

All traces of chlorine may be removed from the bleached cloth by treating with an antichlor, bisulphate of soda, thiosulphate of soda, peroxides and others.

In the use of sizes and finishing pastes special care should be observed in preventing the employment of tallow that may have turned rancid, or of dextrine in the acid state.

It is much better to use a pure soap as the softening agent than tallow.

PRACTICAL POINTS ON THE TYING-UP OF JACQUARD HARNESSES.

Combination of Straight and Point Tie-Ups.

For our subject we will take the combination of these two systems of tie-ups, as used extensively in connection with the manufacture of napkins, handkerchiefs, scarfs, draperies, curtains and similar damask fabrics, in which the centre part of the fabric is

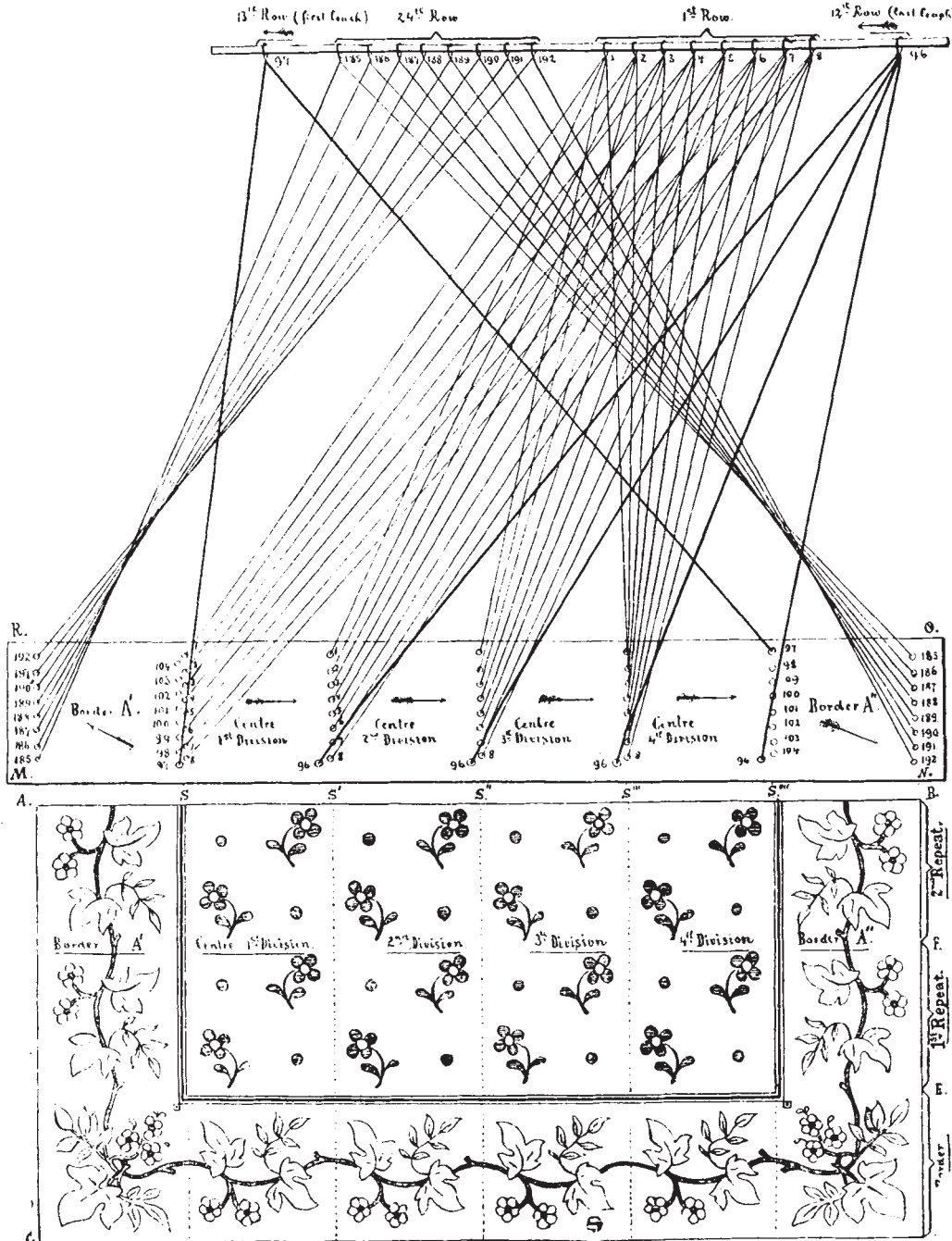


Fig. 1

Yellowing of the goods may be delayed or avoided by not subjecting the bleached goods to the influence of high temperatures, as in some operations of drying or of calendering. A too high temperature is liable to cause the conversion of the starch to yellowish-colored dextrine. Over-bleaching may also be the cause of the occurrence of the fault of yellowing, through the formation of oxycellulose.

worked on the straight-through system; the borders on each side work on the point tie-up, repeating equally from centre towards selvage.

In the other two borders, to be woven, at the beginning and the end of the fabric, the same principle is observed, thus resulting in four corner squares in the fabric, only two of which need to be designed,

the other two being produced by the peculiar tie-up used.

Fig. 1 is given to illustrate the subject, using (for an example) a 200 Jacquard, *i. e.*, an 8 row deep machine, with 25 hooks in width, plus two reserve rows which the machine may or may not contain.

The needles of the Jacquard machine are divided in two sections, as follows:

Needles 1 to 96 to be used for the *centre* design and

Needles 97 to 192 to be used for the *border* design.

This leaves 8 needles (the last row nearest to the usually reserve rows) empty and which may be not considered present, or taken out, or used for a margin or with the selvage.

these patterns for the loom is in the union of the two tie-ups, the straight-through and the point tie-up.

As previously stated, the borders *A'* and *A''* are produced by the point tie-up, while the remainder of the borders are made with the straight-through tie-up. The combination of these two tie-ups occurs in the corner squares of the border, and the arrangement must be such as will permit the two sides of the corner patterns to properly unite with the design for the balance of the bottom or top border.

Ground plan for above fabric:

Letters of reference *A, C, D, B, F*, indicate the outside design of fabric.

Letters of references *S, S', S'', S''', S''''*, indicate the four centre division of the fabric.

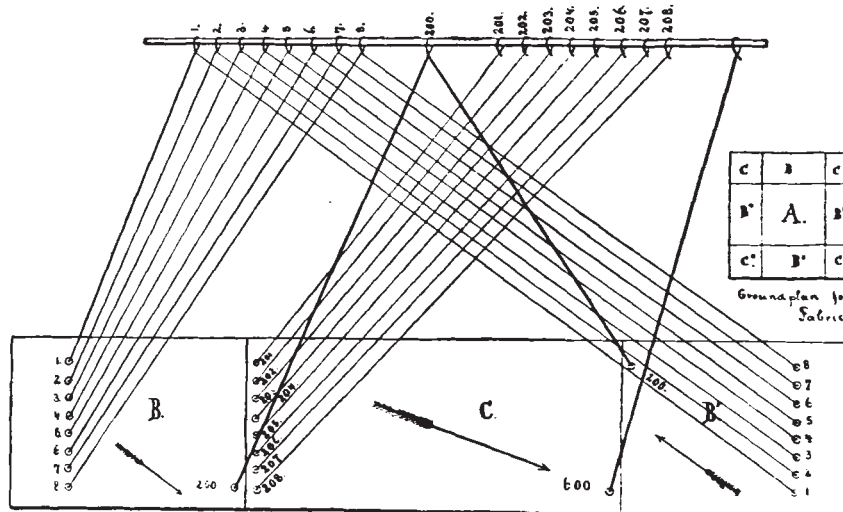


Fig. 2

Our diagram of the tie-up shows us the following arrangement of centre and border used, *viz.*:

$$\begin{aligned} 4 \text{ repeats of centre} &\times 96 &= 384 \text{ ends} \\ 2 \text{ border} &\times 96 &= 192 \text{ ends} \end{aligned}$$

Ends in fabric exclusive selvages 576

The diagram represents four divisions for the centre, tied-up straight, hence four harness-cords for each leash.

The border, using only two repeats in the fabric, will contain only two harness-cords to one leash.

In the diagram in connection with the centre design, the first full row of the machine is indicated, which equals the first row deep in the Jacquard machine of every centre division, containing harness-cords 1, 2, 3, 4, 5, 6, 7, 8.

We also show (heavy line) the last centre leash. No. 96, being the last hook of row 12 of the machine.

The borders *A'* and *A''* are worked from the same portion of the design, but the figure, on account of the point tie-up, runs in each border in an opposite direction, as indicated by arrows in the comberboard.

Border *A'* commences with harness-cord from leash 192, and ends with harness-cord from leash 97, and then joins the centre design.

Border *A''* commences with harness-cord from leash 97, as is joining the centre design, and ends with harness-cord from leash 192, joining then the selvage.

The great difficulty to be overcome in arranging

Using One Division Tied-Up Straight for the Centre, with Point Tie-Up for Borders.

To illustrate the subject, diagram Fig. 2 is given, using for this purpose a 600 machine under the following arrangement: Needles 1 to 200 for the point tie-up, (*i. e.*, the two borders) and needles 201 to 600 for the centre with a straight tie-up, using one repeat only.

$$\begin{aligned} 200 \text{ ends for each border} &= 400 \text{ warp-threads.} \\ 400 \text{ " " centre} &= 400 \text{ " "} \end{aligned}$$

800 warp-threads

In the ground plan of the fabric accompanying the tie-up, *A* is the centre; *B, B', B'', B'''* the borders; *C, C', C'', C'''* the four corners.

Waterproofing Tulle.

According to a late German patent tulle and similar fabrics can be made so that they are not spoiled by rain, and can be cleaned with a wet sponge, by impregnating them with an ordinary solution of colloidion, to which enough amyl acetate has been added to make the drying slow.

The tulle, after treatment, has a soft handle and ample lustre. The coating does not peel off. Gum-lac is added with advantage. The recipe given is as follows: 6 kg. of gum-lac is dissolved in 4 litres of spirit and 16 litres of amyl acetate. After complete solution, the liquid is mixed with 13 litres of colloidion.