

(No Model.)

3 Sheets—Sheet 1.

F. H. CHILTON.

EMBROIDERING ATTACHMENT FOR SEWING MACHINES.

No. 318,449.

Patented May 26, 1885.

Fig. 1.

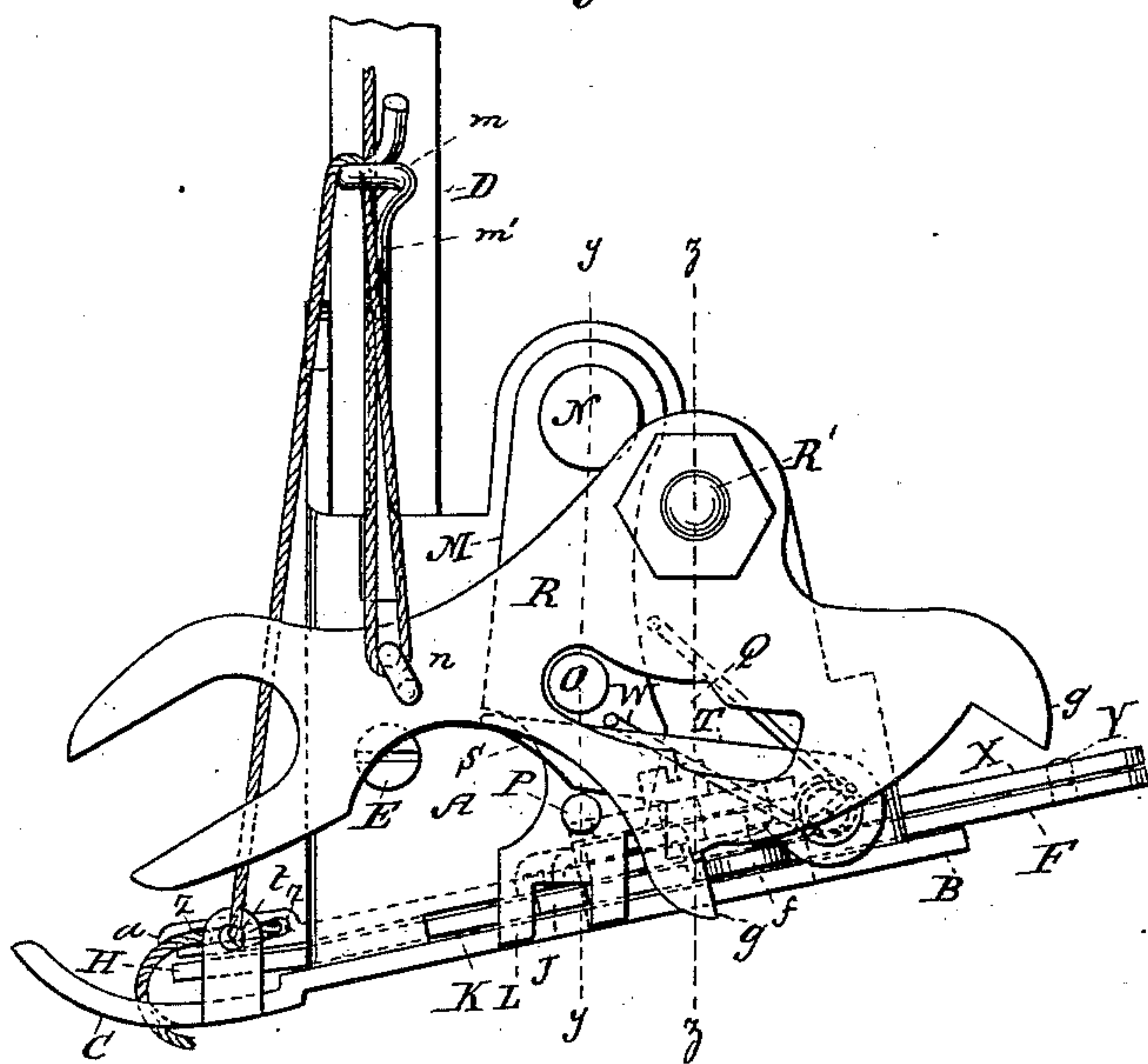
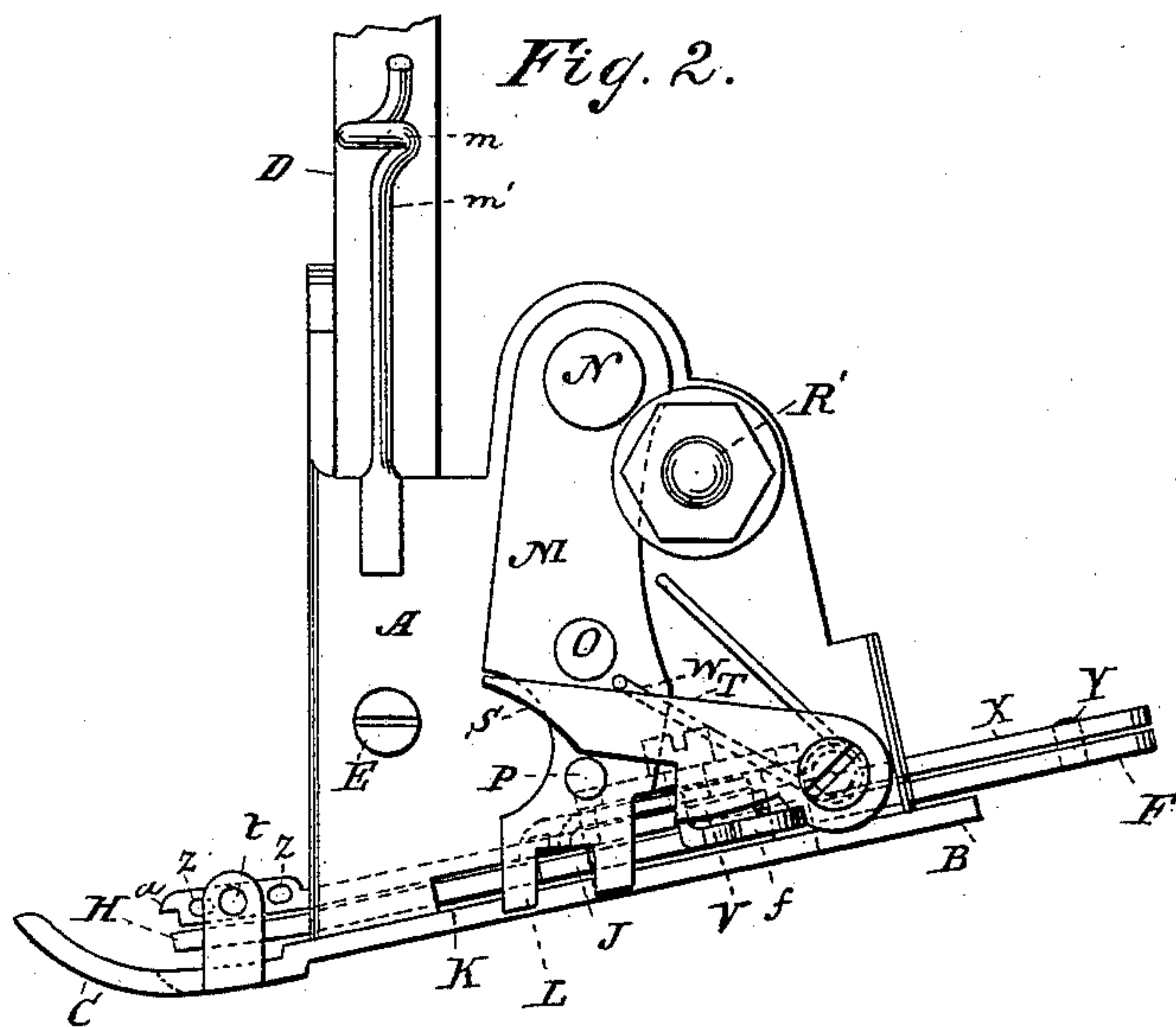


Fig. 2.



WITNESSES

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(No Model.)

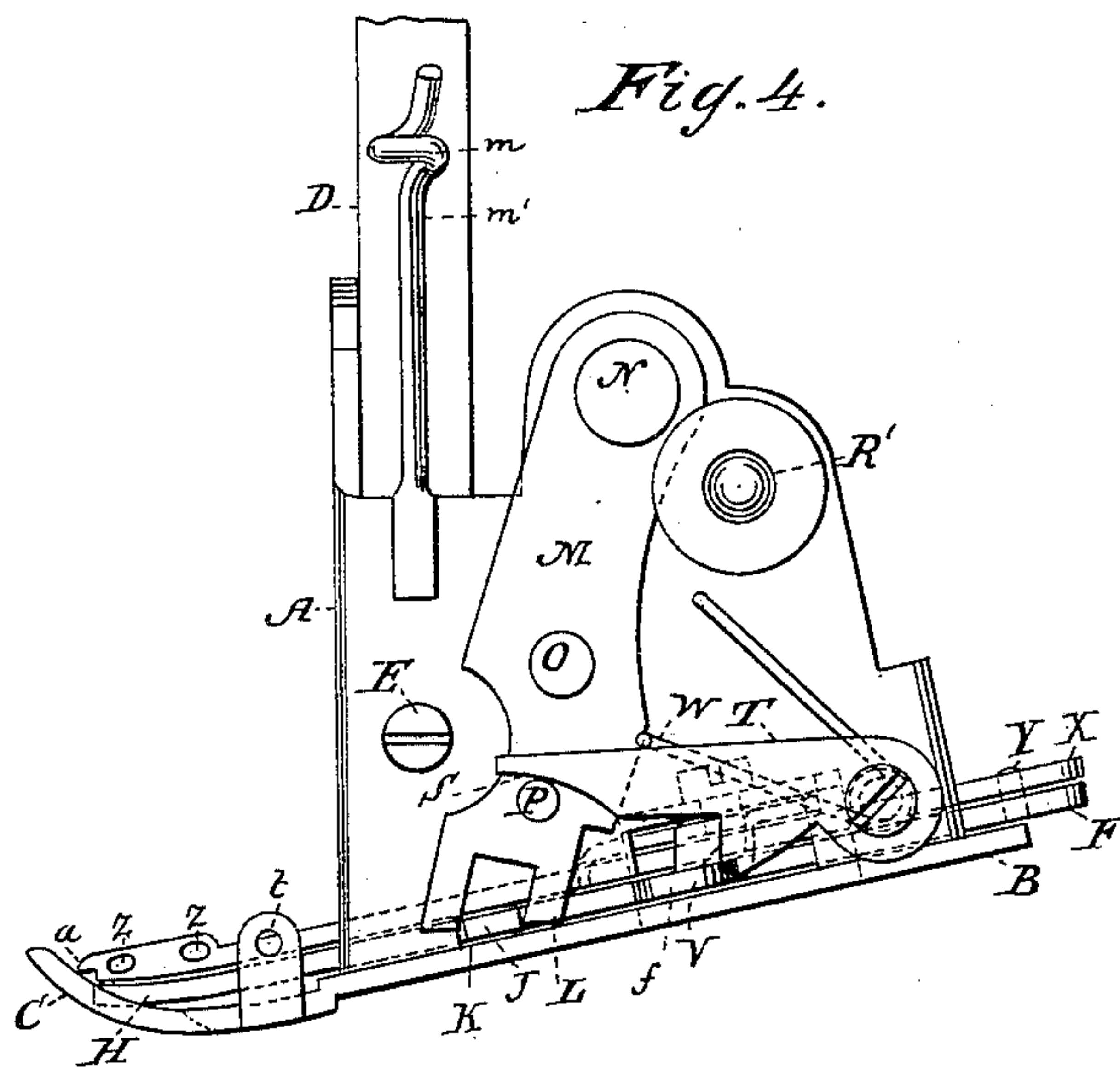
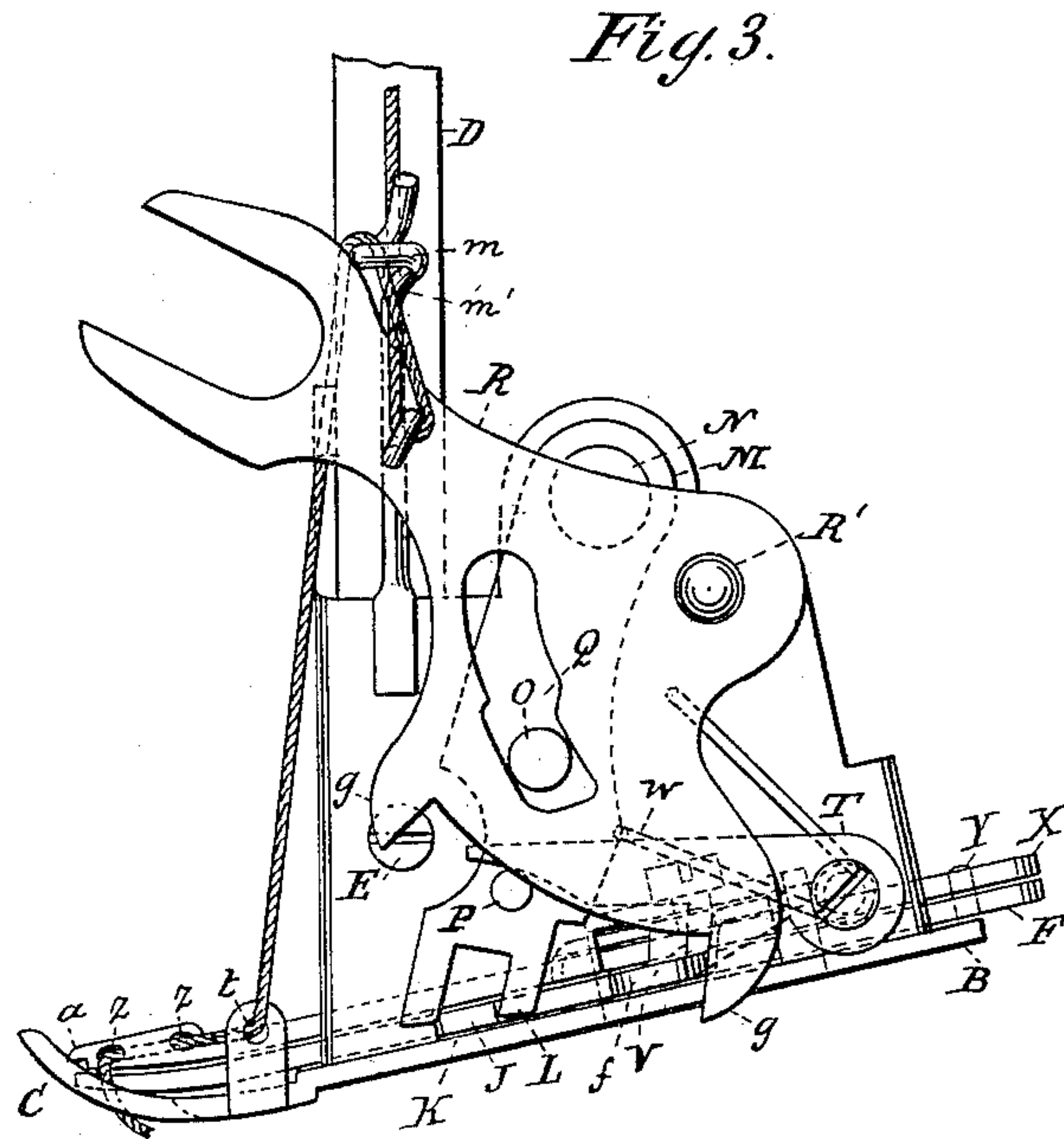
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Fig. 5.

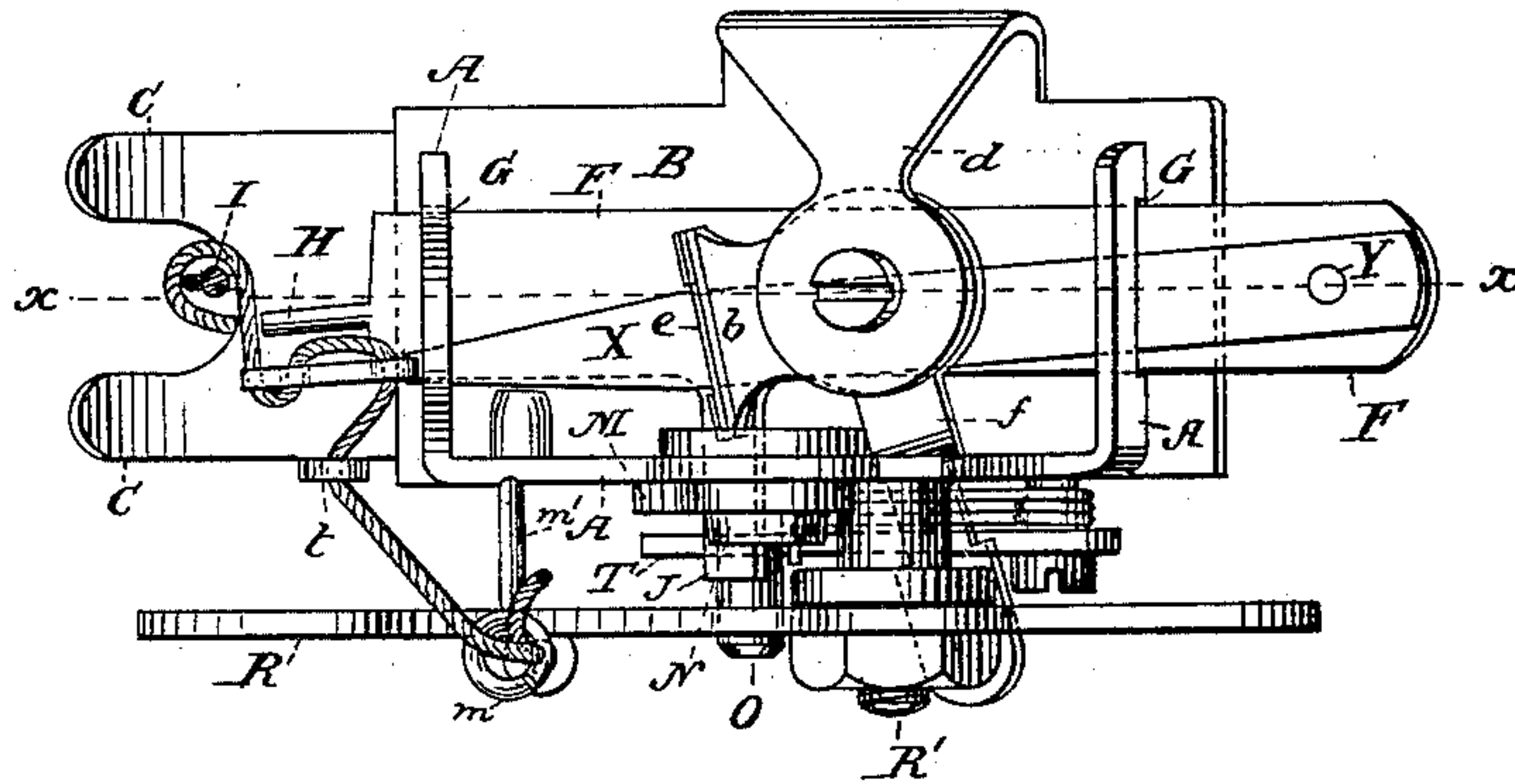


Fig. 6.

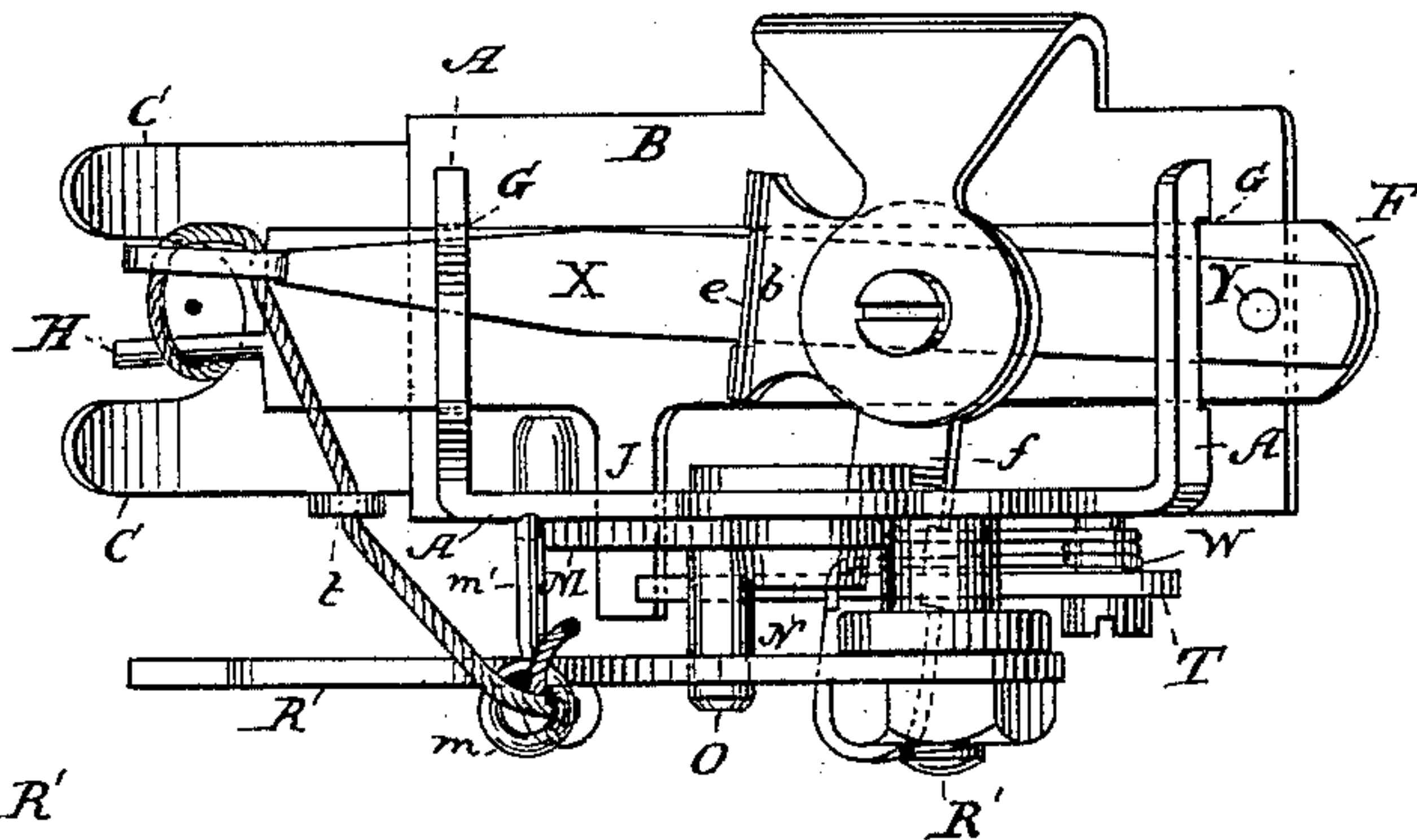


Fig. 8.

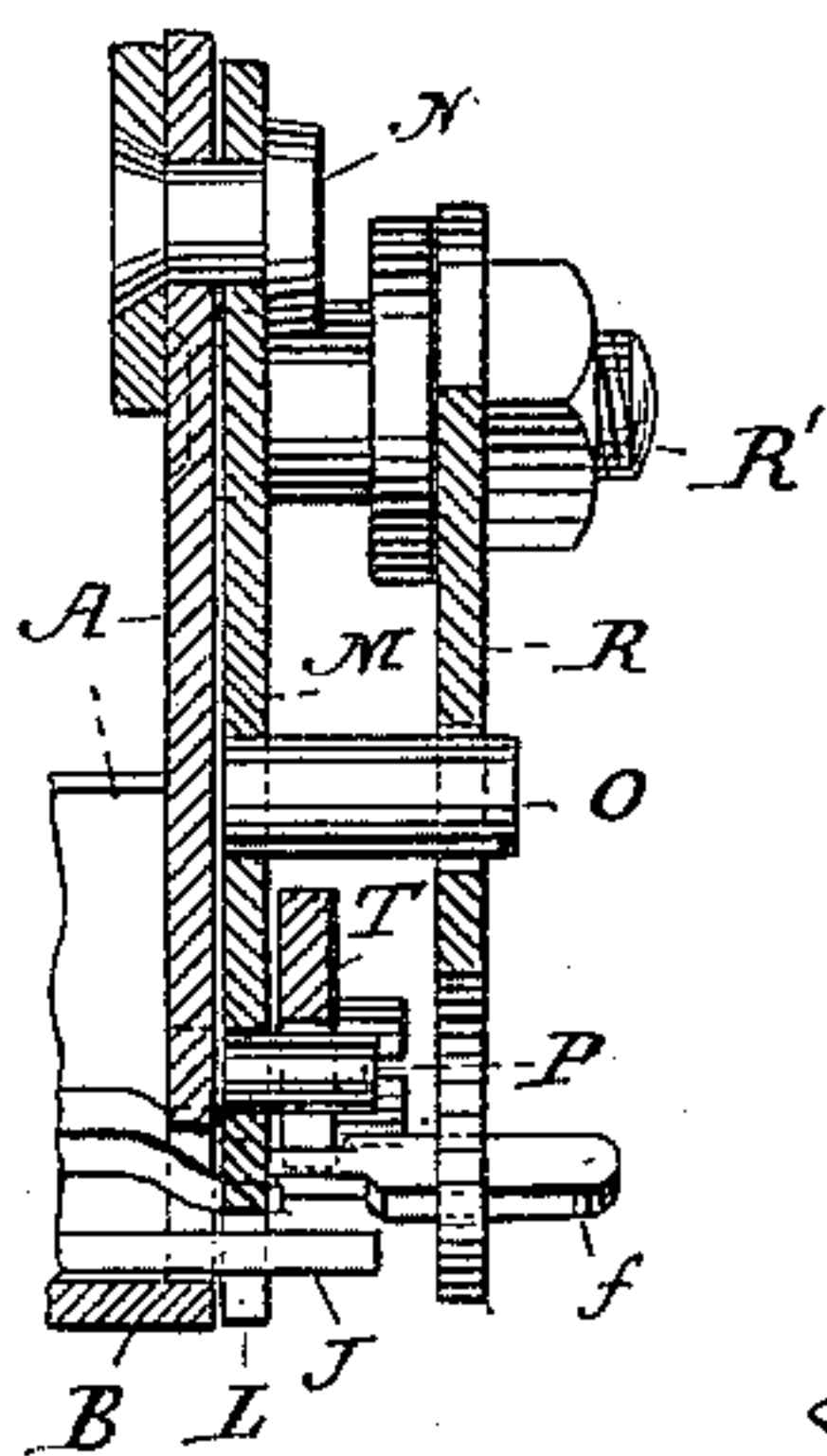


Fig. 9.

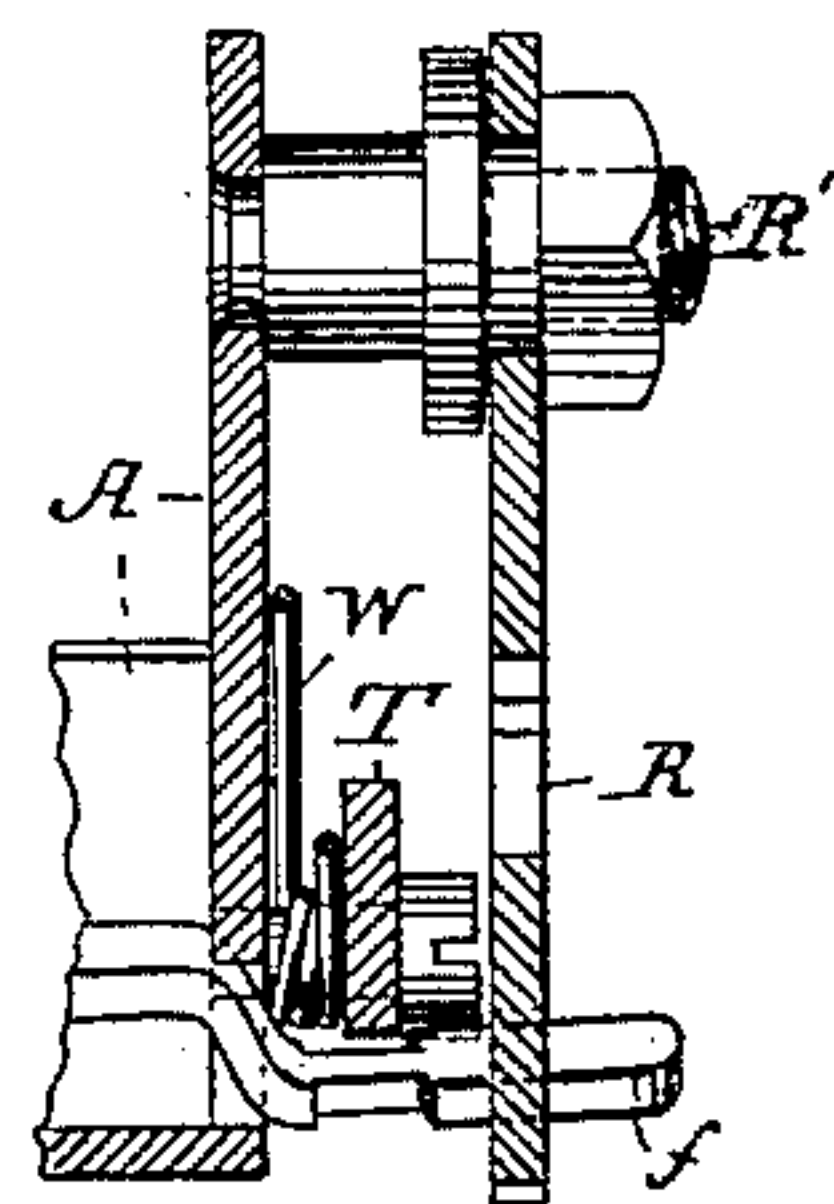


Fig. 7.

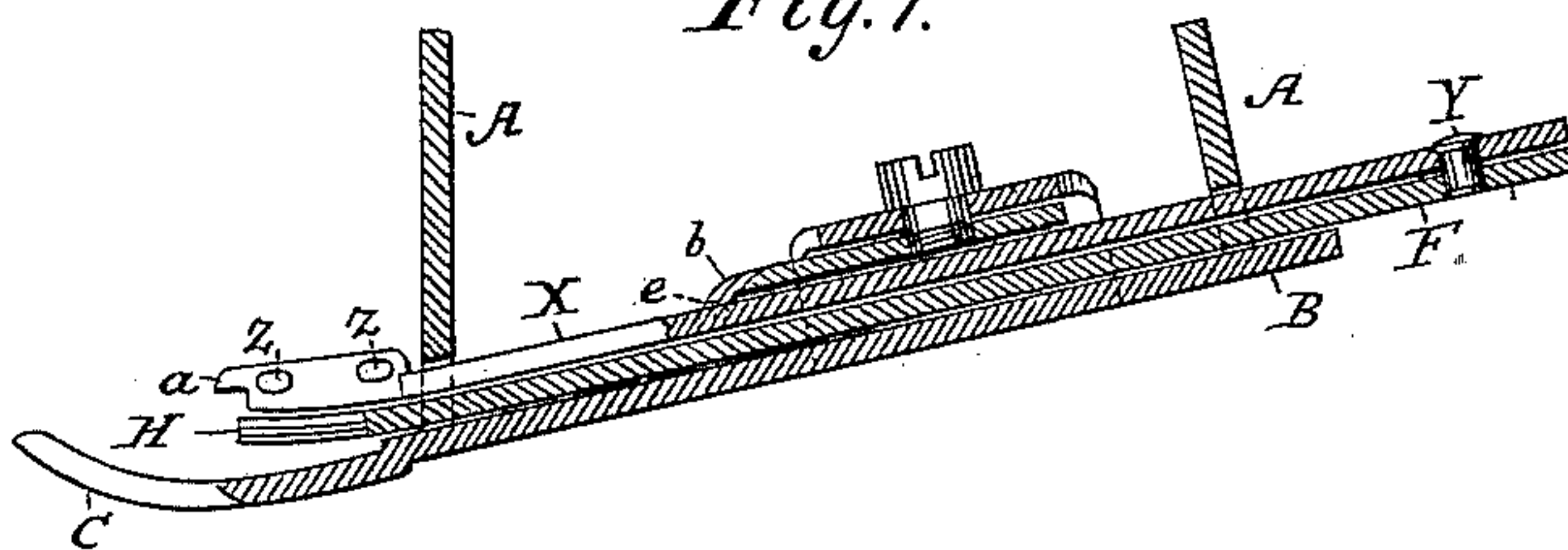
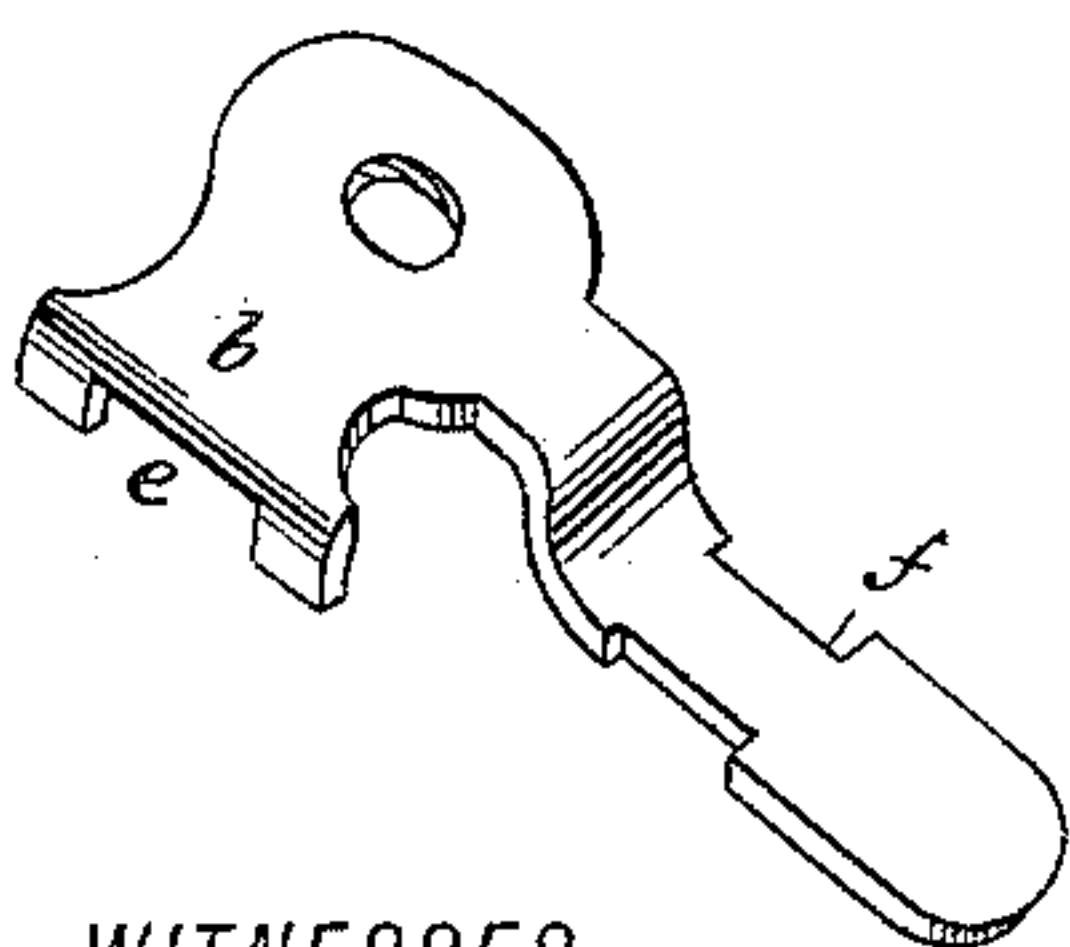


Fig. 10.



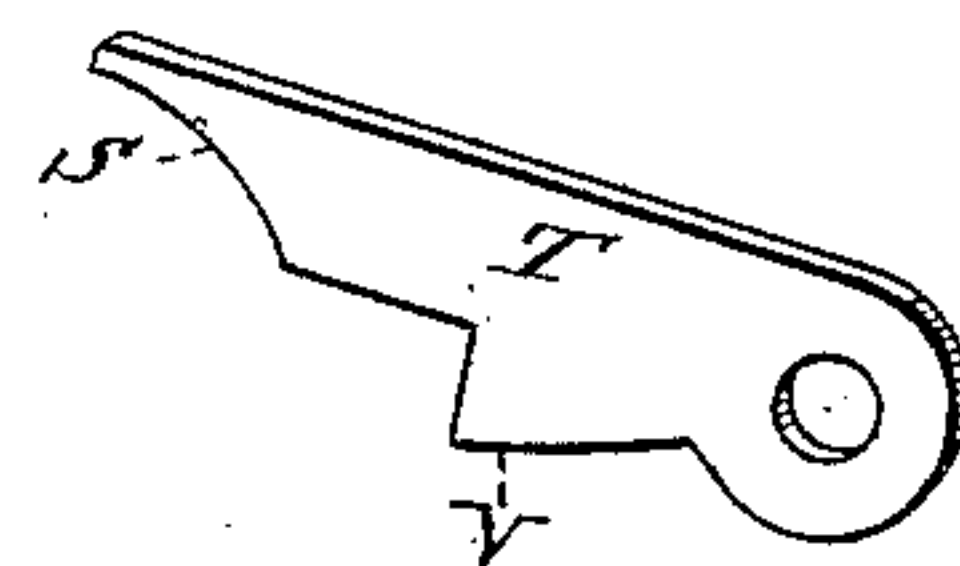
WITNESSES

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Fig. 12.



Fig. 11.



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UNITED STATES PATENT OFFICE.

FRANKLIN H. CHILTON, OF NEW ROCHELLE, ASSIGNOR TO THE EMPRESS EMBROIDERER COMPANY, OF NEW YORK, N. Y.

EMBROIDERING ATTACHMENT FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 318,449, dated May 26, 1885.

Application filed January 5, 1885. (No model.)

To all whom it may concern:

Be it known that I, FRANKLIN H. CHILTON, a citizen of the United States, and a resident of New Rochelle, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Embroidering Attachments for Sewing-Machines, of which the following is a specification.

The invention relates to improvements in embroidering attachments for sewing-machines; and it consists in the elements hereinafter described, and particularly pointed out in the claims.

Referring to the accompanying drawings, which form a part of this application, and in which like letters of reference indicate corresponding parts, Figure 1 is a side elevation of an embroidering attachment embodying the elements of the invention. Fig. 2 is a similar view of same, the actuating-lever in this instance being omitted for clearness of illustration. Fig. 3 is a side elevation of the attachment, the actuating-lever being shown in its upward position. Fig. 4 is a similar view of same, the actuating-lever being omitted. Fig. 5 is a top view of the attachment, the parts of the same being in the position shown in Fig. 1. Fig. 6 is a similar view of the attachment, the parts being illustrated in the position shown in Fig. 3. Fig. 7 is a central vertical longitudinal section on the line $x x$ of Fig. 5. Fig. 8 is a vertical transverse section on the line $y y$ of Fig. 1. Fig. 9 is a similar sectional view on the line $z z$ of Fig. 1. Figs. 10 and 11 are detached perspective views of detached parts of the attachment referred to by letter hereinafter, and Fig. 12 is a view illustrating the formation of the stitch produced by the attachment sought to be protected hereby.

In the drawings, A denotes the supporting bracket or frame of the attachment, having at its lower side the inclined plate B, the front portion of which projects in front of the bracket and forms a presser-foot, C. The bracket A is adapted to be secured to the presser-foot bar D of the sewing-machine by a screw, E, in the customary manner.

Upon the plate C, and in line with the greatest length thereof, is arranged a reciprocating looper, F, passing through slots G in the front

and rear ends of the bracket A. The front end of the looper F is pointed, as at H, the point being at one side of the vertical plane of the sewing-needle, (lettered I, as indicated in Fig. 5.) The looper F is provided upon one side with the lateral extension or arm J, as more clearly indicated in Fig. 6, and is guided in its movement by the slots G aforesaid. The arm J projects through a slot, K, cut in the side wall of the bracket A, and is engaged by the notch L, formed in the lower end of the vibrating arm M, which is pivoted at N upon the bracket A, and by means of which, when in motion, the looper J is given its longitudinal reciprocating movement.

Upon the outer face of the vibrating arm M are secured the pins lettered O P, respectively, the former of which projects through a cam-slot, Q, formed in the actuating-lever R, the latter being loosely secured near the outer end of the post R', which is rigidly secured to the bracket A, while the said latter pin projects outward below the cam-edge S of the dog T, which is pivoted on the lower rear portion of the frame A, and is provided with a tooth, V, pointing downward. The free end of the dog T is retained upon the pin P by means of a coiled spring, W, which has a downward tension upon the dog.

Upon the looper F is arranged the thread-carrier X, the rear end of the carrier being pivoted upon the looper by a pin, Y, while its forward end is provided with eyes Z and an elevated point, a , as indicated in Fig. 7. The thread-carrier X, being pivoted to the looper F, has a longitudinal sliding movement therewith, and has also a lateral vibrating motion when actuated by the switch b and lever R. The formation of the switch b is more clearly illustrated in Figs. 5 and 10, in which it will be seen that the device consists of a circular plate pivoted to the lip d , preferably formed integral with the plate B, and having a slot, e , cut in its front depending edges, through which passes the thread-carrier X, said plate b being also provided with a lateral extension or arm, f , which projects through the rear portion of the slot K into suitable relation to be engaged alternately by the projecting ends g of the lever R when the latter is in motion.

The movement of the lever R operates to vibrate the arm *f*, which gives the switch a partial rotary movement upon its pivot, whereby the thread-carrier X is given a lateral vibrating movement, without interfering with its longitudinal reciprocation. The space between the projecting points *g* on the lever R is to permit of a definite length of the longitudinal movement in the thread-carrier X before either of said points strikes the arm *f* of the switch *b*, and impart a vibratory movement to said carrier, the purpose being to give the carrier a forward and backward movement before causing it to cross the path of the looper F. When the arm *f* has reached its forward throw, the tooth V of the dog T is forced down behind it by means of the spring W, whereby the said arm, with the switch and thread-carrier, is locked into position, and is only relieved when the lever R makes its downward movement and the dog is elevated by the pin P riding upon the cam-edge S of same.

The lever R will be connected with the needle-bar of the sewing-machine, so as to communicate motion therefrom in the customary manner.

The embroidering-thread is passed from a suitable spool downward through the elevated eye *m*, formed in the rod or wire *m'*, secured to the bracket A, thence through the eye *n*, secured on the lever R, and upward again through the eye *m*, down through the eye *t*, formed in the presser-foot, whence it passes through the rear eye Z of the thread-carrier, and on the side of said carrier to the other, passing through it in the opposite direction to which it was inserted through the first eye Z, the thread being then laid around the point of the thread-carrier below the elevated projection *a*, whence it extends under the presser-foot C.

In the operation of the invention the downward throw of the lever R, caused by the depression of the needle-bar, will move the pin O, cam-slot Q, and vibrating lever M, the looper F, and carrier X to their rear position, as indicated in Fig. 5, at the same time the lever R operating through the switch *b* to move the said carrier upon its pivot to the right-hand side of the longitudinal line of the center of the presser-foot, (looking at the front of the attachment,) as shown in said figure. Upon the upward movement of the lever R, due to the elevation of the needle-bar of the sewing-machine, the looper F and carrier X are moved forward by means of the pin O, cam-slot Q, and vibrating lever M, and during their forward movement the rear point *g* of the lever R will strike the arm *f* of the switch *b*, moving it forward and turning the switch upon its pivot, whereby the carrier X is moved to the opposite side of the path of the sewing-needle to the position indicated in Fig. 6, the dog T locking the thread-carrier in the position illustrated by its tooth V falling behind the arm *f*, as shown in Fig. 4.

Upon the forward movement of the looper F and carrier X the point H of the looper will detain the embroidering-thread at the right-hand side of the path of the sewing-needle looking at the front of the attachment, while the carrier will move the embroidering-thread across the path of the looper and in front and to the left-hand side of the vertical plane of the sewing-needle, as indicated in Fig. 6, and then upon the depression of the needle-bar and lever R the looper and carrier will move directly toward the rear, so as not to be in contact with the sewing-needle, and leave the loop formed in the embroidering-thread in the opening in the front end of the presser C, the movement to the left of the carrier X only occurring during the latter portion of the rear stroke of the looper. When the carrier X crosses the path of the looper F at the end of its rear stroke, as above described, it will operate to draw the embroidering-thread around the sewing-needle, as indicated in Fig. 5, forming a loop, which is sewed down and formed under the foot C, while the looper F and carrier X again move forward and rearward, forming another embroidering-stitch. Upon every forward movement of the looper F and carrier X the dog T locks the carrier in position, whereby the carrier is prevented from having any undue vibration from the rapid operation of the sewing-machine to which the attachment may be applied.

The switch *b* preserves the proper relation of the carrier X to the looper F, so that the stitches will be of uniform size and each stitch properly and regularly formed.

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

1. In an embroidering attachment for sewing-machines, a longitudinally-reciprocating looper, a carrier pivoted thereto and having both a reciprocating and vibrating movement, and a switch engaging said carrier and provided with a laterally-extending arm, in combination with an operating-lever engaging said arm and adapted to be secured to the needle-bar of a sewing-machine, substantially as set forth.

2. In an embroidering attachment for sewing-machines, a longitudinally-reciprocating looper, a carrier having both a reciprocating and a vibrating movement, and the pivotally-secured switch *b*, engaging said carrier and having a laterally-projecting arm, *f*, in combination with an oscillating lever, R, engaging the latter and adapted to be secured to the needle-bar of a sewing-machine, substantially as set forth.

3. In an embroidering attachment for sewing-machines, a longitudinally-reciprocating looper, and a thread-carrier having both a reciprocating and a laterally-vibrating movement, in combination with the pivotally-secured switch *b*, engaging said carrier and having a laterally-extending arm, *f*, the actuating-lever R, which engages the arm *f*, and adapted to be secured to the needle-bar of the sewing-

machine, and the dog T, by which the arm F is locked at the end of its forward throw, substantially as set forth.

4. In an embroidering attachment for sewing-machines, the supporting bracket and foot, in combination with a longitudinally-reciprocating looper, a reciprocating and laterally-vibrating carrier, the switch *b*, engaging the carrier and having a laterally-extending arm, *f*, the actuating-lever R, engaging the arm *f*, the dog T, adapted to lock the arm F upon the termination of its forward stroke, and the vibrating arm M, having pins O P, the former of which engages a cam-slot in said lever R, and the latter the forward end of the dog T, substantially as set forth.

5. In an embroidering-machine, the combination, with a supporting bracket and foot, of a longitudinally-reciprocating looper having a point formed on the end thereof and to one side of the vertical path of the sewing-needle, the reciprocating thread-carrier X, pivoted to the rear end of said looper, and a switch adapted to communicate motion from the operating-lever to the thread-carrier, substantially as set forth.

6. In an embroidering attachment for sewing-

ing-machines, the combination, with the looper F, formed with a point, H, on the end thereof and to one side of the vertical path of the sewing-needle, of the thread-carrier X, pivoted to the looper and provided with the eyes Z and point *a*, a switch connected with the thread-carrier, and an actuating-lever connected to the said looper and switch, substantially as set forth.

7. In an embroidering attachment for sewing-machines, the combination, with the looper F, having a laterally-extending arm, J, of the thread-carrier X, arranged over said looper, the vibrating lever M, the lower end of which engages the arm J, and which is provided with a pin, O, which enters a cam-slot formed in the actuating-lever R, and means for imparting to the thread-carrier a laterally-vibrating motion during its longitudinal movement, substantially as set forth.

Signed at New York, in the county of New York and State of New York, this 3d day of January, 1885.

FRANKLIN H. CHILTON.

Witnesses:

GEORGE COOK,
HERMAN GUSTOW.