

the fact that it penetrates readily and possesses none of the objectionable features in drying.

This glue, which is known to the trade as *Beticol*, dissolves readily in cold water, does not jelly, and yet is neutral, and possesses more hygroscopic qualities than ordinary glue.

For purposes where it is desired to make it insoluble, formaldehyde is used.

Ordinary glue, jellies as soon as it comes in contact with formaldehyde, but *Beticol* remains perfectly liquid from six to eight hours and can be applied the same as caseine or albumen, with water added according to requirements.

At this point, we desire to mention a prepared and vegetable glue which simply needs thinning by water, and a product which is extensively used throughout the trade. We refer to *Spinx Finish*, prepared by the same concern.

Giant Gum is another of their sizes, which is in powder form, and is readily dissolved in boiling water.

For use on the finer counts of worsted yarns, they suggest the use of *Arabol Flexible Glue XX*, which lays the fibre perfectly and renders the yarn perfectly soft and pliable.

NOVELTIES FROM ABROAD.

Black and Gray, Figured, Worsted Suiting.

Warp: 3220 ends.

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

Reed: 12 @ 4 ends per dent; 48 ends per inch; 67 inches wide in reed.

Dress: 1 end 2/24's worsted, silver gray mix
1 " " " , black
2 ends " " , medium & dk. gray mix twist
1 end " " , black
5 ends in repeat of pattern.

Filling: 1 pick 2/24's worsted, black
1 " " " , medium & dk. gray mix twist
1 " " " , black
2 picks " " , medium & dk. gray mix twist
5 picks in repeat of pattern.

Finish: Worsted finish; 56 inches wide.

Piece Dyed Worsted Dressgood. (Stripe Effect.)

Warp: 4704 ends.

Weave: See Diagram Fig. 2; repeat 18 warp threads and 4 picks; 4, 6, 8, 10 or 12-harness fancy draw.

Reed: 21 @ 4 ends per dent; 84 ends per inch; 56 inches wide in reed.

Dress: 53 ends single 42's worsted, white
1 end 2/80's cotton, white

54 ends in repeat of pattern.

Filling: 75 picks per inch, all single 48's worsted, white.

Finish: Scour well, dye deep black, scour, shear thread bare, press; 52 inches wide.

Brown Mix, Worsted Suiting.

Warp: 3600 ends.

Weave: See Diagram Fig. 3; repeat 66 warp threads and 32 picks; 18-harness fancy draw.

Reed: 12½ @ 4 ends per dent; 50 ends per inch; 72 inches wide in reed.

Dress: 2 ends 2/26's worsted, black
1 end " " , brown mix
1 " 2/70's " , red
60 ends 2/26's " , brown mix
1 end 2/70's " , green
1 " 2/26's " , brown mix

66 ends in repeat of pattern.

Filling: 56 picks per inch, all 2/26's worsted, green and brown mix.

Finish: Worsted finish; 58 inches wide.

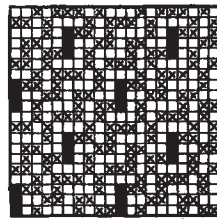


Fig. 1



Fig. 2

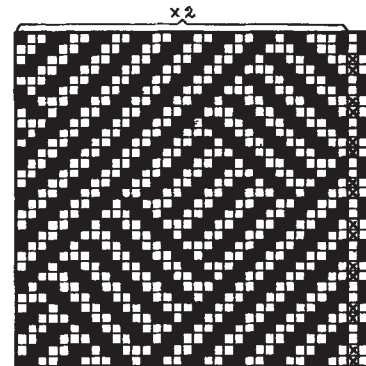


Fig. 3

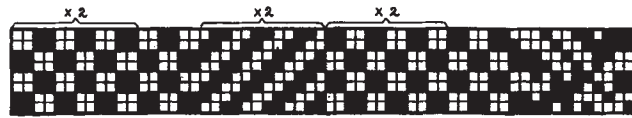


Fig. 4



Fig. 5

Worsted Suiting. (Herringbone Effect.)

Warp: 3600 ends.

Weave: See Diagram Fig. 2; repeat 18 warp threads and 4 picks; 8, 10 or 12-harness fancy draw.

Reed: 12½ @ 4 ends per dent; 50 ends per inch; 72 inches wide in reed.

Dress: 16 ends 2/28's worsted dark bronze } times 3
2 " " " mix
16 " " " black
1 end 2/48's " dark bronze mix
1 " 2/28's " green
1 " 2/28's " black

72 ends in repeat of pattern.

Filling: 56 picks per inch, all 2/28's worsted, light bronze mix.

Finish: Worsted finish; 58 inches wide.

Worsted Suiting. (Color Effect.)

Warp: 4250 ends; all 2/34's worsted.
Weave: See Diagram Fig. 4; repeat 96 warp threads and 8 picks; 20-harness fancy draw.
Reed: 15½ @ 4 ends per dent; 62 ends per inch; 68½ inches wide in reed.

Dress: 2 ends dark olive } 7 times
 2 " light olive }
 2 " dark olive }
 1 end dark olive } 12 times
 1 " light olive }
 2 ends light olive }
 2 " dark olive } 10 times
 2 " light olive }

96 ends in repeat of pattern.

Filling: 64 picks per inch, arranged thus:
 2 picks 2/34's worsted, light olive
 2 " " " , dark olive

4 picks in repeat of pattern.

Finish: Worsted finish; 56 inches wide.

Worsted Suiting. (Figured Stripe Effect.)

Warp: 4500 ends; all 2/48's worsted.
Weave: See Diagram Fig. 5; repeat 104 warp threads and 16 picks; 16-harness fancy draw.
Reed: 17½ @ 4 ends per dent; 70 ends per inch; 64½ inches wide in reed.

Dress: 2 ends light gray
 2 " dark gray

4 ends in repeat of pattern.

Filling: 70 picks per inch, arranged thus:
 2 picks 2/48's worsted, light gray
 2 " " " , dark gray

4 picks in repeat of pattern.

Finish: Worsted finish; 56 inches wide.

INGRAIN CARPETS.

(Continued from page 13.)

The Ingrain Jacquard Machine.

The same is what we technically call a double cloth Jacquard Machine, Fig. 5 showing its working section, *i. e.*, one row of needles across the machine, showing also the necessary boards for guiding and operating the tail cords. The machine consists of two divisions (I and II) which are worked alternately. Letters of reference accompanying the illustration indicate thus:

A the top board, to which the tail cords are fastened around a wire, by knot shown below the boards. *B* and *F* represent the lifter boards (trap boards) which are shown in their top view in Fig. 6. *C-D* is the needle board. Arrow *S* indicates the direction of working the cylinder towards the needles. *G* is the needle box with its pin for holding needles and springs in position. Each needle is connected to two tail cords, as indicated in the drawing, one for figure and one for ground. *H* and *L* are the two guide boards for the tail cords. Each tail cord is weighted by a small lead weight, as shown at *K* in drawing.

In place of using cords, as shown in illustration, for raising the harness, Thomas Halton's Sons, the pioneer builders of Jacquard Machines in Philadelphia,

use the regular wire hooks, acting in connection with the bars of two griffs, in their place. These two griffs then take the place of the two lifter, *i. e.*, trap boards *B* and *F* respectively.

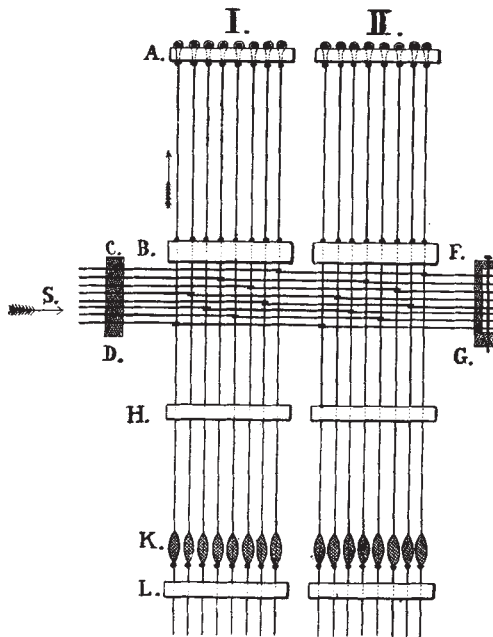


Fig. 5

THE TYING-UP OF THE HARNESS.

Two systems of tie-ups are used with the yard wide Ingrain carpet, viz: the *straight through* and the *point tie-up*; a combination of both being used in connection with Art Squares.

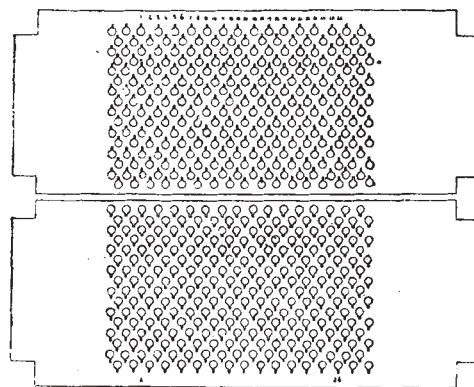


Fig. 6

THE STRAIGHT THROUGH TIE-UP.

Diagram Fig. 7 illustrates this tie-up. There are two separate bottom boards in the Jacquard Machine, indicated respectively by *A* and *B*, one for the ground and the other for the figure tail cords.

The four journals of the Ingrain Carpet Loom and which take the place of the usual comberboard in other Jacquard Looms, are illustrated separately in connection with diagram Fig. 8 (each journal carrying its own set of threads).

Numerals of reference in connection with Fig. 7 clearly show the tie-up; corresponding numbers are used between neck cords and the holes of the journals. The two divisions of the tie-up are shown separated from each other by means of dotted line *C*.