Arrangement: 1 Face 1 Back.

Pick-out and record interlacing of first face thread.

Pick-out and record interlacing of first back thread.

Pick-out and record interlacing of second face thread.

Examine on your record, position where back warp stitches to face filling.

If the same stitches (up) between two face warp threads rising at the same pick, you are proceeding correctly, and thus may continue with your pick-out, until repeat of weave is obtained.

If, however, you find on your record, on said pick, one of the face warp threads up and the other one down, you have not struck the correct combination of face and back warp to each other; you have, previously to picking-out, liberated either the wrong face or back warp thread ahead, from your sample; except you deal with a face weave where a perfect stitching is not possible and when you have to pick-out more, or the complete weave, and then settle matters by theory.

Fig. 6 is given to explain the subject, showing three different ways, how you may get hold of the two systems of warp threads when picking-out. The face warp threads are shown in the same position in all three diagrams. The record is shown in position as you will pick it out from sample, and has to be turned by you 45 degrees for regular position of weave.

Filling-up, at picking-out is shown by *dot* type for all warp threads. *Full* type in the weave indicates face warp threads *up* in the weave. *Cross* type in the weave indicates back warp threads *up* in the weave.

6[a] shows that we liberated from the sample one more back thread previously to picking-out. Start picking-out for a new record, beginning with a face end next, and weave will come correct.

6[b] shows that we left one back thread in the sample, that should have been pulled out previously to starting picking-out. Pull out two (2) back warp threads from sample, and start picking for a new record, with one end face warp, and when weave will come correct.

6[c] shows the correct start, *i. e.*, sample was prepared correctly for the picking-out, showing also that picking-out for alternate picks $\frac{1}{2}\frac{3}{2}$ and $\frac{1}{1}$ is easier, compared to picking-out for every pick $\frac{3}{3}\frac{1}{1}\frac{1}{1}$ and where you are always apt to mix face and back warp, which in most instances are of the same count of yarn.

Arrangement: 2 Face 1 Back.

Explanations thus far given will fully explain subject, remembering that 2 face warp threads are always picked-out in rotation, before using 1 back warp thread. At the start, after having recorded the interlacing of your first face warp thread, be careful and experiment if the back warp thread or another face warp thread is the next to be used by you. Careful consideration for a few moments will guide you to start at once with the proper combination of face and back warp. Remember that you must master the subject of picking-out yourself, by actual work.

When handing the weave-plan to the weave-room, have the same start and end with one end face warp, and not start 2 face 1 back. It will result in a better flannel from the loom, since the reed wires will then come between two face threads, the reeding observed most frequently being 3 or 6 threads per dent. This will cover more perfectly the interlacing of the back warp to the face structure already in the loom. Said interlacings, with the back warp thread working against the wires of the reed, would show them up more prominently, resulting, in turn, also in small, open spaces, running throughout the entire length of the fabric, technically known as reed marks; both items, in many instances, may become a detriment to the face of the finished fabric.

Regarding picking-out samples, constructed with 2 systems warp, it will be advisable to mark down at once upon the design paper which are the face threads, besides indicating specially any fancy threads among them, also for the back warp if a fancy arrangement is used there; it will facilitate the work of picking-out, since by thus being able to compare pick-out, as it is built up, with the fabric sample under operation, the work is made easier, besides you will be able, at any time, to detect errors, which may happen even with the most experienced, and thus be able to correct them at once.

(*To be continued.*)

NOVELTIES FROM ABROAD.

Granite Dressgood. *(Piece Dye)*

CORD EFFECT.

Warp: 4200 ends.

Weave: See **Fig. 1**; repeat 23 warp threads and 16 picks; 10-harness fancy draw.

Reed: 21 { 5 dents @ 4 ends; 1 dent @ 3 ends (cord effect)
52 inches wide in reed.

Dress: 21 ends 2/70's worsted in the grey, twisted over with white cotton.
1 end 4/52's worsted in the grey.
1 " 2/70's worsted in the grey, twisted over with white cotton

23 ends, repeat of pattern.

Filling: 72 picks per inch, all single 48's worsted in the grey.

Finish: Scour, piece dye light blue, clear face on shear, press; 48 inches wide.

Worsted Dressgood.

Warp: 4000 ends, all 2/60's worsted.

Weave: See **Fig. 3**; repeat 80 warp threads and 16 picks; 16-harness straight draw.

Reed: 19 @ 4 ends per dent, 52½ inches wide.

Dress: 16 ends light gray green
2 " light violet
13 " light gray green
2 " light violet
14 " light gray green
2 " light violet
14 " light gray green
2 " light violet
13 " light gray green
2 " light violet

80 ends, repeat of pattern.

Filling: 60 picks per inch, arranged thus:
18 picks 2/60's worsted, light gray green
2 " " " , light violet
—
20 picks, repeat of pattern.
Finish: Scour well, shear, press, 48 inches wide.

Worsted Cheviot Dressgood.

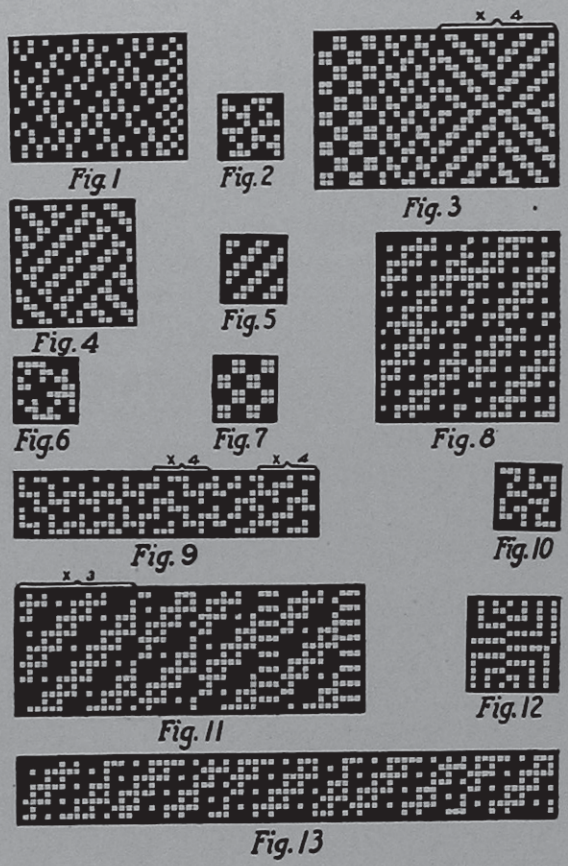
Warp: 2880 ends.
Weave: See **Fig. 2**; repeat 8 by 8, 8-harness straight draw.
Reed: 10¼ @ 4 ends per dent, 64 inches wide.
Dress:
1 end 2/36's worsted cheviot, white
1 " " " " , dk. gray mix } 26 times
1 " 2/48's worsted, lilac
1 " 2/36's worsted cheviot, dk. gray mix
1 " 2/48's worsted, lilac
1 " 2/36's worsted cheviot, white
1 " " " " , dk. gray mix } 28 times
1 " 2/48's worsted, green
1 " 2/36's worsted cheviot, dk. gray mix
1 " " " " white
1 " " " " dk. gray mix } 3 times
1 " 2/36's worsted cheviot, white
—
120 ends repeat of pattern.
Filling: 40 picks per inch, arranged thus:
1 end 2/36's worsted cheviot, white
1 " " " " , black
—
2 ends in repeat of pattern.
Finish: Cheviot finish, full about 10% in length, shear, press; 52 inches wide.

Worsted Suiting.

Warp: 4224 ends all 2/52's worsted.
Weave: See **Fig. 5**; repeat 4 by 4; 8, 12 or 16-harness straight draw.
Reed: 16 @ 4 ends per dent, 66 inches wide.
Dress: 2 ends gray mix
1 end black
1 " gray mix
2 ends black
1 end gray mix
1 " black
2 ends gray mix
1 end black
1 " gray mix
2 ends black
2 " gray mix* } 4 times
2 " black }
1 end gray mix
1 " black
—
32 ends, repeat of pattern.
Filling: 64 picks per inch, arranged thus:
1 pick 2/52's worsted, gray mix
3 picks " " , black
—
4 picks, in repeat.
Insert the gray mix pick when the 2 ends gray mix, indicated*, are in lower shed.
Finish: Worsted finish, scour well, clear face on shear, press, decatize; 56 inches wide.

Fancy Woolen Dressgood.

Warp: 1180 ends, 3 run woolen yarn, white with bleached knickerbockers.
Weave: See **Fig. 4**; repeat 16 warp threads and 16 picks; 16-harness straight draw.
Reed: 10 @ 2 ends per dent, 59 inches wide.
Filling: 20 picks per inch, all 3 run woolen yarn, dark olive with fancy knickerbockers.
Finish: Cheviot finish, full slightly, clip on shear, press; 52 inches wide.



Worsted Suiting.

Warp: 4400 ends, all 2/36's worsted, gray mix.
Weave: See **Fig. 6**; repeat 8 warp threads and 8 picks; 8 or 16-harness straight draw.
Reed: 16½ @ 4 ends per dent, 66¾ inches wide.
Filling: 64 picks per inch, all 2/36's worsted, black.
Finish: Worsted finish, scour well, clear face on shear, press, decatize; 56 inches wide.

Worsted Suiting.

Warp: 7140 ends.
Weave: See **Fig. 8**; repeat 24 warp threads and 24 picks; 4-harness twill, reversible-checkerboard effect; 24-harness straight, or 16-harness fancy draw.
Reed: 17½ @ 6 ends per dent, 68 inches wide.
Dress: 1 end 2/48's worsted, dark gray mix
1 " " " , black
—
2 ends in repeat of pattern.
Filling: 96 picks per inch, same counts, colors and arrangement as used for warp.
Finish: Worsted finish, scour well, clear face on shear, press, decatize; 56 inches wide.

Fancy Woolen Cheviot Suiting.

Warp: 1416 ends, 3 run woolen yarn.
Weave: See **Fig. 5**; repeat 4 by 4, 8-harness straight draw.
Reed: 10¼ @ 2 ends per dent, 68¾ inches wide.
Dress: 1 end olive mix, with fancy knickerbockers
1 " white, with white knickerbockers
—
2 ends, repeat of pattern.
Filling: 22 picks per inch, all 3 run woolen yarn, arranged thus:
1 pick olive mix, with fancy knickerbockers
1 " white, with white knickerbockers
—
2 picks, repeat of pattern.
Finish: Woolen cheviot, scour well, full slightly, decatize, press; 56 inches wide.

Melton Suiting.

Warp: 3080 ends.
Weave: See **Fig. 7**; repeat 4 by 4, 8-harness straight draw.
Reed: 23 { 1 dent @ 1 end; 1 " " 2 ends; 1 " " 1 end
66½ inches wide in reed.
Dress: 3 ends 4½ run woolen yarn, black
3 " 2/30's worsted, white
—
6 ends, repeat of pattern.
Filling: 50 picks per inch, arranged thus:
1 pick 4½ run woolen yarn, black
2 picks 2/30's worsted, white
1 pick 4½ run woolen yarn, black
—
4 picks, repeat of pattern.
Finish: Melton finish, scour well, full. shear, press, decatize; 56 inches wide.

Worsted Suiting.

Warp: 4576 ends, all 2/32's worsted.
Weave: See **Fig. 9**; repeat 88 warp threads and 4 picks; 8-harness fancy draw.
Reed: 16½ @ 4 ends per dent, 69½ inches wide.
Dress: 2 ends black
12 " olive
2 " black } 9 times
2 " olive }
2 " black } twice
1 end olive }
2 ends black } 8 times
2 " olive }
—
88 ends in repeat of pattern.
Filling: 62 picks per inch, arranged thus:
2 picks 2/32's worsted, black
2 " " " , olive
—
4 picks in repeat of pattern.
Finish: Worsted finish, scour well, clear face on shear, press, decatize; 56 inches wide.

Worsted Suiting.

Warp: 4460 ends, 2/36's worsted.
Weave: See **Fig. 10**; repeat 8 warp threads and 8 picks; 8 or 16-harness straight draw.
Reed: 17 @ 4 ends per dent, 65½ inches wide.
Dress: 1 end black
1 " gray and white twist
3 ends black
3 " gray and white twist
—
8 ends, repeat of pattern.
Filling: 62 picks per inch; same counts and colors as in warp, also the same arrangement, in 8 picks repeat.
Finish: Worsted finish, scour well, clear face on shear, press, decatize; 56 inches wide.

Worsted Trousering.

Warp: 7800 ends.
Weave: See **Fig. 11**; repeat 78 warp threads and 16 picks; 24-harness fancy draw.
Reed: 16½ { 8 dents @ 8 ends; 1 dent " 3 "; 1 " " 8 "; 1 " " 3 "
66½ inches wide in reed.
Dress:
48 ends 2/52's worsted, gray mix
8 " " " , black
1 end 2/64's worsted, gray & pearl silk } 4 times
1 " 2/52's worsted, gray mix }
3 ends 2/52's worsted, black
1 end 2/64's worsted, gray & pearl silk } 4 times
1 " 2/52's worsted, gray mix }
3 ends 2/52's worsted, black
—
78 ends, repeat of pattern.
Filling: 120 picks per inch, arranged thus:
1 pick 2/52's worsted, gray mix
1 " " " , black (insert when the 3 warp threads forming the rib effect are in lower shed).
—
2 picks in repeat.
Finish: Worsted finish, scour well, clear face on shear, press, decatize; 56 inches wide.

Worsted Suiting.

Warp: 5160 ends, all 2/52's worsted.
Weave: See **Fig. 12**; repeat 12 warp threads and 12 picks; 12-harness straight draw.
Reed: 13 @ 6 ends per dent, 66¼ inches wide.
Dress: 1 end green
1 " brown
—
2 ends, repeat of pattern.
Filling: 78 picks per inch, all 2/52's worsted, arranged thus:
1 pick blue
1 " green
—
2 picks in repeat of pattern.
Finish: Worsted finish, scour well, clear face on shear, press, decatize; 56 inches wide.

Worsted Trouserings.

Warp: 7200 ends.
Weave: See **Fig. 13**; repeat 72 warp threads and 16 picks; 16-harness fancy draw.
Reed: 13¾ @ 8 ends per dent, 65½ inches wide.

Dress:

12 ends 2/48's worsted, black
1 end 2/48's worsted, gray & pearl silk
1 " " " , light & dark gray tw. } 6 times
4 ends 2/48's worsted, black
12 " " " , gray mix
4 " " " , black
1 end 2/48's worsted, gray & pearl silk
1 " " " , light & dark gray tw. } 6 times
4 ends 2/48's worsted, black
12 " " " , gray mix

72 ends, repeat of pattern.

Filling: 106 picks per inch, arranged thus:
1 pick 2/48's worsted, gray mix
1 " " " , black

2 picks in repeat.

Finish: Worsted finish, scour well, clear face on shear, press, decatize; 56 inches wide.

The Single Iron End Heddle Frame.

Heddles and its Frames, form not only an important expense account to the weave room of a mill, but at the same time are factors in quality and quantity of production, for which reason improvements in that line are of interest to note.

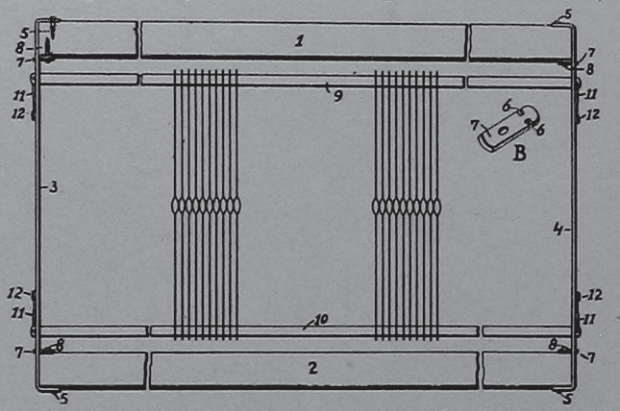
After having fully demonstrated the superior qualities of their Flat Steel Heddle, the *Steel Heddle Mfg. Co.,* of *Philadelphia,* has lately perfected and introduced with success an improved Single Iron End Heddle Frame. The superior points of this new frame are its strong construction, being also of such a make that the frame will remain in a perfect alignment under all atmospheric conditions of the weave room, no warping or bending of the rails being conceivable.

In order to acquaint the mills, who have not introduced the new frame, with the same, the accompanying illustration is given, showing the new heddle frame in its front elevation, with heddles in position. Detail view *B* shows in perspective, one of the four notched braces, as are used with each frame, to maintain superior stiffness, and which is not interfered with by any shrinkage or expansion of the wooden top and bottom rails, or by any change in atmospheric condition in the weave room.

A description of the construction of the frame is best given by quoting numerals of references accompanying our illustration, and of which 1 is the top and 2 the bottom rail, both being of wood. 3 and 4 are the end straps, made of bar iron, forming the two sides of the frame; their end portions are bent inwardly, and extend across the ends of the top and bottom rails respectively, being secured thereto by screws 5.

For a short distance, at each of the four inner corners where rails and straps meet, the latter are slotted to receive notches 6 of securing braces 7 (as are shown in detail illustration *B*) which in assembling, after being inserted in the slot, are then turned at right angles in normal position, and then fastened by means of a screw 8 to the rail, braces 6 being for this purpose provided with a hole, as shown in diagram *B*.

From explanation given, it will be seen that the construction of this heddle frame affords a most rigid structure, inasmuch as the notched securing braces 7, which are mounted at the inner end corners of the top and bottom rails, constitute braces to maintain the stiffness of the entire structure, and that the efficiency of these braces can not be affected by any shrinkage or expansion of the top and bottom rails,



inasmuch as the slotted engagement of said securing braces with the end straps 3 and 4, will readily permit such shrinkage or expansion, without affecting the rigidity of the structure.

The end straps 3 and 4 have cut therein the slots for the reception of the usual heddle supporting bars 9 and 10, maintained in position by being perforated near their ends, which perforations are engaged by spring hooks, which are riveted, at 12, to the outer faces of the end straps 3 and 4 respectively. The rivets are made flush with the inner surfaces of the end straps 3 and 4 so that the utmost width of the heddle frame may be utilized.

The Steel Heddle Mfg. Co. have great success in placing this new frame in mills all over the country, on account of its superior, strong construction.

Veelos Balata Belting.

The reputation of Veelos Balata Belting has been established beyond a doubt, and due to its increasing demand, the Charles Bond Co., 520 Arch Street, Philadelphia, who are the sole agents in this country, have found that the trade could be more readily supplied if it were manufactured in this country instead of in England.

Accordingly, the Manheim Mfg. & Belting Co. was formed with Charles Bond, pres.; Geo. H. Danner, vice pres.; M. M. Pfautz, sect.; and M. G. Hess, treas.

A plant is to be equipped at Manheim, Pa., for the manufacture of this belting, which is preferred, in many cases, to leather belting, which is far more costly.

Besides the Manheim Mfg. & Belting Co., Mr. Bond is also interested in the Manheim Foundry & Machine Co. This plant is fully equipped for the manufacture of the folded steel hanger, which, from a practical standpoint, appeals to every textile manufacturer and overseer.