

Fig. 14 is the $\frac{2}{1}\frac{1}{1}$ 5-harness twill.

Fig. 15 is the 4-harness, even sided, broken twill.

Fig. 16 is the combination of Figs. 14 and 15, 1:1, repeating on 40 warp threads and 20 picks.

Fig. 17 shows us the 5-harness corkscrew.

Fig. 18 shows us the 4-harness, even sided, broken twill, and

Fig. 19 the combination of corkscrew Fig. 17 and broken twill Fig. 18, 1:1, repeating on 40 warp threads and 20 picks.

Fig. 20 shows us one of these combination weaves of a somewhat large repeat, 110 warp threads and 55 picks, being the result of combining 1:1.

Fig. 21 the $\frac{3}{1}\frac{2}{2}\frac{2}{1}$ 11-harness regular twill with the 5-harness corkscrew shown in Fig. 22.

Fig. 20 calls for its execution on the loom for (11 + 5) 16-harness, double-draw.

Fig. 23 shows us another one of these large combination weaves, showing a striped effect, the result of combining warp and filling in one of the foundation weaves, see Fig. 24. The latter repeats on 11 warp threads and 11 picks, and is used 1:1, in connection with the 5-harness corkscrew, Fig. 25, as the foundation for the new large effect weave Fig. 23. The same repeats on 110 warp threads and 55 picks, calling for (11 + 5) 16-harness, double-draw, for its execution on the loom.

FABRIC ANALYSIS.

(Continued from page 32.)

1 SYSTEM WARP 2 SYSTEMS FILLING.

These are picked-out in the same manner as single cloth samples, picking always the filling out of the warp. Close attention must be paid during picking-out to the serial succession of these two systems of fillings. If in the picking-out of such a pattern it should happen that the back pick has been recorded, and drawn out of the sample before the proper face pick had been taken out, the result, if not noticed, then will be a wrong weave, which before being used, must be corrected. As soon as you see such an error, during picking-out the sample, correct it at once, or better start picking-out over again. If you should fail to record a pick and the pick is pulled out before you noticed it, the same as with any other sample, leave a horizontal row of squares empty, and insert interlacing by theory, after repeat of weave for the sample is obtained.

The fundamental rules of weave formation, to be observed in the construction of this system of weaves, will greatly assist you here in removing difficulties, and when by knowing and adhering to these rules, it is very easy to correct a stitching or misplacement of picks, which has been marked incorrectly, a feature readily explained in connection with diagrams Figs. 7 and 8, and of which Fig. 7 shows an arrangement in which the back pick has been taken out before the proper face pick, and was so recorded on the point paper, whereas in diagram Fig. 8 the corresponding picks have always been taken out in proper rotation.

In the construction of weaves of this kind, the following rules must be always observed: "Stitch

your back filling to your face structure with a warp thread which is down in the face pick preceding and following this backing pick; at the same time distribute this stitching, as good as possible, over all the repeat of the warp threads, i. e., use them as uniformly as possible for stitching said back filling."

Weave Fig. 8, in order to give the face of the fabric a close texture, shows the ratio of the face to the back picks to be 2 : 1, and which is the arrange-

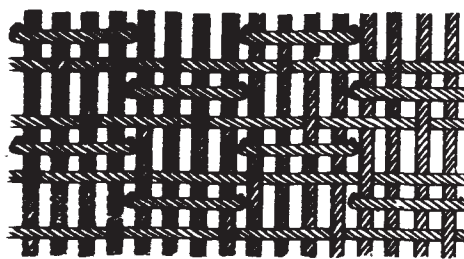
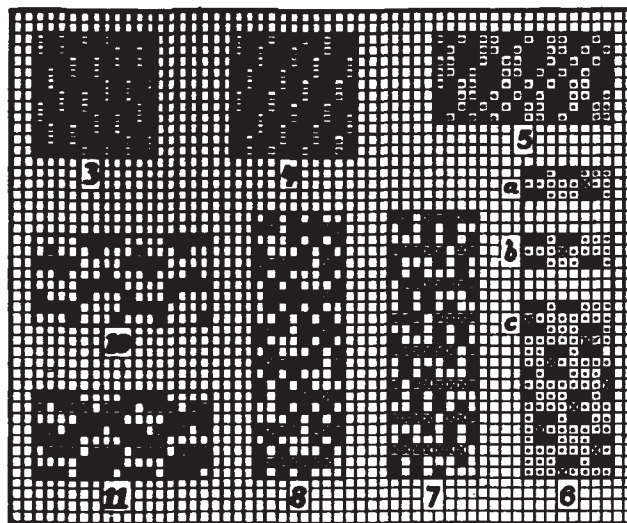


Fig. 9.

ment most frequently met with in connection with these fabric structures. Rules and explanations given, however, will at the same time show, how to proceed if dealing with the arrangement of 1 pick face to alternate with 1 pick back. They are identical, hence no further explanation required.



2 SYSTEMS WARP 2 SYSTEMS FILLING.

This fabric structure is technically known as *double cloth*, and comprises the bulk of our hardest sample to pick out. It can only be mastered after being thoroughly familiar with the fabric structures dealt with until now, since it comprises all rules and explanations thus far given. The experienced designer will, as a rule, handle these fabrics minus picking-out, or at the most, take from one end of the fabric, its lower structure away, ascertain proportion of face and back for warp and filling, ascertain face weave and in turn construct the double cloth weave required, by practical experience gained in his vocation.

Again, there may be samples met with, where he as well as the less experienced, will have to resort to picking-out the sample after the single cloth procedure. In that case, be careful to notice how the combining of

the two cloths is done, *i. e.*, whether the back warp stitches into the face filling or the face warp into the back filling. This information will guide you in your work.

In some instances, it may be found of advantage to remove one of the systems of back threads, the warp or the filling, which ever easier and more advantageously removed.

Having mastered the analysis of double cloth, you will have little difficulty to master special subjects, like additional binder warps, binder picks, stuffer warps, stuffer picks, 3-ply cloth, etc., hence no reference necessary; again they may come up in such a variety that an explanation would only bewilder—they belong only within reach of the experienced designer.

HOW TO PICK-OUT PILE FABRICS.

By pile fabrics, in this instance, we refer to woolen overcoatings or cloakings, known as Montagnacs, Flocone, etc., presenting either a wool, alpaca or fine camels hair face, *i. e.*, pile pick; the ground and the backing picks to be wool, and the two systems of warps, either wool (rather hard twisted) or merino or cotton yarn. The stuffer filling, if such is used to increase bulk and warmth of fabric, is, as a rule, a woolen yarn, carrying any amount of shoddy.

The picking-out of these fabrics is generally commenced with singeing or shaving off the fuzz on the back of the sample, in order to be able to ascertain that weave. Next ascertain texture for warp and filling. After this, remove carefully back warp and back filling, ascertaining, at the same time, their counts. Provided the fabric contains a stuffer pick, the same will then rest loosely to the eye of the designer. Ascertain its texture as well as counts of yarn.

We now have a new back structure for the fabric. Singe or shave the same and begin picking-out the face structure; pick-out carefully. No great trouble will be experienced, but it will be advisable to proceed with care and judgment.

In Fig. 9 an enlarged outside view of a striped Flocone is given, as is seen from the back of the fabric after the backing structure and stuffer picks have been removed. The remaining threads of the face structure have been shown with excessively large perforations between the threads, so as to make matters very clear to the reader.

In Fig. 10 a representation of fabric structure Fig. 9 is given on point paper, taking into consideration that Fig. 9 illustrates the back view of the structure.

If we now want the weave for the face of the fabric, we must reverse weave Fig. 10, exchange risers for sinkers throughout the entire weave, in turn obtaining weave Fig. 11, *i. e.*, the reverse of weave Fig. 10.

Fabric plan Fig. 9 clearly explains the subject. We can clearly distinguish the ground picks from the pile picks, also the places where the latter have been torn or broken on the gig and the ends thus produced transformed into flakes, *i. e.*, loose pile ends.

When dissecting the face structure, ascertain the nature of the raw materials used, counts of yarns used,

as well as the texture of warp and filling. Next ascertain, by comparison of textures for face and back structure, the arrangement of face to back in warp and filling.

The most important point to make sure of is the pile pick, its fineness, its proportional arrangement to the ground pick, also whether it refers to a single, 2 or more fold pick, and whether the latter have been entered single or from one bobbin.

NOVELTIES FROM ABROAD.

Woolen Cheviot Suiting.

Warp: 2040 ends; 3½ run woolen cheviot yarn and 2 fold 80/2's spun silk.

Weave: See Fig. 1; Repeat 34 warp threads and 56 picks; 18-harness fancy draw.

Reed: 15½ @ 2 ends per dent; 31 ends per inch; 66 inches wide in reed.

Dress: 1 end wool, black } × 3
 1 " " , white }
 1 end wool, black
 1 " spun silk, white
 1 " wool, black
 1 " " , white
 1 " " , black
 1 " spun silk, white
 1 end wool, black } × 12
 1 " " , white }
 1 end wool, olive
 1 " spun silk, white
 1 " wool, olive
 1 " wool, white
 1 end wool, black } × 11
 1 " " , white }
 1 end wool, black
 1 " spun silk, white
 1 " wool, black
 1 " " , white
 1 " " , black
 1 " spun silk, white

68 ends, repeat of pattern.

Filling: 32 picks per inch, arranged thus:

1 pick 3½ run woolen cheviot, black
 1 " 2-ply 6 run woolen cheviot, white
 and brown twist

2 picks in repeat of pattern.

Finish: Cheviot finish; scour well, clip on shear, press, 56 inches finished width.

Worsted Suiting.

Warp: 4352 ends, all 2/42's worsted.

Weave: See Fig. 3; Repeat 8 warp threads and 8 picks; 8 or 16-harness fancy draw.

Reed: 16 @ 4 ends per dent; 64 ends per inch; 68 inches wide in reed.

Dress: 2 ends black
 2 " white and dk. gray mix } × 16
 1 end black
 1 " white and dk. gray mix } × 32

128 ends, repeat of pattern.

Filling: 70 picks per inch, all 2/42's worsted; arranged thus: