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POINTS ON JACQUARD DESIGNING.

To Produce a Well Balanced Design.

(Continued from January issue.)

Cotton Fabrics

constructed with a high texture and finished with a clear face, form good specimens of ground fabric structures for the introduction of figure effects on their face.

For the texture of fabric use:

WARP: 1/60's cotton yarn, 100 ends per inch;

FILLING: 1/36's cotton yarn, 128 picks per inch.

The figure, as a rule, should be simple in character, so as to allow large flushes of the yarn to be brought on to the face, and the weave development should only be employed for tying down floats of yarn which are too long.

If the tying of the long floats be done in twill order, the diagonal ridges which are produced reflect the light more directly to the eye of the observer, and thus the natural brightness of the yarn is increased. Flat masses of figures should be avoided, except when required for special purposes.

WHEN MOHAIR OR LUSTRE WORSTED YARNS are employed for figuring purposes, it is necessary that the lustrous quality of the material should be brought out as much as possible. These yarns are usually employed in combination with a non-lustrous cotton or woollen yarn, which enters into the ground of the fabric.

The fabric shown at Fig. 4 is composed of 2/120's

Fig. 4

cotton warp and 24's mohair filling, woven with 66 threads and 60 picks per inch.

A portion of the Jacquard design is shown in its weave plan in Fig. 5.

Small seed effects, such as the one shown here, are frequently introduced into these styles, as they are very effective in filling up (as all these portions of Jacquard design are shown by considering full black crochet as *filling up*), thus giving character to the design without detracting from the prominence of the object which forms the feature of the pattern.

Fabrics which are composed of yarns spun from short wools, such as botany, are somewhat dull in appearance in comparison with fabrics in which long

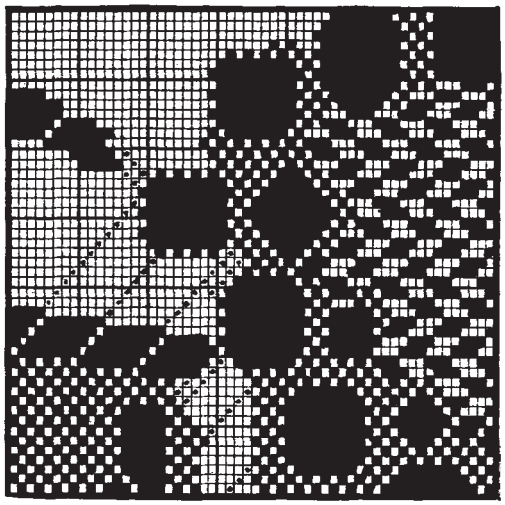

Fig. 5

lustre wools are employed; also, the yarns have a rougher surface, owing to the inclusion of a larger number of fibres in a cross-section of the thread, the points of which project from the surface of the thread. Hence the designs for these fabrics should be of a somewhat massive character, with a flat, smooth surface, in which little detail is employed, and in which any variety of effect obtained by weave development is of the simplest nature.

For an example of such a texture use 2/60's botany warp, 72 ends per inch, and 1/30's botany filling, 68 picks per inch.

The effect of the finish in deciding the style of figure which is suitable, is forcibly illustrated by comparing the raised cotton fabric, Fig. 6, with a clear surfaced cotton texture. In the former case the surface of the cloth is covered, on both sides, with a pile or nap which completely conceals the thready structure of the cloth, rendering it absolutely necessary for the figure to be bold and massive, and preventing the introduction of any weave development on the figure, except of the very simplest character. This fabric can be produced in a loom with boxes at one end only, using for example the following texture:

WARP: 1/22's white cotton, 58 threads per inch.

FILLING: 2 picks 12's cotton or 18's imitation, dark; 2 picks 12's cotton or 18's imitation, light; 84 picks per inch.

The fabric is covered on both sides by the filling, which interchanges from one side to the other, as required, to form the pattern, so that a dark figure

on a light ground is produced on one side, and a light figure on a dark ground on the other side, as shown in the illustration, the warp being completely hid.

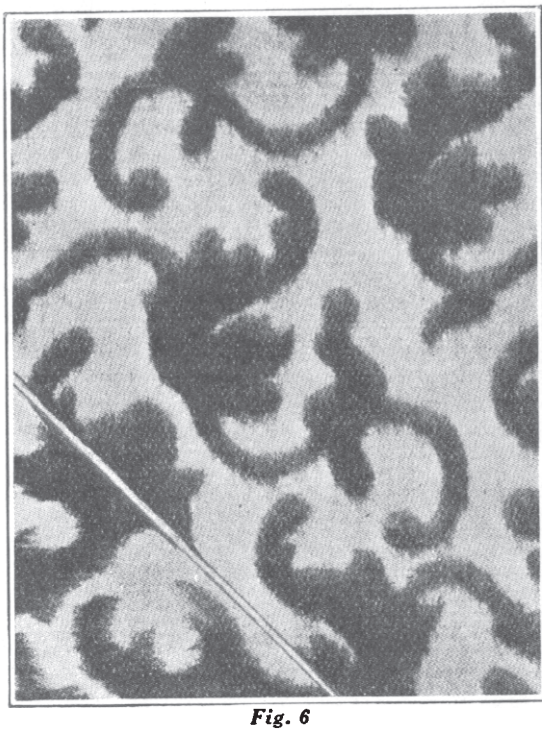

Fig. 6

The best weaves to employ for these raised fabrics, whether made of cotton or wool, are those which produce a perfectly smooth face, such as the 4, 5, 6, 7 or 8 end satin; the 4 and 6 harness weaves are also known as *"crowfoot twills."*

The figure is first blocked in with light transparent color, then the respective weaves are put on the figure and ground, arranged in such a way that where the dark filling is required on the face, the light pick is thrown to the back and *vice versâ*.

The style of the pattern must be determined to a large extent by the purpose to which the fabric is to be applied.

For example, while the designs shown at Figs, 1 and 4 are suitable for dress fabrics, they would be quite out of place if used for a tapestry hanging, while the latter style would be unsuitable for a mantle fabric.

Tapestry Design

can be best woven in an 12 row 600 Jacquard machine (point tie-up = 1200 in repeat of pattern), the figure being produced by variety of coloring in the filling. The particulars of the cloth are as follows:

WARP: 2 threads 2/90's black cotton for binding, 4 threads 2/32's brown cotton for figuring, sleyed 2 threads of brown, 2 threads of black, and 2 threads of brown in each dent of the reed, with 13 1/3 dents per inch.

FILLING: 7 run woolen yarn, or 2/5's cotton in four shades, with 14 picks per inch of each shade.

The warp is drawn through the harness in the following order: The black binder threads are drawn singly through the 1st, 2nd, 5th, and 6th rows; the brown figuring threads, two in each mail, through the 3rd, 4th, 7th, and 8th rows, giving 152 figuring mails in the repeat of the design on the point paper.

In painting the design on to the point paper it is not necessary for the binder threads to be taken into account, as these always work in plain order with as many picks in a shed as there are colors of filling employed, and can be cut for without the working being shown on the plan. Hence the figuring threads only have to be considered, and by painting (blocking) in the effect solid on the point paper, in different colors, according to the order in which the different shades of filling are required on the face of the fabric, as many cards must cut for each pick on the point paper as there are colors of filling employed.

The counts of the point paper is 8 by 4, because, with $13\frac{1}{3}$ dents per inch and two figuring mails to each dent, there are therefore $26\frac{2}{3}$ figuring ends per inch to 14 picks of each color of the filling per inch, each square of 8 on the point paper being equivalent to two rows of the jacquard.

The cutting particulars are as follows:

For each pick in the point paper:

1st card, cut all but shade 1; 2nd card, cut all but shade 2; 3rd card, cut all but shade 3; 4th card, cut all but shade 4, on the 3rd, 4th, 7th, and 8th rows only. Also on odd picks cut the 1st and 5th holes, and on even picks cut the 2nd and 6th holes in each row.

THE INFLUENCE OF THE TWIST OF THE YARN UPON THE FABRIC.

(Continued from January issue.)

Explanations thus far given, in connection with effects Figs. 3 to 8, refer also to such as require to be given in connection with effects Figs. 9 to 14, the

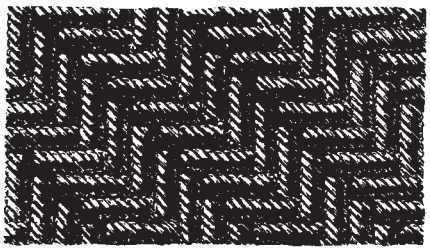

Fig. 9

only difference being, that in the latter case the direction of the twill is reversed, and in the same way in every example (except Figs. 13 and 14) the direction of the twist in warp and filling, *viz:*

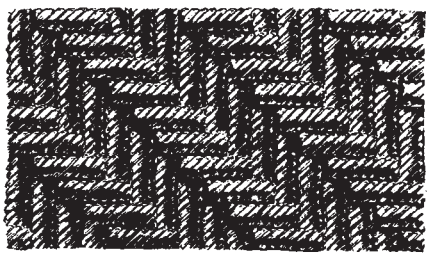

Fig. 10

Effect Fig. 9: warp left hand twist, filling right hand twist.

Effect Fig. 10: warp right hand twist, filling left hand twist.

Effect Fig. 11: warp left hand twist, filling left hand twist.