

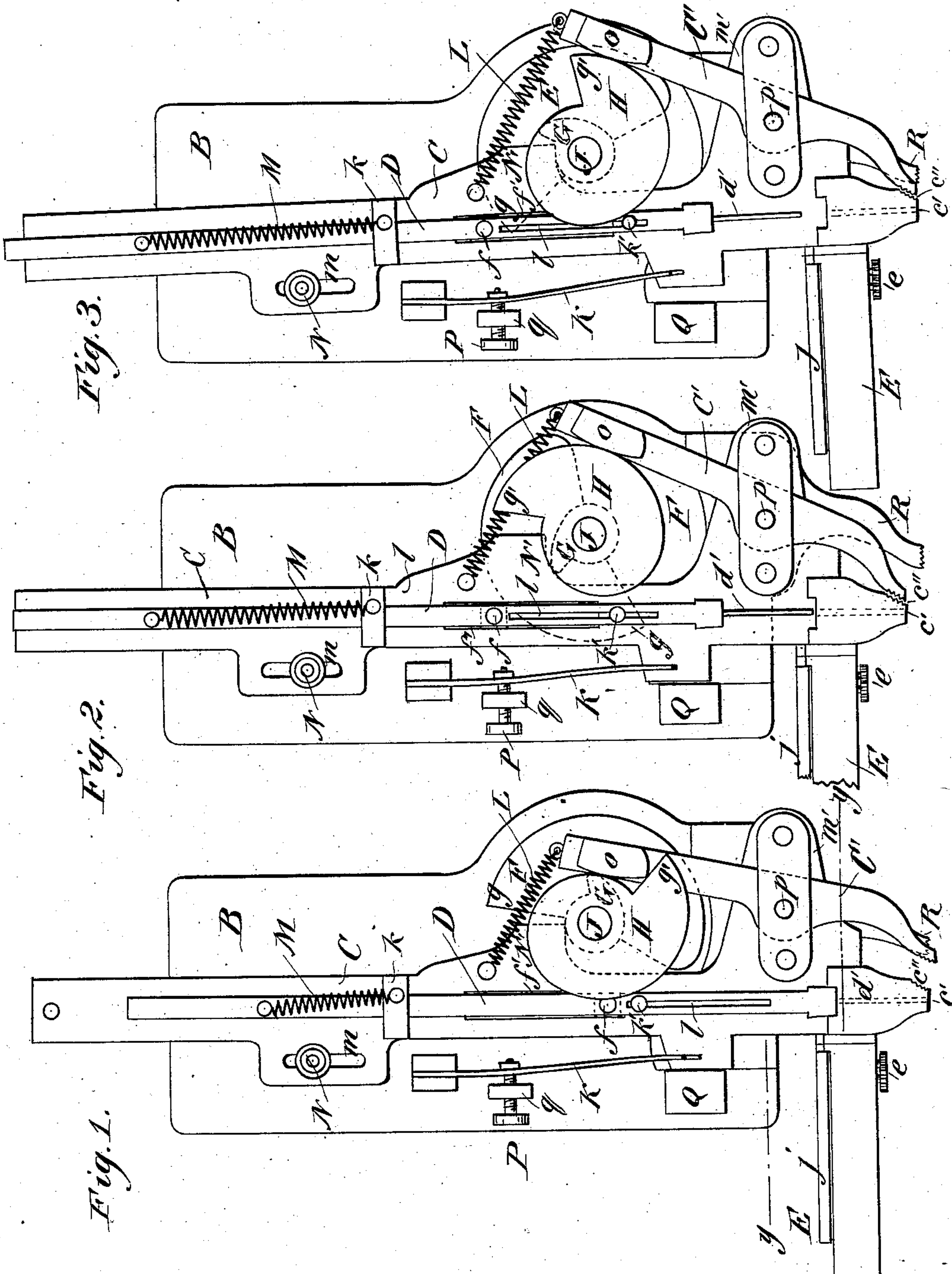
(No Model.)

2 Sheets—Sheet 1.

A. W. PEARSON.
LASTING MACHINE.

No. 292,575.

Patented Jan. 29, 1884.



WITNESSES:

Donn Twitchell.
C. Sedgwick

INVENTOR:

A. W. Pearson
BY *Munn & Co*
ATTORNEYS.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 7.

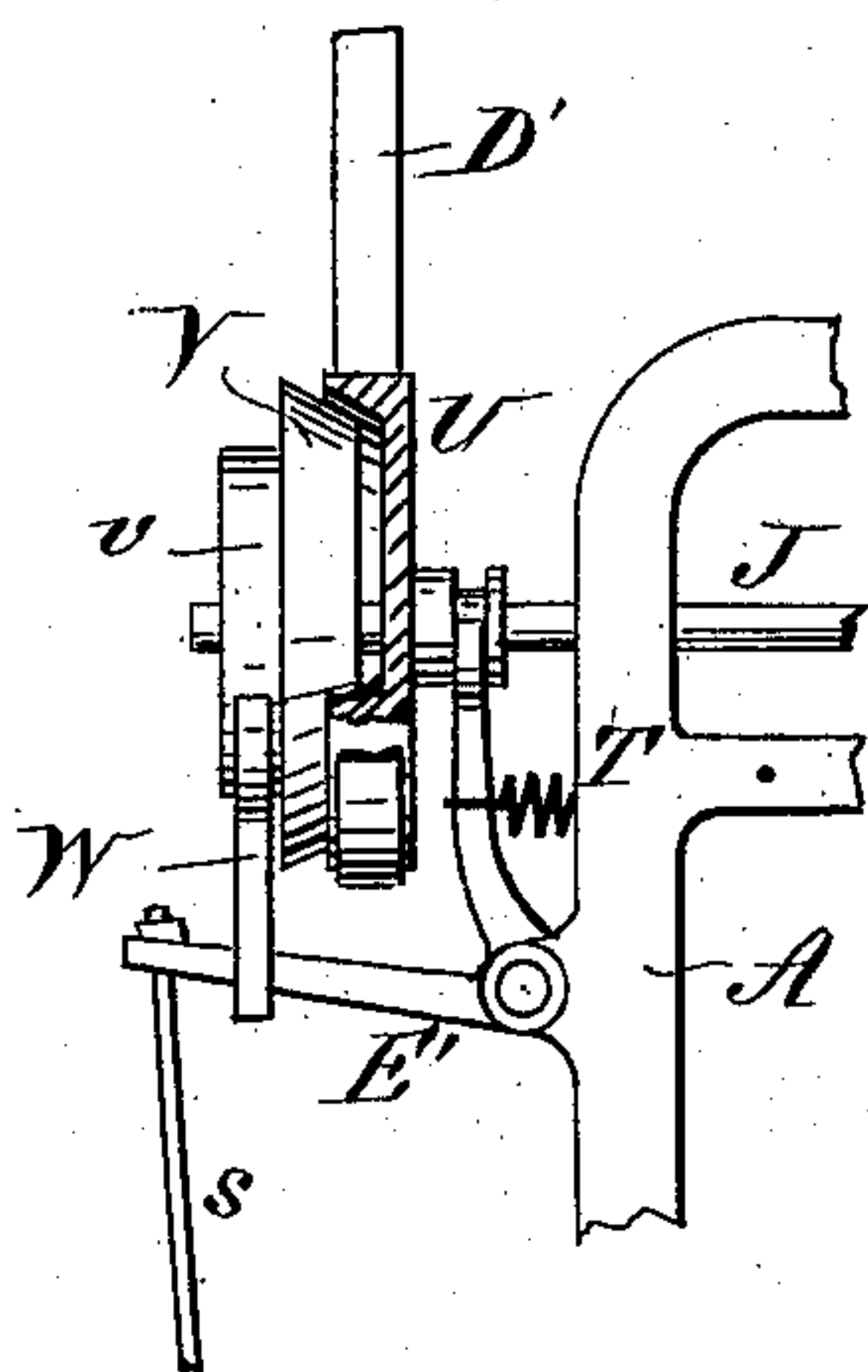


Fig. 4.

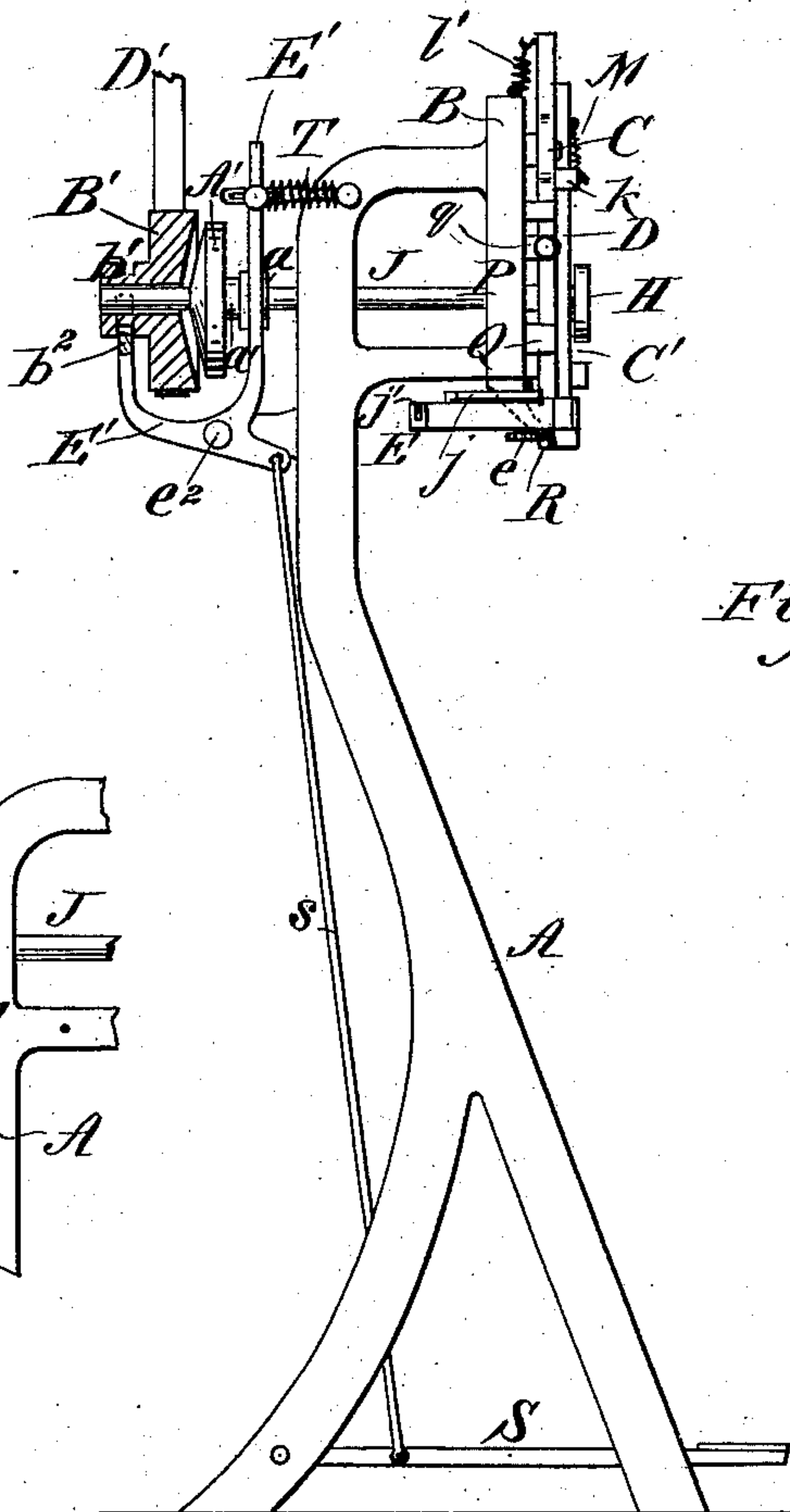


Fig. 5.

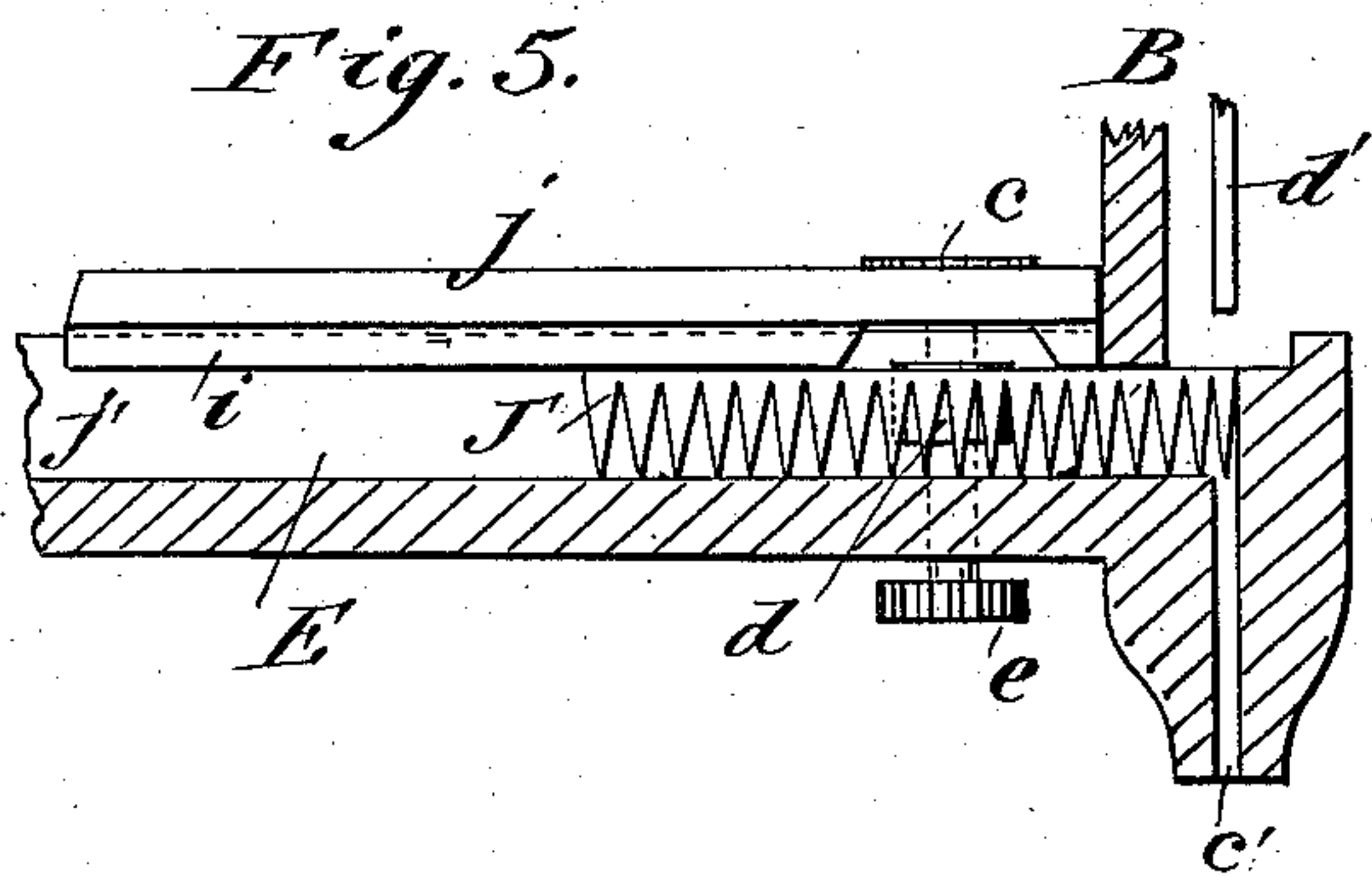
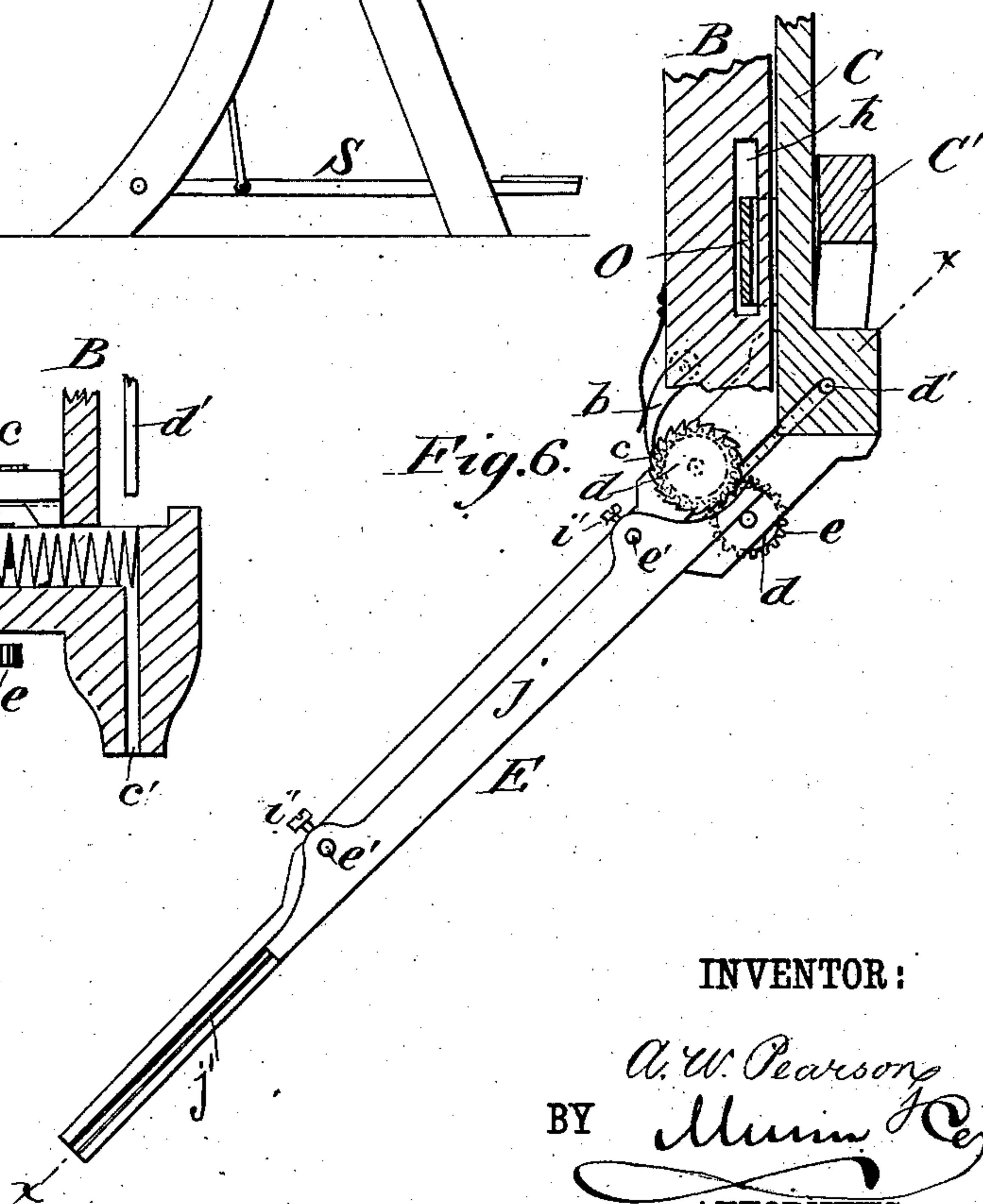


Fig. 6.



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UNITED STATES PATENT OFFICE.

AUGUSTUS W. PEARSON, OF NYACK, ASSIGNOR TO JAMES CAVANAUGH,
TRUSTEE, OF BROOKLYN, NEW YORK.

LASTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 292,575, dated January 29, 1884.

Application filed October 6, 1882. (No model.)

To all whom it may concern:

Be it known that I, AUGUSTUS W. PEARSON, of Nyack, in the county of Rockland and State of New York, have invented a new and
5 Improved Lasting-Machine, of which the following is a full, clear, and exact description.

The work of properly lasting boots and shoes requires that the edge of the upper shall first be drawn upward—that is, away from the
10 bottom of the last at its edges—and then carried over upon the bottom of the last and tacked.

My invention consists of a machine that will perform these operations, and by which boots
15 and shoes may be properly and rapidly lasted.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

20 Figures 1, 2, and 3 are front elevations of my invention, showing the movable parts thereof in the different positions they successively occupy when the machine is in operation. Fig. 4 is a side elevation of the machine
25 and its frame or stand, showing the treadle for shipping the belt. Fig. 5 is a sectional elevation of the tack-feeding device, taken on the line *x x* of Fig. 6. Fig. 6 is a sectional plan view, taken on the line *y y* of Fig. 1; and Fig.
30 7 shows modified means for stopping and starting the machine.

The frame or stand A is formed with the plain face B, against and in front of which the main working parts of the machine—consisting
35 of the jaw-plate C, jaw C', hammer D, tack-feeding device E, and cams F, G, and H—operate.

The main operating-shaft J, as shown in Fig. 4, is journaled in the stand, and has all of the
40 cams, F, G, and H, secured to its forward end.

To the rear end of the shaft is secured rigidly the friction-disk A', and upon the shaft is placed the loose pulley B', continuously rotated by the power-belt D'. The pulley B'
45 has a hub, *b'*, with an annular groove, in which the outer yoke end, *b*², of the J-shaped lever E' engages for shifting the loose pulley on shaft J for starting the machine. The lever E' is pivoted at *e*² to the frame A, and its longer arm
50 has suitable connection to a part, *a*, of a lock-

ing-clutch, which slides on the shaft J, for engagement with and disengagement from the part *a'* of this clutch, which is fixed to the shaft. A spring, T, tends to lock the clutch
55 *a a'* and disengage the pulley B' from the friction-disk A', when the treadle S, connected to lever E' by rod *s*, is released, thus quickly locking the shaft J at rest until the treadle is again depressed to swing lever E' to unlock
60 the clutch *a a'* and simultaneously engage driving-pulley B' with disk A' for starting the machine; as will readily be understood.

When the machine is at rest and locked, the main parts thereof occupy the position shown in Fig. 1—that is to say, the jaw-plate C and
65 hammer D will be at their lower point and the jaw C' will be open. Now, upon a quarter-turn of the main shaft, these parts will be caused by the cams to occupy the position of Fig. 2—that is, the jaw C' will first be closed
70 against the lower end of the jaw-plate C, and then this plate C, the hammer D, and jaw C' will be raised to their highest position. From this highest point (upon the still further revolution of the shaft) the jaw-plate, jaw, and
75 hammer will be carried by the cams to the right (the plate C turning slightly on the bolt N) and lowered to the position shown in Fig. 3, at which position (the revolution of the shaft being continued) the hammer D
80 will fall and drive the tack, and the springs K and L will then return the parts C C' to their original positions, (shown in Fig. 1.)

The tack-feeding device E is attached to and carried with the jaw-plate C through all
85 of these movements, and the lateral movement of the plate to the right, from the position shown in Fig. 1 to that shown in Fig. 3, serves, through the medium of the spring-actuated pawl *b*, ratchet *c*, feed-rollers *d d*, and pin-
90 ions *e e*, to feed the comb, J', of nails along, so that a nail will be presented, at each operation of the machine, in position under the driver *d'* of the hammer, ready to be broken
95 from the comb and driven by the driver through the orifice *c'* of the jaw-plate, through the upper of the shoe, and through the insole, for holding the upper.

j is a plate for holding the comb J' in the slot *j'* of the feeding device, as clearly shown 100

in Fig. 5, and this plate is adapted to be held with the tongue *i* thereof at any desired depth in the slot *j'*, according to the length of the nails, by means of the set-screws *i' i'*, applied to the pins *e' e'* of the plate, as will be understood from Fig. 6.

The hammer *D* moves in a passage made through the lug *k*, formed on the front face of the jaw-plate *C*, and also upon the headed pin *k'*, which passes through the slot *l*, made in the hammer, into the said plate, and the hammer is raised by the cam *F* coming in contact with the lug *f*, formed on the back of the hammer, which lug reaches through the slot *f'* in the plate *C* over the edge of the cam. The upward movement of the hammer is against the tension of the spring *M*, which, when the nose *g* of the cam *F* passes the lug *f*, causes the hammer to deliver its blow and drive the tack or nail.

The jaw-plate *C* is movably attached to the face *B* of the frame by means of the headed bolt *N* and the angle arm or plate *O*, which latter is secured to the back of the plate near its lower end, and reaches up into the recess *h*, formed in the lower end of the face *B*, as shown in Fig. 6. The bolt *N* passes through the slot *m*, made in the plate, into or through the face *B*, and this slot *m* is of sufficient length to accommodate the vertical movement of the plate, and the recess *h* is of sufficient length to accommodate the lateral movement of the plate, turning on the bolt *N* as a pivot. The vertical movement of the jaw-plate *C* is produced by the cam *G* running in contact with the shoulder *N'*, formed on the side of the plate, and its lateral movement is produced by the cam *H* running in contact with the lug *o*, formed on the upper end of the jaw *C'*, the jaw *C'* being pivoted on the boss *p*, formed on the extension *m'* of the plate *C*, and attached at its upper end to the plate by the above-mentioned spring *L*. The cam *H* also closes the lower end of the jaw *C'* against the lower serrated face *C''* of the jaw-plate, and the lateral movement of the jaw-plate does not begin until the serrated faces of the jaw and plate come together or firmly grasp whatever may be between them. The lateral movement is then against the tension of the spring *K*, and this lateral movement continues until the toe *g'* of the cam *H* passes the lug *o* on the jaw *C'*, whereupon the spring *K* will return the jaw-plate, hammer, jaw *C'*, &c., back to their original position, opening the jaw *C'*, as above mentioned, and as shown in Fig. 1. The spring *K* must always be stronger than the spring *L*, for it is upon this that the force of the grasp between the jaw and jaw-plate depends; and the force of the spring *K* is made adjustable by means of the headed screw *P*, which passes through the spring and turns in the lug *q* on the face *B*, for varying the strength of the spring to suit the grasp to the work to be done, whether heavy or light.

Q is a lug formed on the face *B*, which serves as a stop to limit the distance of backward

movement of the jaw-plate *C*; and *R* is a serrated rest formed upon or secured to the lower edge of the face *B*, against which the bottom of the last is held and guided while lasting. The jaw-plate *C* is held down, so that its shoulder *N'* rests in constant contact with the cam *G*, by the spring *l'*, (shown in Fig. 4;) and the cam *G* is so formed and timed with the action of the cam *H* that the lower end of the jaw-plate, in its lateral movement, will describe a curve for properly carrying the edge of the upper over upon the bottom of the last for tacking.

In use, the machine being provided with the comb *J'* of nails, the operator holds the bottom of the last up against the lower serrated end of the rest *R*, with the edge of the upper between the serrated faces of the jaw-plate *C* and jaw *C'*. He then presses his foot upon the treadle *S* to start the machine. The shaft *J* will first turn with a slow motion, which will cause the edge of the upper to be first grasped between the jaw-plate and jaw, then carried directly upward from the bottom of the last, and then carried in a curved line over and down upon the bottom of the last, where it will be tacked by the falling of the hammer. As soon as the edge of the upper is released from between the jaw-plate and the jaw by the backward movement of the jaw-plate, the operator will stop the machine by releasing the treadle, and move the last, with the upper still between the jaw-plate and jaw, to a point where another nail should be driven, when the operation will be repeated, and this action will be repeated until the lasting of the boot or shoe is completed. In this manner it will be seen that the upper is drawn over the last by my machine and brought over upon the bottom of the last almost in exact imitation of hand-lasting, and it will thus be seen that the lasting may be done rapidly and perfectly.

Instead of attaching the spring *M* to the hammer, as shown in the drawings, to be distended by the lifting of the hammer, a spring might be placed upon the upper end of the hammer, arranged so as to be compressed by the upward movement of the hammer, for causing it to deliver its blow, and an adjusting-screw might be attached, so as to adjust the force of the spring for causing the hammer to deliver a heavier or lighter blow, as desired, and not depart from the spirit of my invention; and instead of the devices above described, and as illustrated in Fig. 4, for starting and stopping the machine, I may use the friction device shown in Fig. 7, consisting of the conically-chambered loose pulley *U*, on which the belt constantly runs, and the beveled circular plate *V*, made fast to the shaft *J*, the pulley *U* being adapted to be moved on the shaft in contact with for starting and out of contact with the plate *V* for stopping the machine by means of the connected treadle *S* and lever *E'* and the spring *T*; and with this arrangement for bringing the machine suddenly to a full stop after each operation, I em-

ploy the brake W, attached to the lever E', which brake is adapted to be brought into contact with the offset *v* of the plate V by the action of the spring T, at the same time it with-
 5 draws the pulley U from contact with the said plate.

In the arrangement of Fig. 7, the angle-lever E' is moved toward the frame A, and to automatically engage the brake W on the release
 10 of the treadle.

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

1. In a lasting-machine, the combination, with the last-rest, of the jaw-plate and jaw and their operating mechanism, said jaw-plate and
 15 jaw being adapted to grasp the edge of the upper and carry it straight upward from the inner sole, whereby the tendency to crowd the inner sole and to cause the upper to bind, as
 20 is the case when it is drawn directly over and in contact with the sole, is obviated, substantially as set forth.

2. In a lasting-machine, the combination, with the last-rest, of the gripping-jaw and
 25 jaw-plate and their operating mechanism, said jaw-plate and jaw being adapted to grasp the edge of the upper and carry it straight upward from the inner sole, and then in a curvature over and down upon the inner sole, whereby
 30 slack in the upper, which would take place were the upper released at the upper end of the straight movement of the jaw and plate, is overcome, substantially as set forth.

3. The combination, with the jaw-plate C, jaw C', and nail-feeding device E, of the hammer D, and operating-cams F, G, and H, substantially as and for the purposes set forth.

4. The jaw C', attached to the jaw-plate C, in combination with the spring K and cams
 40 G and H, whereby the jaw-plate is moved vertically and laterally and the jaw C' opened and closed, substantially as described.

5. The jaw C', attached to the jaw-plate C, in combination with the springs K L and cams
 45 G H, the spring K being stronger than the

spring L, substantially as and for the purposes set forth.

6. The face B, provided with the rest R, in combination with the jaw-plate C, jaw C', hammer D, and cams F, G, and H, substan-
 50 tially as and for the purposes set forth.

7. The jaw-plate C, adapted to have lateral movement, in combination with the feeding device E, pawl *b*, ratchet *c*, and suitable feed-
 55 wheels, whereby the lateral movement of the plate C will feed the nails under the hammer, as set forth.

8. The jaw-plate C, provided with the jaw C', and pivoted to the face B, in combination with means, substantially as described, for
 60 giving the plate C direct upward and curved lateral movement, as and for the purposes set forth.

9. The spring K, made adjustable by the screw P, in combination with the upward and
 65 laterally-moving plate C, substantially as and for the purposes set forth.

10. The combination, with the feeding device E, of the adjustable tongued plate *j*, whereby nails of different lengths may be held
 70 in the device, as set forth.

11. In a lasting-machine, the combination of the shaft J, the fixed beveled friction-disk A', fixed clutch-piece *a'*, loose driving-pulley B', and sliding clutch-piece *a*, with the shifting-le-
 75 ver E', with one arm adapted to move the loose pulley B', and the other arm held under the action of the spring T, and the treadle S, connected to the lever E', substantially as and for the purpose set forth.

12. The face B of the frame, formed with the recess *h*, in combination with the jaw-plate C, provided with the angle-arm O, and attached to the plate by the headed bolt N, passing
 85 through the slot *m* in the plate, as and for the purposes set forth.

AUGUSTUS W. PEARSON.

Witnesses:

ALPHONSE BOMBARD,
 EBEN J. PEARSON.