

TYING-UP OF THE JACQUARD HARNES.

Three Section Straight Through Tie-up.

This system of tie-up of a Jacquard Harness is used in the manufacture of all kinds of fabrics in

the cards, one small square on the point paper standing for three needles in the machine, the respective color used by the designer on the point paper indicating which of the respective thread of each unit of

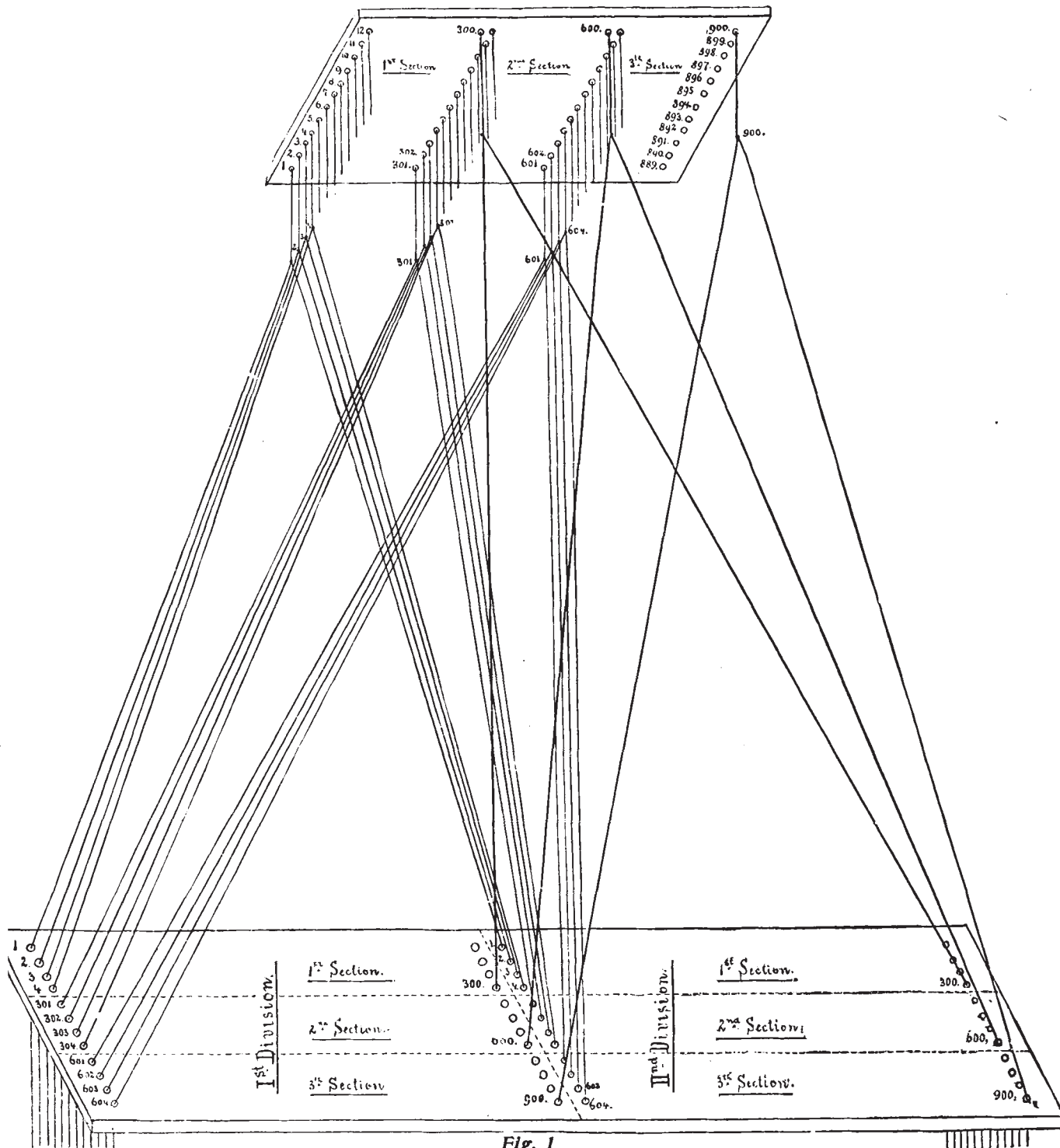


Fig. 1

which the face is figured with three systems of warp, or two systems of warp for the face and one system for a binder; the same are largely used in the manufacture of fancy plushes, and velvets.

The object aimed at is to have the threads of each system of the warps conveniently together in the Jacquard Machine, and when then each system of threads in rotation is dealt with in the stamping of

three warp-threads has to be taken by the card stamper.

Actually speaking, it means combining three Jacquard machines in one tie-up, each machine operating its one set of warp-threads; the three machines combined in one making it easier for mounting the Jacquard loom, as well as tying up the harness, etc.

In order to better explain the subject, the accom-

panying two illustrations are given, and of which Figure 1 shows us, for example, a 900 Jacquard machine tied up in three sections straight through, placing the machine to the comber-board in what is known as the English system, *i. e.*, the bottom board of the machine corresponding, considered in length to that of the comber-board. Both boards are divided in three sections indicated respectively: Section 1, calling

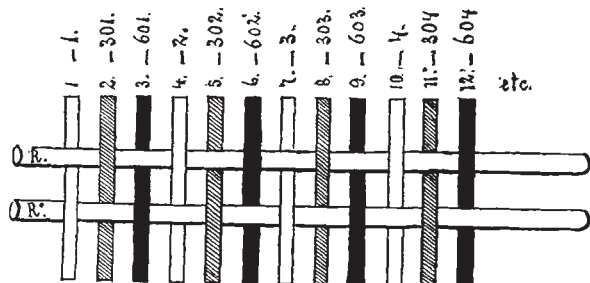


Fig. 2

in both boards for neck-cords and leashes 1, to and inclusive 300; Section 2 for neck-cords and leashes 301 to and inclusive 600, and Section 3 for neck-cords and leashes 601 to and inclusive 900.

The comber-board is shown divided in two divisions, in order to simplify illustrations as well as explanations, any number of divisions as called for by texture and width of the fabrics can be used. The number of divisions used times number of needles used in the Jacquard machine, gives us the number of ends in the warp, and which in our example gives us ($2 \times 900 =$) 1800 ends for the warp. Besides using full divisions, a portion of one may be used in order to suit a certain width of fabric required in the reed.

The threading of the machine shown in our illustration is done from the rear towards the front, and from the left towards the right.

The threading of the comber-board is done in a corresponding manner; 300 ends for each section in one division, divided by 4 rows deep, each section, making 75 cross-rows for each section of each division. The machine is a 12 row deep Jacquard, which thus calls for 3 rows deep in comber-board for every row deep in the Jacquard, *i. e.*, 25 rows of hooks 12 deep in each section of the machine, take up the 75 rows of holes 4 deep, in each section of the comber-board.

In our illustration, only the first 4 neck cords of each section of the machine are shown with its leashes attached, calling for one row deep of the comber-board, *i. e.*, for the first row deep of all three sections. The last neck cord to each section of the machine is also shown with its leash attached and its harness cords threaded into the proper holes in the comber-board; the same being shown by heavy lines in the illustration to distinguish them from the first.

After thus threading the Jacquard harness, the next to do is to lease the cords, *i. e.*, heddles below the comber-board, and which is done alternately taking one cord from each section, until the threading of the harness is complete.

Fig. 2 is given to illustrate subject, showing the three sections of harness cords indicated respectively in outline, shaded, and black, as threaded to its respective lease rods R and R^1 . This shows that:

| 1st. Cord in Lease calls for Cord | 1 in Machine |
|-----------------------------------|---------------|
| 2nd. " " " " " " | 301 " " |
| 3rd. " " " " " " | 601 " " |
| 4th. " " " " " " | 2 " " |
| 5th. " " " " " " | 302 " " |
| 6th. " " " " " " | 602 " " |
| 7th. " " " " " " | 3 " " |
| 8th. " " " " " " | 303 " " |
| 9th. " " " " " " | 603 " " |
| 10th. " " " " " " | 4 " " |
| 11th. " " " " " " | 304 " " |
| 12th. " " " " " " | 604 " " |
| 13th. " " " " " " | 5 " " |
| 14th. " " " " " " | 305 " " |
| 15th. " " " " " " | 605, " " etc. |

With reference to card stamping, each section in the machine then stands for its respective set of warp-threads in the loom, three of them working as mate threads. For example, having section 1 stand for white, section 2 for blue, and section 3 for red, the design then is correspondingly executed in three colors, if dealing with a three color effect, and when then in card stamping first one color is cut for one section, then the second color for the second section, and finally the third color for the third section. Since each square on the point paper is only painted in one color, it naturally follows that its respective color will be cut in the proper section, and its corresponding warp-thread in the loom operated by the needle from the desired section.

Provided we should deal with two figure-threads and one binder thread, said figure threads are dealt with similarly to the three figure thread procedure previously explained, the third section being then cut for the binder warp after a given weave, the point paper design then having been executed with two colors only, the stamper being instructed special with reference to cutting the weave in the binder section.

The Scotch-Tweed Industry.

The South Scotland tweed industry, which for two or three years has been rather active, is now somewhat depressed, due mostly to the decree of fashion in favor of fine Saxony makes of cloth and against chevions, thus giving worsted manufacturers an opportunity which they were strenuously improving, while tweed manufacturers are facing a winter of poor promise.

In regard to the probable effect upon the Scotch-tweed trade of the reduction of our tariff on woolen goods (which will take effect on Jan. 1 next), there are differences of opinion. The new tariff is at present considered by most Scotch mill owners an uncertain element in the situation, mainly on account of (1) the free listing of wool, which, while lowering prices to American mills, may increase prices in the English market; (2) the American preference, for the time being at least, for worsted goods; and (3) the competition of cheaper English and other European cloths in the American market.