No. 725,578. PATENTED APR. 14, 1903.

F. E. MORRIS.

MACHINE FOR SEWING LOOPED FABRICS.

APPLICATION FILED AUG. 1, 1902.

NO MODEL.

Fig. 1.

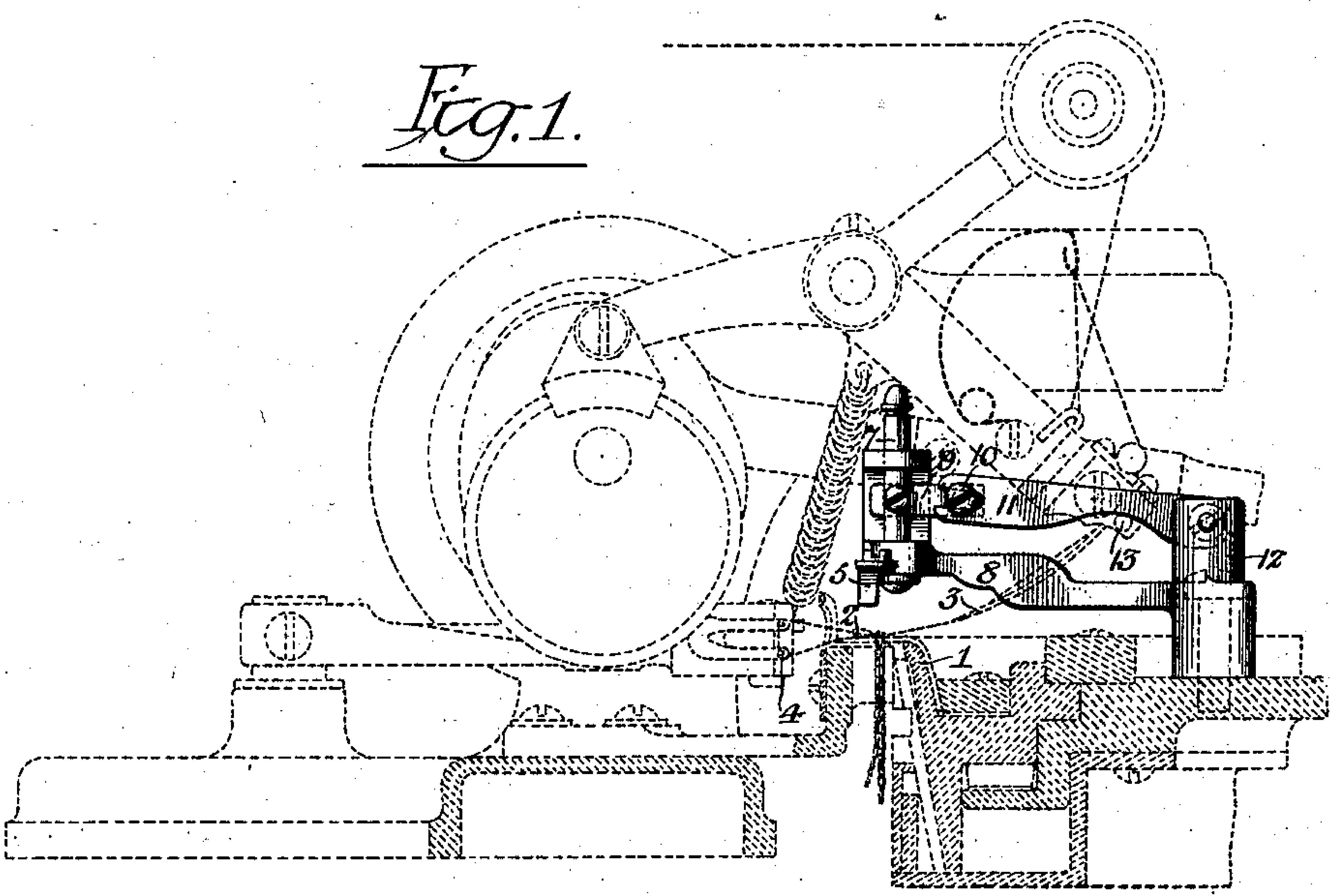


Fig. 2.

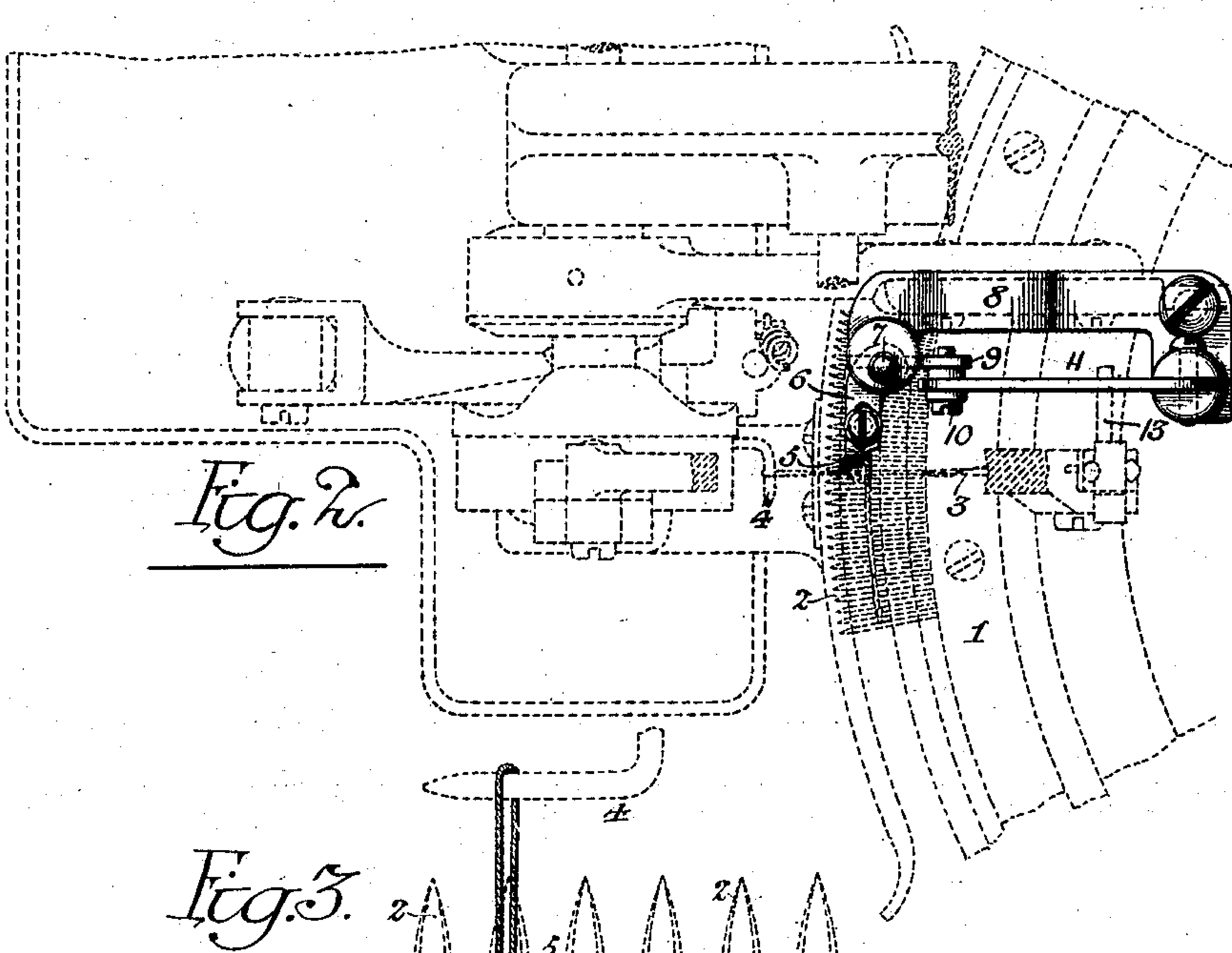
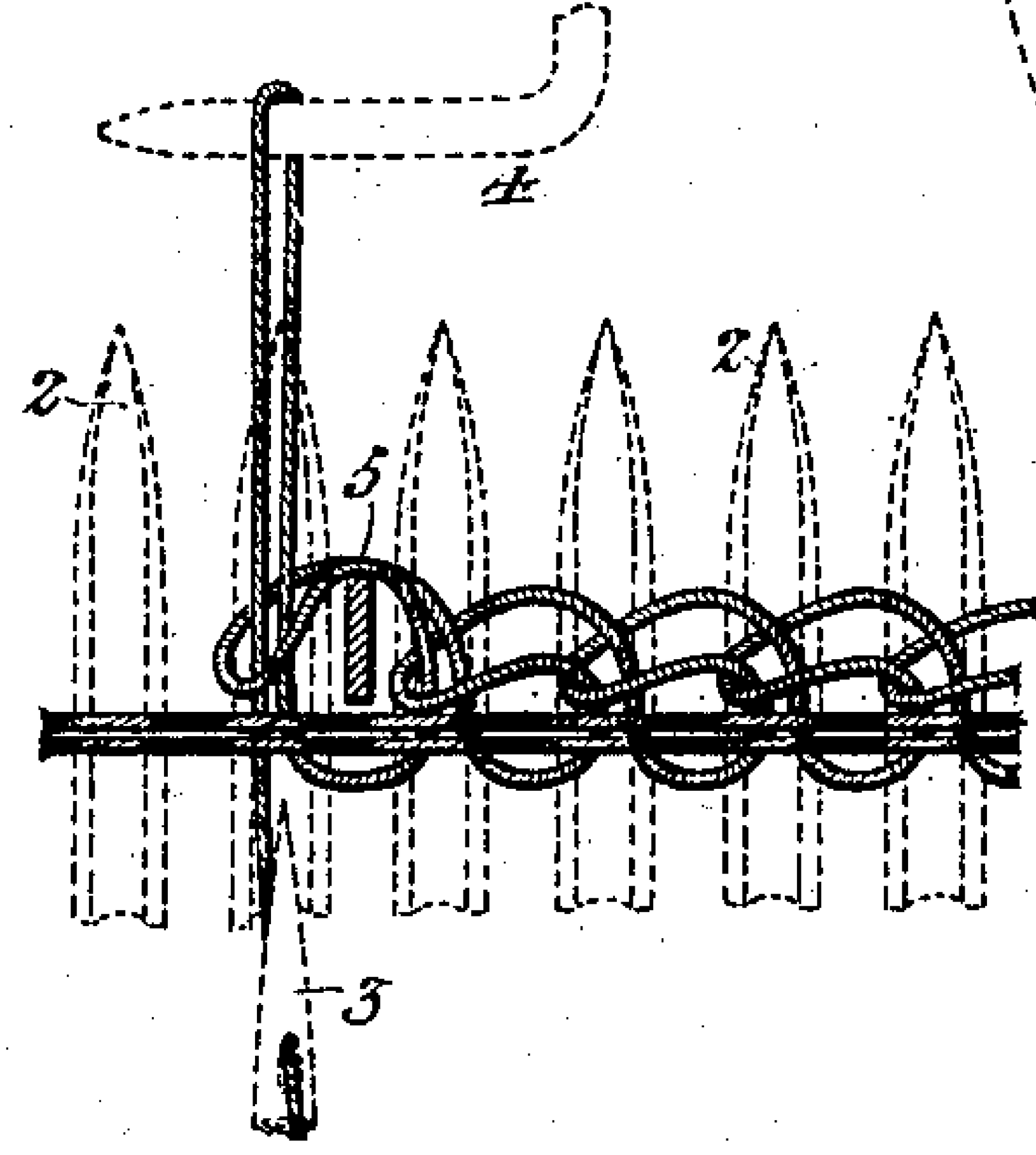


Fig. 3.



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UNITED STATES PATENT OFFICE.

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MACHINE FOR SEWING LOOPED FABRICS.

SPECIFICATION forming part of Letters Patent No. 725,578, dated April 14, 1903.

Application filed August 1, 1902. Serial No. 117,980. (No model.)

To all whom it may concern:

Be it known that I, FRANK E. MORRIS, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Machines for Uniting Knitted Fabrics, of which the following is a specification.

My invention relates to machines known as "looping-machines" and intended for uniting knitted webs by means of a chain of stitches formed by the conjoint action of a needle and looper, the stitches of the knitted webs being mounted upon pins or points upon a carrier to which intermittent movements are imparted, so that the needle passes in succession through the loops of the courses of the knitted webs which are to be united.

The object of my invention is to insure an elastic seam by providing a certain amount of slack in each stitch of the chain, whereby the union of the knitted web is effected. This object I attain in the manner hereinafter set forth, reference being had to the accompanying drawings, in which—

Figure 1 is a view showing in dotted lines in longitudinal section sufficient of an ordinary looping-machine to illustrate my attachment thereto, the latter being shown by full lines. Fig. 2 is a plan or top view of the mechanism shown in Fig. 1; and Fig. 3 is a diagram, on an enlarged scale, illustrating the operation of my attachment.

So far as the looping-machine itself is concerned, it is of ordinary construction and need not be described further than to say that it comprises a ring 1, carrying a series of projecting pins or points 2, one for each loop or stitch of the course of knitted web, this ring being provided with mechanism whereby intermittent movements of partial rotation will be imparted to it, each movement being to the extent of the distance apart of the successive pins or points 2.

The machine has a vibrating needle 3 and a hooked looper 4, which parts are so operated that the needle vibrates over the pins 2 in succession and the looper 4 delivers the previously-formed loop to the needle and receives a fresh loop of thread therefrom, the result being that the needle passes through the successive pairs or groups of stitches or loops of knitted webs mounted upon the pins 2 and unites the same by a chain of stitches formed by the needle-thread.

The purpose of my invention is to prevent the drawing of these stitches so tightly as to deprive the seam of the elasticity which is essential to the proper performance of its duty, for if the seam is less elastic than the webs which it unites the stretching of these webs permits such strain to be exerted upon the chain of stitches whereby they are united as to break said stitches. I therefore draw each stitch of the uniting-chain around a finger 5, which is so located and so operated that it will engage said stitch and retain the same until the needle has been so far retracted that its further movement is not sufficient to tighten the stitch.

As shown in Figs. 1 and 2 of the drawings, this finger 5 is carried by an arm 6, projecting from the lower end of a vertically-sliding bar 7, which is mounted in bearings at the outer end of a bracket 8, secured to a fixed portion of the machine, said sliding bar or rod 7 having another projecting arm 9, with pin 10, which engages the slotted end of a lever 11, hung to a post 12 on the bracket 8 and adapted to be acted upon by a pin 13, projecting from the arm which carries the needle 3.

When the needle-arm is at the rearward limit of its movement, its pin engages the lever 11 and causes the same to lift the sliding rod 7, and consequently the finger 5, as shown in Fig. 1, thereby permitting movement of the ring 1; but as soon as the needle commences to move forward the finger 5 drops in advance of the loop of needle-thread carried by the looper 4. Hence when said looper delivers its loop to the needle and takes a fresh loop therefrom and the needle is retracted, as shown in Fig. 3, the finger 5 prevents the pull upon the needle-thread from drawing tight the last-formed stitch, the finger retaining this position until the needle is almost at the limit of its retraction, when the pin 13 again acts upon the lever 11 so as to lift the finger 5 free from engagement with

the stitch. As a consequence of this operation each stitch has an ample amount of slack to insure the elasticity of the chain. Hence the latter can be stretched to the same extent as the stitches of the fabric which it joins and no such strain can be exerted upon the chain of stitches as to cause the same to break.

The invention is of importance in uniting fabrics having open or "lacework" portions, as these are especially susceptible to stitching.

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. The combination with the stitch-forming device of a machine for uniting knitted webs, with fabric-receiving pins or points, a needle movable into a plane substantially parallel therewith, a looper, a stitch-engaging finger, said looper and the finger being movable from and toward the fabric-receiving points and in a plane at right angles to the same, substantially as described.

2. The combination of the stitch-forming devices of a machine for uniting knitted webs, of a finger for engaging the stitch which is being drawn, a sliding rod carrying said finger, a lever engaging said rod, and a projection from the needle-arm of the machine for engaging said lever as the needle is approaching the rearward limit of its movement, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRANK E. MORRIS.

Witnesses:
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