

## A HAND BOOK OF WEAVES

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Translated and Revised by Samuel S. Dale

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

FIG. 1311

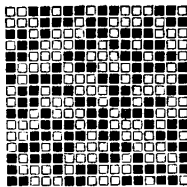


FIG. 1312

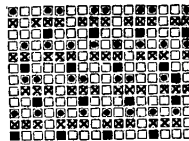


FIG. 1313

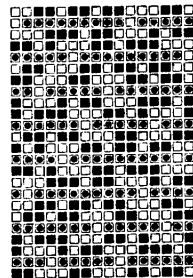
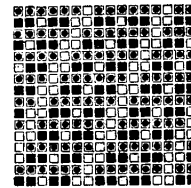


FIG. 1314

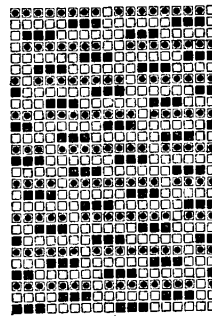


FIG. 1315

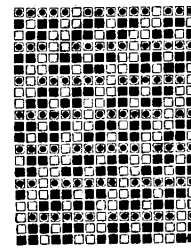


FIG. 1316

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 nar-  
row and uniform furrows or ridges to re-  
semble knitted fabrics are called tricots, the

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name being derived from the French "tricoter" 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

FIG. 1317

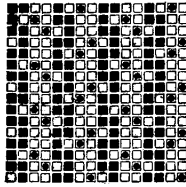


FIG. 1318

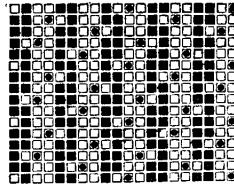


FIG. 1319

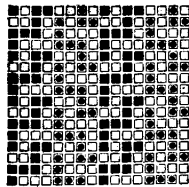
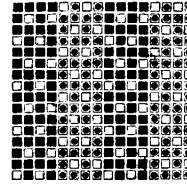


FIG. 1320

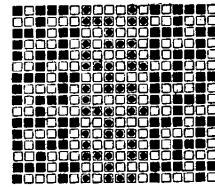


FIG. 1321

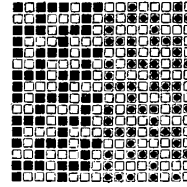


FIG. 1322

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

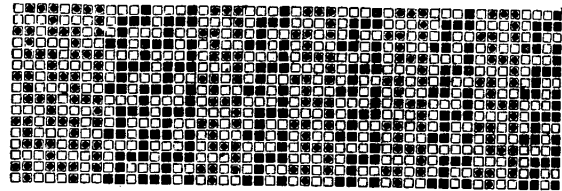


FIG. 1323

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

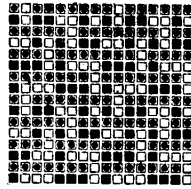


FIG. 1325

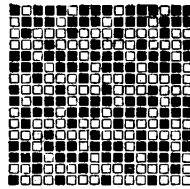


FIG. 1326

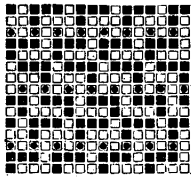
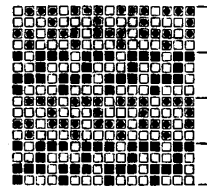


FIG. 1327

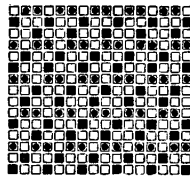


FIG. 1328

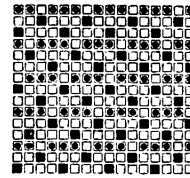


FIG. 1329

ing the face warp to form groups of two threads each. Threads 1 and 3 lie close together, as do threads 5 and 7, developing the tricot effect.

Fig. 1320 may also be considered as a

Fig. 1323 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

FIG. 1330

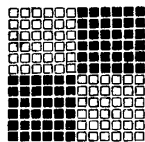


FIG. 1332

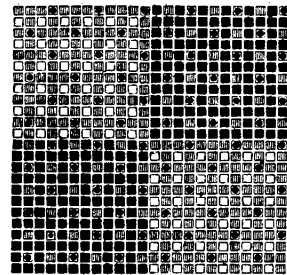
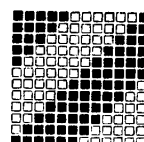


FIG. 1331

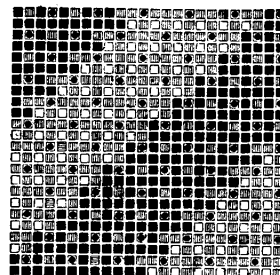


FIG. 1333

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 organzine 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

FIG. 1334

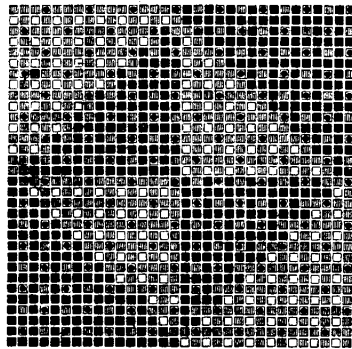
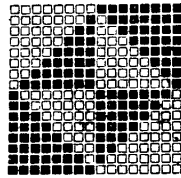


FIG. 1335

broken 1 up 3 down twill. The filling threads are arranged to prevent a sharp

FIG. 1336

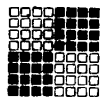


FIG. 1338

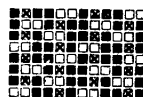


FIG. 1339

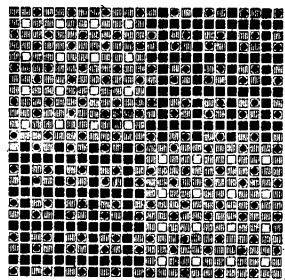
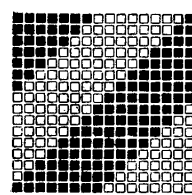


FIG. 1337

break like that in the warp of the tricot long, Fig. 1317. The number of tricot effects can be increased by using heavier fill-

ing 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.

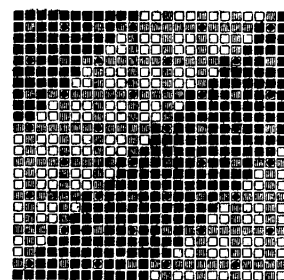


FIG. 1340

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. 1326 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

FIG. 1341

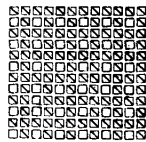


FIG. 1342

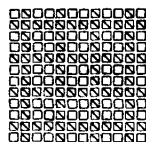


FIG. 1343

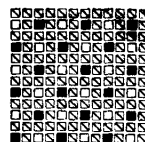


FIG. 1344

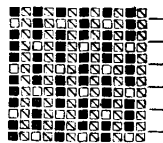
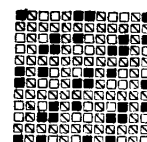


FIG. 1345

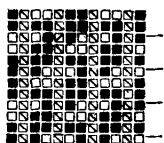


FIG. 1346

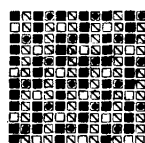


FIG. 1347

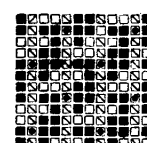


FIG. 1348

a 6 up 6 down basket, Fig. 1330, woven 1 and 1 with an inner plain weave. It is drafted as follows:

1. The cotton warp and filling threads for the inner fabric are shown by shaded squares to distinguish the inner from the outer threads.
2. The inner plain weave is drafted with dotted circles on the shaded threads.
3. The weave for the outer threads is marked with black squares.
4. The inner and outer weaves having been drafted as above, it is now necessary to raise the outer warp threads above the inner picks in the squares in which the outer threads float on the face. Where the outer warp is above an outer pick the outer warp thread is also raised above the succeeding inner pick, thus bringing the inner pick below the outer warp.

It is also necessary to raise the inner warp threads above the outer picks where the latter float on the back. Where an outer warp thread is raised above an outer

each riser of the outer weave.

The complete draft is shown at Fig. 1331.

Figs. 1331, 1333 and 1355 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.