

A STUDY IN WEAVE FORMATION

HOW RIB WEAVES ARE MADE.

The characteristics of rib weaves are line effects running either filling or warp ways throughout the entire width or length of the fabric; again both effects may be combined in a fancy weave. The lines referred to are produced in the fabric at the places where either the warp-threads or the picks exchange positions in their interlacing in the weave.

The foundation of rib weaves is the plain weave, having respectively either two or more picks introduced in the same shed, or two or more warp-threads made to interlace alike, side by side, or use the combination of both effects in one weave.

This will indicate to us that rib weaves can be divided into Warp effects, Filling effects and Combination or Figured effects. Plain Warp effects, refer more particularly to cotton, worsted and silk dress goods, whereas Filling, Fancy, Figured and Combination effects refer more to worsted men's wear and figured dress goods.

WARP EFFECTS (Plain).

In this instance two, three or more picks are entered in each shed of the plain weave.

Diagram *A* shows 2 picks entered in this way, the rib weave repeating on 2 warp-threads and 4 picks.

Diagram *B* shows 3 picks entered in each shed of the plain weave, the rib weave thus repeating on 2 warp-threads and 6 picks. In the same way 4 or more picks can be inserted in each pick of the plain weave, increasing correspondingly always more and more the round of picks required for the repeat of the weave, *i. e.*, producing wider ribs.

The warp, in this system of rib weaves, produces the face and back of the fabric, the filling resting embedded (not visible) in the body of the structure. The rib lines as visible on face and back of fabric run in the direction of the filling.

FILLING EFFECTS (Plain).

In this instance two, three or more warp-threads are made to interlace side by side (the same) on each pick of the plain weave.

Diagram *C* shows 2 warp-threads thus interlacing alike on each pick; repeat of weave 4 by 2.

Diagram *D* shows 3 warp-threads thus interlacing alike on each pick; repeat of weave 6 by 2. In the same way 4 or more warp-threads can be made to interlace the same, side by side, increasing correspondingly the size, width or prominence of each rib line.

The filling, in this system of rib weaves, produces the face and back of the fabric, the warp-threads in this instance resting embedded (not visible) in the body of the structure. The rib lines as visible on face and back of fabric run in this instance warp-ways.

WARP EFFECTS (Fancy).

In this instance alternately small and heavy rib lines are made to exchange position; diagrams *E* and *F* being given to explain the construction of this subdivision of rib weaves.

In weave *E* one pick in one shed is made to alternate with two picks in the other shed, or a fine rib line to alternate with one more prominent. Repeat of weave 2 by 3.

Weave *F* shows a more pronounced combination, *viz.*: one and three, *i. e.*, 4 picks in repeat.

FILLING EFFECTS (Fancy).

Weaves *G* and *H* illustrate subject, using the same combinations as previously used for the warp effects, *viz.*: one and two, and one and three. The difference in this instance is that the filling produces the face and back of the fabric, the warp resting embedded in the structure, the rib lines running in the direction of the warp-threads in the fabric. Repeat of weave Fig. *G* is 3 by 2 and that of *H* is 4 by 2.

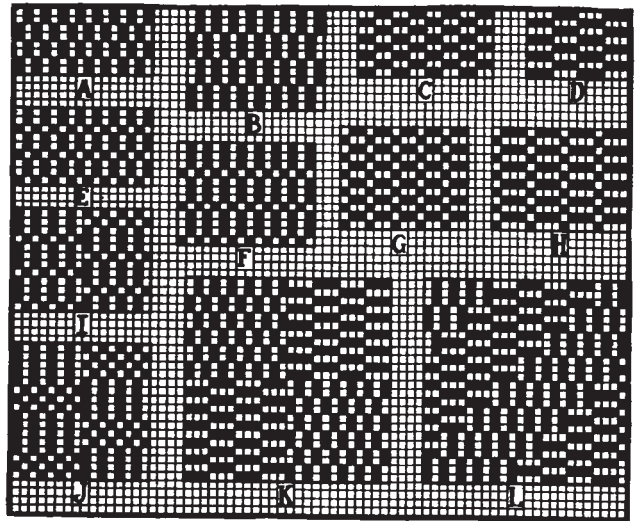
Figured Rib Weaves.

Weaves Figs. *I*, *J*, *K* and *L* are given to illustrate subject.

Weave Fig. *I* shows a fine spot effect produced by distributing the 3 *up* 1 *down* fancy rib weave (warp effect) as was shown in diagram *F*, in groups of 8 warp-threads distributed after the *plain setting*. Repeat of weave 16 by 4.

Weave Fig. *J* shows a more pronounced spot effect produced by using the 5 *up* 1 *down* 1 *up* 1 *down*, 8 pick fancy rib weave (warp effect) distributed in groups of eight warp-threads after the *plain setting*. Repeat of weave 16 by 8.

Weave Fig. *K* shows what we call a checker-board effect, produced by combining both warp and filling-ways 12 warp-threads and 12 picks of the plain rib weave 2 *up* 2 *down* warp effect as shown in diagram *A* with 12 warp-threads and 12 picks of the 3 *up* 3 *down* filling effect shown previously in diagram *D*. Repeat of weave 24 warp-threads and 24 picks.



Weave Fig. *L* shows the 3 *up* 3 *down* warp and filling effect plain rib weaves, as explained before when dealing with weaves Figs. *B* and *D*, arranged to produce a diagonal effect in the fabric by the peculiar warp and filling combination observed.

Silk Faille.

Weave Fig. *B* is known in the silk trade as the plain faille weave, being then used in connection with a binder warp, as shown in Fig. 1 by *dot* type, interlacing on the pure plain weave, which on account of its tight interlacing imparts stiffness, *i. e.*, firmness to the fabric structure, besides preventing the loosely interlacing face warp-threads (shown in *full type*) from slipping on the filling and thus result in imperfections on the face of the fabric.

As will be readily understood 2 warps are required on account of the difference in the take-up between face and binder warp, each warp coming from its own beam, the let-off of both beams varying to suit the

difference in the take-up of the two warps at the weaving, the binder warp on account of its closer interlacing (6 : 2) taking up more than the face warp. One kind of filling is used, its count influencing the take-up of both systems of warp.

The nature of these warp rib weaves, *i. e.*, that the filling does not show on face and back of the structure, permits in connection with these failles the use of a cheaper souple dyed filling and which would detract from the lustre of the face warp provided said filling would show through on the face of the fabric, for which reason a high warp texture is required for the construction of these silk failles to cover well the binder warp and thus not show the filling.

Either the face warp is drawn single, or in connection with heavier textures the face warp is drawn 2 ends in a heddle or in two heddles side by side on the same harness. The binder is drawn 1 end in a heddle. The common arrangement used is 6 ends Face : 1 end Binder. Be sure you run your binder in the centre of your dent, and for which reason previously quoted arrangement of 6 Face : 1 Binder must be threaded 3 Face 1 Binder 3 Face, *i. e.*, seven threads to each dent, as shown by dash below the weave. This threading of your warp in the reed will prevent reed marks as well as preventing the filling from showing on the face. In some instances face and binder warp are run from one beam, the mill not having two beam looms. This procedure is not advisable to use.

A fair texture for these failles' exclusive selvage is 12,000 single ends 2-thd. Japan organzine 13/15 den. for face with 2,000 single ends 2-thd. Italian organzine 12/14 den. for binder. Width of cloth in reed 36¾ inches, Reed 55 with 7 threads per dent. For selvage use 60 double ends face and 10 double ends binder for each side. Filling 92 picks per inch. 2 ends of 3-thd. Japan tram 24/26 oz. bright souple.

As will be readily understood other combinations of rib weaves, textures and counts of yarns can be used in the construction of these silk failles, according to size of rib desired.

Worsted Novelties in Men's Wear and Dress Goods.

Fig. 2 shows a novelty in these figured rib weaves produced by the combination of warp and filling effect rib weaves, arranged in the shape of triangles. Such as are produced by the warp-threads (shown in *full* type) produce triangles in a horizontal direction, whereas those produced by the filling (see *cross* type) produce triangles in a vertical position. Repeat of weave 12 by 12; two repeats each way are given.

With reference to fabric structure, the same refers to a fancy worsted suiting made with 5180 ends 2'60's worsted, Reed 13 with 6 ends per dent, 66½ inches wide.

Arrangement of warp:

- 1 end 2/60's worsted, green
- 1 " 2/60's " brown

2 ends in repeat of pattern.

Arrangement of filling:

- 1 pick 2/60's worsted, blue
- 1 " 2/60's " green

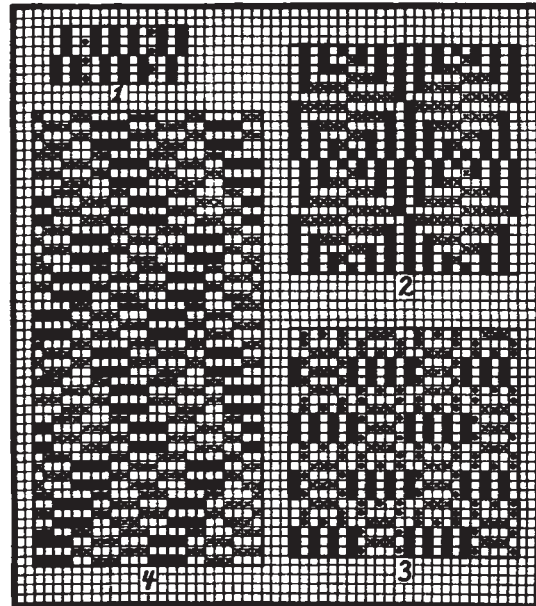
2 picks in repeat of pattern; 74 picks per inch.

The arrangement of 1 : 1 in warp and filling will bring one triangle in one color (green) the joining

one in the other color (brown) in turn forming squares of warp and filling effect rib weaves each in two colors, each square as formed by the two triangles standing on its point.

Finish: Worsted finish, clear face, 56 inches wide.

Fig. 3 shows a combination rib weave for a worsted dress goods, repeating on 12 warp-threads and 12



picks, using 2320 ends of 2'24's worsted, any fashionable color or mix, for the warp. Reed 10 by 4 = 58 inches wide in loom.

Filling: 42 picks of 2'24's worsted, any fashionable color or mix, the same to harmonize with the warp.

Finish: Scour well, shear and press, 52 inches finished width.

Fig. 4 shows a combination rib weave used in connection with a worsted dress goods, repeating on 12 warp-threads and 24 picks, being a filling effect rib weave spotted in an oblique direction in the shape of an entwining twill affair. Warp 5670 ends of 48's worsted in the grey. Reed 17½ with 6 ends per dent. 54 inches wide in loom.

Filling: 200 picks, single 80's in the grey.

Finish: Worsted finish, clear face, 48 inches finished width.

Detection of Catechu in Black Silk Dyeings.

Many recent improvements in the dyeing of weighted silk are noted. A black produced with Monopol soap and Catechu gives richer and somewhat faster shades than if the catechu is omitted. On boiling the fabric with dilute hydrochloric acid and then with sodium carbonate solution, a brown color of the material indicates the presence of Catechu if aniline colors have not been used in shading the black. It is preferable to remove all the organic weighting from the fabric by immersion in cold 10 per cent. hydrochloric acid for one hour, and then in N/1 caustic potash for five minutes. The alkaline extract contains tin, phosphate, haematein, and Catechu, and the last-named is recognized by the formation of a flocculent yellow precipitate on boiling with formaldehyde the filtrate obtained after acidifying with hydrochloric acid.