

FIGURED COTTON ZEPHYRS.

When required to produce some of the more fancy patterns in this line of fabric structure, the use of fancy drafts in connection with a dobby loom is a necessity. The principle involved in designing these weaves, considered from a technical point of view, means: Figuring with the warp upon a plain ground.

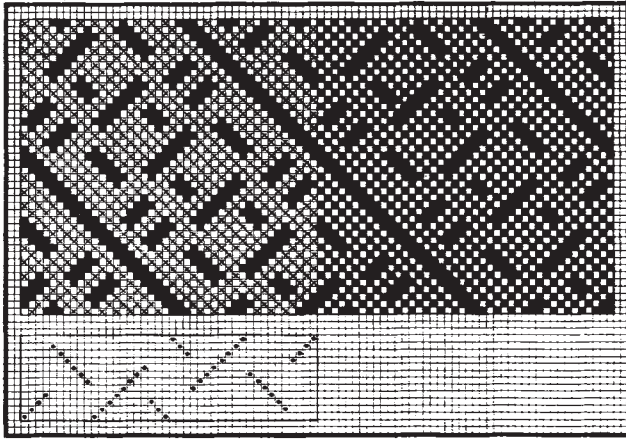


Fig. 1

The first thing the designer, in planning for novelties in this class of fabrics has to do, is to prepare his sketch, *i. e.*, planning his idea as well as repeat of weave on the point paper. To obtain the best results it may be often necessary for him to make more than one attempt, while each effort serves as a kind of study, and aids the full development. This is more generally the case when a set plan, or method of procedure, is not employed.

To illustrate the construction of this system of weaves, the accompanying four weaves are given, and of which,

Fig. 1 shows a diagonal line effect obtained by continuing to join the threads, which uniformly float over three picks, until a number of threads equal to the number of picks in the prearranged motive is obtained. Considering the weave more in detail, it shows us that the square of equality in size of pattern, both warp and filling ways, is assuredly the case in all regular twills that travel only one pick for each thread.

Weave Fig. 1 is a design repeating on 42 warp-threads and 42 picks and which can be woven on 12 harness, fancy draw, as shown by drawing-in draft given below weave in *dot* type.

One repeat of the weave is shown in two kinds of type, *cross* type showing the foundation, *i. e.*, the plain weave, whereas *full* type shows the twill effect.

The second repeat of the weave is shown all in *full* type to clearly show the formation of the pattern in the cloth.

This weave forms an all-over diagonal effect, suitable for a cloth whose warp is all of one color. It may also be employed as a stripe, in which case the threads required for this purpose are drawn on 2 or 4 extra harnesses, interlacing throughout the repeat of the weave on the plain, cotton or calico weave, as the same is variously called.

Weave Fig. 1 represents a specialty in a twill effect, for the fact that it is seldom that a design containing a regular diagonal will reduce in drafting, which fact, along with the regular, extensively figured, fancy ground weave, adds value to the design.

Provided the diagonal lines are an objectionable feature, a re-arrangement of the latter half of the draft, will cause the lines to be broken, and the design in turn be regularly spread all over the surface of the cloth. Weave Fig. 2 explains this subject, the weave repeating on 42 warp-threads and 42 picks, showing what we technically call an entwining twill effect. Two repeats each way are shown, showing actually four repeats of the design, in order to show the novelty of the effect produced.

To show the construction of a more varied combination design, Fig. 3 is given, repeating on 80 warp-threads and 80 picks, and which weave can be woven on 16-harness, fancy draw, similarly constructed to the drawing-in draft shown in connection with weave Fig. 1.

As a further development in design, one portion of the diagonal may be reversed, in turn producing effect shown in Fig. 4, a design composed of lines varied in length and direction of inclination, and which weave also calls for a 16-harness, fancy draw, in connection with 80 warp-threads and 80 picks for the repeat of the pattern.

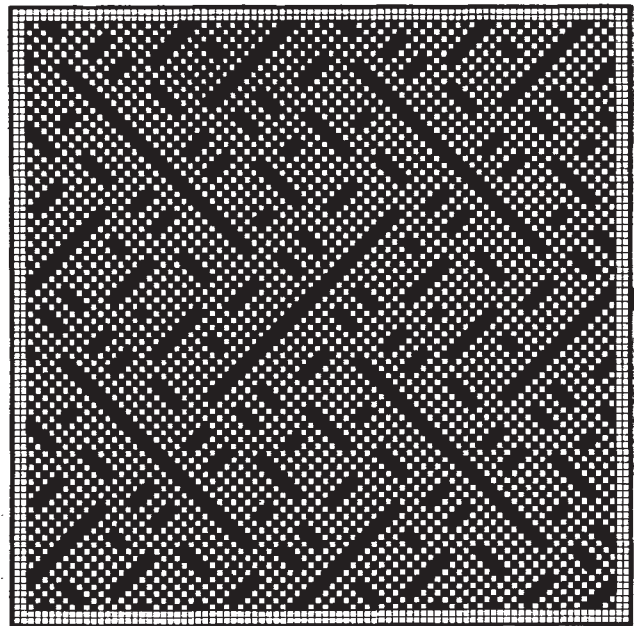


Fig. 2

A very large design may be obtained by reversing the order of the weave in both the warp and the filling directions. This treatment, if applied to design Fig. 3, would produce a diamond effect, with a filling of short diagonal lines varied in length and direction of traverse.

One feature, which is to some extent found to deteriorate diamond effect designs, is the floating of the

threads and picks over a greater distance at the point where they reverse, than at any other point in the

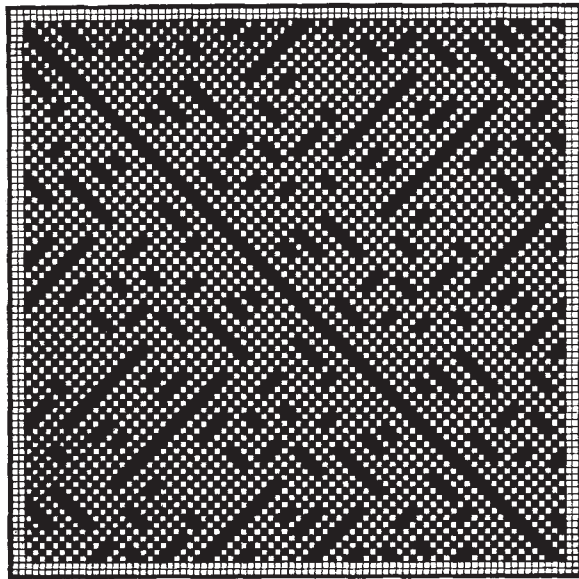


Fig. 3

design. This defect can be avoided, when reversing designs of similar construction to the one shown at Fig. 3, by leaving out three threads when reversing the draft, instead of only one thread, as in the usual plan.

Fig. 4 is also a suitable design to be reversed in both the warp and filling directions, resulting in a diamond effect pattern, *i. e.*, an entwining twill check-effect, standing on one of its four points.

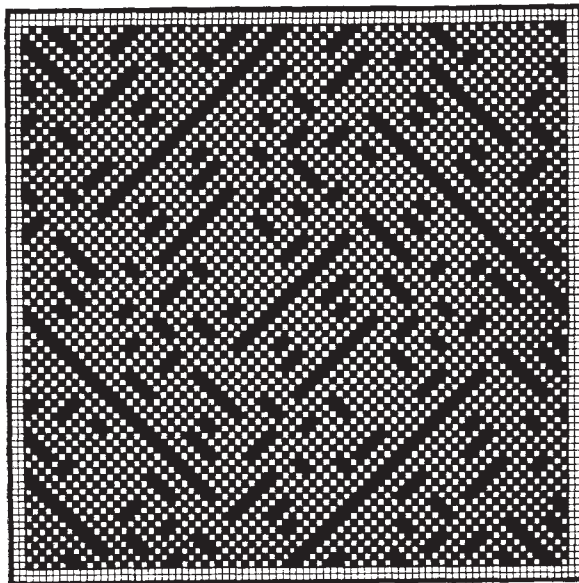


Fig. 4

Weave Fig. 4 could also advantageously be reversed in one direction only, when a long, narrow stripe effect would result. The same development may be applied to designs Figs. 1 and 2, when the results, although possibly not so bold and clear, would weave on 12 harnesses.

A great obstacle to the general employment of designs of the description just given is the cost of producing pattern samples for the market. If a sample warp is drawn in to suit Fig. 4, the amount of

variety to be obtained, by changing the harness chain, is rather limited, and (for example) to produce Fig. 3 a complete re-drawing of the warp would be necessary.

A 400 jacquard machine would be a very convenient adjunct to the mill, so as to be able to produce fabric samples (to sell by) of these irregularly drafted patterns. It would be no impediment if the pattern did not repeat exactly on 400 ends; a number of repeats, plus a portion of one repeat, might be cut on the cards, and if the cloth were severed at each 400 ends, the sample would be wide enough for all practical purposes, showing several repeats (as well as their connection) warp and filling ways.

TERRY PILE FABRICS.

Their Quality, Production and Cost.

By H. Barlow.

(Continued from August issue.)

Temples.

There is more imperfect and damaged cloth due to imperfect terry at the sides caused by imperfect temples, than from any other cause. Familiar to the weaver, loom fixer and percher is the complaint "looping or mingling" at the side of cloth, and this defect is due almost entirely to the bearing inwards of the warp-threads, owing to the difference between the width of cloth at the fell and the width of yarn in the reed. It is not possible in terry weaving to keep the width of the fell of the cloth even with the width to the yarn in the reed, but it may be said that the efficiency of the temple is less in terry pile weaving than in ordinary plain or twill weaving, for the following reasons:

(1) The loops of terry, particularly in reversible cloth (loops on both sides) occupy space and prevent the temple pins from acting to the extent that is the case in weaving ordinary cloth.

(2) The pile considerably increases the bulk of the fabric, and therefore, owing to the temple cap, it is not so easy to draw the cloth forward, besides there is a tendency for the sides to hang back and cause the ends for 3 and 4 inches to be slack.

(3) Much annoyance is caused by the loops of terry being pulled by pins, and by the warp-threads getting between the temple rings and washers when fringing, thus preventing the rings from turning round.

The following are measurements taken from nine looms:

LOOM.	REED.	WIDTH OF YARN IN REED IN INCHES.	WIDTH OF CLOTH AT FELL IN INCHES.	DIFFERENCE IN INCHES.
1	48	46.4	45.6	0.8
2	48	23.6	23.0	0.6
3	45	49.45	49.2	0.25
4	45	24.6	24.15	0.45
5	39	45.75	44.75	1.0
6	39	23.25	22.75	0.5
7	39	45.5	44.6	0.9
8	39	39.75	39.12	0.63
9	39	34.0	33.5	0.5

Highest difference = 1" or 1/2" each side.

Lowest difference = .25" or .125" each side.

Mean difference = .62" or .31" each side.

On account of this difference in width of warp in reed, as compared to the width of the cloth at its fell, when the reed moves forward the warp-threads are forced outwards, until when the reed is about to beat