

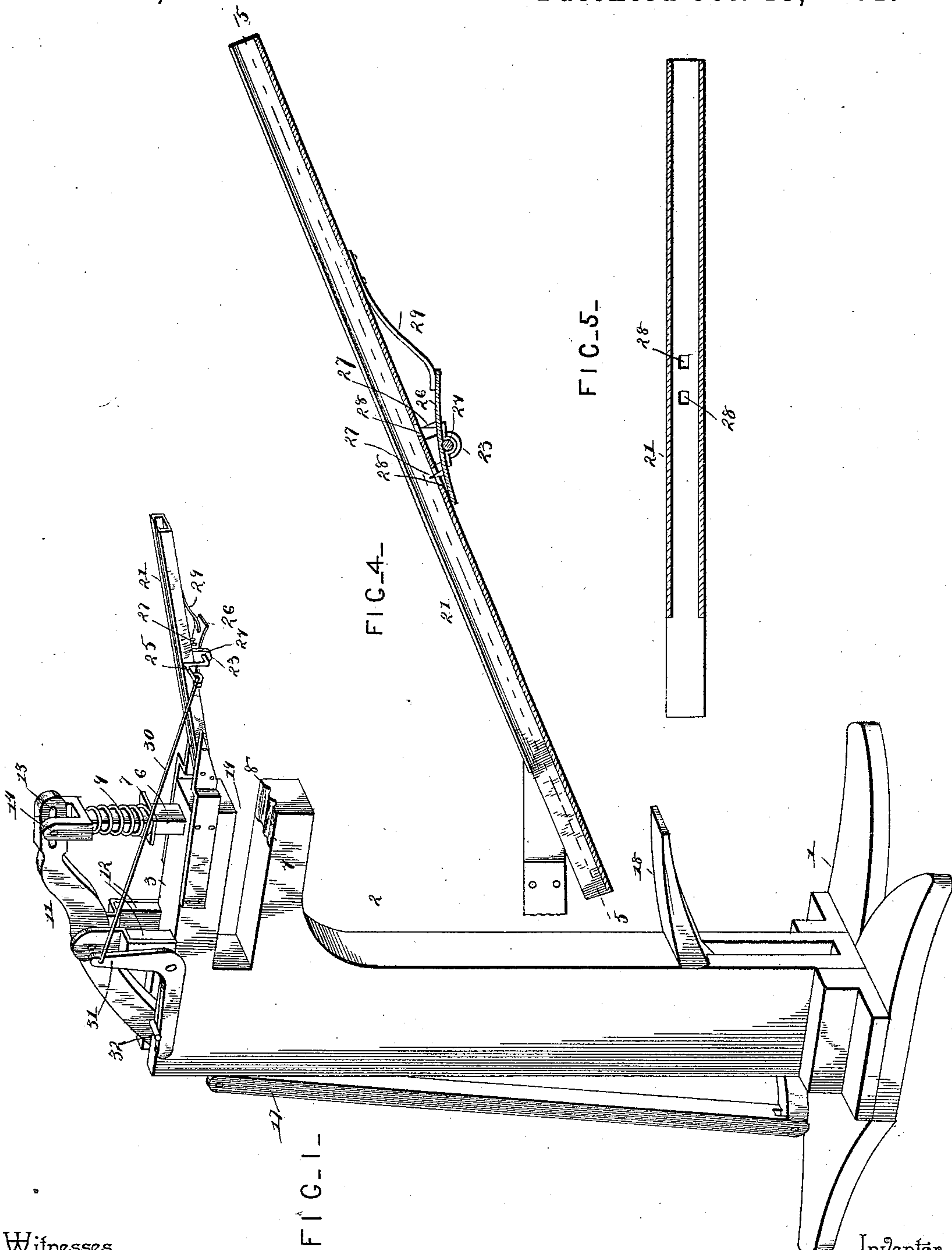
(No Model.)

2 Sheets—Sheet 1.

G. HAY.
MACHINE FOR SETTING STAPLES.

No. 461,337.

Patented Oct. 13, 1891.



Witnesses
Geo. C. Truck.

Wm. Bagger.

By his Attorneys,

C. A. Snow & Co.

Inventor
Gilbert Hay

(No Model.)

2 Sheets—Sheet 2.

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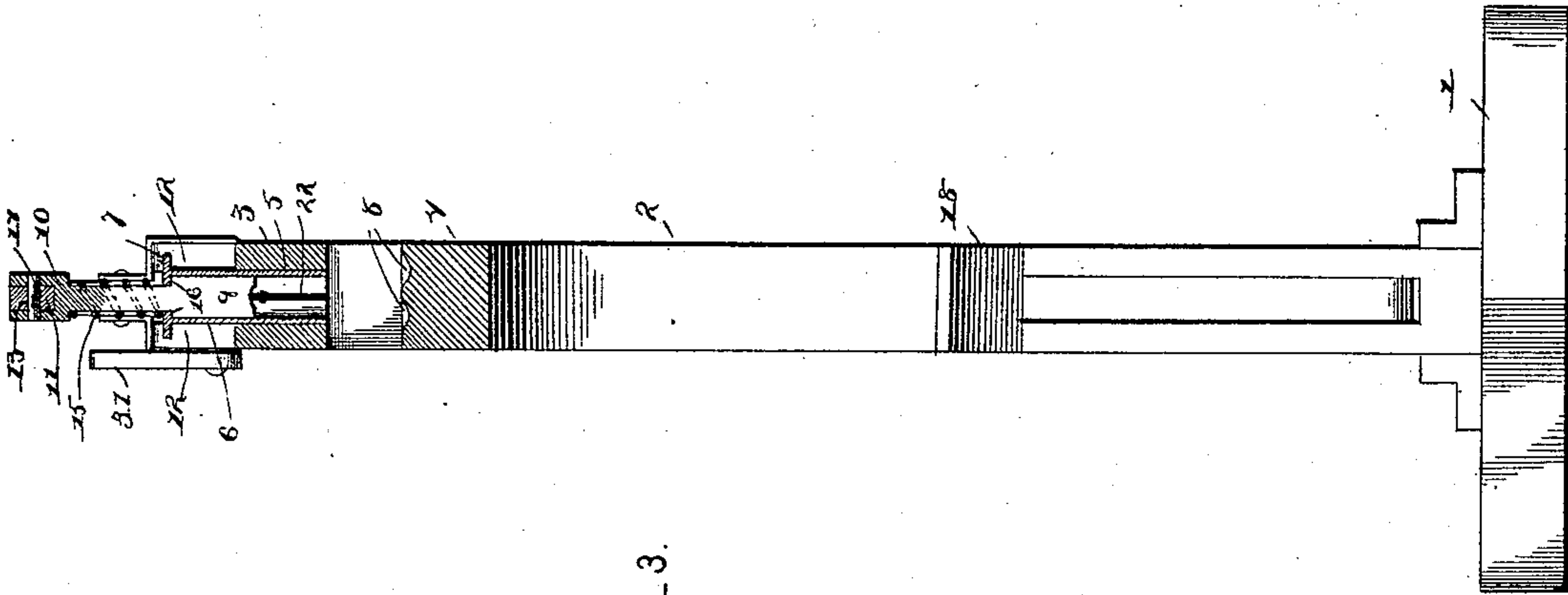


FIG. 3.

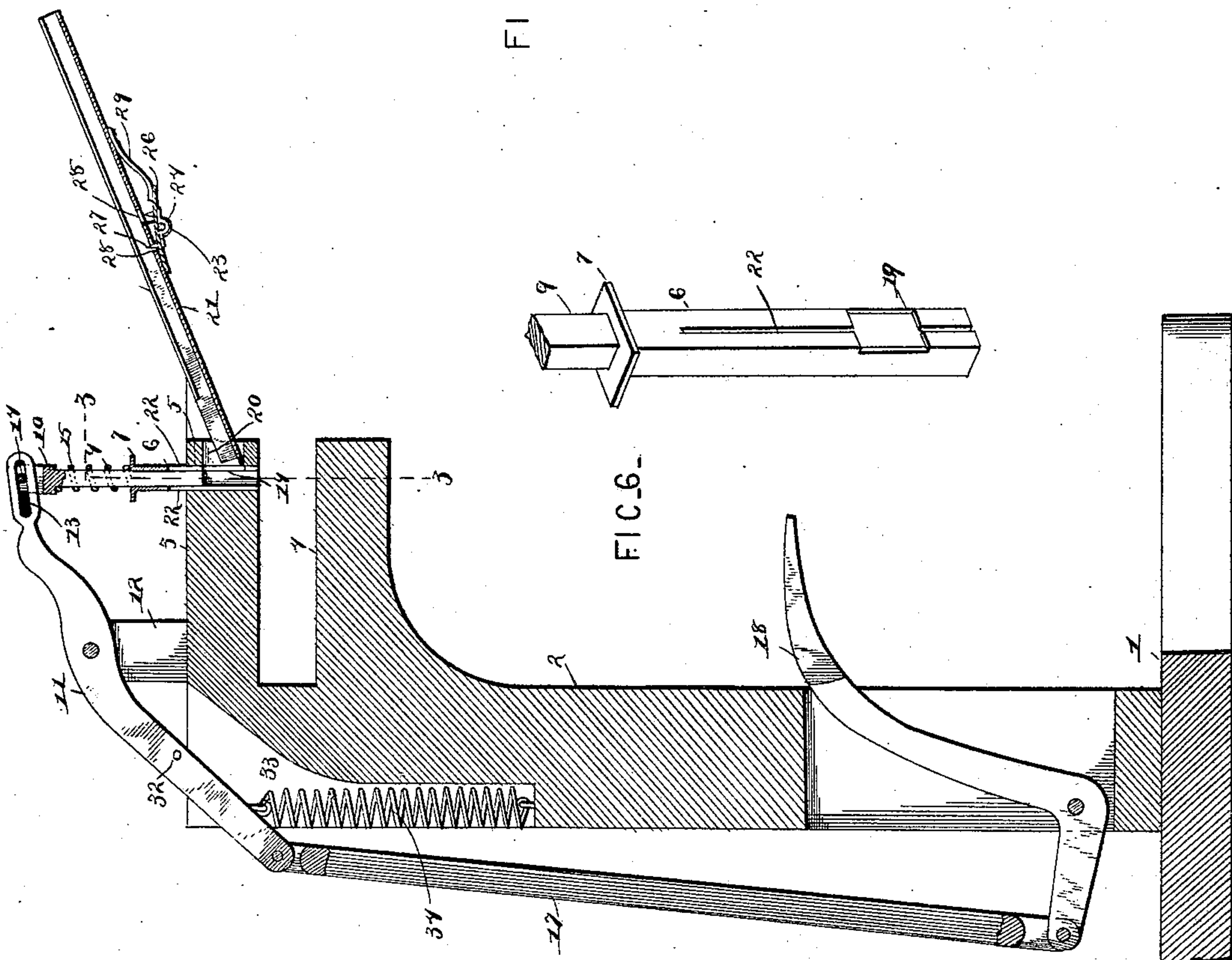


FIG. 6.

Witnesses

Geo. C. French.

FIG. 2

Wm. Bagger

By his Attorneys,

C. A. Snow & Co.

Inventor
Gilbert Hay

UNITED STATES PATENT OFFICE.

GILBERT HAY, OF MADISON, NEBRASKA, ASSIGNOR OF ONE-HALF TO
EDWARD JACOBS, OF SAME PLACE.

MACHINE FOR SETTING STAPLES.

SPECIFICATION forming part of Letters Patent No. 461,337, dated October 13, 1891.

Application filed November 8, 1890. Serial No. 370,774. (No model.)

To all whom it may concern:

Be it known that I, GILBERT HAY, a citizen of the United States, residing at Madison, in the county of Madison and State of Nebraska, have invented a new and useful Machine for Setting Staples, of which the following is a specification.

This invention relates to machines for setting staples; and it has for its object to provide a machine of this class which shall be simple in construction, durable, and easily operated.

With these ends in view the invention consists in the improved construction, arrangement, and combination of parts which will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings hereto annexed, Figure 1 is a perspective view of a machine constructed in accordance with my invention. Fig. 2 is a vertical sectional view of the same. Fig. 3 is a vertical transverse sectional view taken on the line 3 3 in Fig. 2. Fig. 4 is a sectional view on a larger scale of the trough or chute and the staple-feeding mechanism. Fig. 5 is a transverse sectional view taken on the line 5 5 in Fig. 4. Fig. 6 is a detail view of the vertically-sliding plunger and tube.

Like numerals of reference indicate like parts in all the figures.

Upon a suitable base 1 is mounted an upright 2, the upper end of which is provided with horizontal arms or brackets 3 and 4, extending forwardly one above the other. The upper bracket 3 is provided with a vertical perforation 5, forming a guide for a vertically-reciprocating slide 6, which consists of a tube rectangular in cross-section and of suitable dimensions to admit of the passage of a staple of the desired size. The upper end of the tubular slide 6 is provided with a flange 7, and the said tube is made of such a length that when the flange 7 rests upon the upper side of the bracket 3 the lower end of said tube shall almost reach the bracket 4. The latter forms the anvil, and it is provided on its upper side with grooves 8, adapted to turn the points of a staple toward each other, so as to clinch the said staple.

9 designates the punch or staple-driver, which is mounted to slide vertically in the

tube 6. The lower end of said punch may be slightly rounded or concave, and its upper end has a head 10, which is pivotally connected with a lever 11, which is mounted between a pair of lugs 12 at the upper end of the upright 2. The lever 11 is provided at its front end with a slot 13 to receive the pin 14, by which it is connected with the punch 9. Between the head of the latter and the flange 7 of the tube 6 is mounted a coiled spring 15, which serves to force the punch automatically in an upward direction. The upward movement of the punch in the tube 6 is limited by a shoulder 16, which is formed upon said punch and is adapted to abut against the flange 7 at the upper end of the guide-tube. The rear end of the lever 11 is connected by a rod 17 with the rear end of a foot-lever or treadle 18, which is suitably mounted in the upright or standard 2.

The front side of the vertically-sliding tube 6 is provided with an opening 19, which when the said tube is in a raised position registers with an opening 20 in the front end of the arm or bracket 3. Suitably attached to the said arm or bracket is an inclined trough or chute 21, adapted to hold the staples and to guide them through the opening 20 into the lower end of the tube 6. The latter is provided with vertical slots 22, and being made of metal it is somewhat elastic, sufficiently so to retain by friction the staple which enters through the slot or opening 19. The trough 21 is provided with downwardly-extending lugs 23, forming bearings for a transverse shaft 24, which is provided at one end with a crank 25. Suitably mounted upon the shaft 24 is a plate 26, having upwardly-extending prongs 27, which extend through slots or openings 28 in the bottom of the trough or chute, forming detents for the staples, which are placed in the latter. The rear end of the plate 26 is normally pressed in a downward direction by means of a spring 29, which is suitably attached to the under side of the chute. The crank 25 is connected by means of a rod or cord 30 with one arm of a bell-crank lever 31, which is pivoted to the side of the standard. Said bell-crank lever is actuated by means of a stud 32, that extends laterally from the lever 11.

The upper end of the standard 2 is provided with a recess or socket 33, in which is mounted the retracting-spring 34, the ends of which are connected, respectively, with the bottom of the recess or socket 33 and with the lever 11.

This machine is intended especially for setting staples in leather goods for the purpose of securing seams. Prior to my invention such seams have usually been secured by riveting. By my improved machine the staples may be easily and quickly set for the purpose of securing the seams in a more rapid and effective manner than has heretofore been possible.

The operation of my invention will be readily understood from the foregoing description, taken in connection with the drawings hereto annexed. The material in which the staple is to be set is supported upon the arm or bracket 4, that forms the anvil. The operator then places his foot upon the lever or treadle 18 and depresses the latter, thus operating the lever 11 and forcing the punch 9 and the tube 6 in a downward direction. The tube descends until it rests upon the upper side of the material, and the punch continues to descend, driving the staple which is carried in the lower end of the tube into the material and clinching the ends of the staple on the under side. While this operation takes place the bell-crank lever 31 is actuated by the stud 32, thus oscillating the rock-shaft 24 in the feed trough or chute. The plate 26, having the prongs 27, is thus manipulated to release one of the staples, which is permitted to slide down to the lower end of the feed-trough, from which it may pass through the opening 20, and when the tube 6 is restored to its raised position through the opening 19 and into the said tube, while the prongs at the lower end of the vibrating plate 26 are depressed through the opening in the bottom of the trough in order to permit a staple to slide down, the prongs at the upper end of said plate are raised through the slots in the bottom of the trough, so as to retain the remaining staples, and thus causing a single staple to be fed at each operation.

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

1. In a machine for setting staples, the combination of an upright having forwardly-extending parallel arms or brackets, a vertically-slotted tube mounted slidably in the upper arm or bracket and having an opening in its front side for the admission of staples, a staple-driving punch mounted to slide vertically in said tube, mechanism for laterally supplying staples to the lower end of the slot of the latter within said arm through the front opening therein, a spring arranged to force the punch normally in an upward direction in the sliding tube, and suitable operating mechanism, substantially as set forth.

2. In a machine of the class described, the

combination of the upright having forwardly-extending parallel arms, the vertically slotted and sliding tube mounted in the upper arm and having an opening in its front side, the punch mounted to slide vertically in the said tube, a feed trough or chute secured at the front end of the upper bracket, which is provided with an opening registering with the opening in the front side of the guide-tube when the latter is in a raised position to laterally receive the staples therethrough to said registering guide-tube, and suitable operating mechanism, substantially as set forth.

3. In a machine of the class described, the combination of the standard or upright provided at its upper end with forwardly-extending arms, the upper one of which has a vertical opening and a perforation in its front end communicating with said opening, the vertically slotted and sliding guide-tube having an opening in its front side, the vertically-reciprocating plunger or punch, the feed-trough secured to the front end of the upper bracket, the staple-feeding mechanism, and suitable operating mechanism, substantially as and for the purpose set forth.

4. In a machine of the class described, the standard or upright having the forwardly-extending parallel arms, the vertically slotted and sliding guide-tube working in the upper arm or bracket and having a flange at its upper end to limit its downward movement within said arms, and means for laterally feeding the staples through the front end of said arm or bracket to and within the slotted tube therein, in combination with the vertically-reciprocating plunger or punch having a shoulder to engage the said flange and to limit the upward movement of the plunger in the tube, and suitable operating mechanism, substantially as set forth.

5. In a machine of the class described, the combination of the standard or upright having the forwardly-extending arms, the upper one of which has a vertical perforation and an opening in its front end connected with said perforation, the vertically-movable guide-tube having an opening in its front side, the vertically-reciprocating punch or plunger, the feed trough or chute secured to the front end of the upper bracket and communicating with the opening in the latter, a rock-shaft mounted transversely under the said feed-trough and carrying a plate provided with prongs adapted to take upwardly through openings in the bottom of the trough, a spring to normally depress the outer end of said plate, and suitable operating mechanism, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

GILBERT HAY.

Witnesses:

WILLIS MCBRIDE,
J. HOFFMAN.