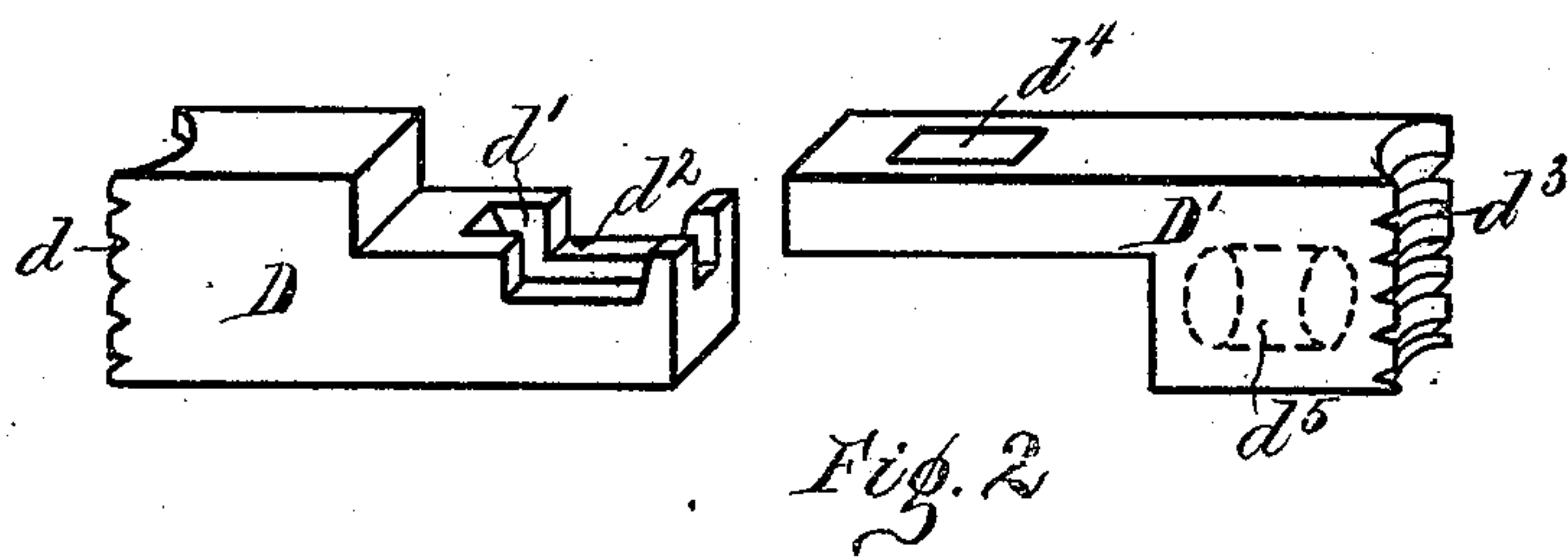
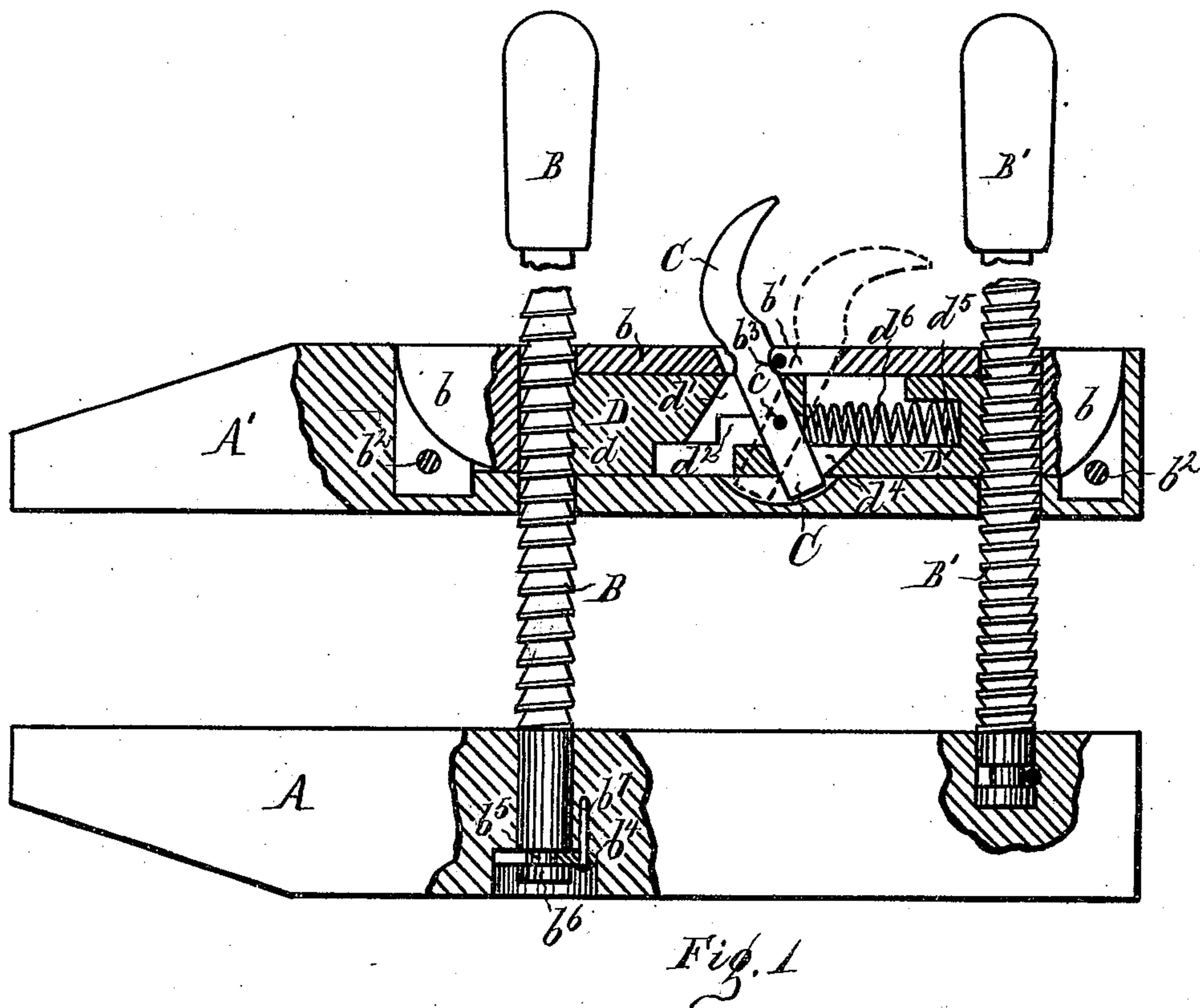
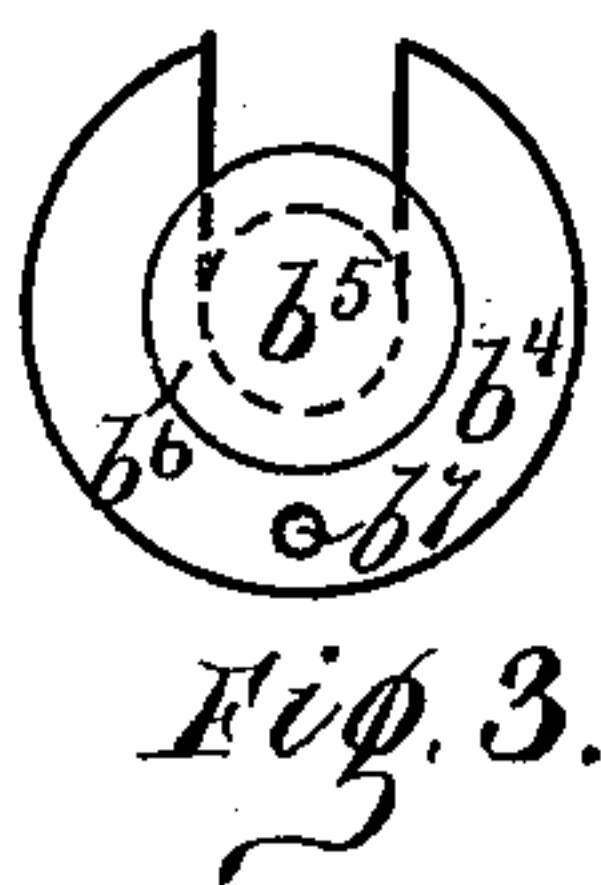


## JOINERS' CLAMPS.

Patented March 14, 1876.



Witnesses:  
Chas F. Meisner.  
J. W. Herthel.



Inventor:  
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per. Herschel & Co  
Attyys.

# UNITED STATES PATENT OFFICE

GUSTAV A. NAUMANN, OF ST. LOUIS, MISSOURI.

## IMPROVEMENT IN JOINERS' CLAMPS.

Specification forming part of Letters Patent No. **174,838**, dated March 14, 1876; application filed February 11, 1876.

*To all whom it may concern:*

Be it known that I, GUSTAV A. NAUMANN, of St. Louis, Missouri, have invented an Improvement in Joiners' Clamps, of which the following is a specification:

This invention is an improvement on the patent issued to me dated September 6, 1875, No. 169,027, for joiner's clamp. The improvements here presented relate to a novel construction of parts, also their combination to operate in the manner as will hereinafter appear.

Of the drawing, Figure 1 is a sectional elevation. Fig. 2 is a bottom perspective of the slides. Fig. 3 is a bottom plan, showing manner of fastening the front screw.

A and A' are, respectively, the fixed and movable jaws. B B' are the front and back hand-screws. The movable jaw has an open hollow face, in which is inserted a hollow bar, *b*. (See Fig. 1.) The hand-screws pass through the hollow bar *b*, as indicated in Fig. 1. The hollow of the bar *b* is open its entire length at the bottom for the admission of the following new operating parts: A trigger, C, which is passed through a slot, *b*<sup>1</sup>, (see Fig. 1,) and in the bar *b*. This trigger I pivot at *c*, a point about the middle of the hollow bar. Before pivoting the trigger, I insert in the hollow bar a pair of slides, D D', of the constructive shape shown clearly in Fig. 2. The slide D has threads *d*, which engage with the threads of the front screw; also, in said slide *d*<sup>1</sup> is a slot, through which the trigger passes, and *d*<sup>2</sup> are spaces cut away for the passage of the pin which holds the trigger. Likewise, the slide D' has threads *d*<sup>3</sup>, to engage the rear screw. *d*<sup>4</sup> is a slot, which allows the trigger to operate, and *d*<sup>5</sup> is a cylindrical hole for the insertion of part of the coil-spring *d*<sup>6</sup>. (See Figs. 1 and 2.) The slides D D' are inserted in the hollow bar, as shown in Fig. 1, so that the slide D, by its threads, shall face the front screw, that of the slide D' by its threads, shall face the rear screw, the spring *d*<sup>6</sup> being placed between both slides, and thus the parts just mentioned are contained in the hollow bar, ready for operation. The hollow bar *b* is fastened properly in the movable jaws by pins *b*<sup>2</sup>. At *b*<sup>3</sup> there is a stud projecting from

the slot *b*<sup>1</sup>, which serves to hold the trigger in an adjusted position.

The parts being described and arranged as shown in Fig. 1, their operation will be as follows: The slides are engaged with the screws, (see Fig. 1,) and so hold the movable jaw secure in an adjusted position. The operator, releasing the trigger from its pin or stud, and pressing said trigger to the right, (see dotted lines,) will cause the slide D, owing to its engagement with the trigger above the point at which the same is pivoted, to move to the right, and the slide D', which is in engagement with the trigger below, to move to the left. This opposite operation of the slides leaves the screws B B' free to admit of the movable jaw being shifted into any position along said screws.

To lock the movable jaw in position, the trigger is moved to the position shown in full lines, (see Fig. 1,) which leaves the slides free to be acted upon by the spring *d*<sup>6</sup>, and this causes each of said slides to engage the respective screws B B'.

It will be noticed that it is very easy to operate the trigger C, for the purposes stated, and that it is in a more convenient position than the end of the slide in my former patent. In said patent, also, its slide was not decisive in engaging the screws, and said engagement of the parts was not at all times regular and in line; but in my present improvement the threads engage on a true line, and hold fast at the desired point.

It is also easier to manufacture the slides D D' than the slide in my former patent, and thus a saving of time and expense is achieved. Also, in my patent before alluded to, as well as in the ordinary make of clamps of this nature, the hand-screws are fixed alike in the lower jaw; but the great strain brought to bear on the front screw proves its non-sufficiency to hold the said screw in the jaw. The strain forces the joint of the screw out of the wood. I strengthen this joint and overcome this defect, as shown in Figs. 1 and 3, when I pass the screw end through the fixed jaw, and hold said end of screw by a washer, *b*<sup>4</sup>. This washer is slotted, so as to pass round the neck *b*<sup>5</sup> of the screw, and so that the head of the



screw at  $b^6$  is under the washer. The washer is further secured by pin  $b^7$ , and, thus made, said lower joint of the screw is most strong and durable.

What I claim is—

The combination of the trigger C, hollow bar  $b$ , its pair of slides D D', that of D having threads  $d$ , slot  $d^1$ , spaces  $d^2$ , that of D' having threads  $d^3$ , slot  $d^4$ , hole  $d^5$ , the coil-

spring  $d^6$ , hand-screws B B', movable jaw A', and jaw A, all said parts operating as and for the purpose set forth.

In testimony of said invention I have hereunto set my hand.

GUSTAV ADOLPH NAUMANN.

Witnesses:

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CHAS. F. MEISNER.