

No. 659,626.

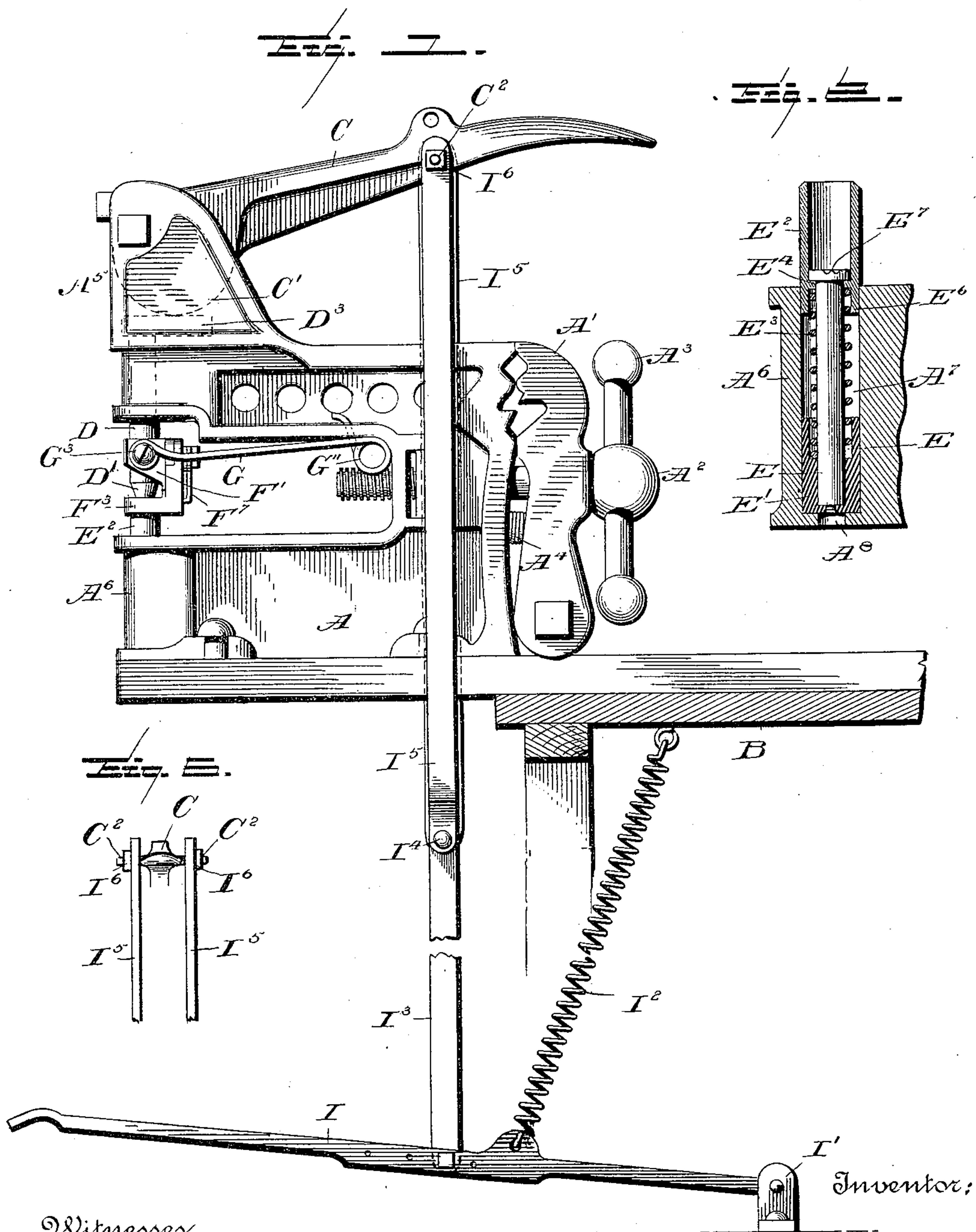
Patented Oct. 9, 1900.

H. C. POMEROY.  
RIVETING MACHINE.

(Application filed Dec. 11, 1899.)

(No Model.)

2 Sheets—Sheet 1.



Inventor:

Witnesses  
*L. C. Hills*  
*Alfred T. Gage*

*Henry C. Pomeroy,*  
*E. B. Stocking*  
Attorney

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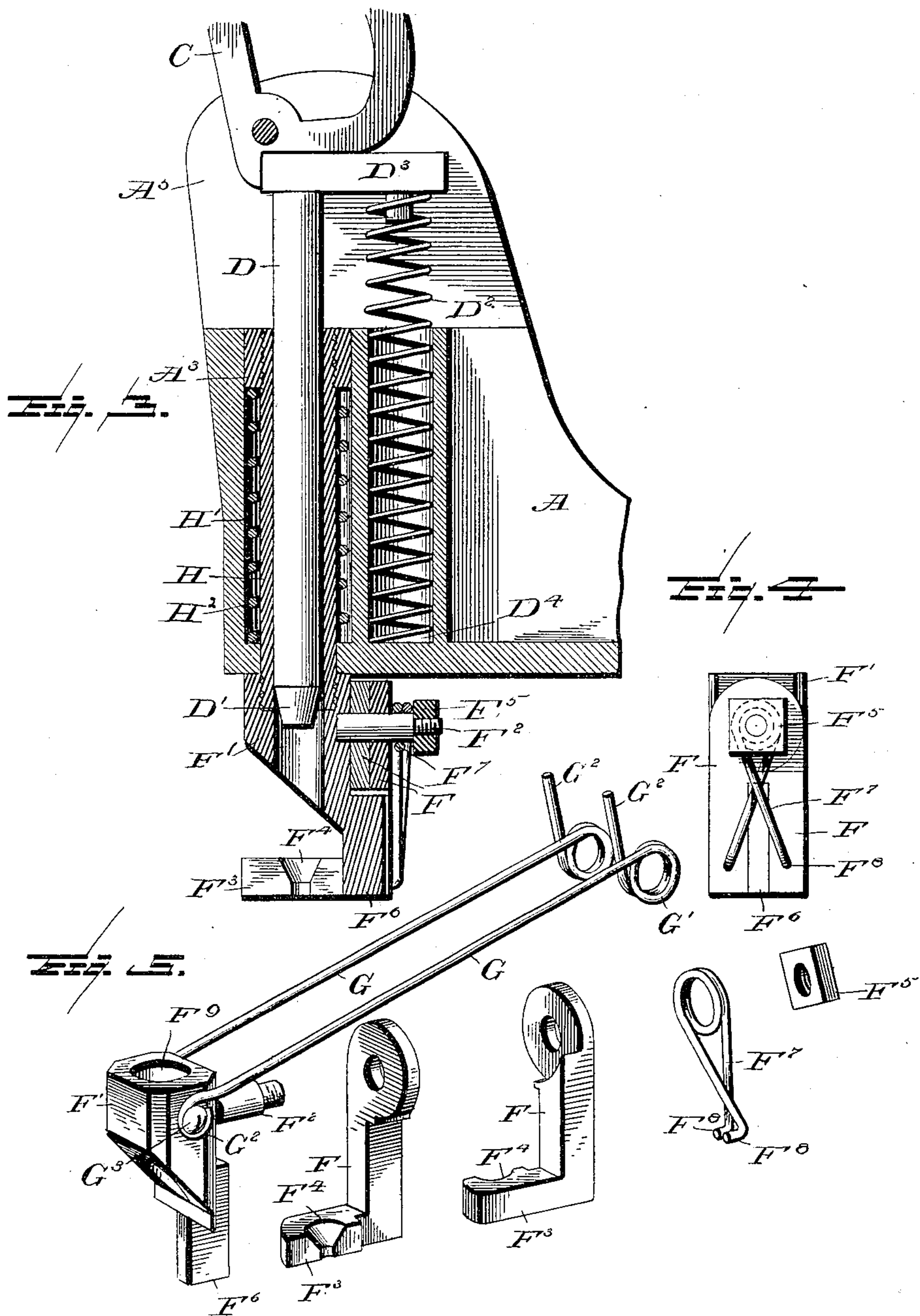
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Witnesses  
L. C. Hills  
Alfred T. Page.

By

Inventor:  
Henry C. Pomeroy,  
E. B. Stocking

Attorney



# UNITED STATES PATENT OFFICE.

HENRY C. POMEROY, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-FOURTH TO  
FRED H. SMITH, OF SAME PLACE.

## RIVETING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 659,626, dated October 9, 1900.

Application filed December 11, 1899. Serial No. 739,984. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY C. POMEROY, a citizen of the United States, residing at Chicago, in the county of Cook, State of Illinois, have invented certain new and useful Improvements in Riveting-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to riveting-machines, and particularly to improvements in the means for retaining in position the rivets prior to their insertion through the material to be operated upon.

15 The invention has for an object to provide an improved structure whereby a rivet may be supported upon a post by its head or base and its shank projected upward beneath the material to be operated upon, or the rivet  
20 may be supported above said material with its shank projecting downward toward the material.

Other objects and advantages of the invention will hereinafter appear in the following  
25 description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings, Figure 1 is an elevation of the machine with the foot-power mechanism applied thereto. Fig. 2 is a vertical section through the post for supporting the rivet with its shank upward. Fig. 3 is a vertical section through the jaws for supporting the rivet with its shank downward and illustrating a modified form of supporting-spring for  
35 said jaws. Fig. 4 is a rear elevation of the rivet-supporting jaws. Fig. 5 is a detail perspective of the rivet-supporting jaws with the parts separate and illustrating the supporting-spring shown in Fig. 1, and Fig. 6 is a detail showing the means of connecting the foot-power mechanism with the operating-handle of the machine.

Like letters of reference indicate like parts  
45 throughout the several figures of the drawings.

The letter A designates any suitable form of framework for supporting and containing the several parts of the riveting mechanism  
50 and is mounted upon any desired support—for instance, as shown at B. In the present

instance the framework is shown as provided with a pivoted vise-jaw A', adapted to be operated by means of a threaded rod A<sup>2</sup> and handle A<sup>3</sup>, said jaw being automatically opened 55 when the rod is rotated in one direction by means of a spring A<sup>4</sup>. The upper part of the frame is also provided with the usual pivoting-lugs A<sup>5</sup> for supporting the handle C. This handle is provided with the usual cam- 60 surface C' and operates upon a plunger D for the purpose of forcing the rivet through the material and afterward heading the same. The foregoing parts may, however, be of any desired construction, as my invention 65 relates particularly to improvements in the rivet-holding mechanism to be hereinafter described.

For the purpose of supporting a rivet with its shank upward I have devised an improved 70 structure of post over that shown in my allowed application filed July 27, 1898, Serial No. 687,035. The forward part A<sup>6</sup> of the frame A is provided with a recess A<sup>7</sup>, having an aperture A<sup>8</sup> at its base. Into this recess a removable 75 supporting post and sleeve are introduced, as shown at Fig. 2. The post E is provided at its lower portion with a supporting-block E' and at its upper portion with a sleeve E<sup>2</sup>, adapted to support material above the shank 80 of the rivet resting upon the post E. This sleeve is normally held in an elevated position, as shown in Fig. 2, by means of a coiled spring E<sup>3</sup>, operating against an annular flange E<sup>4</sup> upon the inner face of the sleeve E<sup>2</sup>, and 85 the lower portion of said sleeve is seated in a recess E<sup>5</sup>, formed in the block E'. Beneath the flange E<sup>4</sup> is a depending stop E<sup>6</sup> to limit the downward movement of the sleeve when the same has passed below the upper face of 90 the supporting-head E<sup>7</sup> upon the post E. It will be seen that the annular flange E<sup>4</sup> limits the upward movement of the sleeve, while the stop E<sup>6</sup> limits its downward movement, and all of the parts of the post, sleeve, block, and 95 spring are so riveted together that they may be removed from the socket or recess A<sup>7</sup> in the frame and replaced by a different size of sleeve and post for use in connection with various sizes of rivets. This removal is ef- 100 fected by means of a tool introduced through the opening A<sup>8</sup>, by which the block E' may



be forced upward to remove the post, sleeve, block, and spring from the recess. It will thus be seen that rivets having different sizes of head or base can be used in the machine by simply changing the size of post and sleeve located in the recess. The plunger D in its descent forces the rivet through the material and heads the same, as described in the above-mentioned application and is common in this art. If it be desired, however, to support the rivet with its shank projecting downward, the jaws F may be used. These jaws are pivoted upon a collar F' by means of a stud F<sup>2</sup> at the back thereof, and each jaw is provided with an angle arm or finger F<sup>3</sup>, provided with a tapering seat F<sup>4</sup>, within which the rivet may be supported. The jaws may be secured upon the stud F<sup>2</sup> by means of a securing-nut F<sup>5</sup> or in any desired manner and are held in contact with each other and with a centering-stop F<sup>6</sup> by means of a tension-spring F<sup>7</sup>, supported upon the stud F<sup>2</sup> and provided with angular ends F<sup>8</sup>, adapted to engage each of the jaws, preferably by entering a recess in the same. The collar F' is provided with an aperture F<sup>9</sup>, through which the plunger D passes, and said plunger is provided at its lower end with a tapered portion D', which in its downward movement engages the tapering sockets F<sup>4</sup> in the arms F<sup>3</sup> of the jaws F, thus forcing the same apart and releasing the rivet when the shank of the same has come into contact with the material operated upon.

For the purpose of permitting a preliminary downward movement of the jaws before the same are separated for the releasing of the rivet the jaws may be yieldingly supported by means of a spring or springs, preferably as shown in Figs. 1 and 5, wherein a spring G is provided with a coiled portion G' and projecting end G<sup>2</sup>, adapted to be secured to the frame A, while the opposite end G<sup>2</sup> of the spring G is pivotally connected to the collar F' by means of pivot-pins G<sup>3</sup> upon each side of the collar. By this means the collar will be moved downward by the pressure of the plunger exerted upon the head of the rivet and uprights and centers the same until the shank of the rivet comes in contact with the material. The increased pressure then separates the jaws of the holder and permits the shank of the rivet to pass through the material and be released from the jaws when the continued pressure upon the rivet expands the shank of the same upon the post E, thus heading the same upon the opposite face of the material operated upon.

In Fig. 3 I have illustrated a modified structure for supporting a collar F', which consists of a sleeve H, secured to the collar and extending upward into a recess H', formed in the head of the frame A. Surrounding this collar is a retracting-spring H<sup>2</sup>, which rests upon the base of the recess at its lower end and at its upper end bears against a tension and guiding nut H<sup>3</sup>. It will be under-

stood in each instance that the plunger D is properly elevated by any suitable form of spring—for instance, a spring D<sup>2</sup>—bearing against a head D<sup>3</sup>, carried by the plunger, and seated in the recess D<sup>4</sup>, formed in the frame A.

In passing rivets through material where greater pressure is required than can be ordinarily exerted by the hand upon the lever C it has been found desirable to provide a simple and readily-attached foot-power mechanism, and for this purpose I have devised a structure embodying a foot-lever I, pivoted at I' to any suitable support and normally elevated by means of a tension-spring I<sup>2</sup> or other suitable spring extending from said lever to a fixed support. Extending upward from the lever is a link I<sup>3</sup>, to which there is pivoted at I<sup>4</sup> parallel arms I<sup>5</sup>, extending upon opposite sides of the machine and pivotally connected at their upper ends I<sup>6</sup> to lugs C<sup>2</sup>, extending outward at opposite sides of the handle C. This structure of foot-power mechanism can be readily applied to the hand-machine whenever desired and detached therefrom by simply disconnecting the arms I<sup>5</sup> from the lugs C<sup>2</sup>, and the pivotal connection at I<sup>4</sup> permits the parts to be folded in a small and convenient space for the purpose of packing and transportation. It will be seen that pressure upon the lever I will depress the cam-lever C, thus effecting the riveting operation, while the spring I<sup>2</sup> will return the parts to an elevated position.

The operation of the rivet-holding mechanisms and the foot-power device will be apparent from the foregoing description, and it is also obvious that while the rivet-holding devices are adapted for coöperation with each other, thus producing a machine adapted to operate with the rivet-shank upward or downward, still either of these devices might be omitted and the remaining one used alone. It will be seen, further, that the post E can be used either to support the head of the rivet or to upset the shank thereof when it is passed through the material and that the plunger D will operate to upset the extending shank of the rivet whose head is supported upon the post E, while the arms F<sup>3</sup> of the jaws will rest upon the upper surface of the material operated upon, thus holding the same firm while the rivet passes through the material. When the jaws are used to support a rivet with its shank downward, it will be seen that the sleeve E<sup>2</sup> will rest upon the under surface of the material, thus always holding the same during the riveting operation.

It is obvious that changes may be made in the details of construction and configuration without departing from the spirit of the invention as defined by the appended claims.

What is claimed is—

1. A rivet-holding pocket comprising a recessed block, a supporting-post secured within said block and recess and having a head at its upper end, a sleeve surrounding said head



and provided with an interior flange to contact with said head, and a spring extending at one end into said sleeve and bearing against said flange and at its opposite end into the  
5 recess in the block surrounding said post; substantially as specified.

2. In a riveting-machine having a recessed base, the combination with a frame and plunger mounted above said base, of a rivet-supporting post having a flanged head, a block  
10 fitting said recess to removably support said post therein, a sleeve surrounding said post and having an interior flange adapted to en-

gage beneath said head, a spring surrounding said post between said sleeve-flange and  
15 block, an extension carried by the sleeve below said flange and adapted to contact with said block in the downward movement of the sleeve; substantially as specified.

In testimony whereof I affix my signature 20  
in presence of two witnesses.

HENRY C. POMEROY.

Witnesses:

FRED H. SMITH,  
E. FLORENCE SMITH.