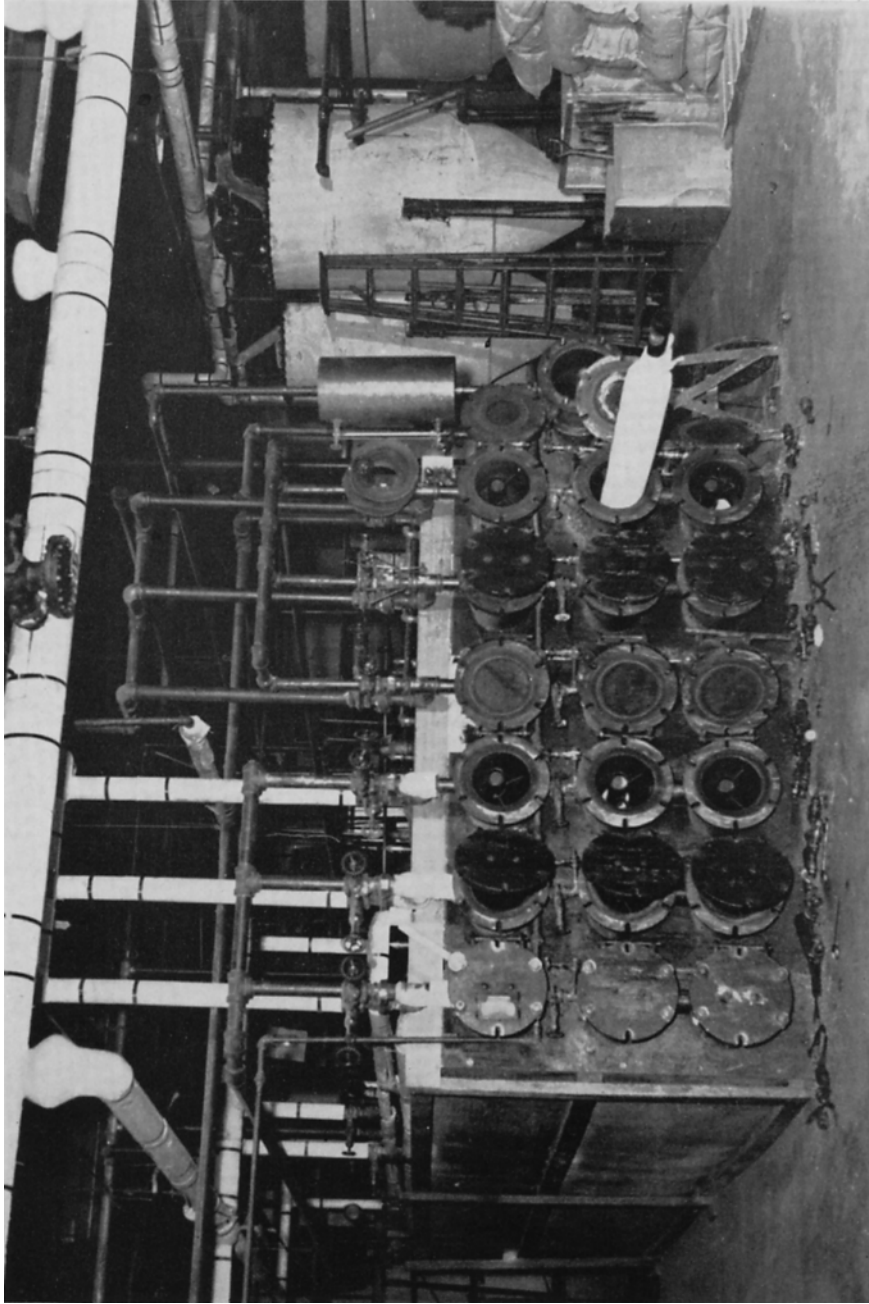




Thread drawing



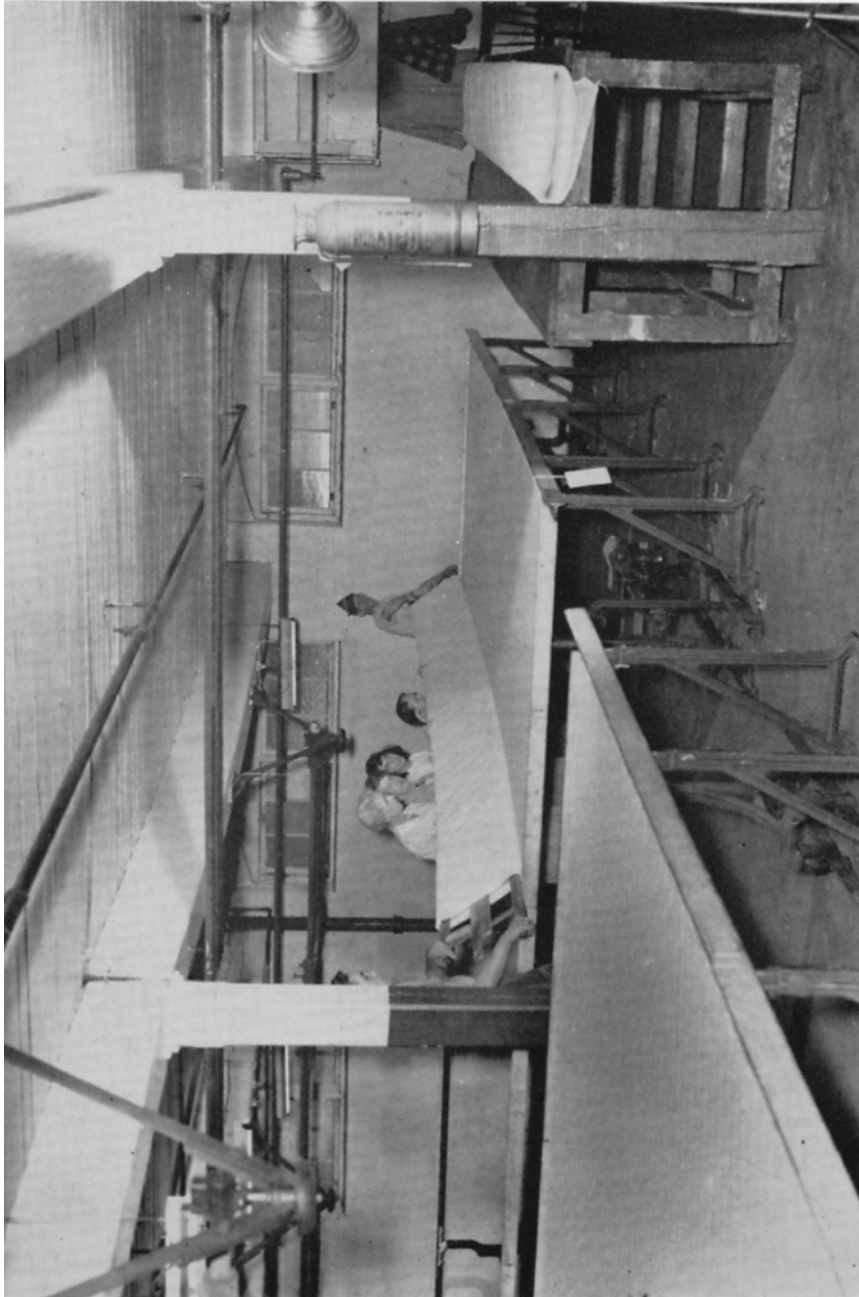
Acetone separator showing web half inserted



Pinning the web on the dressing frame



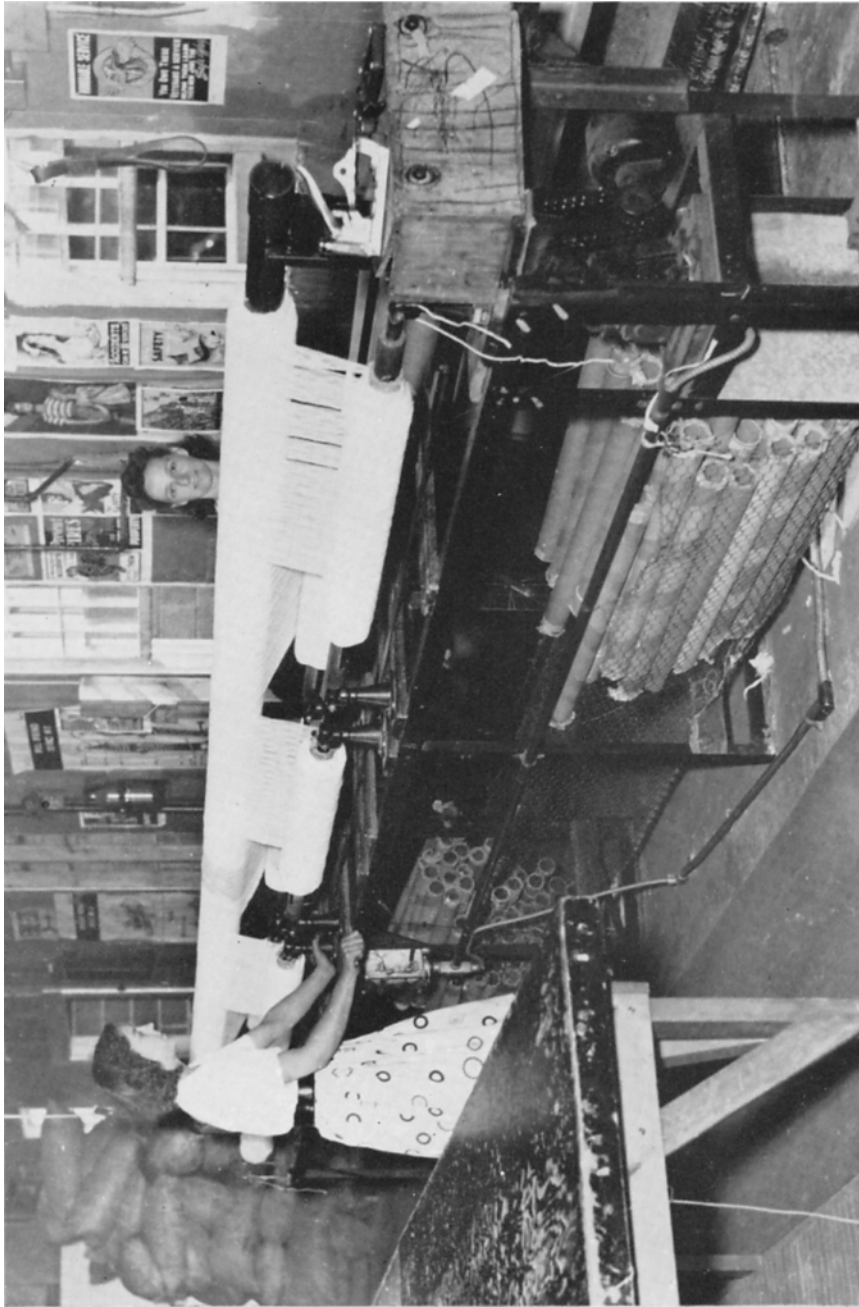
Dressing frame with web in place



Removing web from dressing frame



Fastening the bands to cardboard tubes



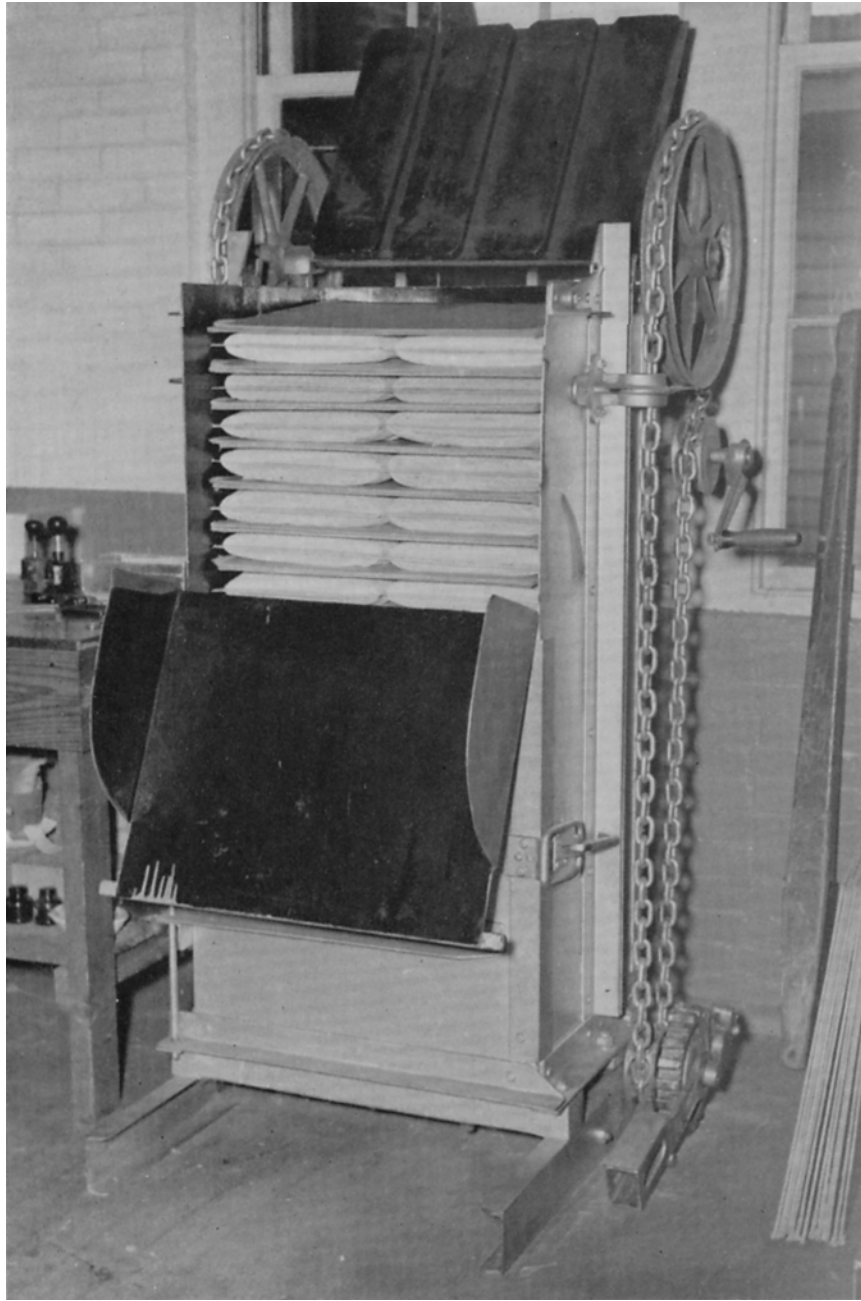
Rolling the bands on cardboard tubes after acetone separating



Jennying



Packaging and ticketing



Pressing the packaged lace

26. Designing

The designer is an artist. He must possess three essential characteristics: ability to draw well, technical knowledge of the capabilities of the machine which must produce his design in lace, and imagination. The first enables him to draw shapely motifs of well balanced proportions, the second saves him from the error of drawing designs which, however beautiful, cannot be reproduced in lace, and the third affords originality and distinction to his work. The imagination of the designer, which is also his inspiration, must be controlled by his knowledge of the capabilities of the machine. On the other hand, technical skill without artistic imagination will result in commonplace copying. The successful designer must, therefore, have a balance of technical skill and imagination. Much more thought and study are present in every design than appear on paper, for the designer molds his art to the needs of the moment. Sets of lace are made in various widths, and in the drawing of them it is essential that the principal features and characteristics of the initial design be maintained. As a rule the designer does not draft his original work although there are a few men in the lace industry who are accomplished designers and draftsmen, but this is the exception rather than the rule.

27. Drafting

The work of the draftsman is far more complex and mechanical than that of the designer. The draftsman must be an artist, and a lace machine technician. His work is a combination of the artistic and the technical. He must interpret the design in terms of the machine. The machine has infinite versatility and the beauty of its products depends upon the artistry and the capabilities of the draftsman. He must constantly experiment on the machine developing new effects in lace and new types of construction. About eight years of intense study and intimacy with the lace machine are essential to successful drafting. The draftsman must know the exact movement of each thread and each part of the machine which executes the design. Indeed, in executing a design he must translate it by a mathematical procedure into a highly complex chart from which are punched the jacquard cards which control the movement of each of the bars guiding the threads. On the draftsman's chart is a number representing exactly the passes, the combinations, the movements, of each warp and beam thread at any moment during the lace making process, and the draftsman must be sure that the sum total of these many thousands of movements through the combined work of the jacquard and the bobbin thread will be an artistic reproduction of the design. In some of the most important commercial lace productions, where the pattern is small, the prime necessity is draftsmanship, design taking second place.

The draft is several times larger than the design, the size varying with the length and quality, to allow filling in with clarity the details of the workings of the threads. The design is drawn on the draft, square for square, with

such modifications as are indicated by the draftsman's knowledge of the play of the machine, and every movement of the beam and warp threads is recorded motion by motion, the passage of the threads up and down being indicated by distance units called "gaits". The word "gaits" is applied to the space left between the threads of two neighboring carriages, and is the technical term used to denote the measurement of a distance unit to be traversed by a thread in moving laterally from the space between two carriages to the adjoining space.

28. Reading

After a pattern is drafted and arranged or set-out, it is "read off" on to a sheet of specially squared paper. In the squares, numbers are placed which indicate the position of each thread in the pattern as specified by the draft. If a column of figures on the sheet is read vertically, the result gives the work of one bar in a pattern; if a line of the sheet is read horizontally, the result gives the work of all the threads in two motions of the machine as affected by the working of the cards on the jacquard cylinders and their influence on the steel bars which guide the threads. Every movement of the threads as shown by the draft is indicated numerically upon the figure sheet. Reading is not difficult, but must be done with meticulous accuracy. The draft and the figure sheets are the counterparts of each other, and if either is lost, it can be reproduced from the other.

29. Punching

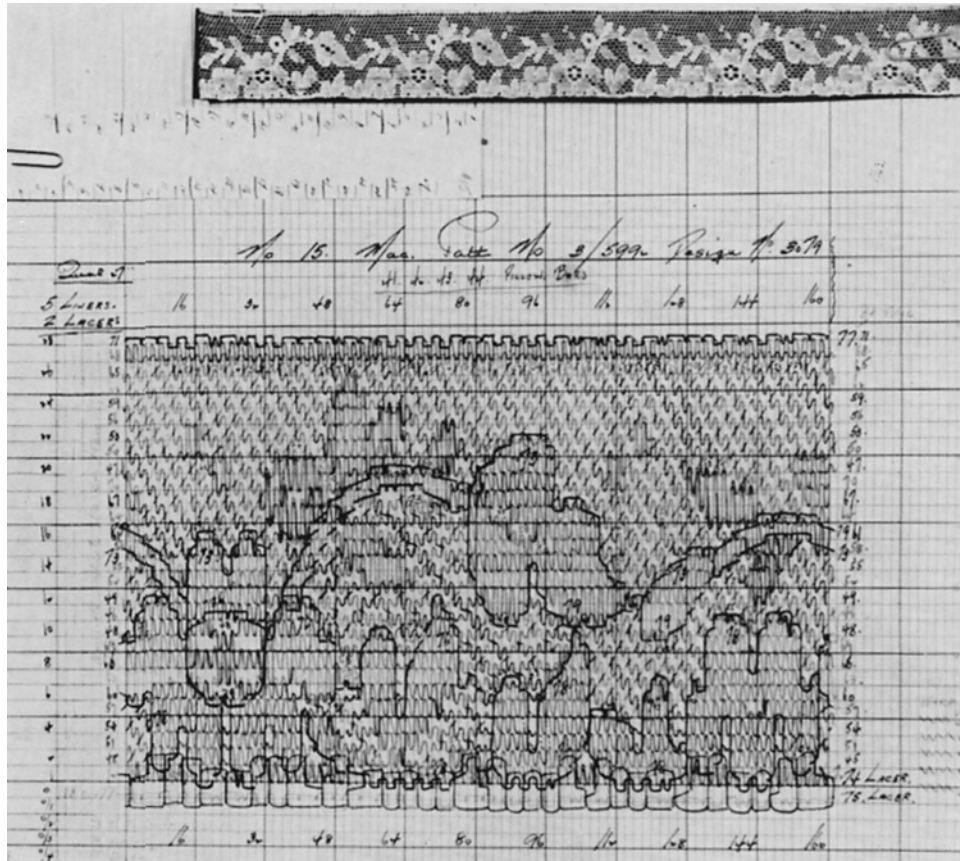
The numbers on the sheet indicate the positions of the holes to be punched in the jacquard cards. These are made of stiff, pliable cardboard, of such a length and width as to fit exactly the face of the jacquard cylinder. The cards are punched on a machine called a "piano puncher". The action of the punching machine is no different from that used for punching any jacquard cards and comprises two movements, one horizontal and the second vertical. The holes punched in the cards correspond to those of the cylinder of the jacquard, and the numerical value of the holes is the same as the numerical value of the droppers in the machine. Card punching requires speed and accuracy as all mistakes must be found and taken out of the cards by the draftsman. Punchers average 100 to 120 cards per hour.

30. Lacing

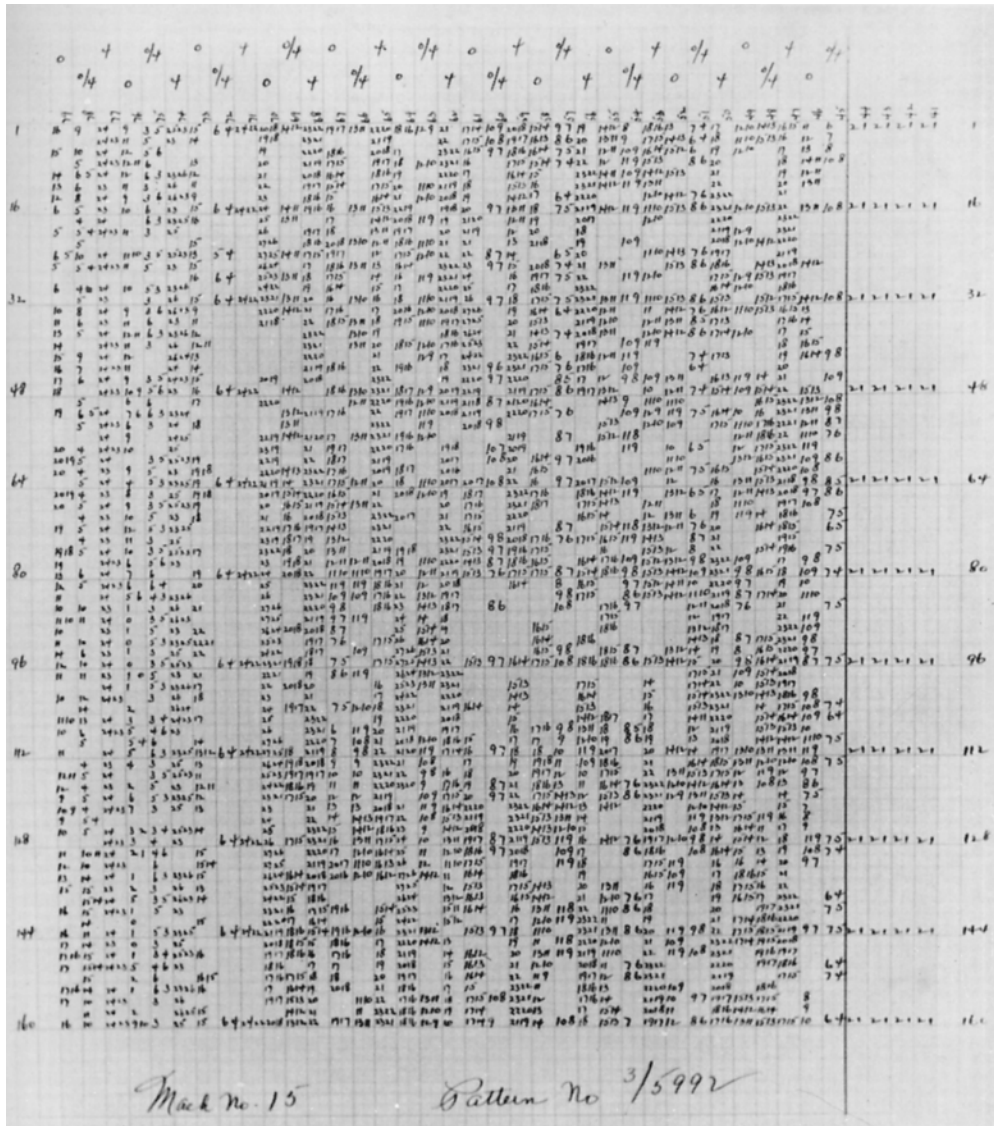
The cards are numbered in the order punched, but they are laced together in two packs, the odd numbers for the cylinder of the front motion of the jacquard, and the even numbers for the cylinder of the back motion. The cards are fed one at a time into a machine which automatically laces them together.



A designer at his desk



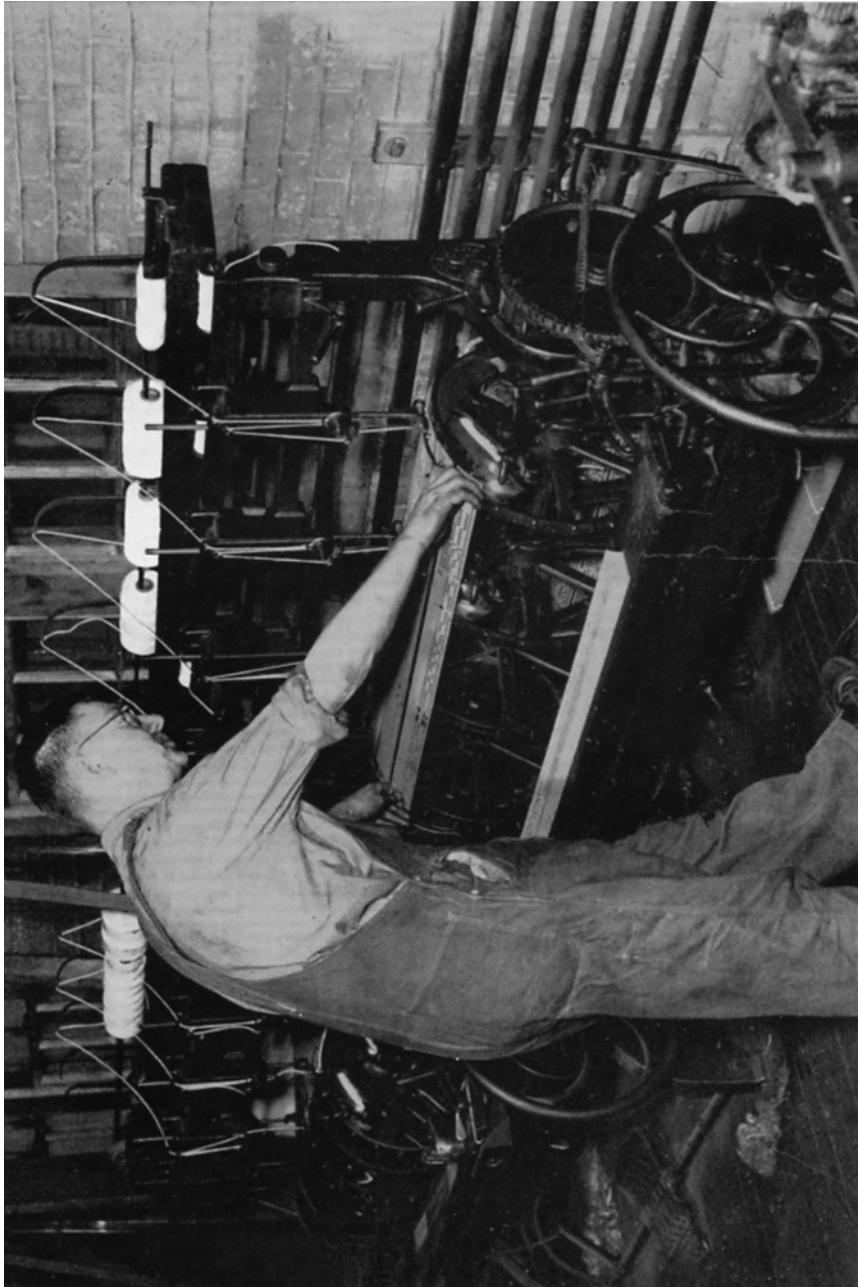
Draft of 9½ point, 28 carriage Lyons lace, showing sample of lace at top.



Draftsman's figure sheet



Punching Jacquard cards



Lacing Jacquard cards together

31. Correcting

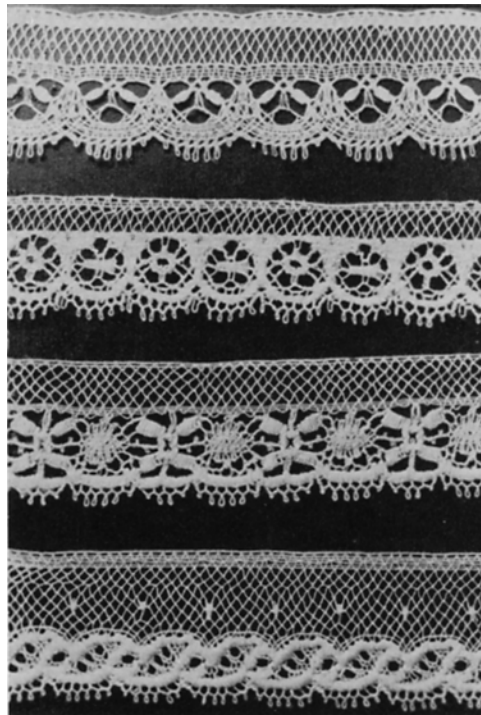
When the pattern cards are first placed upon the cylinders of the jacquard, a pattern is run off. It is the duty of the draftsman to correct this pattern, take out all the card punching or reading errors, change any arrangement of the threads which traps or causes them to break, and alter any part of the pattern which requires improvement. Alteration of a pattern, once it is drafted and punched, is expensive, because the draftsman has to alter not only the draft but the punching sheet and cards: a long and tedious process. When the pattern is corrected, the draftsman directs the alteration of the weight on the warp or beams to a suitable tension, and the future weighting of the pattern is the responsibility of the twist hand, under the foreman.

Lace Styles

The products of the Leavers lace machine may be classified as follows:—

EDGING

Narrow lace, especially designed for trimming frills and parts of dresses, usually made with the upper edge straight and the lower edge indented or scalloped.



12 point Val edgings

INSERTION

Narrow lace, specially made for inserting in a plain fabric, made with both edges straight and strengthened by having several threads running side by side for use in sewing to the fabric.

Edgings and insertions are usually made in sets of various widths, each set embodying a distinctive design. Edgings and insertions may be in the same set.

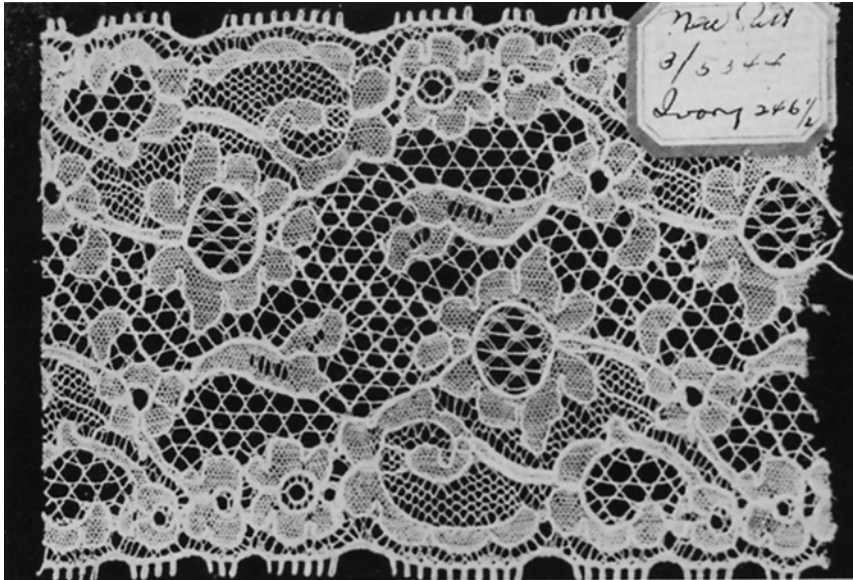


12 point Vals; from top to bottom

1. Clipped Val insertion
2. Val insertion
3. Val edging
4. Val insertion

GALLOON

Narrow lace having both edges scalloped or the whole article serpentine in form.



Bobbin fining Binche Galloon

BEADING

Edging, insertion, or galloon type with slits through which ribbon may be laced.

TIES OR STREAMERS

Galloons, six to eight inches in width, and having, as a rule, a repeated object which can be scalloped to form a perfect end. Ties and streamers are also cut out of all-over nets specially designed to permit their use for dual purposes.

FLOUNCING

Wide lace with a straight top and a scalloped front, same as edging, made in widths from 12" to 54" and used to form deep ruffles or flouncings gathered or pleated at the top.

MOTIFS

The decorative figures of the pattern which when they consist of butterflies, ribbon-knots, etc., can be cut out and used, detached, in the ornamentation of garments.

ALL-OVER NET

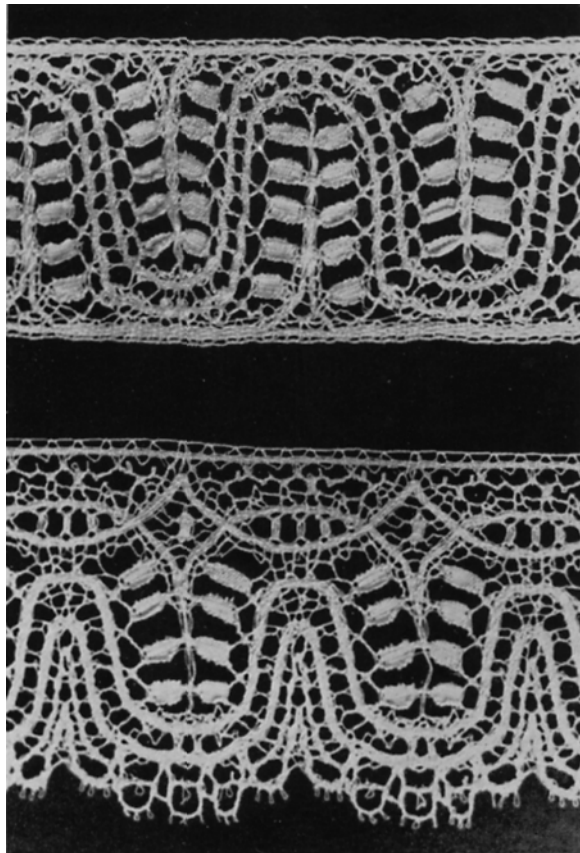
Lace made without top or scallop and with a pattern of a definite width and length which is repeated to the full width of the machine and indefinite in length. The piece is cut into any required length and into breadths varying from 18" to 72" according to purpose for which the material is desired.

VEILING

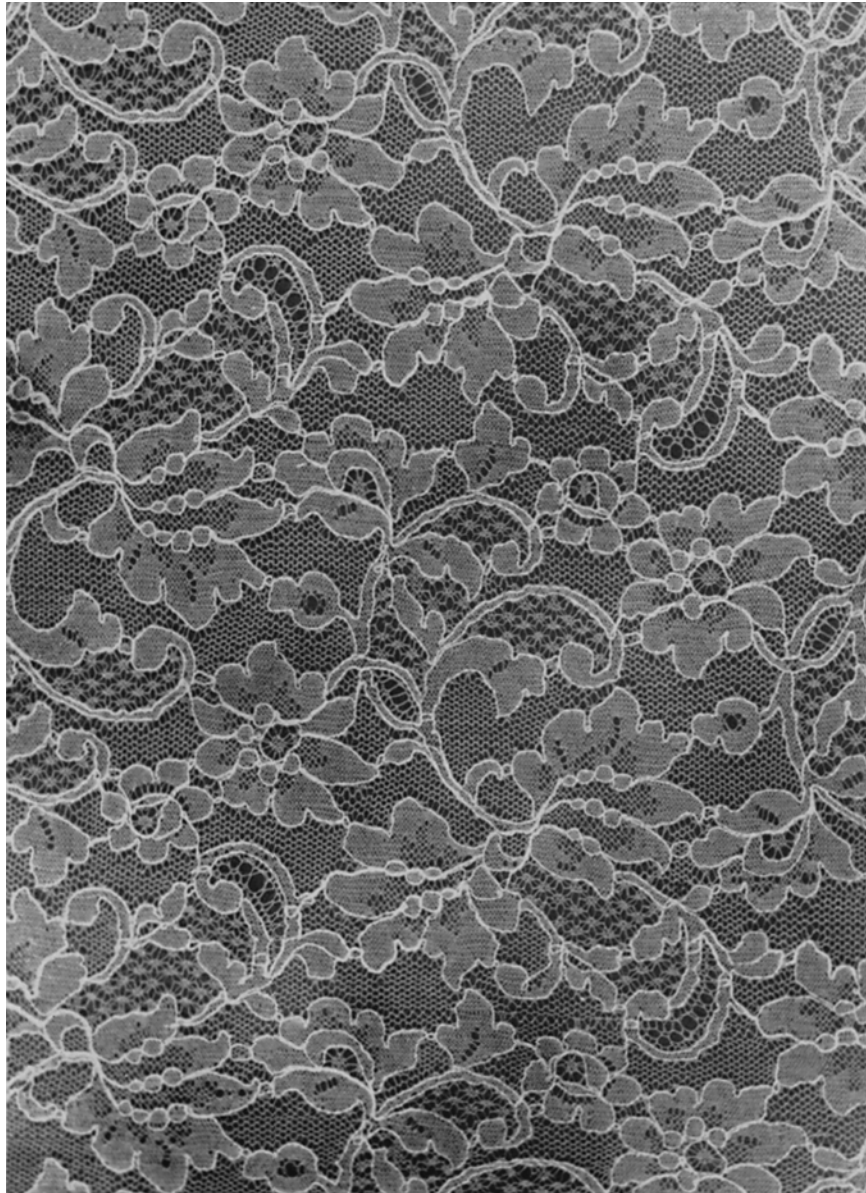
Light, fancy, open nets, sometimes ornamented with a design on the bottom border. They are used for face veils and for decorative purposes on women's hats; a veil is a particular length of veiling.

Narrow laces may be any width from $\frac{1}{4}$ " to 12".

Wide laces may be any width from 12" to 54"



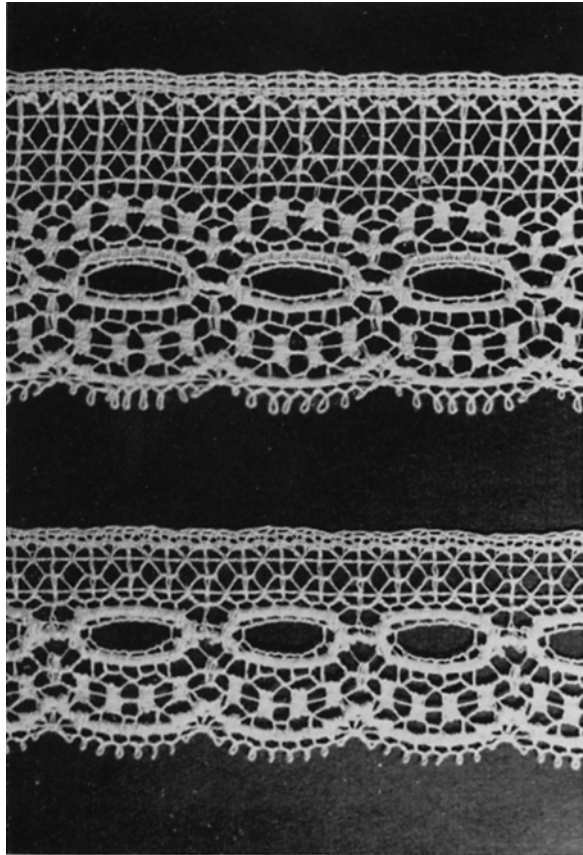
Maltese type Torchon insertion with edging to match



Bobbin fining all-over lace



120 carriage 9½ point Lyons Galloon



Torchon edgings

Glossary of Leavers Machine-Made Lace

The names given to Leavers laces are principally the names of the localities where the different styles originated as hand-made laces and do not in any case indicate geographical source of origin. Some of them are excellent imitations of the hand-made articles of the same name.

ALENÇON

Independent beam, single warp bobbin-fining and double-warp bobbin-fining laces, made to imitate the products of the French bobbinet-jacquard machine. In 1879, this name was applied to a narrow lace which was made on the Leavers lace machine. The mesh was Ensor net and for the width of an inch on the pattern the net threads were worked from independent bars for the purpose of allowing fancy meshes to be introduced into the face of the pattern. The remainder of the net was made by eight bars; the motifs were small and filled with gimping or fancy meshes, and were outlined with very thick threads which were sometimes worked in pairs.

ARMENIAN

Narrow cotton lace of needle-work type, made with independent beams and used principally for trimming handkerchiefs.

BINCHE

The name applied to cotton lace containing a distinctive fancy net or ground. Made by independent beams in narrow widths, as a variant of Valenciennes, or in wider widths as a thick threaded bobbin-fining lace.

BLONDE

Natural colored silk lace of light texture, made on an Ensor net background.

BOHEMIAN

Cotton or silk lace made with warps in which the pattern consists of tape-like shapes.

BOURDON (MARGOT)

Silk lace in which the pattern is outlined with very coarse threads.

BRABANT (LOOP)

Cotton lace in which the ground work and the filled-in motifs, which are outlined with thick threads, are made by the warp; also called loop laces.

CARRICK-MA-CROSS

Cotton bobbin-fining lace, made in two varieties, solid outlined motifs on a net ground or on a guipure ground with cast-off purls.

CHANTILLY

Fine quality silk lace with the motif outlined by thick threads of spun silk or cotton.

CLUNY

Cotton lace of coarse texture, made by independent beams and largely used for articles of furniture and upholstery purposes.

CRAQUELE

Cotton lace containing an irregular shaped net having the outline of a coffin and sometimes termed coffin net.

DUCHESS

Cotton machine-made imitation of Brussels and Honiton lace, bobbin-fining lace made with brides and tape-like effects with the motifs outlined with thick threads.

ENGLISH ANTIQUE

Cotton lace made by independent beams or bobbin-fining systems. The net contains square effects known as guipure d'art.

EVERLASTING

Narrow cotton trimmings of the French banded style; so named because of their durable wearing qualities.

FILET

Cotton lace distinguished by a square mesh. Made by independent beams as a variant of Val laces, or on a bobbin-fining set-out.

GUIPURE

Cotton lace which is distinguished by brides covered with purls and by independent beams generally made of silk.

HAMBURG

Cotton independent beam laces made with a solid ground to imitate cloth.

IRISH POINT

Cotton lace sometimes called Irish crochet or baby Irish, made by independent beams or on bobbin-fining set-outs and with heavy purls.

MALINES

Cotton lace made with a single warp, fine front gimps, with outlining threads for the motifs of the pattern. The latter part of the 19th Century, laces made of silk warp and bobbins with fine mesh net and cotton gimps with outlining threads were called Malines and Fedora laces.

MALTESE

Cotton lace made on the independent system with bands and crosses similar to those which are characteristic of the hand-made silk articles of the same name, further distinguished by a beautiful arrangement known as "crown-front".

MIRECOURT

Cotton lace made on a bobbin-finishing set-out, and distinguished by a fine woven net known as "half-finishing".

NORMANDIE

Cotton lace made on a bobbin-finishing set-out, plain or outlined with thick threads, made as wide as eight inches with various characteristic meshes, such as diamond, round hole, Point de Paris, or filet. The plain styles were at one time known as "Platt Valenciennes"; the same laces are also made with a warp as well as back and front gimps.

PARAGUAY

Cotton lace made with independent beams containing wheel designs similar to Teneriffe laces, with fine drawn-thread effects of spider web texture.

POINT D'ESPRIT

Cotton lace made by independent beams on an Ensor net set-out with small spots on the net.

POINT de PARIS

Cotton lace made by independent beams or the bobbin-finishing system, the distinguishing feature of which is an octagonal net ground.

RUSSIAN POINT

Cotton lace made by independent beams, the pattern composed of tape-like bands with a very heavy cord running down the center.

SPANISH

A heavy silk lace with designs consisting of large motifs, such as roses and leaves made on a warp ground, Ensor net system, with back and front gimps or center gimps.

TORCHON

Cotton lace made by independent beams of the Cluny style of fine yarns and of narrow widths.

TUCK LACES

Tuck nets are ornamented with parallel rows of tucks, arranged either close together and covering the surface, or in clusters with spaces between, which may be of plain Ensor net, or of fancy nets made by independent beams.

VALENCIENNES

Cotton lace made by independent beams, Calais Vals, Vraie Valenciennes or fil passe, an imitation of hand-made Belgian Valenciennes laces.

- French Vals diamond mesh
 - German Vals round hole mesh made half gauge, the motifs and details full gauge
 - Filet Mesh Vals square mesh
 - Ensor net Vals hexagonal mesh
- Val laces also contain motifs of the Cluny, Maltese and Torchon styles

VEILINGS

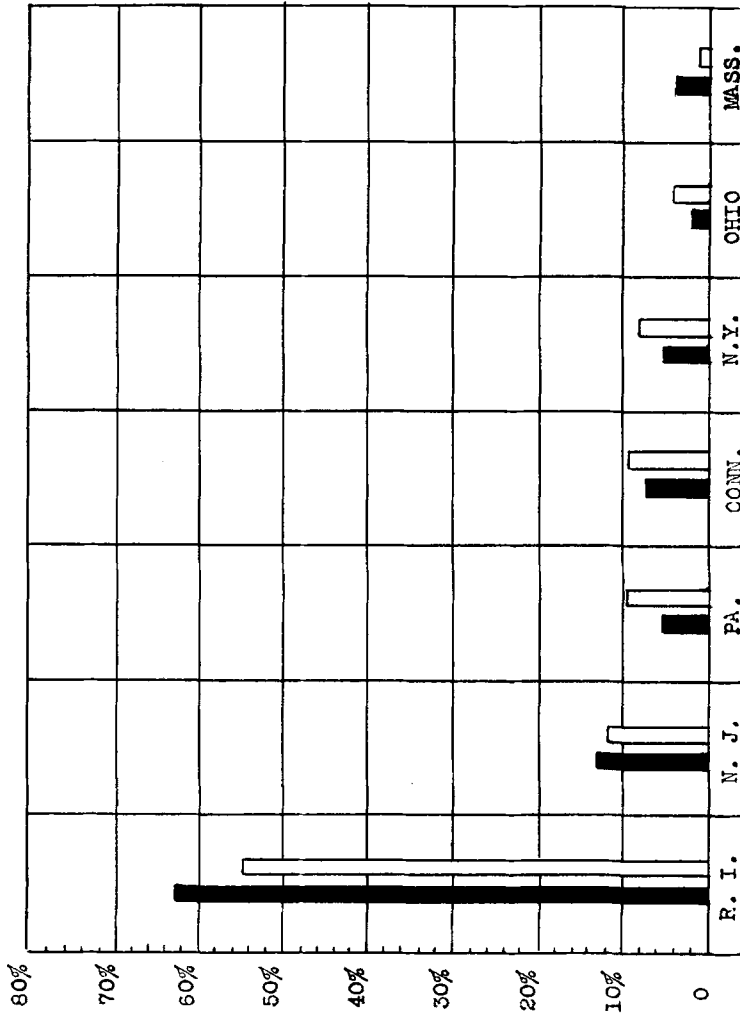
Silk lace of fancy meshes for use as face veils or on hats.

VENETIAN

Cotton lace made on a bobbin-fining net set-out and characterized by specially shaped motifs with fancy nets, the connecting stems being of a broad, braided style, and joined by brides.

YAK

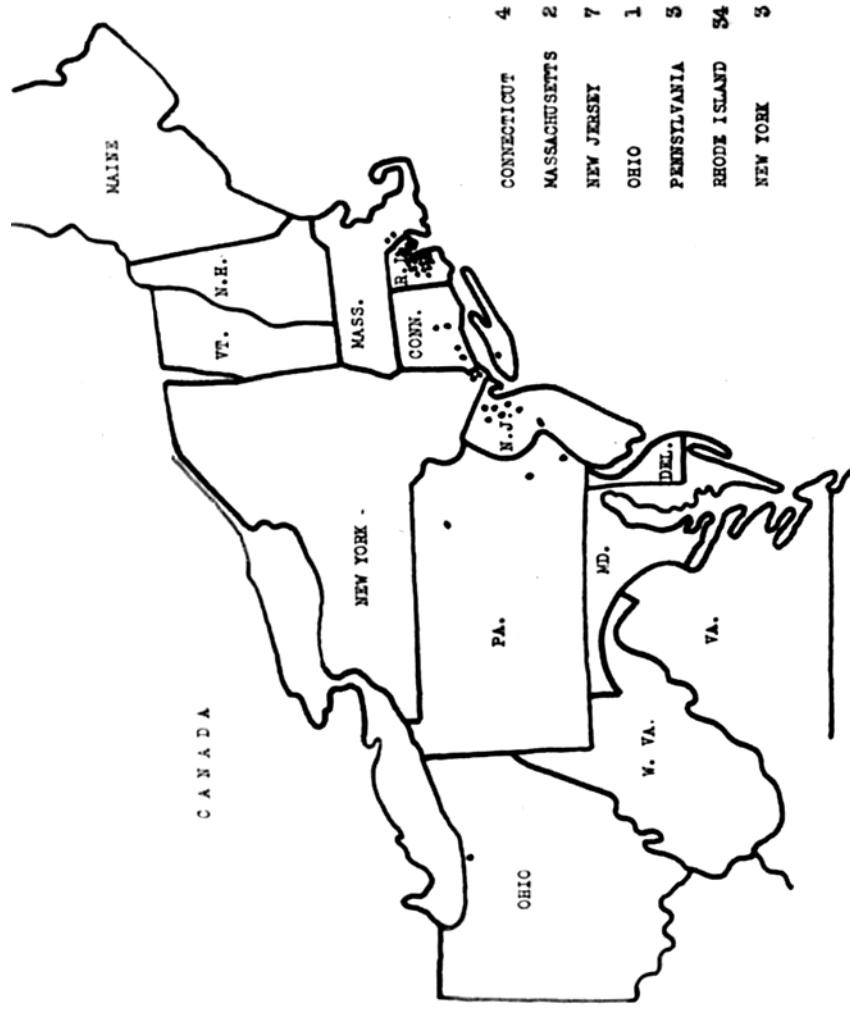
Cotton or wool lace made by independent beams, half gauge. So called from the fact that these laces were made by hand of wool spun from the fleece of the yak. Used for articles of furniture and upholstery purposes.



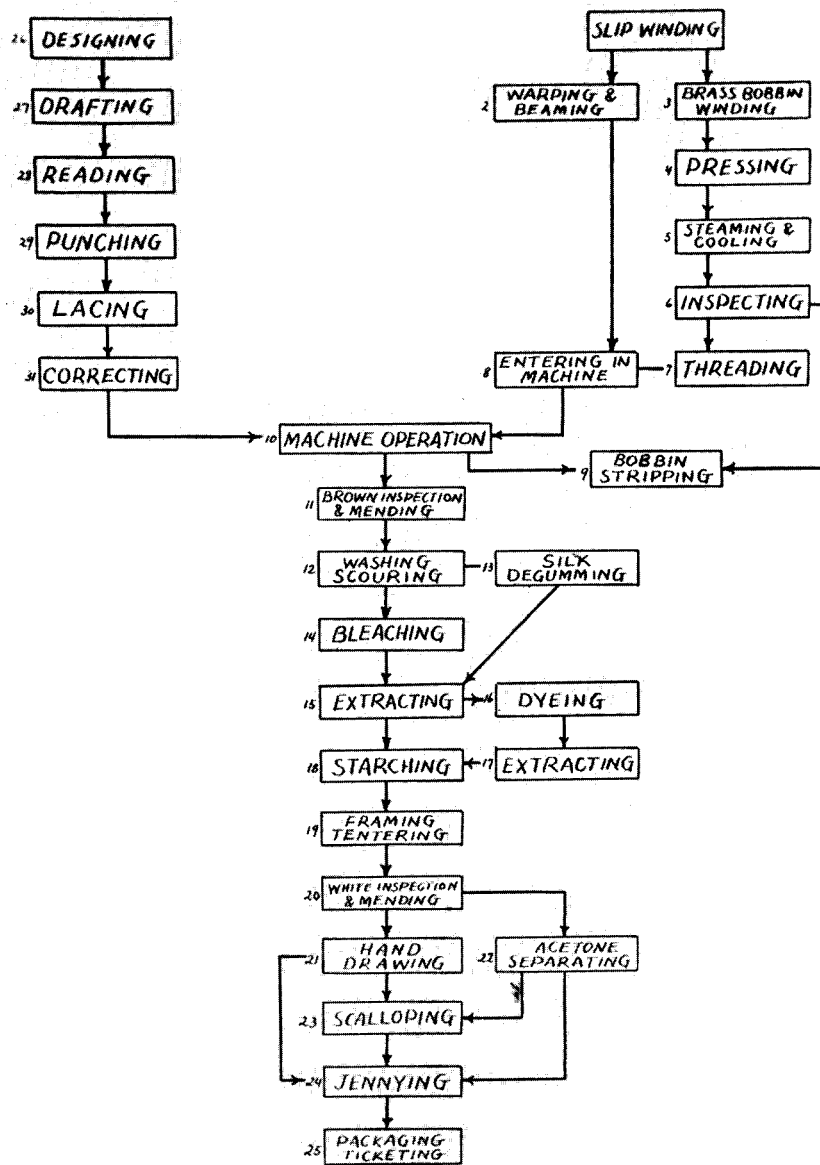
54 ■ MILLS 34 7 3 4 3 1 2

730 □ MACHINES 401 88 71 70 59 31 10

Leavers Lace Mills and machines in the United States, by States



Geographical distribution of Leavers Lace Mills in the United States



Leavers lace flow chart

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