

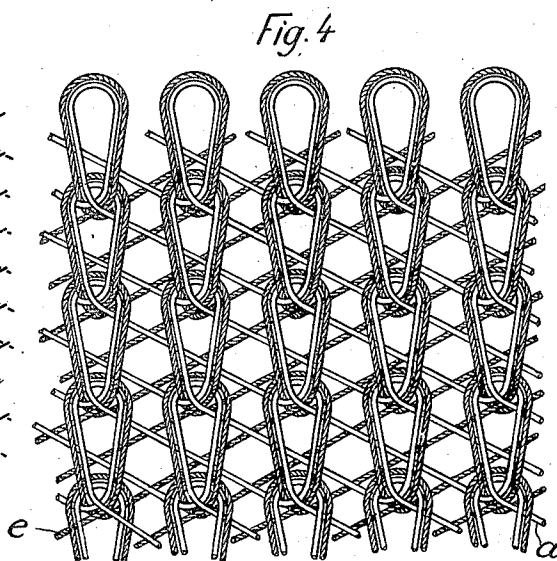
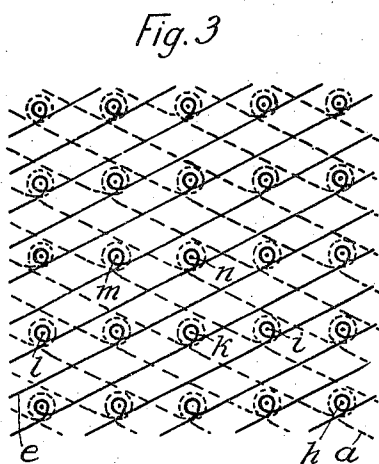
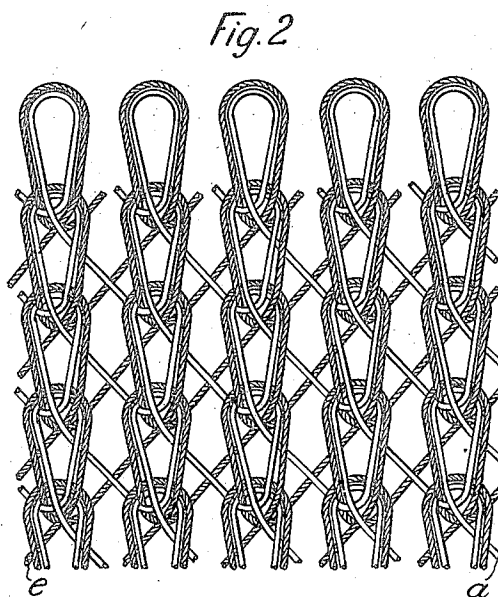
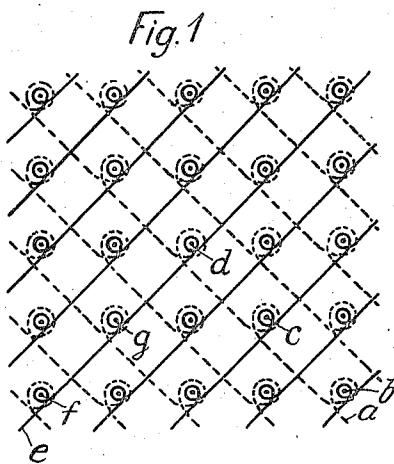
Feb. 15, 1938.

H. WIRTH

2,108,735

METHOD OF MANUFACTURING MILANESE WARP FABRIC

Filed Feb. 21, 1936



Inventor:
Herbert Wirth
by William C. Linton.
Attu.

UNITED STATES PATENT OFFICE

2,108,735

METHOD OF MANUFACTURING MILANESE
WARP FABRIC

Herbert Wirth, Hartmannsdorf, near Chemnitz,
Germany, assignor to the firma Emil Wirth
Wirkmaschinenfabrik, Hartmannsdorf, near
Chemnitz, Germany

Application February 21, 1936, Serial No. 65,150
In Germany February 22, 1935

6 Claims. (Cl. 66—86)

The present invention relates to a method of manufacturing warp fabric on Milanese warp machines having guides.

In the manufacture of Milanese fabric on the known Milanese warp machines having picker point bars the threads are laid in a forward direction over the spring beard needles only or under and over the spring beard needles. The manufacture of Milanese fabric having interlaced loops, however, is impossible on such machines. The elasticity of the known Milanese fabric is, moreover, limited.

The present invention relates to a method which can be carried out on Milanese warp machines of the type disclosed in applicant's U. S. Patent No. 2,022,448 having guides by means of which method plain or double-faced Milanese fabric may be produced which fundamentally differs from the known Milanese fabric.

Whereas the known method allows two kinds of lap only, still further lappings are possible according to the new method. Moreover, net work also may be produced by the method according to the present invention.

To obtain the object aimed at, in a Milanese warp machine having guides, the warp threads are, according to the present invention, laid over the spring beard needles in the rearward direction and under the spring beard needles in the forward direction, the rearward movement of the warp threads being compensated by a corresponding forward movement under two or more spring beard needles for the purpose of obtaining the diagonal forward working of the warp threads.

By this kind of lap of the warp threads, a Milanese fabric made by a plain Milanese lap as well as by a back-lapped Milanese lap may be produced. Also both kinds of lap may be used in the manufacture of openwork and double-faced Milanese fabrics.

With regard to Milanese fabrics made by the lappings hitherto known, the Milanese fabric produced by the novel lappings has a greater elasticity. Also the front or right face of the fabric has a more distinct rib-like appearance than the known Milanese fabric. In the case of double-faced fabric, both front or right faces have this distinct rib-like appearance.

In the accompanying drawing, two kinds of lap for a plain Milanese fabric and the corresponding loop diagrams are shown by way of example, to explain the method according to the invention.

In this drawing:

Fig. 1 shows the lapping diagram for a plain Milanese atlas fabric,

Fig. 2 illustrates the corresponding loop diagram,

Fig. 3 shows the lapping diagram for back-lapped Milanese atlas fabric and

Fig. 4 illustrates the corresponding loop diagram.

According to the present invention the threads are always laid over the spring beard needle or needles in the rearward direction, while the diagonal lap of the warp threads under the spring beard needles is effected in a forward direction, whereby the rearward movement over the spring beard needle or needles is taken into account; for instance, in the manufacture of plain Milanese atlas (Fig. 1) the warp threads, after having been laid over one spring beard needle in the rearward direction, are laid under two spring beard needles in the forward direction for the production of the next row of loops. In the forward lapping, the thread *a* is laid over the spring beard needle *b* in the rearward direction and then under this spring beard needle *b* and a spring beard needle *c* in the forward direction. Then a rearward lap over the spring beard needle *c* is effected again, whereupon the thread is laid again under the spring beard needles *c* and *d* in the forward direction. Then with all warp threads running in the same direction the lap is effected in the manner described over one spring beard needle in the rearward direction and under two spring beard needles in the forward direction. The warp threads extending in the other direction are laid in the same manner in the opposite direction. For instance, in the forward lap the thread *e* is laid over the spring beard needles *f* in the rearward direction and then under the spring beard needle *f* and another spring beard needle *g* in the forward direction, this operation being, as indicated already, repeated with all warp threads running in this direction.

In the manufacture of back-lapped Milanese fabric (Fig. 3) the warp threads are, after lapping over the spring beard needle in the rearward direction, laid in the forward direction under more than two spring beard needles, depending on the back-lapping to be effected (whether under 1 or under 2).

For example, in the forward lap, the thread *a* is laid under the first spring beard needle *h* on which a rearward lap is effected, then in the forward direction under the second spring beard needle *i* which is to be back-lapped and under

a third spring beard needle *k* on which lapping in the rearward direction is again to be effected. With the threads extending in the opposite direction, the thread *e*, for instance, is, in the forward lapping operation, laid over the spring beard needle *l* in the rearward direction and then in the forward direction under this spring beard needle *l* and the spring beard needle *m* to be back-lapped and under another spring beard needle *n*.

If these Milanese fabrics are to be produced as net work, the forward lapping of the warp threads under the spring beard needles may, according to pattern, also be effected under more spring beard needles. A rearward lapping of the threads may equally be effected over two spring beard needles.

In the manufacture of double-faced Milanese fabrics, lapping is effected in exactly the same manner as described above and as shown for instance in Figures 1 and 3. The warp threads are, however, not only supplied to one row of spring beard needles, but are alternately laid on two rows of spring beard needles. Therefore, first one row of the lap in consideration is effected on the one row of spring beard needles and after working of this row of loops the following row is produced in the same manner with the other row of spring beard needles.

What I claim is:

1. In a method of manufacturing warp fabric on Milanese warp machines having guides, laying

the warp threads over the spring beard needles in the rearward direction and under the spring beard needles in the forward direction and compensating the rearward movement by a corresponding forward movement of the warp threads under the spring beard needles.

2. In a method as set forth in claim 1, continuously laying the threads over one spring beard needle in the rearward direction and then under two spring beard needles in the forward direction.

3. In a method as set forth in claim 1, continuously laying the threads over one spring beard needle in the rearward direction and then under three spring beard needles in the forward direction.

4. In a method as set forth in claim 1, laying the threads over one spring beard needle in the rearward direction and then under more than three spring beard needles in the forward direction.

5. In a method as set forth in claim 1, laying the threads over a plurality of spring beard needles in the rearward direction and then under more than three spring beard needles in the forward direction.

6. In a method of manufacturing warp fabric on Milanese warp machines having guides, effecting different kinds of lap alternately on two rows of spring beard needles, for producing double-faced goods.

HERBERT WIRTH.