

No. 646,035.

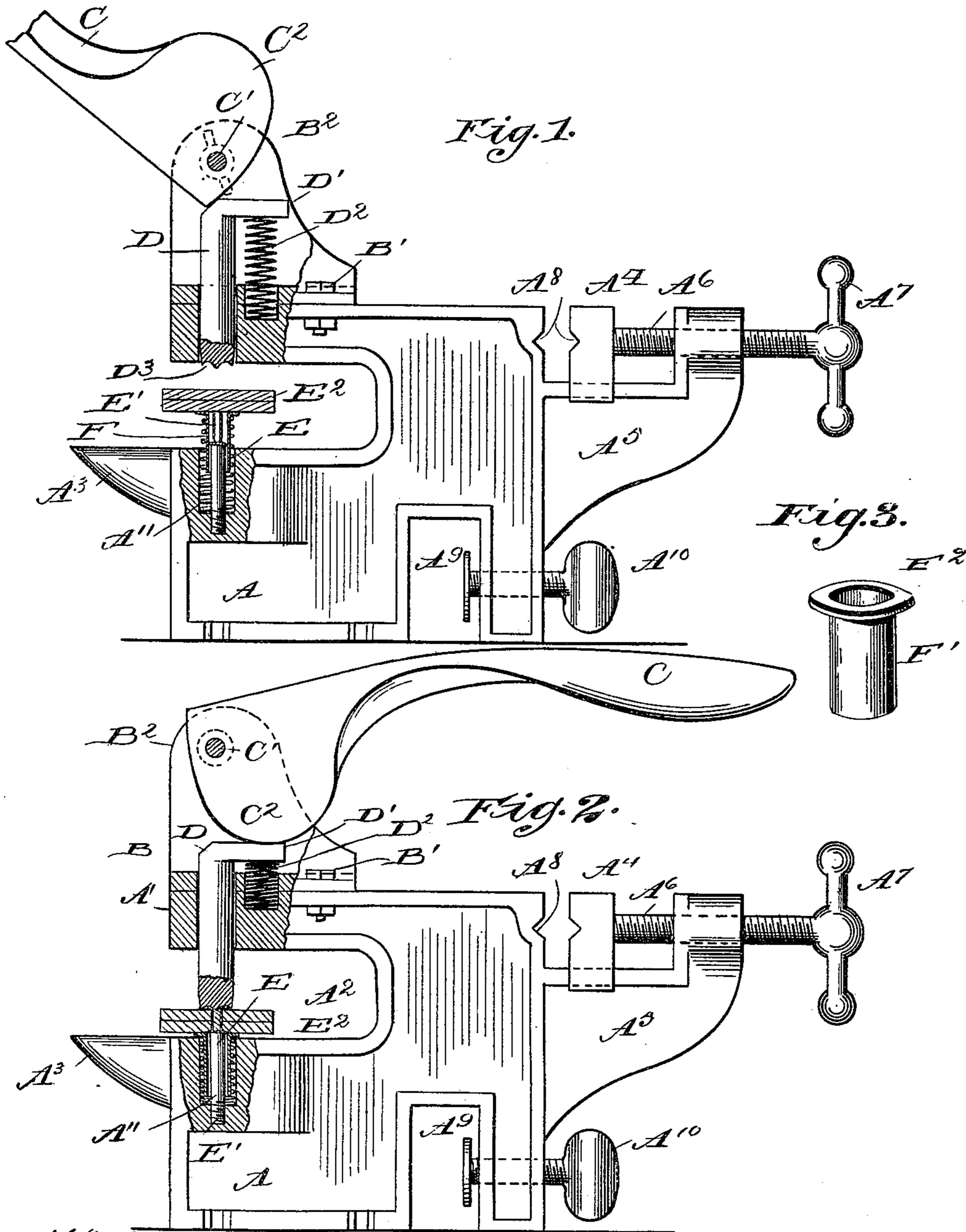
Patented Mar. 27, 1900.

H. C. POMEROY.
COMBINED RIVETING AND PUNCHING MACHINE.

(Application filed July 27, 1898.)

(No Model.)

2 Sheets—Sheet 1.



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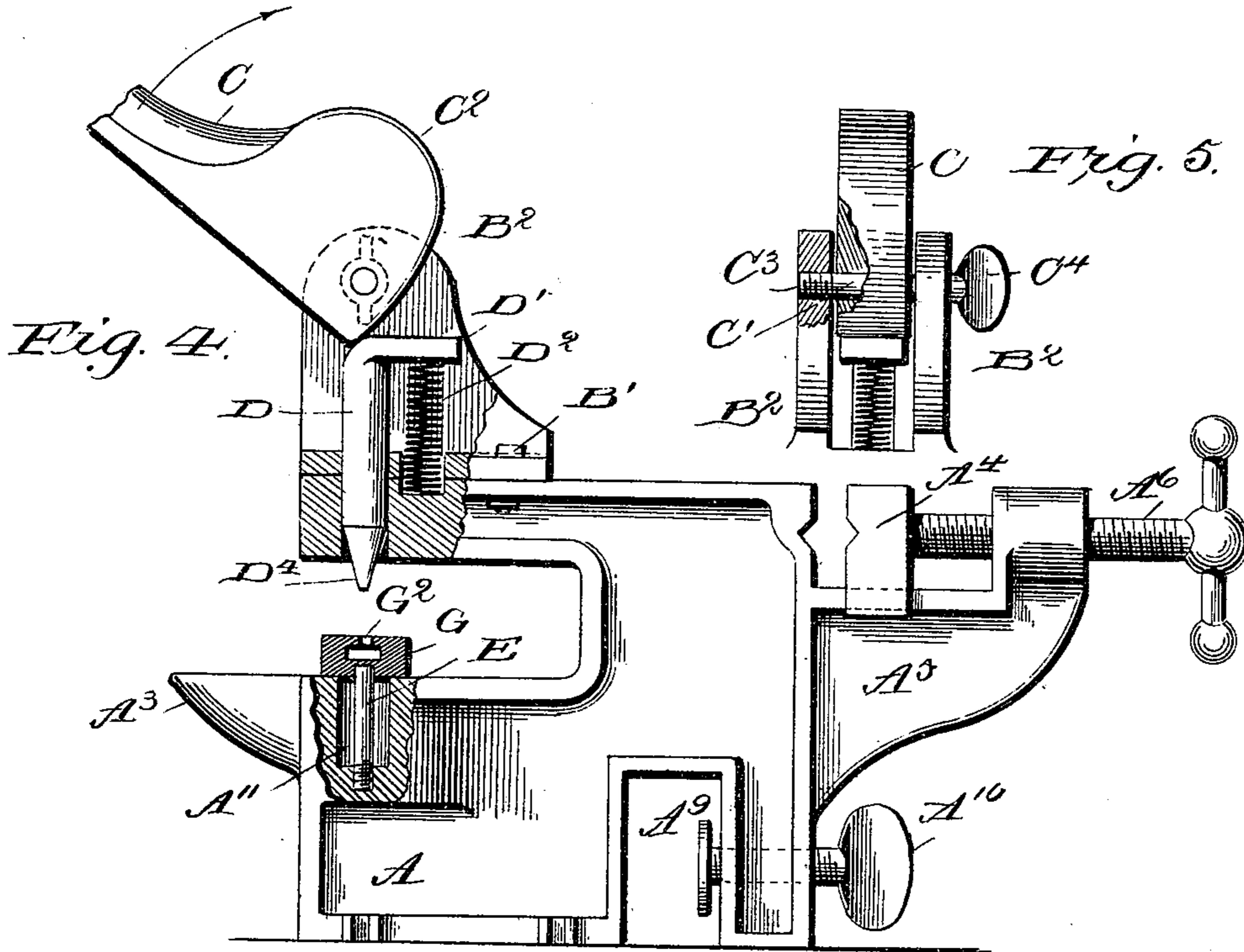


Fig. 6

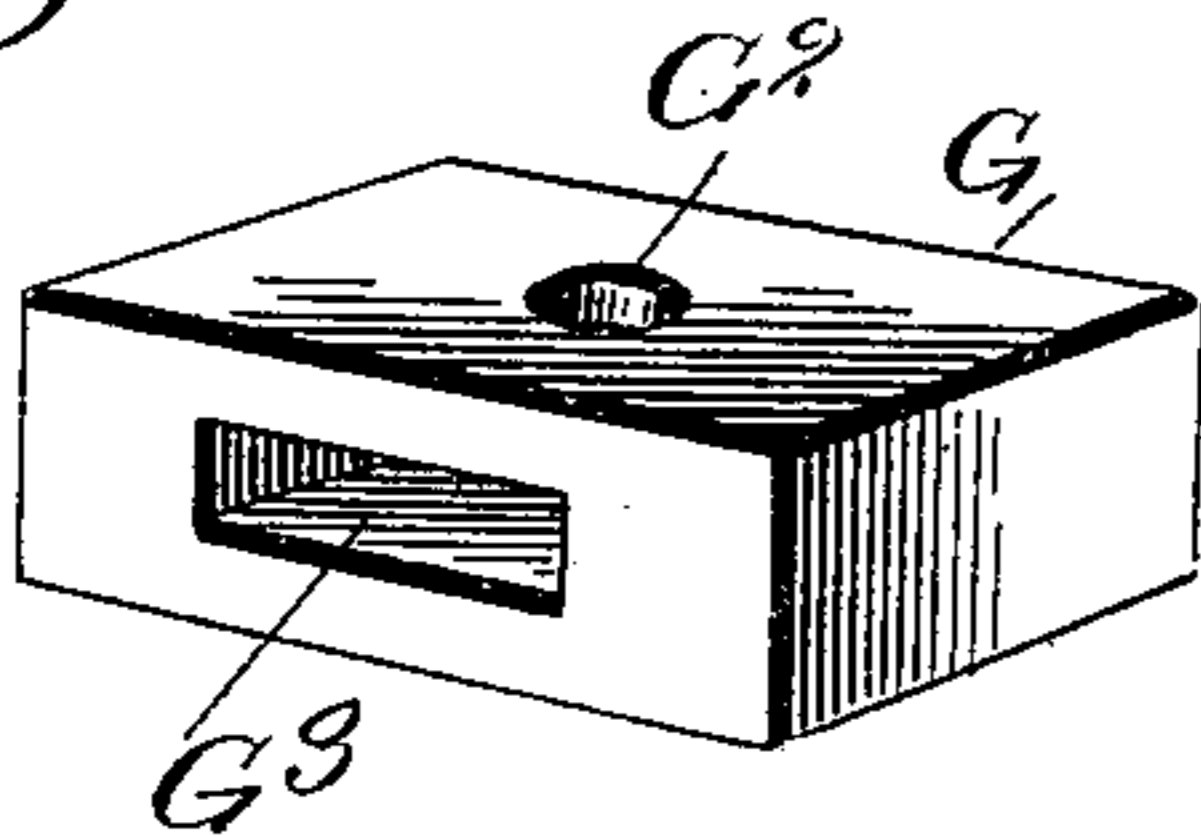


Fig. 8.

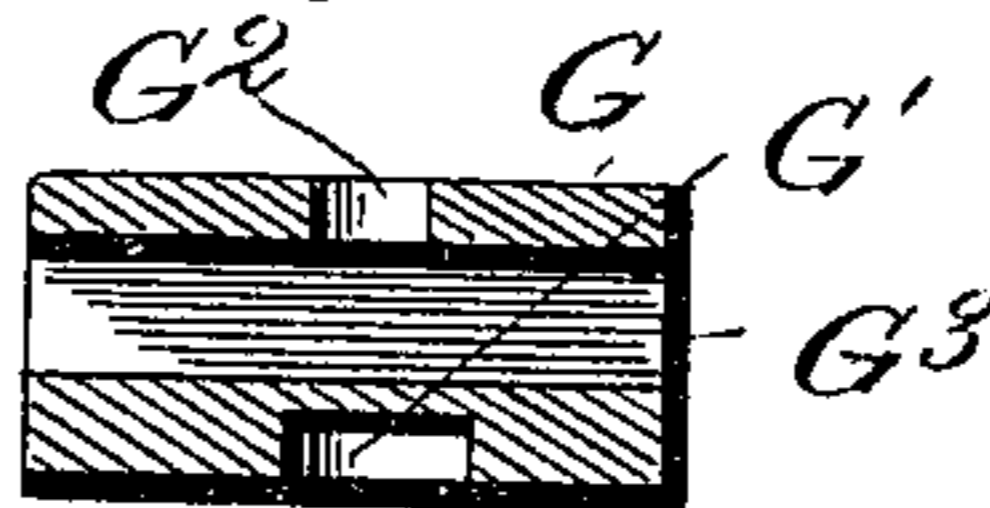


Fig. 7.

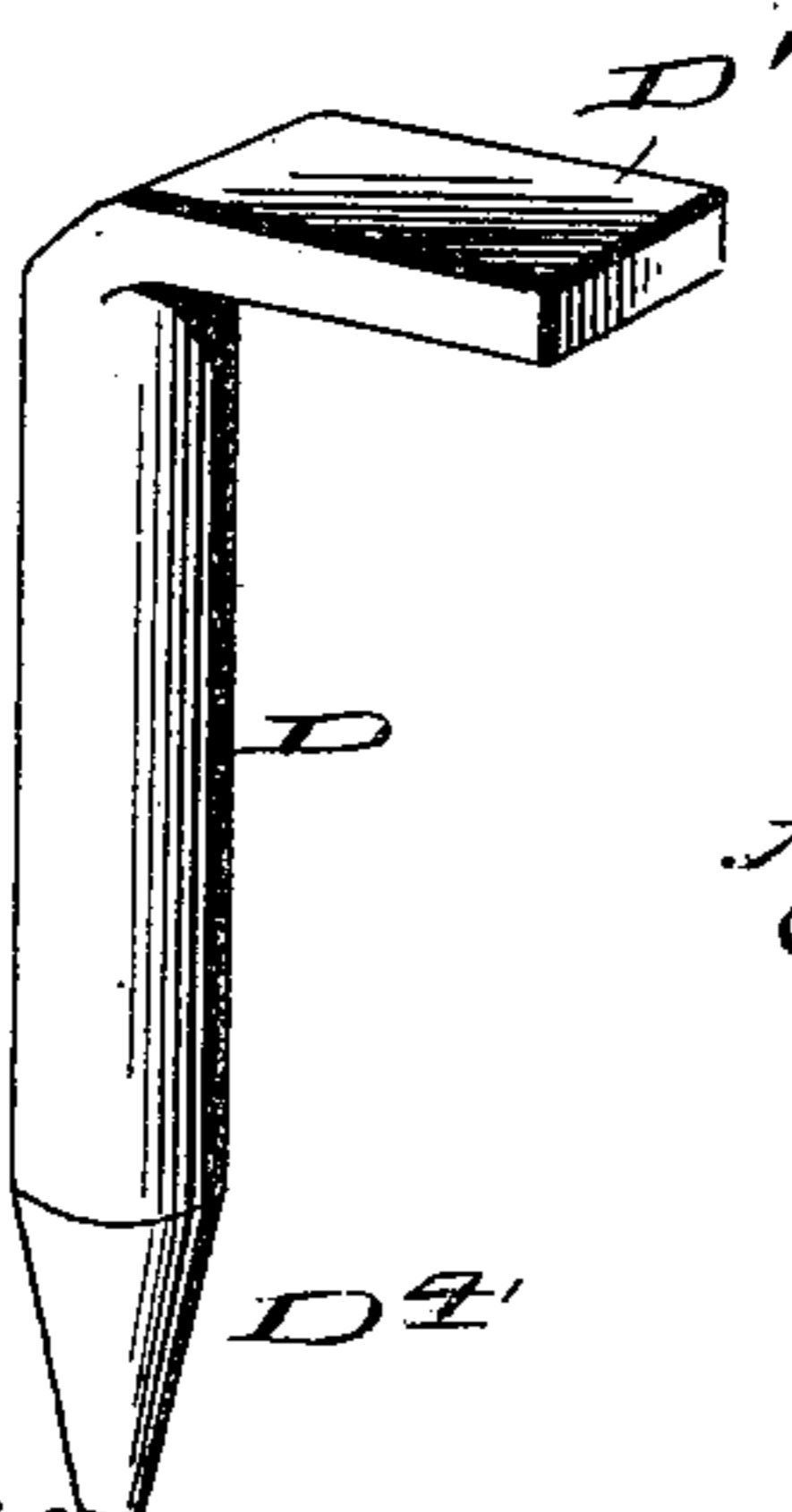
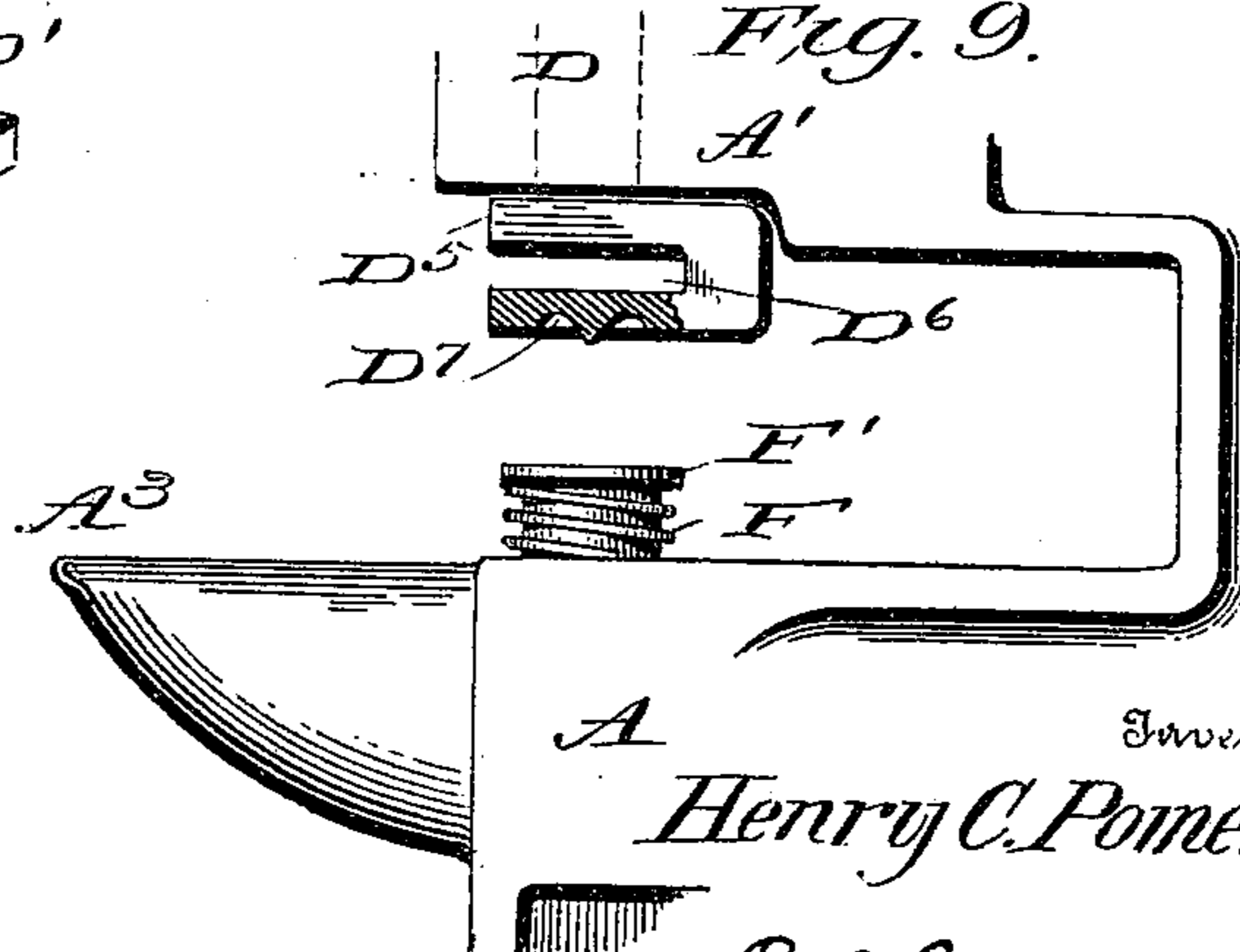


Fig. 9.



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UNITED STATES PATENT OFFICE.

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

COMBINED RIVETING AND PUNCHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 646,035, dated March 27, 1900.

Application filed July 27, 1898. Serial No. 687,036. (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 a Combined Riveting and Punching Machine, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to a combined riveting and punching machine and is adapted for all classes of work where parts are to be connected by a rivet.

The invention has for its object to form a convenient tool or device embodying a riveting mechanism in which parts may be removed and replaced by other parts to constitute a punching mechanism, as hereinafter described, and set forth in the claims.

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

In the drawings, Figure 1 is a side elevation, with parts in section, of the riveting device with the plunger at rest. Fig. 2 is a similar view with the plunger depressed to set a rivet. Fig. 3 is a detail perspective of the sleeve located within the supporting-spring for the work. Fig. 4 is a side elevation, with parts in section, showing the punching device applied. Fig. 5 is a detail end elevation, with parts in section, illustrating the removable cam-lever. Fig. 6 is a detail perspective of the die-block. Fig. 7 is a similar view of the punch. Fig. 8 is a cross-section through the die-block, and Fig. 9 is a modified form of the riveting-plunger.

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

The letter A represents a frame or foundation provided with a neck A' at its upper portion, which forms a U-shaped recess A². The base is also provided at one side with an anvil A³ and at the opposite side with the movable vise-jaw A⁴, suitably mounted on an extension A⁵ and operated by the screw A⁶, provided with a handle A⁷, which is rotatably mounted in the extension. The stationary and movable members of this vise are each provided with a recess A⁸, within which may

be clamped the strands of two pieces of wire which are to be spliced. The lower portion 55 of the base is also provided with an opening A⁹ and with a clamping-screw A¹⁰, by means of which the base may be secured to any suitable support. When possible, however, it is preferable to secure the same by resting the 60 base upon a support. Upon the neck A' a removable casting B is secured by means of bolts B', said castings being provided with upwardly-extending ears B², between which a lever C is pivoted by means of a bolt C', and 65 provided at its pivotal end with a cam C². This casting may be removed from the frame A and the upper surface of the same left free for use as an anvil, if desired. The removable bolt C' may be threaded at one end, as at 70 C³, Fig. 5, and provided at the other end with a thumb-piece C⁴.

The base of the casting B and the neck A' are both provided with apertures in alignment with each other, through which may be 75 passed a plunger D, having at its lower end either a riveting device or a punching device. This plunger is provided with a lateral extension D', and beneath this extension a spring D² is located, which spring is seated 80 at its lower end in a suitable recess formed in the casting B and neck A'. By the use of this spring the plunger may be constructed so as to fit closely within its recess and is not 85 liable to the lateral movement which would occur were the spring located around the plunger. It also permits the use of springs of different tension and the convenient changing of the plunger when the lever C has been removed. The base A is provided with a recess 90 A¹¹ beneath the plunger D, and centrally located within said recess is a post or standard E, which may be threaded at its lower end, as at E'.

The parts thus far described are adapted 95 for the application of either the riveting-tool or the punching device, and I will first proceed to describe in detail the riveting-tool used, which may be replaced at will by the punching mechanism. The lower end of the 100 plunger D when used for riveting is provided with a suitable annular recess D³ for heading the rivet, and the rivet E' is supported upon the post or standard E. The work or material 105 E² to be riveted is supported above the rivet by means of a coiled spring F, located within

the recess A¹¹ in the base A and surrounding the post E. At the upper end of this spring a sleeve F', formed with a horizontal flange F², is provided, beneath which flange the upper edge of the spring rests. This flange also closely surrounds the post E and prevents any lateral play of the coiled spring when pressure is applied thereto. The spring normally supports the work above the upper edge of the rivet, and when the plunger is depressed the rivet is forced through the material and the open end thereof headed or overturned upon the material, as illustrated in Fig. 2. This construction is applicable for use with material of a reasonably-soft nature, through which the ordinary rivet can be forced without bending or breaking the rivet. When, however, the material operated upon is of a stiffer or more refractory character, such as metal, I provide a punching device which can be applied for first forming an aperture through the material into which the rivet will be afterward introduced and set. The plunger D in this interchangeable form is provided with a punching-point D⁴, and the spring F and sleeve F' are simply lifted from the socket or recess and a die-block G applied to the upper end of the post E. For the purpose of holding the die-block G in proper alinement with the punching-point D⁴ a recess G' is formed in the lower surface of the block, into which the upper end of the post E will fit, and the upper face of the block is provided with an opening G², through which the point of the plunger will pass in the punching operation. A lateral opening G³ is also provided through the block for the removal of the material punched out, so that the same is prevented from falling into the recess A¹¹ of the base A, where it would interfere with the insertion of the spring when the riveting operation is again performed.

From the foregoing it will be seen that in order to complete the punching device when the riveter is ready for use it is only necessary to remove the bolt C' when the lever C is in the position indicated in Fig. 1, when the plunger provided with the riveting-recess D³ can be lifted out and a plunger provided with the punching-point D⁴ inserted in its place. The spring and sleeve will also be removed from the post E and the die-block placed thereon, when the parts are ready for the punching operation. It will be readily understood that the punching device may be replaced by the riveting through a simple reversal of the above-mentioned operation.

In Fig. 9 I have illustrated a modified form of riveting device particularly adapted for placing a rivet through two layers of material and leaving one or more layers unriveted, as in the case where a loop is located above the material to be riveted. In such a case the lower end of the plunger D is provided with a U-shaped riveter D⁵, provided with a slot or recess D⁶ to receive the material not to be riveted, and the lower end of this de-

vice is provided with an annular recess D⁷ to perform the riveting operation. The spring F and sleeve F' are similar to those heretofore described, and in operation the loop is simply placed within the slot or recess D⁶ and the parts to be riveted under the recess D⁷.

This invention combines in one device several tools adapted to perform their several functions and forms a most convenient device for use in repairing harness, straps, and belting, or riveting sections of sheet metal, as the structure is adapted to either force the rivet through the material or first punch the material and then place the rivet therein. The structure of frame by which an anvil and vise are formed, with the other features of construction, provides most convenient attachments for operating upon the classes of material which may be riveted. For instance, the material may be first clamped in the vise, then punched and riveted, after which the rivets may be thoroughly headed or set upon the anvil provided therefor. The device is also particularly adapted for splicing wire, as the strands to be spliced are held within the recesses A⁸ of the vise and the free ends of the wire closely coiled about the body of the adjoining portion.

Having described my invention, what I claim is—

1. A combined riveting and punching device comprising a frame provided with an apertured neck and recessed base, a plunger slidably mounted in said aperture, means for depressing said plunger, a stationary post located in the recess formed in the base of the frame and provided with a flat upper face, and a work-support having a socket to fit said post and adapted to contact with said base; substantially as specified.

2. A combined riveting and punching device comprising a frame provided with an apertured neck, a plunger slidably mounted therein, means for depressing said plunger, a stationary post located in the base of the frame, and a die-block provided with a punch-receiving opening and a recess to fit the upper end of said post; substantially as specified.

3. A combined riveting and punching device comprising a frame provided with an apertured neck and a recessed base, a plunger located in said aperture, a cam-lever for depressing said plunger, a removable pivot for said lever, a post located in the recess in the base of the frame beneath said plunger, a die-block provided with a lateral opening, a punch-receiving opening, and a recess to fit the upper end of said post; substantially as specified.

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

HENRY C. POMEROY.

Witnesses:

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F. E. BAUMANN.