A HAND BOOK OF WEAVES

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This Series began in July, 1811

Fig. 1312, used for woven felt, is a broken 1 up 3 down twill on face and a broken 3 up 1 down twill on back, woven 1 face, 1 back, 1 stuffing pick. After each two picks (1 face 1

back) there is inserted a stuffing pick which lies inside the fabric. Above this pick is raised every warp thread which is raised above the preceding or succeeding pick.

Fig. 1306, 16-shaft, woven 2 face, 1 back.
Fig. 1315, woven 2 face, 1 back.
Fig. 1316, 7-shaft, woven 2 face, 1 back.
Fig. 1312, woven 1 face, 1 back, 1 stuffing.

TRICOT WEAVES
Cloths having the face broken with narrow and uniform furrows or ridges to resemble knitted fabrics are called tricots.

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name being derived from the French "tricot" to knit. When the furrows run lengthways or in the direction of the warp, the cloth is called "tricot long". If the furrows run crossways or with the filling the fabric is called "tricot cross".

The simplest way of obtaining a tricot floats on the back. This exchange of position after each 4 warp threads causes a rib or tricot line, and gives an elastic fabric. It is suited for a worsted tricot for dress goods with 150 to 170 picks of 1/70s to 1/80s worsted per inch.

For heavy tricot cloths transposed double effect is by alternating a thread of right twist with one of left twist in both warp and filling. The reversal of the twist causes a ridge or tricot, which is very effective in light fabrics. Combinations of tricot long and tricot cross effects can be made by a suitable arrangement of threads of different twist in both warp and filling.

**TRICOT LONG**

Tricot effects are also produced by weave construction. The tricots at Figs. 1317 and 1318 are made by alternating two threads of a warp weave with two threads of a filling weave. Fig. 1317, 2 threads 3 up 1 down, 2 threads 1 up 3 down. Fig. 1318, 2 threads 4 up 1 down, 2 threads 1 up 4 down. Combinations of 2 up 1 down with 1 up 2 down can also be used for this purpose.

At Fig. 1319 a group of 4 warp threads is woven plain on alternate picks, the other picks floating on the back. The plain weave and float are transposed for the next 4 threads, the back pick interlacing the warp in plain weave order, while the other pick weaves, as shown at Fig. 1320 are used. In Fig. 1320 the first 4 warp threads form two plain cloths, one above the other, and not stitched in any way. After the fourth thread every back pick comes directly to the face, while the face picks pass to the back. In this new position two plain cloths are again made for 4 threads when the back and face picks again are transposed, resuming their original position for another four threads. This successive transfer of the filling from face to back and from back to face makes one compact fabric.

At the point where the face and back picks are transposed a back warp thread, woven 1
up 3 down, breaks with the adjacent face warp thread, woven 3 up 1 down, as shown by threads 4 and 5, Fig. 1320. This sharp break tends to separate the two adjacent face warp threads, 3 and 5. Fig. 1320, caus-

tween the breaks the double plain weave is clearly developed as shown at Figs. 1321 and 1322; the weaves alternating every 6 threads in Fig. 1321, and every 8 threads in Fig. 1322.

Fig. 1324 shows a pattern with tricot stripes of different widths. Very heavy tricot cloths are made with extra back warp or filling. Fig. 1324 shows the tricot long, Fig. 1320, with a back filling

back warp weave with a broken 3 up 1 down twill on the face and a broken 1 up 3 down twill on the back, the two weaves being so adjusted as to cause the break already described. By an increase in the width be-
stitched in 7 up 1 down order.

Tricot long effects are frequently used for fine woolen goods in which the face warp consists of woolen yarn twisted with organ-
zine silk.
TRICOT CROSS

Tricot cross effects are obtained by turning the tricot long weaves one-quarter round, thus transposing the warp and filling. Fig. 1325 shows 2 threads of a broken 3 up 1 down twill alternating with 2 threads of a broken 1 up 3 down twill. The filling threads are arranged to prevent a sharp break like that in the warp of the tricot long, Fig. 1317. The number of tricot effects can be increased by using heavier filling for the picks that float on the back 3 up 1 down.

Fig. 1326 is a cross tricot weave obtained by turning Fig. 1320 one-quarter round to bring the back threads in the filling. It is shown at Fig. 1327 with a stuffing pick in each stripe to increase the weight of the cloth.

Fig. 1326 may be considered a double plain weave with face and back warp threads transposed every 4 picks. The width of tricot effect is not increased as compared with that in Fig. 1326, hence it is better to consider it a back filling weave with the face woven with a broken 1 up 3 down twill, and the back with a broken 3 up 1 down twill, the two weaves being adjusted to cause a break by bringing a single riser on a face pick next to a single sinker on a back pick.

Fig. 1328 shows a back filling tricot weave, 2 face 1 back. The face weave is a 1 up 2 down twill to the right; the back weave a 2 up 1 down twill to the left. Each sinker on the back pick comes next to a riser on the preceding face pick, producing the break or tricot effect.

Fig. 1329 shows a similar arrangement with a broken 1 up 3 down twill on the face and a 3 up 1 down twill to the right on the back; woven 2 face 1 back.

In tricot fabrics the effect depends in large measure upon the correct adjustment of the set of warp and filling, and upon the relative
size of the warp and filling yarn. Thus in Fig. 1346 the tricot effect is made more pronounced by increasing the relative size of the filling yarn.

CLOTHS WITH AN EXTRA INNER FABRIC

If the threads of a fabric float for long distances it is frequently necessary, in order to prevent slipping of the warp and filling and to make the cloth more durable, to introduce an extra inner fabric, which is usually woven with a plain weave. Fig. 1331 is pick, the adjacent inner warp thread at the right must also be raised above the outer pick, thus bringing the inner warp thread above the outer filling.

No change is necessary in the squares where the outer picks float on the face, because the outer picks come above the adjacent inner picks, while the outer warp floats on the back.

These operations of drafting may be stated thus:

Place a riser to the right and also above each riser of the outer weave.

The complete draft is shown at Fig. 1331. Figs. 1331, 1333 and 1335 are weaves for cloths with extra inner fabrics, the outer weaves being shown at Figs. 1330, 1332 and 1334 respectively.

When the fabric is laid 2 inner 1 outer, Rule 4 is changed to the following:

Place a riser at the right and left as well as above and below each riser of the outer weave, see Fig. 1337. Fig. 1336 is the ground weave. On the other hand, when the cloth is 2 outer 1 inner. Rule 4 is changed to the following:

Place a riser at the right of and above each riser on every outer thread that is followed by an inner thread, Fig. 1340. Fig. 1339 is the ground weave.

Fig. 1338 shows a broken 3 up 1 down twill to which an extra warp thread is stitched plain, 1 up 1 down with the filling. The warp is 2 regular, 1 extra. The two weaves are so adjusted that the extra warp threads are covered by the regular threads.