and Luzerne Counties, in the State of Pennsylvania, in which is included the important Scranton district, and which strike was settled by arbitration in December of that year.

Among the data furnished to the arbitrator was the following comparative table of wages paid for female labor, in the throwing industry, in Paterson, N. J., and in Scranton, Pa.

*Relative Wages in Scranton and Paterson.*

55 Hours, Paterson, N. J.

Winders .....	\$7.50
Doublers .....	7.50
Tram spinners .....	9.00
Organ flyer hands .....	7.50 to \$8.00
Spinners .....	5.00 to 6.00
Reelers .....	7.00
Lacers .....	4.50
Bobbin Boys .....	3.50 to 4.00

58½ Hours, Scranton, Pa.

Winders .....	\$4.00 to 5.00
Doublers .....	3.00 to 4.50

Tram spinners .....	3.50 to	4.50
Organ flyer hands .....	2.75 to	4.00
Spinners .....	2.50 to	3.50
Reelers .....	3.00 to	3.50
Lacers .....	1.25 to	2.50
Bobbin boys .....	2.50 to	3.25

This illustrates very well the difficulty of the competition referred to, if these figures are correct.

The arbitrator decided that the mills which were parties to the arbitration should reduce their working hours to 55 per week, and should adopt the following minimum wage scale for throwing mills:

*Rates Fixed by the Arbitrator.*

WAGES TO BE PAID IN THROWING DEPARTMENT.

Minimum rate for winders, doublers and twistors (second time spinners):

	Per week.
Learners up to six months .....	\$2.00
After six months, to twelve months .....	2.50
After twelve months to eighteen months .....	3.00
After eighteen months to twenty-four months ....	3.75
After twenty-four months, at least .....	4.50
Tussah workers, 50 cts. per week additional, or ..	5.00

Minimum rate for first time spinners and reelers:

Learners up to six months .....	\$2.00
After six months to twelve months .....	2.50
After twelve months to eighteen months .....	3.00
After eighteen months to twenty-four months ....	3.50
After twenty-four months, at least .....	4.00

(NOTE.—At this writing—March, 1913—a general advance in wages of 10% has been granted in most of the throwing mills in Eastern Pennsylvania.)

In this connection, some figures published in 1910 by the U. S. Government, shewing wages paid in the silk industry abroad, as compared with the average wages paid here, may be of interest.

WAGES IN THE SILK TRADE.

A comparison of wages in the United States and foreign countries is as follows:

	Wages per day.		Hours of labor per day.
	Men.	Women.	
United States (Connecticut, New Jersey and New York) .....	\$1.50 to \$3.00	\$1.00 to \$2.50	8 to 10
Average about.....	2.25	1.60	
France and Switzerland (Lyons and vicinity, Zu- rich, etc.) .....	.75 to 1.50	.50 to .90	9 to 11
Italy (Como, etc.) .....	.50 to .80	.30 to .60	9½ to 12
Japan (power looms, pay includes board and lodg- ing) .....	.15 to .20	.10 to .12	10 to 14
China (no power looms) ..	.10 to .12	.06 to .09	10 to 14

WAGES IN ENGLAND.

Average wages per week paid in all districts of England (Board of Trade Reports):

MEN.

Foremen .....	\$6.80
Throwsters .....	4.50
Pickers, thrown silk .....	4.84
Twisters, sewing silk .....	6.10
Dressers, spun silk .....	6.34
Dressers' assistants .....	4.70
Dyers .....	5.54
Weavers .....	5.50
Warehousemen .....	6.42
Mechanics .....	7.78
Laborers .....	4.64

WOMEN.

Doublers—	
Thrown silk .....	2.44
Spun silk .....	2.58
Throwsters .....	2.08
Reelers .....	2.44
Winders and spoolers .....	2.70
Preparers and carders .....	2.70
Spinners .....	2.56
Gassers .....	3.54
Winders, weaving department .....	2.46
Weavers .....	3.10

## FRANCE, LYONS.

Weavers .....	\$3.16 to \$3.46
Dyers .....	5.76 to 6.92
Printers .....	6.92 to 8.06
Finishers .....	5.76 to 6.34
Laborers .....	4.60 to 4.90
Velvet weavers .....	5.14 to 5.90

## GERMANY, CREFELD.

Report of United States Consul Joseph E. Haven, 1909:

"There is no recognized wage scale in force in the silk and velvet mills in this district, each manufacturer having a standard of his own. The wages vary in the different departments, according to the skill of the several workmen. In the weaving department overseers receive from \$5.95 to \$7.14 a week, while laborers are paid from \$5.71 to \$6.18. In a few factories wages are paid according to piecework. Overseers in the winding and warping departments receive from \$5.95 to \$7.14 weekly; the laborers from \$3.57 to \$4.96. The employees in these departments are generally women. In the dyeing department overseers are paid \$9.52 to \$10.71, skilled labor from \$7.14 to \$8.33, and unskilled labor from \$4.76 to \$5.95. The overseers in the finishing department receive \$8.33 to \$9.52, and the laborers from \$4.76 to \$6.18."

## DUSSELDORF.

Report of United States Consul Peter Lieder on wages in silk industry in Dusseldorf:

"In spinning mills, where only women are employed, the average daily wage is from 71.4 cents to 83.3 cents. Immediately after leaving school, usually at fourteen years, the young girls enter the factories. In two years they earn from 35.7 cents to 47.6 cents a day, and after four or five years their wages are increased to the maximum of 83.3 cents. In weaving mills the salary undergoes many fluctuations, reaching as high as \$1.19 per day. There are also many factories where workers are paid according to what they produce, and often make as much as \$1.30 a day."

## BARMEN.

Report of Special Agent Clark on wages in the silk industry in Barmen:

"Wages in Barmen and the surrounding section are higher than in most other textile centres of Germany. Ordinary weavers will average 60 to 80 cents a day, and weavers on special work will get as high as \$1.43 or more."

*Standard Wage Scales.*

Much effort has been spent from time to time in the attempt to establish standard price lists, for harmonizing the rates of the various mills and to afford the workers fair pay.

For the reasons already set forth, such a programme can never have a very wide acceptance, as the rates necessary to give the operative a fair wage under the average of manufacturing conditions—which is poor—would be absurdly high for the well managed mills with first class equipment and highest grade silk.

*The Paterson Broad-Silk Price List.*

Such a price list, for labor employed in the broad-silk trade, was, indeed, worked out and put into use in Paterson, N. J., where it found considerable acceptance, though doubtless each mill made modifications of it to suit its own conditions.

I present this price list herewith, some of the items in it representing rather the average of the rates than fixed figures.

This was in existence in 1909/1910, but conditions in the Paterson silk industry have been somewhat modified by strikes that have since occurred.

PATERSON PRICE LIST.

PIECE WORK.

Winding.	14/16 Raw-Silk for single weaving.	Gum . . . . .	10c. per lb.
Winding.	13/15 Colored Organzine, 16/18 oz. dye.	Gum . . . . .	12c. per lb.
Winding.	3, 4 & 5 Thread Tram, 22/24 oz. dye.	Gum . . . . .	10c. per lb.
Winding.	2/40 Dyed Cotton Yarn . . . . .		5c. per lb.
Winding.	2/80 Dyed Cotton Yarn . . . . .		6c. per lb.
Winding.	2/120 Dyed Cotton Yarn . . . . .		8c. per lb.
Winding.	2/200 Schappe or Spun Silk . . . . .		8c. per lb.
Winding.	2/250 Schappe or Spun Silk . . . . .		10c. per lb.
Warping.	14/16 Raw-Silk, straight work. Per 1,000 . . . . .		12c. per 100 yds.
Warping.	13/15 Dyed Organzine. Per 1,000 . . . . .		15c. per 100 yds.
Warping.	Cotton or Spun Silk. Per 1,000 . . . . .		15c. per 100 yds.
Twisting.	Straight . . . . .		30c. per 1,000 ends.
Twisting.	Two or more beams. For second beam . . . . .		5c. extra
Twisting.	Double warp . . . . .		5c. extra

*Day Work Rates.*

Winders, per week . . . . .	\$7.50 to \$8.00
Warpers " " . . . . .	18.00
Drawers-in " " . . . . .	18.00 to 20.00
Twisters " " . . . . .	18.00
Quillers " " . . . . .	5.50 to 6.50
Pickers " " . . . . .	6.50 to 7.00

## WEAVING PRICE LIST FOR BROAD SILKS.

Standard Plain Goods.				Standard Jacquard Goods.			
Thds.	Reed.	Picks.	Price.	Thds.	Reed.	Picks.	Price.
1	60	88	4½	2	60	88	7
2	60	88	5½	3	60	88	8
3	60	88	6½	4	60	88	9
4	60	88	7½	5	60	88	9½
5	60	88	8	6	60	88	10
6	60	88	8½	7	60	88	11
7	60	88	9½	8	60	88	11½
8	60	88	10				

## REED SCALE, STANDARD 60 DENT.

1% added to price paid per yard for each dent above standard.

1% deducted from price paid per yard for each dent below standard.

## PICK SCALE, STANDARD 88 PICKS.

1% added to price paid per yard for each pick above standard.

1% deducted from price paid per yard for each pick below standard.

## WIDTH SCALE, STANDARD 20".

Widths above 20" 2½% per inch added to price paid per yard.

15% extra to be paid for regular one loom jobs.

## SHUTTLE SCALE, STANDARD I.

*Extra*

Plain Goods: 2 to 4 shuttles, one cent extra;

5 and 6, two cents extra. Seven, three cents extra.

Jacquard: One cent for second shuttle and ½ cent extra for every added shuttle over two.

## SHAFT SCALE, STANDARD 10.

⅛ cent extra for every shaft above ten.

## BEAM SCALE, STANDARD I.

Extra beams, ½ cent each.

Jobs on two beams with satin stripes, satin threads to be counted at only half their number, and be figured as ground threads.

## THREADS.

Stitch and stripe threads counted as ground threads.

Above 4 threads, tabby weaves, 25% extra above price list.

If ⅔ cotton filling below 100 count, ½ cent extra.

## JACQUARD MACHINES.

1,200 fine index, ½ cent extra per yard.

Double 600, one cent extra per yard.

Above double scale 10% per yard extra on price paid.

SWIVELS.

Single Rack: Up to 6 spaces,  $1\frac{1}{2}$  cent per yard extra.  
 Above 6,  $\frac{1}{8}$  cent per yard for each space extra.  
 Double Rack: 3 times price of single.  
 Triple Rack: 4 times price of single.

GRENADINES.

Plain—100% extra above price list.  
 Figured—130% extra above price list.  
 Scarfs, Two Wides, etc.— $\frac{1}{2}$  cent per yard extra for every pair of doups.

RULES FOR FIGURING PRICES.

If reed is a different count from standard, first add or deduct the difference from standard price, which will give the different reed price; then, if there are any differences in picks from standard, add or deduct difference from price to be paid on the different reed.

This will give the list price.

If the goods are any wider than standard, then add difference to price.

All extras such as beams, shafts, shuttles, etc., must be now added. If one loom jobs, now add 15%.

The foregoing will give a very good idea of the elements that enter into such price lists, and the manner in which they are handled.

*Training Country Help.*

When mills are established in country districts, practically all of the help has to be trained, and this means weary and discouraging work, covering months and years, during which time the percentage of imperfect goods turned out is very great.

It is usually found convenient to set aside a room in the mill, or adjoining the mill, equip it with a few looms, etc., and organize a weaving school, in which learners are taught the rudiments of the art.

Some staple fabric, such as a black taffeta, or satin, may be used as the article to break them in on, and the losses on the large amount of defective goods, produced by these learners, is charged to the cost of installation, or some other suitable account.

*Trouble of Securing Help in the Country.*

In getting help in a country location, the class feeling in the vicinity must be reckoned with. The daughters of the farmers, in many sections, look down upon factory hands and consider mill work beneath them, and yet these same farmers' daughters may represent most of the labor that is available in the district, and, without them, labor would



have to be brought in from a distance which would be a serious disadvantage.

*How One Concern Met the Difficulty.*

I heard of one concern which overcame this prejudice in the following manner.

A spacious room was provided as a permanent lunch room, and was well equipped with round tables, good chairs, and suitable table equipment.

A day was set for the opening of the mill. All of the machinery had been installed, the rooms were decorated, and everything was in most attractive shape.

A modest sized force of skilled help was put to work at the different machines, all of them being neatly dressed.

Every family round the countryside had been specially invited to attend, and provision had been made for a dance and for a substantial supper afterward.

They came, crowds of them, and when they saw the conditions of work as they were in that mill, their prejudices vanished, and numbers of them took work in the mill as learners.

This may have been an exceptional case, but it might be made the rule with great advantage.

*Understandings Between Manufacturers Regarding Help.*

Mills located near to one another frequently have an understanding that no operative working in one mill shall be hired away by another mill. This is a very useful arrangement, as any other course would have the effect of pitting one employer against the other in bidding up the wages of the people to an unprofitable point, and this would be especially the case in small towns where there was not help enough to go round.

The result of this is often seen in those manufacturing towns, where, after all the available labor is fully employed, some new establishment locates and finds to its sorrow that the only way it can secure hands is to tempt them away from its neighbors by offering higher pay. The help, so secured, is got back by the others by a still higher raise, and so the game continues till every one is paying more than he can afford, all along the line, and no one employer has benefited a particle.

*Care in the Engaging of Applicants for Work.*

As all manufacturers have constantly to employ new people, to a greater or less extent, it is of much importance that the most intelligent methods be employed in making the selection.

The way ordinarily adopted is to talk to the applicant, and, if he tells a fairly straight story, to put him to work with practically no further enquiry. Of course, if he proves at the start to be thoroughly incompetent, he is quickly discharged, having in the mean-

time damaged more or less material, but if he seems reasonably experienced he remains on the job.

Later on, it may turn out that he is a strike organizer, a periodical drunkard, or undesirable for many reasons, but this is only found out by trouble arising.

A system that would help to inform manufacturers regarding applicants for work would be a great benefit, and would tend to give steady work to the good people, and to drive the worthless ones out of the trade.

This can only be effected by a free and full interchange of information between mills regarding the help, and because mills are competitors is no reason why a friendly co-operation might not be looked for, particularly as, in such a case, it would be a matter of self interest.

There has been unfortunately too much unwarranted jealousy and mistrust shown between rival organizations, the animus being sometimes displayed by the owners, sometimes by their mill superintendents and foremen, and sometimes by both.

Men of one nationality are prone to express dislike or distrust of those of some other race, and much clannishness is the result. All this is bad policy, and is a hindrance to their best interests.

*Records Which Should be Kept.*

When persons apply for work, the names and addresses that they give should be written down, as well as their statements regarding their former employment, so long at this mill, so long at that, etc., the class of work that they claim experience on, and the reasons for their being out of work.

A card of enquiry, with a stamped and addressed envelope for its return, should now be mailed to one or more of the firms for whom the applicant claimed to have worked.

This card would have noted on it the statements that had been made, and would have blanks to be filled in, wherein the former employer could note whether the workman was good, fair, poor or worthless; the nature of the work that he had been employed at, his ability, his experience and what his personal character was. No enquiry would be made regarding his former earnings or rates of pay. A short description of the person might be given by the enquirer as regards general appearance and probable age.

Even if it were thought proper to put the applicant to work at once, this information should be written for just the same.

In every mill there should be kept a record book of the help, which would show the full name, the address, the previous employers and length of time with each, and the date of employment, of each employee. It should also show the date of his leaving and the reason for same. In too many cases, as it is, the only available records are the old payroll books, while a record of the kind referred to would

be of most material assistance in the prompt answering of questions regarding former employees.

Many manufacturers, when enquiries regarding applicants are addressed to them, even with a stamped envelope for return of the enquiry, exhibit their lack of intelligence, decency, and manners by making no reply at all. They might at least say that they did not desire to give the information, or that they did not know the name, or what not. It is to be hoped that such persons, even if lacking in ordinary civility, may at least see that their personal interest lies in the reciprocal interchange of information.

*Difficulty With Workpeople's Names.*

The different aliases under which many silk workers masquerade is a troublesome point. Much of the difficulty is due to the fact that in a number of Slavic languages, and in some others, there are letters having sounds that do not correspond with any in the English alphabet, and, therefore, with the best intentions in the world, a man may be in doubt how to express his name in writing, and may sometimes spell it one way and sometimes another.

Many of the people are quite illiterate, and unable to spell at all, and others, seeing that they are not understood, let their names go down in whatever way the employer chooses to write them. This they are hardly to blame for, and much of the trouble lies in the lack of care or patience used by the mill superintendents in getting the complete names set down right at the outset.

*Signing of Employment Contracts.*

When new employees are taken on, a useful method is to have them sign their names in a special book, each signature being witnessed, the witness signing in the adjoining column.

At the top of every page of this book is printed a statement of the conditions of employment; that the employee represents himself as being a skilled workman in this or that line, and undertakes to turn out good and perfect work; the length of time for notice of leaving to be given is stated; the liability to fines, and their character; the causes for summary discharge, and many other debatable points; and, as the workman has agreed to them in writing, with his signature legally witnessed, he is thus debarred from the pleasure of "having the law on his employer" whenever he happens to be in an ugly mood over something.

As each new employee signs the book, a printed copy of what he has agreed to should be given him, so that he can acquaint himself at his leisure with the conditions.

*A Form of Contract that Has Worked Well.*

The following form has been in use for years in the mills of a large worsted goods concern in Philadelphia, Pa.

It is printed at the top of each page of the book in which all new employees have to sign their names, the same being duly witnessed as already described:

*WHEREAS, We, the undersigned, each of us, have accepted employment from & Co. as competent and skillful operatives in the work for which we are engaged, we do hereby personally covenant, promise, and agree with them, the said*

*& Co., to comply with all future regulations, and submit to all fines and penalties for imperfect work now in force at the time of taking employment with them, and to finish in a good and workmanlike manner all work which we each begin; and we each of us do hereby waive all right to set up as a defence or excuse for imperfect work either want of knowledge of the above-mentioned fines, penalties, or regulations, or imperfections or defects in the materials or machinery furnished us; and if we, or any of us, quit or discontinue regular work from any cause—continued sickness excepted, of which we will furnish a physician's certificate if required—we each discharge ourselves, and quit claim to re-employment and payment for any and all work we may have done, left unfinished, thereby forfeiting to the said*

*& Co. all pay for the same. This agreement is not to be vitiated by change of style of work, by discontinuing and, recommencing, or by suspension and resumption of work; and we each hereby agree to surrender one week's pay if we each do not give that much notice previous to leaving the employ of said & Co.*

The remainder of each page under this heading is divided into four columns, headed, respectively—date—name of witness—name of employee—work employed to do. These are filled in as occasion demands. I was informed that this method of control had proved very satisfactory.

#### *A Representative Set of Mill Rules.*

The following is a copy of the Rules and Regulations that are enforced by one of the great New England mills:

#### **RULES AND REGULATIONS.**

*Rule 1. OVERSEERS are required to be promptly in their respective places before the assembling of the hands, there to remain (unless called away in the discharge of their duties), to see that these rules are maintained and obeyed, that the work of the Mill is properly conducted, and, upon the closing of the Mill, to see that all the hands are out and their apartments closed.*

*Rule 2. ALL EMPLOYEES must be at their places and be ready to commence work on time. They must not leave their work, even to*

prepare for departure, till the whistle is blown. Persons violating this rule will suffer a deduction from their wages equal to double the amount of time lost, but no such deduction will be less than a half hour's time for those on day work, or ten cents for those on piece work.

Rule 3. EMPLOYEES in each department are directly responsible to the Overseer of their special work, and no person is allowed to go from one department to another, except in the performance of duties, nor to leave the Mill during working hours without consent of the department Overseer.

Rule 4. Any person wilfully or carelessly wasting, destroying or defacing property of the Mill will be charged with the same; and the hands are strictly forbidden to handle or interfere with machinery not directly under their charge. This prohibition applies especially to the electric lighting apparatus, the elevators, water supply and heating apparatus.

Rule 5. EMPLOYEES commencing any work must properly complete same to be entitled to any pay.

Rule 6. The following prohibitions must be absolutely observed by all OVERSEERS and EMPLOYEES of the Mill:

The use of Books, Papers, or other Reading Matter during working hours.

The use of Profane or Improper Language, Loud Talking and all other needless noise.

Smoking in or about Mill, or bringing in or carrying matches.

Carrying out of the Premises any material or article whatever belonging to the firm.

Taking into the Water-Closets any Material used in the Mill, especially Wool or Waste.

Wasting Time or Loitering in the Water-Closets.

Rule 7. The whistle will blow five minutes before, the gates will be closed and the engine started one minute before the hour of work. All employees not in before the gates are closed will be considered as being late, and will come under the penalty provided in Rule 2.

Rule 8. Wages will be paid every two weeks—always leaving six days' earnings unpaid. Hands leaving our employ are required to give one week's notice, and weavers to properly weave out their warps. A failure to comply with this provision will forfeit whatever wages may be due. Those absenting themselves from their places, without permission of the Overseer of their respective departments, will be considered as having left without notice, and will suffer the said forfeiture of wages. The only exception to this will be in case of sickness, when notice must be immediately sent to the office. The proprietors reserve the right to discharge any person without notice for inefficiency, ill conduct or a violation of these rules, and it is hereby expressly agreed and understood that these rules shall be and are a

*legal contract between the employer and all persons accepting employment in this establishment.*

These rules may seem rather stiff to those not accustomed to the routine of mill life, but there is more contentment, better work, and greater profit for employee and employer in mills when strict discipline is maintained than in those establishments that are run in a haphazard manner.

*Local Associations of Manufacturers.*

Local associations of manufacturers (even for a very limited number of objects) will be found of much use in the sifting out of the desirable workpeople from the undesirable. When some one is dismissed for serious cause, the other members can be advised; not that they should be obligated not to employ him, but that, should they have occasion to engage him, they would hire him with their eyes open.

*Blacklisting.*

General blacklisting is injudicious, as men who might be subjects for blacklisting may be quite prepared to turn over a new leaf and to do their best in the future.

It happens, not infrequently, that men who at some time in their careers have been active leaders in strikes or other labor troubles, have subsequently come to see the folly of it all and have afterward proved to be the most trustworthy and dependable of men.

*Advantage of Concerted Action.*

The members of these local associations, at times of general strikes, may agree upon a common course of action and, meeting frequently, each will be thoroughly aware of the position of the others and how matters are going with them. Anyone who finds he can no longer act with the rest should be free to withdraw from his agreement to do so, upon giving due notice to the others, and then all will know where they stand.

*Friendly Co-operation in Certain Directions.*

Manufacturers, working together in this way, can also help each other quite a bit by giving information as to unfair treatment at the hands of certain customers, or of those from whom they buy, and such warnings (properly substantiated, of course) would be useful for the guidance of the others.

Various methods that might be employed for the welfare of the employees would be proper subjects for consideration and joint action.

In the transmitting of information between mills, whether on the subject of help or in other directions, it is neither expected nor de-

sired that manufacturers should speak of matters which would reveal in any way the means that they employ for the economical production of their goods.

There are, of course, those in the trade who play the part of the ostrich with his head in the sand, and who are secretive to the last degree, and, never giving one any information, no matter how harmless, naturally have little told them in return.

Such is not the general rule, and it is therefore fair to hope that manufacturers generally may see that, particularly in this matter of enquiries as to help, their interest is best served by giving cheerfully and at once the fullest information that they can in reply to enquiries.

## XX

### WELFARE WORK AMONG MILL OPERATIVES.

Much has been spoken and written of late years about welfare work in mills or factories, and while few people are now disposed to question the advantage of it in some directions, and to a reasonable degree, yet there is much difference of opinion as to how far it should be carried.

While many persons who have earnestly studied how they could improve the condition of their employees have not been seeking any material return for their labors in doing so, yet, none the less, these efforts have often yielded a commercial reward, direct or indirect.

#### *Self-Supporting Propositions.*

It may, perhaps, be fairly argued that everything done in this line ought to be, as it were, self-supporting, or, at any rate, should yield to the employer some tangible benefit, sufficiently definite to warrant the expenditure on it of the necessary time or money.

It is axiomatic that what costs one nothing is generally but lightly regarded, and that anything that has to be paid for is much more highly esteemed.

#### *State Legislation.*

Matters affecting the health of employees, of course, come into a different category, and these matters are fairly well looked after by the laws of the States.

These laws, in the main, provide that the premises occupied by the workers shall be safe, sanitary, well ventilated and properly lighted; that there shall be suitable protection against the risks of fire; that overcrowding is guarded against, and the hours of labor of children or minors, and sometimes of adults, are regulated.

Most of these matters would, in any event, be arranged for by



the employers as a matter of self interest, for, unless the people have reasonably good conditions under which to work, neither the quality nor the quantity of the product will be satisfactory.

There are, in addition, a number of directions in which the welfare of the employees may be promoted by the employers, some of them looking toward an increased reward for faithful work, and it is about some of these that I desire to speak.

*Rewards for Faithful and Long Continued Service.*

Thus, an employer may pride himself on his organization and on the large body of experienced and reliable men in it, men, perhaps, who are good all round weavers, able to handle any fabric that comes up, and who can also be counted on to stick by their employer in time of trouble.

Compare such a force with an aggregation of unreliable and inefficient people and the great value to the employer of the body of good help is apparent.

This efficiency on their part is due to many years of experience, coupled with good habits, industry, sobriety and other qualities.

What recognition does the textile manufacturer give to such men who are the mainstay of his organization? He gives absolutely none.

They are paid at the same piece work rates as all the others, and while they will doubtless average a better pay than the inefficient weavers, yet they will get not a whit more than those men, equally smart but utterly untrustworthy, and who may be constantly engaged in stirring up trouble.

Those valuable qualities of character and of loyalty the employers take advantage of and make no return for.

There is a meanness about this, and it is radically unfair, if not dishonest, to take that which is of value and make no return.

In industries where piece work rates do not prevail, these better-class men may be given wages above the average, and something ought to be done by textile manufacturers to give an express reward to fidelity and continuity of service, and when this is done there will doubtless be more fidelity shewn than is the case now where it pays no dividend.

*A Method Which Might be Employed.*

While the piece work rates could not be changed for the benefit of certain help, yet a bonus might be paid at the year's end of so much a month, beginning to be paid after the people had been employed for, say, two years, and increasing each year till a certain maximum was reached.

Thus the first bonus paid might be at the rate of \$1 a month, \$12 being given to the operative when the payment was made.

The next year he would get \$24, or \$2 a month, and so on, in-

creasing year to year, till a maximum of, say, \$100 a year was reached, or whatever sum might be reasonable and proper.

It is entirely certain that proper financial recognition of experience and reliability would not be money ill spent.

*Sick-Benefit Societies.*

Another feature is an employee's sick-benefit society, which, as there is no expenditure for anything but benefits, returns the whole of the money collected to the subscribers, and is, of course, cheaper than any outside insurance could be.

In organizing a society of this sort certain points must be borne well in mind. For one thing, the number of the employees of the mill must be sufficiently large, so that if a fair proportion of them choose to join the society they will make a reasonably numerous body, in which the cases of sickness will have a chance to average up.

In the next instance, care must be taken to avoid coming into conflict with the Insurance Laws of the State.

*Necessary Rules for Such a Society.*

It is very necessary that the rules of the society contain no feature which could give the contributors a sort of vested interest in the funds, otherwise there would be all kinds of trouble with those who left the employ of the mill.

Arrangements should also be made so that the funds could not be used—or misused—for other purposes, such as strike benefits, and the dues should be on a self-collecting basis.

The direction should be in the hands of a committee representing both employers and employees, and provision should be made to protect the society from unwarranted claims upon its funds.

*A Plan Which Has Worked Well.*

A plan which was entirely originated by the writer, and which worked very well in practice—the membership running from 150 to 300—was as follows:

Three classes of benefits were arranged for. Class A embraced all whose earnings averaged \$10 a week or over. Class B took in those earning from \$6.50 to \$10 a week. Class C was composed of those earning less than \$6.50.

Class A paid dues of 15 cents a week, Class B paid 10 cents, and Class C, 5 cents.

For sick benefit Class A received (I think) \$7 a week, Class B, \$4.50, and Class C, \$2.50.

No benefit was paid for sickness lasting less than one week, or more than eight weeks in the year.

In addition to the sick benefit there was also a provision for funeral expense in case of death, which was fixed at \$75, \$50 and \$25 respectively for the three classes.

*Details of the Management.*

Employees had to have been working in the mill for at least a month to be eligible for membership and had to be in visibly good health.

Arrangements were made with a local physician by which, for a very moderate charge, he would call and report on any member claiming to be sick, and in such instances the officers would also designate two members to act as a visiting committee.

As prompt notification of illness had also to be given, these measures prevented any improper leakage of the funds, and the benefits were never high enough to tempt many persons to stay at home in idleness.

The direction was in the hands of a committee of five, four being mill hands elected by the society, and the fifth the mill bookkeeper, appointed by the mill, who acted as treasurer and banked the money in a special fund, and it could only be drawn on his signature, countersigned by the chairman.

Orders for payment of benefits had to be signed by a majority of the committee, and against these vouchers the treasurer drew cheques for the money. This control effectively prevented any misdirection of the funds.

Members had to agree that dues were to be withheld from their pay, and, when the pay envelopes were being filled, printed colored tickets, serving as receipts, were enclosed to cover the dues retained.

In this way the payments were always self collecting and there was no trouble with unpaid dues.

It was considered judicious, in the case of employees, who had to be discharged, to return to them the two last payments that they had made, so that there could be no grumbling on that score. Membership ceased with employment.

After the organization of the society those entering it paid a fee of 75 cents for Class A, 50 cents for Class B, and 25 cents for Class C.

Members were free to resign at any time. So long as they paid they had a current insurance, and the insurance ceased with their payments.

A Constitution and By-Laws, covering the foregoing and many other points, were adopted, and were published in a small booklet for distribution.

*Suspicious Attitude of Employees.*

When a proposition, such as the above, is evolved, it is apt to be very suspiciously looked upon by the employees, who generally seem to imagine that anything new that is proposed has been devised for the purpose of taking something away from them. This feeling is doubtless the inheritance of the injustice that was so commonly practised towards workingmen in times past.

On this account it is not likely at first to make rapid headway, but when well established it attracts members fast and is much valued by the employees.

With a sufficiently large membership, and worked on lines similar to the above, it should not only pay its way but should accumulate a nice surplus.

*Cooking and Dressmaking Classes.*

Another direction in which interest can be shown in the people is by the establishment of classes in cooking, and dressmaking, for the women.

If the mill has at its command a space suitable for the purpose it can be provided with the necessary equipment, and teachers could be arranged for.

The teachers might be paid, say, \$3 for giving a lesson, which could be on one evening a week for the cooking, and on another evening for the dressmaking, and a charge of, say, 10 cents a lesson could be made, so that a class of thirty would pay the cost of the teacher.

The use of the premises, fuel, lights, etc., would be but a trifling expense to the mill.

*Money Saved Almost Like Increased Pay.*

Now it is true that no direct return comes to the employer from introducing such teaching, yet there is a distinct indirect benefit.

Mill workers, in large part, not being trained to household duties, are apt to be extremely ignorant on the subject of preparing food, and are also lacking in the knowledge of how to make clothes for themselves or their children.

If, now, they were taught how to do these things they would be able to live better and on less money by knowing how to avoid waste and to make the most of the supplies and materials at their command.

A dollar a week, no inconsiderable sum, might easily be saved to a family through this means, and, so far as the comfort of the worker was concerned, it would be the equivalent of an advance in pay of an equal amount, and so, without any increase in wages, the body of workers would be much more contented with the pay they were getting.

*Earnings of Silk Workers in Anthracite Regions.*

The following figures were quoted by Mr. W. J. Lauck, in an article in "Silk," May, 1911, as being extracted from a report of the United States Government dealing with a study of the conditions prevailing among the operatives of silk mills located in the anthracite coal mining communities.

*"The average earnings in the silk mills of native American men, 18 years of age or over, were \$12.24 weekly; of immigrant males of the same age, \$12.39, and of men of native birth but of foreign father, \$10.91 each week. For native American women, 18 years of age or over, the average weekly earnings were only \$5.52; for foreign-born women of the same age group, \$5.57, and for women of the second generation or of native birth but of foreign father, \$5.82. The average weekly earnings of all female operatives, 18 years of age or older, were \$5.71.*

*"Information was also secured relative to the earnings of operatives who were 14 but under 18 years of age. Of the males of this age classification, the native Americans earned \$4.31 weekly; the immigrants, \$4.68, and the second generation of immigrants, \$4.26. The earnings of girls of the same ages were considerably less. The native American girls, 14 but under 18 years of age, have average weekly earnings of \$3.65, the foreign-born girls of the same age group, \$3.75 each week, and girls of the second generation of immigrants, \$3.77. Of all the girl employees between the ages of 14 and 18 years, only 12.1 per cent. earned more than \$5.00, and 1.2 per cent. above \$7.50 each week. The average weekly earnings of Polish girls, 14 but under 18 years of age, were \$3.87 and about one-fourth of the entire number investigated had earnings each week above \$5.00."*

#### *Prizes for Suggestions.*

Another feature designed to stimulate the interest of the employees, and one which has met with much success in its application, is the offering of a series of prizes for the best suggestions for improvements in the business, made by the employees.

Here are hundreds of pairs of eyes watching the complicated work of the mill, and if they can be induced to take an interest in observing things many a profitable suggestion will be made which otherwise would never have been elicited.

It frequently happens that when an ordinary worker does have some valuable suggestion to make he puts the matter before his foreman, and the latter may in turn put it up to the manager as being his own idea and so reaps all the credit of it. Hence, the workman is discouraged from using his observation.

There are many directions in which suggestions of great value may be made. The avoidance or minimizing of waste, the arrangement of work so as to get the job done with less labor, improvements in processes, means whereby production could be increased, etc., etc.

To give a concrete instance: In a business in which this system of rewards was in force, the concern used annually an immense number of printed forms of a size and shape that they had used for years.

One of the clerks took the trouble to compare the sizes of the various printed forms used, with the sizes of the sheets from which

the printer cut them, and he was able to show that, by a slight modification of the shape, an additional form could be cut from the same sheet and much waste could be thereby avoided. He received a prize, of course.

These prizes may be as few or as many as desired, and may range from \$10 to, say, \$100.

They are given for such suggestions as are adopted, and anyone may make as many as he pleases, and they should be open to every one except the manager.

To assure that credit be given to the proper party a suggestion box is fixed up, the only key being in the hands of the manager. Suggestions are made on special record slips, in duplicate, one being put in the box and the other retained by the writer as a proof of his authorship.

The general experience, when this method has been applied, has been that the few hundred dollars per year paid in prizes has resulted in economies running into thousands.

*Plan for Eliciting Suggestions.*

I worked out a suitable plan for this purpose, and am presenting herewith the notice which was prepared for the occasion, and which outlines the details of the proposition.

NOTICE.

*Prizes for Suggestions.*

*There will be awarded at the end of the present year \$250.00 in prizes, to be given to those of our employees who will make, during that time, such suggestions to the Company as will lead to economies of time, labor and material; to an increase of production; to improvements in the systems and methods at present in use; and to the increasing of the perfection of the manufactured goods.*

*These prizes are offered as an inducement to our employees to help us with their ideas as to how, in every department, things may be done better, material or labor saved, and output increased and improved. They are open to every employee of the mills, from the lowest to the highest, and wherever any one sees how any improvement can be made, we invite an immediate suggestion to that effect.*

*The person making the suggestion will write it out on the form provided for that purpose beside the suggestion box, and will drop the original into the box, retaining the duplicate himself. In this way the suggestion will come direct from the person making it to the office, so that every person making a suggestion will be sure to get full credit for the same.*

*These suggestions will be carefully recorded and such as seem to have merit will be tried. At the end of the year the Company will decide as to whom the prizes shall be given, and will make public*

announcement of same, with a statement as to what the suggestions were for which the prizes were awarded.

Each person is not limited to one prize, but may receive as many of the prizes as the usefulness of his or her suggestion may warrant.

Prizes will be as follows:

One first prize	of	\$75.00.
One second	" "	60.00.
One third	" "	50.00.
One fourth	" "	25.00.
Two fifth	" "	10.00.
Four sixth	" "	5.00.

Every suggestion, no matter by whom made, will receive careful consideration.

Should the winner of a prize have left the mills before its award it will be forwarded to him, and should he die his family will receive it.

(Signed)

THE ——— SILK MILLS.

#### *Profit Sharing.*

Again, it is a very useful thing to interest the important mill people in the profits of the business in some manner. There are a good many people in every manufacturing organization whose intelligent interest and conscientious efforts have much to do with its ability to earn dividends.

Such people would be the superintendent, and the assistant superintendent, the head designer, the head bookkeeper, the chief engineer, the loom boss or head loom fixer, as well as the other loom fixers, the foremen of the warping, winding, quilling, and others.

If, now, a certain fixed per cent. of the net earnings can annually be set aside as a bonification for these people it has a marked effect upon their attitude toward the business. Its interest is now their interest and the results are soon apparent.

When a mill is making good earnings this sum might properly amount to, say, 25 per cent. of their annual compensation, and being paid semi-annually would be an immense stimulant.

Many other things will suggest themselves to the minds of all who give the subject attention, but it is to be remembered that efforts to benefit others are more often met with suspicion and criticism than with thanks, so we must not look for much appreciation of our pains.

## XXI

### THE RELATIONS BETWEEN MILLS AND THEIR COMMISSION HOUSES

The commission-house system, as it exists in this country in its various forms, is the outgrowth of peculiar conditions, and, like all other institutions, its methods and practice change somewhat from time to time.

In this article it is my intention to discuss, for the benefit of manufacturers, certain features of the relationship existing between the mills and these selling houses.

#### *High Class of Men Engaged in the Business.*

The gentlemen engaged in the dry-goods commission business stand second to none in point of integrity and ability, and in pointing out customs that are currently accepted as proper practices I do not desire to be understood as criticising the personal fairness of these gentlemen, or their desire to do right—as they understand it.

#### *Functions of a Commission House.*

A commission house performs for its mills the functions of banker, adviser as to styles and fabrics, selling agent, guarantor of credits, etc.

The employment of a commission house is due to the lack of sufficient capital on the part of a mill to carry its own credits, and to the inability of many mills to properly handle their own goods.

The capital that a mill will require to finance its own accounts will largely depend on the terms current in the trade. Silks and dress goods are sold on about 70 days' time, cottons on 2 to 4 months, men's wear and cloakings on about six months, and overcoatings even longer, as much as 10 to 13 months having been given at times.



To these lengths of time must be added the period that they are carried in stock, after manufacture, till their delivery date, and during all this time the mill would be out of pocket the full cost of such production, except for such bills as were discounted.

*Relation Between Capital and Turnover.*

The capital required to run a textile mill is very great, and most mills will not turn their capital more than one-and-a-half to one-and-two-third times each year, and if they turn it twice they are doing exceptionally well. Thus, a mill employing a capital of \$600,000—owned, borrowed, or owed for materials, etc.—should not, to be safe, have an out-turn of more than \$900,000 to \$1,200,000 net, a year. If, in addition, it carried all its own credits to maturity, the capital required would be greater, and, if it discounted its raw material bills, greater still.

By financing through a commission house, the unduly enlarged facilities given in the way of advances and cashing of sales, enables overtrading to be done to such an extent as to constantly keep mills, accepting the full limit of these facilities, in a dangerously spread-out condition, and, in this event, they are ever at the mercy of their factors.

If business had to be done within the limitations of their own capital, they would not be able to grant extended credit to their customers, and terms would be on a saner basis.

As it is now, the long credit that is given by the mill, or its factors, to the clothing manufacturer, for instance, is passed on by him to the retailer, and thus the latter is doing business on the manufacturer's capital without cost to himself.

*The Old Basis of Note Settlement.*

Prior to the Civil War, note settlement for purchases was the general rule, and if this were the case to-day financing a mill would be much easier, and a man would then have some paper to take to his bank for discount, while, as it is, he has only his ledger accounts to show.

If the banking system were differently organized here, manufacturers could, no doubt, get the proper assistance in handling their accounts from regular bankers. As it is, the only mills which can get from banks what they need are those who are so rich that they could own a bank or two themselves if they wished.

*Facilities for Discount Afforded by English and Canadian Banks.*

When an English or Canadian bank accepts a customer's account, it usually agrees to discount, on presentation, all commercial paper received by the customer, without question. The argument is that the customer would not take a note unless he felt sure it was good, and as he has to stand back of it himself, the chance of loss to the bank is negligible. This is in addition to giving the customer very

liberal lines of discount on his own paper. Therefore, where notes are accepted by banks, as checks would be, people both take and give them freely, as the notes coming in will take care of those maturing, and thus business, in effect, is very nearly on a cash basis, because there the banker fulfils his proper function as an intermediary in the exchange of commodities. A friend of mine, who has large lumber mill interests in Ottawa, Canada, and in Albany, N. Y., told me that he was able to do four times the business in Canada that he could do in New York on the same capital, owing to the banking arrangements there.

In recent years some banks here, and other financial institutions, have supplied facilities to manufacturers for financing their own affairs by advancing certain amounts on their open accounts, and making collections of the bills when due; but not very many mills have been able to avail themselves of these facilities, and there are some drawbacks to this method.

*Why the Commission House has Come into Being.*

As the banks, therefore, fail to afford to manufacturers the support required, the commission house has come into being, and were it not that it provides banking facilities it would not exist. In addition to cashing the sales made, one of its great functions is that of a money lender in making advances on manufactured goods sent to it for sale.

*Serious Drawbacks to the System.*

While called into being to perform these necessary services for the mills, services, be it remarked, of great value and which should be properly paid for, it is much to be deplored that, in certain directions, its development has been such that it leads to practices of a kind distinctly injurious to the trade.

It aids small and weak people to embark in manufacturing on a scale utterly incommensurate with their capital; it conduces to the general acceptance of cancellations, claims, and return of goods, that would not be acquiesced in by mills independently situated; to the imposing of charges and losses on the mills which should not equitably be placed on them, but which they are powerless to resist; to the temptation offered to mills to make goods for advances, with a subsequent slaughtering of them at heavy loss; to the conflict of the interests of various accounts when handled under one roof; and in many other ways.

*The General Unprofitableness of Textile Manufacturing.*

In witness of this it may be pointed out that in no industry is there more ability or experience required than in the management of textile mill interests; or more technical skill on the part of the workers; or more improved machinery; or greater specializing and organization at the producing end; or a more complex system of distribu-

tion; or a greater amount of capital employed. Yet what do we see year by year? Why, in the last twenty-five years the failures in the textile manufacturing trades have been appalling, both in number and size; and how many mills make real money, that is, money that can be withdrawn from the business?

Who are the gentlemen who can buy expensive yachts, and purchase New York city property, improved or unimproved; who buy large interests in banks, railways, mines, or what not? Are the names of silk or woolen manufacturers conspicuous among them? To ask the question answers it. Manufacturers, as a class, are not fools, and there is something wrong with underlying causes when a great industry has to be conducted without adequate profit.

*The Good Work of Some Commission Houses.*

It is quite true that some commission houses, owing to the excellent judgment and ability of their partners and department men, have done admirably for their mills—far better than many of the mills could have done for themselves. They have kept them sold up most of the time on profitable goods, have advised them well, assisted them in the purchase of raw materials and what not; and have generally taken care of them.

On the other hand, I will cite two instances that occurred a number of years ago.

*Two Interesting Incidents.*

A gentleman of my acquaintance went into a large commission house, which, among other goods, carried a line of fancy cloakings, and he was waiting to see one of the partners who was engaged in laying out work with the owner of the cloaking mill. He was so near that everything they said could be heard, and, after the partner had mapped out orders for 800 pieces of extreme styles, and the cloaking manufacturer had gone, my friend, who was familiar with the trade, asked him why on earth he was allowing those goods to be made, remarking that there would probably be a smart loss on every yard. The reply was that everything that came in there earned interest and commissions for the house, no matter what price it brought, and if one mill failed they knew where there were plenty of others.

It is interesting to recall that when this mill did fail, not long after, with a huge stock of unsold goods, the price that they realized was so extremely low that the commission men suffered a tremendous loss on the advances they had made, though they thought they were amply secured.

The other was the case of a woolen commission house, which, being in a tight corner for money to meet some notes, took a large line of quite salable goods and sold them for cash, at about 30 per cent. less than their value, so as to raise funds. They then wrote the mill that as these goods had been advanced on, and the season was getting late,

they had thought it best for all parties to accept an offer made them, etc., etc. The mill did not, of course, know the facts and had to swallow it. These were probably very unusual cases, but they were the outcome of the system, and they occurred absolutely as stated.

*Necessity of Comprehensive Written Agreements.*

Many mills send their goods to commission houses for sale without a proper written agreement covering all points, and many questions crop up on which, in default of express agreement, "the custom of the trade" will be binding, and this custom is generally favorable to the selling agent.

Furthermore, the seller is the *agent of the mill*, and, within certain limits, his acts bind the mill unless they contravene the written terms of the agreement.

The practice of the domestic commission houses, whose businesses are centred in the Worth Street district, and the so-called foreign importing and commission houses which are located in the Fourth Avenue section, differs materially. The forms of the contracts of different commission houses differ, and the arrangements that they make with their various mills differ also. It is a case of get all you can.

Large mills, whose business is of great value, and consequently sought after, are in a position to debate with the commission house the terms that they will agree to; but the smaller men have to sign whatever sort of contract is given them, or go elsewhere to meet the same conditions, and they suffer in many ways in consequence.

The view of selling agents seems to be that no loss of any sort should fall on them, except bad debts that they have guaranteed against, and they will say that if they should be required to stand certain losses to which I will refer later (caused largely by their own action or inaction), that their commission should be higher. This by no means follows. They should protect not only themselves, but their manufacturers, against avoidable losses.

*How Mushroom Concerns are Encouraged to Start.*

Selling agents are generally seeking new business, and their department men are always eagerly searching for new accounts that they can attach to themselves. They, therefore, are led to encourage those who ought never to start in business, to start.

Most mill employees think (as do most salesmen in the market, for that matter) that as long as wheels are turning in a mill lots of money is being made, and many of them are looking for a chance to start for themselves. A boss weaver and a warper foreman may each have saved some money, and between them may have, say, \$5,000. They put their heads together and conclude to see what they can do. One of them knows some salesman, and they ask him what are the prospects at the selling end. He jumps at the chance of securing an

account, and tells them that prospects are splendid; that he can put them on most profitable goods right off, and sell every yard they can make. Perhaps he introduces them to one of the heads of his house, and he, in turn, gives them a "hot-air" talk, deals in generalities, tells them that his firm will be glad to handle the account, will give them every facility for sale, and will make liberal advances on their goods, and so sends them away with great hopes. They then arrange to rent a loft with power, buy some second-hand preparatory machinery at a low price, and order about fifty looms. The loom builder will furnish them at, say 10 per cent. cash and 10 per cent. a month till paid for, title not to pass till last payment is made. They get credit for a few bales of silk from one of the houses which cater to such trade, and in a short time start up.

Here, then, is a mill of fifty looms started on a capital of \$5,000, which is just enough to properly run 5 looms, or, even through a commission house (if on a safe basis), 10 looms at the most. The output of such a mill will be about \$100,000 a year, and the concern is consequently tied up, neck and heels, with the selling agent, and is absolutely dependent on the weekly advances to take care of necessary payments. They cannot stop, as stoppage would mean liquidation, and liquidation would mean failure. They are therefore often forced to consent to sales at prices and terms which, if they were untrammelled, they would not accept, and the damage that is caused to the market prices of all goods, with which they and their numerous fellows compete, is incalculable.

As a matter of fact, they generally find, after they are started, that the best they can do is to get a new dollar for an old one, and so they struggle along, most of them failing after a run of but a very few years, others simply existing, while of course, here and there, one succeeds.

*Where the Interests of the Mill and its Factors are at Variance.*

Some commission houses encourage these mushroom growths, as what they are after is commissions on sales, and they care little if the mills do not make money, though, of course, they do not want them to lose too much and fail, as then they would stop producing goods. Thus, a quick, easy sale of a lot of goods at fifty cents a yard would suit the agents much better than the slow and laborious peddling of them out at sixty cents, as all that they would lose would be their commission on the difference, while the difference in the price obtained would be a matter of life or death to the mill.

*Points of View of Loom Builder and Raw-silk Dealer.*

The loom builder helps, also, because it is for his interest to do so, for it is reasonably certain that the first few payments will be met, and if he has then to take back his looms and repaint and resell them he will make no loss. On the other hand, if the mill grows it will

follow on with installations of the same kind of looms, and will be a steady customer of that builder.

The raw-silk or thrown-silk merchants who give credit argue in a similar manner, and if the mill does well they will continue to supply it with much of the silk needed.

*Representation of Undercapitalized Looms Should be Refused*

If commission houses would resolutely decline to sell for, or make advances to, any mills, large or small, that were not supplied with proper working capital for the loomage operated, very few of them would come into being, and the trade would be saved from many evils due to this cause.

Most of the men, too, who start up in this way, would give their eye teeth if they could get out of it with their money as soon as they find by experience the conditions they have to meet, but it is then too late; they must sink or swim. To prevent them from ever starting up would keep them from wasting their savings, and becoming factors in trade demoralization.

There are some selling agents, of course, who will not handle such accounts, just as there are those who strenuously urge their mills not to make goods for stock, for stock goods, as a rule, make heavy losses for mills. One merchant of my acquaintance has often told me that he would as soon see a live rattlesnake come into his store as a case of goods that was not sold. When trade is dull, however, many agents are not unwilling to see stock goods made, as, whatever the price they go at, they will get their commission, while, if looms stand, there will be just so much less to sell, and the volume of their sales will suffer accordingly.

*Commissions Charged, and What They Include.*

I will now refer to some of the points about which questions may arise, and which should in all cases be clearly understood by both parties, and the agreements arrived at should be put into writing and signed.

The commission charged by a selling agent is intended to provide for such expenses as rent for space occupied, salaries of manager and salesmen, portorage, trucking, packing and delivery expense, clerical force in counting house, general expense, fire insurance, storage, guarantee of credits, and profit to the house.

For the above services, and according to the character of the goods, varying commissions are charged, ranging from 4 per cent., or even lower, for cottons, up to 7 per cent. for woolens, dress goods, silks, etc., and some unfortunates are charged as much as 7½ per cent., or maybe higher. Seven per cent. on the net returns of the goods is generally regarded as full commission. There are instances where houses, having undertaken to sell goods at 7 per cent. commission, have charged it on the gross sales instead of the net, a most inde-

fensible practice, and one which, unless specifically understood by the manufacturer, and so specified in the agreement, should be firmly resisted.

The 7 per cent. commission is supposed to be made up of approximately 1 per cent. for fire insurance and sundry expenses, 3 per cent. for selling expenses proper, and 3 per cent. for guarantee of credits and profit. As a matter of fact, the experience of well-managed credit offices, in the distributing of silks and ribbons, which generally go to a very good class of trade, is that on the average the annual loss from this source will not be more than  $\frac{1}{2}$  per cent., certainly 1 per cent. would cover it most liberally. The remainder of this 3 per cent. may therefore be set down as the main part of the agent's profit.

Of course, large houses get their business handled at a better rate than smaller ones, and this is only reasonable.

#### *Various Methods of Handling Accounts.*

The account may be managed in various ways.

Thus, the goods may be thrown into a general department and sold in common with other similar goods by the one manager and staff of salesmen, employed directly by the commission house.

Or, an individual, or a firm, may conduct a special department under the roof of a commission house, and may have the selling of the goods of one or more mills, the commission merchant doing only the fiscal part of the business, that is, the passing on and guaranteeing the credits, making advances, cashing sales, and making collections. When the business is done in this way, the commission house makes such allowance from the gross commission charged as would seem reasonable, as an offset against the expenses of this sub-department.

Or, if the mill is of good size, a special department may be created for it, all of the salaries and expense being met by the house.

Or the mill may employ its own manager and salesmen, getting a suitable reduction in commission in consequence.

Or the mill may hire a store outside, and maintain an entire selling and office force, and simply use the commission house as a banker, to cash its sales, collect and guarantee its accounts, and make advances on merchandise when called on to do so.

The commission paid for these purely fiscal services is relatively small.

In fact, the commission house will make any deal by which it will get a satisfactory profit with little or no risk, and its money advances are always protected by a lien on the goods.

In its contract, the commission house may limit the total amount of advances it may be called on to make, regardless of the quantity of goods that may be sent in, and it may well do so, as the furnishing

on demand of the large sums required to keep mills running is no easy task.

*Profit on the Interest Account.*

The earnings on the interest account are generally a source of large profit to the commission houses, as they usually borrow their money at 4 or 5 per cent. and lend it to the mills at 6 per cent.

Sometimes, interest rates will remain high for quite a period, and at such times the profit from this source is curtailed, and the commission houses then limit all they can the demands that may be made upon them by their mills for money.

*Commission the Same Under Varying Conditions.*

Some goods, from their nature, are more troublesome and expensive to sell than others, but this does not always affect the commission. In the same way, the risk in guaranteeing such goods as go to the cutting-up trade is greater than for such goods as go to dry-goods jobbers and retailers, but yet this does not alter the commission either.

*Losses Entailed on Manufacturers by the Credit Office.*

A direction in which mills suffer seriously, and unjustly, and which is a direct result of the commission-house system, is as follows: A merchant, in good standing, places an order with the silk department of a commission house, for ten thousand yards of novelty silks, at a dollar a yard. The goods are to be made to his own colorings, and the styles are extreme ones. Before the order is transmitted to the mill, it is sent to the credit office to pass the approval of the credit man. The buyer has been given a line of credit of, say, \$50,000, and, as he only owes, say, \$15,000 at the time, the sales memorandum is marked "O. K." and the order goes to the mill and is put in work.

A couple of months later the goods are ready for delivery at the contract time, but meantime the customer has bought other goods in one or more of the various departments of the house—velvets, woollens, hosiery, or what not—and his line of credit is full up. The commission house notifies him that they have \$10,000 worth of silks ready for delivery to him under his contract, and that, as he is already at the limit of his credit, they would be glad if he would discount an equal amount of his bills so that they can send the silks in. This may not be a convenient thing for the customer to do at the time, or he may have concluded that he made a mistake in ordering the goods, or the color situation may have developed so that he sees the shades he has had them made in may be undesirable, or he may know where he can get equally good goods at a lower price. He therefore says that he cannot discount any bills, as requested, and that if the goods are not delivered forthwith, as per contract, please to consider the order cancelled. The mill knows nothing of all this, and, when weeks or months afterwards they learn that the goods are still on



hand, there is nothing to be done but to swear. Then, after a considerable loss of time and interest, the goods are finally sold at somewhere from 50 to 70 cents a yard, and the mill is mulcted in a sum of some thousands of dollars.

This is an every-day occurrence, and is thoroughly inequitable and unjustifiable. What has the mill to do with purchases that the customer makes in other departments (purchases largely made after the taking of his order), or with the line of credit given by the commission house? If the credit office feels the necessity of making a hard-and-fast limit of credit then the value of all orders in work at mills for each customer should be memorandumed against him, and no other order should be taken, or goods sold from stock, which would put the account into such shape as stated above. If, on the other hand, this course should present difficulties, and it does, the commission house should be in duty bound to deliver all such orders. As it is, the salesmen of the house sell the goods and the credit office approves the sale. What more can the mill know? Then the goods are made up to sample and delivered on time, and the result is that the agent, to whom is committed the care of the mill's interests, pursues, for his own selfish ends and according to his own narrow views, a course that may impose upon his client very severe losses. Such a state of affairs imperatively demands a change of policy.

*Mills Should Have a Chance to Protect Themselves.*

Meantime, while conditions remain as they are, mills should arrange that in such cases they be given the right to order the delivery of the goods, as per contract, and that they can themselves assume the credit risk, with a proper reduction in the percentage of commission charged on such sales. No manufacturer would hesitate for an instant (except in the case of some particularly discredited customer) in deciding to take any reasonable credit risk, rather than accept the certainty of a heavy loss in the reselling of a lot of goods, made on some one else's judgment, and well along in the season. Every sales agent should see to it that this option is presented to his client, and that, too, before the day for the delivery of the goods has gone past.

Some selling agents have tried to guard against this situation by requiring customers, when a line of credit is granted, to enter into an agreement to discount existing bills when their line is full and other orders of theirs are coming forward for delivery, and, in the event of not being able to do so, that any orders so made for them will not be subject to cancellation if held till such time as they have sufficiently reduced their account. This is all right in theory, but, judging from the disinclination of commission houses to make a real fight against the general cancellation of orders, when customers feel like it, it is not worth much in practice.

*Adverse Influence of Sales by Other Departments.*

Another way in which this matter of handling credits hurts a mill is that it cuts down the number of its possible customers, for, if the line of credit given to a perfectly good house is filled up by what it has brought in the other departments, that house will have to pass by all other goods presented to it by mills selling through such commission agent, no matter how much it might desire to purchase.

It will be seen, of course, that such conditions are most apt to occur in very large houses, particularly in those which have many departments and many different classes of goods, as scattering purchases of a variety of merchandise would soon fill up a buyer's line of credit. In placing his business, the manufacturer may well consider if it would not be better, so long as methods continue as they are, to give his account to some agent of modest size, particularly to one who does not conduct an establishment akin to a modern department store.

*Dodging the Guarantee Which Has Been Paid For.*

Similarly, when goods are ready for delivery and anything has occurred since the checking of the order to impair the confidence of the credit office in the stability of the buyer—anything, in fact, from slowness of payment to actual bankruptcy—the selling agent refuses to deliver the goods except for cash, which, of course, is rarely forthcoming, and again the goods lie in stock, and again a loss is thrown on the manufacturer in their final sale.

This is a gross wrong. The manufacturer may have no knowledge of whom the goods are made for. He did not sell them, he did not check the account, his skirts are absolutely clear. In fact, to protect himself against bad credits, he is annually paying his agent a substantial sum, in the commission charged, as a credit guarantee.

It is to be presumed, in view of the large annual amount of money that this guarantee charge amounts to, that the selling agent is assuming some real risk, for if each customer were an Arnold, Constable & Co., or a Marshall Field & Co., no mill would agree to pay a cent for guaranteeing accounts, but would carry the risk themselves.

*The Equitable Course.*

As the sales agent declines to deliver the goods, and so invites the loss on their resale, for the sake of protecting his own pocket in the event of the possible difficulties of the customer, and as he has, before the goods were made, approved the credit of that customer and ordered the mill to make them for him, and as in the commission that would be charged the mill, on that and other sales, is a sum of money to guarantee them against loss on just such risks, the equities of the case would demand that, where the agent felt that the risk of delivery would be too great, he should take the goods over to his own account and shoulder himself the loss that would follow.

If this equitable and honest course was the "custom of the trade," as it should be, it does not follow that commission houses would necessarily be losers. It would, however, compel their credit men to be much more careful in checking the orders before their execution, and the result would be that, when made, there would very seldom be a question as to the safety of delivering them.

Selling agents to-day regard the present practice as quite fair and right. So did railway managers (till recently) when they gave rebates to favored interests. Gentlemen in the insurance business, too, used to have no doubt as to the equity of their peculiar methods.

The truth is that no method is fair and no method is equitable where the interest of one of the parties is regularly sacrificed to suit the interest or convenience of the other. To-day, the manufacturer's interest is regularly sacrificed in such matters, and the constant and crushing losses so inflicted have been the cause of many a failure.

#### *Revaluing Stock Goods.*

Commission agents are often criticized severely for their arbitrary way of "revaluing" stock.

A manufacturer may have his stock drawn against, and, as he sends in his weekly shipments, he draws against them also, for the arranged percentage, to take care of his maturing obligations, pay-rolls, etc.

Then, some day, when he asks for a cheque, he is told that there is nothing coming to him; that, on revaluing his stock, they find that the late shipments are no more than enough to give them their proper margin of security, and that he can have no money till he sends in more goods.

#### *Reasons for the Revaluing.*

This revaluing may have been done on general principles if the market was weak or sluggish, or some few pieces of a large line may have been sold at a lower price than invoiced, for special reasons, and they may have jumped at the conclusion that the value of the entire line has gone off, but they will probably say nothing about this to the manufacturer till they have more of his goods in their hands.

#### *A Pawnbroking Parallel.*

Their action is in line with that of an ordinary pawnbroker, who, if he had lent some one \$50 on his watch, and had afterwards concluded that he had over-advanced on it, would then, in the event of the person coming to him again to get a loan on the chain, seize that, and calmly inform him that he would hold it as additional collateral.

The comparison is an absolutely just one, and in both cases the action is indefensible.

*Forcing Manufacturers Into Bankruptcy.*

With his supplies cut off at a moment's notice like this, what is the manufacturer to do? He may manage to turn himself somehow, but if the obligations to be met are notes, or pay-rolls, of a heavy character, he may be unable to meet them, his credit will promptly be called in question, and he will find himself in financial difficulties at once.

Many a concern has been forced into bankruptcy in this ruthless fashion, which otherwise would have remained solvent.

*How the Sale of Goods is Hindered.*

There are times, also, when manufacturers' sales agents feel obliged to decline fairly good offers on stock merchandise, which otherwise they would have gladly—and properly—accepted, fearing that it would immediately invite a revaluing of their stocks by their factors. They are thus impelled to hang onto goods which, if sold in season, could have been disposed of at moderate concessions, and which, having to be carried along, are slaughtered later on.

*The Fiction of Time for Collection of Accounts.*

Another practice, common among the commission houses which handle silks, but which would be regarded by most Worth Street houses as quite unjustifiable, is the charging of a certain number of days' time against the mills on the plea that it takes so and so many days to collect accounts. This is generally assumed as 10 days. As a matter of fact, it will not, on a careful average, amount to more than one-half or one-third of that. Therefore, when the average date of a months' sales is computed, some houses add 10 days to that date, and others save their clerks the trouble of computing it by simply crediting all sales as of the end of the month, which in practice amounts to nearer 20 days than 10.

This is a custom that is absolutely without right. The credits and collections are something with which the mill has no concern. Goods sold in New York are payable in New York, on the date due and in New York funds, and it is the business of the selling agent alone to make the collections and to see that they are paid when due. If he fails to do so, it is not the mill's affair. It would be as logical, if customers were dragging 30 or 60 days, to charge such time to the mill.

It is quite true that manufacturers often sign contracts permitting of this deduction, but they do so because they are told that it is the "custom of the trade." As a matter of fact, it is a self-made custom of the trade on the part of houses handling certain classes of goods, while in the case of the majority of strictly dry-goods commission houses such a practice would not be tolerated. Therefore, as usual, the commission house in its contract drives the hardest bargain it can, and grabs 6, 10, 12, or 15 days, or end of month dating, as the case

may be. The net result is that they take about half a month's interest off the mills, which, considering that they are paid a full commission, they are in no equitable way entitled to, and this is equal to  $\frac{1}{4}\%$  on the sales which, on each \$1,000,000 worth of business, amounts to \$2,500, transferred in this dextrous manner from the manufacturer's pocket to that of his friend the selling agent.

This custom of crediting sales as of the last of the month has another side. A mill sends in a lot of goods at the end of the month for delivery. They find they are not charged out till the first or second of the following month, which may or may not entail the risk of a cancellation for late delivery. If they say anything about it they are perhaps told that everybody had been dumping in goods for delivery on the last day or two of the month, and that it was physically impossible for the house to make delivery of them all; some had to lie over for a day or two. This may all be so, but when the agent charges them out at the beginning of the next month, the mills may only get credit for them perhaps some 30 days after, which means a charge against them of  $\frac{1}{2}\%$ , which is quite unjustifiable.

#### *Transfer Commissions.*

Another question arises where an account is to be transferred from one agent to another. A preliminary to transfer is, of course, that all advances, or loans on the stock, must be repaid. Some commission is usually exacted on the transfer and it will generally run from one per cent. to half of the full commission, as the case may be.

The theory of charging for transfer is that the selling agent, in arranging to handle an account, has had to rent floor space, hire salesmen and clerks, insure the goods, and commit himself to many other expenses, and that, therefore, when an account is moved, even when goods are unsold, as money has been laid out to prepare for their sale, it is only proper that the commission merchant receive some return for his pains.

Leaving aside the question of whether goods have been advanced or not, which, as advances must be repaid anyway, has nothing to do with the case, the goods to be transferred separate themselves into certain classes. Thus, there are goods for sale at the agent's; goods at the agent's, sold but being held till time for delivery; goods at the mill made on order, but not yet sent forward; goods at the mill made for stock; goods in work at the mill sold and unsold; and orders for goods not yet started.

A claim may be made for full commission on all sold goods, whether at store or mill, and on all unfilled orders. This is not tenable if the goods are to be delivered by the new agent, as the expenses of the delivery of the goods and the collection of the accounts has not been incurred, nor will there be any guarantee risk to take. If the mill forwards to the old agent goods to fill all orders taken by him and he

delivers them and collects the accounts, of course he is entitled to his full commission, and on the unsold goods transferred, which have been in his store, he will probably want half commission.

A mill, however, that has in view the likelihood of changing its agent, may for weeks, or months, prior thereto send to its agent only such goods as are actually sold, holding all unsold goods at the mill. The agent may try to make himself believe that he has a moral claim to a transfer charge on such goods as would have normally been sent forward to him for sale, even though held at the mill, and such claims are sometimes put forward. The selling agent, however, not having been successful in placing the full mill product, is in no worse position in this case than if stock goods had not been made and the looms had been allowed to stand, and, as such goods have never been in the agent's possession, there is no proper ground on which he can maintain such a claim.

When, however, the mill has its own salesroom, rented by itself, pays its selling and office force and all expenses, and does at its own cost everything except the collecting and guaranteeing of accounts, there is then no reason why the selling agent, who has been at no expense whatever on account of the unsold goods, should receive any transfer commission, and on such goods as have been sold but not delivered, and which will be delivered and financed through the new agent, he would have no reason to demand a charge either.

Such charges are demanded, however, equitably or not, and if a colorable showing that it is in any way a "custom of the trade" can be made out, the claim, in default of written agreement to the contrary, could probably be maintained at law.

In signing up with a commission house, it is very necessary to have every such point considered and embodied in the agreement, particularly as, when an account is moved, there is apt to be ill feeling on one or other, or perhaps both sides, and any looseness of understanding will surely invite trouble.

#### *The Acceptance of Claims, Cancellations and Returns.*

A great grievance that mills have is the unwarranted acceptance of cancellations, claims, allowances and returns on the part of their selling houses which, as duly authorized agents, bind their principals, the manufacturers. At the same time, with regard to the customers, the agents are the principals and the mills might have no standing if they desired to enforce their rights by legal process against the customers. Their only recourse, in the case of serious grievance, might lie in a suit against the commission house, a course rarely resorted to, and which would, of course, lead to a severance of relations.

The commission house system is primarily responsible for the growth of the colossal evil of cancellations, allowance of excessive claims, and acceptance of the return of goods which the buyer finds

he does not want. To such lengths has this gone, that, in many branches of the dry goods trade, an order is only regarded as an expression of preference on the part of the buyer.

The reason lies plainly on the surface. It is the selling agent who has the say about the acceptance of these cancellations, etc., and the mill that bears the attendant loss. The agent, no doubt, fights hard against the practice and tries to do the best he can for his mills, or, to be more exact, he says he does, and perhaps thinks so, but is the fight he makes anything like what it would be if he were holding the bag himself and the losses were falling on him? You may be sure it is not.

The fact is that his customer has great value to him as a buyer of many other lines of his goods, and if a large buyer, who is taking \$100,000 worth of goods a year in dress goods, hosiery, velvets, linings, etc., wants to cancel \$10,000 worth of silks (to save himself from a loss that might be caused him from poor judgment in ordering), will the commission merchant withstand him as if the silk were his only purchase, and as if the house had to take the loss? Oh, no. He will write him civil letters and try to persuade him to take the goods, but he will not risk, by a fight, the cutting off of his purchases in the other departments of the house. So also with returns and claims.

The cancellation evil will never be stopped as long as those who have the say about the allowance of same do not have their "pocket-book nerve" severely jarred, though something might possibly be effected by a concert of action among all the commission houses, that is, a real arrangement that would compel every buyer to take his purchase, even if suits had to be brought against the whole trade.

Such an agreement, however, is nowhere in evidence at present.

*Acquiescence in Cancellations by Commission Houses.*

A great hardship to the trade in this matter is due to the fact that, as the bulk of the silk production is sold through agents, it makes it excessively hard for those mills which sell their own goods to enforce their contracts when the big commission houses allow their customers to break theirs.

Thus, when a manufacturer, who finances his own business, takes the stand that he will not accept cancellations, which his customers are trying to make on a falling market, some of them may tell him that they would take delivery of their goods without a murmur were it not that their competitors, in their home towns, had been allowed to cancel their orders by the different commission houses representing the mills from whom they had bought them.

They may further point out that, as under such circumstances the goods could nearly always be re-bought later for less money, if they had to take deliveries they would be at a serious disadvantage compared with the others, and that losses would thus fall upon them because they had given the preference in their purchases to the inde-

pendent seller, rather than to the commission house mills, and that in future it would be safer for them to buy where they could cancel if they wished to.

This argument is not without reason, and so it makes it very hard for the individual manufacturer to stem the current of such practices.

*Manufacturers Held by Contracts; Customers Are Not.*

In other businesses the observance of contracts is obligatory, and it is to be observed that the silk manufacturer is held rigidly up to his by the raw-silk houses with whom he deals.

In the marketing of textiles, if the manufacturers were to work in concert in this matter, it would not take long to suppress the evil if they really grappled with it in earnest.

*The Marketing of Goods at Auction.*

Questions also arise when it is necessary to dispose of goods at auction. There are small lots from time to time that it is convenient to sell in this fashion, damaged goods or what not, and, though full commissions are charged on them, there is little cause for complaint, as the difference in commission will not amount to much.

It is different when a large sale is to be made, and if this contingency is not mentioned in the contract, it is wise for the manufacturer to have a clear understanding with his commission house before he orders the sale. Special arrangements are generally made, but, if not, the manufacturer may find that he is being charged his full commission, and the auctioneer's fee for handling the sale and crying the goods in addition. Of course, if the auctioneer delivers the goods and assumes the credit risk, his charge will be that much higher, with some reduction, to compensate, in the commission house charge.

In view of the fact that the selling agent has been unsuccessful in keeping the mill closely sold up, and preventing the accumulation of undesirable or surplus goods, and so has been instrumental in necessitating a sale under the hammer with its attendant loss, a charge of anything like full commission would not often be warranted. Half commission in addition to the auctioneer's charges is considered fair by many houses.

*Allowance of Special Discounts.*

Some selling agents have peculiar practices all their own. One large house, for instance, though possibly there are others, allows an extra one per cent. to a certain large out of town retail concern, and every one under that roof, selling to this concern, is mulcted that one per cent. This may serve to bind the business of that retailer to this house more closely, but it is at the expense of the mills, and much of it on goods that will ill bear any deduction. Peculiar is a mild name to apply to this office arrangement.



*Conflicting Interests in a Department.*

There are other directions in which the interest of a mill may be ill served when its goods are sold through a commission house, directions where no blame can properly attach to the agent, but which are inherent drawbacks to the system, yet nevertheless hurtful to the manufacturer.

For instance "A" and "B" are two manufacturers whose goods are handled in the general silk department of a commission house, the manager of which department attends to the work of laying out goods for the mills.

Mr. A—, in talking over styles for the coming season with the department manager, suggests, for instance, the idea of getting up some lines of Bengalines, and perhaps has some samples and information from abroad which tend to show that taste may be leaning in that direction. If the idea is approved, colors, weaves, etc., are discussed, and Mr. A— goes back to his mill to prepare his samples.

Next week Mr. B— is in the city, and he, too, is arranging for his coming campaign. He has similar views as to the likelihood of Bengalines being wanted, and as he has box looms and wants to use them, he indicates his desire to sample in that direction. The manager is in an awkward position. If he lets Mr. B— direct his efforts in this channel, Mr. A— may accuse him later of having given away his ideas and plans to a rival manufacturer. He therefore blows cold on the idea, and tells Mr. B— that perhaps it would be better to sample on plaids and try to find work for his box looms in that field, and so he is sidetracked from sampling in a direction that was really the most promising. Of course, the manager does not actually know at that stage just what fabric will sell, but just the same, Mr. B— might as well have had a line of Bengalines in his collection on the chance of their being good, and so the desire to avoid a conflict of interests in the department leads to the preventing different mills, from time to time, from turning out fabrics that they could make well and profitably.

It not infrequently happens that the manager of a department will be more friendly to one of his consignors than to the others. It may be the largest of his accounts, he may have some personal interest in its sales or profits, or he may like the owners better.

In such a case, as orders come in, they may be turned over to the favored mill whenever possible, and it may get the cream of everything, and the sale of its goods may be pushed in preference to the others.

This is not equitable but it is hard to prove it.

*Commission House Orders.*

Then, again, there are the "Commission House orders."

The selling of the goods of a mill has been undertaken by the

agent, samples made, and salesmen sent out. The manufacturer has declared positively that he does not intend to make any stock goods, and does not want to weave a yard except upon positive order.

Soon, he receives an order from the agent covering some hundreds of pieces, representing various styles and colorings, and he goes joyfully to work producing them. As they are sent in he draws against them for his needs—the advances, of course, never equaling the cost of the goods—and then looks to see them charged up in the sketches of sales as they come in.

A few pieces appear on the sketches, but, when he visits the market, or writes to enquire, he is staggered by finding them nearly all in stock and still unsold. His "order" was no order, except from the agent, and, as the agent is the representative of the manufacturer, the latter has no recourse against any one, and has to face the prospect of a heavy loss on the stock goods, ordered in defiance of his expressed views.

#### *A Continental Method of Financing Mills.*

In some of the Continental textile centres they have a method of financing mills that might possibly be imitated in some of our manufacturing centres here.

A warehousing company, of moderate capital, is formed, each manufacturer who goes into it subscribing to the shares according to the number of his looms, and the management is assumed by a committee of the shareholders.

When goods are made for stock, or when order goods have to be held for a time before delivery, they can be deposited at the warehouse and drawn against, just as they are now drawn against when sent to a commission house, and the advances are very liberal if the goods are all right, for the committee, being thorough judges of goods and of the market, advance as much as they reasonably and safely can.

The warehouse company issues its negotiable certificates against the goods, and, with them as collateral, borrows from the banks the amounts that have been advanced. When the goods are withdrawn, the advances are repaid or other collateral substituted.

If the goods are for shipment to customers, they may be billed up and the accounts made payable to the warehouse company, which collects them, repays itself, and returns the remainder to the manufacturer, just as a commission merchant might do.

By this means, and with a capital only sufficiently large to enable the banks to feel safe in advancing on the warehouse receipts, the warehousing company becomes the medium through which the manufacturers borrow, on the only collateral they have got—their goods—the sums necessary to finance them.

Such institutions would seem to be very suitable for American conditions.

*Our Faulty Banking System Necessitates the Commission House.*

Be this as it may, so long as the banks of this country are unable or unwilling to afford proper banking assistance to mills, or until the mills organize to finance and protect themselves, just so long will the commission house system thrive with its attendant drawbacks.

*Raw-silk Houses Might Finance Mills.*

Bearing in mind this fact that the mills require greater financial assistance than the banks are able or willing to afford, it would seem as if it should be those who are most vitally interested in the well-being of the manufacturers—i. e., the raw-silk merchants—who should do this financing, rather than having it handled by commission merchants, whose interests are far from being identical with those of the mills.

*Goods Hypothecated Made from Unpaid-for Silk.*

If goods are to be pledged, it must not be forgotten that the major factor in the value of those fabrics is the raw-silk, bought on extended credit, nor must it be overlooked that, if disaster occurs, these same raw-silk men who are heavy creditors have no protection whatever.

*Other Creditors are Protected.*

The commission agent, the throwster, the dyer, and the finisher, seize, under their liens (liens often carried to such an extent that, I believe, would neither be sustained at law or at equity), all of the visible convertible assets of the bankrupt, and leave the raw-silk man and the yarn dealer out in the cold.

*Funds Required for Advances to Mills.*

It may be objected that raw-silk merchants are not in a position to undertake such serious financial responsibilities as the financing of mills would entail.

In answer to this it may be said that, while very few of them could carry such a load on their individual shoulders, though some could, the thing could be done by a group acting in concert. Again, the capital required need not, after all, be so enormous, as they would then have exactly the same collateral back of their loans that the commission houses now have, and on account of the paper that they offer for discount being thus protected, commission houses can get all the money they need from the banks.

Raw-silk houses, undertaking the same functions, could command the same funds.

*Effect Upon Silk Sales to the General Trade.*

Should it be objected that a raw-silk house, financing mills, would be shut out from selling to the rest of the trade, the answer is that it is a benefit to the rest of the trade to help to keep a manufacturer

from having to demoralize the market by slaughtering his goods under commission house pressure. He would no more be competing with the manufacturers than the factor now is who may have a dozen competing mills selling goods under his roof. This would soon be recognized.

*Manufacturers Could Procure Silk at Best Prices.*

If the raw-silk house became the factor, supplying to the mill all of its silk, and making as great, or, if necessary, greater advances on its goods, how would the manufacturer benefit, and might he not have to accept poorer silk, or at higher prices than otherwise?

First, the arrangement would have to provide that, if more advantageous raw-silk purchases could be made elsewhere, he would be free to buy, and in that event his raw-silk factor would assume the credit and pay the bill. The market would not only thus be open to him, but the high credit of his factor would insure him the most advantageous prices.

*The Restriction of Speculation.*

Next, the factor could effectually restrict any speculative tendencies of the mill owner, a tendency that has brought not a few concerns to disaster, and, anyway, gambling in silk is no part of proper manufacturing.

*No Specified Date for Maturity of Silk Bills.*

Again, as the raw-silk factor must look to the sale of the goods into which his silk has entered to recoup him for the value of the material, he is equally interested with the weaver in not forcing any merchandise to a slaughter sale but in holding goods till the proper occasion for selling them arrives, be that soon or late, and therefore there would be no due date for the raw-silk bills. That is, payment for the silk entering into the goods would be looked for when the goods were sold, be that in two months or in nine months, and not before.

*Assets Which the Mill Owner Should Have.*

The manufacturer would have to own his plant, and to have in addition a capital sufficient to take care of his pay rolls, and his throwing, dyeing, and finishing charges, together with his supply bills and other current mill expenses. About \$200 a loom would probably cover this. The factor would look after the raw-silk bills and the bills for other yarns, and would also make advances on goods.

*Great Benefits of Such a System.*

If such a method of financing could be introduced on a large scale, to take the place of the present commission house system with its numerous disadvantages, the beneficial effect upon the trade would be far-reaching.

As explained elsewhere in this article, it is the maturing of silk

bills that compels the increased manufacture of stock goods, with all its attendant evils, at the very times when production should be restricted. Financing through raw-silk channels would alter all this, as there would then be no set time to pay such bills, and manufacturers could therefore curtail their production when the market needed fewer goods, and still remain solvent.

*Joint Interests of Manufacturer and Raw-Silk Dealer.*

The interests of the raw-silk dealer and his customer are, or should be, the same, and such a method of financing as is here suggested would protect the one, strengthen the other, and save the general market from the chronic over-production of stock goods, made for advances, which keeps it constantly in such a demoralized condition that the whole industry suffers.

*Manufacturers Should Study Their Contracts.*

While most manufacturers must, for the present, continue to use commission house facilities, they should take care to see that all debatable questions are clearly set forth in their contracts. If they are required to accede to extortions they should resist, and if the selling agents will not abate their pretensions they should seek out some house which will accord them fair treatment.

If they will read over their existing contracts with care, they may be surprised to find how completely they are at the mercy of their commission houses in many of the directions here spoken of.

*Nominal Commission is Less Than the Actual Charges.*

In calculating what their goods will yield at the market prices fixed, they must by no means conclude that the customary 7 per cent. is all that they have to allow, but they must consider with minute care every charge, exaction, or loss that the system entails on them, and, leaving aside the special and heavy sources of loss previously referred to, most of them will find that their nominal 7 per cent. is an actual 8 per cent.

It is also a not uninteresting fact that mills which had formerly sold their goods through commission agents, and have subsequently arranged to finance their business themselves, rarely show any desire to return to the old system, though sometimes forced to do so by their overtrading.

*Increased Cost of Merchandising.*

During the last few years the cost of selling goods has materially increased.

This has been mainly caused by the policy pursued by the distributors of refraining from placing advance orders of any moment, relying upon the manufacturers to furnish them with goods at whatever time best suited their convenience.

The result is that, instead of the usual volume of sales being made up of a moderate number of large to fair sized orders, it requires a very large number of the present day small orders to sell up the mill.

Consequently, more salesmen may be needed, and very many more trips on the road must be made, to secure the business, and all this adds largely to the expense.

Added to this, the cost of traveling has greatly increased, store rents and other expenses are higher, and there is a heavy interest charge, that falls upon the mills, on the large stock of goods which it is now customary to carry.

*Agents Withdrawing from the Actual Work of Selling.*

To take care of such increased expenses, at the usual commissions charged, would cut seriously into the profits of a commission house which maintained its own selling departments.

It is interesting, therefore, to observe that, coincidentally with this increasing selling cost, the commission houses have been gradually giving up their own sales departments and have been allowing these functions to devolve upon firms or individuals which act as sub-agents between themselves and the mills, thus placing upon other shoulders the burden of the increased cost.

*Limitations of Sales Department Managers.*

These intermediaries are too often simply firms composed of a couple of cheap salesmen of no financial worth whatsoever, who at times may hardly be able to find the money for needed traveling expenses, and who are in no position to engage salesmen of the type required for the effective selling of the product of the mill.

*Functions Retained by the Commission Houses.*

The commission houses, in such cases, still look after the guaranteeing and collection of accounts, the cashing of sales, and their business of money lending, in which they advance money upon the pledge of personal property upon which they hold a lien.

A very large number of mills seem to exist for no other purpose than for furnishing business to the selling agents. They certainly make no money for themselves, though their factors do.

*All Should be Interested in the Mill Profits.*

In conclusion, it may be remarked that no mill is likely to make money unless those who have charge of its direction, its sales, and its credits, have to depend for a substantial portion of their compensation upon a share in the net profits of the mill, instead of upon the volume of its sales and the commissions thereon.

## XXII

### THE RELATIONS BETWEEN MILLS AND THEIR SALESMEN.

For the success of any business, it is most essential that the best understanding should exist between the principals and the salesmen who represent them in the market.

This is far from being the case in the textile manufacturing industry, and many employers, in private conversation, will be heard to speak most disparagingly about salesmen as a class, while the latter will discourse among themselves with much freedom about the particularly poor goods that the mills they represent produce, the absurd prices that they are expected to get for them, and their private belief that the goods of nearly every other competitor are better than what they themselves are obliged to sell.

It is proposed here to consider some of the points that lead to friction in practice between employer and employee, so that a clearer understanding of them may be arrived at.

#### *Requisites of Salesmanship.*

To sell goods well, as to do anything well, is no easy task. It requires hard and constant work, much thought and planning, considerable physical work and fatigue, the cultivation of a wide and friendly acquaintance, and a courage and perseverance that nothing can dishearten. If, added to these qualifications, the salesman has an inborn capacity for persuading people, and a sound training in his art, he will probably make the kind of salesman that we all wish for. How many do?

The writer has had lots of experience, and is under no illusions on the subject. Barring exceptional times, and exceptional lines of

merchandise, selling goods is hard and very often most discouraging work.

It may be presumed that, on the whole, the goods offered by each competing house are, value for value, about on a parity or nearly so, and that in getting the orders it is largely a question of the personality of the salesman rather than of the difference in value of what they have to offer.

*The House Must Back Up the Salesman.*

Those managers who loyally back up their salesmen are likely to get loyal service in return. If a salesman's customers realize that what he says "goes," and that approaching his employers over his head will simply result in their confirming the salesman's quotations and terms (even if they might otherwise have asked higher figures, or might have been willing to sell at lower ones), they will look upon him as headquarters, and can trade with far more confidence than would otherwise be the case.

On the other hand, some managers or partners notoriously cut the ground from under the feet of their salesmen by selling goods at lower prices than their men have been allowed to quote, and so completely nullify their efforts.

They argue that they cannot let their salesmen become aware of the fact that on certain lines of goods they would rather cut the price in special cases than let the business go past, feeling that their men would then be likely to quote the reduced price to everybody, which would usually be the case.

I know one gentleman who, when he was a salesman, used to protest bitterly against this practice, while now, as a member of a firm, he is treating his own salesmen in exactly the same way. The habit is a bad one, but it seems easy to acquire.

*Profit Making the Primary Object.*

In selling goods, the primary object should be to get a good profit, or some profit, on them, and, unless this can be accomplished on the bulk of the goods sold, the mill making them cannot go on producing indefinitely.

*What Training Does the Salesman Get?*

Considering the difficulties of the salesman's work, and the many and special qualifications that should be brought to it, one would imagine that a long and arduous special training would be desirable and necessary. It is necessary, but the salesmen do not get it, and the fruits of their exertions are, therefore, of much less value than what they properly should be.

Let us see how a salesman graduates. He starts in a commission house as office-boy or stock-boy, keeps the sample pieces clean and in proper shape, cuts up samples, helps the salesmen in various ways, is sent to the warehouse to re-pack and re-assort cases, etc., etc. Then,



on very busy days when all the salesmen are occupied, he sells a few goods to some customer who can get no one else to wait on him and is in a hurry. As he grows older he gets more chances to sell in the store, and if he is ambitious he gets permission to take out some samples and drum up small trade in the city that is not being looked after by the regular salesmen. Presuming that he is a bright, smart, and pleasant fellow it will not be very long before he begins to build up quite a respectable trade, and in time he becomes one of the regular city salesmen.

Then, some fine day, there is a vacancy on the road, perhaps in a very good territory, and he is given the chance. His good qualities serve him as well here as in the city, and perhaps in two or three years more, say by the time he is thirty, he is one of the important salesmen for that house.

We will go further and suppose that later on a manager is wanted for the department, one who will lay out work for the mills, coach them on styles and so forth, then, as likely as not, our successful salesman friend will be selected for this most important and difficult post by the commission house which, of course, is interested in sales rather than in profits.

It is to be observed that all of this experience teaches the salesman absolutely nothing about the necessity of making a profit, and he is also likely to be very ignorant about the real values of goods. When samples of inferior goods, at lower prices, are pushed up against him, he is at a loss to know whether they are better or worse than his, on account of this ignorance. He may be able, however, to give a very sound opinion as to how much a particular fabric will sell for, and then again he may not.

*Justifiable Discontent of Employers.*

Is it any wonder that with such a deficiency in the training of most salesmen, and many department managers, that manufacturers should hold the views regarding them that they do? They find that these men, whose salaries they are paying, are special pleaders for their customers; are using their best efforts to get the lowest prices on goods for their trade; and are arguing earnestly to get accepted any offers that have been made to them, no matter how low.

So long as an offer, no matter what, is accepted by the house, the salesman will generally argue that it must have been satisfactory or it would not have been accepted, and, as a logical sequence, that the regular price on the goods must show a fat profit.

While his principal may give him the coldest of plain facts as to the real cost of the goods, this makes little impression on him, in fact he often believes it a lie, and why? Because he sees salesmen of competitors anxiously trying to book business on samples that seem to be as good, or better, and at as low, or lower, prices, and he

simply can't believe what is too often the truth that every one of them is making a loss on every yard so sold.

*Where the Employers Are at Fault.*

What incentive has a salesman to work for a profit? Generally none at all, and it is the failure on the part of employers to recognize this that leads to the waste of their assets and makes them feel at times as if their men were trying to give their goods away. If employers are going to expect that their salespeople will lie awake at nights planning how to plant their goods at a profit they must arrange that these men will either benefit or suffer in pocket, according as they are successful or unsuccessful in this respect. The roots of the trouble lie deep. We consider ourselves an intensely practical people and we are looking for results, and still greater results, all the time. When we hire a man we are impatient if he does not earn much more than his salary from the first start off. His compensation is based on the amount of goods he can sell, or is expected to sell. When his sales increase we will, generally under pressure from the salesman, increase his salary. When business is bad, from entirely outside causes, we may cut down his salary, and if the depression promises to be long continued we may discharge him, and that too at a time when he has little or no chance to get another berth. We require every one to give us high-pressure results all the time, and if, from no fault of their own, it cannot be done we make them suffer for it.

*Salesmen Compelled to Consider Their Personal Interests.*

The employee, observing how solicitous the employer is about his own interest, considers that he likewise must look out for himself. The tenure of his position he feels to be an uncertain one. If out of a position, what is there that will help him to a similar one with another house? Why, of course, the knowledge that he stands so well with a large and important trade that he can carry much of it with him.

He thus is compelled to do exactly as the unjust steward in the Scriptures did, who could not dig and was ashamed to beg, and he starts out to make himself "solid" with his customers. He tries to get for them inside figures, and, even when they would readily pay the regular prices, he may suggest to them the making of lower offers and he tries to get these offers accepted. If he knows that on a line of goods, selling fairly freely, say, at \$1.00, his house, on account of it being well along in the season and their having quite a lot of the goods left, would not decline firm offers of 90c., not one of his customers will, after that, be asked to pay a cent more than that figure. He hustles also to see that his trade gets the cream of everything in the way of assortments, deliveries, or what not.

Such services, being valuable to the customers, make them friendly to the salesman, as distinguished from the house he represents, and if, in time, he hangs his hat up under another roof, much of this trade will follow him and is lost to the house that has been employing him.

Thus, the net result of our eagerness for volume of sales has been to create a condition well calculated to wipe out any chance of the profits we expected to make, and we have compelled our salesmen to work first for themselves, secondly, for their customers, and lastly for us.

*European Methods are Different.*

Things in Europe are done differently. Employees may not be paid as much, but, if they behave themselves and attend to their business, they need have little fear of losing their positions when business is bad, and the really smart men get ahead there as they do everywhere else. Thus, the staff of a house is to a great degree permanent, and in a well organized business the owner can keep it going in a very satisfactory manner with a minimum of personal attention. An American merchant is afraid to be much away from his work, for fear that if he is some of his employees will get the business away from him.

*Salaries Based on Volume of Sales Instead of on Profits Made.*

Under present conditions, salesmen see that it is volume of sales, not profits made or losses avoided, that counts in getting them more salary. What is needed is a policy that will, in some way or another, make them sharers in the profits, coupled with the giving to them some opportunity to learn more about their merchandise than they can at present.

Many French manufacturers employ their important salesmen on a basis on which by far the greater part of their income is derived from a share in the profits, the fixed part of their salary being quite minor in character. They have no right to "go behind the returns," call for an accounting, and overhaul the inventory, as no doubt many people here would think it proper to do under similar circumstances. The firm or company simply announces that the profit has been so and so much, and each receives his agreed percentage. It works well in practice, but, of course, the good faith of the employer must be beyond question. These salesmen are not trying to see how cheap they can sell the goods, but rather what is the most they can get for them, and selling goods at a loss or without profit, just to make sales, is something they cannot comprehend.

With our system here, it is notorious that the great volume of the sales of many high priced and highly considered salesmen, selling an ocean of stuff, is, at the best, the exchanging of an old dollar for a new one, and the employer will be fortunate if he does not wake up to find that it has been the exchanging of the dollar for ninety cents.

*Services of Valuable Men Often Underrated.*

On the other hand, there are a few men so constituted that the making of a loss, even at some one else's expense, is abhorrent to them. Such men will sell all regular goods at a profit and will always try for the highest price and frequently get it. If there are old or odd lots of goods in stock, they take care to have them properly sampled, and give every customer that they can a chance at any rate to see them, and so manage to place quite a few pieces that would otherwise continue to repose under the counters. When it is not on the cards to get regular prices on these left-overs they will get good offers, which, while perhaps showing a small loss, will avoid a much greater loss that might be inevitable later on. Such salesmen will not generally sell a great volume of goods, and in consequence are frequently but poorly considered and ill rewarded, but in all that makes for the ability of the mill to pay dividends, their work is of infinitely greater value than that of those showy and highly rewarded men who can sell untold quantities of desirable goods at 50 cents a yard that cost 55 cents to make.

*Paying Salesmen a Commission, and Its Difficulties.*

Salesmen, working in whole, or in part, upon commission, notoriously neglect old accumulations of goods, alleging that they cannot afford to waste their time trying to peddle off such stock. Such stock, therefore, is left to take care of itself, which it does later on either under the hammer, or as a job at private sale, to the tune of 50 cents on the dollar, and a hundred pieces so slaughtered will wipe out the profit of a thousand pieces sold at regular prices.

*Difficulty of Getting Men to Help in Profit Making.*

An illustration of the difficulty of getting men to work for a profit is seen when a mill has some goods on hand of a shade badly wanted, and when, even then, their own salesmen can get nothing extra for them. It often happens that such a hot demand develops for a special color that every yard is cleaned out of the market and 15-yard lengths are being cut and sent forward from the mills, and the retailers are asking and getting 10 cents a yard extra for the color.

Now, if a manufacturer had foreseen the demand for this shade and, as a gamble, had made a thousand pieces earlier in the season, and had put them in a vault with a time-lock that would not open till, say, April 15th, and if at that time this red-hot demand existed, would he then reap the 5 or 10 cents a yard extra profit that his foresight, and the great risk he had taken, would entitle him to? On your life he would not. His men, one and all, would urge on him the inadvisability of forcing their customers to pay an extra price just because he "happened" to have a color that they wanted, and,

unless possibly for a few pieces to some outsiders, he would see the lot melt away without a penny of benefit.

If he missed his guess, and the color made was not wanted, would his men then work extra hard and struggle to sell that lot at regular prices? Mighty seldom. Their indifference to it would be superb, and they would privately consider the employer an ass, both for making the goods and expecting them to do extra work in trying to sell them.

#### *Stock Goods Held in Small Esteem*

For some inexplicable reason, goods on hand, except such as are in most active request and going out rapidly, seem to be regarded by most salesmen as jobs, as something that they can hardly be expected to do much business on at regular prices, though, if shelves were absolutely empty, they would be the first to declare that they must have a reasonable stock on hand to do business on.

If goods are not yet made, and advance orders are to be booked, the salesmen can be firm enough in fighting for the price, perhaps because they realize that in that case nothing lower will be accepted. But the stock goods they seem to have no liking for, no matter how fresh and good they may be, and they have no heart to push them. If a selling office kept a record of just what happened each year and every year to these goods that the salesmen think it necessary to have in stock to do business on, I believe that many of them would realize that, outside of their sample pieces, stock goods, even small lines of them, are nothing but money sinkers. The goods the salesman has to wait for he esteems. What he has on hand he despises.

#### *Salesmen's Confidence Weakened by Buyers' Tactics.*

The majority of salesmen lend a ready ear to the tales told them by customers of the low prices that other houses are making, tales which are sometimes true, sometimes false, but mostly only half-truths, some fact lying behind which, if stated, would entirely alter the complexion of the case.

These adverse figures are habitually quoted to salesmen by buyers, even when they are not open at the time to make purchases, on the general principle that they tend to break down the salesman's confidence in his goods and so help towards the lowering of prices. Then, when the salesman asks for cuttings of the goods quoted, which it is expected he will, they are given to him apparently as a special favor, and he then goes running back to his manager with them to show how impossible it is for him to do business at the prices he is expected to get. Thus, salesmen are constantly bombarding their managers with bear arguments of this nature, and, in the aggregate, they may succeed in creating such an atmosphere of doubt and depression in the sales office, as eventually leads to such a cutting of prices as eliminates any chance of profit. When one house does so it is promptly reported round the trade, and other houses think themselves compelled

to follow suit, with the result that they are all again in the same boat, but at a lower level of prices than before.

The writer has often given to some friendly buyer the samples so brought in by salesmen, with a request to have a piece of the goods bought for him, only to find that no such price as quoted had ever been made on the regular goods, and in some instances that the cloth quoted as being 52½ cents, and which was visibly superior, was the competing mill's 62½-cent grade instead of its 52½-cent grade, as represented by the customer.

This disbelief in their merchandise, and the consequent looking for reasons why it will not sell freely, becomes a fixed habit with many salesmen, so that they become really adverse factors in the business instead of a help to it; so it is no wonder that their principals at times feel so bitterly towards them, as a class, as they do.

*Mill Experience a Help.*

Some experience at the mills might well help to correct this tendency. Salesmen would then gain the *personal* knowledge that no one has any patent on the making of good and cheap merchandise; that, when everything is taken into account, the New Jersey mill may do as well as its Pennsylvania competitor; that, between large mills, working on the same or similar fabrics, there can be but little difference in their costs, outside of their luck in purchasing raw-silk, which is as likely to favor one mill as the other; and, finally, that each of these competing mills is no more able or willing to do business without profit, or at a loss, than the other.

Knowing, then, the ability of their own mill to get out its goods cheaply and right in all respects, and knowing that the prices have been fixed on a very close basis, the stiffness of the backbone of the selling force would be wonderfully different from what it usually is, and their faith in their goods would be absolute.

*Difficulties Entailed by Distributors' Methods.*

The efforts of even the best salesmen are much thwarted by the conditions under which the retail dry goods business is at present conducted. Large houses have been adding more and more departments to their establishments, even so diverse from dry goods as meats and sporting goods. The profits from many of these new activities have been so satisfactory that they have been encouraged to add still more of them, and this spreading out has been done to a great extent without a corresponding increase in capital. The result has been that the purely dry goods departments are often starved for lack of working capital, and each one is held down to the narrowest limits of purchase by the financial management working through the so-called merchandise man. The buyer may need goods badly for his stock, and be as anxious to purchase them as the seller is to sell them, but he is not permitted to buy.

*Low-cost Production and Low-priced Salesmen.*

Finding that the retaining of high-priced salesmen does not result in their getting a better price for their merchandise, some mills pursue another course. A mill of large size, we will say, that caters to the cutting-up trade, will run its looms fast on low qualities of goods, and make split-edge goods largely, and confine itself to a very few fabrics. It will have an output, therefore, of large volume, made at small expense, of low cost per inch, and designed for a trade that uses a lot of stuff and is hungry for good values. If but a close working profit is put on such goods, they will sell freely on their merits, and without argument, to such trade.

An output such as this should cost but little to sell, and it may be handled by one man of experience, to assist the manager, and as many clean, active young gentlemen, on very small salaries, as may be necessary to run around with samples and keep in touch with the trade. In this case it is the value offered that is counted on to sell the goods, not the men.

*Inducements to Work for Profits.*

Returning to the question of how to get salesmen to work for profits, it is first necessary to have a system that will show just what the profits and losses are on the sales that each man makes.

A system could be arranged by which a confidential man in the office would be furnished with the fair, actual cost of all the fabrics, and would figure out and pencil in the net loss or profit on each sale in the salesbook. Of course, in the case of old, defective, or real job goods, a proper allowance in costs would have to be arranged.

The profit or loss so shown would then be posted both to the salesman's account and to that of his customer. By posting to the customer's account the management can tell, on looking over the season's figures, just what houses, or classes of trade, they have made money by and what houses they have lost by, or not profited by. The unprofitable trade, no matter how large the individual houses or accounts, they may find it wise to let alone in the future, and so concentrate their efforts in the directions where most profit is to be reaped.

The salesmen's accounts, in like manner, will not only show just what volume of goods they have sold, but what has been made or lost on the sales, and when the question of fixing salaries comes up the management will be pretty well informed as to the real worth to the house of each of the men. If a salesman realized that the profit made by him would be a factor in determining his next year's salary there would be fewer low offers for goods reported. The quiet, hard-working fellow, who really did make profits, would be brought to the front in this way.

*Interests of Mill and Sales Office the Same.*

In regard to this question of costs and profits, the welfare of the mill and of its selling staff should be one and indivisible. There is no such thing as a separation of their interests without loss to both, and whatever profit-sharing is arranged for must be on the net results of the business as a whole. Manufacturers must not try to be "smart" with their people and figure against them so as to cut down their returns, nor must salesmen imagine that, just because a mill is running at full blast, money is being made. If, however, salesmen's salaries were fixed on some profit-sharing basis by the mills, active employment of machinery would then generally mean that profits were being made, which is by no means the case at present.

*Value of the P. M. System.*

If the P. M., or premium, system, much employed by retail shops, were judiciously used by manufacturers, or their agents, it would be a great help in moving old or undesirable goods, and in avoiding losses. If the season were advancing and a lot of fancies at \$1.00 a yard were dragging, a P. M. of 10 cents a yard would insure their being shown and pushed by the whole selling force, and a probable subsequent loss of 25 or 50 cents a yard on their final sale might be avoided. This interesting of the salesmen in minimizing prospective losses is a very proper way of profit saving.

*Complaints Based on Ignorance.*

A lack of understanding of the processes of manufacture leads to the voicing of many complaints by salesmen that otherwise would not be made. They cannot understand why each piece of goods of the same kind is not an exact duplicate of each other piece in weight, finish, texture and color; why defective places should be found in goods; why deliveries are so slow; and why, when some special color is wanted, the half of the mill cannot be run on it forthwith.

They do not realize that months of preparation lie back of the output of each loom; that when many colors are offered for sale (and where is the salesman who does not say that a large line is a necessity?) there must be fewer looms devoted to each color, and, as the demand cannot be foreseen, assortments will always be slow of completion; that when orders come late for delivery it is often because proper time has not been allowed for their manufacture, the buyer having fought for short time and the sales office having granted it. This is a usual custom for buyers to pursue, as it leaves them in a position to decline the goods if they are late for delivery in case they find later on that they would as soon not have them.

*Salesman's Courage Should be Fortified.*

Salesmen, of course, are not mill men and cannot be expected to have any intimate knowledge of that end of the business. Many



manufacturers regard it as very undesirable that they should have any knowledge of it at all, but this view I believe to be a mistake.

Consider how strong the faith of a salesman would be in his merchandise, and how great his consequent courage in standing out for a price, if he had been either employed in the mills or had been much in and about them, where he would have seen a great organization working with the best machinery, materials, and methods, and operated in the ablest and most economical manner; a place where every energy was directed to the making of the most perfect merchandise at the minimum of cost.

Such a man does not have to be told that his goods are right and his values as good as any one's. He knows it, and the firmness of his knowledge and belief impresses others. When his bottom price for a fabric is  $52\frac{1}{2}$  cents and a customer throws out at him an article, apparently as good, that he claims to be buying at  $42\frac{1}{2}$  cents, such a thing does not shake his courage and belief in his goods. He knows the adverse quotation has something back of it, a closing-out price, some bad colors, a lot of seconds, or a lie, and he could seldom have this real, as opposed to expressed, belief in his stuff if he had not had the mill experience.

The salesman who has not been so fortified, cannot be expected to have that ingrained belief in his goods that is necessary to keep up his nerve and fortitude in the face of lower prices and adverse criticisms, and, like Bob Acres, he finds his courage oozing out of the tips of his fingers, and so, lacking the entire faith in his wares, he becomes mentally unable to put up the fight that would result in the selling of his goods at the prices asked.

#### *Method Employed by One House.*

This matter of fortifying the courage of the salesman is so important that I knew of one large domestic commission house (and no doubt others do it) which used to call in its men from the road—even those travelling far afield—at regular intervals, and it took a good deal of money, as well as of the salesmen's time, to do so.

They argued that, from the time the salesman started on his trip, he had been encountering nothing but criticism of his goods, and had been bombarded with low adverse quotations, with a consequent weakening of his belief in the merit and value of his goods.

By calling him home he would see for himself the heavy trade daily being done, the full prices that were being got, and how the mills were being sold up.

Then in a few days, with renewed confidence and vigor, the salesman would set forth once more.

This they called "repainting their salesmen."

*Value of Letting Salesmen Know More About the Mills.*

If the relationship between a mill and its salesmen were of a more permanent character, and if, in that event, each salesman could spend some weeks every year at the mills, there would be a much stronger body of salesmen, a proper appreciation on their part of what a mill should be expected to do, and a much better understanding all around.

The National Cash Register Co., whose success has been most remarkable, graduates its salesmen largely from the factory force, and, in addition, instructs them in salesmanship. These salesmen never weaken on their goods or lose faith in them.

*Trouble Caused by Haphazard Sampling.*

The random sampling of goods by salesmen, without consultation with the heads of the departments, is a source of much trouble and leads to practical misrepresentation of the goods.

All textile fabrics, owing to unavoidable natural causes, are subject to more or less difference in weight, touch, etc., and while part of this difference is counteracted in the finishing process some of it will remain.

Owing to the effect of the dyestuffs on the fibre, the different colors in a line may feel quite differently, though made alike in all other respects. Thus, a piece of cardinal taffeta can usually be counted on to feel far superior to a piece of light gray, or beige, of the same quality.

Again, even in the same line of goods, there may be manufacturing differences existing between pieces apparently the same. The manufacturer is striving to get out goods that are perfect and well-finished merchandise, and that will be regular in every respect. He has, however, to deal with a very irregular material, and has in addition the trouble caused by the unavoidable variations in the weightings put on his silk by the dyer. In the making of his goods, therefore, he will find that, owing to these causes, some of his lots come extra light and some extra heavy. Wherever possible he will balance heavy warp with light filling, or vice versa. Where both warp and filling run light or heavy, he may have to modify the construction by putting in more, or fewer, warp and filling threads to the inch, as the case may be, and so he produces a cloth of different construction from the rest of the goods in the line, but which, as a piece of finished merchandise, is practically the same as the others. There are other causes that will compel a manufacturer, in occasional instances, to deviate from his regular methods of construction, his aim in most of such cases being to get his goods right, without consideration of the little differences in the costs.

It is obvious that such exceptional pieces, which differ in construction, weight, dye, size of silk, etc., from the line they are in,

should never be used as types of the cloth, as they do not properly represent the goods.

A salesman, however, wanting to show a swatch of the goods to a customer, when trying for an order, will open up a lot of pieces and, after examining and feeling them all, will pick out the one that seems heaviest and best and take a cut from that.

This practice leads to all kinds of trouble. The customer keeps part of the sample and expects all the goods delivered to equal it, and, as the piece it was cut from will naturally be an extra-good one, very few of them will be equal to it, and the buyer will be dissatisfied and return what he will describe as the light pieces. The piece sampled may also just happen to be an odd one, and may have five or ten per cent. more picks or ends than usual, and here again, if the customer counts them, he may claim that the goods delivered are different from the sample from which he ordered, and he is quite within his rights in doing so.

No piece of goods should ever be used as a sample, or type piece, until the number has been reported to the mill and they have looked up its record as to construction, weighting, finished weight, etc., and word has come back that it is regular, and such report should be confirmed in writing to avoid future controversy. This matter of having all type pieces approved is a simple thing, but of great importance, though very seldom done. When neglected, it always seems to happen that, somehow or another, an irregular piece is selected to sample from.

A good manager of a sales office can do much to minimize misunderstandings with the mill.

#### *Color Matching and Its Limitations.*

Take, for instance, the matter of matching colors, always a fruitful source of complaint. Dyeing is not an exact science and no dyer will guarantee to exactly match a color, though he will come so close to it as to match it commercially. He may come a shade on the dark or on the light side. Should the warp be dark and the filling light, or vice versa, an exact match in the fabric may be had, but if both warp and filling are on the dark or light side the shade will be a little off, and, anyway, matching colors in the skein, either at the dyehouse or at the mill, is a puzzling matter and requires much skill and judgment, and it is hard to say just how the shade of the goods will come out when woven. As, therefore, a variation may be looked for, it is most important that the samples for color, furnished the mill by the sales office, should neither be the very lightest nor very darkest tones that will answer, but such medium tones as will allow of a little variation on either side without getting off the shade.

How common it is to hear a bitter cry raised that here are thirty pieces of navy, and five or more different shades among them when

they should all match. Some of this trouble can be avoided by taking care not to have odd pieces of different dye lots lying back, but to work off in sequence the different orders as they come in.

Should exactness of match be a *sine qua non*, it can be had by dyeing up the whole order for the color, perhaps hundreds of pieces, at one time. With orders running from fifty to five hundred pieces of a color such a policy would lock up far too much capital in dyed silk, and, if a change in taste required that a lot of the looms be switched onto other fabrics or colors, it would leave a stock of dyed silk on hand that could never be woven up in the season it was dyed for, and great loss might be entailed thereby in interest, deterioration of silk, and passé colors.

The dyeing should be done in reasonable sized lots, neither too small nor too large, and great care should be used to match samples, and, when the unavoidable differences arise, the goods should be delivered in due course just as they come. Salesmen with a mill experience would understand this and would not complain at not being able to get the impossible.

*Mills Left in the Dark as to Probable Requirements.*

A mill has to buy its raw material long ahead of its orders for goods, and has to secure such sizes and qualities, and in such quantities, as are likely to be needed. When consulted as to probable needs, sales managers are very shy of expressing an opinion, fearing lest if, for instance, they should say that they would likely want a lot of crêpes, and the mill should buy Cantons to make them, and they should later on find it injudicious to bring out crêpes, that they would be blamed for having induced the mill to provide silk for them. Even when salesroom opinions are freely given they are often wide of the mark, and in these, and many other important matters, the mill has to grope its way the best it can.

What is of real importance to a mill, however, is a daily report from the salesroom of the sales, returns, and cancellations. Advance order business, and current sales from stock, should be noted separately, and the reasons for the returns or cancellations should be stated.

A careful study of this data will give the man at the mill a good idea of the direction of the demand, and when he sees the sale of certain lines of goods lagging, or of other lines picking up, he will govern his raw-silk purchases and his loom dispositions accordingly, and will thus make proper arrangements before it is too late.

Should there be any signs of a different class of fabrics being wanted, the mill should be informed at the earliest moment. It is no light matter for a mill to have to arrange for different loom equipment, special qualities, sizes and twists of silk, and the rearrangement of orders already laid out for. It is seldom good policy to alter much

the production arranged for at the beginning of a season, on the principle that a team of horses will not make fast time if they are pulled up on their haunches at each cross-road. Changes of product in the middle of a season lock up extra capital to a frightful extent.

*Short Warps of Undesirable Colors.*

Sales managers understand that mills like to make no short warps, and when they round up a lot of plain goods orders they bulk them together, and fill out the quantities to full-length warps. In such cases the pieces actually sold, and those unsold, should be marked separately, so that the mill, if it wished, could go to the extra trouble and expense of making short warps rather than make excess pieces of hazardous or undesirable colors.

*Sampling in Unprofitable Directions.*

From time to time a mill is called on to sample on fabrics that previous experience has shown to be money losers, and yet nothing will convince the selling force to that effect. Chameleon taffeta is one such fabric. A perfect piece of chameleon, of good quality, could be made to sell at a figure that would mean a retail price of \$2.00. An imperfect cloth (as to irregular color) of fair quality could be made to retail at \$1.00. After a lot of sampling, and making of sample pieces and trifling orders, it all comes back to the same old story—the buyer wants the perfection of the \$2.00 article in the \$1.00 cloth, and he does not and cannot get it, so he drops the cloth.

Louisine is another fabric on which much effort is wasted. To give the same apparent value as a 52½-cent taffeta, in a louisine, would mean a price of 62½ cents. The buyers, in the end, are found to want the 62½-cent cloth at the 52½-cent price, and not getting it they lose interest.

A mill might properly say, when invited to sample on louisines, chameleons, hair-lines, swivel-figured taffetas, and other money losers, "We regret to say that we are not equipped for making these fabrics," and not allow themselves to be led into the wasting of money on them. There are, on doubt, exceptional cases where it pays to make them, but I would let the other fellow take the chance.

*Avoid Friction and Base Salesman's Reward on Profits.*

It will be seen from the foregoing how many causes of discord there are between mills and their salesmen, but with care and patience and a good system many of them can be avoided, and, at any rate, a good understanding of them will remove much ill feeling.

The great problem is how to make the compensation of the selling force dependent in large measure upon their success in making profits for the mill, and until this is done the best results will never be attained.

## XXIII

### REGARDING THE COST OF SAMPLE COLLECTIONS

A heavy item of expense in manufacturing, but which is frequently disregarded when figuring on the cost of a line of goods, is the outlay for sampling. No one who has not given this subject close attention can begin to realize what it means in dollars and cents to a mill making fancy goods to any extent.

#### *Qualifications of the Man in Charge.*

In charge of this important work must be a man with a thorough knowledge of the construction of fabrics, so that any cloths laid out can be relied on to weave properly in the looms, and to be well-balanced commercial fabrics, free from undesirable features. He must also be a man of great good taste, and have an ingenious mind and an observing eye. Such a man, when one is so fortunate as to find him, cannot be hired cheap.

#### *Expenses Entailed by Fancy Goods.*

Under him may be one or more designers making sketches, or painting in the designs, as the case may be.

Then, there are collections of foreign samples to be subscribed for each season, and the purchase, from time to time, of good designs offered for sale by outside designers.

It is usually found expedient to equip a sample department in which will be mounted a number of looms and some preparatory machinery. There is, therefore, the space so occupied to be charged for, together with interest and depreciation on the machinery and the expense attendant on same.

Numerous sample blankets have then to be made, and, later, complete ranges of samples in the styles selected. The quantity of material so used up is extraordinary, and the labor cost is heavy, cover-

ing, as it does, wages of pattern weavers, loom fixers, warpers, etc. The drawing-in and twisting expenses of the numberless pattern warps that are needed is, in itself, very large.

*Yarns Needed for Sampling Purposes.*

Small quantities of all sorts of yarns have to be purchased for sampling purposes, and in every fancy-goods mill one will find no end of such materials, all the way from jute to tinsel, in little lots of from one to ten pounds. Such sample parcels lock up quite a lot of money and have but trifling commercial value.

*Heavy Cost of Jacquard Work.*

For Jacquard work, the cutting of the cards is a great expense, and their storage requires much room. On this class of work there is also the heavy cost incurred in changing the tie-up of the looms from time to time; the repairs and alterations of the harnesses; and the building of new harnesses, either to replace those wearing out, or for the bringing out of patterns that require a different tie-up. The protracted stoppage of looms for these necessary purposes adds considerably to the cost.

It must not be forgotten, either, that Jacquard warps have to be drawn in, or twisted in, in the loom, so that, outside of the labor paid for the work done, there is also to be reckoned the extra cost for this stoppage, which is much greater than would be the case with harness looms.

*Other Outlays to be Met.*

At the salesrooms, a considerable yardage is cut off the pieces in stock there, for use in making sample cards and as types, etc., and the cost of making up sample cards is not small.

If warp or surface prints are being made, there is also the engraving of the rollers, and on warp prints there is the weaving in of the crossings on the warps before printing, and the extra amount paid the weaver for removing same when the goods are being woven, and many other expenses incident to such goods.

Sample pieces of the various fabrics have to be made, and in the final closing out of such pieces a smart loss is generally taken.

When all these various items of expense are searched out and brought together, it will usually be found that they amount to a sum far in excess of what any one dreamed of.

*Fancy Goods Expenses Should be Kept Separate.*

Many mills make some plain goods and some fancies, the fancies generally being the small end. It is, however, a very common practice to figure the sampling and special fancy-goods expenses in with the general expenses of the mill, instead of charging all, or nearly all, of it to the fancy goods, as should be done.

*Business on Fancies Often Done at a Loss.*

If this latter course were pursued, I believe that many concerns which think they are making some profit on their fancies would find that, if they took the sampling cost into consideration, they are making a loss.

It seems to be agreed that, if one is offering fancy goods for sale, a good-sized collection is necessary to enlist the attention of the buyer. If this is the case it is equally certain that, with the large cost of getting up such a collection, on any business of restricted size there will be nothing but an "Irish dividend" left for the mill.

*Large Initial Profits Necessary.*

The application of all this is, that if a fancy-goods business of considerable proportions cannot be achieved it is better to let it alone altogether; and in view of the losses that such lines are subject to from cancellations, and from loss on stock pieces, there is no use in the ordinary mills pricing such goods on the basis of a small profit. If they do not figure at the outset on a liberal profit they will find they have made none at all.



## XXIV

### CHANGES IN MERCHANDISING METHODS

For some years past, profound changes have been taking place in the methods of distributing the production of our textile mills, and still the transition process continues. These changes which have taken place have been anything but beneficial for the mills, and the silk trade has been one of the greatest sufferers.

Time was when the jobbers ordered largely in advance and paid a fair price for their goods, but the great growth in size of the retailers, all over the country, made them such large consumers that the mills, compelled to do so by severe competition, concluded that only by passing by the jobbers, and offering goods to the retailers direct, could they find a living profit.

The jobbers were sometimes protected by being given prices enough below those quoted to the retailers to enable them also to market the good on the same basis, but it was seldom that the margin of profit in the goods would allow of this, so that in large part they were unprotected.

#### *Present Position of the Jobber.*

Being thus left out, the number of jobbers dwindled away, those remaining becoming, in large measure, distributors of job lots of goods, very big lots, at times, but still jobs.

Sometimes they have special grades made for them, which are not offered for sale elsewhere, and on these lines they can do business.

They also reach the smaller retailers that it does not pay the mills to go after, and by also selling cut lengths they find channels for distributing substantial quantities of goods.

#### *Selling to Retailers and Attendant Difficulties.*

At first, this selling direct to retailers seemed easy and profitable,

but very soon the keen competition among sellers lowered prices in this channel also, to a level that left no more profit in them than jobbers' prices had formerly allowed, and with this very serious drawback, that the times when the mills needed orders for their looms were not the times when it suited the retailers to place them.

When the mills protected the jobbers, and had both jobbing and retailing customers, the jobbers would place orders in April for July-August delivery, and, as they had to have the goods on their counters at the latter dates, it was imperative that the orders be placed in time to allow of their being made, and as goods for the retailers would be running off the looms about April the jobbing orders came in just when needed.

For the autumn trade, goods are not needed on the counters before September-October, and, even if made on order, can be contracted for in July-August, so there is little necessity for the buyers to place orders before then, with the result that, every summer, the dress-silk mills face an interregnum of some three months, when they must either shut down most of their looms or run wholly or in great part for stock.

It is at this juncture that the few large jobbers in the field get their innings, as many mills, to bridge over the slack period and avoid either of the alternatives mentioned, will take their orders at prices not only without profit but frequently at a material loss, considering this less of an evil than to shut down their machinery and permit their organizations to be broken up and their help scattered.

*Disinclination of Jobbers to Carry Stock.*

Recently, another phase of jobbing distribution has arisen, which is shown in a disinclination to carry any reasonable stock and in trying to throw that burden on the manufacturers. A big silk jobbing house may send over several times in one day, to a commission agent, for one piece each time of black of a staple line that they are carrying. The advance orders from them have dwindled to miserable proportions, and many orders are not for much more than a few sample pieces, coupled with requests or demands for scores or hundreds of sample cards, free of charge. On these samples and cards they do their business, and send in orders months later for such goods as they have sold, and which orders, coming so late, are of little value to the mills. Thus does the jobber play the game of "heads I win, tails you lose," taking no chances himself and letting the mills sweat.

This practice is not confined to silk departments, but is general in other textiles, and houses that formerly bought hundreds, or thousands, of pieces of a style are now, in many instances, buying just a few yards to make sample cards with. To such an extent has this proceeded that a number of the largest and most important mill agents, in dress goods, cottons, etc., are seriously considering the discontinuance of any

protection to the jobber, and of putting him on exactly the same price level as the retailer.

There is little doubt that a continuance or extension of such policies on the part of jobbing interests will be prejudicial to their wellbeing, for if they cease to be either useful, convenient, or profitable channels for mills to distribute goods through, just so surely will they be done without.

*The Cutter-up and His Methods.*

The cutter-up is another party who has long operated on the manufacturer's capital, and who takes few chances himself. He does not need goods to cut up for his spring trade until January, and for his autumn business in July, and in October and March he buys his sample pieces, that is, he orders only samples at a time when he should be placing his real business, and these sample pieces are for delivery as soon as possible.

Of course, he picks a few styles from this house, and a few from that, and in each case he is likely to make a point of speaking enthusiastically of their goods, and of the quantity that he expects to use. Naturally, it is a fair inference that he thinks well of the styles, or he would not have ordered them, but his principal aim is to encourage the manufacturer to make up advance stock at his own risk, so that he, the cutter, can have ample stock to draw from if he should sell the styles, and, if not, it is the maker who will stand the loss on the unsalable stock.

After the sample pieces are ordered, the mills, having no business of any amount booked, must either stop or run on stock. Being all pretty "easy marks," they play the cutter's game by banking up goods at their own cost and risk, to use as a stock for him to select from—or to reject. They are guided as to the styles and quantities to make by the number and kind of sample pieces that have been placed, and soon the looms are turning off goods in quantity, and at prices leaving next to no profit, even if sold.

Meantime, nothing has been heard from the cutters, who have made their sample garments and have sent out their men on the road. About the beginning of January, or July, in come the cutters and want so many pieces of this, that, and the other thing for immediate delivery, and if the manufacturer has not the stock on hand they profess great indignation. They will refer to what they told him as to their probable requirements, to the fact that they bought sample pieces of the goods, and will ask what kind of a way that is to handle their trade, and in general will behave like very ill-used men, when really what they deserve is two swift kicks properly placed.

*Losses Attendant Upon Business With Cutters.*

On the other hand, when the manufacturer presses upon their attention any styles that he has made in anticipation of their wants, but

which they do not happen to have done business on, they will not take them at any price, for their ill-success with them on the road has demonstrated to them that they will not sell.

Thus, in addition to stocking up goods for these gentry, with all the cost and drawbacks entailed thereby, the manufacturers suffer most cruel losses in the final marketing of their unsalable lines, owing to their rejection by the special trade for which they were made, and their unsuitability in other directions.

In consequence, this is a most treacherous trade, and, owing to the unresisting characteristics of the selling agents of the mills, it is enabled to do business largely on their capital and to shift the risk of mistakes of judgment onto their shoulders. If the attendant losses had to be paid out of the pockets of the selling agents and salesmen, it is no guesswork to say that this business would be conducted on very different principles.

#### *The Retailers' Ideas of Profits.*

Then, there are the retailers, those distributors who can say blandly to the producers that they will handle nothing that will not show them about 40 per cent. profit, and that they must have this or that to retail at such and such a price. Their organizations are thoroughly perfected mediums for the purpose of squeezing the last fraction of a cent from the producer, and of getting from the consumers prices that occasion enquiries into the high cost of living. Here are the swollen profits. Compare the weaver, hardly making interest on his capital, or the jobber with his 10 or 15 per cent. profit, with the 30, 40, or 50 per cent. gross profit regularly taken in by the retailer.

#### *Poorer Goods at Higher Prices.*

Year by year, greater retail profits are looked for. Let anyone who recollects the quality of the 19-inch taffetas that were regularly retailed at 75 cents a few years ago, observe the quality of the merchandise which is now handed over the counter at that figure, and by the best houses. It is very inferior, and yet silks, at first hands, have long ruled at lower levels than they did then.

This charging of higher prices, and giving poorer goods, has an effect seriously detrimental to the trade as a whole, as it not only tends to diminish the consumption but makes customers dissatisfied with what they do buy.

#### *Restrictions Placed Upon Retail Buyers.*

The retail buyers are held strictly down to certain limits of capital by their principals, and even with a growth in business they find it hard to get permission to use more money. Meantime, however, the increasing diversity of the stock that has to be carried becomes a grave problem. Fashion papers reach every corner of the land, and requests

for new fabrics, styles, and colors are made at local counters of remote towns, almost before the goods have been shown in New York.

Makers of advertised and branded goods also push their wares far afield, and create a widespread demand for their specialties.

The result is, that the retail buyer must carry many more styles and colors, and as his working capital remains the same he must spread his stock thinner, first limiting himself to a piece of a color, and then to half a piece of a color, with perhaps full pieces of black and white. Before long, perhaps, we may see only dress patterns put in stock.

The stocking of goods in such diminutive quantities makes it imperative that, somewhere in the market, there must exist stocks which can be drawn on instant. If the purchasing were entirely from jobbers this might be all right, but as they go direct to the mills for their supplies it follows that not only are they not in a position to give advance orders, but they expect the mills to carry stock for them also.

#### *The Merchandise Man.*

The much decried merchandise man, inimical as his office is to proper merchandising in the true sense of the word, has done his part in bringing about the present state of affairs, with which his employers have no reason to complain, no matter how disastrous it has been to the manufacturers. These latter may talk till they are black in the face, but till they *do* something the merchandise man will keep his extinguisher over them.

#### *Illustrations of How Manufacturers are Expected to Carry Stock.*

To show how the carrying of stocks is everywhere shouldered off upon the mills, I quote these items from the *New York Journal of Commerce*, of November 14, 1911: "The cool weather lent a snap to trade in retail channels, and in different quarters of the market there was a hurried looking around for any available lots of spot merchandise in heavy weights." "The cold wave which arrived yesterday caused clothiers who are short of overcoatings to scurry around the market for additional supplies." "In the underwear houses where heavy weights are handled buyers were on the ground early to renew offers for any quick shipment garments that were available."

Here we see concerns leaving themselves almost bare of seasonable heavy weights up to the middle of November, and then, when a cold day comes, having to rush round to find some goods to sell.

#### *Risks and Expenses Unloaded Upon the Mills.*

We now perceive that we have arrived at a point where the mills receive no advance orders worth mentioning from either jobbers, cutters, or retailers, but are expected to carry stock for all of them, stock paid for by money borrowed from commission houses at full rates of interest, and financed also by unduly long raw-silk credits.

The carrying of stock not only locks up capital, eats up interest, and other carrying expenses, but styles and colors quickly become passé, and, if carried long, weighted silks may diminish in strength.

Then who is to say what should be made amongst the multiplicity of styles, fabrics, and colors? Let a mill make four lines of goods that are wanted, to one that is not, and the loss on the latter will usually exceed the profit on all the former, a fact that would stand out more boldly if every house made a semi-annual clean up, either by auction or private sale, thus knowing exactly where it stood.

Most sales managers refer to plain weaves, made for stock, as "staple goods," or "bread-and-butter stuff," but the fact is that just as heavy losses can be made, and often are made, on the so-called staple goods as are made in the closing out of most fancies.

*Necessary Profits are Not Got.*

It should be apparent that, if the mills are distributing goods in diminutive quantities, with all the attendant expense, and are making and carrying stock with the fearful risk attached, and in general are performing the entire function of jobbers, they should receive a jobber's profit, in addition to a mill profit, to compensate them for what they have to do, and to offset the heavy losses necessarily entailed.

Unfortunately they do not, partly because they do not ask it, and partly because many competing producers figure the profit considered necessary on the same basis they did when conditions were essentially different.

If, to-day, a mill decides only to run on orders, it will run very few looms as it will not get the orders, and then, when the spot business comes, it will have no goods to sell, and if it runs on stock it can get no profit sufficient to offset the certain losses.

*Curtailment of Mill Credits.*

Apart from any under-consumption, due to restricted dress requirements, we normally have a chronic over-production, largely caused by the too great financing facilities offered by commission houses, and the too long credits on which raw-silk is sold. If mill credits could be curtailed in these directions, it would force many manufacturers to take a stand for such proper business methods as would prevent the buying element from constantly dominating and trampling upon the producers as they now do.

*The Future Outlook and the Present Conditions.*

Should these conditions continue unchecked, what is there to look forward to? Nothing but the retirement from the business of certain firms, the failure of others, and the dividing the business (but on the same abnormal basis) among the rest, and, after a new crop of manufacturers grows up, a repetition of the process. Either that or the

prompt advancing of prices to levels far beyond the wildest dreams of what any experienced person now considers possible.

Consider what the silk industry of America represents, with its enormous investments, its immense and costly mechanical equipment, and the great technical skill and knowledge required by its personnel. How is it that this great industry has been allowed to sink down into this chronic miserable state, making it, and its members, a joke and a laughing stock among men engaged in other businesses?

*The Causes of Inaction.*

Are there not trade associations in the industry, long established, and men of sense and experience at the head of the different mills, yet why is it that the collective and individual intelligences of the trade have allowed their interests to be sacrificed and the condition of their businesses brought to such an evil pass, and with no prospect of relief?

It looks as if it were caused by indifference, laziness, timidity, and fear. Indifference to the evil that may be befalling a competitor; laziness that deters some from moving in any matter not obligatory upon them; timidity on the part of others in asserting their rights; and fear, of one sort or another, on the part of nearly all.

When situations arise requiring concerted and effective action, some are afraid that it will cost them a little money, and that their pocket-book-nerve will be affected; others are afraid of coming into the open for fear they may not be thought "conservative," that fetish which appeals to timid souls; others are afraid to trust, within reason, their associates, thinking they may prove false; and others are fearful of antagonizing customers, creditors, or what not. Therefore, we have had a condition of drift and inaction, and are now paying the penalty.

*Necessity of Leadership.*

There are times when situations require drastic remedies, and real war should be made upon the causes responsible for these intolerable conditions, no matter whose interests may have to be attacked. "Omelettes cannot be made without breaking some eggs."

At such times it behooves those who are leaders to justify their claims to leadership by leading. Who are the leaders of the silk industry? Where are they? If any there be, let them lead, and they will find more followers than they dream of, and success will attend upon their efforts.

## XXV

### SPECIALIZATION IN PRODUCTION

One of the most troublesome and important questions that confronts the management of a mill is what to make, and a question of even greater importance, and one that very often receives little intelligent consideration, is what not to make.

The projectors of a mill, when starting it, usually have in mind the intention to cater to a certain trade, and they begin work along those lines, but, unless business comes to them very readily, it is not long before they are sampling in all sorts of directions.

#### *Necessity of a Definite Policy.*

The selection of a definite policy in this respect is a necessity, and then, after the most careful and sober consideration of every phase of the subject and the final determining upon a line of action, this policy should be steadily pursued to the end, and no ephemeral fashion or condition of business should be allowed to interfere with it till it either be carried to success or be proved to be unprofitable.

#### *Questions Which Will Influence the Decision.*

What, then, are the factors which will influence the decision as to what policy to adopt, and what are the policies that are generally available?

Some of the dominating features in the case will be the number of looms operated by the mill; the location of the plant, which has much to do with whether skilled labor will be available or not; the amount of experience possessed by the mill superintendent in the construction of various classes of goods; the standing of the sales department with the buyers and the ability of the selling staff to reach the desired trade; the degree of taste and the knowledge of fabrics possessed by the sales management; the fabric requirements of the day; and the finan-



cial resources of the concern which may control its action in certain cases.

*The Frittering Away of Energies.*

Some will start out on the assumption that they can easily sell up their mills by making a little of this, that, and the other thing.

This is a fatal mistake, particularly in an age of specialization such as this is, when so many lines of goods, manufactured on a large scale, are sold on a basis of profit not much better than a brokerage. With a too greatly diversified product, costs will be so high that profits will be rare, assortments of colors and patterns cannot be completed on time, the selling expense will be absurdly large, the production of the mill will be far short of what it should be, the concern will not be headquarters for anything, and its goods will be held in small esteem by the trade, if not totally neglected.

The result will be accumulations of odds and ends of stock, from sample pieces to cancelled orders, a heavy loss in the closing out of these broken lots of goods, a frittering away of energies, and a shrinkage of capital. In such cases, the tail will always eat the head off the dog, as the saying is.

*Those Who Copy Instead of Originating.*

Some others will argue that the proper plan to get quickly into the swim is to go out and see what fabrics others are doing well on and then copy them, cheapening them if possible, and in this way find a quick sale for their goods.

It is but fair to state that, of the many houses which pursue this questionable policy as a regular practice, some have been successful, owing generally to their technical ability in copying goods and reproducing the desired effects on a much cheaper scale; but, had they used their unquestioned talent and spent an equal effort in originating styles and fabrics, they might have reaped a still larger reward.

The copyists, however, are nearly always tail-enders, for, to get the business away from those who have it, one has to offer apparently the same goods at lower prices, or give better values for the same money, and the joint competition of the throng of copyists often prevents any of them from making a cent, and simply spoils the market for those whose intelligent foresight entitles them to the business that their efforts have created.

*Delusions of Salesmen.*

Salesmen are always speaking of the "land-office business" that this or that firm is doing on certain goods, and the huge profits they are making, and are urging their mills to copy the cloth, and, of course, at a lower price if possible. Distant fields are always green, and it generally happens that neither the business nor the profits are anything unusual, and, anyway, if there was any special profit in the goods, the original producer would not allow his business to be taken from

him and would cut his prices in turn, so that the purchasers' confidence in the goods would be demoralized by the breaking prices and nothing but harm and loss would result.

The truth is, that, having to find our business exclusively within the boundaries of this country alone, we are all in the same boat, and if the business that one man is doing is cut in upon, he must take some business away from some one else in another direction in order to employ his looms.

The originator always has the best of it, for he gets a reputation for having new things and can get a profit on what he sells, as he has then but little competition.

#### *When to Stop Making Goods.*

While it is very important to get onto the right goods early, it is equally important to get off them in ample season. It is frequently, and perhaps usually, true that the time to stop taking orders on a line, and to begin to take serious steps to close out every piece made or making, is when the demand for the goods is at a white heat, particularly if the goods in any way come into the fancy category.

When sales are in full swing, this cleaning-up process can be accomplished with little or no loss, and a handsome net profit will be the result of the business already done, whereas, if the demand should fall off (and it can change completely over night), the cleaning-up process may be attended with such heavy losses that there may be no profit left in spite of all the work done. The loss on one piece, sold on a closing-out basis, will generally wipe out the profit of five to ten pieces sold at the regular price.

#### *Specializing Along Narrow Lines.*

Specialization is the order of the day, and the best success is most likely to be attained by concentrating activities along the narrowest possible lines, and then pushing the production and sale of those specialties to the limit.

The manner in which too diverse a product, in a mill of ordinary size, will waste the money and paralyze the energies of the concern is appalling.

The complications that a call for the manufacture of too many different things will make are legion. It may entail the use of Jacquard machines of varying scope, and with all sorts of different tie-ups for their harnesses; fancy shaft harnesses, cumbrous and costly, and with all sorts of spacings; plain harnesses of all kinds and widths, French, English, etc.; different constructions of cloths; a wide variety of all the materials under heaven; different twists to the yarns; different widths; different classes of colors; different weightings; different sizes of silks; untold quantities of designs; various finishes; samples for different classes of goods wanted at all sorts of times, and samplings