REVERSIBLES.
(HARNESS AND JACQUARD WORK.)
(Continued from June issue.)

Checkerboard Effects.

Fig. 30 shows us a clear checkerboard effect, using 10 ends white and 10 ends black for each check, hence repeat of pattern 40 warp-threads and 40 picks. Fig. 4 (see Dec. 1914 issue) will explain the weave, the latter
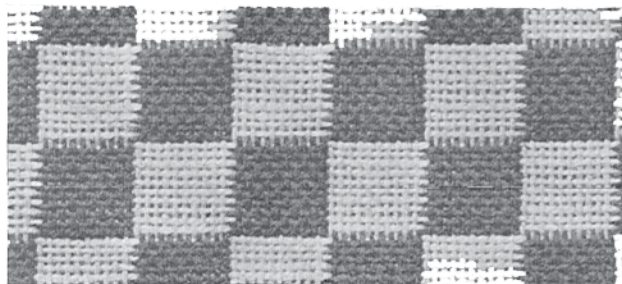

Fig. 30

calling for 4 ends for each color in each check, whereas sample Fig. 30 calls for 10 ends each. The sample has been reproduced on account of its loose texture, giving a good view of the construction of a reversible fabric structure, changing warp and filling ways.

Four Effects in Double Plain.

This result is produced by adding to the two clear effects of double plain, two mixed effects.

For example, consider that the face warp and the face filling is yellow and the back warp and back filling red.
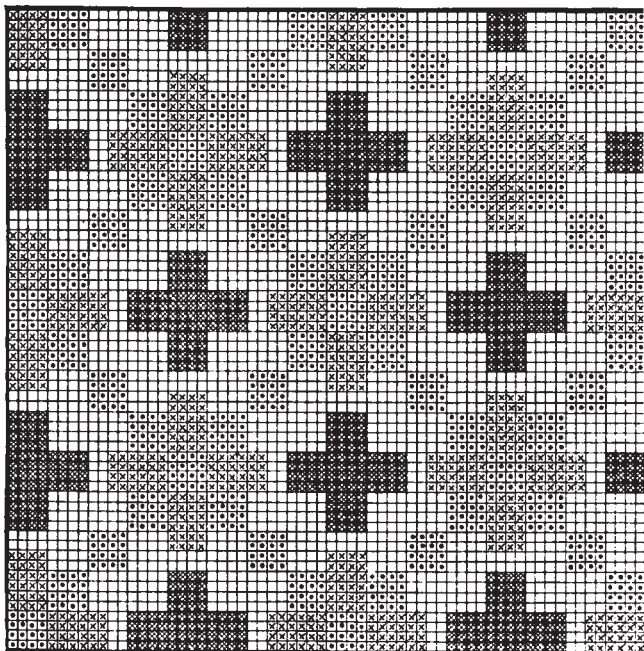

Fig. 31

Interlacing the yellow warp with yellow filling will produce the *first* effect.

Interlacing the red warp with red filling will produce the *second* effect. Both are clear effects.

Interlacing the yellow warp with red filling will produce the first combination, *i. e.*, the *third* effect, and

Interlacing red warp and yellow filling will produce the second combination, *i. e.*, the *fourth* effect possible to be obtained.

Fig. 31 shows us the motive, *i. e.*, face effect of such a four color double pla·n fabric structure, in which

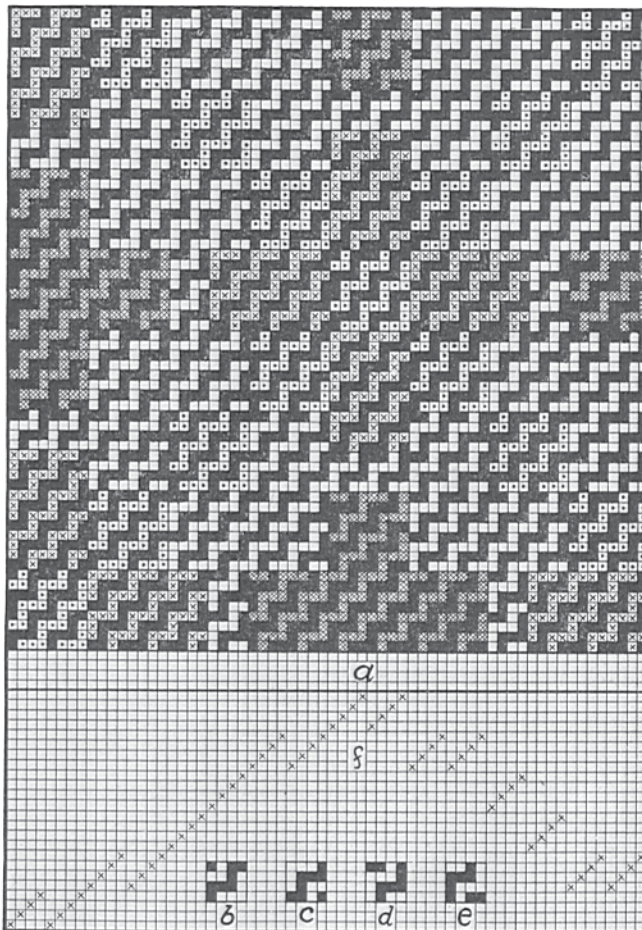*Dot* type represents the interlacing of the face warp with the face filling;

Fig. 32

Cross type represents the interlacing of the back warp with the back filling;

Shaded type represents the interlacing of the face warp with the back filling, and

Empty type represents the interlacing of the back warp with the face filling.

In order to obtain the working design, *i. e.*, the weave, enlarge the motive to four or more times its size (2 or more times each way) depending upon the size of the effects desired in the fabric, using a different

color for each of these four effects quoted. For instance, consider

    Dot type = *Green* paint
    Cross type = *Red* paint
    Shaded type = *Orange* paint
    Empty type = *Brown* paint

This procedure will result in the foundation for diagram Fig. 32^a.

Next introduce the double plain in its (2 warp-threads × 2 picks) four possible different positions (as shown respectively in diagram Fig. 32^b, 32^c, 32^d and 32^e) upon the plan originally prepared for weave Fig. 32^a.

With reference to the four positions, *b, c, d* and *e*, of the double plain shown in Fig. 32,

b shows starting warp and filling with face.
c shows starting with back warp and back filling.
d shows starting with back warp and face filling.
e shows starting with face warp and back filling.

Next insert these four combinations of the double plain, all four in black, each combination all over its respective foundation as painted in the four colors on your weave plan as previously referred to, and when weave Fig. 32^a will result.

In this instance we added the four combinations as follows:

b upon *dot* type or *green* color
c   "   *cross* type or *red* color
d   "   *empty* type or *brown* color
e   "   *shaded* type or *orange* color.

Diagram *f* shows the drawing in draft of weave *a*, to be executed on the loom with 24 harnesses.

Using in connection with motive Fig. 31 or weave Fig. 32 the arrangement of the warp for example to be 1 end white to alternate with 1 end red and that of the filling 1 pick yellow to alternate with 1 pick red, we then obtain a four color effect, *viz:*

    (1) pure red
    (2) white — yellow
    (3) White — red
    (4) red — yellow.

It will be readily understood that any number of additional combinations in three and four colors can be made.

(To be continued.)

Waterproofing Goods.

A cheap, easy, and efficient method of waterproofing fabrics and threads, dyed or undyed is the object of a late English patent. The process consists in first treating the material with a solution of 3 to 20 lb. soap per 100 gallons of water, running the goods through this liquor as many times as considered desirable. They are next treated with a solution of metallic salt, in the proportion of 3 to 20 lb. of salt per 100 gallons of water. If desired, 3 to 20 lb. of bichromate may be added to this solution, or a separate solution may be prepared and subsequently applied, or it may be dispensed with altogether. The goods are passed several times through the metallic salt solution so as to thoroughly precipitate the fatty acid from the soap solution. It is claimed by the patentees that the treatment improves the fastness of dyed goods, and that goods remain impervious to moisture even if subsequently subjected to repeated washings.

FABRIC ANALYSIS.

(Continued from May issue.)

Ascertaining Texture of Finished Fabric.

Having obtained the weave for sample submitted, the next point to ascertain is the number of warp-threads and picks there are in the unit of one inch, in the fabric, the result being what is known as the texture of the (finished) sample. In expressing the same, the texture of the warp-threads refers to the first numeral, thus 42 × 36 means that there are 42 warp-threads and 36 picks per inch in the sample.

Multiplying warp-threads per inch in (finished) sample with the width of the finished fabric the sample picked out refers to, gives us then the number of threads to use in the complete warp.

From the picks per inch in (finished) sample, by carefully examining the construction of the fabric (texture, weave, finish, handle etc.) under consideration, by experience we then have to judge how many picks per inch to put in the cloth, on the loom. This subject will be later on dealt with in detail.

There are two ways of ascertaining warp and filling texture (in the finished fabric) from a sample, one by counting the individual threads in one inch or fraction of an inch, the other by calculating from the design-effect in the fabric after the repeat of the weave has been ascertained by picking-out. Some samples can be handled easier by one or the other procedure, using both in some instances in order to verify counting.
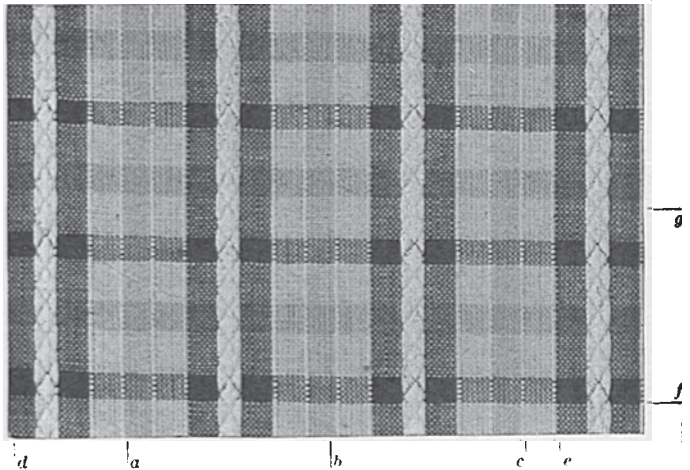

Fig. 13

Obtaining Texture by Counting.

For this purpose use the protruding fringe of the warp-threads as left to you after picking-out the weave, straighten them carefully between your fingers so they rest (protruding from the fabric) perfectly parallel, side by side, the same as they were resting in the woven sample.

Next, with a compass set one inch wide, indicate carefully this distance on your sample close to the last pick as left in the latter, and with your picking-out needle carefully arrange the loose ends, designating which ones on each side of the arms of the compass belong to the *one inch to be counted*. Either mark or paint the first and last thread of this one inch wide fringe with your red paint brush, or indicate them in any other way; again you may clip the fringe of those threads which do not belong to the *one inch unit* on either side. This will give you a chance to handle, i. e., count the threads in the unit of one inch at your leisure; repeat your count while at it, so as to be sure of no error.

Duplicate the same procedure with the filling so as to ascertain the filling texture, i. e., picks per inch in finished sample.

Provided the fringe as left from the picking-out process is too much disturbed or mixed up, prepare such fringes of warp and filling specially for counting texture, on a different place from that where you picked-out.

In some instances, more particularly with heavy felted woolen samples, you may have to use less than one inch fringe for counting, since you may not be able to get the threads in one inch of the sample clear.

With expert work it may be advisable to count each tex-