Posselt's Textile Journal

Vol. XVI. **March, 1915.** **No. 3**

REVERSIBLES

(HARNESS AND JACQUARD WORK).

Using Twills or Baskets for the Weaves of the Plies.

(Continued from February issue.)

Figured Effects.

In this instance we use for the motive a figured effect. Two examples are given to explain subject.

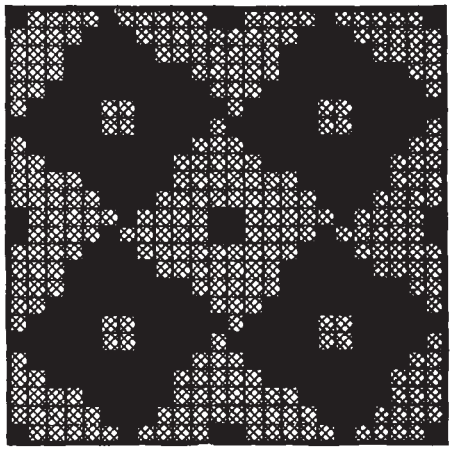

Fig. 18

Fig. 18 shows us a neat, small design, to be used as a motive for producing a figured reversible. In the same the two effects required to be developed in the fabric structure by the reversible principle are

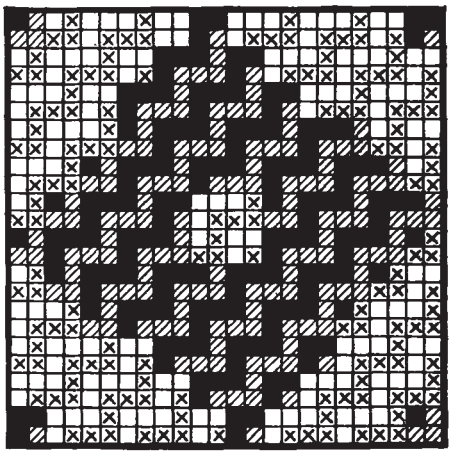

Fig. 19

shown respectively in black and cross hatched, it being understood that any part of the design that shows cross hatched, on one side shows black at the other side, and vice versa.

The repeat of the design calls for 12 squares each way; each square calls for 2 warp-threads and 2 picks in the fabric structure, hence the repeat of weave Fig. 19 for producing design Fig. 18 is 24 warp-threads and 24 picks.

In constructing this figured reversible weave from our motive or design, we may either follow rule given when constructing weave Fig. 10 from motive Fig. 9, or proceed thus:

(1) Paint motive (Fig. 18) enlarged (using four squares for each square in motive) in a light yellow paint on your point paper, see *shaded* type used.

(2) Paint double plain in black or blue on top of it, considering only yellow. We used *full* type on top of *shaded* type for this purpose.

(3) Insert the proper mate double plain in red paint on all squares left white or empty; we used *cross* type for this purpose. By mate double plain we understand, that every warp-thread or pick which in one effect of the double plain works "face" must work "back" in the other effect of the double plain, and vice versa.

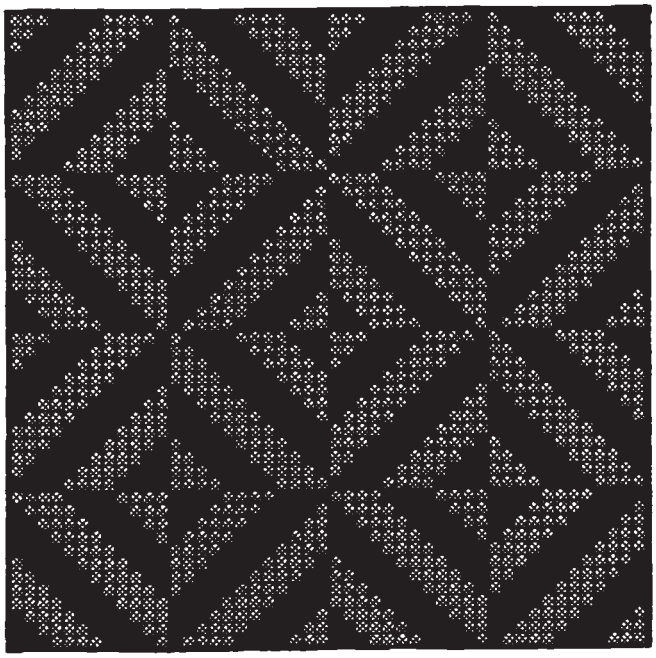

Fig. 20

Full and *cross* type in weave Fig. 19 equal risers; *shaded* and *empty* are sinkers.

Fig. 20 shows us another design for a figured reversible, giving again two repeats of the pattern each way, *i. e.*, four complete repeats of the pattern. The latter represents what we call a broken twill effect motive, showing bands of double plain in different colors to twill against each other. Repeat of pattern is 24 by 24, in turn calling for a weave plan for the reversible structure repeating on 48 warp-threads and 48 picks.

Fig. 21 illustrates the latter; the effect of light and dark, as shown by *empty* and *shaded* type in the weave, is accomplished by the proper displacement of the two combinations of double plain.

The weave itself in this instance is indicated in one kind of type, hence *full* squares stand for warp up or risers, *empty* and *shaded* squares stand for warp down or sinkers.

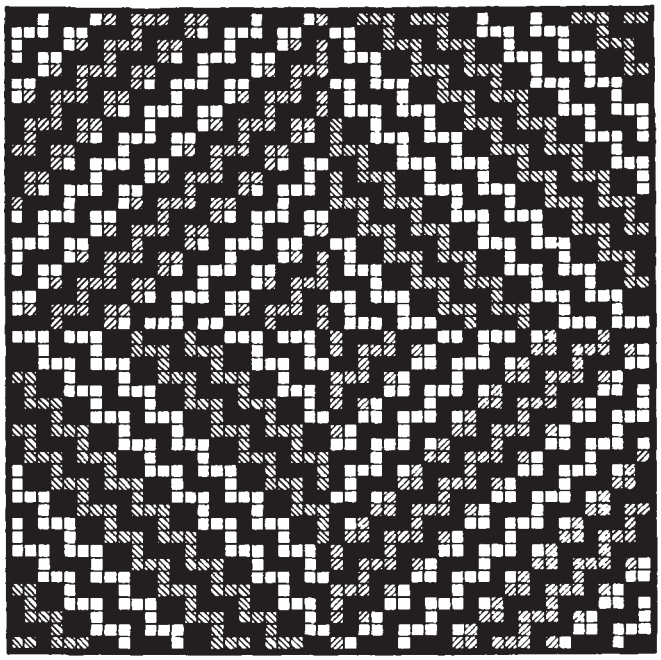

Fig. 21

Double Plain Arranged 2 : 1.

Fig. *22* explains this subject. The same being a figured effect, each effect being shown by a different kind of type.

Dot type shows the combination of 2 ends face to alternate with 1 end back, both warp and filling way. whereas

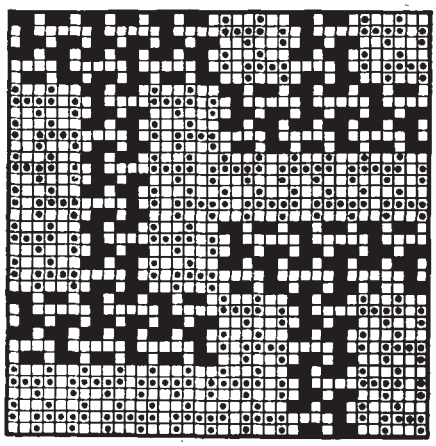

Fig. 22

Full type shows the combination of 1 end face to alternate with 2 ends back, both warp and filling ways.

A heavier count of yarn can be used for the lower textured fabric structure, the arrangement in connection with weave given thus being warp and filling ways:

1 end high count
1 " low count } × 12
1 " high count

Repeat of Weave (3 × 12 =) 36 warp-threads and 36 picks.

(To be continued.)

RING SPINNING. III.

By Sutcliffe Mills and Son.
Practical Cotton Mill Managers.

Calculating the Number of Teeth in the Ratchet Gear When Changing the Number of the Yarn.

The function of the ratchet, or builder, gear, as used in connection with the builder motion of a ring frame is not always correctly understood, not even by some men daily employed in ring spinning departments. In support of this contention, some men inaccurately take it for granted that the speed of the ring rail is affected by changing the ratchet gear.

In case warp-wind bobbins are being produced at the ring frame, the intermittent rotation of the ratchet gear results in the rack being gradually moved towards the fulcrum of the cam-bowl arm, in which suitable grooves for the rack are cast. By this action, each successive layer of yarn wound on the bobbin is slightly shorter than the preceding layer. Provided that the speed of the cam has not been altered, each layer of yarn wound on the bobbin will require an equal length of time. This is the point to remember. It must, of course, also be noted that while each successive traverse is accomplished in the same time, the minimum length of traverse when the bobbin is full takes up the same time as the maximum length of traverse when winding on the empty bobbin.

Referring now to a builder motion arranged for a filling-wind, the length of traverse in the latter case is only short compared to the length of traverse of the warp-wind motion. but the effect of intermittently rotating the ratchet gear in case of a filling-wind motion, is to wind each succeeding layer on the bobbin slightly higher than the preceding layer. Therefore, the larger the ratchet gear in use, the more gradual will the traverse be shortened in reference to the warp-wind motion.

In case of the filling-wind motion, each successive traverse will not be raised quite as high as before, and hence the diameter of the full bobbin will be increased provided that the number of the yarn has not been altered.

Many ring spinning overseers provide themselves with a gauge, or gauges, to serve as a guide as to the maximum diameter of full bobbins. One form of gauge is a circular hole bored in a small piece of brass or steel about $\frac{1}{8}$ inch thick. The diameter of the hole to be $\frac{1}{16}$ to $\frac{3}{32}$ inch less in diameter than the inside diameter of the ring. By building full bobbins to comfortably fit this gauge, it will prevent the traveller, as it revolves around the ring, from coming in contact with the yarn on the bobbin when winding occurs at the shoulder of the chase, where filling-wind is adopted. Further, on condition that the positions of the rings are correct when commencing to wind on empty filling-wind bobbins, and that the final traverse of the full bobbin occurs at the highest practical point on the bobbin, the maximum weight of yarn will be wound on the bobbins.

The building of full bobbins just less in diameter than the inside diameter of the ring, to the extent previously mentioned, must be accompanied by maintaining the spindles correctly adjusted relative to the rings, otherwise the yarn will probably break when winding occurs at the shoulder of the chase, owing to the trav-