16 Motion Back Edge, 3 Straight Ups.

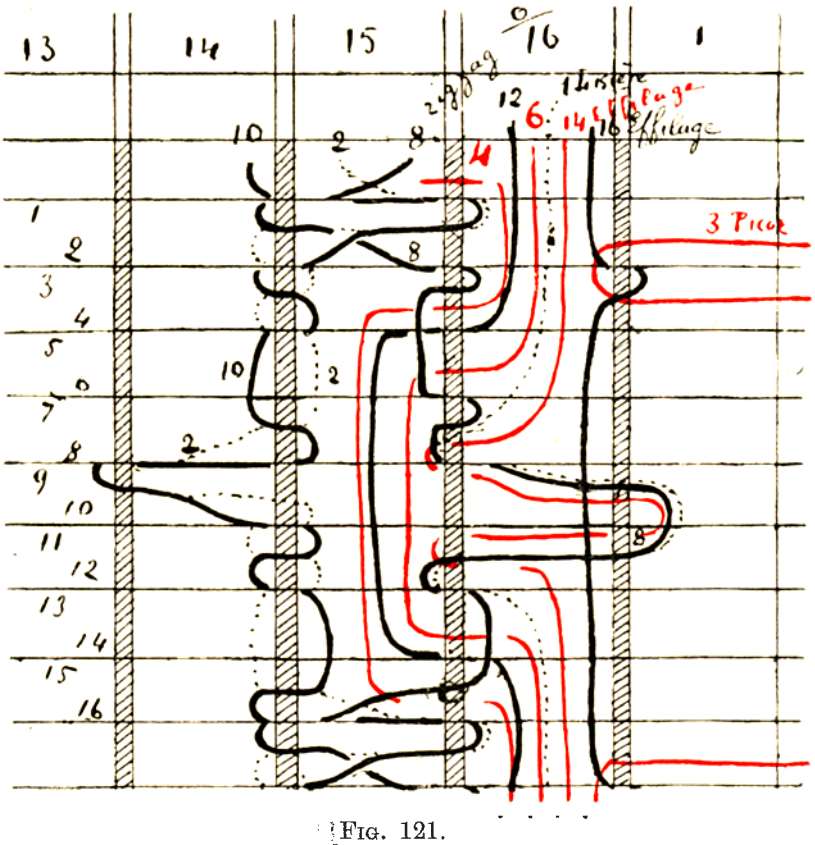


Fig. 121.

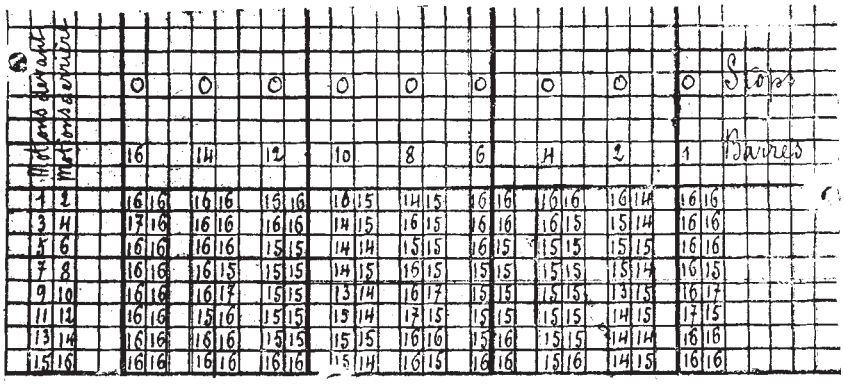


Fig. 122.

In the 16 motion back edge, represented (Fig. 121), the work of the selvidge and separation lacers differs from the other back edges.

The lacer 14 takes the separation bobbin in the point of the weaver which thus becomes rounder, and consequently has a more lacy appearance.

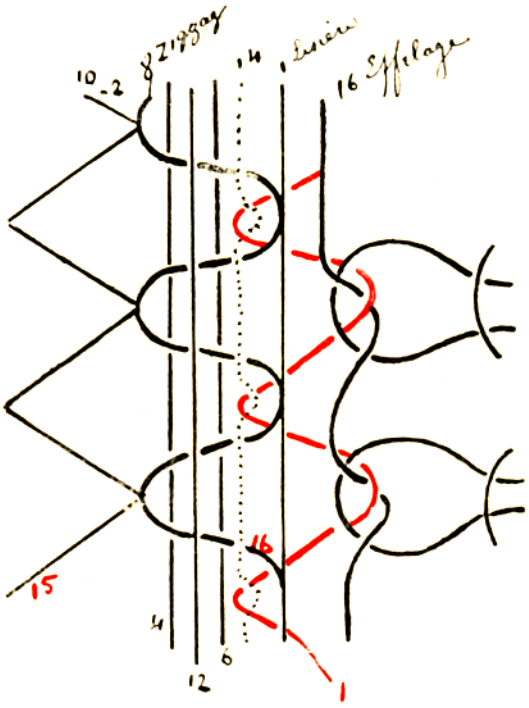


Fig. 123.

Aspect of a 16 motion back edge with 3 straight ups.

Lacing for Insertion.

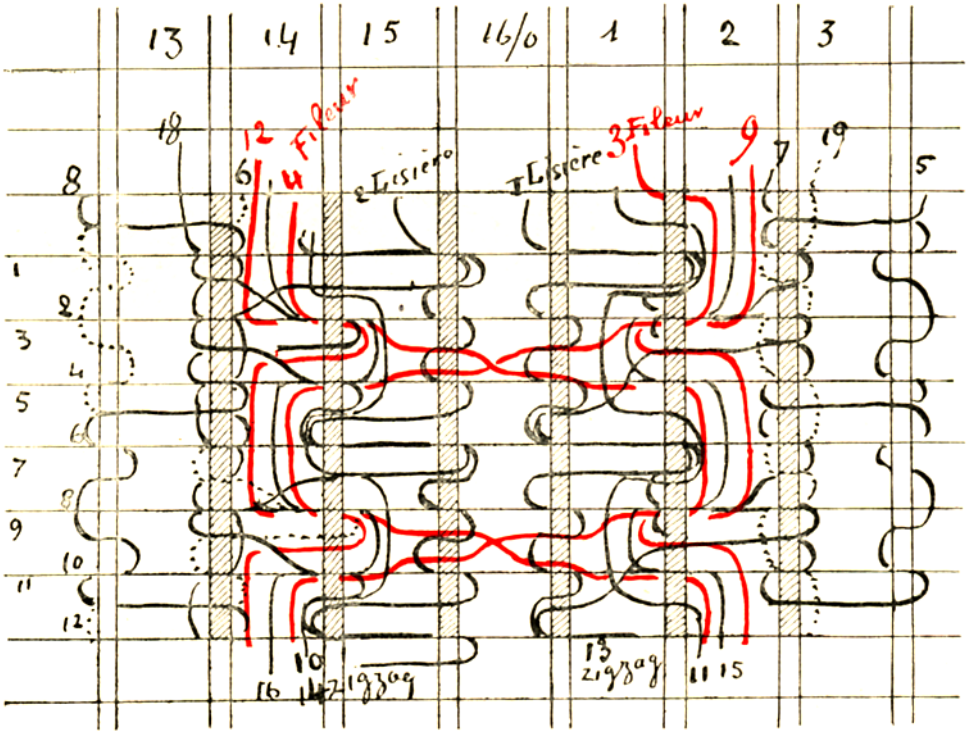


Fig. 124.

Fig. 124 represents a 6 motion lacing for insertions.

Selvidges No. 2 and 1 twist on bobbins 16 and 1.

Lacers should always be in front of the selvidges and at back of weaver and straight ups.

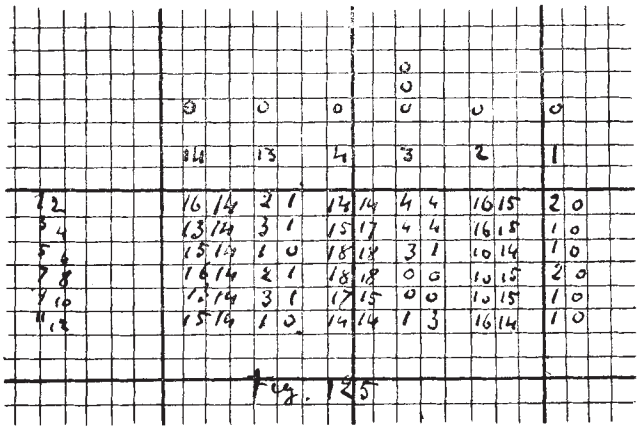


Fig. 125.

In Fig. 125 we only give the figure sheet of lacers, weavers and selvidges.

We give (Fig. 126) the work of the selvidges and lacers.

The pupil will easily decompose this work with strings.

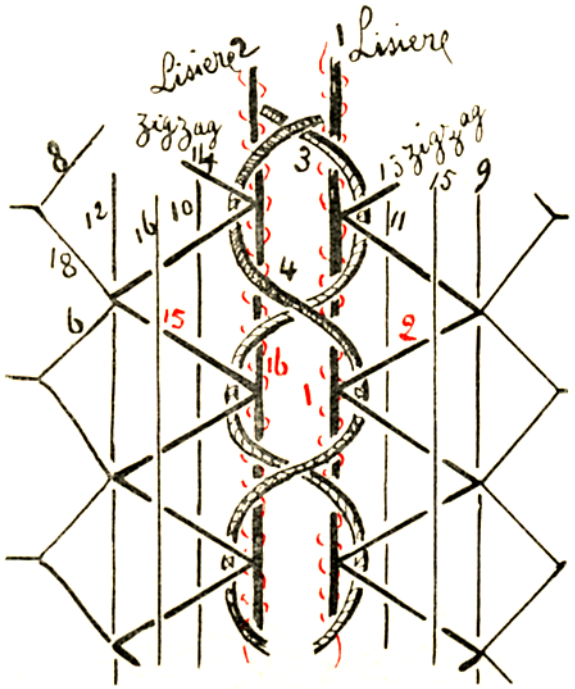
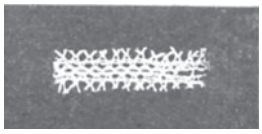
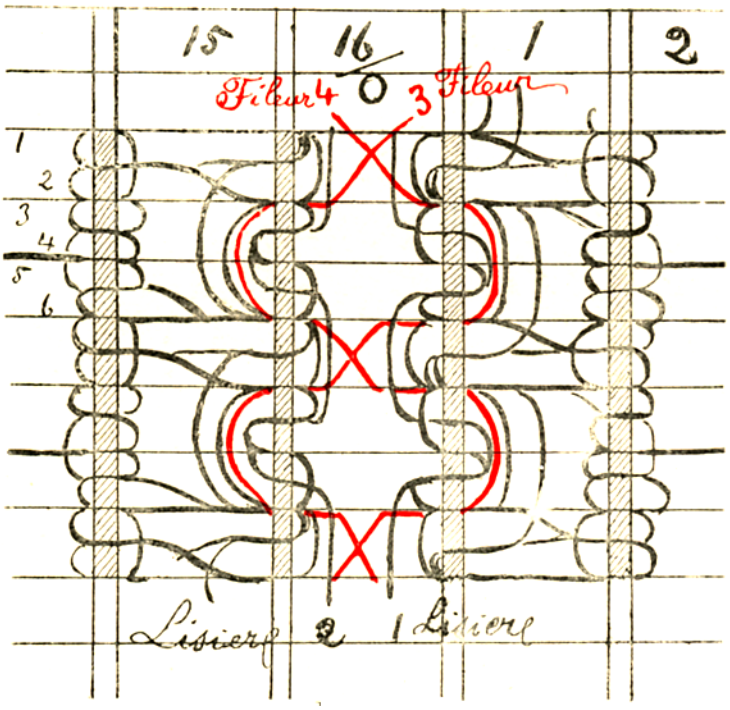


Fig. 126.



Aspect of finished lace representing Figs. 124, 126, 127 and 128.

Lacing for Insertion without Selvidge Bobbins.



In Fig. 127 we give a lacing for insertion in which the selvidge threads do not twist continually on the first and last bobbins.

There is no selvidge bobbin as in Fig. 124.

The weight should be less on the lacers than on the selvidges, also as in Fig. 124 the selvidge threads should be at back of the lacers and the lacers at back of the weavers and straight ups.

Fig. 128 gives the cut of the lacers, to be worked out with strings.

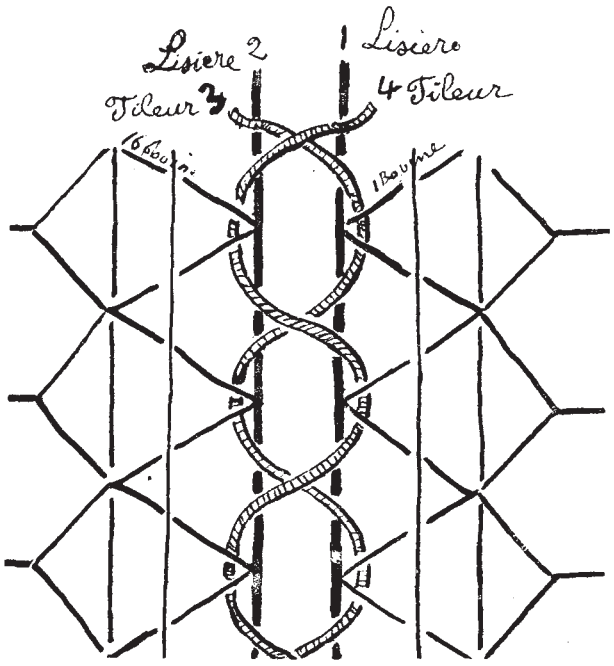


Fig. 128.

A method of lacing in which the bobbin goes through the point of the weaver.

In Fig. 129 we give a lacing on the point of the weaver which makes this rounder.

In this lacing the lacers are in front of all. When the lacers are drawn the bobbins 1 and 16 fall : these two bobbins should be sprung very tight.

In figure sheet Fig. 130 bis we give the work of the selvidges and lacers only.

The work of the lacers does not change with the gauge of the machine.

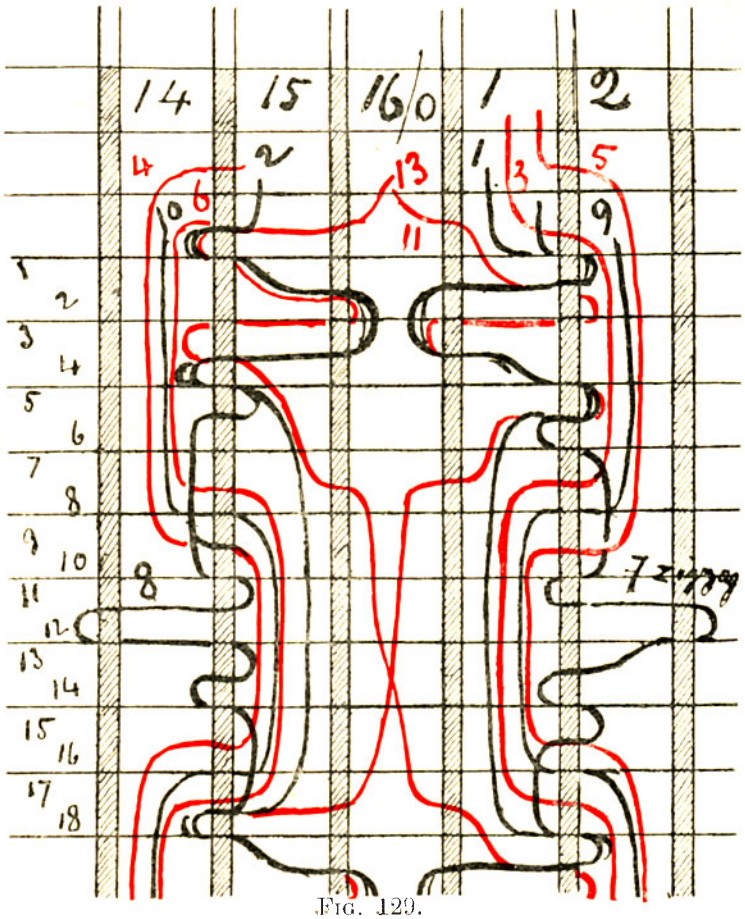


Fig. 129.

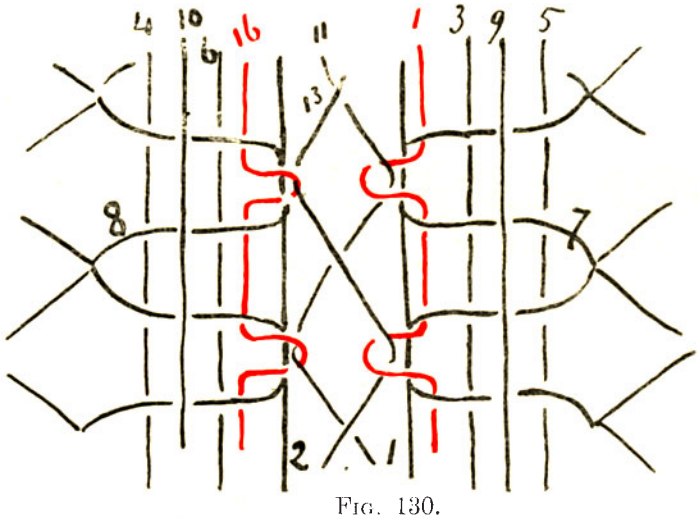
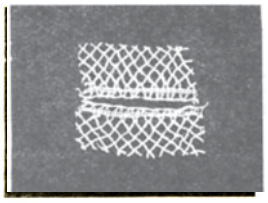


Fig. 130.



Aspect of an insertion drawn representing Figs. 129 and 130.

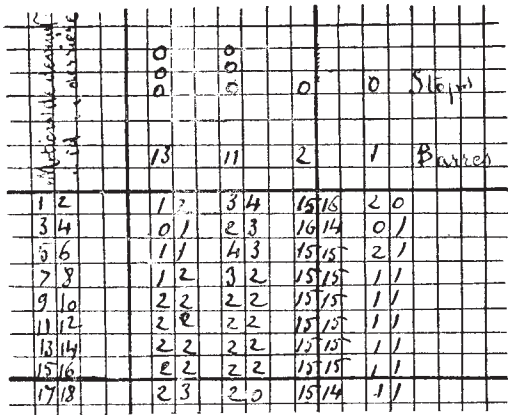


Fig. 130 bis.

28 Motion Spot.

In Fig. 131 we give the work of a spot made on 4 bobbins with 4 threads plus 2 lining threads.

In Fig. 132 we give a detailed sketch, indicating the work with strings ; the bobbin threads in red, the others in black.

The aspect of the spot when finished, is rather lacy, because of some of the bobbins crossing

Bobbin No. 3 crosses No. 2 and bobbin No. 4 crosses No. 5 in the middle of the spot. We have not thought it necessary to give the figure sheets for this spot, the draught being sufficiently clear.

So as to accentuate the small hole in the centre of the spot we advise separating the threads by throwing-off threads 21 and 23.

At $5\frac{1}{2}$ holes per centimetre the quality of this spot will be 234 millimetres per rack, or 49 racks for 11·50 metres (say 9 inch racks), because this spot is made with 12 motion

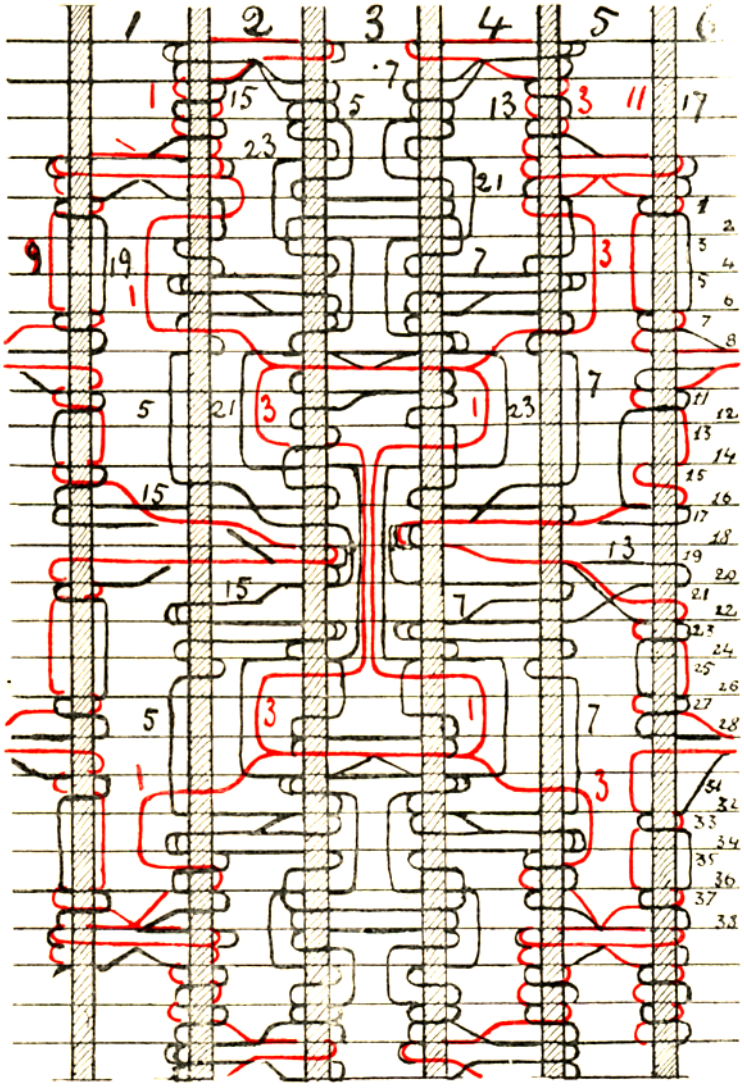


Fig. 131.

net, that is, $3\frac{1}{2}$ twelve motion holes and 2 twenty motion holes, or 28 motions per centimetre.

We are obliged to put more motions so as to cross bobbins 3 and 4.

We advise the pupil to do this work with strings.

The usual weight given to the net threads is sufficient for the spot.

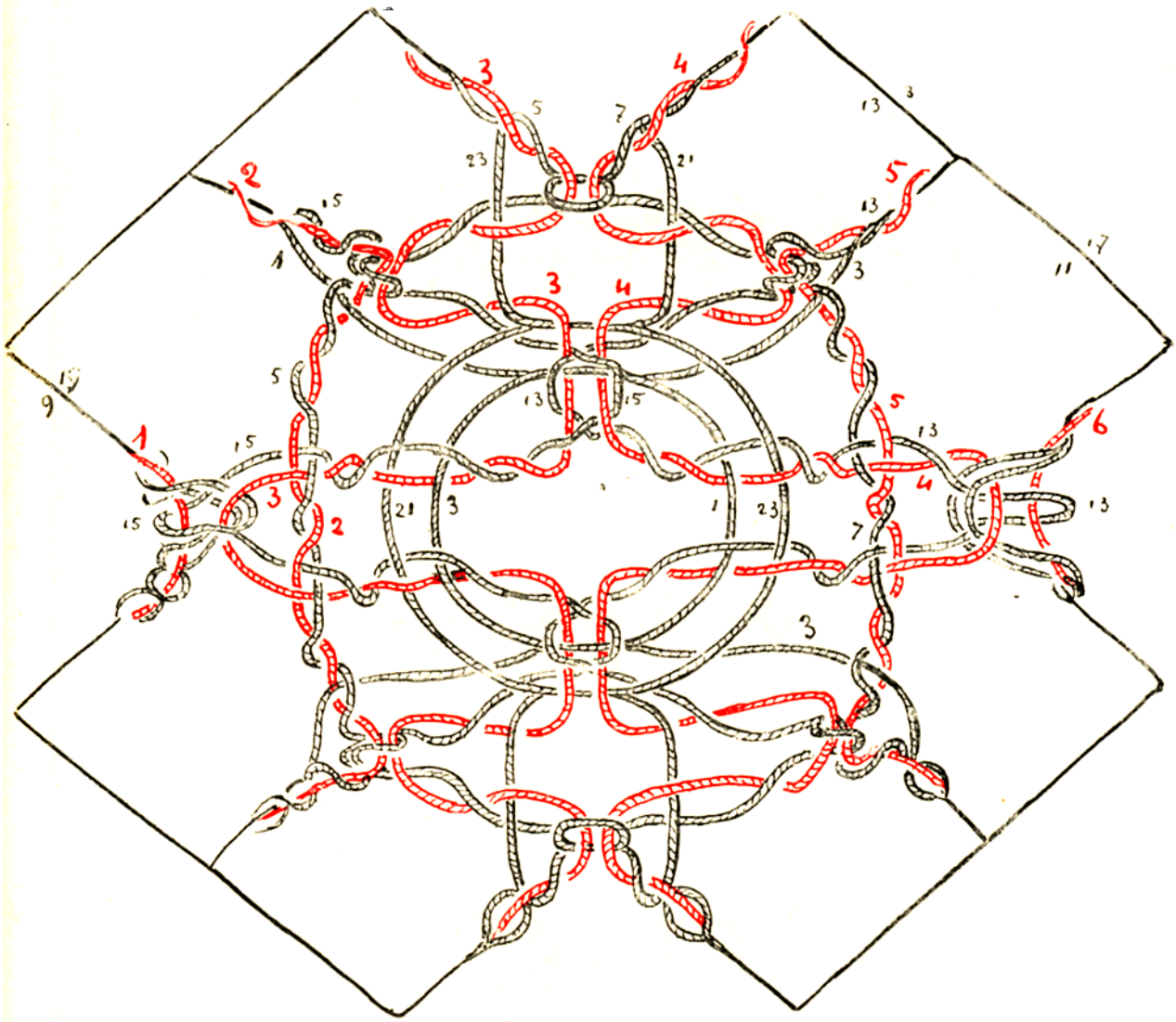
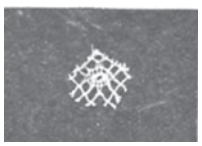


Fig. 132.



Aspect of Finished Spot (Figs. 131 and 132).

32 Motion Spot

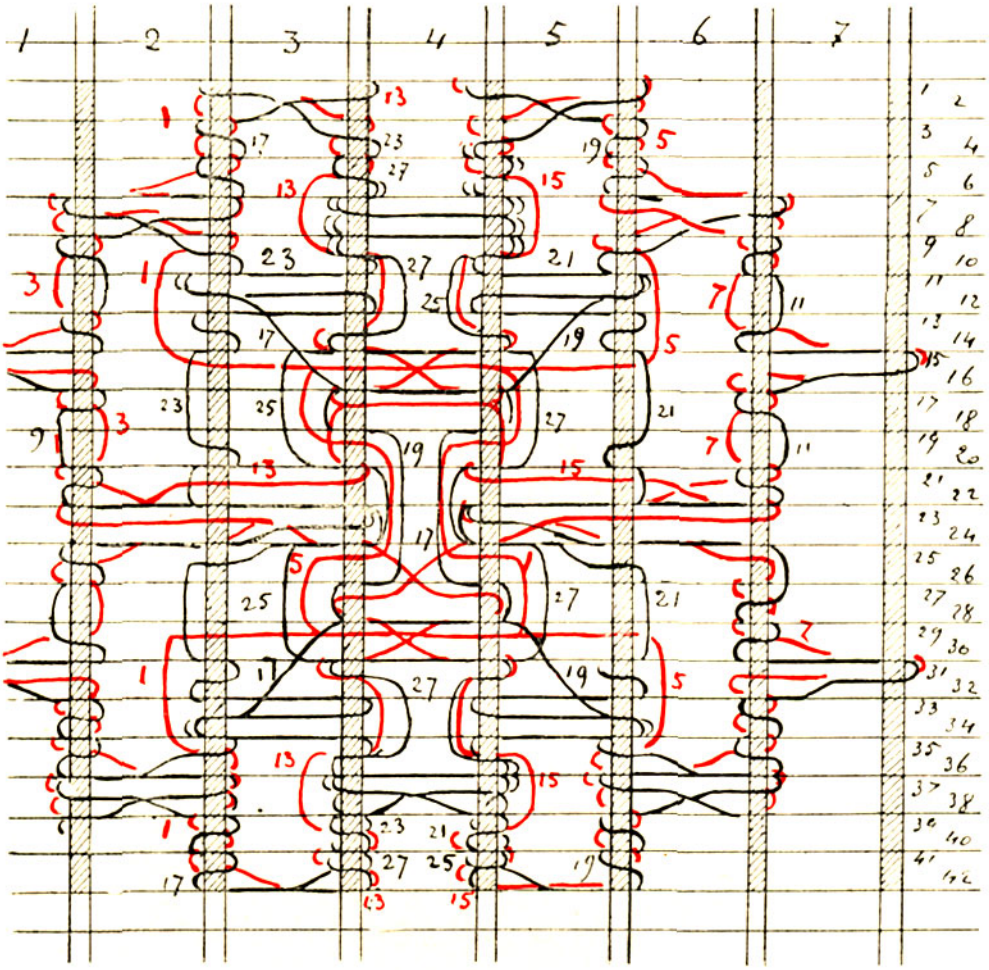


Fig. 133.

The spot drawn in Fig. 134 is composed of 6 threads and 2 lining threads, giving a different aspect to Fig. 132, in that the hole in centre of spot does not exist. The bobbins also cross the outer bobbins, but require less motions (see work of draught, Fig. 133).

The quality to which this spot is applied is about 43 racks for 11·50 inches.

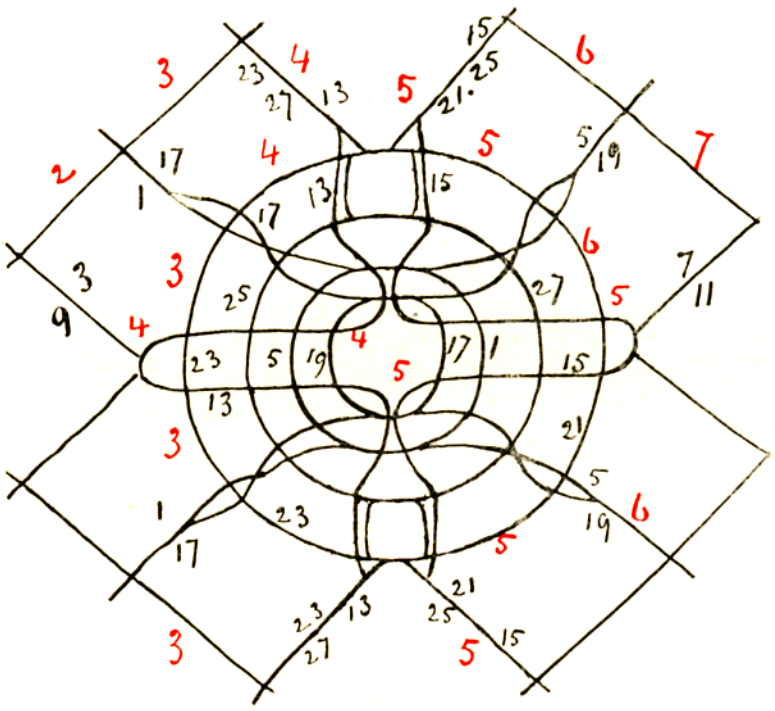
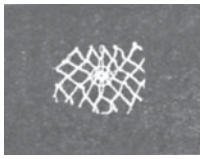
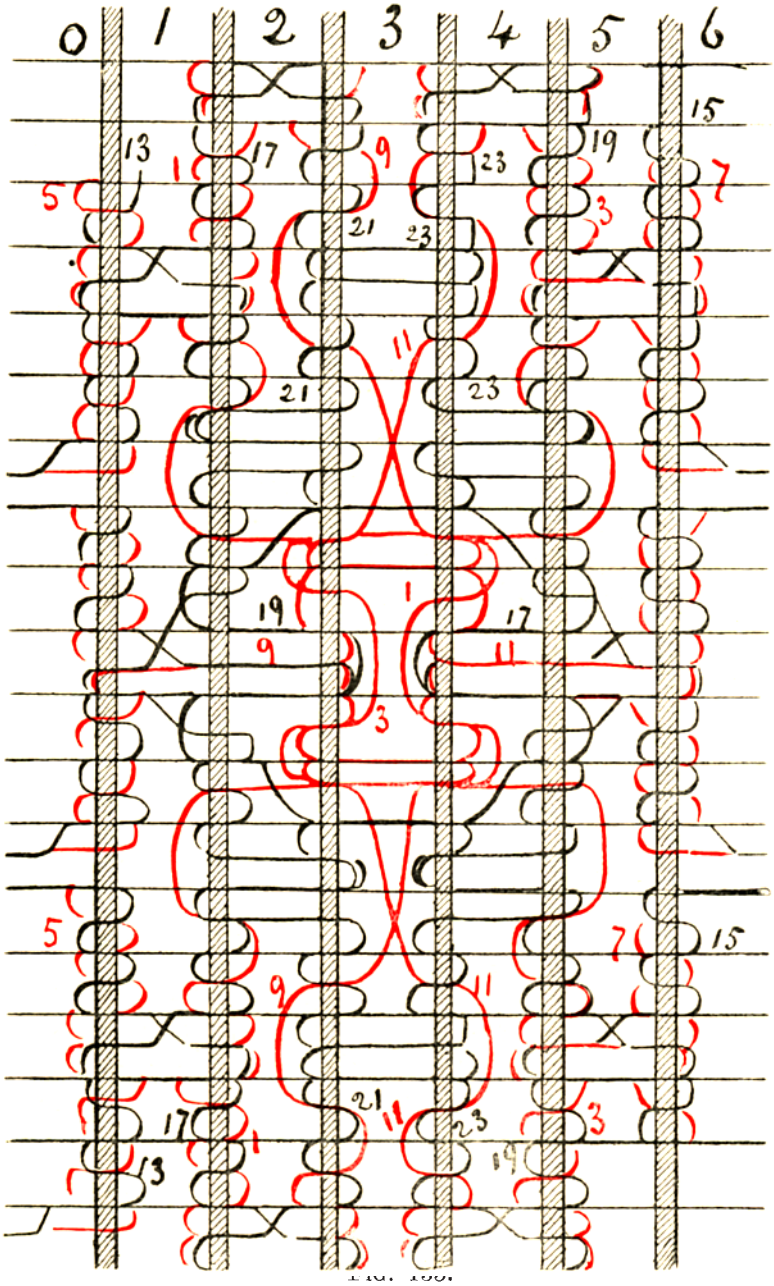


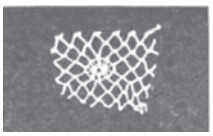
Fig. 134.
Sketch of the work of Fig. 133,
the red figures indicating the work of the bobbins.



Aspect of 32 motion spot, representing Figs. 133 and 134.

Spot in 12 Motion Regular Net.





Aspect of 12 motion spot, representing Figs. 135 and 136.

This spot is made on a 12 motion regular net and is composed of 4 threads and 2 lining threads, Nos. 21 and 23.

In this spot the bobbins do not traverse the lining bobbins. Its aspect is half fine.

The bars 17 and 19 throw off so as to leave the hole in the centre more open, and to spread the threads.

The quality of this spot is same as the 12 motion net already described.

We do not give the work here as in Fig. 132, we only indicate the bobbins in red and the threads in black, thus showing the work that the threads cause the bobbins to do.

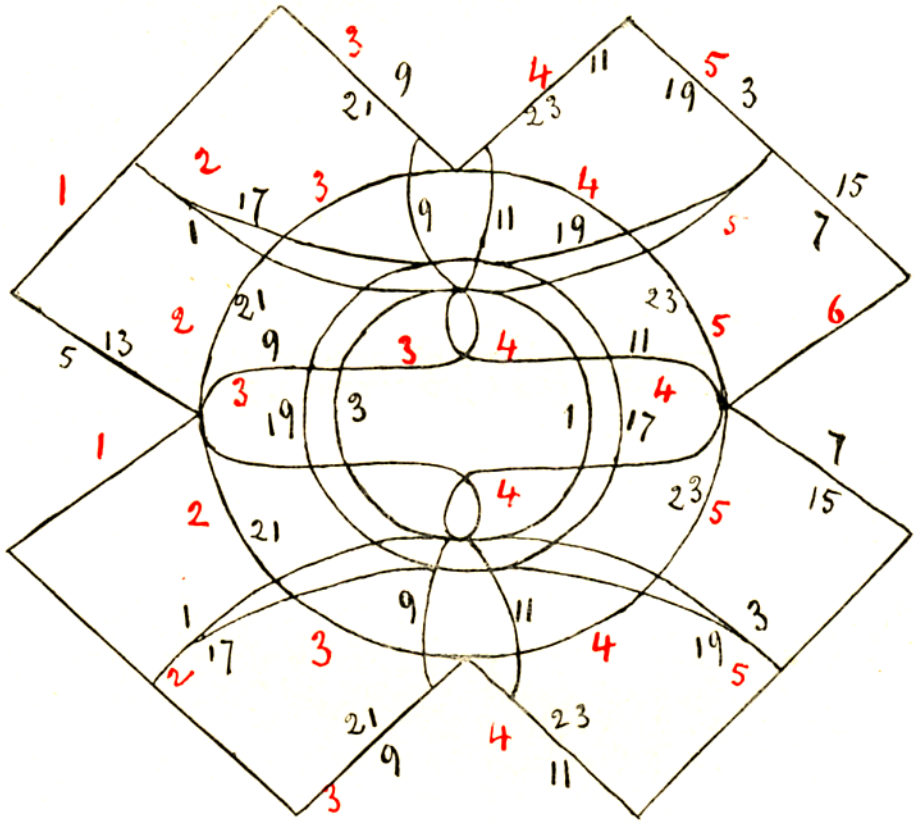


Fig. 136.

Sketch of spot representing Fig. 135.

Spot in 10 Motion Regular Net.

This spot is made on a 10 motion regular net, it is composed of 4 threads and 2 lining threads, and is made on 4 bobbins.

The set out of the threads differs from that of Fig. 135. The quality is the same as the 10 motion net already described.

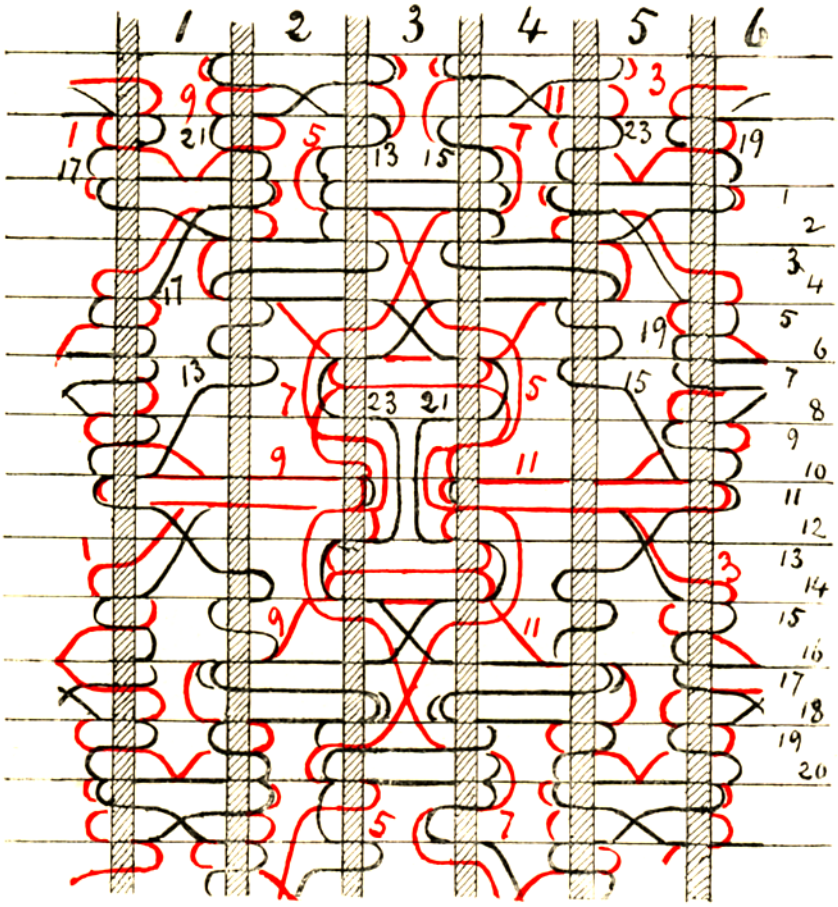


Fig. 137.

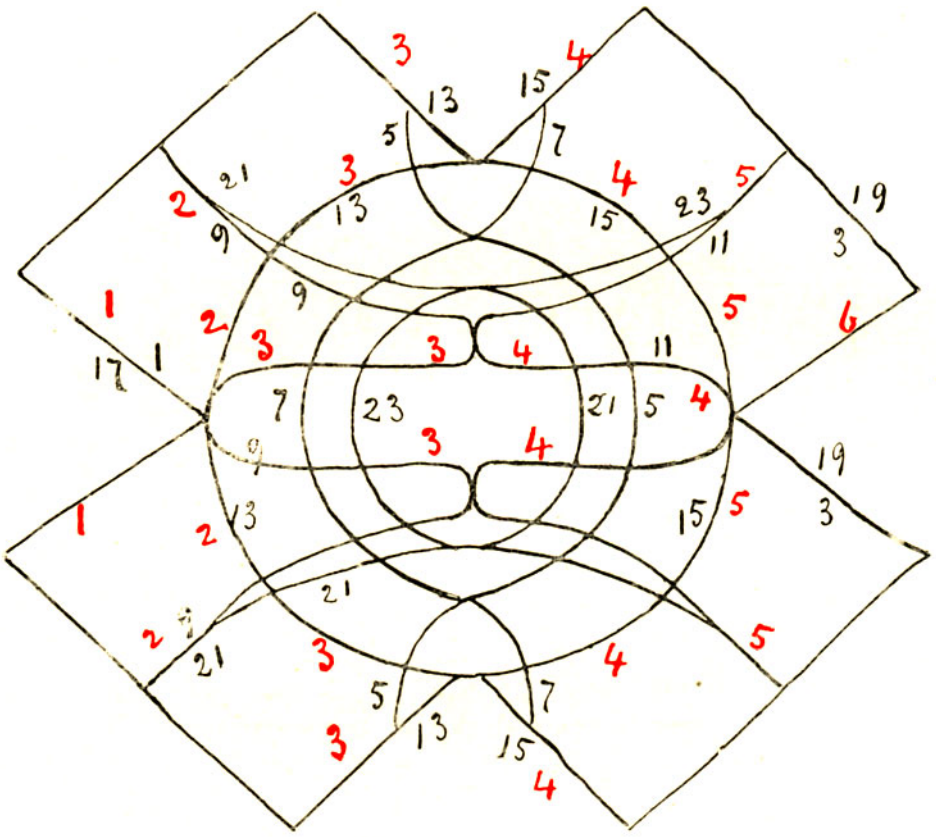
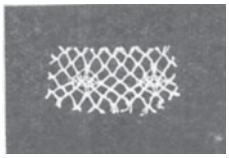


Fig. 138.

Sketch representing the work of Fig. 137.



Aspect of 10 motion spot representing Figs. 137 and 138.

Spot on 8 Motion Net.

This 4 bobbin spot generally made on 8 motion net.

We put 2 motions more on cards 3 and 4 (Fig. 139) to facilitate the passing of lining thread No. 17.

We throw off threads 7 and 3 which, by their work, become inferior to (are at back of) 5 and 1.

Quality, 20 to 22 racks for 11·50 metres.

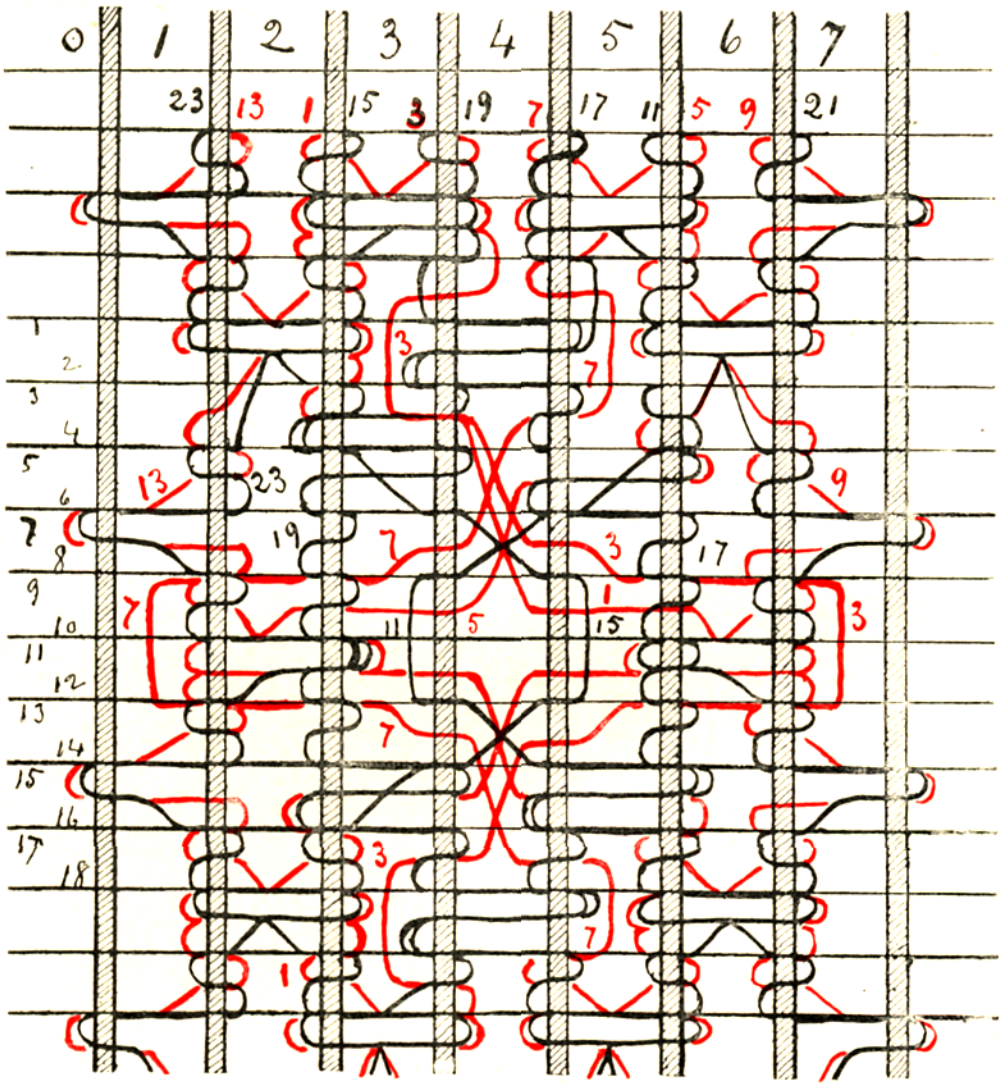


Fig. 139.

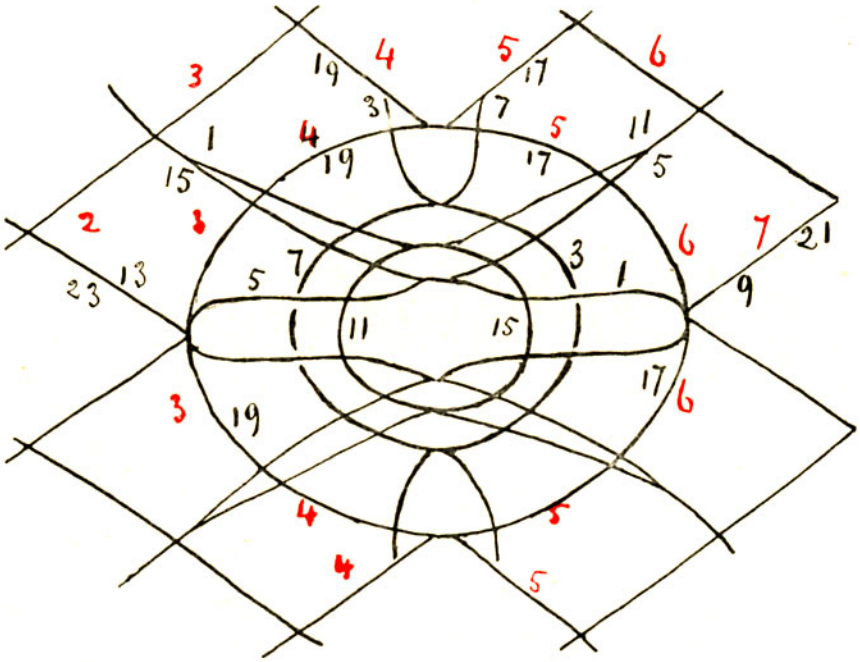
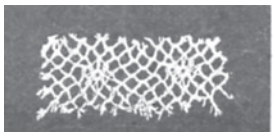


FIG. 140.

Sketch representing work of FIG. 139.



Aspect of 8 motion spot representing FIGS. 139 and 140.

6 Bobbin Open Spot.

This open spot is generally made on 12 motion net.

Here we have been obliged to add 2 motions to facilitate the work of the corders.

One can throw off 29 and 31 so as to make the spot rounder.

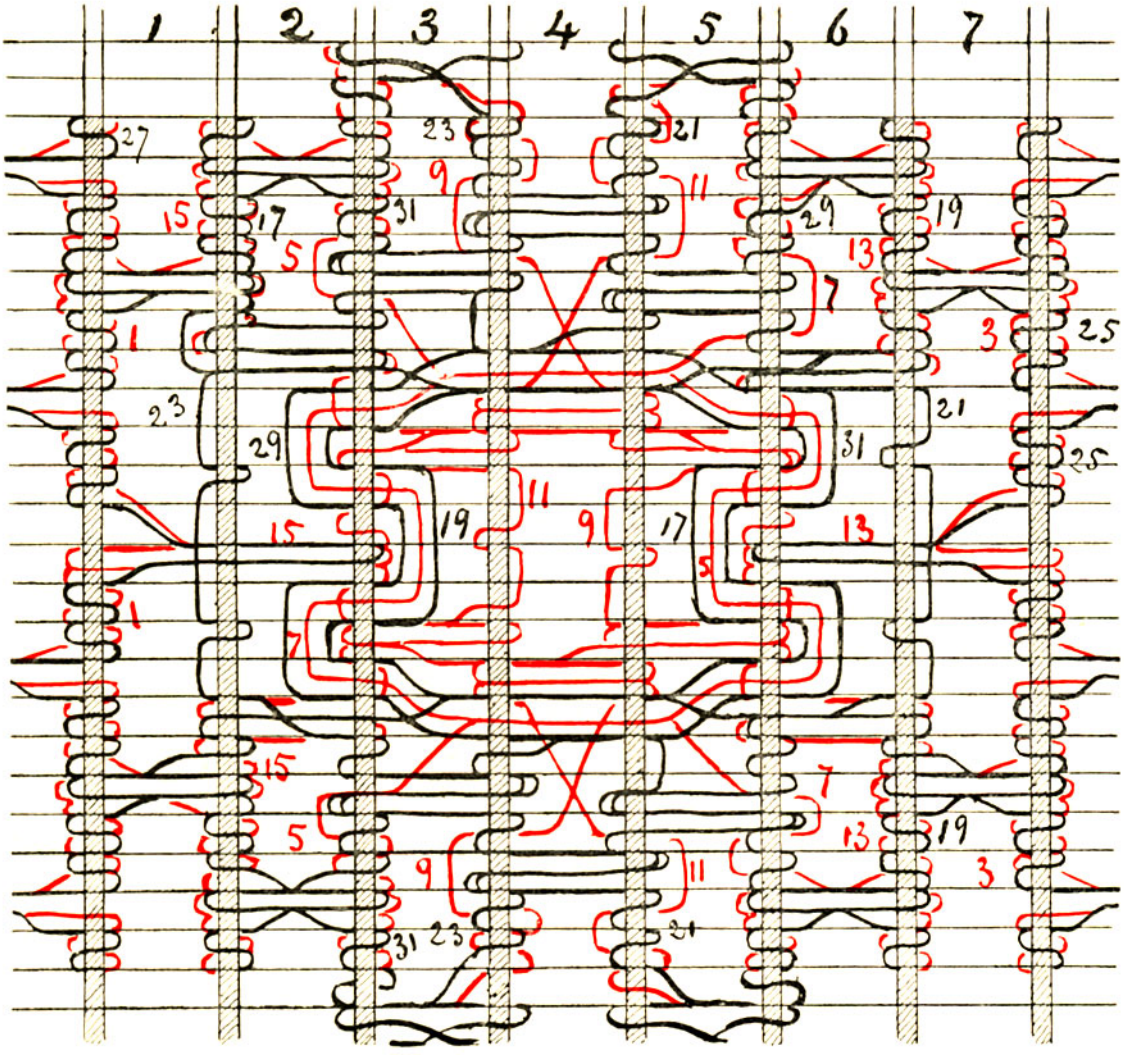


Fig. 141.

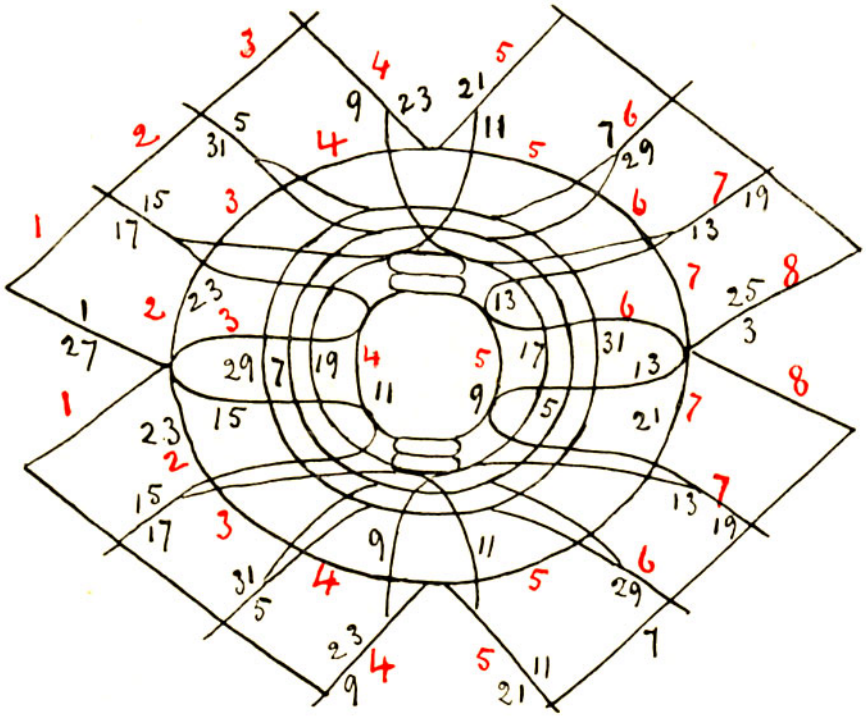
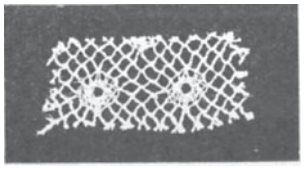


FIG. 142.

Sketch representing work of FIG. 141.



Aspect of open spot representing FIGS. 141 and 142.

6 Motion Gimped Front.

The 6 motion gimped front that we represent here is composed of a purl, 3 corders, 2 front gimps and 2 back gimps, one lacer and a selvidge, and is adapted to a 6 motion enzor net. It is used for 9 or 10 point gimped Valenciennes.

Its quality is generally 55 centimetres per rack and the yarns are 120/2 for gimps, and nets, and 170/2 for bobbins.

It can also be made slacker by using 80/2, for say about 75 centimetres per rack.

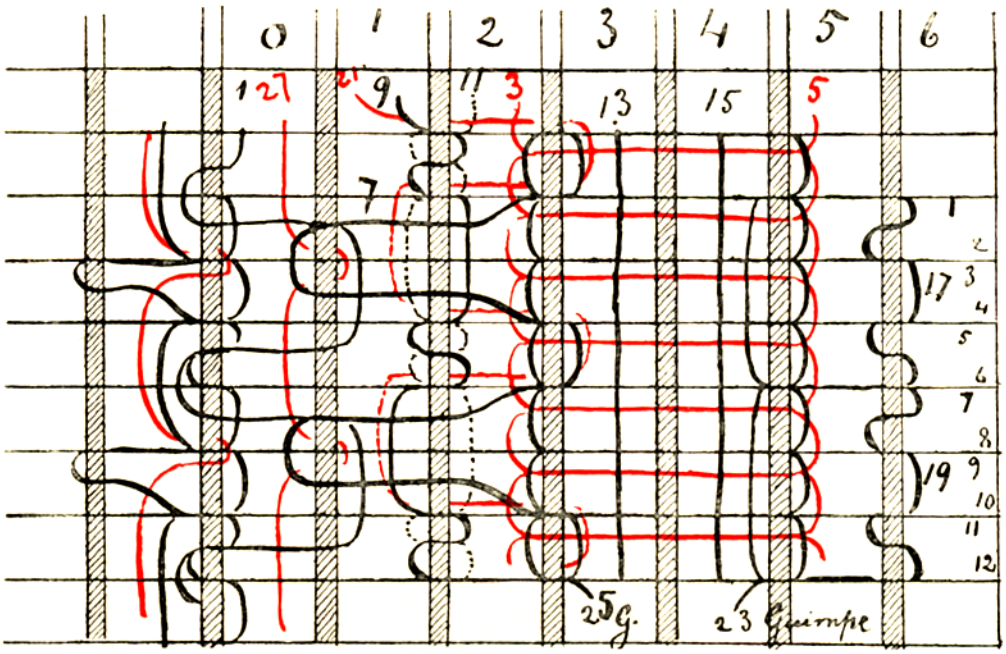
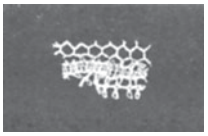


Fig. 143.



Aspect of 6 motion gimped front representing Fig. 143.

8 Carriage " Trou-trou " double insertion.

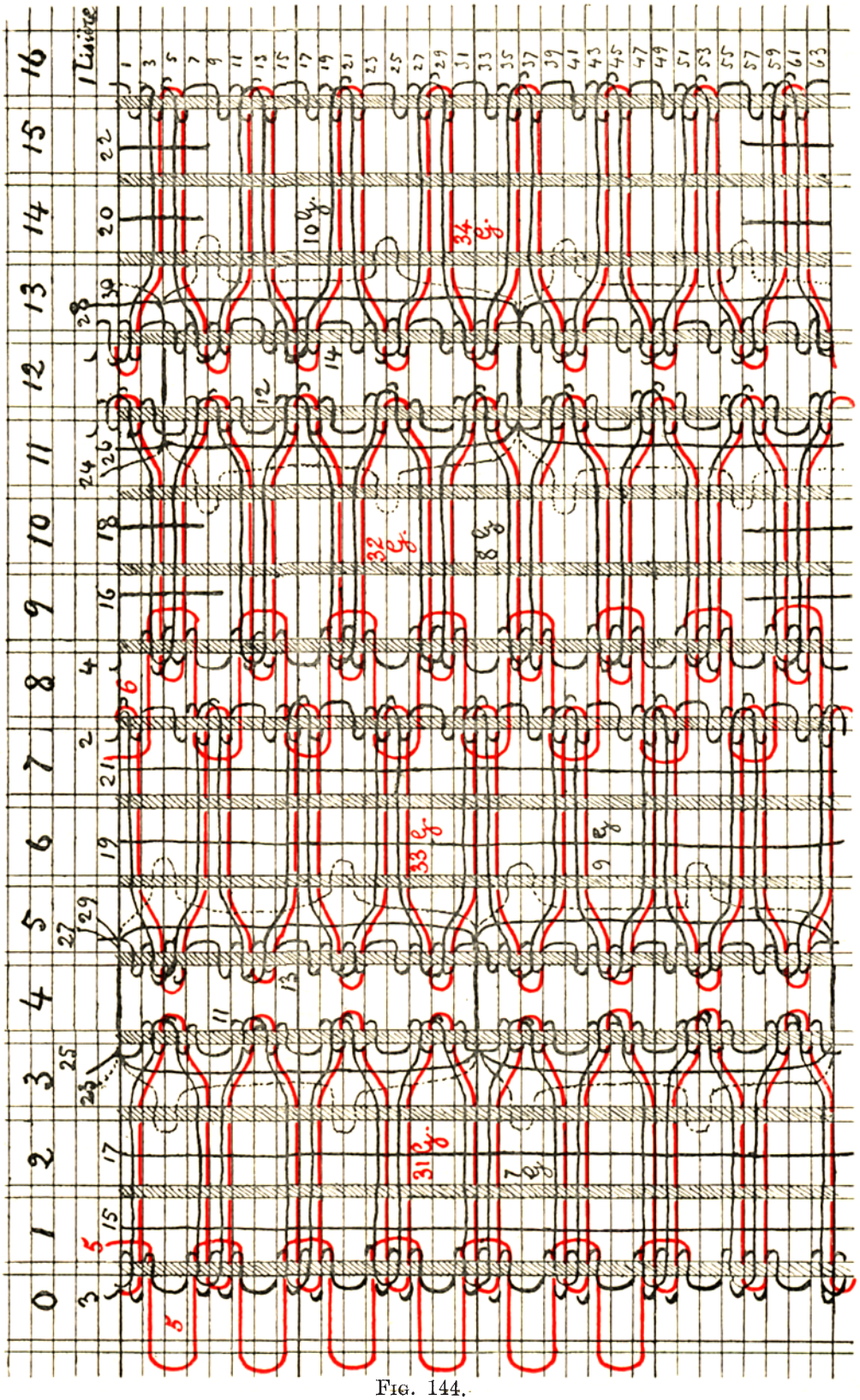


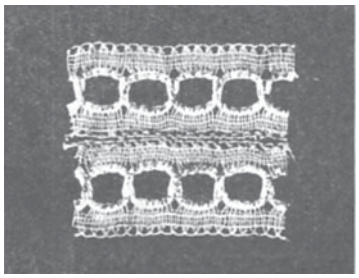
Fig. 144.

The draught that we give (page 99) represents the sork of 2 insertions of a pattern called " trou-trou," with the work of the lacers, and below we give the reproduction of this " trou-trou " finished.

The quality of this article is generally 32 racks for 11·50 metres for 8, 9 and 10 points, etc.

The set out is 8 carriages wide ; the odd threads at bottom, the even threads at top.

You will notice that top insertions, in which the even threads are working, starts 4 motions later than the bottom insertion. This brings the lacing points between each other instead of being one above the other as they would be if they both started on the same motion. The method enables us to lace with one lacer only, which can be drawn easier than 2 lacers.



Aspect of finished " trou-trou " representing Fig. 144.

(See 6 lacer, No. 8 bobbin, Fig. 144.)

The yarns used are 60/2 for the clothing, 20/2 for the thick threads lining the hole, and 42/2 for lacers.

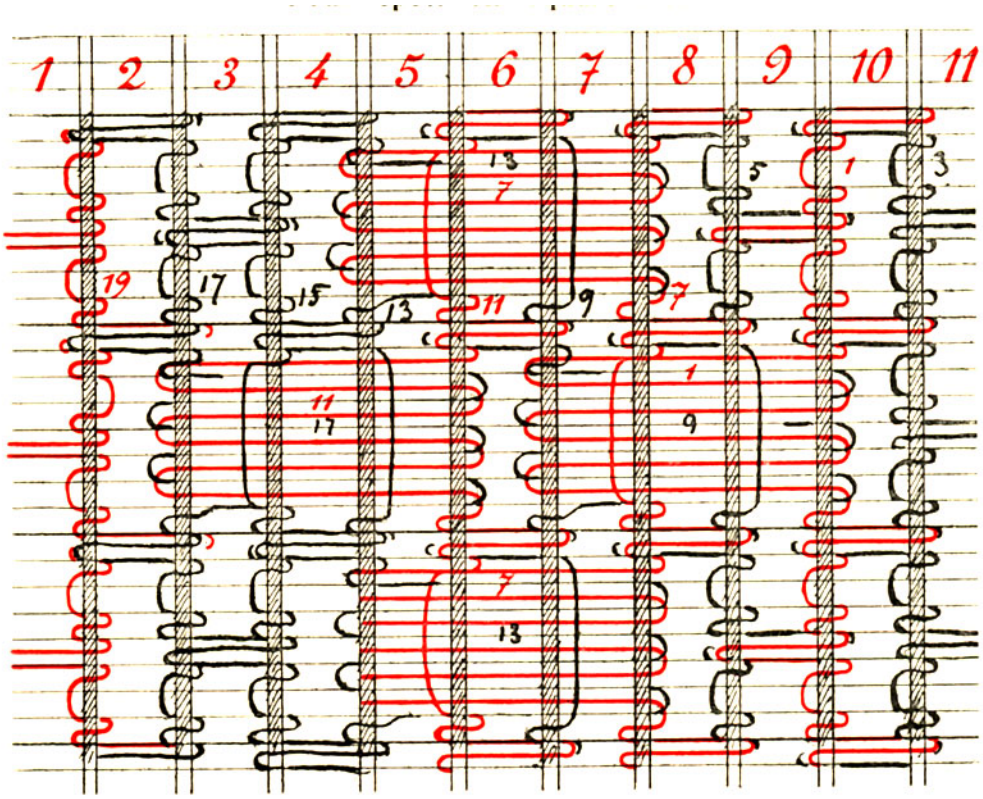
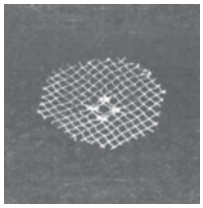


Fig. 145.

The draught (Fig. 145) represents the work of 4 bobbin spots on 16 motion net, without dead motions or nipping. These 4 bobbin spots can be made on all gauges.

At 8 holes per centimetre the quality would be 72 to 76 racks for 11·50 metres. The quality naturally varies with the number of holes per centimetre.

For a 15 point the quality would be 76 racks for 11·50 metres.



Aspect of 4 spots on 15 point net, representing Fig. 145.

Front made with 1 thread and 1 bobbin.

The front that we represent (Fig. 146) is an 18 motion front with 6 threads and 1 bobbin, and can be made in all qualities.

For a 15 point it is generally made at 78 to 80 racks for 11·50 metres.

It can also be made on 9, 10 and 12 points.

The quality varies with the yarn used.

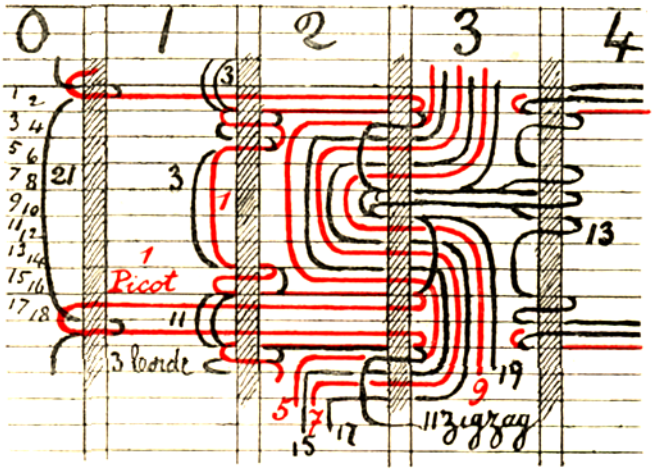


Fig. 146.

Spot made on a square net with 2 threads per bobbin.

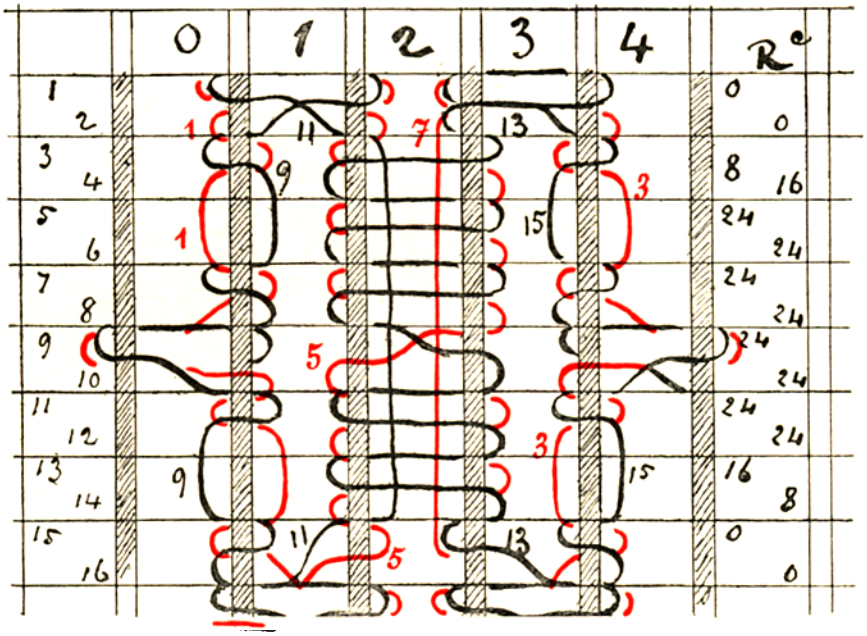


Fig. 147.

Fig. 147 represents the work of a 16 motion spot made on 2 carriages, 9 point without dead motions.

To the right of the draught we give the work of the nip lifting the threads 15 and 13 when making the spot ; and in Fig. 148 the work of another spot, also on 2 bobbins, as applied to 12 motion net, 1 thread per bobbin, of which we give one hole. The work of the nip is at the right of the draught.

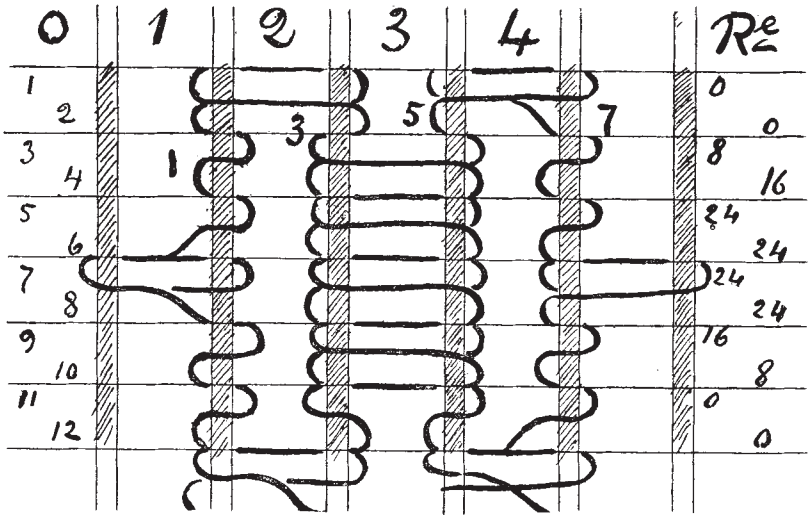


Fig. 148.

Fig. 149 represents a 12 motion net, 1 thread per bobbin. The tie is not made in the same way as the loop that we have already described ; this tie is finer, but it is more difficult to weight than the other. The net is right twist.

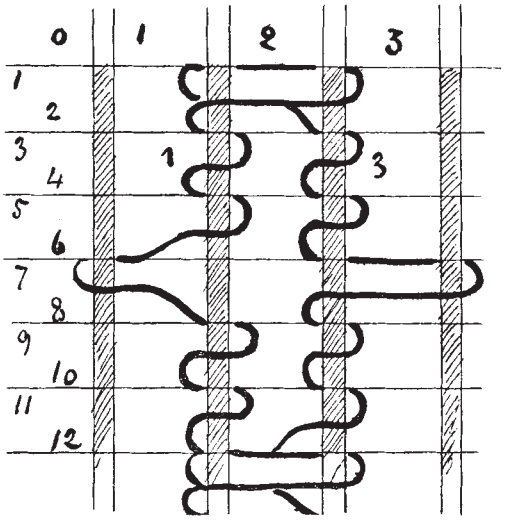
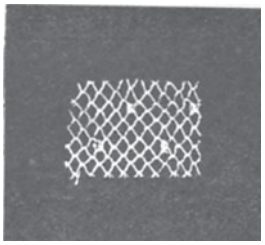


FIG. 149.



Aspect of spot on net, representing FIGS. 147 and 148.

20 Motion Gimped Front.

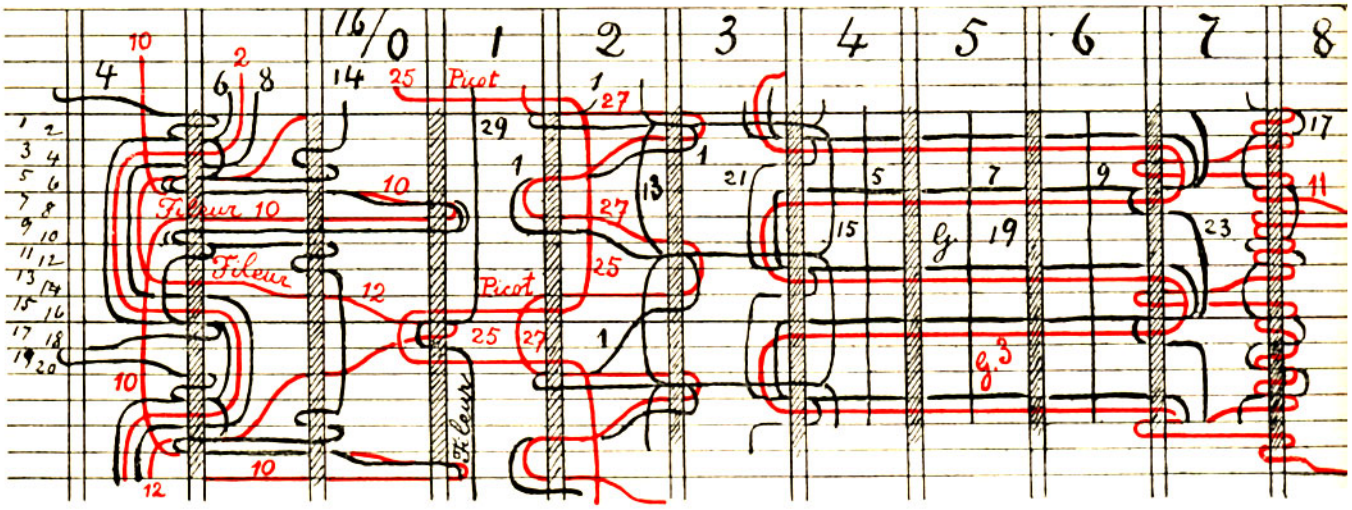


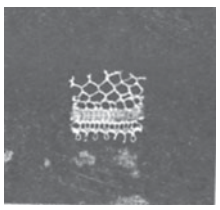
FIG. 150.

We give here the work of a gimped front, the clothing of which does not appear so close as in the ordinary gimped fronts; this effect is more lacy. It will be noticed that we pass the gimps one motion from each other, and that we space the motions before making a gimp rise or fall.

The more we separate the rising and falling, the more the clothing will open and *vice versa*.

The same work is also applied to the motifs of a pattern. So as to show well the opposition between the light and shaded effects, it is usual to make the gimps rise and fall every motion at first, spacing them gradually, leaving the widest spaces in the middle. These effects are generally produced in stiff goods with 170/2 for 12 and 14 points. The quality varies between 20 and 24 centimetres per rack.

We give, in the same figure, the work of the weaver and the lacers, that we recommend, as, with this work, these lacers draw easily.



Finished aspect of 20 motion front, representing the work of FIG. 150.

Tickined Scallop on 8 Motion Net,

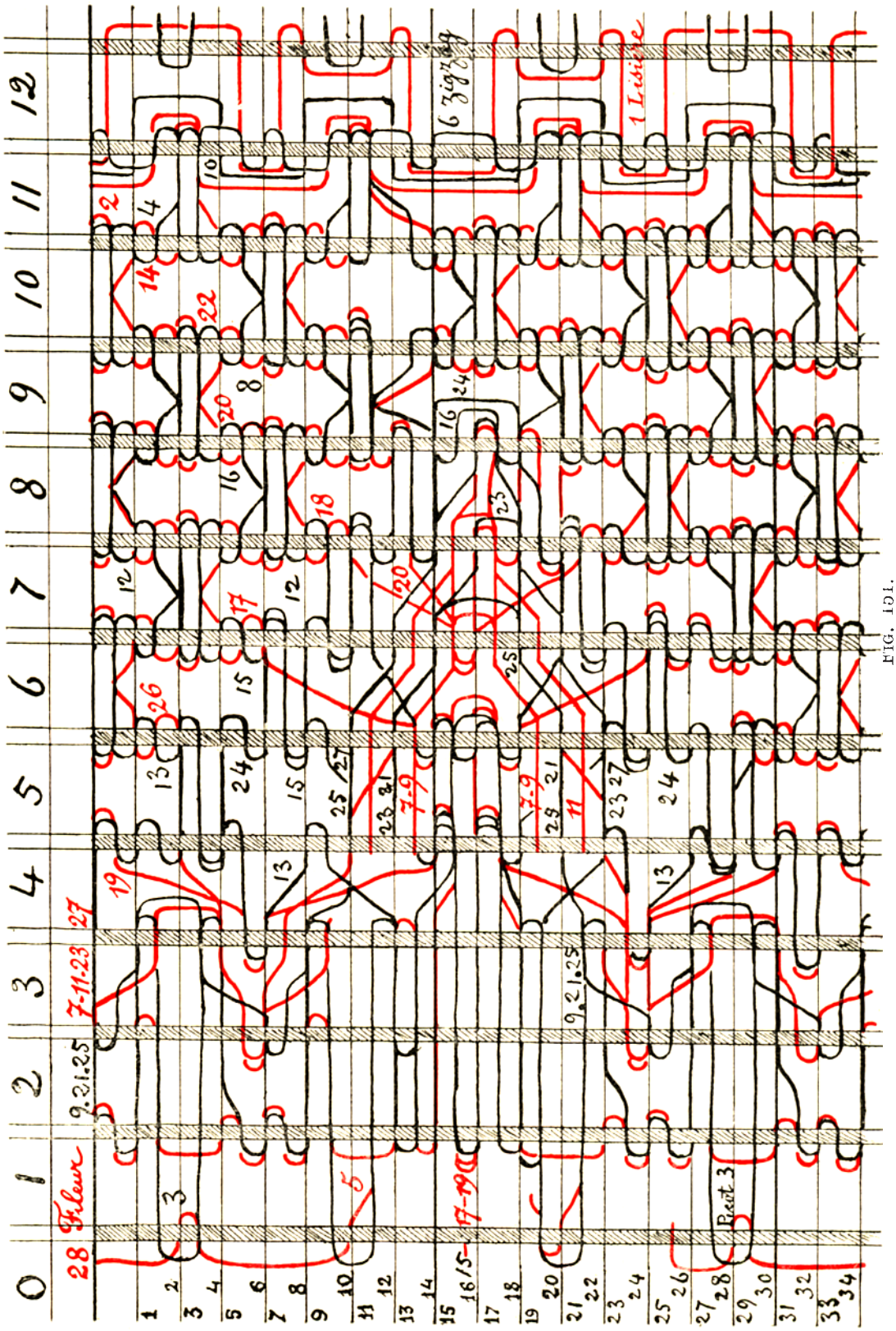


FIG. 191.

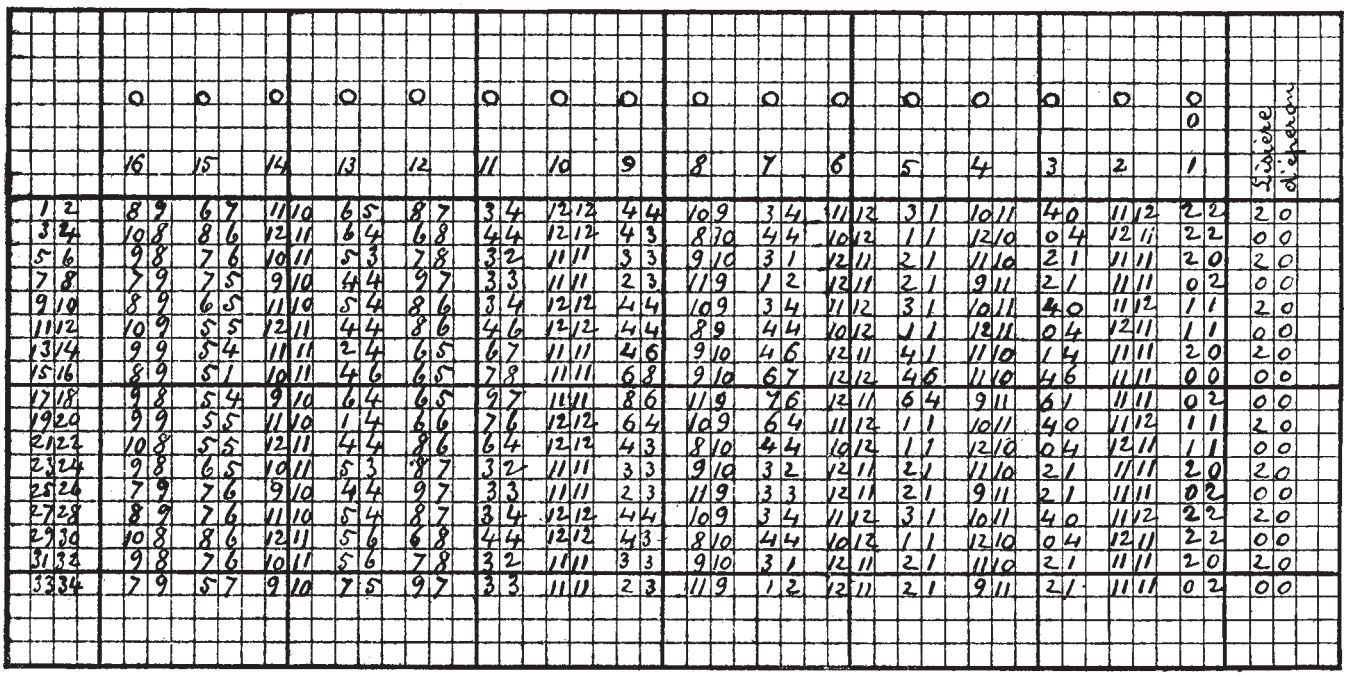


Fig. 152.—Figure sheet of Draught. (Fig 151.)

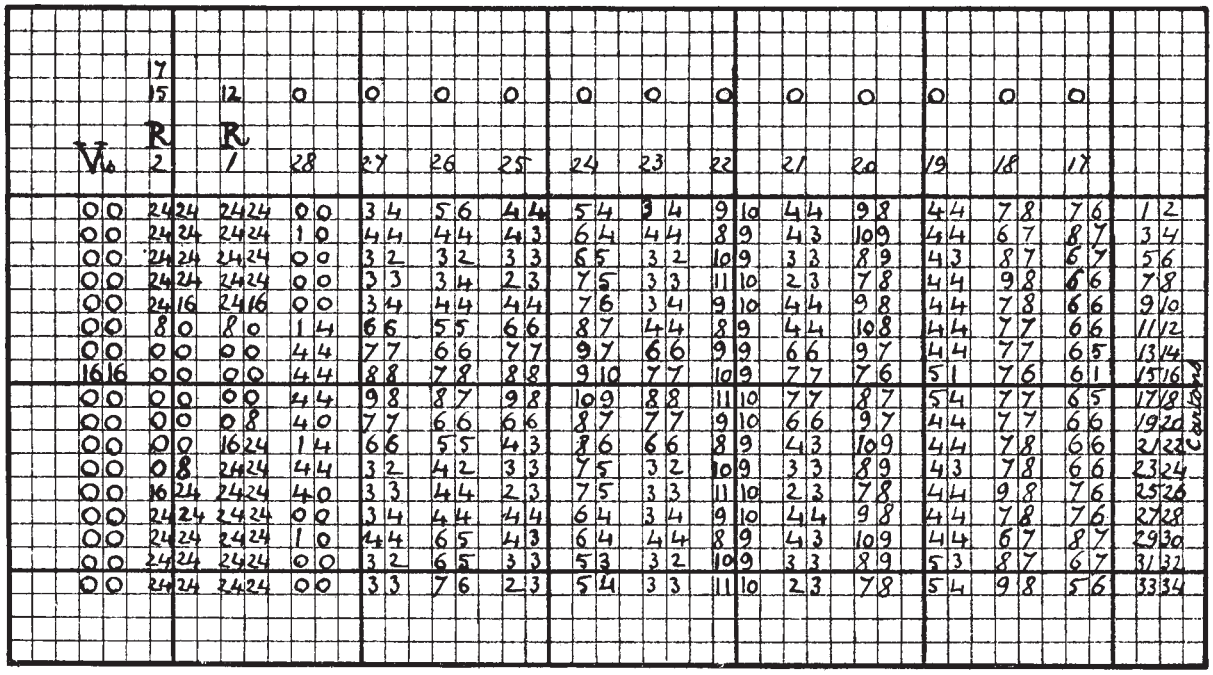


Fig. 152 bis.—Continuation of above sheet.

We give (Fig. 151) the draught of a tickined scallop, that is to say, with a lining thread passing above the band threads (see Figs. 151 and 153), thread 24 being the liner.

This scallop is made on 8 motion net, 2 threads per bobbin, with 28 threads and 2 nips.

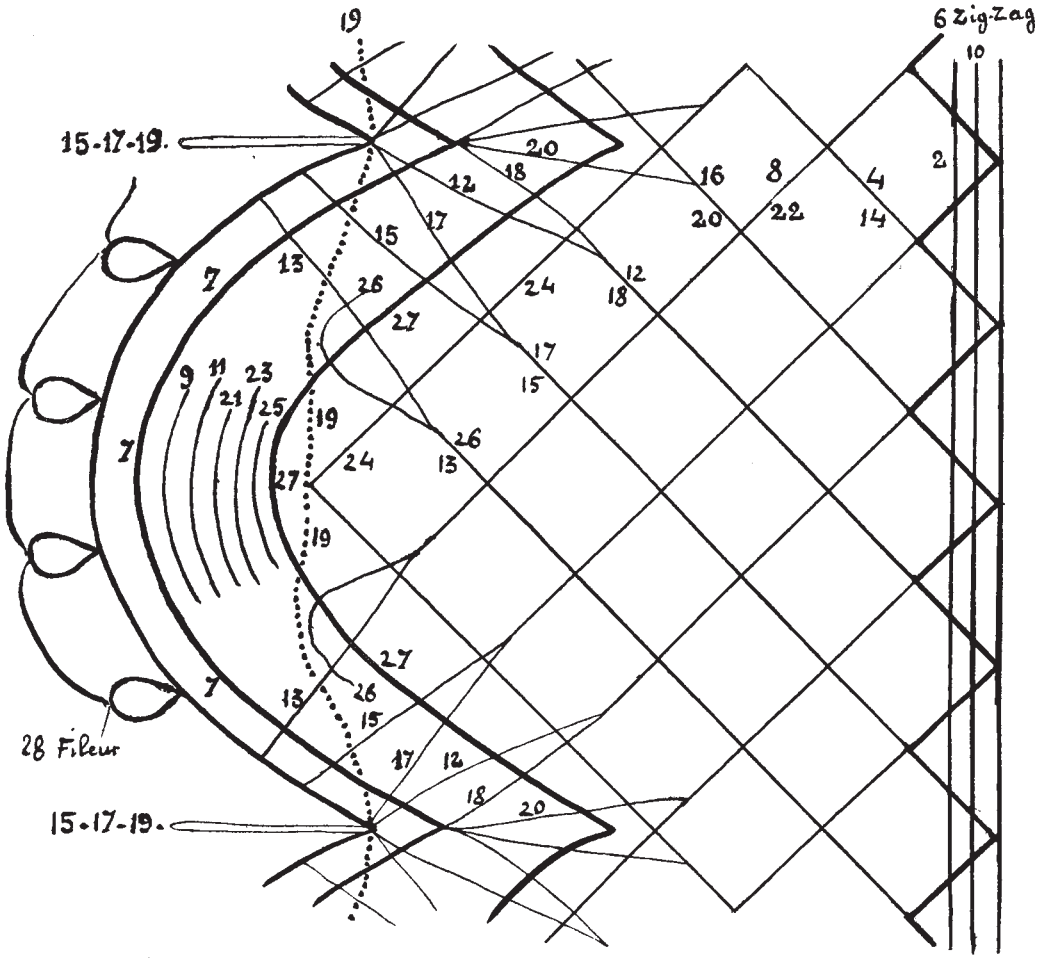
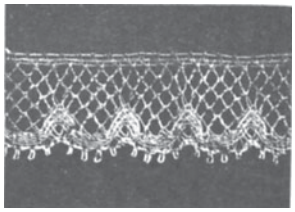


Fig. 153.—Sketch of the Scallop.

It will be noticed that we have numbered one half of our band threads, in front of the net threads and one half at back, so as to obtain a clothing where the scallop rises through the interlacing threads.

We have given this scallop with few motions as an example, esteeming it more difficult to render a slack effect than a stiff one with many motions.

In decomposing the figure sheet you will notice that the band threads that work together change their work at the point of the scallop so as to separate themselves and avoid cotting.



Aspect of finished Scallop representing Figs. 151 and 153.

We have also added 2 motions to the point of the scallop to enable us to pass thread 24 more easily, so as to completely surround the point of the scallop.

This pattern can be made with either round or enzor net.

We recommend working out this pattern with strings.

The quality of this pattern is 25 to 26 racks for 11·50 metres, according to the fineness of the yarns and the gauge.

150/2 can be used for nets and 80/2 for front threads.

6 Bobbin Spot on Enzor Net.

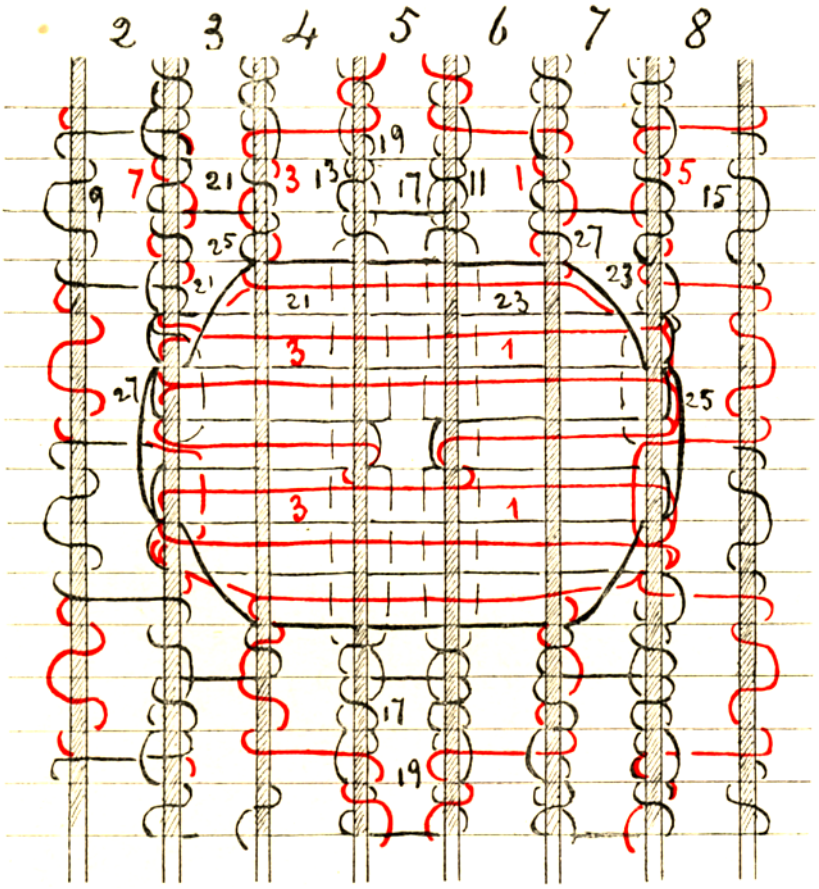
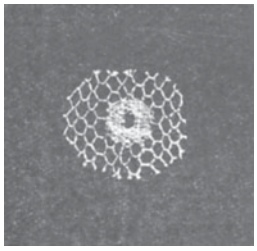


Fig. 154.

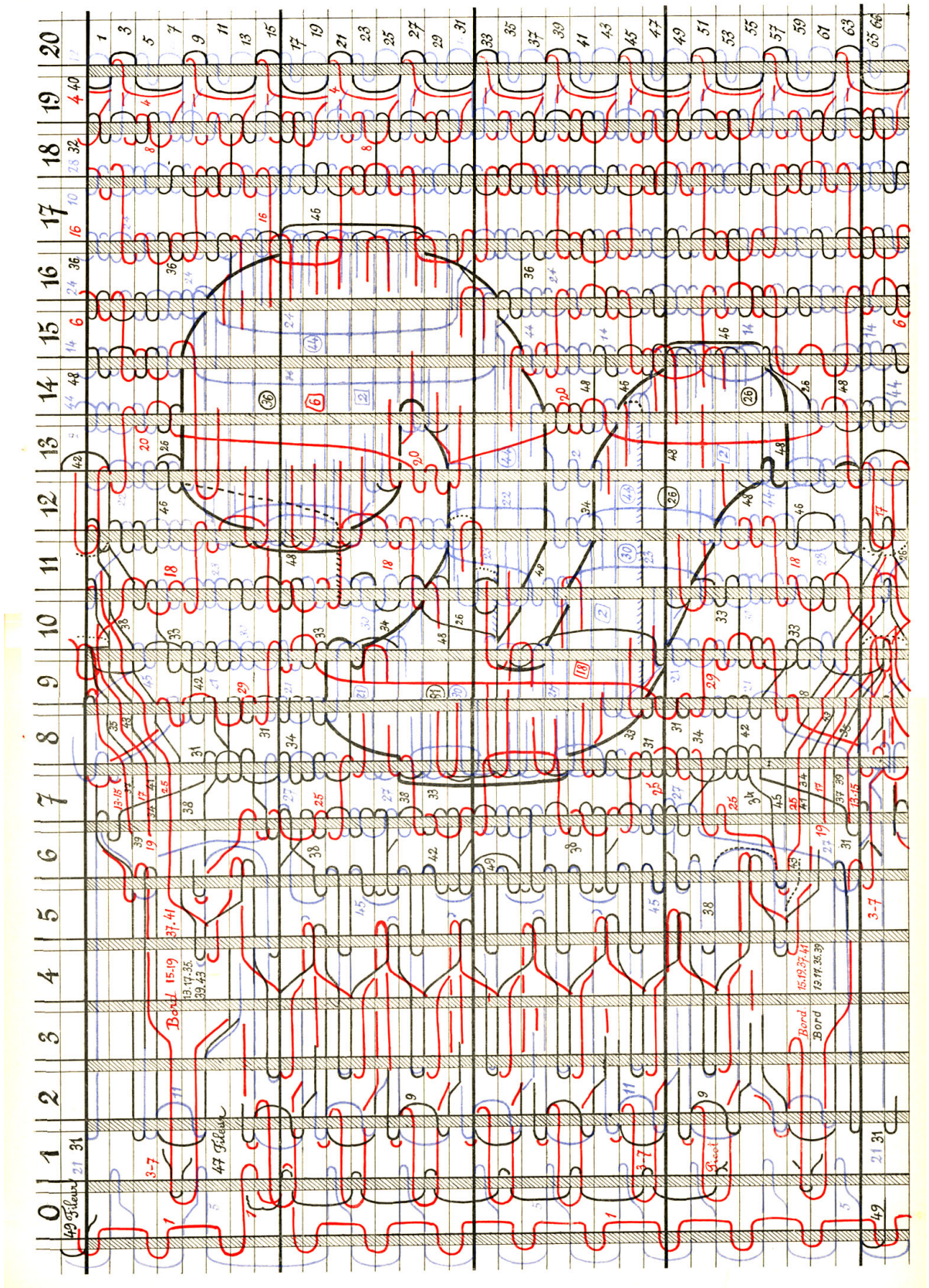


Aspect of finished spot representing Fig. 154.

We give here a 6 bobbin spot with 6 motion enzor net.

The usual quality is 75 to 80 centimetres per rack.

It can also be used with passed or gimped fronts.



Double-page spread reduced to 60% and rotated 90° to fit on page.

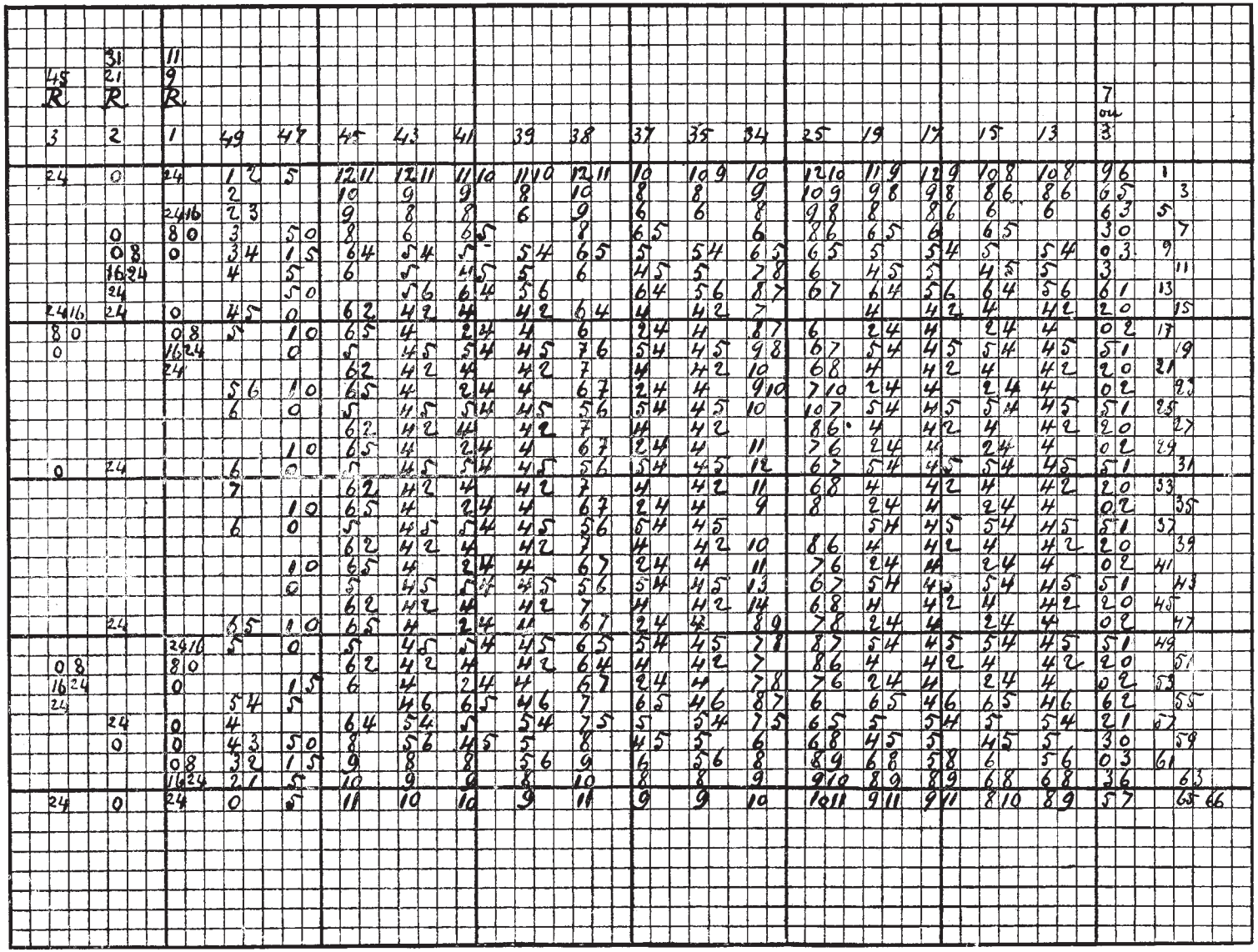


FIG. 156. The nips nip on dead stop.

Gimped Valenciennes pattern with Passed Front.

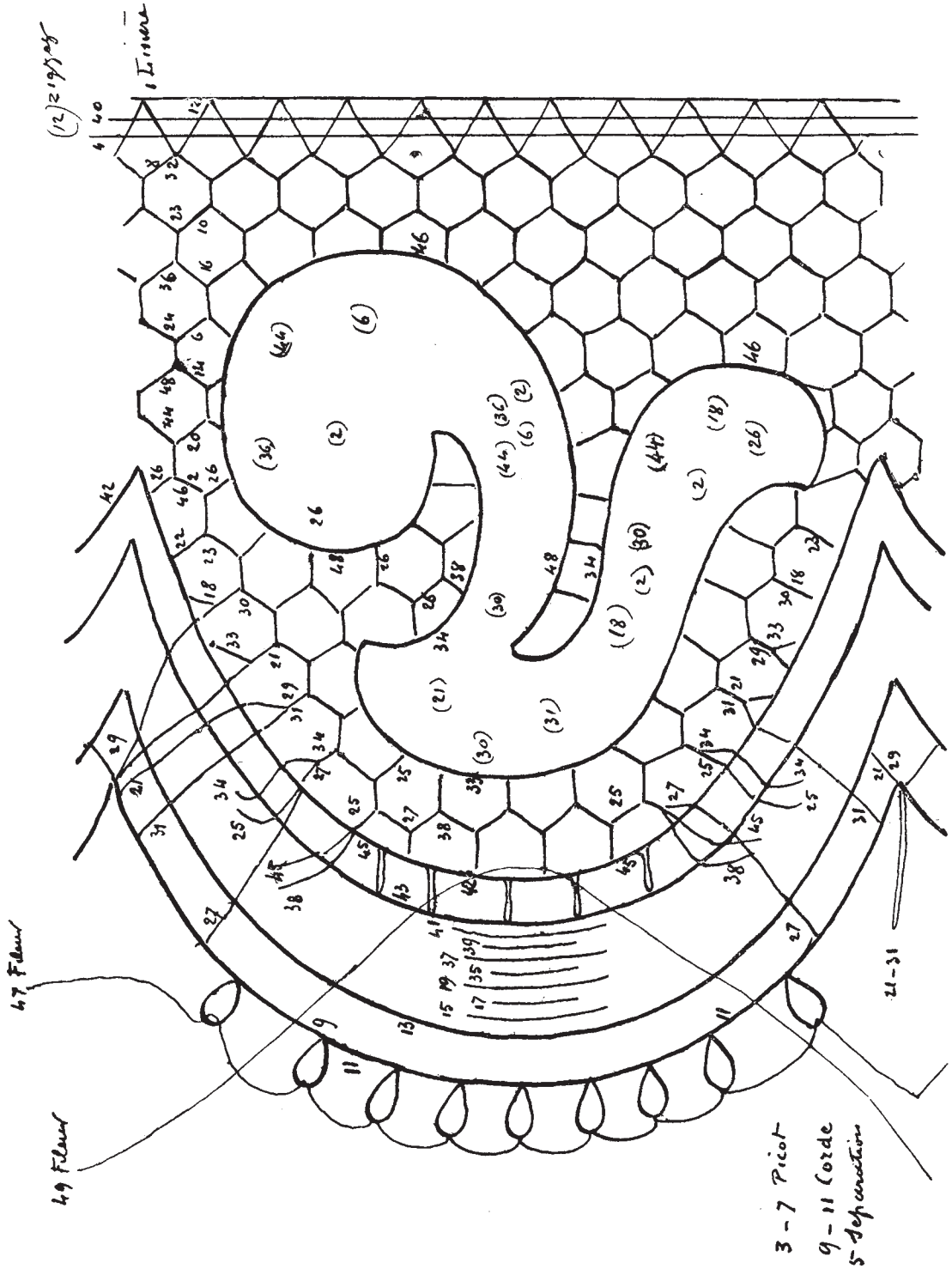


Fig. 157.

We reproduce (Fig. 155) an unpublished pattern 6 motion enzor net with passed front, and gimped motifs, without clips.

The quality is 55 centimetres per rack, $9\frac{1}{4}$ point machine, 20 carriages wide.

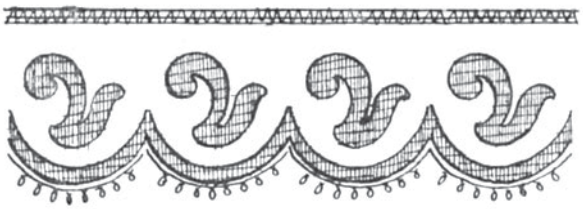
We have made a figure sheet giving the work of the principal threads that we have not entirely traced on the draught so as not to confuse it, the reader can decompose the figure sheet, also the work of the nips.

The design of this pattern measures 18 millimetres and, at the quality given above, should contain 62 motions. We have preferred to add 4 motions rather than take away 2 so as to facilitate the spacing of the motif.

We therefore have an odd number of holes, and this necessitates repeating the pattern twice so the threads can join at the right hole and continue their work normally.

The yarns used for this article are 120/2 for nets, 170/2 to 200/2 for bobbins and 80/2 for fronts. (Sketch Fig. 157).

Bar 49 in Figure sheet 156 is one below stop.



Design of the 6 motion enzor net pattern that has been draughted. (See Fig. 155.)

Cut of Threads for Clothing used for Honiton Braids, Spots, etc.

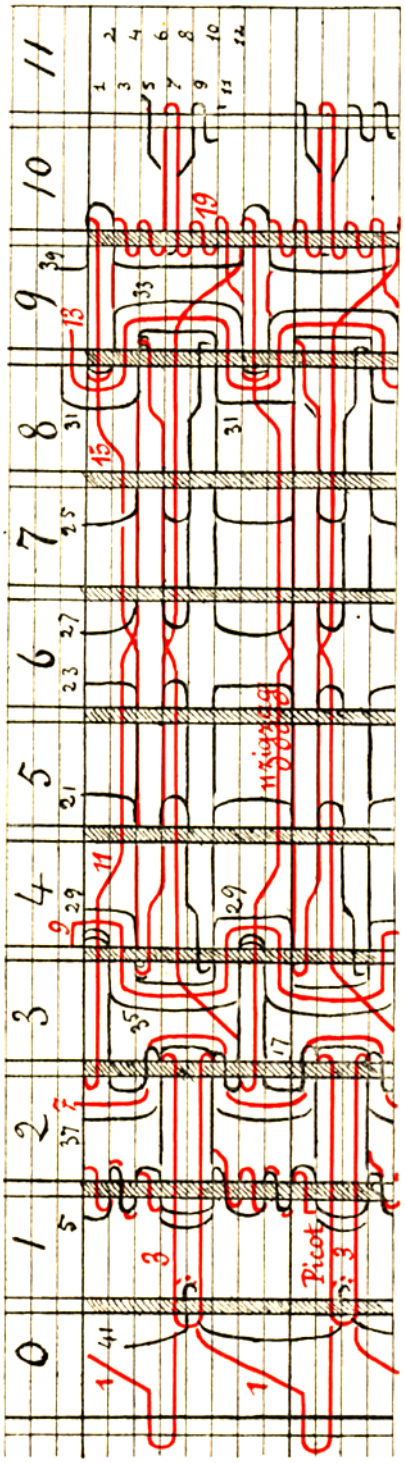


Fig. 158.

We represent (Fig. 158) a cut for clothing, made with 2 threads, 11 and 15, forming weaver accompanied by bobbins 4 and 9.

These weavers are traversed by threads and bobbins working straight, which gives the clothing effect. (See Fig. 160).

This clothing can be used for Honiton braids, as also the front with 2 straight threads.

This cut requires 12 motions.

Fig. 159 represents the figure sheet of several threads of interest in the cut.

Fig. 161 gives the aspect of the finished lace.

In Fig. 160, the sketch of this cut, we show the work of the bobbins in red and the threads in black.

This cut can also be used for Luxeul bands, open Honiton spots, other spots, etc.

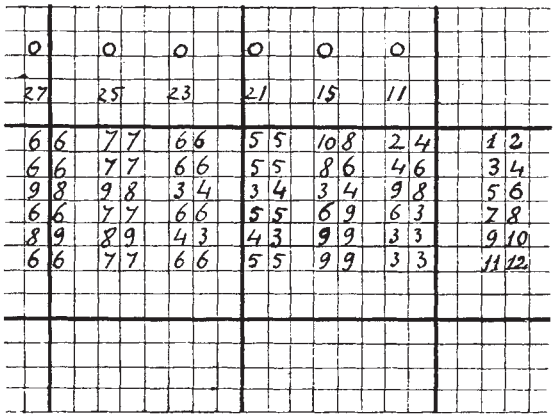


Fig. 159.

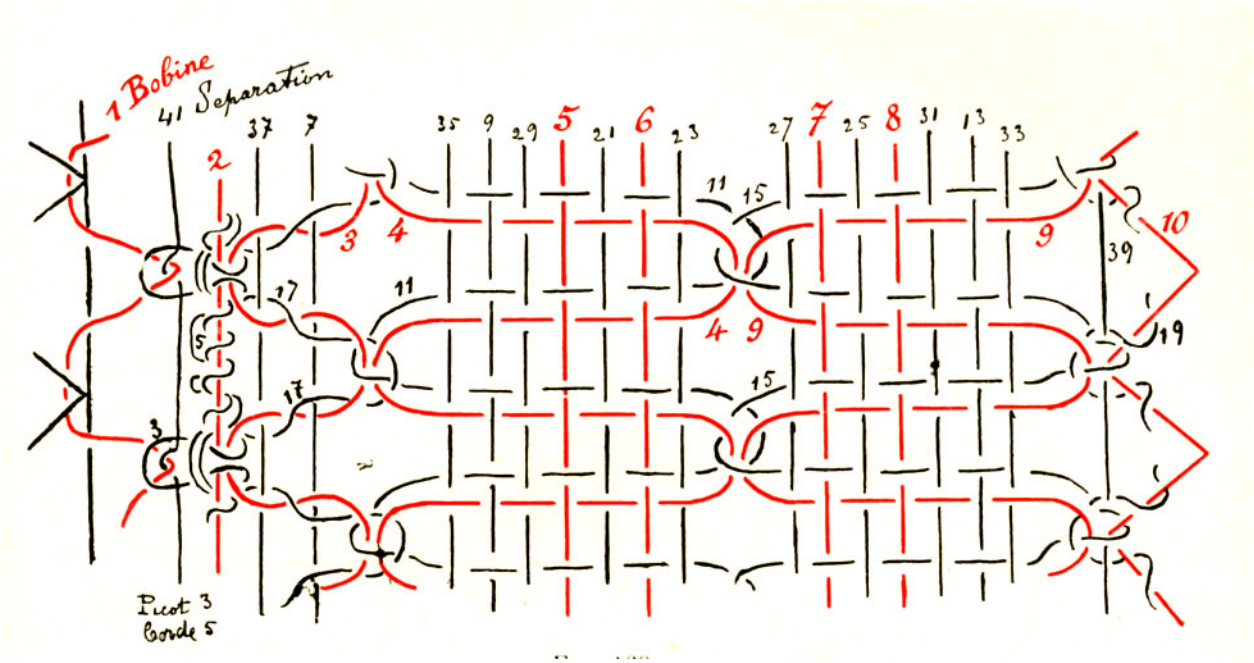


FIG. 160.

FIG. 161.—Aspect of finished lace made with the cut, FIGS. 158 and 160.

FIG. 162.—Aspect of open Honiton spot, made as in FIG. 158.

Ribbon of which the Gimps twist together.

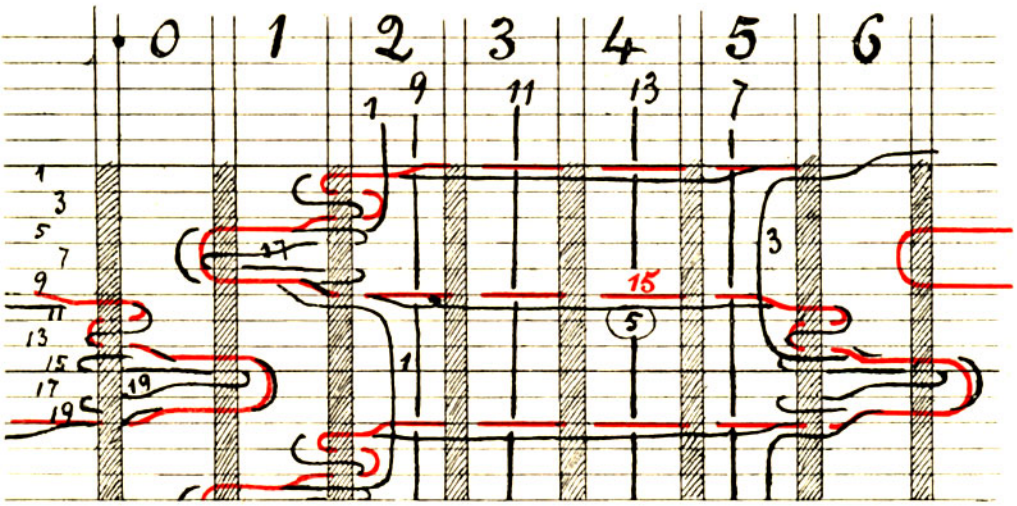


Fig. 163.

Fig. 163 represents a draught, 6 carriages wide, of a ribbon in which the gimps twist together, giving the same effect as a thread twisting with its bobbin. This cut of threads has the advantage of giving a more lacy clothing, and is easy to regulate.

We give (Fig. 164) the figure sheet of this draught for the pupil to decompose the working of the lacers which we throw off so as to keep the separation bobbin as straight as possible, and to prevent the ribbon losing width. The bars 17 and 19 are the lacers.

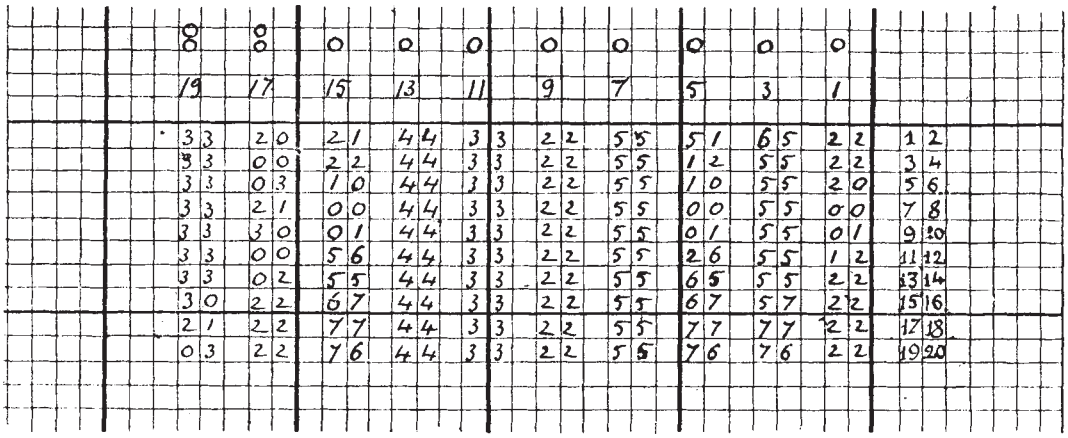


Fig. 164.

Fig. 166 represents a ribbon made by this method.

In Fig. 165, the sketch of the ribbon, we have indicated the work of the bobbins in red and the threads in black.

We advise doing this work with strings, and consulting the draught (Fig. 163).

This cut can be used for all classes of goods, Cluny, Torchon, Guipure, etc. For these goods the bobbins should be tight. No. 1 bobbin is the separation.

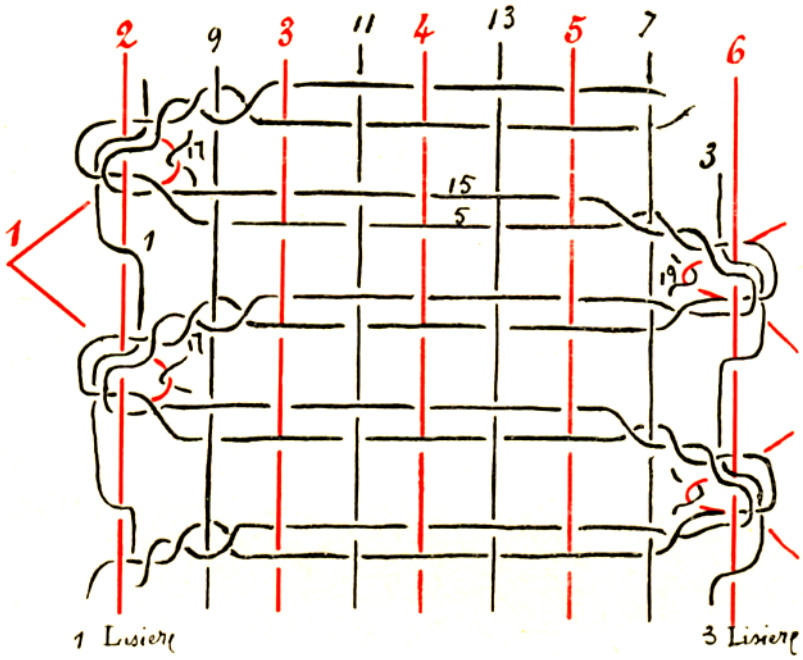


Fig. 165.

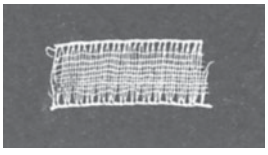


Fig. 166.—Aspect of Luxeuil ribbon, 8 carriages wide, 10 point.

Method of Draughting a Passed Valenciennes Pattern.

As a general rule a pattern in passed Valenciennes is not sketched on the draught from the design because the number of motions in each hole is not the same, as we have already explained in a previous article.

The draughting paper is therefore not proportional to the quality.

It may be done for patterns having an equal number of motions per hole, but, even under these conditions, the pattern would not have the aspect of the design, as in silk goods, where the pattern is (one may say) exactly reproduced in its right proportions.

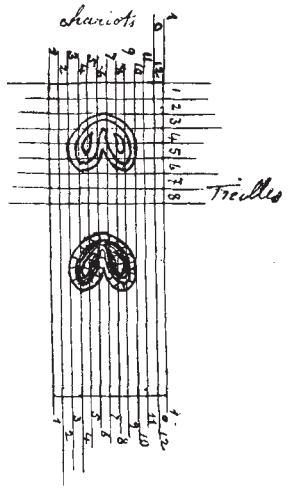


Fig. 167.

In passed Valenciennes, where the cut of threads representing the weavers, and other movements of threads which the finished lace does not reproduce, it is preferable to make a preliminary sketch on which all the motifs destined to reproduce the design are placed.

We give, as an example (Fig. 167), a 10 point, 12 carriage insertion, quality 28 to 32 centimetres per rack, on 12 motion net as far as possible.

The design 12 carriages wide, 10 point, is 15 millimetres wide ; dividing these 15 millimetres in 12 parts, we have 12 lines representing the carriages.

The length of the design being 16 millimetres, and, taking as quality 5 holes per centimetre, that is 2 millimetres per hole, we divide the length in 8 equal parts, that is, 8 holes.

When the design is squared, we take a sheet of paper on which we trace the net (see Fig. 168) ten times larger than its actual size, we then number the 12 bobbins and 8 holes as in the design (Fig. 167).

We notice that the motif of the insertion is crossed by 8 bobbins. We then draw it in the sketch, placing it on the same squares corresponding to the design, and thus get its general aspect ; then we indicate the weavers and the straight threads traversing them, destined to form the clothing.

Thus, in Fig. 168, we have bobbins 5 and 8 which make half a hole of open work between the two weavers each side of the two leaves.

We have two lining threads or tickings which surround the motif and should follow the ties.

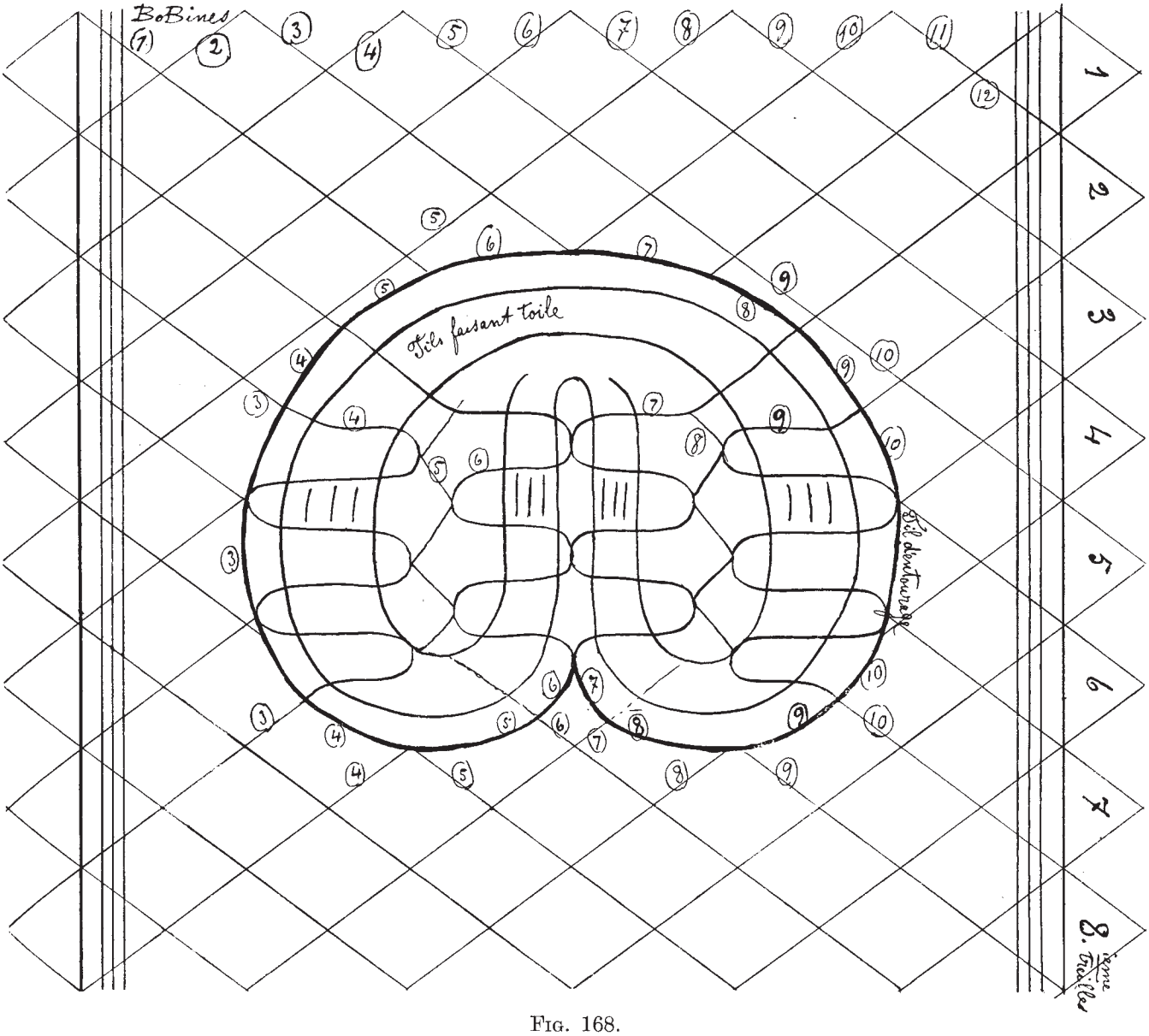


FIG. 168.

We have indicated the work of the bobbins drawn by the threads, and numbered them.

We represent (Fig. 169) a beginning of draught of same pattern on paper proportioned to the quality.

The net ties, the weavers, the lining threads, and the threads forming the clothing are placed on the holes and the numbered bobbins as shown on the sketch (Fig. 168).

We advise the pupil to number the bars on the draught so that the work of the threads can be more easily followed.

Admitting that we had allowed 8 threads per leaf to clothe the motif, the pattern could have been made with 12 motion regular net, but, wishing to give it a finer aspect, we have put 10, which necessitates more motions in the 4th and 6th holes.

As we have six 12 motion holes, one of 16 and one of 18 motions we require 106 cards to make the pattern, and we establish its quality by the following operation :--We multiply the length of the pattern (say 16 millimetres) by 1920 motions and divide the product by 106 (the number of motions contained in the pattern) and obtain 28 centimetres 8 millimetres per rack, which gives $39\frac{3}{4}$ racks for 11·50 metres.

We give in Fig. 170 a squared design representing a 24 carriage width, 9 point, gimped Valenciennes pattern for 6 motion enzor net, quality 60 centimetres per rack.

The net, having a fixed number of motions, this pattern can be draughted direct from the design on proportioned draughting paper.

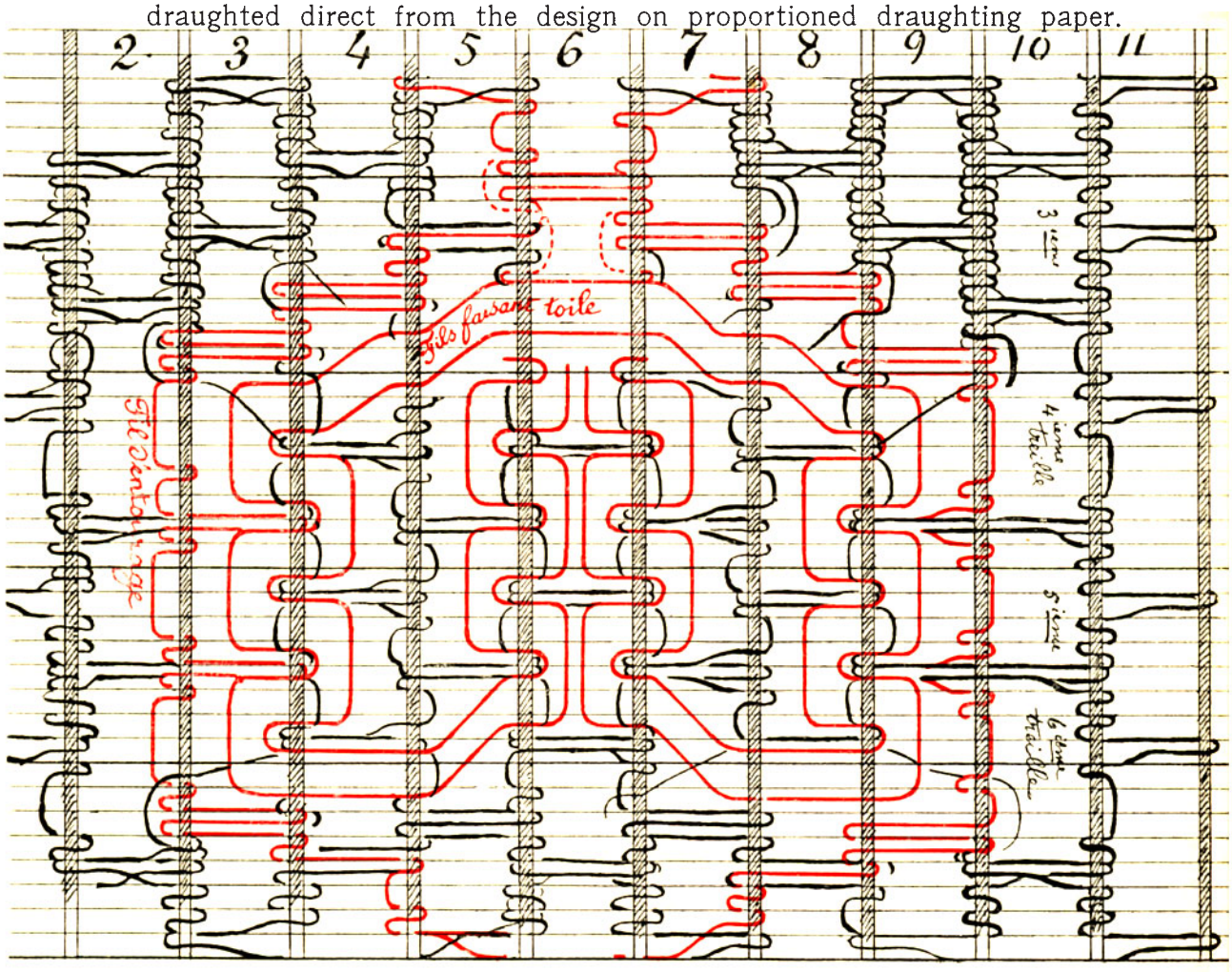


Fig. 169.

We square this design by the following operation : In a 9 point there are 18 carriages in 1 inch, or 0·255 metres, multiplied by 24 carriages, and divided by the gauge 18. The result is

$$\frac{2550 \times 24}{18} = 34 \text{ millimetres.}$$

The 24 carriage design will therefore be 34 millimetres wide, which we divide into 6 equal parts of 4 carriages each.

To find the number of motions, the quality being 60 centimetres per rack and the design 3 centimetres long, we make the following calculations :

$$\frac{1920 \times 3}{60} = 96 \text{ motions.}$$

The pattern having thus 96 motions, we divide this by 6 motions, which gives us sixteen holes. We then divide the length of the design into 8 equal parts each of which represents 2 holes. (Fig. 170).

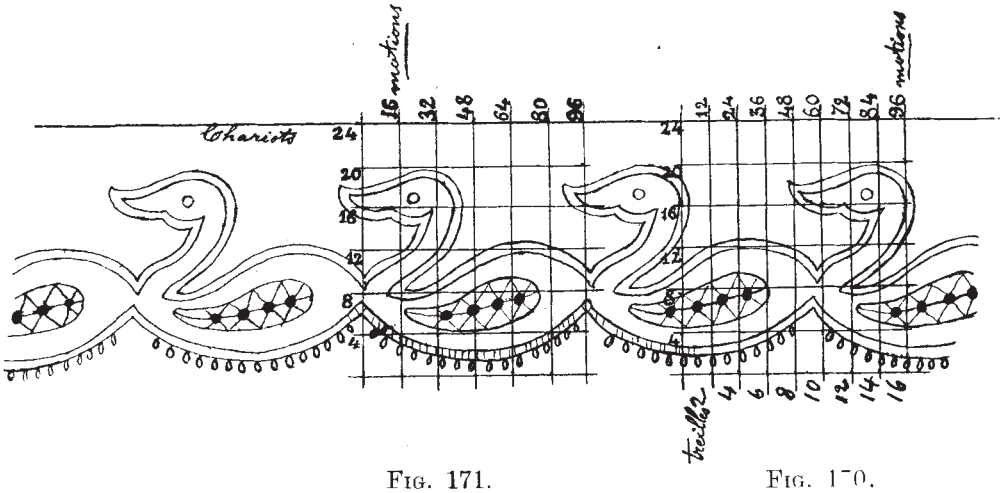


Fig. 171. Fig. 170.

The draughting paper should be traced on the same divisions as the design.

In tracing the draughting paper we advise the pupil to trace a thicker line every 12 motions in the length, and every 4 carriages in the width. These thicker lines will then correspond with the lines traced on the design and facilitate placing the motifs on the draught, and in the length of the pattern they will indicate the front ties of the enzor net.

In Fig. 171 we have the divided design by 16 motions, corresponding to the trade draughting paper.

In draughting either passed or gimped Valenciennes, it is a general rule to make the motifs larger the way of the carriages rather than the way of the motions, because the tissue loses more or less in width and has a tendency to spread in length.

Cluny Floating Spot made with one bobbin.

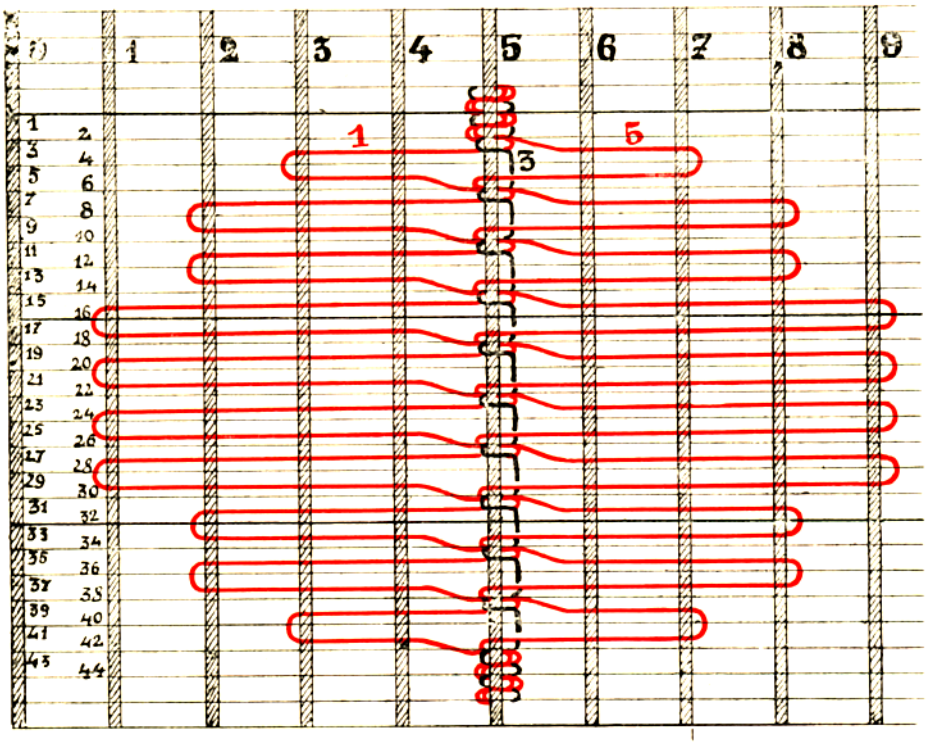


Fig. 172.

In Figs. 172 and 173 we give the cut of a spot made with a single bobbin and 3 threads, suitable for Guipure, Cluny, Torchon, Wool, Valenciennes passed and gimped, etc., etc.

This cut of threads though appearing very simple, is a perfect imitation of a real lace spot.

The sketch (Fig. 174) represents the spot enlarged. The red thread indicates the bobbin and the black threads the bars.

Fig. 173 gives the work of a small spot.

The bars 1 and 5 throw off and draw the bobbin, alternately, one side to the other, thus making it gimp and take the shape of a spot.

No. 3 bar, by its reverse work, remains straight.

The bars Nos. 1 and 5 require nipping to compel the bobbin to throw off and to prevent the threads slackening. (See Fig. 175).

The work of these nips is good but naturally varies according to the size and length of the spot it is desired to obtain.

We recommend that the nippers should nip on dead stop, otherwise the results will not be good. The bobbin should be medium slack.