

Leno Jacquard Designing

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Leno jacquard designing is one of the advanced types of cotton fabric designing. To understand more clearly this class of designing it is advisable to analyze the construction of a leno jacquard.

harness. The easer mail eyes are lower than the mail eyes for ground harness, with the crossing ends passing over the two rods as indicated and through the easer mail eyes. Each mail eye is made to carry two ends.

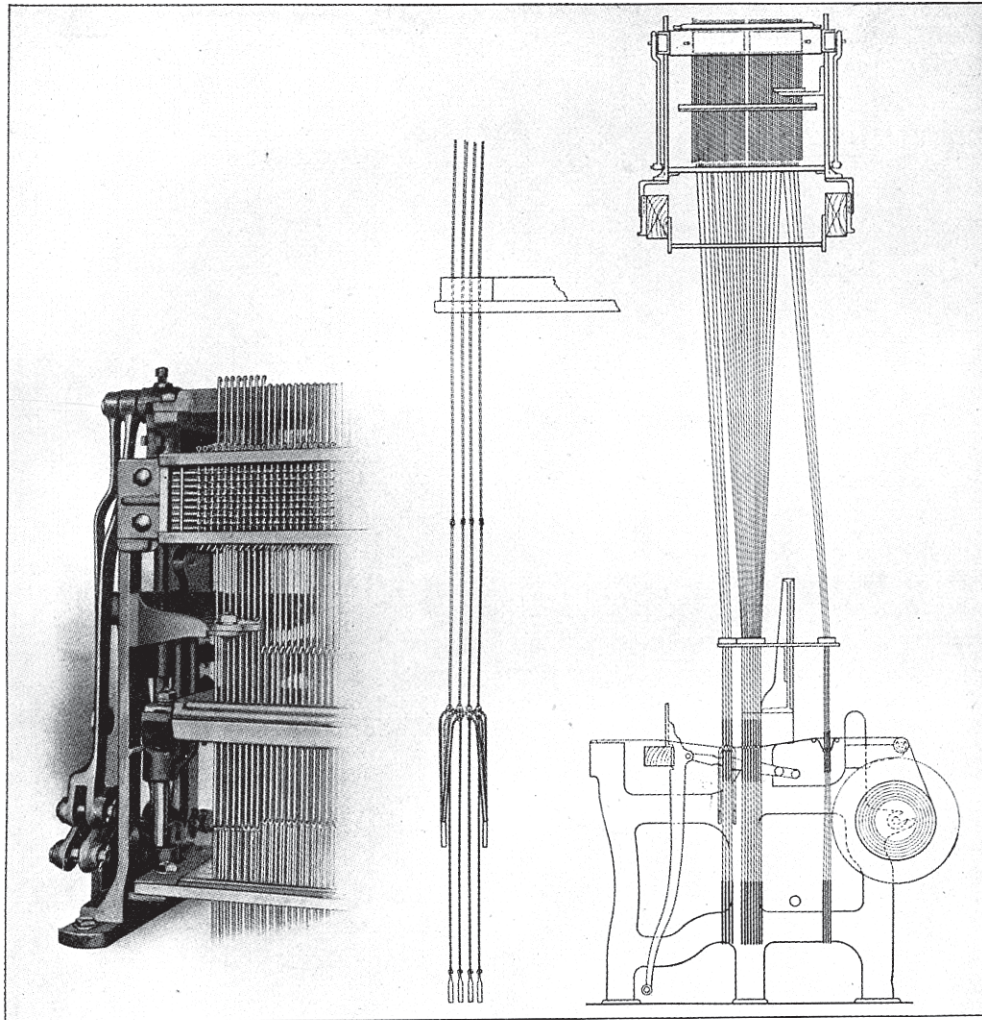


Fig. 1. Crompton & Knowles Leno Jacquard (Mounted)

Figure 1 illustrates the construction of such a machine as built by Crompton & Knowles Loom Works. The jacquard harness is divided into three sections; first, doup harness; second, body or ground harness; third, easer or slackener harness. The doup harness passes through a separate comber board in front of the comber board for ground harness. The easer harness passes through a separate comber board about ten inches behind the comber board for ground

The lingoies or weights on easers are heavier than for ground harness.

The middle illustration at Figure 1 shows how the doups pass through doup eye. Often the doups are all on one shaft in front of doup harness, the arrangement depending to a great extent on the construction of the fabric. This illustration also shows, on the left hand side, a section of the jacquard. In this it will be seen that 8 hooks are higher than the other hooks in the

machine; this reduces the lift on the easer harness and also causes these hooks to be picked up later by the griffe, so that the doup threads may not be slackened too early.

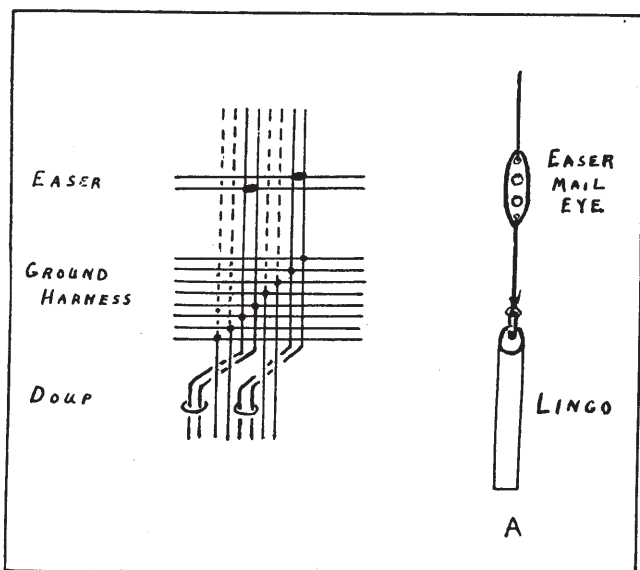


Fig. 2. Method of Drawing the Ends Through the Harness

These machines are especially adaptable for two ends crossing two. Figure 2 illustrates the method of drawing the ends through the harness. Crossing ends are drawn through easer mail eyes, then through two ground harness and through the doup. Standard ends are drawn between easer harness twine indicated by dotted lines, then through ground harness and over the

doup. Easer mail eye and lingo is shown in illustration at A. The yarn all comes from one loom beam.

When a doup harness is raised for a crossed pick the corresponding easer harness must also be raised. It is not necessary to raise the easer harness as high as the ground harness and a special arrangement is used on this machine. The doup shaft is raised on every pick.

A design for this jacquard must therefore be made in three sections to correspond with the three sections in the jacquard; the design proper for the ground or body harness, the first section for the operation of the doups, and the last section for the operation of the easers. These two sections must therefore be exactly alike

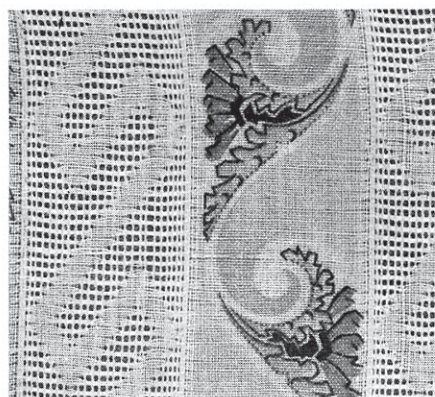


Fig. 3. Leno Jacquard Fabric

since an easer harness must always be raised when the doup harness is raised.

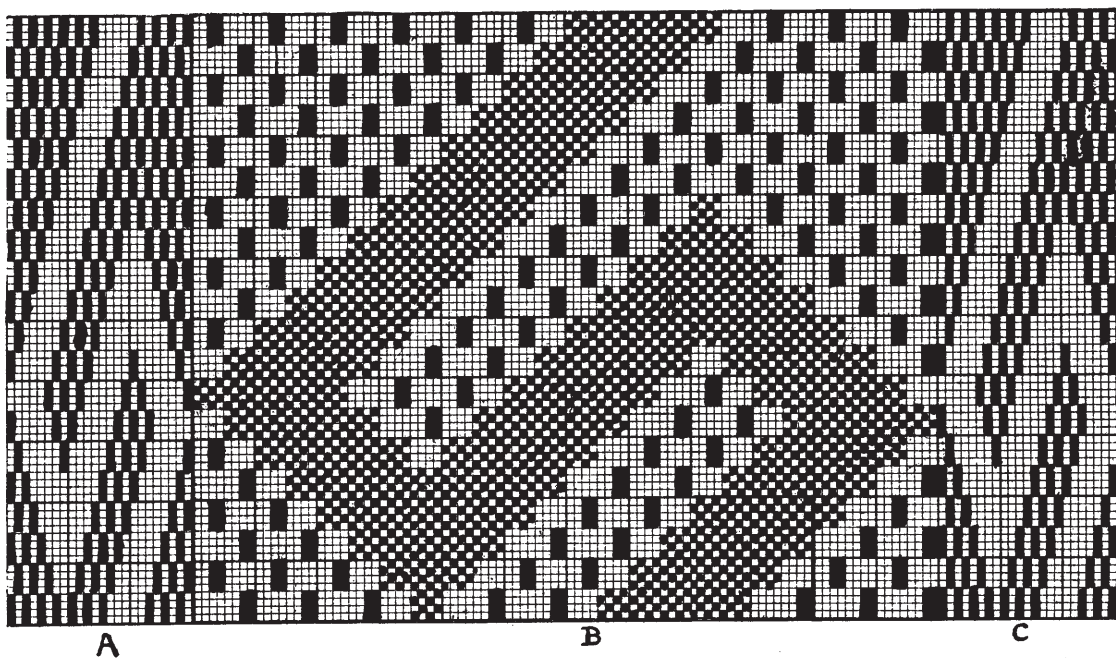


Fig. 4. Weave for Fabric at Fig. 3

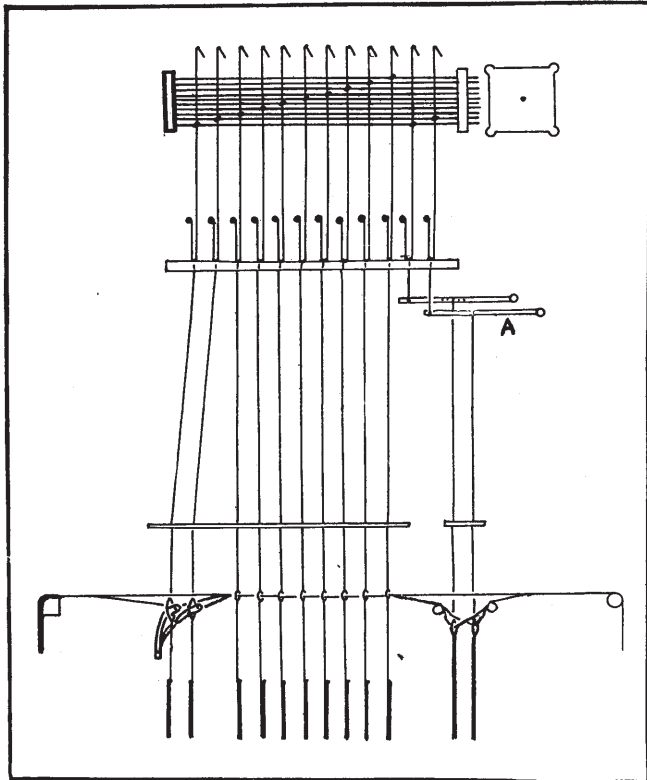


Fig. 5. English Leno Jacquard

The design has to be arranged to suit the capacity of the jacquard. On a 600 jacquard one-third of the hooks are required for the doups and easers, so there will be 100 hooks for doups, 400 hooks for design, 100 hooks for easers; a total of 50 rows in the machine. As there

are 12 needles in a row in the comber board this division will not give even rows.

100 needles	=	8- $\frac{1}{2}$	rows
400 "	=	33- $\frac{1}{2}$	"
100 "	=	8- $\frac{1}{2}$	"
<hr/>			
600 "	=	50	"

The design will have to be made to correspond and care must be taken in cutting the cards.

Probably the best arrangement will be to use full rows as follows:

96 needles	=	8	rows
408 "	=	34	"
96 "	=	8	"
<hr/>			
600 "	=	50	"

Figure 3 is a leno jacquard fabric in which the leno pattern repeats on 96 ends and 80 picks, the figure being plain weave on a leno ground. One repeat of the pattern is illustrated at Figure 4. Sections marked A and C are exactly the same; A being for the lifting of the doups, C for the lifting of the easers. Section B is for the pattern and for body of harness. There are four picks in a shed or change in the leno. Solid blocks of two ends and four picks in the design are to raise the ground harness and doup for open picks; for crossed picks the doups and easers work between the open picks as indicated in sections A and C.

Figure 5 illustrates the construction of an English leno jacquard. This is a 400 machine. A regular 400 jacquard has eight needles in a row and 50 rows. In

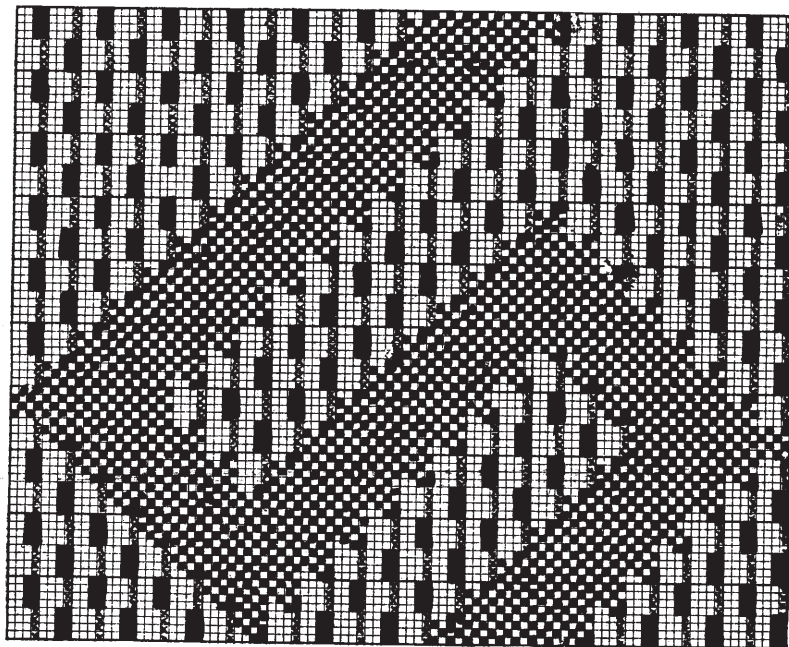


Fig. 6. Design for Jacquard at Fig. 5

this illustration it will be noticed there are 10 needles in a row operating 12 hooks, eight needles being used for the body of harness and two for the doups and easers.

It will be seen that one needle operates corresponding hooks for doups and easers. The reduced lift on the easer is regulated by levers marked A. This arrangement of hooks and needles in a jacquard enables the full capacity of the jacquard to be used. The ends are drawn through harness and doup exactly the same as in the previous illustration. The method of making a design for this jacquard is illustrated at Figure 6, using

the same fabric as at Figure 3, for which design Figure 4 was made. In this design the operation of doups and easers is indicated by crosses. In cutting the cards for this design, the crosses would be cut on the ninth and tenth rows on the card to correspond with the ninth and tenth rows of needles in the machine.

NOTE: A slight change is made in the joining of the plain weave with the leno. Design Figure 4 shows the plain weave to be full against the leno, but design Figure 6 shows the pick preceding and following the leno arranged to have the crossing ends raised. This will give an immediate change from open to crossed picks.

Another point to be noticed in making these designs is that the outline of figure moves in groups of four ends. In these illustrations picks also move in groups of four, but this is not necessary as other than four picks can be used.

