

If dealing with a yellow silk, the degumming is completed when it has become white and lustrous, although it will be found advisable to continue the process for a short time, to be sure that the discharging is completed.

When dealing with white silks, the question of a thorough boil-off is more difficult to ascertain, and needs the experienced dyer. If not possessing this experience, or in order to make sure of it, a useful practice is that when boiling-off white silks, you introduce a small skein of yellow silk into the boil-off liquor, and when you will be guided how far the boiling-off process of the white silk has proceeded by the yellow silk losing its color.

As will be readily understood "the best of silk soaps only" should be used for the process.

If testing two or more samples at one time, in order to obtain an exact comparison, boil-off the various samples to be compared at the same time, since atmospheric, etc., conditions may produce slightly different results.

THE MANUFACTURE OF RIBBONS, TRIMMINGS, EDGINGS, ETC.

Producing Figures in Smooth Ribbons.

(Continued from September issue.)

1 SYSTEM WARP: 2 SYSTEMS FILLING.

To explain subject let us consider Fig. 164 as the sketch for a fabric, the figure to be produced by means of a special figure pick, in place of an extra figure warp as was done before.

This system of producing figures has the advantage of a saving in yarn, since the pick will only float

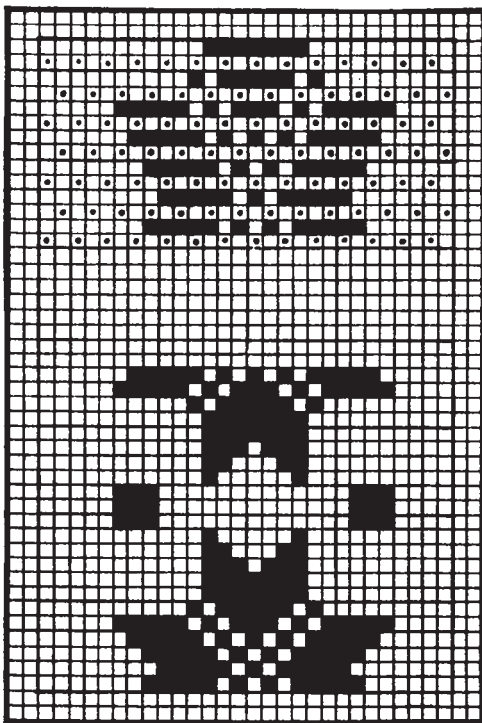


Fig. 170

where so required by the design, whereas in connection with figuring with the warp, said figure threads, where not required on the face, float uselessly on the back. However, using two systems of filling has the disadvantage of having to use a proportionally higher number of picks per inch, with its corresponding increase

in cost of weaving, compared to using only one system filling in connection with a figure warp.

The point paper design for ribbons constructed



Fig. 171

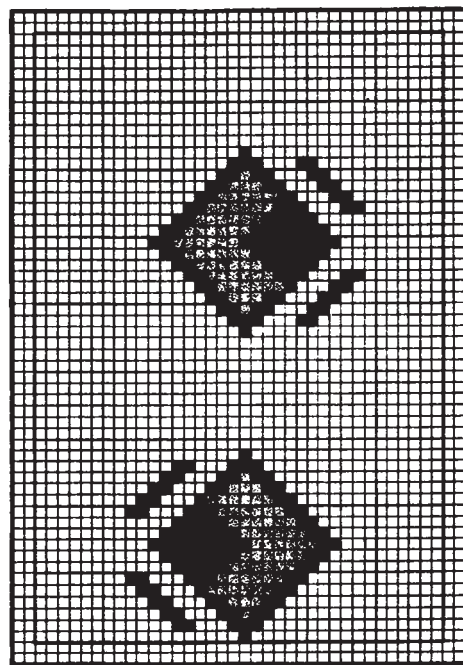


Fig. 172

with two systems filling and one system of warp is identical to those where using an extra figure warp in addition to single cloth. This point paper design is then used directly for building the figure picks for the harness chain (or cutting the figure cards in connection with Jacquard work); the weave for the ground picks referring to simple weaves, as for instances, the plain, the 3- or 4-harness twills, or some small, well broken-up granite weave. As a rule, these fabrics are woven *face down* on the loom.

Fig. 170 illustrates the subject, showing at the bottom one repeat of the point paper design and which corresponds to that shown in Fig. 165. The same calls for 22 figure picks, in one repeat of pattern, and for which reason, in connection with the use of the plain weave (22 bars) for the interlacing of the ground picks, 44 bars will be the repeat of the chain, considering the arrangement of ground: figure pick to be as 1:1.

A portion of this chain (14 bars) showing the analysis, *i. e.*, interlacing of the fabric, is given in the upper portion of Fig. 170, showing the first 7 ground and 7 figure picks; the ground picks being indicated by *dot* type, the figure picks by *full* type, respectively. On account of weaving design Fig. 165 face up and design Fig. 170 face down in the loom, the two designs are identical. If weaving design Fig. 170 face up, read *empty* square for warp up, *full* and *dot* squares for filling up, *i. e.*, warp down.

1 SYSTEM WARP: 3 SYSTEMS FILLING.

Fig. 171 is a sketch for a figured ribbon, to be produced with one system warp (ground warp) and three systems filling, using one system for the ground and two systems for the figure.

Fig. 172 is the corresponding point paper design.

In the loom (weaving ribbon face down) place your ground pick in the lower box, placing in the middle box the filling which has to produce the widest

weaving portions of the figure, and in the top box the filling producing the more innermost working portions of the figure. Provided we would reverse position of these two figure picks, the ends would catch with each other, resulting not only in waste (looping around each other) of yarn, but at the same time producing a useless rigid effect upon the back of the fabric structure, which in this case is considered *up* in the loom. As will be readily understood, two figure picks have to be built for each horizontal row of squares of the point paper design where two colors appear, otherwise only one, considering for one pick *full* type and for the other pick *cross* type for risers. Where only one of these types show on the point paper, as mentioned before, only one figure pick is to be cut.

In connection with Fig. 172, the point paper design (one repeat), the arrangement of the filling is as follows:

1 pick ground	}	$\times 2$
1 " figure (centre box)		
1 " ground	}	$\times 13$
1 " figure (top box)		
1 " ground	}	$\times 2$
1 " figure (centre box)		
11 picks ground		

58 picks, repeat.

Two repeats of this arrangement of filling produce one repeat of complete weave.

Fig. 173 shows a three shuttle design in which off and on, one or the other figure pick is used. In this instance, place the ground pick in the lower box, in the centre box that figure pick which is used the most, and in the top box the figure pick which is used for the least number of picks.

This arrangement of the picks is done to prevent catching of the figure picks, *i. e.*, that they clear each other at weaving. Enter the ground pick first, next enter the first figure pick from left to right to be followed on the next pick with the second figure shuttle, entering also from left to right. For the fourth pick the ground filling is entered. for the fifth pick the second figure filling, and for the sixth pick the first figure filling (see point paper design 174).

Figure picks entered before the ground pick is entered, are in turn used as the next pick after said ground pick. This will clear the two figure picks and prevent catching of the threads, in turn preventing the formation of ridges on the back of the fabric (which is woven face down) as previously referred to.

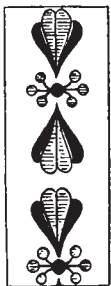


Fig. 173

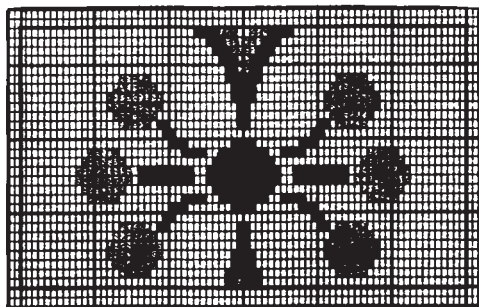


Fig. 174

In connection with sketch Fig. 173 and point paper design Fig. 174, for example, we considered the texture to be 90 warp-threads and 60 ground picks, to the inch. The various figure picks respectively considered,

call for the same number of picks as the ground pick, for which reason the design paper to use is calculated: 90 : 60 or as 3 : 2 giving us either 6 by 4 or 12 by 8 as the paper to use.

(To be continued.)

FULLING AND SCOURING Woolens and Worsteds.

FULLING is one of the most important processes which concerns woolens after leaving the loom; it is a process rarely applied to worsteds, since with the latter the preservation of the quality of the yarn has to be taken into consideration. Under the heavy pressure of the rollers in a fulling mill the wool fibres, which are softened and lubricated with the soap used, interlock one with the other until a level fibrous surface is produced. This procedure may be carried to its furthest point—say, in the felting of billiard cloth, or it may be a mere bursting of the threads as in a worsted serge. However there is a limit to the fulling, *i. e.*, felting action, since beyond a certain stage the fibres cease to felt, and if felting is continued after this point the wool simply comes away as flocks.

SCOURING is a most important process in the finishing of both worsteds and woolens, and on its being properly performed depends the success of the operations and treatment to which the goods are afterwards subjected. A thorough elimination of the soap from the goods after scouring is essential, particularly if the material has to be dyed; if the process has been slighted, *i. e.*, not all traces of the soap removed from the goods, the latter will then come up uneven in color. In nearly all cases where goods develop a greasy smell after finishing, this is the result of the soap which has been left in the goods; the best agent to use in the wash waters is a little ammonia, which quickly frees any soap residues and is also quite safe.

In scouring fancy flannels containing colored threads, it is a good plan never to allow either warm soap or warm water to touch them, as the colors are liable to bleed into the adjacent white parts unless the liquors are used cold. By using cold soap in the fulling and the scouring processes and then treating the goods with fuller's earth in the washer after all the soap has been removed, the cloth will be both clean and free from smell, and the colors will be bright. By cold liquors we mean tepid waters not exceeding blood heat, which will do no harm.

Some fancy mixtures may be scoured with fuller's earth alone, but this depends, of course, upon the amount of impurities they carry. If the cloth contains only a small amount of size, the latter in conjunction with the other impurities the cloth contains, may be safely removed by scouring well with refined fuller's earth. Such goods after scouring should always be put at once through the hydro-extractor after scouring and dried as quickly as possible. Even assuming that none of the colors have bled into the non-colored portions of the cloth, during the process of fulling or scouring the latter are sullied to some extent by merely lying in the wet state. It is advisable to scour and dry all the better grades of woolens before putting them into the fulling mill, since they require a fairly long treatment, and by this method a closer and better cover is obtained than if they were felted with all the dirt and grease in them. In many cases the goods after scouring are only hydro-extracted and entered in the fulling mill, and handled there with soap thick enough to compensate for the water in the cloth.