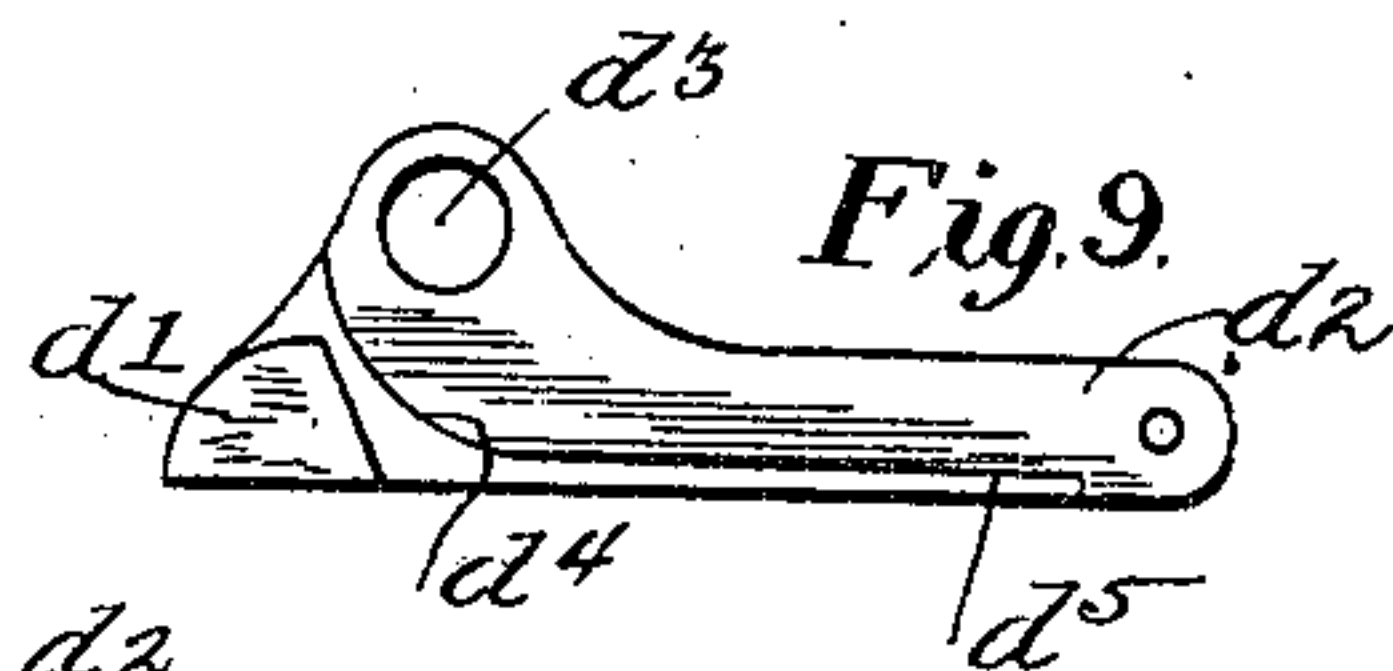
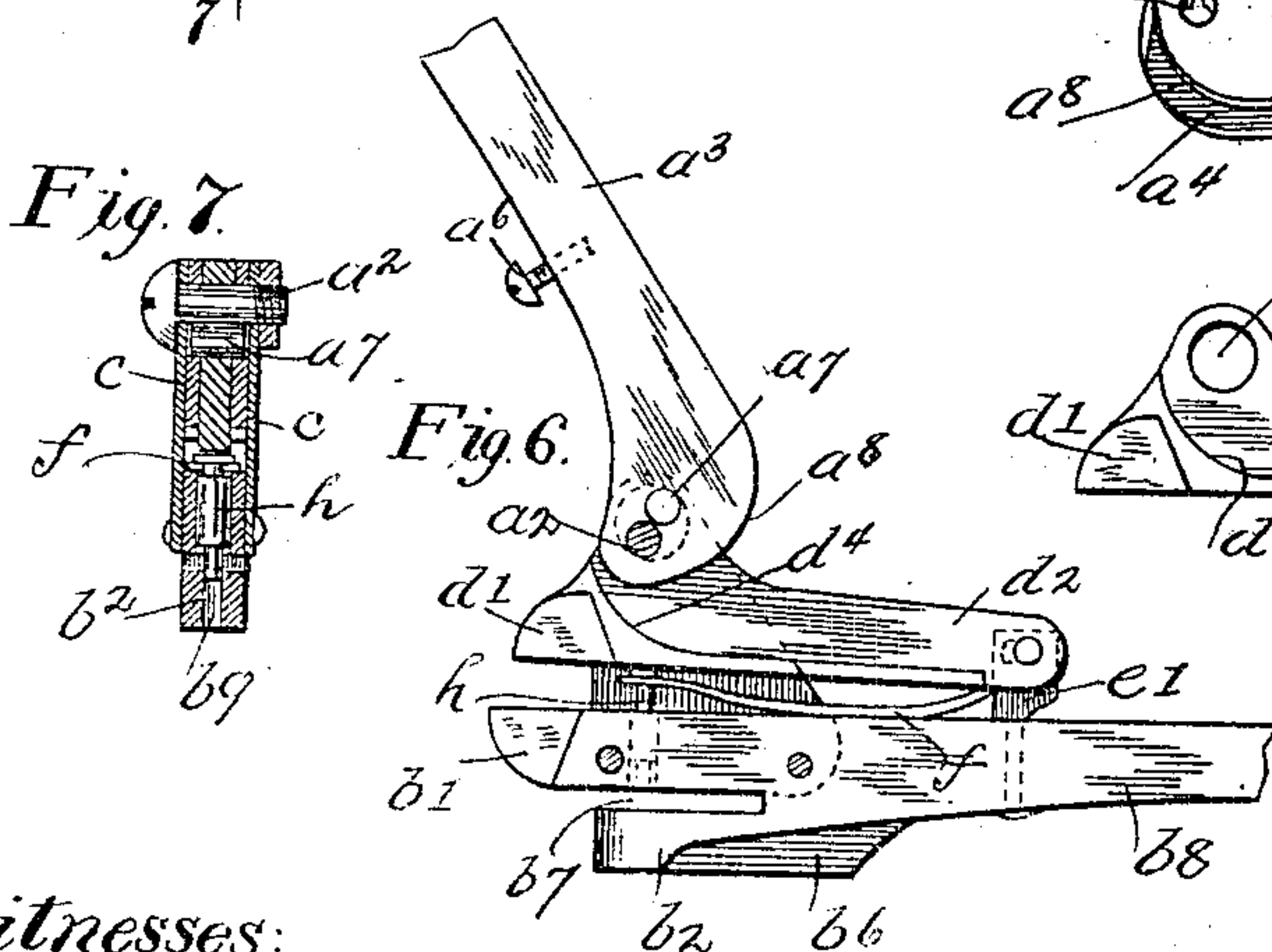
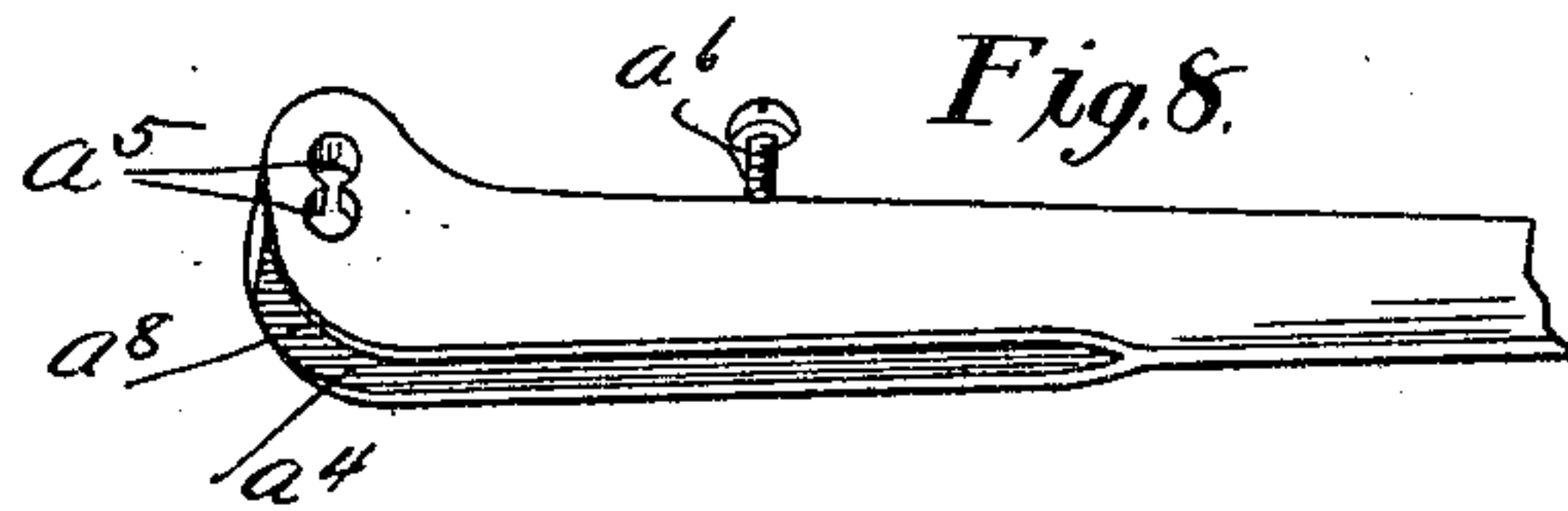
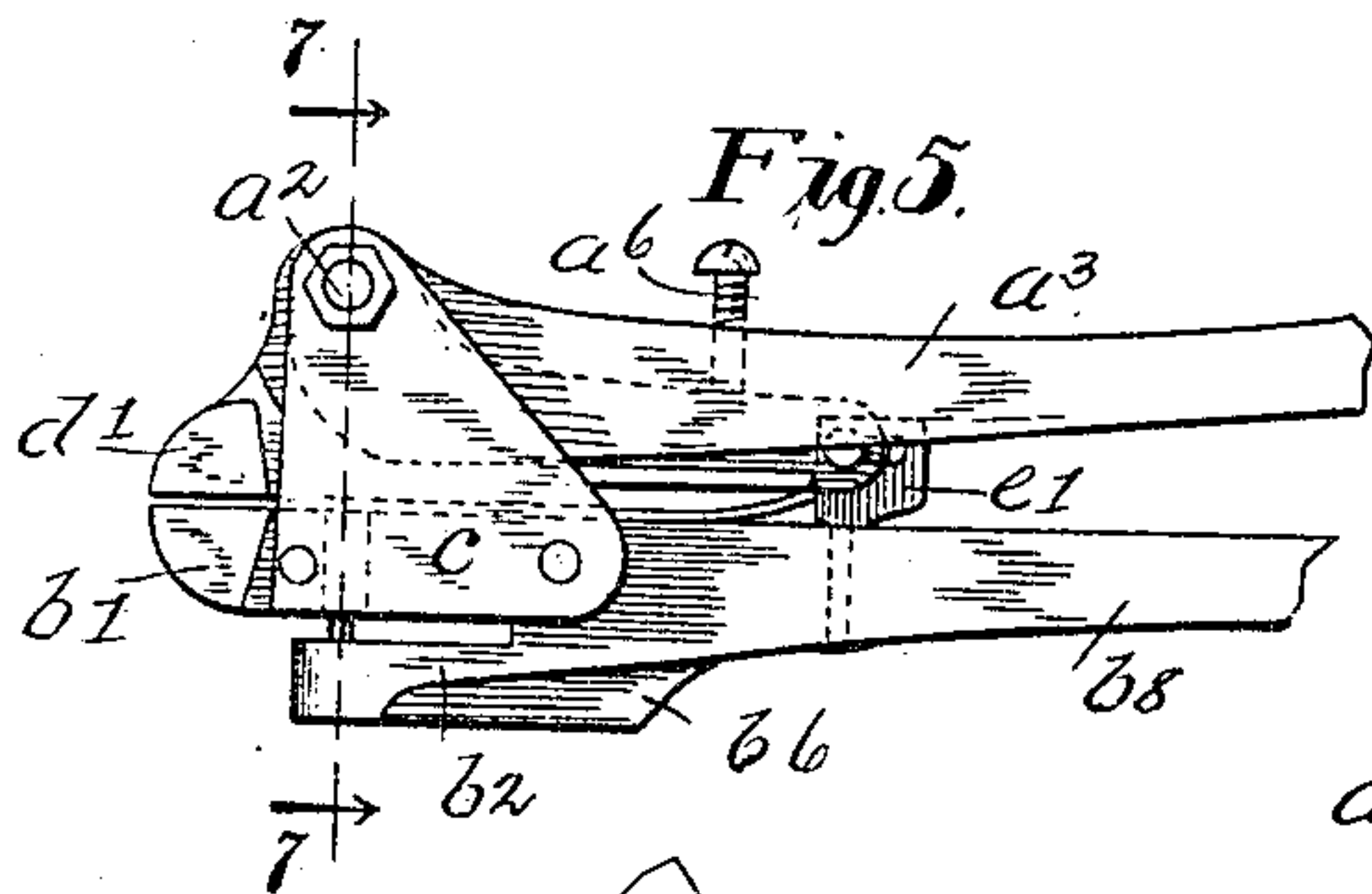
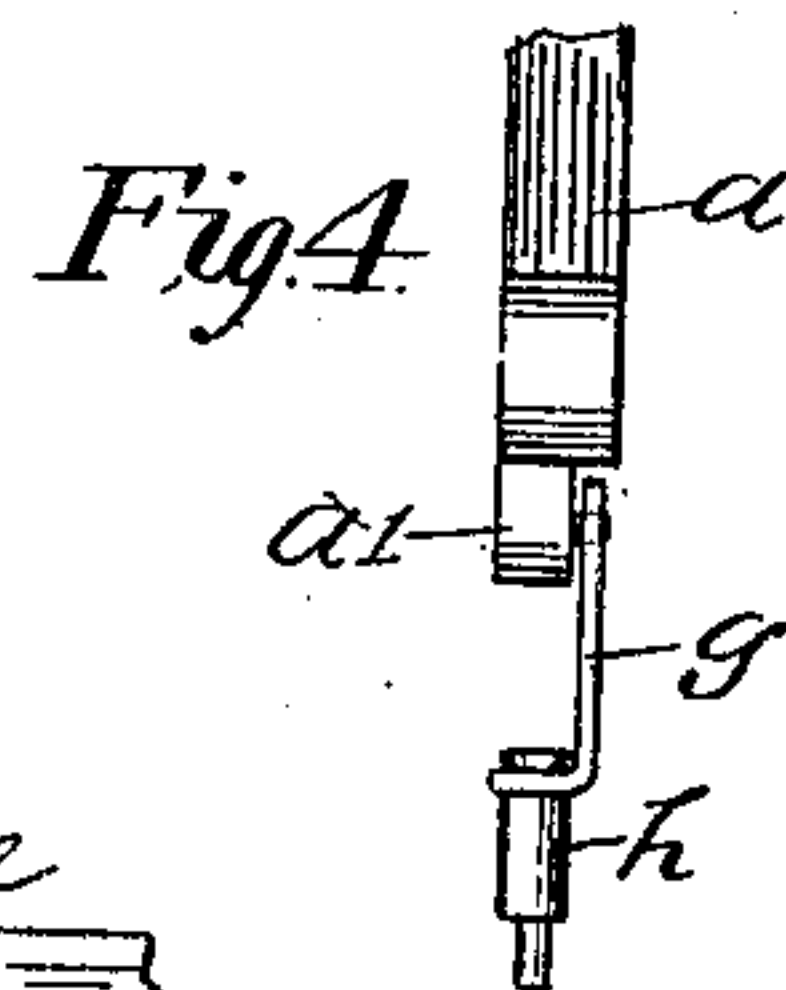
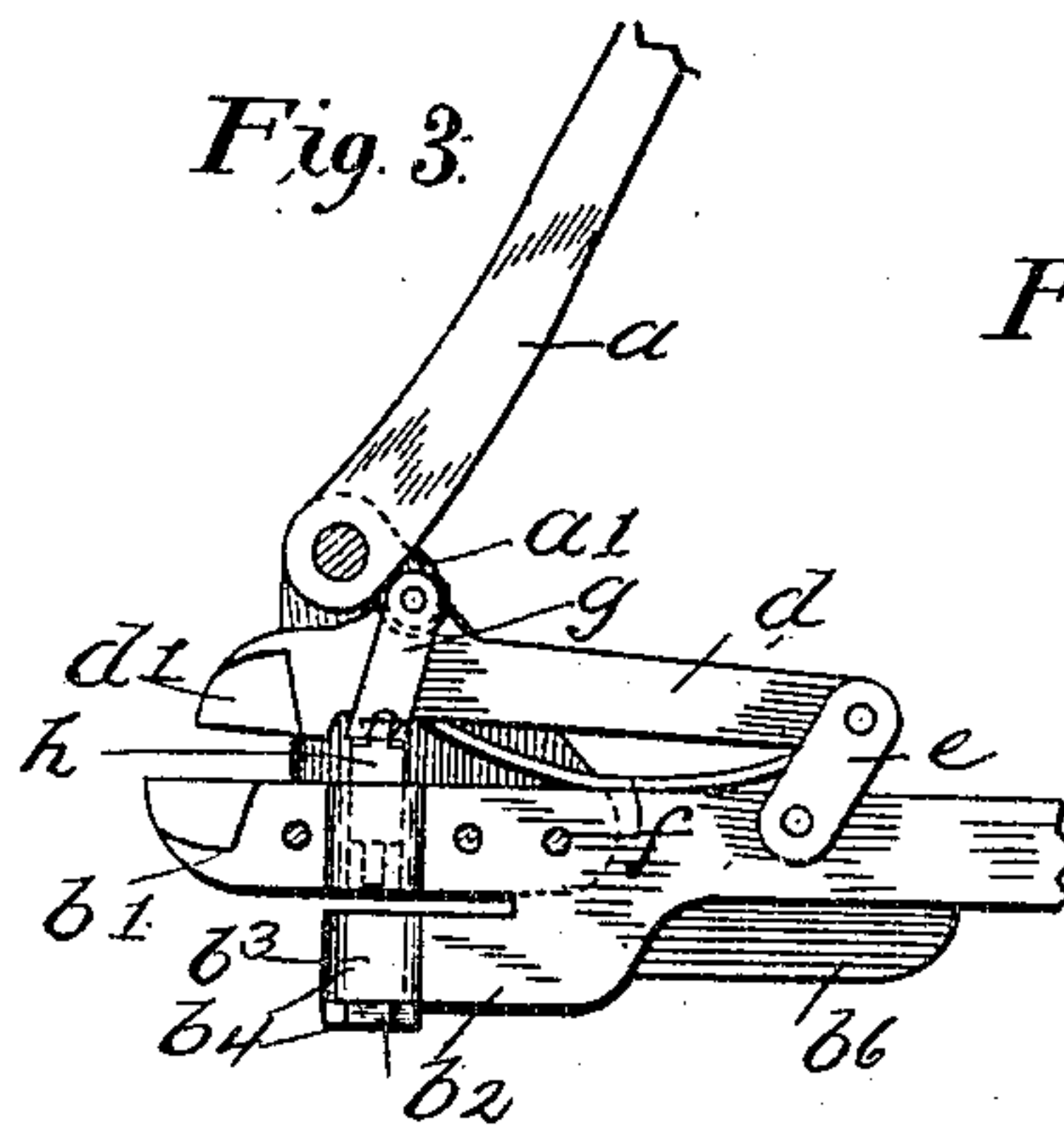
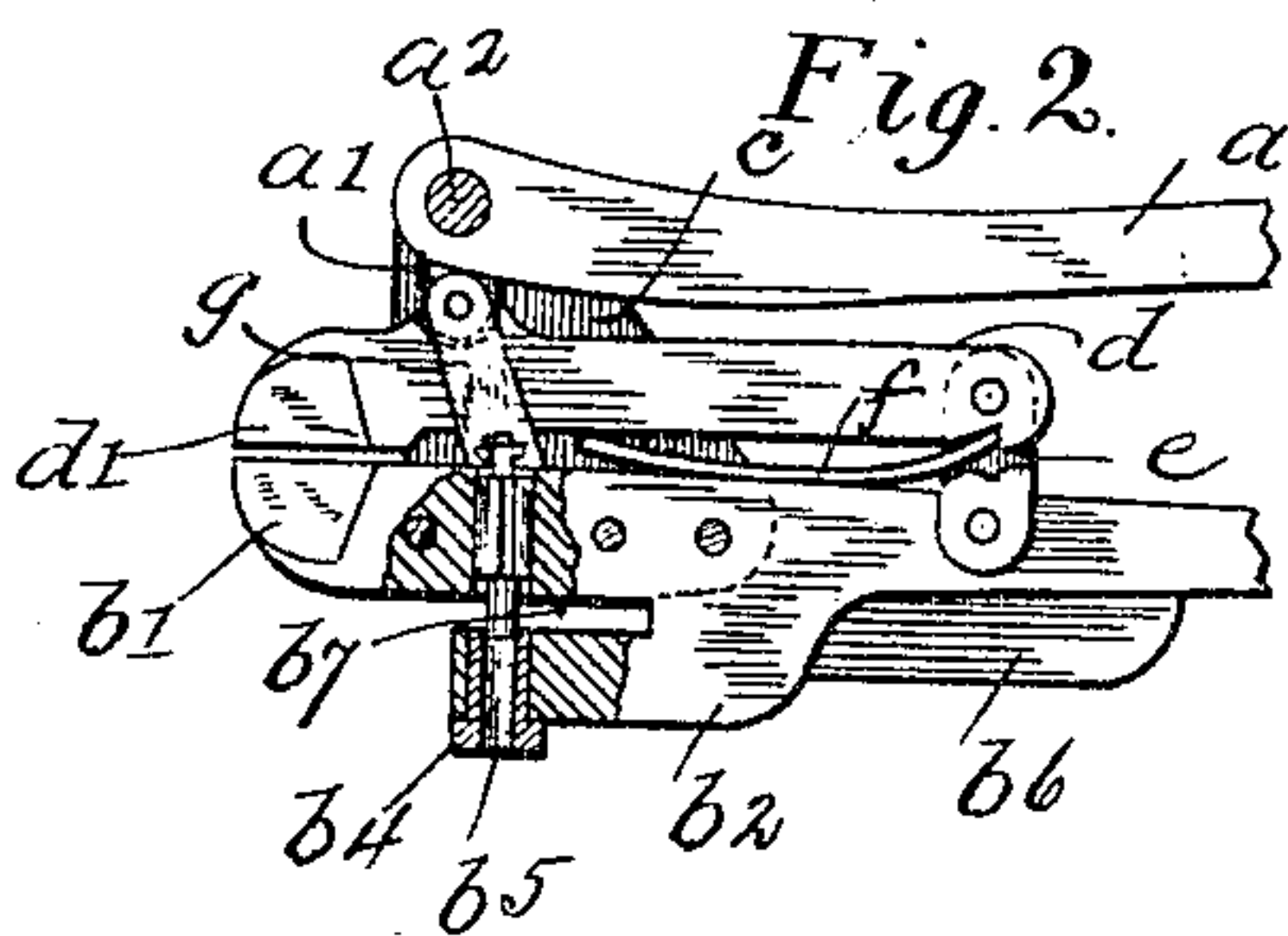
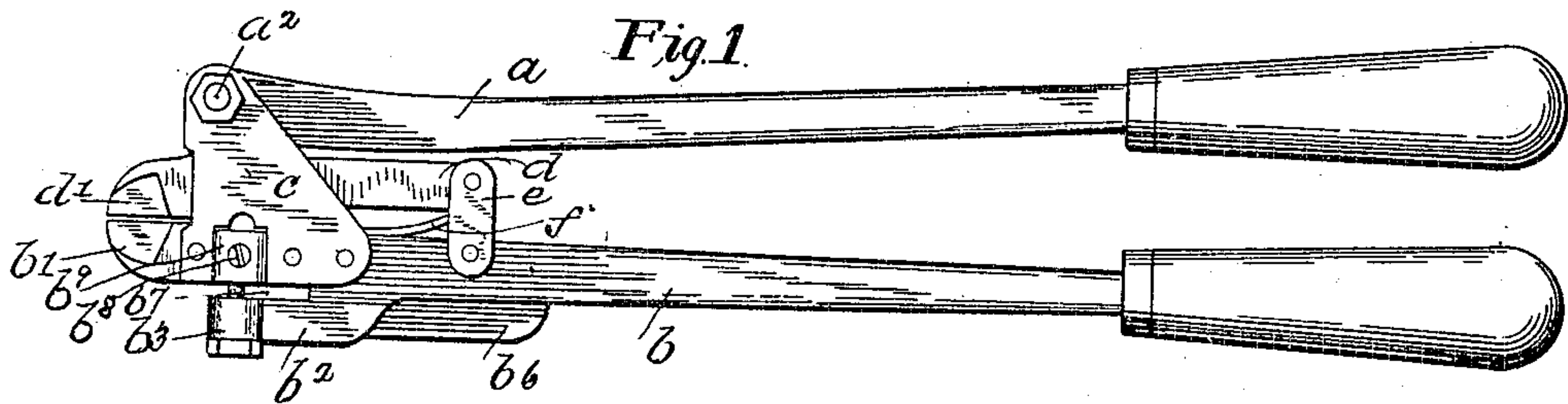


No. 812,225.

PATENTED FEB. 13, 1906.

J. L. PAINTER.
BOLT CLIPPER AND PUNCH.
APPLICATION FILED NOV. 7, 1905.



Witnesses:
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UNITED STATES PATENT OFFICE.

JOHN L. PAINTER, OF BELLEVUE, OHIO.

BOLT-CLIPPER AND PUNCH.

No. 812,225.

Specification of Letters Patent.

Patented Feb. 13, 1906

Application filed November 7, 1905. Serial No. 286,230.

To all whom it may concern:

Be it known that I, JOHN L. PAINTER, a citizen of the United States, residing at Bellevue, in the county of Huron and State of Ohio, have invented certain new and useful Improvements in Bolt-Clippers and Punches, of which the following is a specification.

This invention relates to improvements in tools for punching holes in sheet metal and for cutting or clipping rivets and bolts; and the especial object of the improvements, which form the subject-matter of this application for patent, is to produce a tool in which the working leverage will be great and the friction slight and in which a shear-cutting action will be effected.

A further object is to combine in a single tool the operations of cutting and punching, which are frequently alternately used in riveting sheet metal.

Further objects of general utility are attained by my invention, as will be apparent to those skilled in the art to which said device belongs.

In the accompanying drawings, which form a part of this application, I have shown two forms of my invention, both, however, embodying the same principles of construction and operation.

In the following described views, Figure 1 shows in side elevation a complete device embodying my improvements. Fig. 2 is a view, partly in elevation and partly in section, showing the parts when in the punching operation. Fig. 3 shows in side elevation the parts included in Fig. 2 when in the cutting operation. Fig. 4 is a fragmentary detail of the punch-pulling element. Fig. 5 is a side elevation of a modified form of my device in one position. Fig. 6 is an elevation of the device shown in Fig. 5, but with one part removed and the operative parts in a different position from that shown in Fig. 5. Fig. 7 is a cross-section on line 7 7 of Fig. 5, and Figs. 8 and 9 are details of parts shown in Figs. 5 and 6.

Referring to the drawings, and especially to Figs. 1, 2, 3, and 4 in detail, *a* represents one of the operating-handles of my device, and *b* the coöperating handle, each of which is provided with a suitable grasping portion, and for convenience these handles will hereinafter be referred to as the "upper" and "lower" handles, respectively. The upper handle is formed with a lug *a'* on its lower side and is pivotally mounted on a pivot *a²*, which passes

through suitable openings in the upper part of two triangular-shaped cheek-plates *c c*. The lower handle terminates at its forward end in a cutting-jaw, which is formed with a beveled face, as *b'*, on one side. Along the under side of the lower handle is an extension *b²*, which runs forwardly, is spaced from the cutting-jaw to provide an opening *b⁷*, and terminates in a barrel or tubular portion *b³*, in which is fitted a female die *b⁴*, having a vertical bore *b⁵* therethrough. Registering with the die a vertical opening is formed in the jaw portion of the handle *b*, and in this opening is slidably fitted a punch *h*, which is formed with a contracted portion adapted to enter the bore of the female die. At the rear of the extension *b²* the handle is formed with a web *b⁶*, which is adapted to be clamped in a vise, if desired. The jaw portion of the lower handle is firmly riveted between the plates *c c*. Arranged between the two handles is a movable jaw *d*, the forward end of which on one side is beveled to form a cutting edge, as *d'*. The rear end of this jaw is pivoted between two flat links *e e*, the lower ends of which are pivoted on the handle *b* just above the web *b⁶*. The under side of the jaw *d* is notched to receive the rear end of a flat spring *f*, which is housed between the plates *c c* and bears against the under side of the jaw, as shown in Figs. 2 and 3. *g* is a link, which at its upper end is pivoted on the lug *a'* and at its lower end is divided and embraces the upper portion of the punch *h*, on which a head is formed, so that as the link is raised by the handle *a* the punch will be lifted, all as shown in Figs. 3 and 4.

In the modified form of device shown in Figs. 5 to 8, inclusive, the upper handle *a³* is formed with a longitudinal slot *a⁴* at and adjacent to its pivoted end. Extending transversely therethrough near its extreme end are two intersecting openings *a⁵*, and a set-screw *a⁶* passes vertically from the upper edge of the handle through a suitable threaded opening into the slot *a⁴*. Through one of the holes *a⁵* the pivot-pin *a²* passes, and in the other hole a small roller *a⁷* is loosely placed. The under edge of the handle *a³* near its pivoted end is rounded, so as to provide a cam-like surface *a⁸*, which is eccentric to the pivotal axis of the handle. The lower handle *b⁸* differs from *b* only in that the female die *b⁴* is omitted, and an opening *b⁹* is formed in the extension *b²* to receive the punch *h*. The movable jaw *d²* is pivoted at its rear end on a

plate e' , which is rigidly secured to the lower handle and is formed with a horizontal slot in which the pivot works, thus allowing for the longitudinal movement of the jaw when in use. The jaw is formed with a hole d^3 near its forward end, which is large enough to receive the pivot a^2 and the roller a^7 . It is also formed with a shoulder d^4 , against which the cam-face a^4 of the upper handle works, and with a flange d^5 , on which the lower edge of the slotted portion of the handle rests when the parts are assembled. The flat spring f at its rear end bears against the plate e' and at its forward end is bifurcated and engages the head of the punch h , the normal tension of the spring being exerted to lift the punch out of its receiving-hole b^9 . The spring also serves to press upwardly the jaw d^2 , and thereby facilitates the action of the handles.

In both forms of devices it will be apparent that in raising the upper handle the movable jaw moves rearwardly and upwardly through the action, in one case, of the lug a' on the recessed portion of the upper edge of the jaw, the spring f , and the links e , and, in the other case, through the pivotal action of the handle on the jaw, the spring f , and the connection with the slotted plate e' . The roller a^7 (shown in Fig. 6) provides an antifrictional bearing of maximum efficiency, which adds greatly to the utility of my device.

In the form shown in Figs. 1, 2, &c., the upper and enlarged part of the punch is slotted vertically on one side, and said slot is engaged by the end of a screw b^8 , which passes through a boss b^9 on one of the cheek-plates c , thus preventing the punch from turning in its bearings.

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

1. A tool comprising two handles having a pivotal relation to each other, one of said handles having a fixed cutting-jaw at one end thereof, a movable jaw arranged between said handles, and means for operating said

jaw, whereby it will be given an oblique movement relative to the fixed jaw.

2. A tool comprising two handles having a pivotal relation to each other, one of said handles having a fixed cutting-jaw and a punch-socket at one end thereof, a punch slidably mounted in said jaw, a movable jaw arranged between said handles, means for operating said jaw whereby it will be given an oblique movement relative to the fixed jaw and means for lifting said punch.

3. A tool comprising an upper handle and a lower handle having a pivotal relation to each other said lower handle having a fixed cutting-jaw at one end thereof, a movable jaw arranged between said handles and pivotally connected to the lower handle, means for operating said jaw by frictional contact with the upper handle, and a spring bearing against said movable jaw and lift.

4. A tool comprising an upper handle and a lower handle having a pivotal relation to each other, said lower handle having a fixed cutting-jaw and a punch-socket at one end thereof, a movable jaw arranged between said handles, said jaw adapted to move obliquely relative to the fixed jaw, means for operating said jaw from the upper handle said means comprising a roller-bearing, and means for lifting said punch.

5. A tool comprising an upper movable element and a lower fixed element, said fixed element having a cutting-jaw, and punch-socket arranged therein, a punch slidably mounted in said socket, a spring adapted to lift said punch, a movable jaw mounted between said elements and adapted to depress said punch said jaw pivoted on said fixed element and connected with said movable element with an antifrictional bearing therebetween.

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

JOHN L. PAINTER.

Witnesses:

R. B. DECKER,
F. T. PERRIN.