

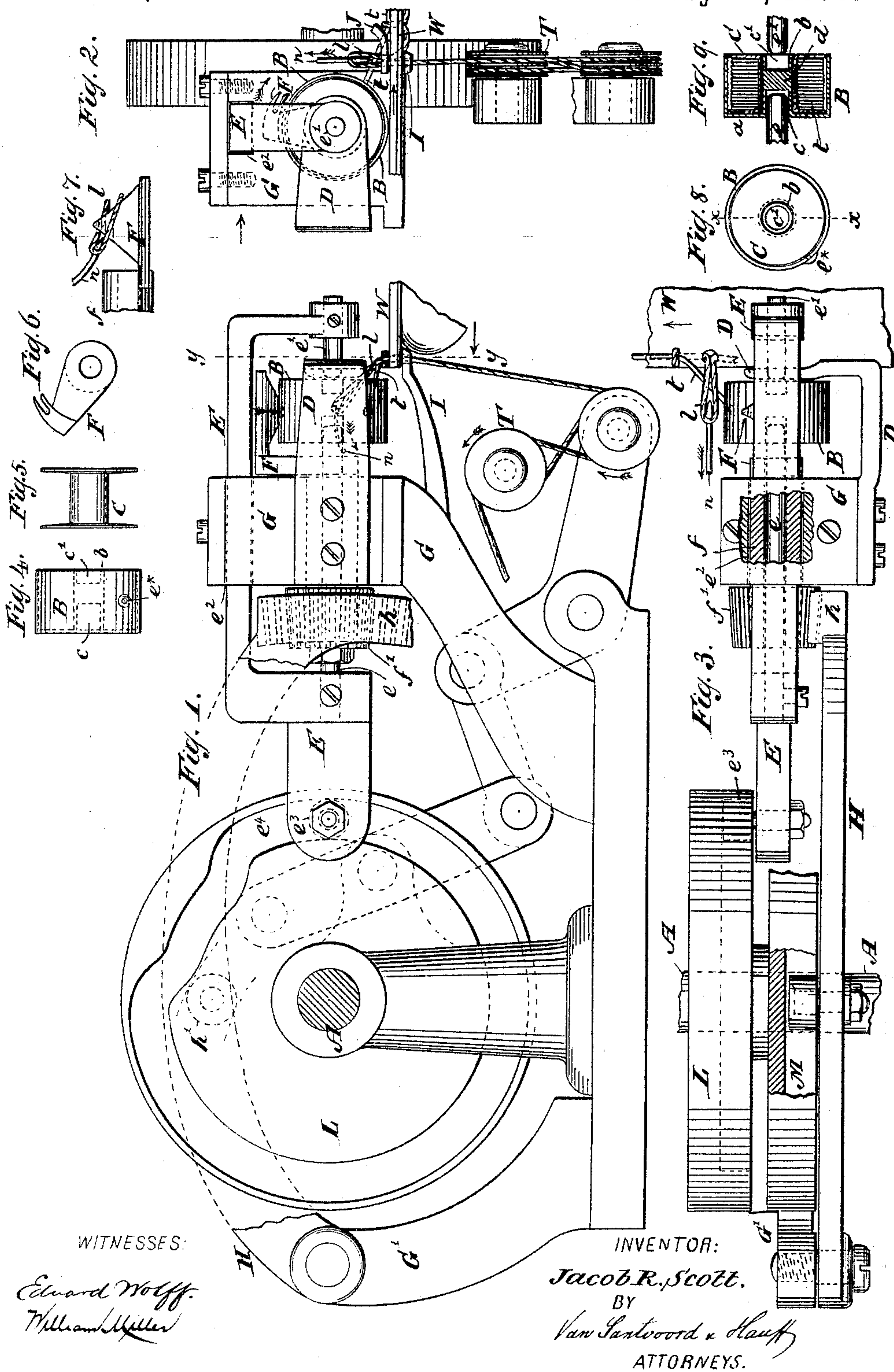
(No Model.)

2 Sheets—Sheet 1.

J. R. SCOTT.
SEWING MACHINE.

No. 497,690.

Patented May 16, 1893.



WITNESSES:

Edward Wolff.
William Miller

INVENTOR:

Jacob R. Scott.

BY

Van Santvoord & Hauck
ATTORNEYS.

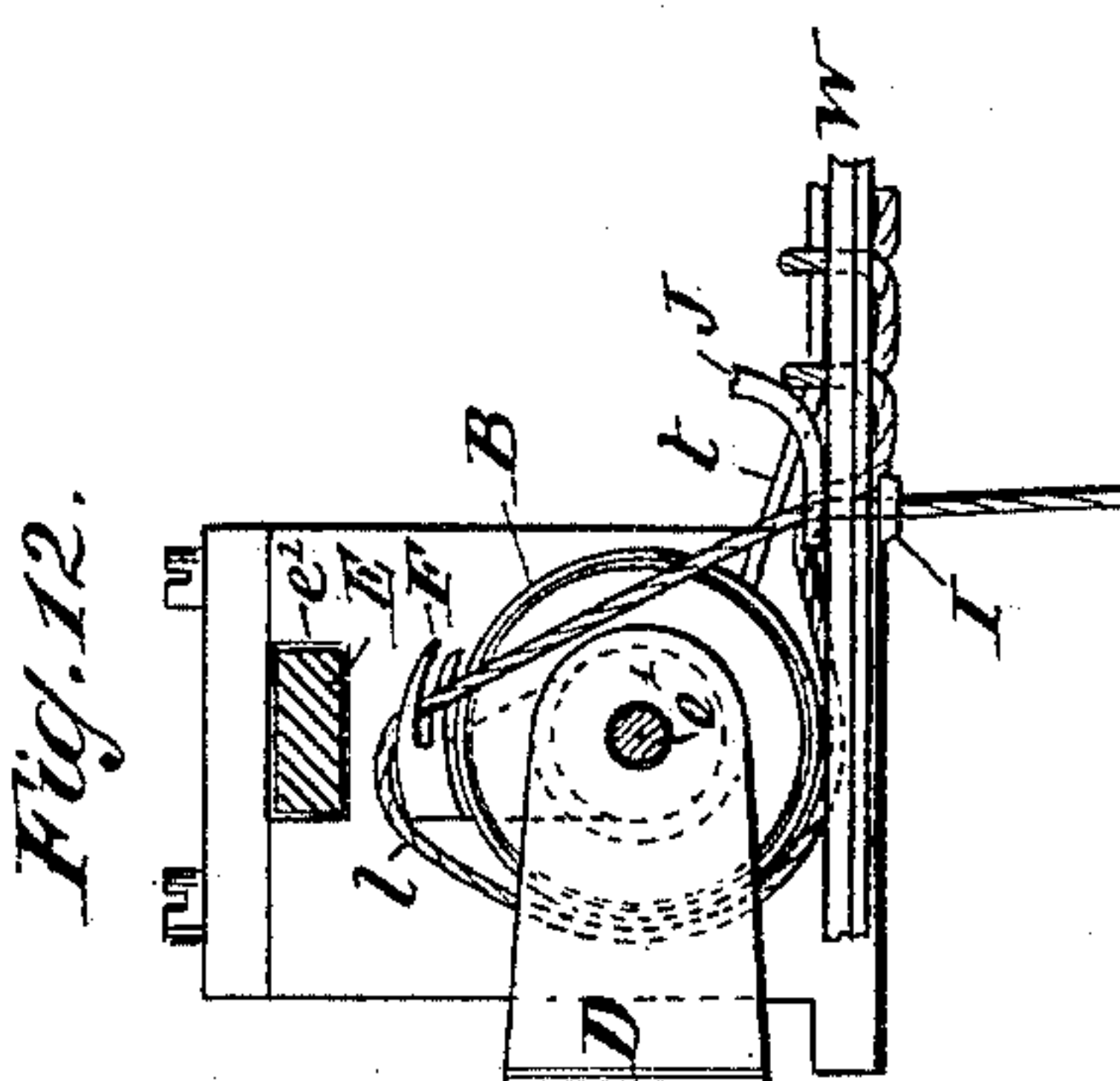
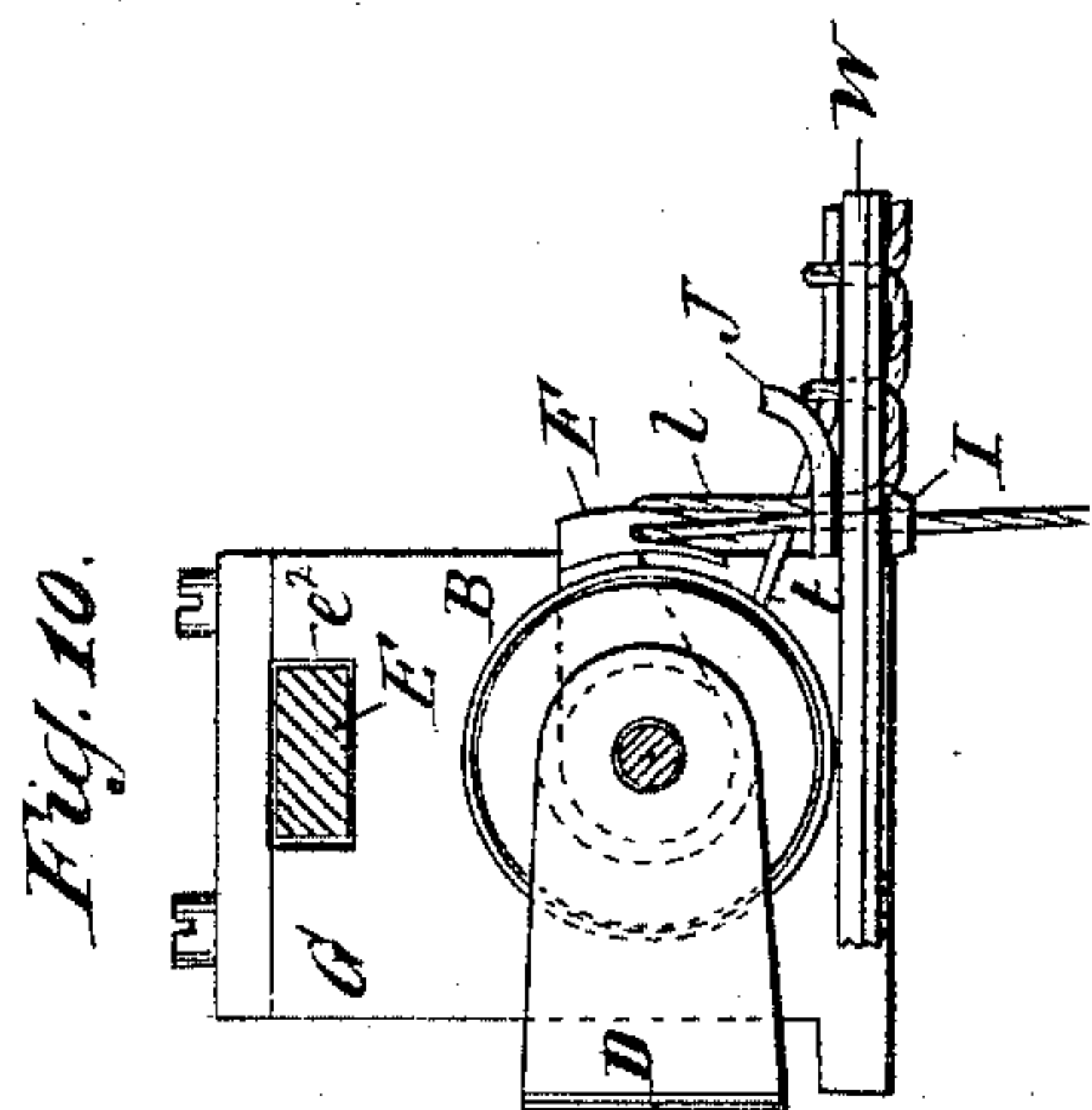
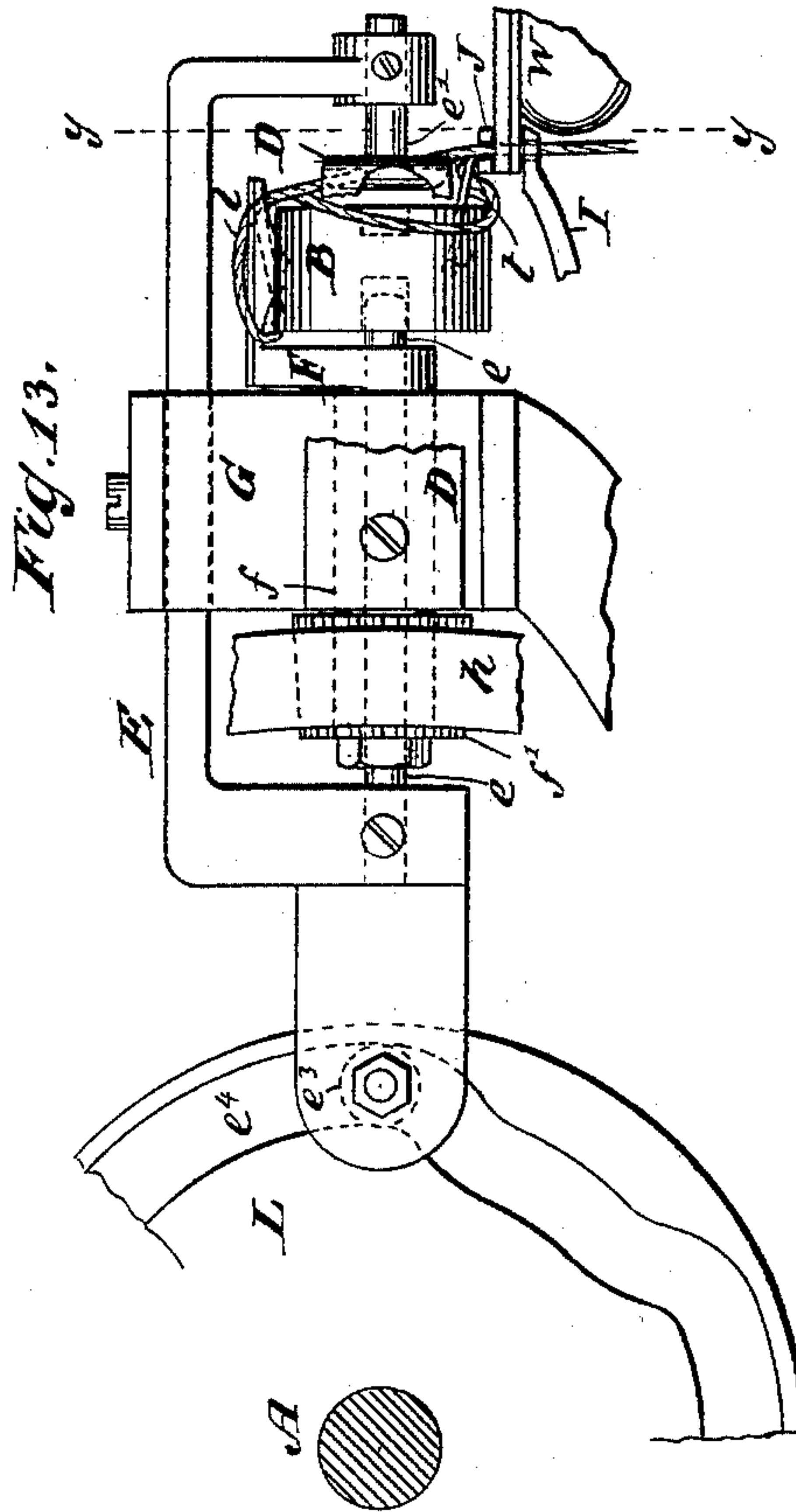
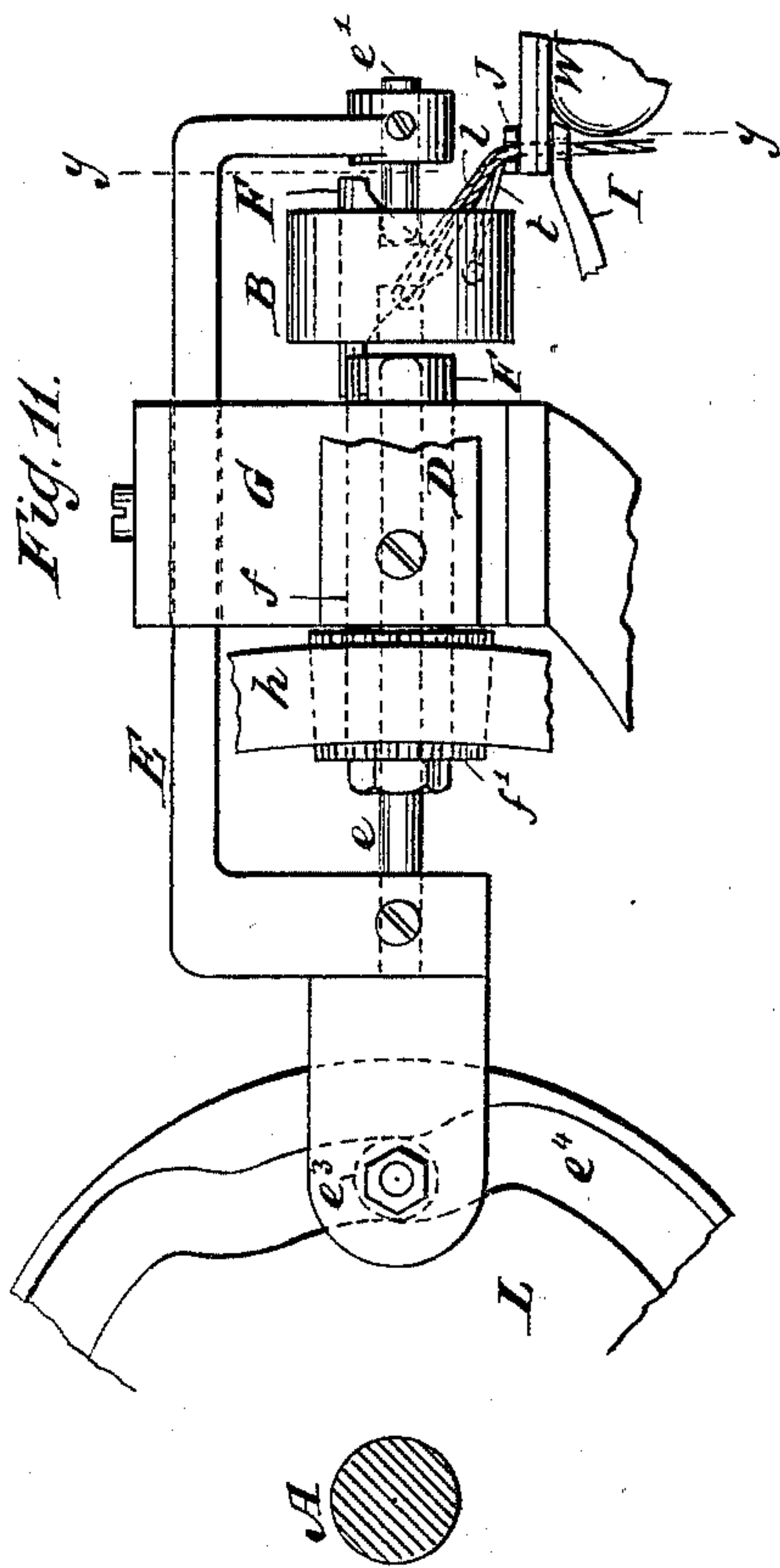
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UNITED STATES PATENT OFFICE.

JACOB R. SCOTT, OF NEW YORK, N. Y.

SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 497,690, dated May 16, 1893.

Application filed November 25, 1892. Serial No. 453,095. (No model.)

To all whom it may concern:

Be it known that I, JACOB R. SCOTT, a citizen of the United States, residing at New York, in the county and State of New York, have invented new and useful Improvements in Sewing-Machines, of which the following is a specification.

This invention relates to certain improvements in sewing machines as pointed out in the following specification and claims and illustrated in the accompanying drawings in which—

Figure 1, represents a side elevation partly in section. Fig. 2, is a front elevation. Fig. 3, is a plan or top view. Fig. 4, is a side elevation of the bobbin holder detached. Fig. 5, is a side elevation of the bobbin detached. Fig. 6, is a face view of the loop carrier detached. Fig. 7, is a plan or top view of the loop carrier showing the same as it begins to enter the loop of the needle thread. Fig. 8, is a front view of the bobbin holder and the bobbin. Fig. 9, is a vertical section in the plane xx Fig. 8. Fig. 10, is a transverse vertical section in the plane yy Figs. 1, 11 and 13, the position of the stitch forming devices being that which they occupy in Fig. 11. Fig. 11, is a side elevation showing the stitch forming devices in the position which they occupy in Fig. 10. Fig. 12, is a transverse vertical section in the plane yy Figs. 1, 11 and 13, the position of the stitch forming devices being that which they occupy in Fig. 13. Fig. 13, is a side elevation showing the stitch forming devices in the position which they occupy in Fig. 12.

My invention relates particularly to the construction and operation of the bobbin holder and of the loop carrier which serves to spread the loop of the sewing thread and to pass the same over the bobbin holder, said bobbin holder being provided with sockets in its opposite ends and supported by two pins which alternately engage the sockets but one of which is out of engagement with its socket while the other is in engagement and vice versa so that the loop of the sewing thread can be passed over one end of the bobbin holder while the pin on that end is out of engagement with its socket and then the

pins are changed so that the loop can pass over the opposite end of the bobbin holder and embrace the bobbin thread when the slack of the sewing thread is taken up by the take-up mechanism.

My invention can be applied to different kinds of lockstitch sewing machines but in the example illustrated by the drawings I have shown parts of a waxthread sewing machine of the class described in Letters Patent No. 366,935, granted to Christian Dancel, July 19, 1887, in order to explain the movements of the various parts requisite for the formation of a stitch.

In the drawings the letter A designates the main shaft to which a revolving motion is imparted by any suitable means.

B is the bobbin holder which is constructed of a cylindrical case closed at one end by a head a and open at the opposite end (best seen in Figs. 4 and 9). From the head a extends a hub b which is located in the center of the cylindrical case and terminates in a plane passing through the edge of the open end of said case. This hub is provided with sockets c c' the inner ends of which are separated from each other by a partition d .

The bobbin or spool C (Figs. 5 and 9) is bored out to fit the hub b of the bobbin holder and in the cylindrical jacket of the bobbin holder is made an opening or eye e^* through which the bobbin thread t passes as indicated in Figs. 1, 2, 3, and others. A bracket D which is secured to the standard G forming part of the frame of the machine (best seen in Figs. 1 and 3) serves to retain the bobbin in the bobbin holder. This bobbin holder is supported in the machine by two pins e e' which are secured in a yoke E in such a position that either of said pins can be thrown in engagement with one of the sockets c or c' in the bobbin holder and that if the pin e is thrown in engagement with the socket c , the pin e' is out of engagement with the socket c' and vice versa.

The yoke E is guided in a groove e^2 in the top of the standard G (Figs. 10 and 12) and in its tail is secured a roller stud e^3 which engages a cam groove e^4 formed in the hub L mounted on the main shaft A. The pin e ex-

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tends through a tubular shaft *f* which has its bearing in the standard *G* and on the outer end of which is mounted the loop carrier *F* while on its inner end is mounted a pinion *f'* which engages a toothed segment *h* formed on the inner end of a lever *H*. The outer end of this lever is pivoted to a standard *G'* which forms part of the main frame and on said lever is secured a roller stud *h'* which engages a cam groove in the hub *M* mounted on the main shaft *A* (see Figs. 1 and 3). As the main shaft revolves an oscillating motion is imparted to the lever *H* and by the co-operation of the toothed segment *h* and the pinion *f'* a reciprocating rotary motion is imparted to the loop carrier.

I is the work support.

J is the presser foot and *n* is the needle which is situated above the work support and passes down through the work *W* and after having received the sewing thread, draws the same up through the work so as to form the loop *l*.

At the moment when the needle has reached the position shown in Figs. 1, 2, and 3, the loop carrier is moved in the direction of the arrow shown near it in Fig. 2 so that it enters the loop *l* (see Figs. 10 and 11) while the needle moves out of the way of the loop carrier. During the time the loop carrier completes part of this movement, the position of the yoke *E* is changed so that the pin *e'* enters the socket *c'* of the bobbin holder *B* and the pin *e* is withdrawn from its socket (see Fig. 11) and as the motion of the loop carrier continues that portion of the loop *l* which connects with the take up mechanism *T* is drawn up over the inner end of the bobbin holder. At the moment the thread has passed the socket *c* in the inner end of the bobbin holder, the position of the yoke *E* is changed (see Figs. 12 and 13) the pin *e* enters the socket *c* and the pin *e'* is withdrawn from the socket *c'* and then the loop carrier *F* is withdrawn from the loop and returned to its original position, while by the action of the take-up mechanism, the loop *l* is drawn down over the outer end of the bobbin holder and made to embrace the bobbin thread. All these movements take place, while the hub which contains the cam groove *e⁴* turns from the position shown in Fig. 1 to that shown in Fig. 13 and the hub which engages the roller stud *h'* on the lever *H* must be formed so that during the above named movement of the hub containing the cam groove *e⁴* the toothed segment *h* causes the pinion *f'* to make a complete revolution in one direction and then a complete revolution in the opposite direction.

After the loop of the sewing thread has been carried over the bobbin holder and drawn up tight in the work *W* the feed motion takes place and the bobbin holder is drawn up against the bracket *D*. In order to allow the loop of the sewing thread to pass through

freely between the outer end of the bobbin holder and said bracket the partition *d* is left between the sockets *c* *c'* and the pin *e'* of the yoke *E* is adjusted in such a position, that when the yoke is moved into the position shown in Fig. 11, the tip of said pin strikes the partition *d* and pushes the bobbin holder inward so as to leave an open space between the same and the bracket *D*. This bracket also serves to retain the bobbin holder in position against the strain of the bobbin thread so that when the pin *e* of the yoke enters the socket *c* of the bobbin holder, the latter is not liable to be thrown forward upon the pin *e'*.

In the example represented by the drawings the movements of the yoke *E* and of the loop carrier *F* are completed during one-twelfth of the revolution of the shaft *A*, but if desired a continuous rotary motion can be imparted to the loop carrier and if the loop carrier makes twelve revolutions for each revolution of the main shaft *A*, it will carry the loop of the sewing thread over the bobbin holder during one of these revolutions and perform no work during the remaining eleven revolutions.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination with a needle, and a loop-carrier, of a bobbin-holder provided with sockets in its opposite ends, two pins extending in opposite directions and movable back and forth for alternately engaging said sockets, and means for moving the pins in opposite directions, substantially as described.

2. A bobbin holder for a sewing machine, consisting of a cylindrical case having a central bobbin or spool-carrying hub *b* to enter a center orifice in the bobbin or spool and provided with a partition *d* which divides said hub into two separate sockets *c* and *c'* extending in line with the axis of the hub, substantially as described.

3. The stitch forming mechanism of a sewing machine, comprising a bobbin holder provided with sockets in its opposite ends, a yoke provided with pins projecting therefrom in opposite directions for engaging, one at a time, the sockets of the bobbin holder, a loop-carrier, and means for reciprocating the yoke and operating the loop-carrier, substantially as described.

4. The combination with a needle, of a bobbin holder *B* provided with sockets in its opposite ends, a standard *G*, a yoke *E* guided in the standard, a tubular shaft *f* mounted in the standard, a loop-carrier mounted on the tubular shaft, a pin *e* carried by the yoke and extending through the tubular shaft, a pin *e'* extending from the yoke, and means for reciprocating the yoke and rotating the tubular shaft, substantially as described.

5. The combination with a needle, and a loop-carrier, of a bobbin-holder provided with sockets in its opposite ends, a reciprocating

5 yoke provided with pins projecting therefrom in opposite directions for engaging, one at a time, the sockets of the bobbin-holder, a bracket for retaining the bobbin-holder in position against the strain of the bobbin thread, and means for operating the loop-carrier and reciprocating the yoke, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JACOB R. SCOTT.

Witnesses:

WM. C. HAUFF,
E. F. KASTENHUBER.