

No. 696,069.

Patented Mar. 25, 1902.

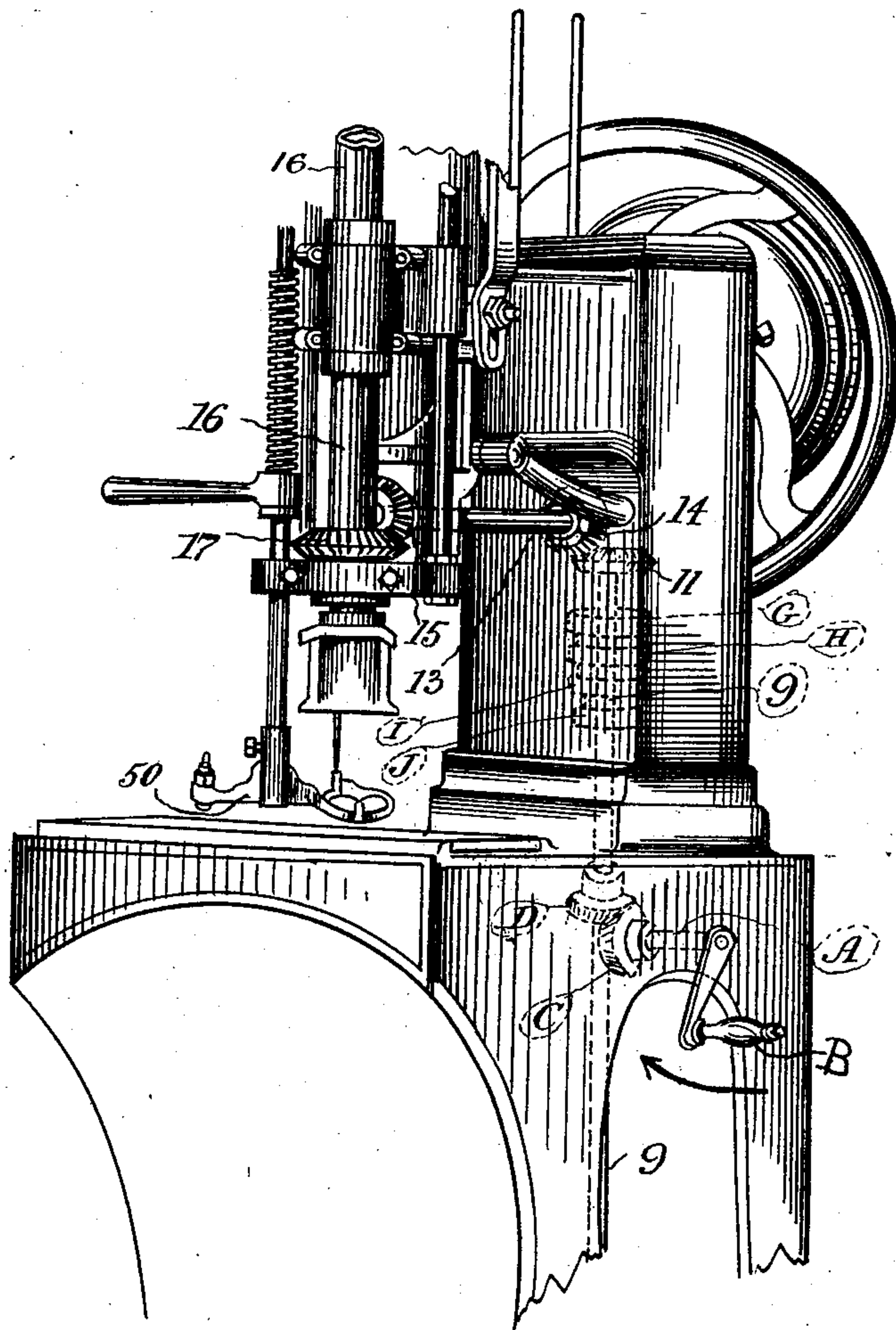
W. U. & J. R. U. MORTON.
EYELET SEWING MACHINE.

(Application filed Apr. 22, 1901.)

(No Model.)

2 Sheets—Sheet 1.

Fig 1.



Witnesses:
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J. R. Stamp

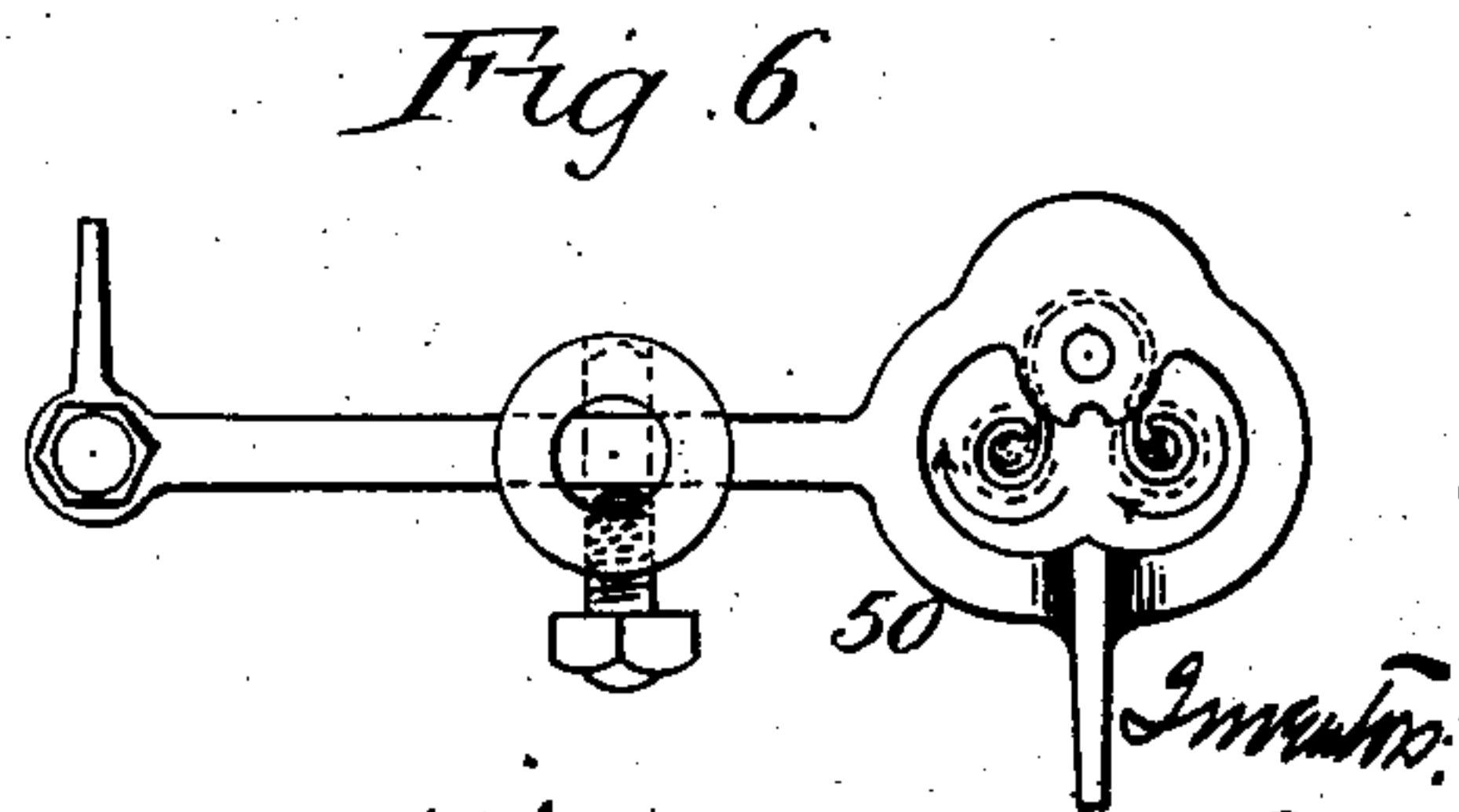
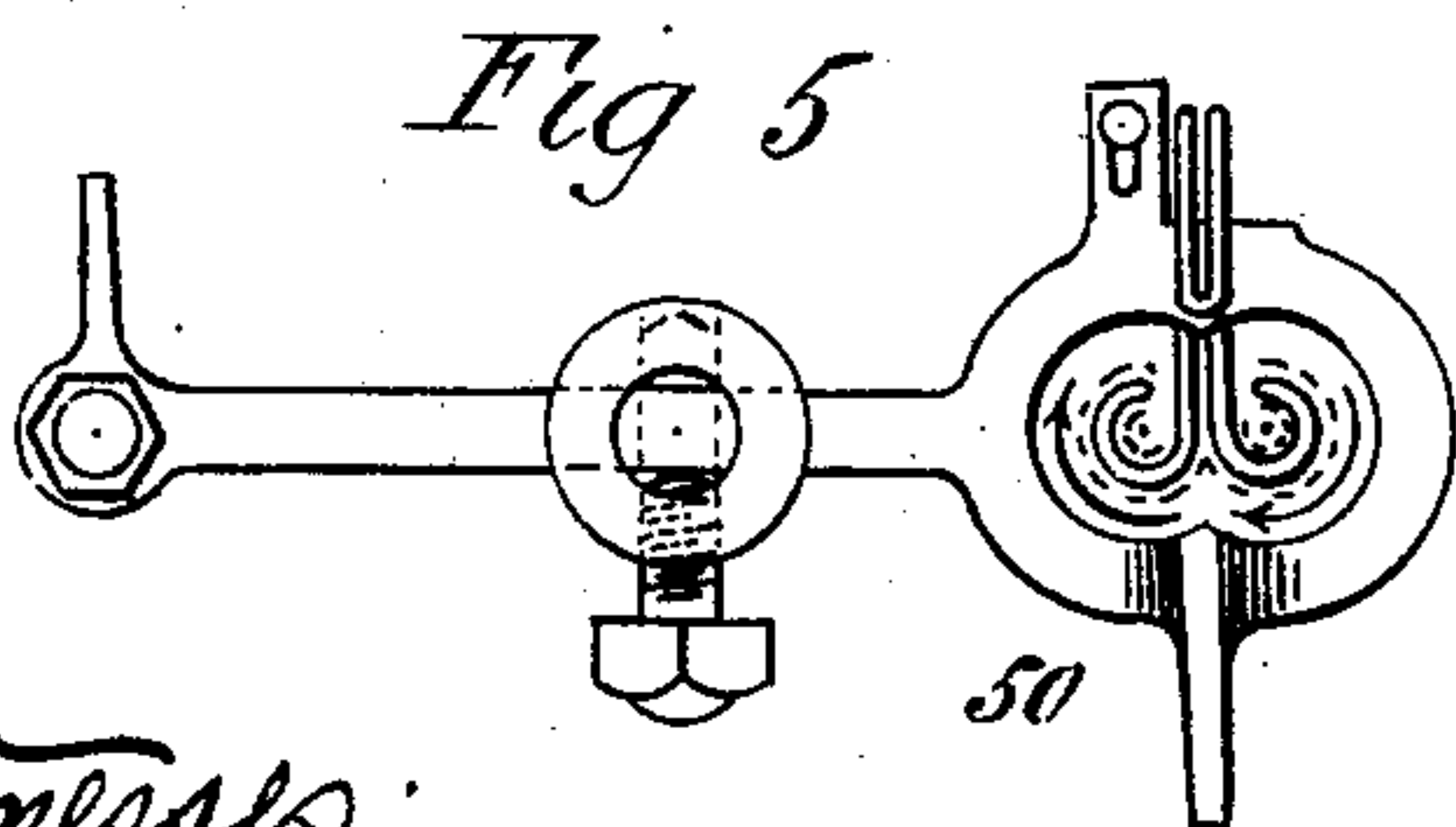
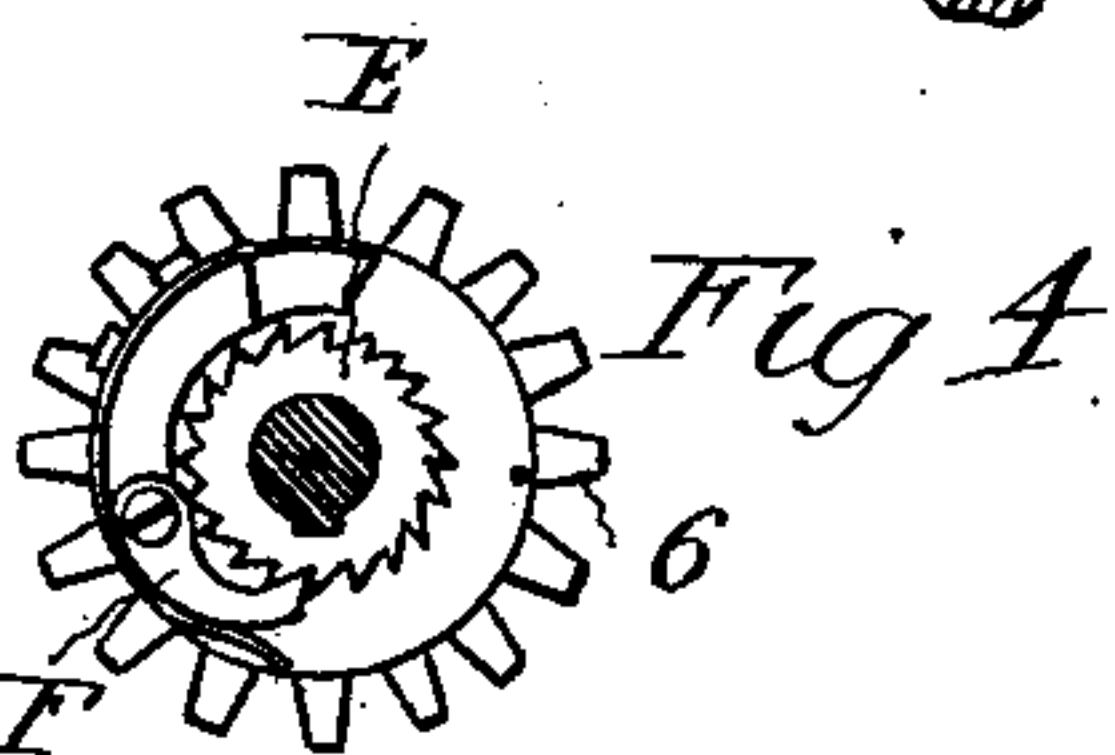
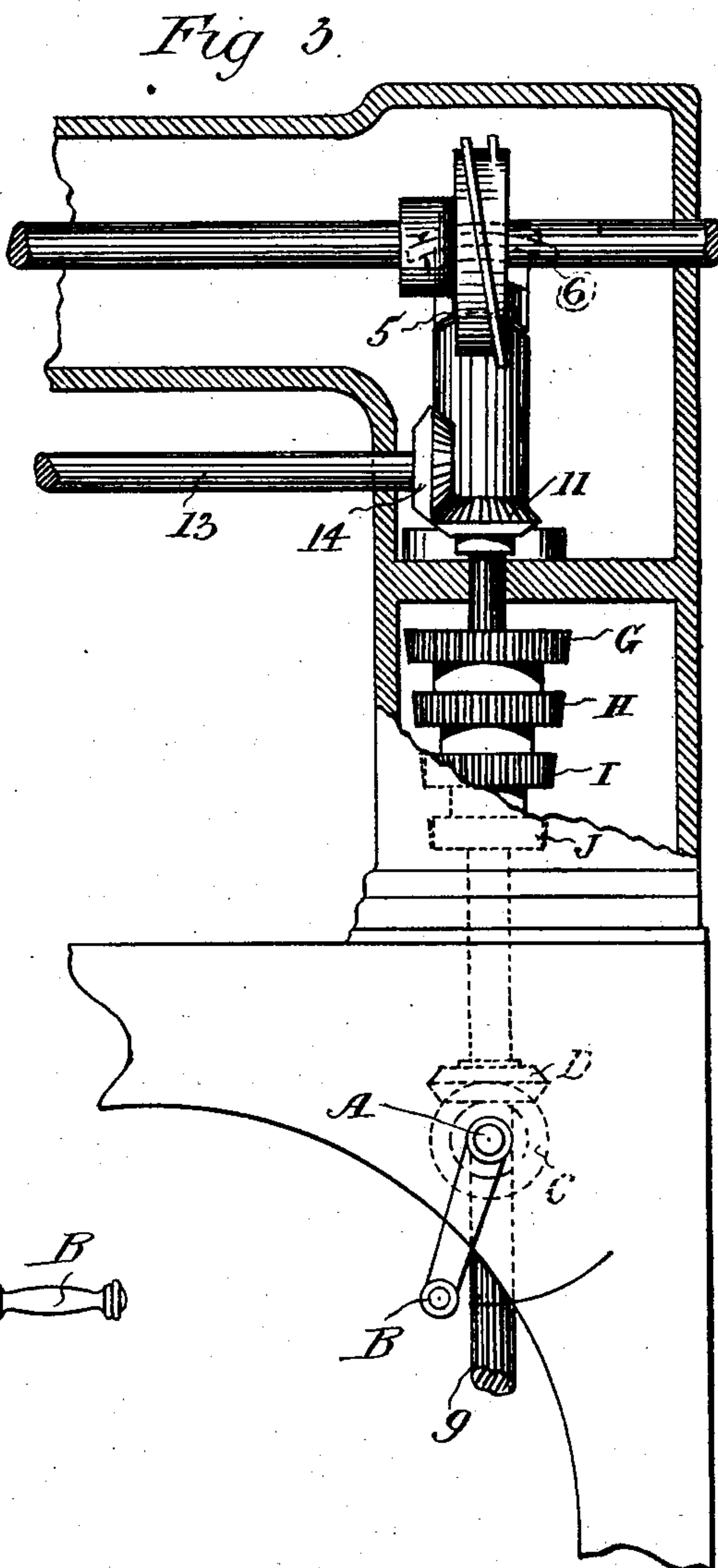
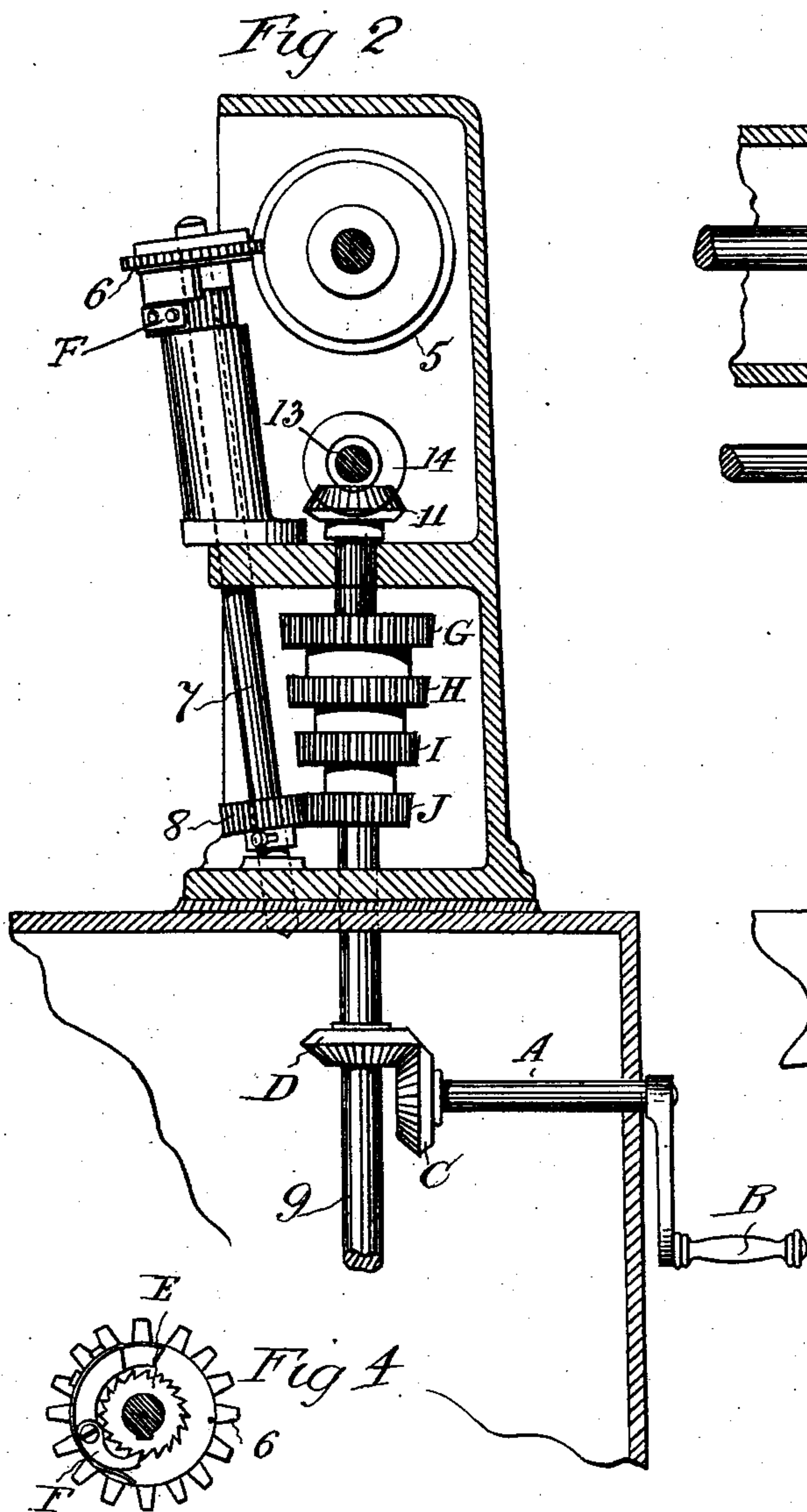
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EYELET SEWING MACHINE.

(Application filed Apr. 22, 1901.)

(No Model.)

2 Sheets—Sheet 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

WILLIAM URIE MORTON AND JAMES RAEBURN URIE MORTON, OF GLASGOW,
SCOTLAND.

EYELET-SEWING MACHINE.

SPECIFICATION forming part of Letters Patent No. 696,069, dated March 25, 1902.

Application filed April 22, 1901. Serial No. 56,943. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM URIE MORTON and JAMES RAEBURN URIE MORTON, sewing-machine manufacturers, of 11 Bothwell Circus, in the city of Glasgow, Scotland, have invented new and useful Improvements in Eyelet-Sewing Machines, of which the following is a specification.

This invention relates to improvements in sewing-machines for making eyelets, and is a further development of our prior United States patent, No. 626,815, June 13, A. D. 1899, and has for its object to so construct the machine as to make it applicable to sewing hooks and eyes of various sizes onto sails, tarpaulins, awnings, tents, wagon-covers, horse-blankets, and other covers or articles of cloth, which operation it has heretofore been found expedient to perform only by hand.

It has further for its object to enable the attendant to return the needle to the starting-point without stitching in case of the breakage of the thread or cord when the hook or eye has only been partly sewed to the cloth.

In the drawings, Figure 1 is a general view taken in perspective of parts of a machine embodying our invention. Fig. 2 is a front elevation, partly in section, drawn to an enlarged scale, of only that portion of the machine necessary to illustrate our invention. Fig. 3 is a similar area taken at an opposite plane. Fig. 4 is a bottom plan of a detail of the spur-wheel, pawl, and ratchet arrangement hereinafter more fully described. Fig. 5 is a plan of a clamp or presser-foot employed when the machine is sewing a hook onto the cloth, and Fig. 6 is a similar view of a clamp or presser-foot employed when the machine is sewing an eye corresponding to the hook to the cloth.

In carrying out our invention with reference to that part of our improvements for returning the needle to its original starting-point in case of the breakage of the thread or cord we have a rod or spindle A passing through the machine. Upon the outer end of this rod or spindle A is mounted the crank-handle B, and on the inner end a bevel or miter wheel C. This bevel or miter wheel engages with a corresponding bevel or miter wheel D, mounted upon the vertical shaft 9,

which receives its motion from the inclined vertical shaft 7 described in our said prior patent and transmits the circular motion of the needle-bar tube by means of spur-wheels and the bevel-gearing 11 14 15 17 and the shaft 13. The circular motion of the needle-bar tube 16 is to give the circular concentric lines of stitching shown in dotted lines in Figs. 5 and 6, the direction of which is indicated by the arrows. It was necessary in the event of the thread or cord breaking when only a part of the circle was completed when stitching with the machine described in our previous patent to complete the circular course of stitching, which entailed a considerable loss of time and trouble to the attendant. Under our present improvements the needle-bar tube 16 can be turned forward very quickly from any point to complete the circular course and return the needle to the point where the thread or cord has broken without causing the needle to reciprocate. This is accomplished by turning the handle B in the direction of the arrow shown in Figs. 1 and 3, which will through the shafts 9 and 13 complete the circular travel of the needle-bar tube 16 and bring the needle again to the point where the thread or cord has broken. This forward movement could not be adopted with the invention described in our patent heretofore mentioned without imparting the reciprocating or sewing movement to the needle, thereby causing delay and inconvenience. We, however, without communicating any motion to the driving-shaft accomplish this by mounting the spur-wheel 6 loosely upon the said vertical inclined shaft 7 and having a ratchet-wheel E keyed rigidly upon the said shaft 7, the teeth of the ratchet-wheel being engaged by a pawl F, which is fixed to the under side of the said spur-wheel 6. When the machine is in operation, the cam-wheel 5 imparts motion to the spur-wheel 6, which in turn imparts motion to the ratchet-wheel E through the pawl F, thereby turning the shafts 7, 9, and 13 and the needle-bar tube 16. The reciprocating or stitching movement of the needle and the means for bringing about said movement are clearly described in our previous patent. When the stitching thread or cord breaks, the operator turns the handle B

in the direction of the arrows, as heretofore stated, and the ratchet E slides under the pawl F, whereby no motion is imparted to the driving-cam 5 and the needle is brought quickly to the point desired without reciprocating.

The vertical shaft 9 is mounted with four bevel-wheels G, H, I, and J of different diameters and different number of teeth. The teeth of these spur-wheels correspond to the number of stitches necessary in sewing four different-sized hooks or eyes to the cloth. The spur-wheel 8 of the inclined vertical shaft 7 is readily adjustable and may be clamped upon the shaft 7 to engage with each of the said four spur-wheels G, H, I, and J at will of the operator.

The clamp or presser-foot 50 for holding the material in position is shaped to suit the hook, as in Fig. 5, and the eye in Fig. 6, and is provided with a jam-nut or some such suitable arrangement to adjust the level of the presser-foot on the cloth. The clamp or presser-foot is also provided with a central slot formed in the direction of its length, whereby it can be moved backward or forward in order that the needle may be brought over the center of the respective eye being sewed.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a sewing-machine, the combination of stitch-forming mechanism, comprising a needle-bar tube and a needle set eccentrically therein, with means for rotating said tube, comprising a driving-cam, the shaft 7 adapted to be driven by said cam, suitable connection between said tube and shaft, and a second device for rotating said tube and shaft, and means carried by said shaft, whereby said tube may be rotated by said second device without imparting motion to said driving-cam.

2. In a sewing-machine, the combination of stitch-forming mechanism, comprising a needle-bar tube and a needle set eccentrically therein, with means for rotating said tube, comprising a driving-cam, the shaft 7, suitable connection between said tube and shaft, a spur-wheel mounted loosely upon said shaft, and adapted to be driven by said cam, a pawl carried by said spur-wheel, a ratchet rigidly mounted on said shaft, said pawl engaging said ratchet, whereby rotation is imparted to said shaft, and a second device for rotating said tube and shaft, said pawl-and-ratchet mechanism permitting rotation of said shaft by said second device without motion being imparted to said driving-cam.

3. In a sewing-machine, the combination of

stitch-forming mechanism, comprising a needle-bar tube and a needle set eccentrically therein, with means for rotating said tube, comprising a driving-cam, the shaft 7 adapted to be driven by said cam, the shafts 9 and 13 connecting said tube and shaft 7, of a second device for rotating said tube, comprising a crank-handle and suitable bevel-gearing connecting said handle with the shaft 9, and means carried by the shaft 7, whereby said tube may be rotated by said crank-handle without imparting motion to the driving-cam.

4. In a sewing-machine, the combination of stitch-forming mechanism, comprising a needle-bar tube and a needle set eccentrically therein, with means for rotating said tube, comprising a driving-cam, the shaft 7, the shafts 9 and 13, connecting said tube and shaft 7, a spur-wheel mounted loosely upon the shaft 7 and driven by said cam, a pawl carried by said spur-wheel, a ratchet rigidly mounted on the shaft 7, said pawl engaging said ratchet to rotate the shaft 7, and a crank-handle and suitable bevel-gearing adapted also to rotate the tube, said pawl-and-ratchet mechanism permitting rotation of the tube by said crank-handle without imparting motion to said driving-cam.

5. In a sewing-machine, the combination of stitch-forming mechanism, comprising a needle-bar tube and a needle set eccentrically therein, with means for rotating said tube, comprising a driving-cam, the shaft 7 and the shafts 9 and 13, a series of bevel-wheels of different diameter carried by the shaft 9, and an adjustable bevel-wheel carried by the shaft 7 and engaging any one of said series of bevel-wheels, whereby the number of stitches to a rotation of the needle-bar tube may be varied at will, a spur-wheel loosely mounted at the upper end of the shaft 7, said driving-cam engaging said spur-wheel, a pawl carried by said spur-wheel, a ratchet rigidly secured on the shaft 7, said pawl engaging said ratchet, of a second device for rotating said needle-bar tube, comprising a crank-handle and suitable bevel-gear connecting said handle and the shaft 9, said pawl and ratchet permitting the rotation of the needle-bar tube by said second device without imparting motion to the driving-cam.

In testimony whereof we affix our signatures in presence of two witnesses.

WM. URIE MORTON.

JAMES RAEBURN URIE MORTON.

Witnesses:

JOHN LIDDLE,

JOSEPH HENRY PEARSON.