

(No Model.)

3 Sheets—Sheet 1.

F. EGGE.

OVERSEAMING MACHINE.

No. 324,672.

Patented Aug. 18, 1885.

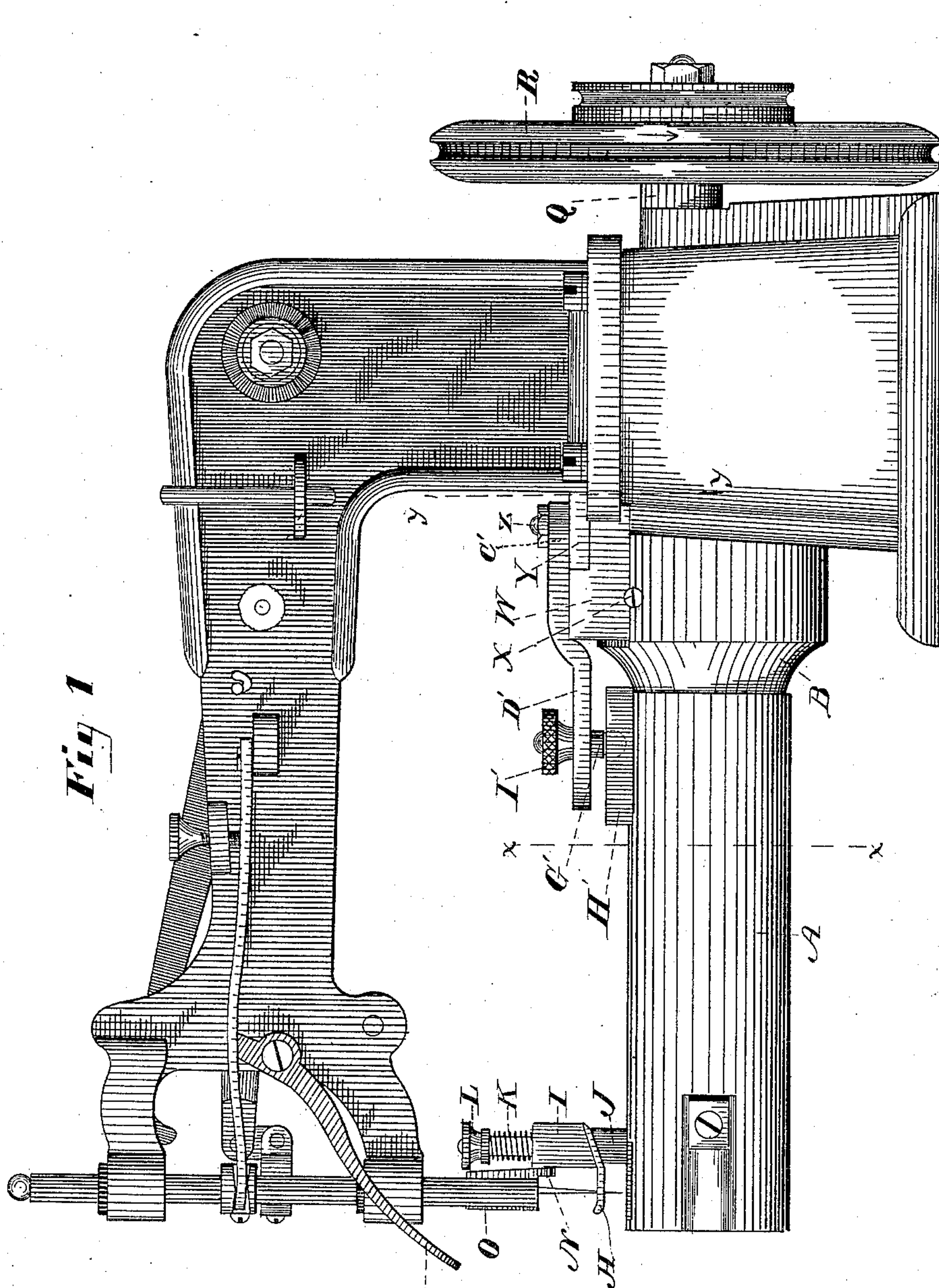


Fig. 1

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Inventor:
Frederick Egge
By: Smith & Hubbard
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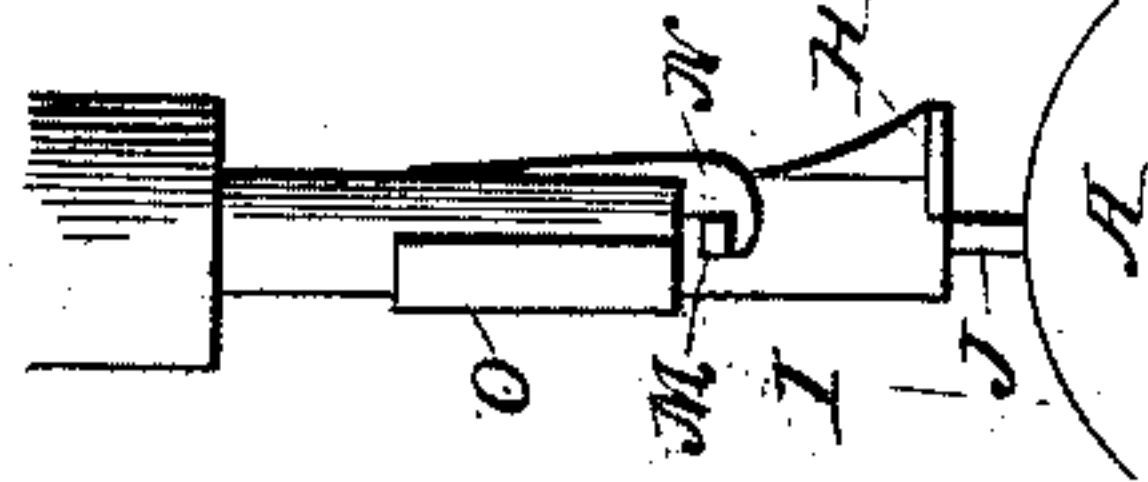


Fig. 9

(No Model.)

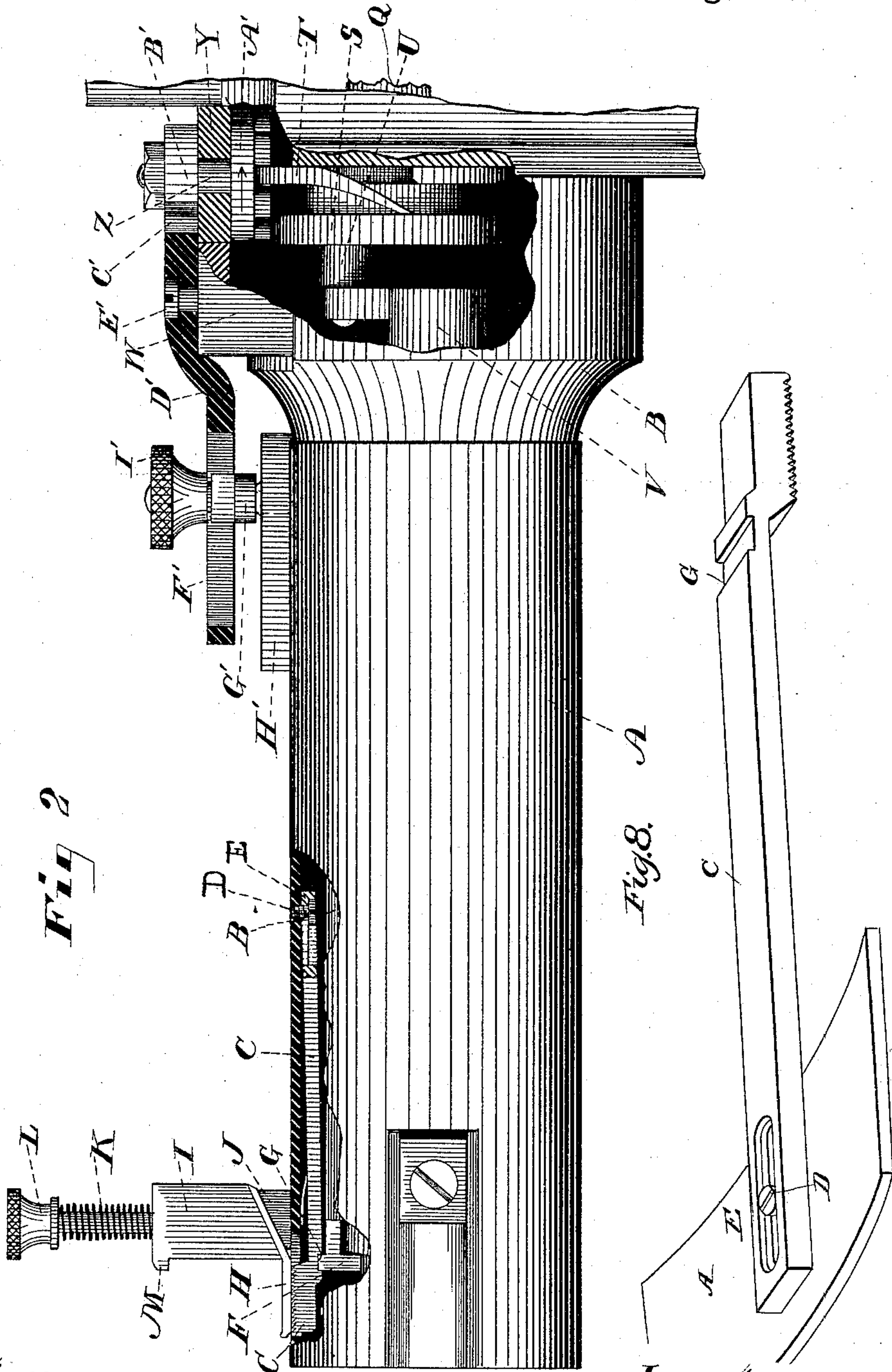
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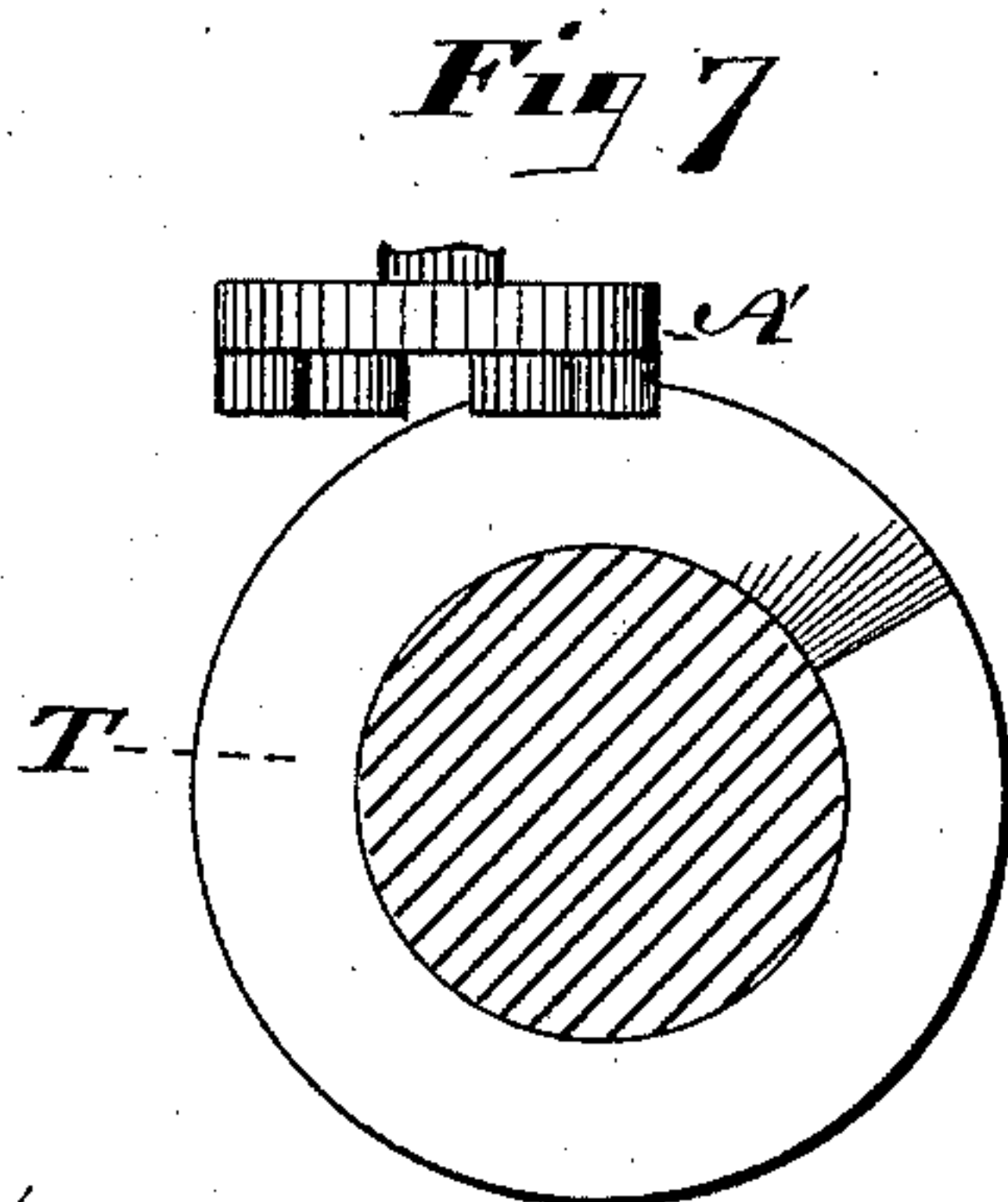
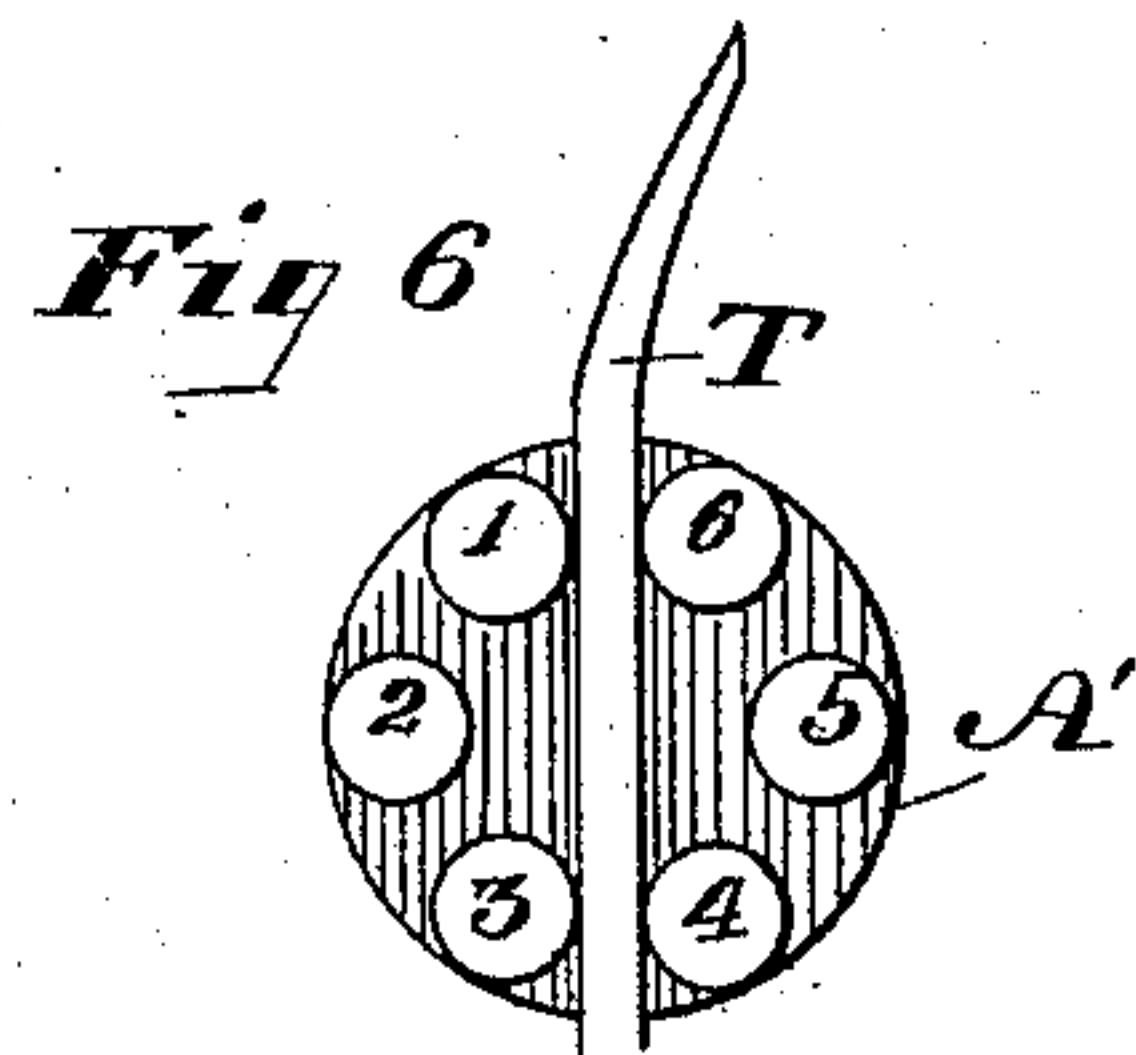
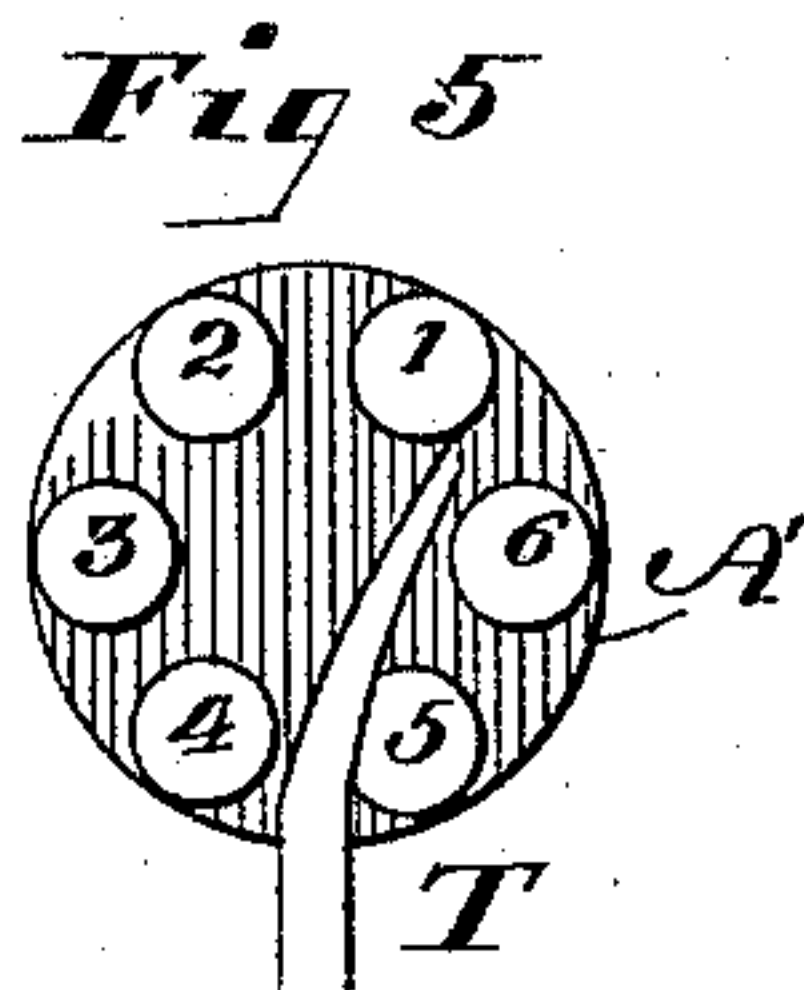
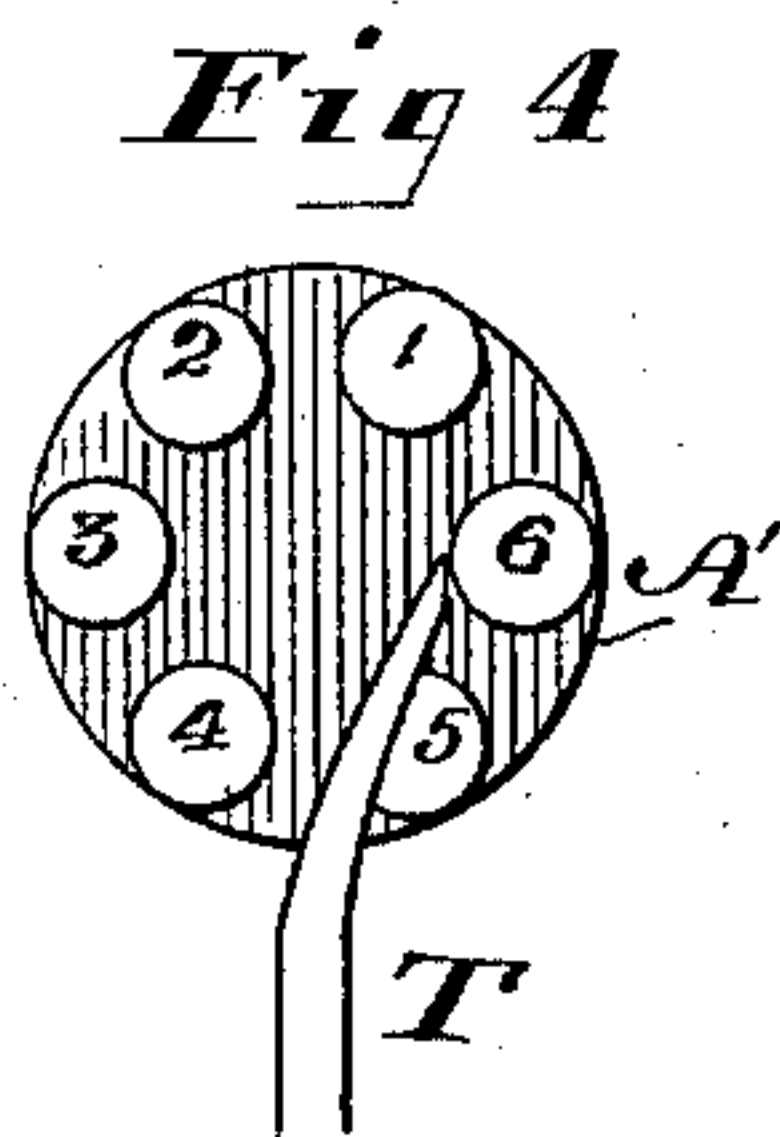
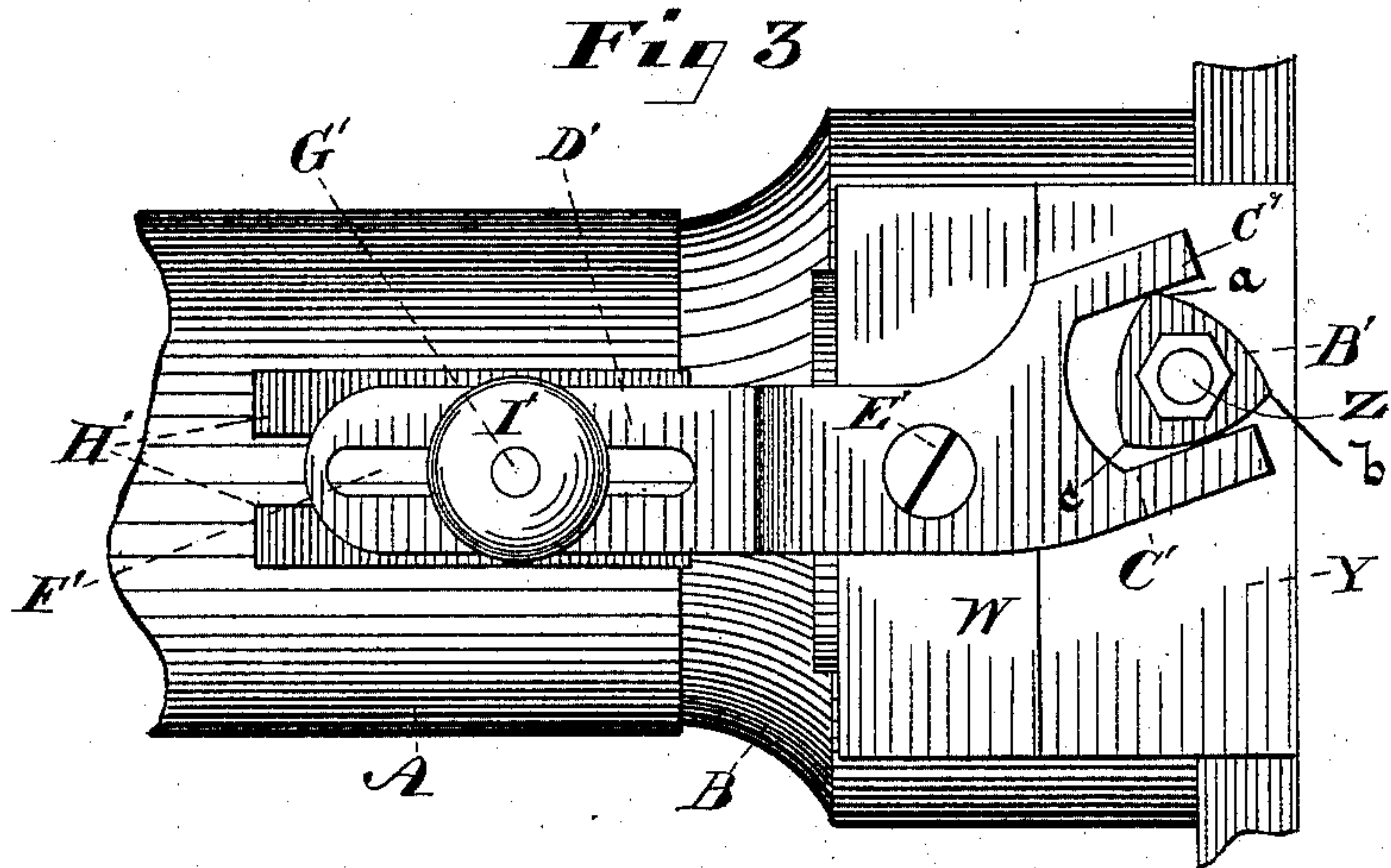
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UNITED STATES PATENT OFFICE.

FREDERICK EGGE, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR TO THE SMITH & EGGE MANUFACTURING COMPANY, OF SAME PLACE.

OVERSEAMING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 324,672, dated August 18, 1885.

Application filed December 31, 1883. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK EGGE, a citizen of the United States, residing at Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Overseaming - Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to certain novel and useful improvements in overseaming - machines, and has for its object to provide a device whereby the edges of cloth fabric, leather, &c., may be overseamed or overcast, thus doing away entirely with the tedious process of hand sewing or the knitting or weaving together of the fabric; and with these ends in view my invention consists in oscillating the fabric or other material underneath the point of the needle and feeding the said fabric, &c., forward by the continuous action of the feed-dog; and, further, in the details of construction and combination of elements hereinafter fully and in detail explained, and then specifically designated by the claims.

In order that those skilled in the art to which my invention appertains may more fully understand the same, I will proceed to describe its construction and operation, referring by letters to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side elevation of an ordinary Wheeler & Wilson cylinder sewing-machine with my improvement in operative position thereon; Fig. 2, a detail view illustrating the cylinder and sleeve partially broken away and sectioned, and showing the switch-track operating on the toothed wheel and the vibrating lever pivoted in position, and also showing the feed mechanism; Fig. 3, a detail plan view taken between the lines *xx* and *yy* of Fig. 1; Figs. 4, 5, and 6, developments illustrating the operation of the switch-track on the toothed wheel; and Fig. 7, a detail side elevation of the switch-track and toothed wheel, showing their relative position after the switch has operated on a tooth. Fig. 8 is a perspective view of the feed-dog and a portion of the cylinder inverted. Fig. 9 is a detail showing the

hook on the needle-bar operating to lift the presser-foot.

Similar letters denote like parts in the several figures of the drawings.

It is a well-known and distinctive feature of cylinder sewing-machines of the style shown that a variable motion is imparted to the shaft, which extends throughout the cylinder, by means of a crank-pin connection with the shaft of the driving-wheel; also, the feed dog in machines of this class has been operated by a cam with two acting surfaces—namely, peripheral and face; and as I have shown my improvement attached to a machine embodying these features it is not deemed necessary therefore to enter into any detailed description of the principles of construction and operation of a cylinder machine.

A is a sleeve which is placed over the cylinder B. C is the feed-dog attached within the sleeve, as shown at Fig. 2, by means of a pin or screw, D, which passes through an elongated slot, E, and is headed at the bottom, thus permitting said dog to have a longitudinal movement, as will be hereinafter explained.

F is a lower projection of the feed-dog in ordinary cylinder machines, and upon which the double-acting cam, hereinbefore mentioned, acts to operate said dog. This projection is in my improvement, however, made separate from the dog, but rests within a recess of the latter, as clearly shown at G, Fig. 2, in order that the dog may oscillate freely with the sleeve and at the same time be operated by the independent movement of the projection F.

H is the presser-foot, the shank I of which is hollow and is placed over a post, J, secured to the sleeve in an ordinary manner. This presser-foot is operated in a vertical plane against the action of the coil-spring K, the tension of which is regulated by the nut L, as will be readily understood.

M is a lug projecting laterally from the shank of the presser-foot, and N a hook attached to the presser-bar O and extending therefrom in such manner as to engage with the side lug, and by means of which the presser-foot may be lifted from the fabric when the presser-bar is raised by the action

of the ordinary lever, P. The object of making the presser foot and bar in two separate pieces is to allow the foot to oscillate readily with the sleeve and at the same time maintain a firm pressure on the goods.

Rigidly secured on the inner end of the shaft Q of the driving-wheel R are a disk, S, and a switch-track, T, which I preferably form from the same stock.

To the disk is secured the crank-pin U, by means of which the variable motion is communicated to the cylinder-shaft V. The upper rear portion of the cylinder, immediately over the disk and track, is cut away and a cap, W, placed over the same. I preferably slide this cap into position within dovetailed bearings in the cylinder, and secure it by means of a screw, X.

Y is a plate through which runs a short shaft, Z, having rigidly secured on its lower extremity a wheel, A', provided with downwardly-projecting teeth 1 2 3 4 5 6, and on its upper portion a wiper-wheel, B', all of which will be readily understood by reference to Figs. 2, 3, and 4. This plate Y is screwed on and forms a part of the cap W, and the wheel A' is thus brought immediately over the switch-track T, so that said track will operate on the teeth in the manner presently explained.

The driving-wheel R revolves in the direction indicated by the arrow in Fig. 1, and the switch-track will accordingly move in the same direction. The deflector end of the track will take the direction indicated at Fig. 5 until it strikes the tooth 1, as shown at Fig. 6, when, by the continued revolution of the track, the wheel A' will be caused to turn until the straight portion of the track has reached the space between teeth 1 and 6, as shown at Fig. 7, when the wheel will remain stationary until the deflected portion again comes around and operates in the same manner upon the next preceding tooth, 6, and so on. At each revolution, therefore, of the driving-wheel the wheel A' will be turned one tooth, or, in other words, since there are six teeth in all, one-sixth of a complete revolution.

The wiper-wheel B' is constructed with three cams, *a b c*, which operate within and upon a fork, C', at the rear end of the lever D'. This lever is pivoted by a screw, E', to the cap W in such manner as to permit of a free oscillation in a horizontal plane. The forward portion of the lever is slotted longitudinally, as seen at F', and within this slot is a pin, G', which extends downward between two shoulders or guideways, H', (see Figs. 2 and 3,) secured to the sleeve A. I' is a thumb-nut, which travels on the upper part of this pin, and by means of which the latter may be secured at any point within the slot, thereby increasing or decreasing the distance between the pivotal or fulcrum point E' and the point at which motion from the lever is communicated to the sleeve, whereby a greater or less oscillation is imparted to said sleeve, as will of course be readily understood.

Oscillation is given to the lever by the action of the wiper-wheel within the fork C', as follows: At each action of the switch-track on the teeth of the wheel A' the wiper-wheel will be turned one-sixth of an entire revolution, and the three cams *a b c* will each be brought into position to operate on said fork twice during each completed revolution, since the number of said cams is only one-half that of the teeth, and both wheels A' and B' complete a revolution in precisely the same time, so that it will be readily understood that the oscillation of the sleeve and the action of the switch-track and toothed wheel are such that there is a complete reciprocation of the sleeve at every one-third revolution of the wiper-wheel.

The operation of my improvement in overseaming fabrics, &c., is as follows: The goods are supported upon the sleeve, and the front ends of the meeting edges secured underneath the presser-foot. As the sleeve oscillates, first one edge of the goods will be brought underneath the needle and then the other, and the feed-dog will at the withdrawal of the needle from the goods feed the latter forward in the usual manner, and this operation continues until the meeting edges are overseamed and united throughout their entire length.

The stitch may be lengthened or shortened and the needle be made to penetrate the goods at a greater or less distance from the edges by running the pin G' outward or inward, thereby increasing or decreasing the oscillation of the sleeve, as hereinbefore set forth.

By making the feed-dog in two pieces and allowing the upper portion to oscillate with the sleeve, as described, the action of the said dog is properly timed with respect to the movement of the needle.

I do not wish to limit myself to the exact number of teeth in the wheel and the number of operating-cams on the wiper-wheel, as I am enabled to produce the same results with equal facility by using any even number of teeth and so constructing the cam and lever that the timing of the oscillation of the latter will harmonize with the time of the movements of the toothed wheel.

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

1. In combination with a vertically-reciprocating needle of a cylinder sewing-machine, a sleeve placed over the cylinder and capable of being oscillated and of supporting the goods, whereby the needle is caused to penetrate first within one and then within the other of the meeting edges of the goods, substantially as set forth.

2. In a machine for overseaming the meeting edges of fabrics, an oscillating sleeve, in combination with the presser-foot acting as a clamping device, and the feed-dog constructed as described, and the vertically-reciprocating needle, substantially as set forth.

3. The combination of the cylinder, the sleeve placed over the cylinder, pivoted lever

adjustably connected to said sleeve, and capable of being oscillated, substantially as described.

4. In a machine for overseaming the meeting edges of fabrics, the support for the goods capable of being oscillated around its axis underneath the vertically-reciprocating needle, substantially as set forth.

5. The pivoted lever adapted to be oscillated from its rear extremity, and with its forward end slotted longitudinally, in combination with the sleeve adapted to be oscillated and provided with guideways, and the pin passed between said guideways through the slotted portion of the lever, and adapted to be secured at various distances from the pivotal point of the latter, whereby the throw of the oscillation of the sleeve is increased or decreased, substantially as set forth and described.

6. In combination with the pivoted lever connected to the sleeve, as described, and having its rear end forked, the wiper-wheel arranged within said fork, wheel mounted on the same short shaft with the wiper and having depending from its lower face teeth, and the switch-track mounted on a revolving shaft and adapted to operate on said teeth and turn the wheel intermittently, substantially as shown and specified.

7. The feed-dog constructed in two pieces, the upper portion being connected to the sleeve, so as to have a movement longitudinal thereof, the lower portion fitting within a recess in the upper and adapted to be thrown upward and forward by a double-acting cam secured on the driving-shaft, whereby the upper portion is free to oscillate with the sleeve and at the same time is adapted to feed the goods forward, substantially as set forth and described.

8. In an overseaming-machine, the presser-foot proper secured on the sleeve capable of being oscillated, in combination with the presser-bar having a hook projection adapted to extend underneath a lug or shoulder on said

foot, and a lever connected to said bar and adapted to raise or lower the same, substantially as shown and described.

9. In an overseaming-machine, the presser-foot proper secured on the sleeve capable of being oscillated, in combination with the presser-bar having a hook projection adapted to extend underneath a lug or shoulder on said foot, a lever connected to said bar and adapted to raise and lower the same, feed-dog constructed in two pieces, the upper portion being connected to the sleeve, so as to have a movement longitudinal thereof, the lower portion fitting within a recess in the upper and adapted to be thrown upward and forward by a double-acting cam secured on the driving-shaft, the sleeve, pivoted lever adjustably connected to said sleeve and having its rear end forked, wiper-wheel arranged within said fork, toothed wheel mounted on the same short shaft with the wiper, and switch-track adapted to engage with said toothed wheel and mounted on the driving-shaft, substantially as shown and specified.

10. The wiper and toothed wheels secured on the extremities of the same short shaft, in combination with the switch-track mounted on the driving-shaft, pivoted lever, and sleeve capable of being oscillated, substantially as set forth.

11. In an overseaming-machine, the combination, with a vertically-reciprocating needle, of the sleeve placed over the cylinder and capable of oscillation, pivoted lever one end of which is adjustably connected to said sleeve, the other end being recessed and containing an intermittently-revolving wiper-wheel, feeding devices, and means for clamping the goods on said sleeve, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

FREDERICK EGGE.

Witnesses:

S. S. WILLIAMSON,
WILLIAM T. HAVILAND.