(No Model.)

E. WOODWARD.

TACK DRIVING MACHINE.

No. 365,497. Patented June 28, 1887.

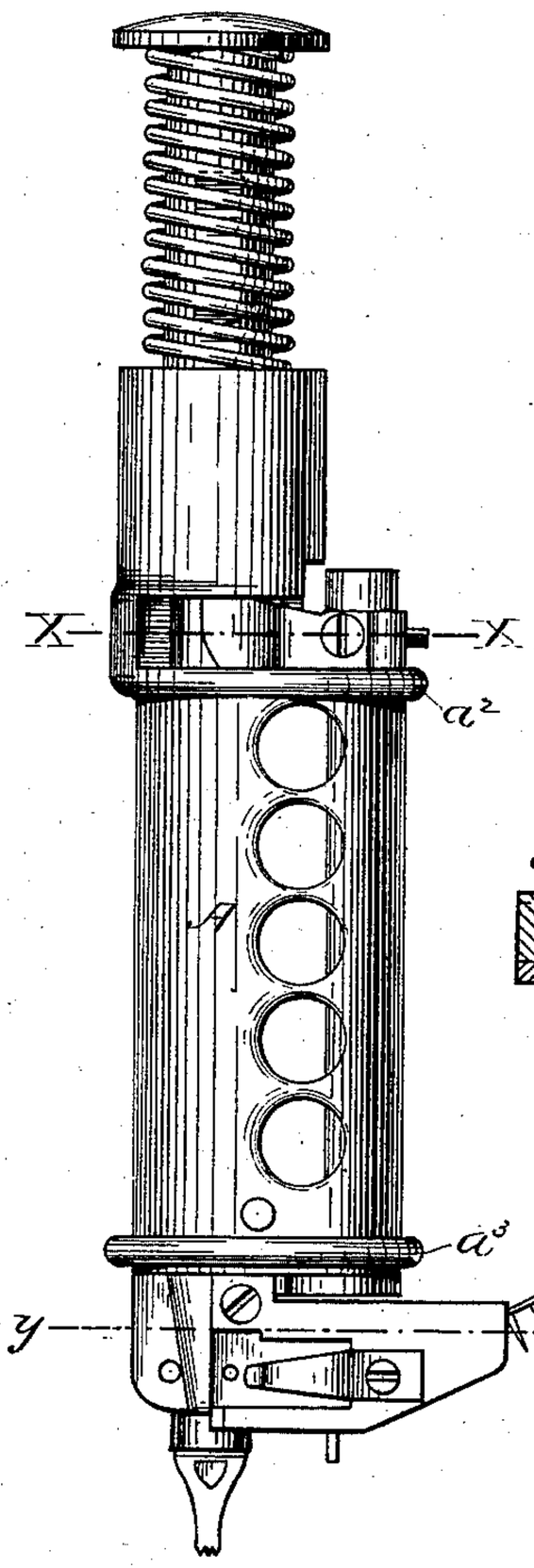

Fig. 1.

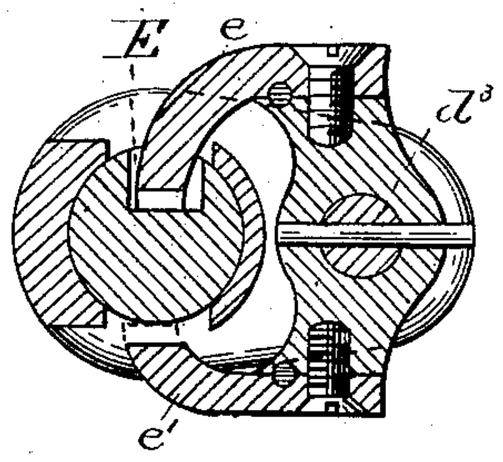

Fig. 4.

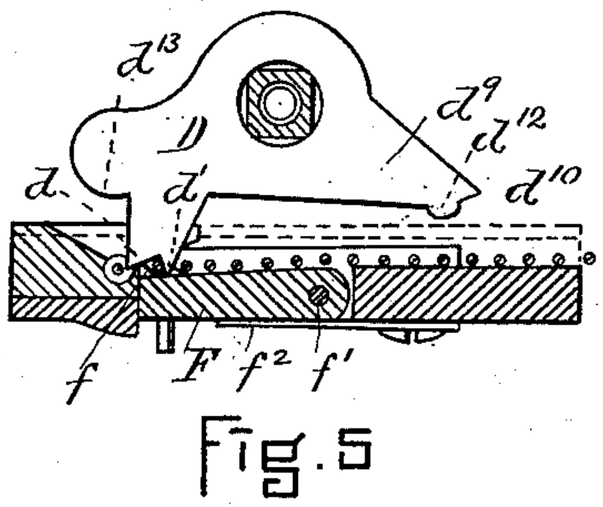

Fig. 5

Fig. 6.

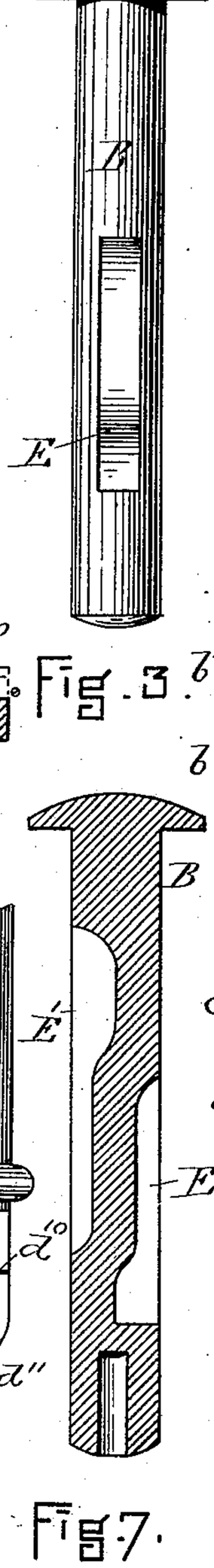

Fig. 3.

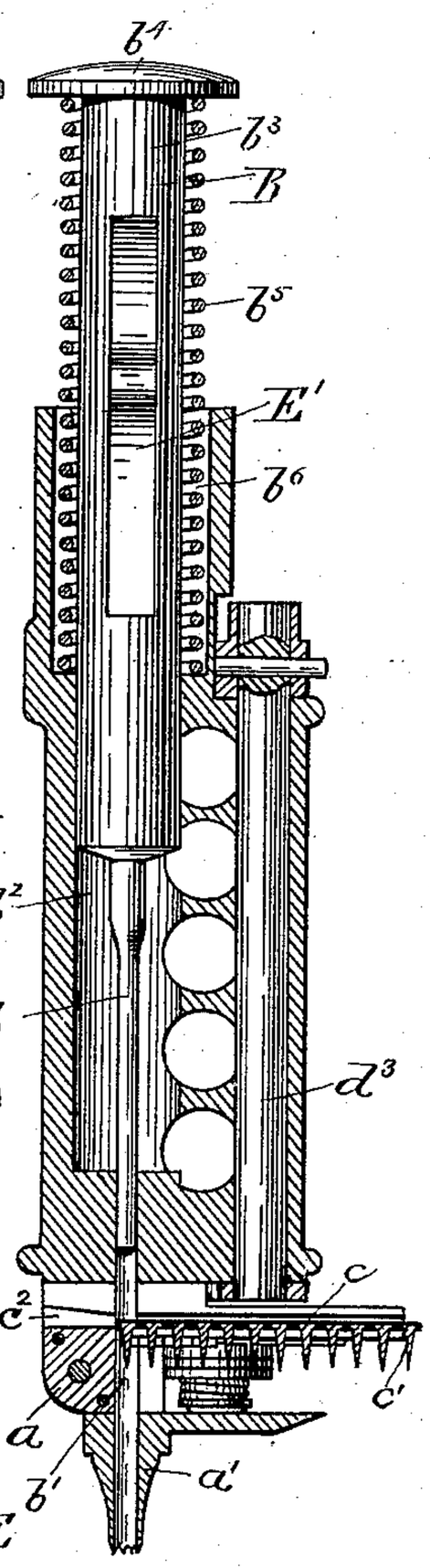

Fig. 2.

Fig. 7.

WITNESSES.

J. M. Dolan.

Fred. B. Dolan.

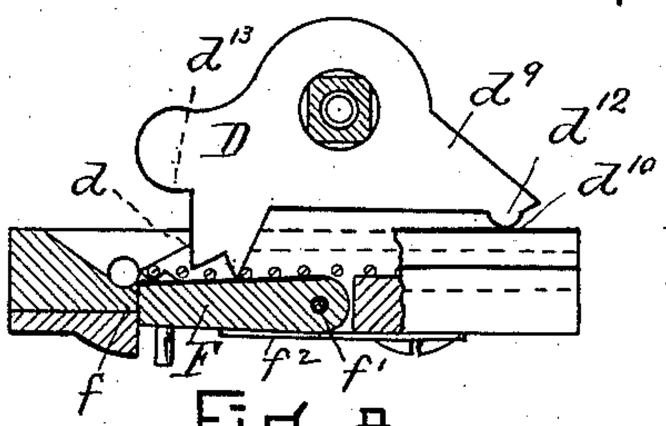

Fig. 8.

INVENTOR.

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UNITED STATES PATENT OFFICE.

ERASTUS WOODWARD, OF SOMERVILLE, MASSACHUSETTS, ASSIGNOR TO THE COPELAND IMPROVED LASTING AND TACKING COMPANY, OF PORTLAND, MAINE.

TACK-DRIVING MACHINE.

SPECIFICATION forming part of Letters Patent No. 365,497, dated June 28, 1887.

Application filed March 18, 1887. Serial No. 231,334. (No model.)

To all whom it may concern:

Be it known that I, ERASTUS WOODWARD, of Somerville, in the county of Middlesex and State of Massachusetts, a citizen of the United States, have invented a new and useful Improvement in Tack-Driving Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in explaining its nature.

The invention is especially designed for driving tacks from the paper tack-strip described and claimed in Letters Patent No. 197,609; and it relates to certain features of construction and organization, all of which will be hereinafter described.

In the drawings, Figure 1 is a view in side elevation of my tacking machine or tool. Fig. 2 is a vertical central section thereof. Fig. 3 is a view in elevation of the driver-rod. Fig. 4 is a horizontal section upon the line *x x* of Fig. 1. Fig. 5 is a view in horizontal section upon the line *y y* of Fig. 1, and in plan of the parts below said line. Fig. 6 is a view in rear elevation, enlarged, of the lower part of the tacker. Fig. 7 is a section of the driver-rod to show the shape of the cams thereon. Fig. 8 is a view representing the position of the feed-pawl at the end of its outward movement just before it is moved inward to engage the shank of a tack.

A is the stock or case. *a* is the foot or section to which the nozzle *a'* is secured. The foot or section *a* and the stock A are preferably made of one casting, and the section of the stock between the ribs a^2 a^3 is adapted in using to be held or grasped by one hand.

B is the driver-bar, and *b* the driver-rod, which is secured to the lower end of the driver-bar.

b' is the passage or throat in which the driver-rod *b* is reciprocated. The driver-bar B extends into the hole b^2 in the stock, and is supported by the stock, and its end b^3 extends above the stock and has the head or button b^4. It is adapted to be moved downward against the stress of the lifting-spring b^5, a portion of which is held in the recess or chamber b^6 in the head of the stock.

c is the horizontal feed way or passage, by which the tack-strip *c'* is fed to the driver.

c^2 is an extension of said passage, through which the tack-supporting strip is moved as the tacks are removed therefrom by the driver *b*.

The tack-strip feeding devices comprise a feed-pawl, D, which has the teeth *d d'*, of which the tooth *d* is adapted in feeding the strip to engage the shank of the first tack in order in the strip, and the tooth *d'* the shank of the second tack in order. The pawl D is carried or supported by the lever or arm d^2, which projects from the lower end of the shaft d^3, which is inclosed in the case or stock A, and the pawl is secured to the lever by the washer d^4, screw d^5, which passes through a hole in the pawl, and spring d^6, which bears against the washer and forces the pawl against the under surface of the arm or lever d^2, so that it is held thereto by friction, a leather washer, d^7, being inserted between the upper surface of the pawl-bar and the under surface of the lever or arm d^2, and another leather washer, d^8, between the under surface of the pawl-bearing and the upper surface of the metal which is mounted on the screw d^5 over the spring. The amount of friction upon the pawl may be varied by the screw d^5, which of course screws into the arm or lever d^2. The pawl D has an arm, d^9, which is adapted to be moved in contact with the surface d^{10} of the side plate, d^{11}, in order that the pawl may be provided with a straight horizontal movement parallel with a tack-strip feedway as it is moved backward to engage the shanks of the tack-strip, as will hereinafter appear. The tack-strip is fed by the feed-pawl upon the movement of the driver-bar, and the pawl is moved from the throat of the machine, or the position in which it is represented in Fig. 5, outward from the throat and backward during the downward movement of the driver. These movements are communicated to the pawl through the shaft d^3 by means of cams upon the driver-bar B, which are oppositely arranged to each other. The cam E, cut in the side of the driver-bar B, and connected with the shaft d^3 by the arm *e*, controls the shaft

and the lever or arm d^2 during the downward movement of the head B, so that the teeth *b* of the pawl are moved out of the passage *b'*, and the pawl itself moved backward to bring the teeth *d d'* into position to engage the shanks of the next tack in order. Of course the pawl D is turned by the arm or lever d^2 until the projection d^{12} upon the arm d^9 comes in contact with the plate d^{11}, and from that time on and during the continued movement of the lever d^2 the pawl is moved horizontally on a straight line parallel with the tack-strip feedway. Upon the upward movement of the driver-bar B, the cam E', (see Fig. 2,) which is a straight pattern cut in the side of the driver-bar B, which is connected with the shaft d^3 by the arm *e'*, (see Fig. 4,) turns the shaft d^3 in an opposite direction from the cam E, and this throws the teeth of the pawl into engagement with the shanks of the first two tacks of the tack strips, the pawl being moved inward upon an arc of a circle until a projection, d^{13}, at the front end of the pawl D comes in contact with the surface d^{10}, which stops the farther inward movement of the pawl, and by the continued forward movement of the arm d^2 the pawl is moved forward still in engagement with the shanks of the tack-strips, and having a straight forward movement, the pawl turning upon the pivot or screw-stud d^5 as it is moved.

There is used for holding the first tack in order in the throat of the machine after it has been fed the hinged block F, having the tooth *f*, (see Fig. 5,) which shuts into the feedway at the point where it enters the throat, and which has an inclined surface toward the feedway and a straight surface toward the throat. This block is pivoted at *f'*, and is held in position by the spring f^2.

In feeding the tack-strip the shank of a tack coming in contact with the inclined surface of the tube forces it outward until the shank of the tack has been moved into the throat, when the spring turns the block to its original position and the tube thereon serves to close the passage to the throat of the machine.

I am aware that tack-driving machines or tubes have been made which embrace some of the features herein described, and my invention relates especially to the manner of operating the feed-pawl by means of a rock-shaft having movements imparted to it by the cam upon the driver-bar.

Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In a tacking machine or implement, the combination herein described of a feed-pawl for feeding the tack-strip, a rock-shaft, and a driver-bar provided with cam-surfaces for operating the rock-shaft and pawl, substantially as set forth.

2. In a tacking-machine, the combination of the driver-bar B, having cam-surfaces E E', feed-pawl D, rock-shaft d^3, and segmental arms *e e'*, substantially as set forth.

3. In a tacking-machine, the feed-pawl carried by a lever-arm and operated by a rock-shaft, the pawl being secured to the lever-arm by the set-screw d^5, and interposed spring and washers, substantially as set forth.

4. In a tacking-machine, the hinged block F, having the tooth *f*, which is adapted to shut into the feedway at the point where it enters the throat of the machine, and which has an inclined surface toward the feedway and a straight surface toward the throat, substantially as described.

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Witnesses:
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