

loimi- ja kudel-
vollaista pomsia
yhälistetty.

2x
2x
2x
8x
8x

12 11 10 9 8 7 6 5 4 3 2 1

TRADING P.

34.50

MASTER WEAVER

Thread from A to C times
Thread from B to C times
Thread from C to C times
Thread from to to
Thread from to to

Tie-up

ja

33
54-8
55-8
57-8

3-752 K

3-752 K

72 D

Threads 880
Inches Wide In Reed 12.5
Inch Wide Material 12

-26-

Oikeanpuoleisen
rakente.

vasemmanpuoleisen
rakente.

3-752 K

BI-MONTHLY BULLETIN
FOR HANDWEAVERS



Z-HANDICRAFTS
FULFORD, QUE., CANADA

MASTER WEAVER

Z - HANDICRAFTS - FULFORD - QUEBEC - CANADA

May, 1956

No. 27

STANDARDS.

(CONCLUSION)

At first we intended to discuss in this third and last article the standards for articles offered for sale. But since we have already written on this subject in the first article, and since the reaction to the two articles already published has been much stronger than we had expected, we decided rather to concentrate on the general discussion, and to quote as many opinions as possible.

In general the opinion of our readers is favourable, but of course there is disagreement as to the ways and means. Very striking and reassuring is the fact, that in all our correspondence there was only one voice expressing doubt as to the level of the different tests of weaving skill, and judging it to be too high. But even this single veto came from a person who did not worry on her own account, but rather thought about the general reaction. This however did not come.

Thus it seems that the requirements which we have proposed are reasonable and acceptable to the majority of weavers, except of course for those who think that in crafts there should be no standards whatsoever. We have no quarrel with this point of view: the standards are not and cannot be compulsory, and whoever does not feel like passing the tests, will still be as good a craftsman as ever.

But there is quite a lot of disagreement about the standards for articles offered for sale. The idea of an approval seal is catching, but here the harmony ends. For instance many weavers feel that the flying shuttle should be condemned regardless of the articles produced. We have also another extreme: that there should be no discrimination at all between hand- and fly-shuttle.

But here are the letters:

No.1 (Mass). "First, teachers. Unfortunately I can, from personal knowledge, speak only of this area... The need for an accepted, universal standard of teaching is all too painfully apparent here. Most of the local teachers are - inadequate... Some of them plain don't know much about weaving; the remainder are along in years and teach handweaving only as it was practised at the turn of the century. Technically they are good. Creatively they are sterile.

No.2 (NY). "I am interested in receiving information regarding the classifications for weavers... I want to work out a system of classification which could be used in our state - or perhaps by weavers all over the country."

No.3 (Calif.). "The idea seems a good one... The four categories are acceptable."

No.4 (Calif.) "As to the idea of a country-wide guild standards, I am against it. It is nice to have such ideas published to call one's attention to one's own shortcomings, but I think that any attempt to set levels... will encourage the pedal pushing and recipe following which is already bad enough and discourage the "creative" weaver, who has, I grant you, often enough no command of technique, but once in a while comes up with a work of genius."

No.5 (Mass). "If I were to write my feelings on this standards business I'd have to take a week off. I think the principal thing is that there should be more uniformity of requirements where there are standards. In some way I feel it is childish but there are some people who need an incentive to systematize their study. I really think that submitting articles to various exhibits and sales serves the same purpose, as only the good is acceptable."

No.6 (NY). "What is the essential difference between designing a lovely set of place-mats and producing 12 on the same warp with a thrown shuttle and producing 12 with a fly-shuttle? ... If you admit of any tool it seems to me that you admit of all tools - fly shuttle included. There are many people who... want to support themselves independently through their craft. If they can do it better through the use of fly-shuttle and if the product is still completely their own, why should they be condemned for their ingenuity and for availing themselves of the modern tools?"

Answering these typical letters, we do not need to dwell on those who agree with us, even if they have different ideas about unimportant technical matters such as the size of samples, the written tests etc. But Nos.: 4, 5, and 6 offer a challenge and we must answer at some length.

Letter No.4. The author of this letter is not writing "pro domo sua". She is one of the most experienced (technically) weavers in this hemisphere. Thus the objections are not personal. It is perfectly true that no amount of technical knowledge could help one to design and weave a guest towel. It may be done in 25-frame damask, or 16-frame leno, and still be as repulsive as a "souvenir". But is the opposite also true? Does it mean that a "genius" must be ignorant? A genius with a thorough knowledge of technique will ride circles around another genius without it! And after all if the "genius" does not want to submit to the tests, there is no reason why he should. The tests are for those who want them, and any discrimination against those who do not is unthinkable.

Letter No.5. Here we must assure the reader that the author is a weaver of the highest standards, and that she knows what she is writing about. Still we must take exception to her thesis that the

exhibitions and sales are a good test of one's skill and knowledge of weaving. The problem of exhibitions is a complex one, and we shall develop it later on. Just one question here: if a weaver produces for an exhibition a piece of linen with 100 ends and picks per inch, and even if his designing is mediocre - should such an achievement be left unnoticed? But this happens all the time under the present conditions. As to the articles which sell well, is this a criterion for a craftsman? Hot-dogs and soft drinks sell best, and still they are not the acme of good taste. I should say that in weaving, whatever sells best should be looked at with suspicion, and carefully investigated.

Letter No.6. The controversy about the hand versus fly-shuttle is an old one. What most people do not realise is that flying shuttle is not as fast as it is supposed to be. Therefore there is no reason to use it except in mass-production. As craftsmen we have nothing against the flying shuttle, but we have everything against mass-produced articles. The whole idea of crafts is against it. Because, as our correspondent justly remarks: "If you admit one tool... you admit all tools". Therefore why not a power loom? It is a tool by all standards, and a very good one too. But then where is the difference between crafts and the industry?

Here we must enlarge. A good weaver can make on a narrow warp 60 to 70 picks a minute - a fly-shuttle 80 to 100. The difference is negligible if we take into consideration that the faster we weave, the more time we waste on winding bobbins, tying broken ends, and correcting mistakes. But whoever works with a flying shuttle on narrow warps, means mass-production, where even small gains count. It is still worse when he works with wide warps and fabrics which are later on cut into small articles. The only legitimate use for fly-shuttle is to weave fabrics which are too wide for a hand-shuttle.

And anyhow there was no question of "condemning" fly-shuttle woven articles. They should be simply labelled for what they are: cheap mass-production.

Finally, as every weaver knows, there is nothing "modern" about the flying shuttle. It is more than 200 years old.

There is one more class of letters, which not only agree with us on the principle, but offer definite and practical suggestions. We shall quote at some length from the one which we consider to be the most interesting from the lot:

No.7 (Mass.). "Wouldn't it be a bit more realistic to have a central agency staffed by business people (preferably men!) to ride herd on standards in the all-embracing sense you use the term? To know, basically, and pass the information along to member-weavers, WHAT WILL SELL WHERE AND WHAT PRICE. That would include: article, design, color, yarns; above all, workmanship; and price. It would be much more than a sales agency, and operated as it could be, would work for the weavers' profit and for the benefit of the consumer. This agency could find the right market for any given weaver - and here's where I disagree with you a bit on your thesis that a weaver should produce only what has a local origin. Each weaver likes to do one thing somewhat better than others; that's usually what he does best. He should not be forced to conform to regional dictates, but he should have the opportunity of selling his work where it is more readily saleable. A central sales

agency-clearing house would help there.

Some day I hope to see a national (or international) organization that will guide, direct, CERTIFY (for consumer's protection) as to quality - design, workmanship, end-use suitability, and sell. The one problem that faces any serious weaver is the constant fight to maintain standards and produce at a price that will show a profit. To attain that nice balance call for careful analysis of every part of loom production - even the shuttle is thrown! It means constantly to cut time (the most expensive component of anything handmade), yet never, never cut quality. A clearing house - sales agency would help here, also. For the slow, inefficient weaver would be in competition with speedier ones and soon either fall by the wayside or improve."

We have no comments on this letter. We could not agree more. Except perhaps that the woven articles should be distributed regionally to create centers of attraction for the tourist. After all, if anything could be bought anywhere, then why travel at all? But obviously this could be handled easily by this central agency.

Theoretically there is already an organization which could develop this idea: American Craftsmen's Educational Council in New York. They have means. The ways are up to the active members.

What is the conclusion? So far there is no national organization in the Northern Hemisphere which would accept in practice any standards whatsoever. There are local Guilds which do that. Our aim is to bring to a common level the different standards set by different Guilds, so that a Master Weaver of Mass. can be still considered a Master Weaver in Oregon. This will help to create a National Guild, whether it is a Guild of American Weavers, a Canadian Weavers' Guild, or still better a Weavers' Guild of North America.

ANALYSIS OF YARNS.

In the next issue of the Master Weaver we shall start analysis of fabrics, and therefore we may say first a few words about the analysis of yarns. Although a layman thinks that a weaver "should" be able to tell at a glance one yarn from another, the problem is not as simple as that.

Theoretically, if we had to do only with pure, untreated, natural yarns, the analysis would not be too hard. But chemical treatment, such as mercerizing, weighting or even dyeing may change both the appearance and the properties of the yarn. When in addition the yarns are mixed in spinning (quite common process today), only the microscope can help.

In many handbooks of textiles we find beautiful tables and microscopic pictures, which show how different the various yarns are. In practice, when we try to use the method indicated, we find out that in most cases the answer is most doubtful, that the pictures greatly exaggerate the microscopic appearance of yarns, and that only

an involved chemical analysis is reliable. Such an analysis is possible only in a well equipped laboratory.

Still, difficult as it is, we simply must be able to distinguish a few common yarns, the ones most likely to be used in handweaving. The tests which we can use are based on: 1. Appearance, 2. Physical properties, 3. Chemical properties, 4. Burning test, and 5. Microscope.

We can eliminate at once the chemical analysis, because although there are a few simple tests which anybody can perform, they do not give us more information than the Burnign tests, and the more elaborate analysis is beyond an amateur's means.

Appearance of yarns is very deceitful, and can give us only a rough idea as to their nature. For instance: if the yarn is very shiny it can be either rayon, nylon, or pearle cotton. If it is glossy but a little duller it may be silk, mercerized cotton, or mercerized linen. If it is still slightly glossy but not so uniform (as if mottled) - it could be linen or wool. Finally, if quite dull, it is probably cotton.

As we can see, the answers are very unsatisfactory. Still, with a lot of experience we can guess (but only guess) pretty close. What helps enormously is a large collection of samples of yarns in all their varieties: natural, bleached and dyed, loosely spun, and with different grades of twist; fine and heavy. By comparing a new sample with our collection we can make our guess much more reliable.

Physical properties can give a few additional indications, provided that we have a certain quantity of the yarn - hardly anything can be done with a couple of inches. For instance the tensile strength (resistance to breaking) can be estimated roughly by pulling the examined piece of yarn (about a foot long) between fingers of both hands. We should compare only yarns of the same size and of the same twist. If a yarn of about 5000 yds/lb breaks very easily it may be wool, rayon, or linen tow; cotton is a little harder; if it hurts the fingers before it breaks, or if it has to be wound on two pencils to be broken - it is linen, ramie, hemp, or silk. Finally if it does not break at all - it is nylon.

The test for elasticity (another physical property) is too difficult to make with any precision. However if we suspect already that the yarn is linen we may stretch it nearly to the breaking point. If it does not come back, but remains stretched it is linen.

By combining the two above tests we may come still a little closer to the truth. And here most weavers stop. With a lot of practice we may achieve a fairly good percentage of right guesses, probably to be compared with the reliability of weather forecasts.

Much more reliable are the two remaining tests: Burning, and Microscope. But these require some equipment. For the burning test we need a tiny alcohol lamp or burner. It can be made of an old mustard jar (the smallest size). Clean the jar, make a hole in the cover about the size of a pencil, take some soft cotton waste and fold it as many times as necessary to make a wick which will fill the hole, and a few inches long. On the outside the wick should project

for about ¼". Fill the jar with burning alcohol. If you want to save on alcohol, cover the wick with a thimble.

We shall need also some sort of pincers or tweezers to hold the burning yarn. The idea is never to hold the yarn in your fingers, if you do not want to get a nasty burn.

We do not need anything very fancy as a microscope. One which gives magnifications from 100 to 300 is enough. We can find one in any mail-order catalogue for less than \$ 10. No accessories are needed except glass slides. These can be cut from an old window pane.

We cannot go here into the instructions about using the microscope. These should be supplied with the instrument. Still better: read a book on this subject. The sample to be examined (about ¼" long) must be pulled apart and spread on one piece of glass and covered with the other. With our power there is no need for special fine glass covers. We may find out later that it helps if a drop of oil (e.g. paraffin oil) is placed in the center of the glass so that the fibers will be immersed in it. The top glass will spread this oil around the sample. Both glasses must remain in close contact, therefore we should use a very small quantity of yarn to be examined.

In the following directions for analysis we make the burning test first. We touch about 3" of the yarn to the alcohol flame, and observe what happens. Then we blow out the flame before it touches the tweezers and smell the smoking sample.

The burning test itself is seldom decisive. Therefore we proceed with the microscopic test, either to confirm the previous result, or to decide between two or more possible solutions. The number at the end of each item in the burning test indicates what to look for in the second test.

Before making the microscope test one should get familiar with: 1-st - the microphotographs of different yarns to be found in books on textiles; 2-nd - the microscopic appearance of known yarns in our own microscope. The two are hardly ever the same. Pictures taken for publication are often made with special microscopes, with samples chemically treated, and in special light. As a rule, our own pictures are seldom as clear as the ones in books.

INSTRUCTIONS FOR ANALYSIS

Burning test.

1. Smell like burned feathers. A black bead at the end of the yarn. The bead breaks in fingers when cold: Wool or Silk (7).
2. Smell like burned paper; even or slightly uneven flame. No bead: Cotton, Linen, Hemp, Jute, Rayon (8).
3. Smell like celery. Yarn melts near fire, small flame. Dark bead remains fluid for a while, then becomes very hard: probably Nylon (9).
4. Faint smell similar to 3. Melts near fire. Very bright, white flame. Smoke, Bead: probably Orlon (10).
5. Acid smell. Melts. Hard bead: probably Acetate Rayon (11).
6. Does not burn: Metallics, or Fiberglass (12).

To distinguish between the different smells, try first known samples of yarn. The smell of nylon is very characteristic, even if it is not quite like celery.

Microscopic test.

- 7.- Scale visible on sides, and as irregular marks across the fiber: WOOL.
 - Fine transparent fibers, no scale, no marks: SILK.
- 8.- Fibers look like ribbons, short marks nearly parallel to the fiber, ends spread, tapered, or cut at an angle: COTTON, or JUTE.
 - No ribbon effect, marks across the fibers, often compared to bamboo stalks. Bent fibers have irregular or broken curves. Ends mostly tapered - LINEN, or HEMP.
 - Irregular fibers with some ribbon effect. Short marks nearly parallel to the fiber. Very few and faint marks across. Frayed ends and even sides of fibers: RAMIE.
 - Very regular fibers, all of the same size. Continuous marks along the fiber: RAYON.
- 9.- Very regular fibers. No marks: NYLON.
- 10.- Fibers look like ribbons but only at the bent. Closely spotted all over - ORLON.
- 11.- Very regular fibers. Few continuous marks along the fiber: ACETATE RAYON.
- 12.- Fibers regular and transparent - FIBERGLASS.
 - Fibers completely black - METALLICS.

We have still two unsolved problems: Cotton and Jute, and Linen and Hemp. But in both cases the doubt may arise only with very coarse yarns. Jute cannot be spun as finely as Cotton, and the general appearance is different. Hemp cannot be as fine as Linen. But fine hemp and coarse linen are more of a problem, and only chemical analysis can give the final answer.

We must repeat once more that the rules given above are not easy to follow, and before we attempt any serious analysis we should get acquainted with the behaviour of samples of yarns which have been identified before, both in the burning test and under the microscope.

It may happen that the result given by the burning test does not correspond with the appearance of the yarn under the microscope. We may suspect then that the yarn is a mixture, and a close microscopic examination should give us a hint as to the components. For instance a mixture of wool and nylon may be puzzling in burning, but the two yarns are so different under the microscope, that they should be recognised. But ramie mixed with linen would be a problem even for a specialist. It may also happen that we work with a new synthetic yarn, a rare variety of one of the classic yarns, or with a common one which has been damaged by chemical action.

SUMMER & WINTER.

This weave, as far as can be ascertained, was not known or at least used in Great Britain up to the end of the 19th century, therefore it could not come here from British Isles. On the other hand it was and still is very well known in Finland, therefore we can reasonably suppose that it was brought to North America by Finnish settlers, as well as the Crackle Weave.

There is a close relationship between these two weaves. Both have floats of 3 in the blocks of pattern, and floats of 2 where two blocks join each other. The drafts look different, but are they really? Let us take a S-&-W draft as in fig.1a, and compare it with a draft for Crackle of the same length written only for two blocks (units: 1232, and 3414) and treadled as in fig.1 b. There is not

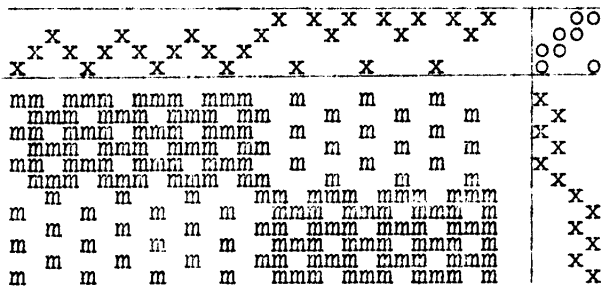


Fig.1 a.

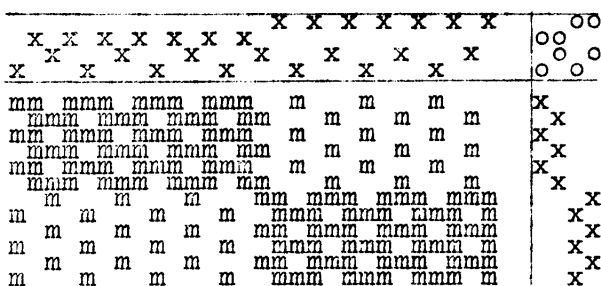


Fig.1 b.

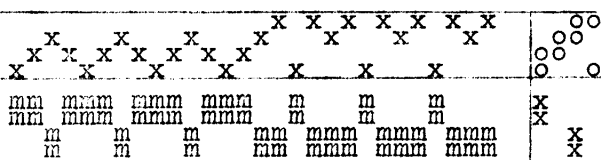


Fig.2 a.

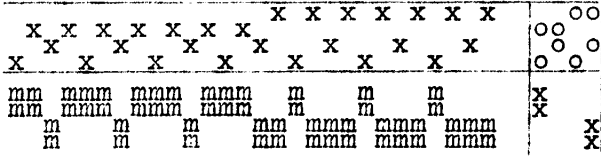


Fig.2 b.

the slightest difference between the two draw-downs. Now we shall take two more examples: crackle woven as crackle (fig.2 a) and S-&-W woven with only one treadle in each block of pattern (fig.2 b). In the last two figures we have made only two picks of weft on each block, but of course a larger number of picks will not change anything. And again we have identical results. Therefore we are entitled to say that Summer-&-Winter is a Crackle written on opposites with each block woven on two treadles instead of one.

The real difference between S-&-W and Crackle is not in the threading and tie-up, but in the treadling only. Thus any draft for crackle can be woven as S-&-W, and any draft for S-&-W can be woven as crackle, like in fig.2 b.

Finally both of them can be woven "as-drawn-in", in the same way as diamond-twill or overshot.

Summer-and-Winter has one advantage over plain, four-block crackle, that the blocks of pattern can be combined at will.

With two blocks of pattern (4 frames) we have four possible combinations: 1) - two blocks together (fig.3); 2) - 1-st block only; 3) - 2-nd block only; 4) - no blocks (ground only).

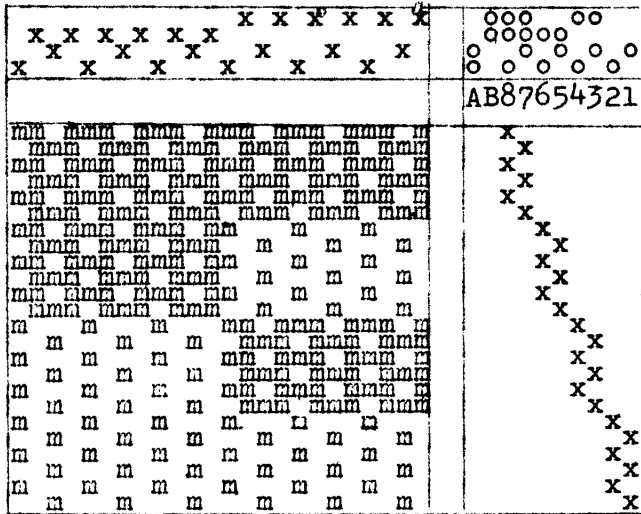
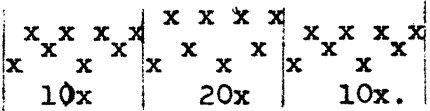


Fig.3

Both blocks
 1-st block.
 2-nd block,
 ground only.

Now let us go back to the 11-th lesson of Drafting (MW 24/9). All patterns in fig.2 can be woven with our new tie-up from a threading draft which will be more or less as follows:



Before we can start weaving we have another problem, which becomes obvious if we as much as glance on the tie-up. There are 10 treadles in it, when nearly all 4-frame looms have only 6. There is only one solution here: to use compound tie-ups and press two treadles at the same time. The best tie-up of this kind is shown in fig.4. We keep the tabby treadles as in the original tie-up, because we use them more often, so that at least the binder can be woven with one foot. For the remaining pattern-shed we have the following combinations of treadles: 1 (in fig.3) = 3 (in fig.4); 2 = 4; 3 = 1 & 3; 4 = 1 & 4; 5 = 2 & 3; 6 = 2 & 4; 7 = 3 & 5; 8 = 4 & 5.

The situation would be still worse in case of a 6-frame draft for Summer-&-Winter. Here we have 4 blocks and 16 possible combinations: 1) ground only; 2) 1-st block; 3) 2-nd; 4) 3-rd; 5) 4-th; 6) 1-st + 2-nd; 7) 1-st + 3-rd; 8) 1-st + 4-th; 9) 2-nd + 3-rd; 10) 2-nd + 4-th; 11) 3-rd + 4-th; 12) 1-st + 2-nd + 3-rd; 13) 1-st + 2-nd + 4th; 14) 1-st + 3-rd + 4-th; 15) 2-nd + 3-rd + 4-th; 16) all blocks together. With 16 combinations and 2 treadles for each, plus two treadles for the tabby we would have in all 34 treadles. In such a case even a compound tie-up is not enough. We must therefore first decide upon the pattern to be woven, and then tie only these treadles which are going to be used in this particular piece. A change of the pattern may require a change of the tie-up.

With 6 blocks of pattern on 8 frames the number of treadles necessary for all possible combination is so high that it is useless even to speculate upon it. Therefore in all cases where the number of blocks is higher than 2, we can use a special method of finding out the tie-up by analysis of the pattern:

- 1) Make a small draw-down (block-out) of the pattern on graph-paper, as in fig.5.
- 2) Analyse it in the same way as we analyse a fabric (compare MW Nos.2 and 3, 1952, or Vol.2: Analysis of Fabrics, and Analysis of Patterns). What we get in result is: The short threading draft or Profile (A), the short treadling draft (C), and the short tie-up draft (B). Here we are concerned only with the last part of the draft.
- 3) Develop the short-tie-up-draft into a full one as in fig. 6. This requires taking twice each vertical line of the short draft which gives us part "b" of the full draft. Then we add tabby treadles (part "a"), and the alternate ties on the first two frames (part "c"). When making the full draft from the short one, we must remember that the empty spaces on the short tie-up count also, both in the horizontal and in the vertical direction, and that the vertical ones must be doubled too.

Very often this is the end of the analysis. But in our case it is not, because the number of treadles is still too high. The draft asks for 8 frames and 16 treadles. Now comes the next step:

- 4) Make a compound tie-up by adding to the short tie-up the tabby treadles, and the two ground treadles (tied to frames 1 and 2 respectively). What we get is the tie-up on fig.7.

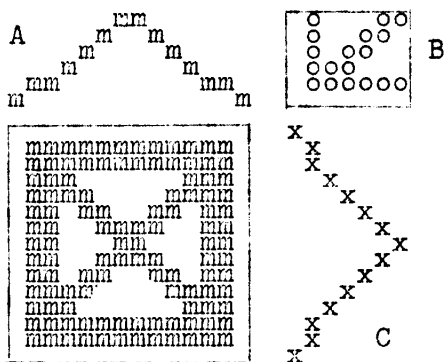


Fig.5

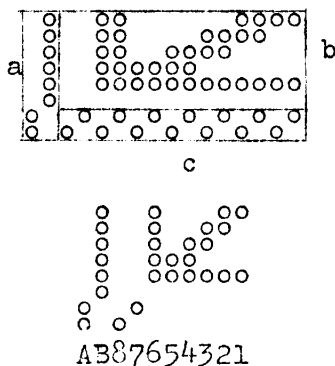


Fig.6

Fig.7

This looks better. There are only 10 treadles which is the right number for any 8 frame loom. The repeats of treadling (taken as many times as necessary) will be as follows:

- 1) 8,A,7,B; 2) 8+6,A,7+6,B; 3) 8+5,A,7+5,B; 4) 8+4,A,7+4,B;
- 5) 8+3,A,7+3,B; 6) 8+2,A,7+2,B; 7) 8+1,A,7+1,B.

One may say that there was no need to pass through the 3-rd stage at all. In our case we could skip it. But this 3-rd step will be used always instead of the 4-th when we have a sufficient number of treadles.

Summer-&-Winter is such an extensive subject that we could not possibly discuss its all problems here. The reader who is interested in the traditional methods of weaving should read carefully the corresponding chapter in M. Atwater's "Shuttlecraft of American Handweaving", and other works by the same author. We shall however say a few words about the less known applications of this weave.

First of all, since the weave has an excellent texture, with short floats, it can be used for 3D effects, where the weft is of prime importance. The superiority of S-&-W over tabby is obvious: if properly used it throws all the weft on one side of the fabric. The threading draft is of no importance because the pattern won't appear at all - thus any draft will do. What is changed is the tie-up, which must be as in fig.8 A for sinking shed (counterbalanced

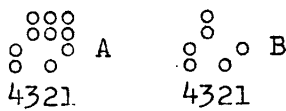


Fig. 8.

looms, and in fig.8 B for rising shed (jack-type looms). The treading in both cases is the same: 1,3,2,4 with "3D" weft on treadles 1 and 2, and fine binder on 3 and 4.

If the heavy weft is really soft and heavy we may try also: 1,3,4,2,3,4. On the other hand, if short floats in warp on the back of the fabric are not objectionable we may use just the opposite combination: 1,2,3,1,2,4 or even: 1,2,1,3,2,1,2,4, always with binder on 3 and 4.

Any traditional S-&-W draft can be simplified (and thus "modernised") by eliminating one block of the pattern. This applies only to the 4-frame drafts. For instance the pattern in fig.9 A, may be changed into 9 B simply by untying two ties in the tie-up.

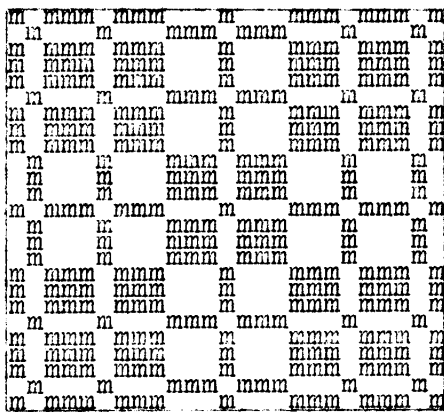


Fig. 9 A.

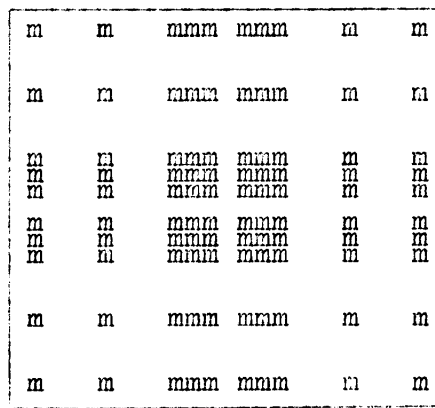
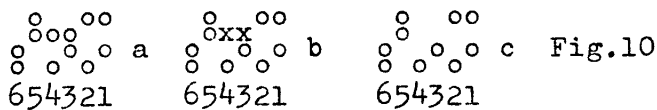


Fig. 9 B.

In the first case the tie-up has been traditional one as in fig.10



"a". If the first block which we have eliminated has been written on frame 3, then we untie the ties marked on on fig.10 "b", and we get the tie-up in

fig 10 "c". Otherwise nothing is changed, particularly NOT the treading. We still treadle as if weaving the traditional pattern.

