A STUDY IN WEAVE FORMATION.

SKIP TWILLS IN COMBINATION WITH BROKEN TWILL EFFECTS.

Harness 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 $\frac{5}{4}$ 4-harness and the $\frac{7}{4}$ 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 6 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 repeat 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 $\frac{5}{4}$ 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 $4 \times 6$ (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.

Weave Fig. 6 has for its foundation the \(\frac{2}{3}\) 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 \(\frac{2}{3}\) 6-harness even sided twill. The reverse twill, shown in dot type, is the \(\frac{2}{3}\) \(\frac{1}{3}\) 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., \((2 \times 6 = 12)\) 12 picks; hence \(4 \times 12 = 48\) picks, is the repeat of the new combination 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](image)

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](image)

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.

**Passamenterie Trimmings.**

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

![Fig. 152](image)

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