

A STUDY IN WEAVE FORMATION.

SKIP TWILLS IN COMBINATION WITH BROKEN TWILL EFFECTS.

HARNES AND JACQUARD WORK.

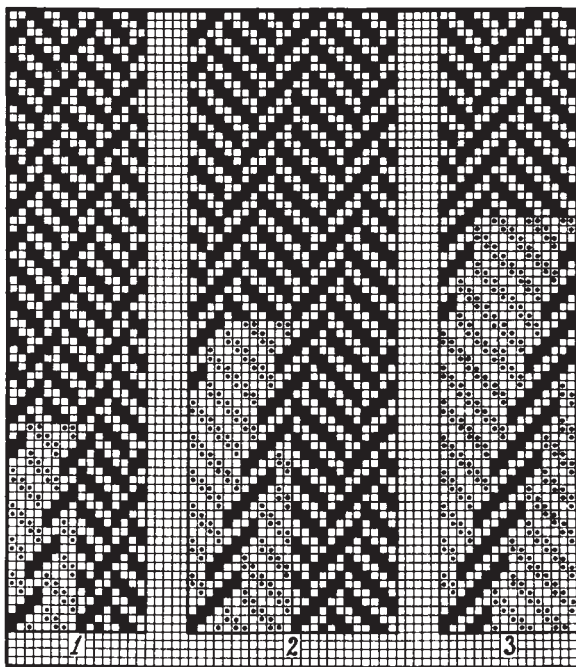
This, as the name indicates, refers to the combination of skip twills with broken twill effects, the exchange of the two effects producing at the same time a bold, diagonal effect on the face of the fabric. The steepness of the latter depends upon the number of threads missed when planning the skip twill. Skipping two warp-threads will produce a 70 deg. diagonal effect, skipping more warp-threads will make the diagonal effect (corresponding to the number of threads skipped) less steep.

For the foundation weave we may use either regular or fancy twills, both of which (the same as with any common skip twill and broken twill) must be even sided twills. By regular twills we refer more particularly to the $\frac{2}{3}$ 4-harness and the $\frac{3}{3}$ 6-harness twill, their use resulting in fabrics suitable for men's wear and dress goods, whereas the use of fancy twills for foundation will result in novel effects, suitable more particularly for dress goods.

Plain Effects.

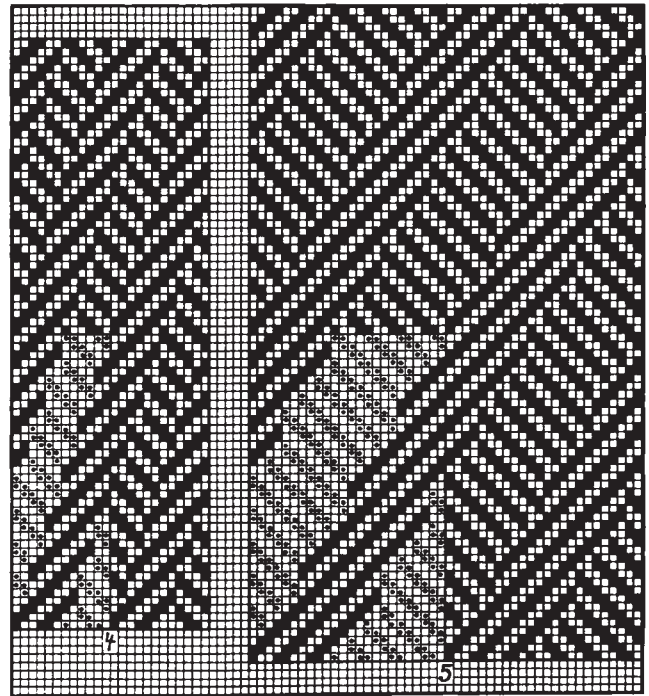
The same have for their foundation, for the skip twill as well as the broken twill effect, our regular twills previously referred to. To show their construction, weaves Figs. 1 to and inclusive 7 are given.

Fig. 1. Repeat 8 warp-threads and 24 picks.



Two repeats in width and three in height of the weave are given to more clearly show the general effect of the weave in the fabric structure. One re-

peat of the weave is shown ruled off in the left hand lower corner of the illustration, with slightly heavier



lines as compared to the regular lines of the design paper, and to which repeat of the weave we will now refer.

The foundation weave used is the $\frac{2}{3}$ 4-harness twill. Two kinds of type are used in the construction of the combination weave, viz: *full* and *dot* type.

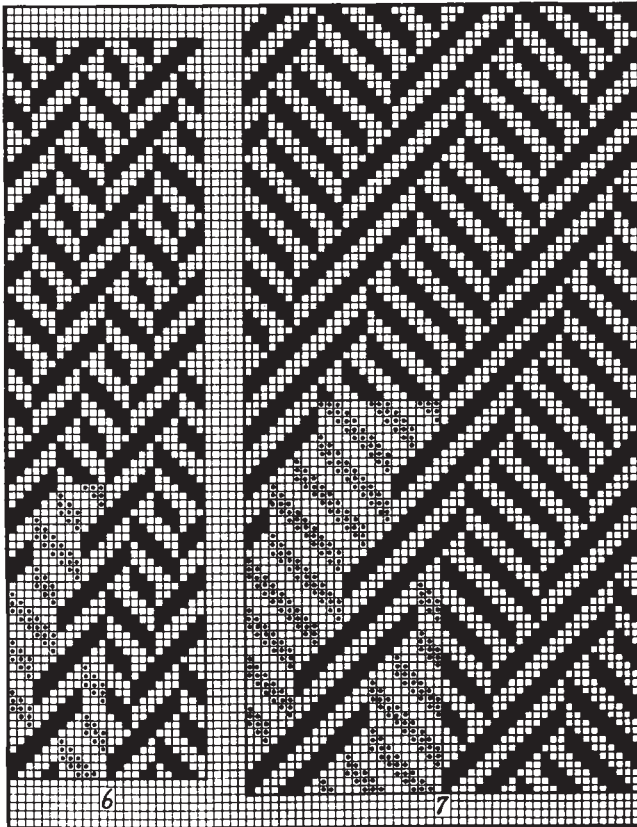
Full type shows four warp-threads of the foundation twill used in one set of threads, taken in rotation; every set starts, *i. e.*, skips 2 threads towards the right, four sets producing the repeat. Every set of twill lines, considered filling ways, skips for 6 picks, hence 4 (sets in repeat) \times 6 (picks to set) = 24 picks, repeat of the new weave. 6 (picks to the set) \div 2 (skips of set) = 3, average grade of diagonal effect, or (1 = 45, 2 = 63, 3 =) 70 deg. is the grading of the diagonal effect in weave Fig. 1.

Dot type shows the 4-harness twill forming the broken twill effect with the previously explained skip twill and its joining repeat.

Only one repeat of the combination weave is shown in two kinds of type, the other repeats being shown in one type only, to more clearly show the effect of the weave as seen in the woven fabric.

Weave Fig. 2 has the 4-harness twill for its foundation weave and repeats on 12 warp-threads. Six threads are used in each set of twills, as is shown by *full* type in the one repeat given in the lower left hand corner; each set skips for 2 warp-threads and 6 picks. Thus, in order to produce the repeat filling

ways ($12 \div 2 =$) 6 twill sets are required. Using 6 sets, each calling for 6 picks, gives us ($6 \times 6 =$) 36 picks for the repeat of the combination weave.



The broken twill (see *dot* type, is inserted as explained in the previous weave. Four complete repeats of the weave are given.

Weave Fig. 3 is identical to that of Fig. 2, the only difference being that 16 warp-threads with 8 ends to the set are planned for the repeat of the weave, giving us ($16 \div 2$ (skip) $= 8$ (sets of twill) $\times 6$ (skip) $=$) 48 picks for the repeat of the weave, filling ways. One repeat of the weave is shown in *full* and *dot* type, with half a repeat, added in one kind of type, above it.

Weave Fig. 4 is a mate to weave Fig. 2, using in the same way 12 warp-threads for its repeat, and skipping 2 warp-threads, but drafting every set of twill lines for 10 warp-threads in place of 6. This produces the same effect of a weave, but the broken twill effect (see *dot* type) has shorter twill lines; four ends in this case as compared to the six ends used in weave Fig. 2.

Weave Fig. 5 shows a less oblique diagonal effect, using the same foundation twill as previously used, but varying the skipping of the individual sets of twills. Repeat of weave, warp ways is 24 threads. Length of the pieces of twills used is 28 threads. Number of threads skipped is 6. Thus $24 \div 6 = 4$ pieces of twills used in the repeat of the weave, each skipping for 10 picks, giving us in turn ($4 \times 10 =$) 40 picks as the repeat of the weave. *Dot* type shows the broken twill, filled in the same as was done in previously given four examples. Four complete repeats of the weave are shown, one in two kinds of type, the other three repeats in one kind of type.

Weave Fig. 6 has for its foundation the $\frac{3}{3}$ 6-harness twill. Repeat warp ways 12 threads. 9 warp-threads are used for each set of twills, the same skipping for 3 warp-threads and 9 picks.

$12 \div 3 = 4$ pieces of twill to one repeat of the weave, and $4 \times 9 = 36$ picks, repeat of weave. Two repeats width ways, and two and a half repeats in length of weave are given.

Weave Fig. 7 has for its foundation again the 6-harness even sided twill. Repeat of weave is planned for 24 warp-threads. 21 warp-threads are used for each twill set, the latter skipping for 6 warp-threads and 12 picks.

$24 \div 6 = 4$ pieces of twill to one repeat of the weave, and $4 \times 12 = 48$ picks, repeat of weave. Four repeats of the weave are given.

Fancy Effects.

Two examples are given.

Fig. 8 shows us an example in which the two twill lines are composed of pieces of twills, each of a different repeat, *i. e.*, two different foundation twills are used in the construction of the new combination weave.

The twill running from left to right, and shown in the lower left hand repeat of the weave in *full* type, is the $\frac{3}{3}$ 6-harness even sided twill. The reverse twill, shown in *dot* type, is the $\frac{3}{2-1/3}$ 9-harness uneven sided twill.

The repeat of the weave warp ways is 24-harness.

Every twill line of the 6-harness twill, as shown by *full* type, starts (*i. e.* skips) 6 warp-threads towards the right, hence ($24 \div 6 = 4$) the complete new weave requires 4 pieces of twill for one repeat. Each skip of the 6-harness twill calls for 2 repeats filling ways, *i. e.*, ($2 \times 6 =$) 12 picks; hence $4 \times 12 = 48$ picks, is the repeat of the new combination

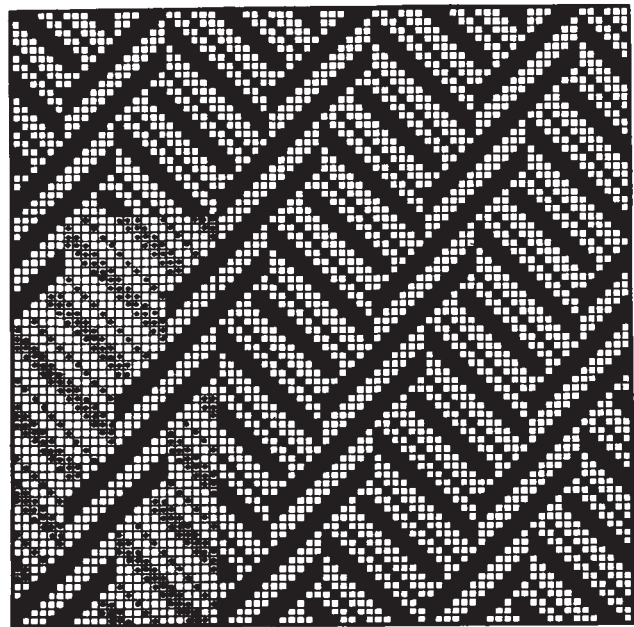


Fig. 8.

weave. Three repeats warp ways and one and a half repeats filling ways are given.

Fig. 9 shows another fancy combination effect, suitable for figured *i. e.*, Jacquard Effect dress goods. The figures are formed by both, warp and filling.

Repeat warp ways is 32 warp-threads.

Every twill effect skips for 8 warp-threads, hence $(32 \div 8 =)$ 4 pieces of twill are required for the repeat of the weave, warp ways.

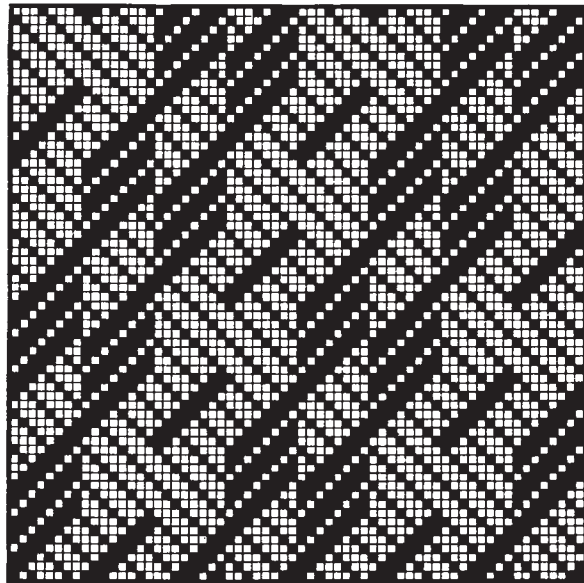


Fig. 9

Filling ways, each effect rises, *i. e.*, skips for 16 picks, hence $(4 \times 16 =)$ 64 picks, repeat of the combination weave filling ways. Two repeats are given.

THE MANUFACTURE OF RIBBONS, TRIMMINGS, ETC.

(Continued from March issue.)

Ribbons Made With Open-work Stripes.

Fig. 150 shows such an open-work ribbon.

The edges show taffeta, next to each a satin stripe (8-leaf satin) followed again on either side of the latter by a taffeta stripe.

The body of the ribbon is formed by leaving five times in rotation several dents in the reed empty, the filling in said open places being held in position by

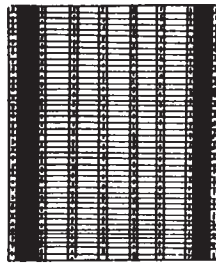


Fig. 150

four sets of threads, each set composed of three warp-threads, the same interlacing with taffeta.

Fig. 151 shows the weave required for producing ribbon shown in Fig. 150. Three sets of warp-threads are used, *viz*:

(1) The warp for the edges of the fabric, comprising eight warp-threads (four warp-threads on each side of the satin stripe) on each edge of the ribbon, each set working on taffeta.

(2) The four sets of three warp-threads each for the centre part of the ribbon, and which also interlace with taffeta.

(3) The warp for the face effect stripe for each edge of the ribbon and which calls for $(8 \times 8 =)$ 64 warp-threads, interlacing with the 8-harness satin, warp effect.

Below the weave, its drawing-in draft is given, using corresponding type, *viz*:

Dot type for the 4 harnesses carrying the warp-threads for the plain portions of the edges, as well as those for the centre stripes, both sets of warp-threads working on taffeta.

Full type for the 8 harnesses carrying the two satin stripes. The complete draft calls for 12 harnesses, section draw.

Below the drawing-in-draft the entering of the warp-threads in the reed is given, shown in *cross* type.

The two taffeta edges, of four threads each, are drawn with two ends per dent. The satin stripes are reeded four ends per dent or sixteen dents for the sixty-four ends of each satin stripe. The four taffeta stripes between the edges of the ribbon are drawn with three ends per dent, *i. e.*, each stripe is drawn in one dent, leaving four or more dents empty between each of these stripes.

Passanterie Trimmings.

Fig. 152 shows a passanterie trimming, illustrating the interlacing of four panels; Fig. 153 shows the weave for producing this trimming.

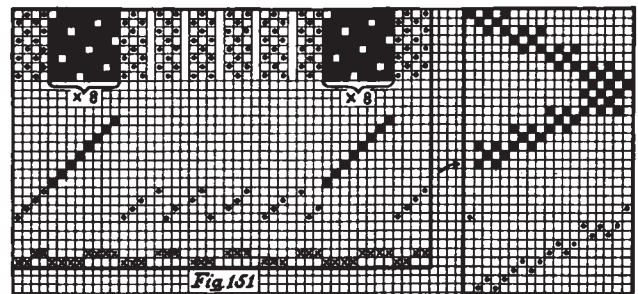


Fig. 151

Fig. 153

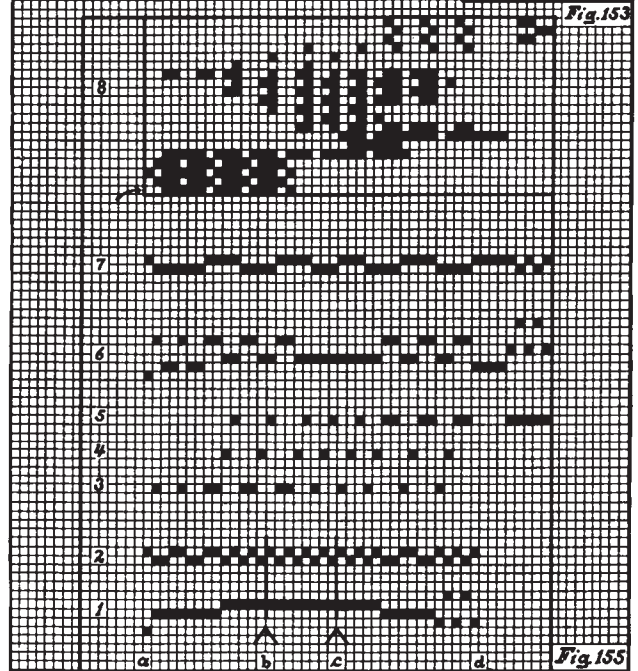


Fig. 155

The latter shows that the filling enters successively for three picks into one panel, the third pick in one panel being at the same time the first pick for the