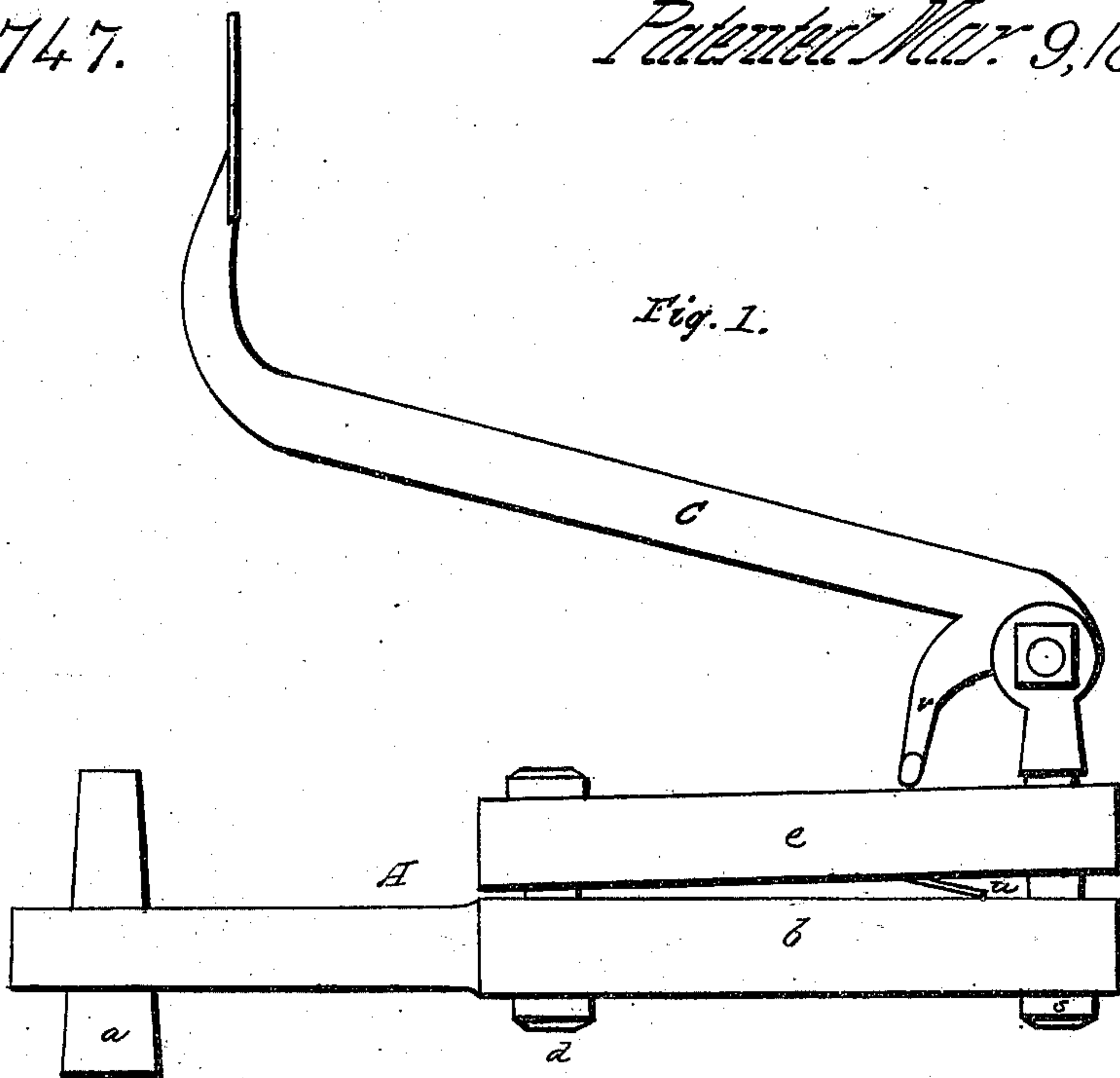


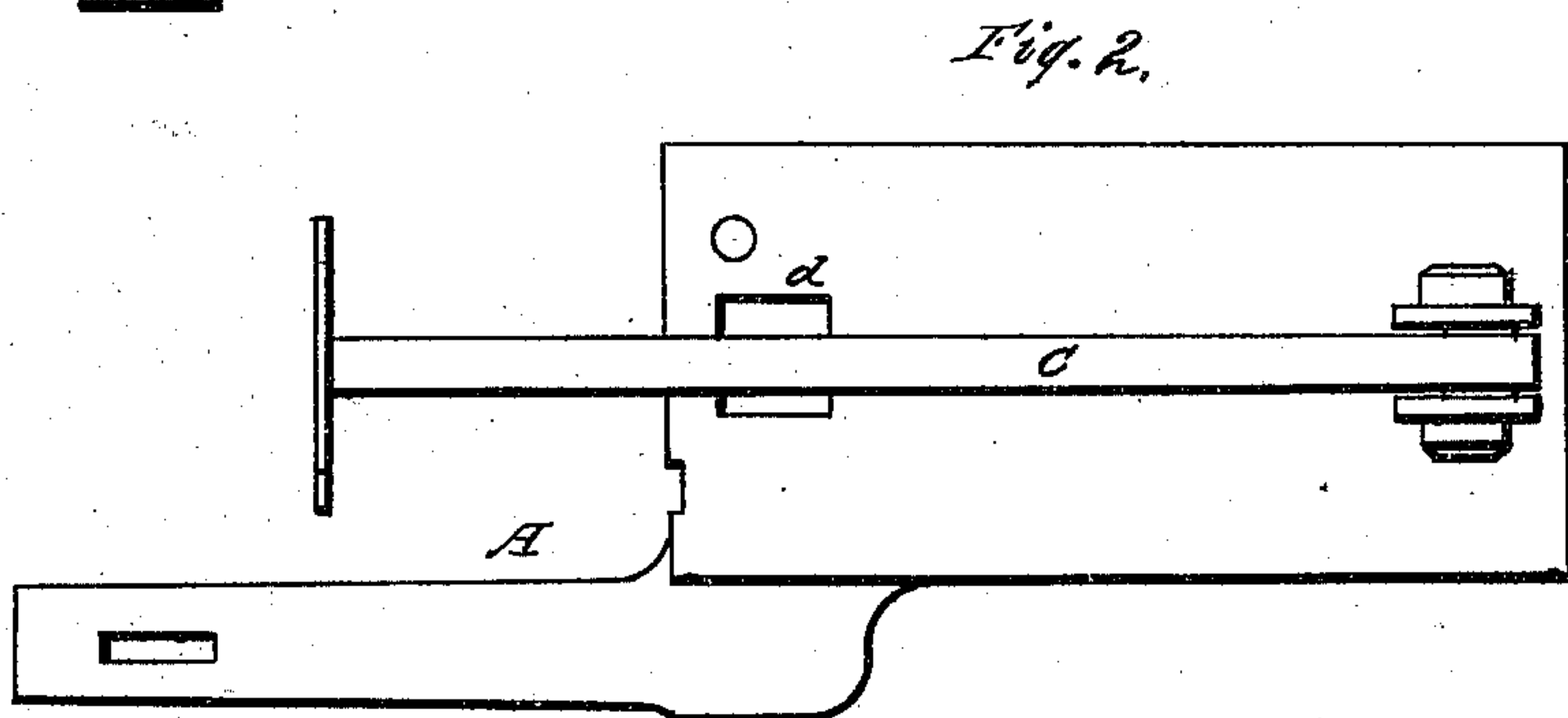
*J. M. Wood.*  
*Bolt Header.*

*No. 87,747.*

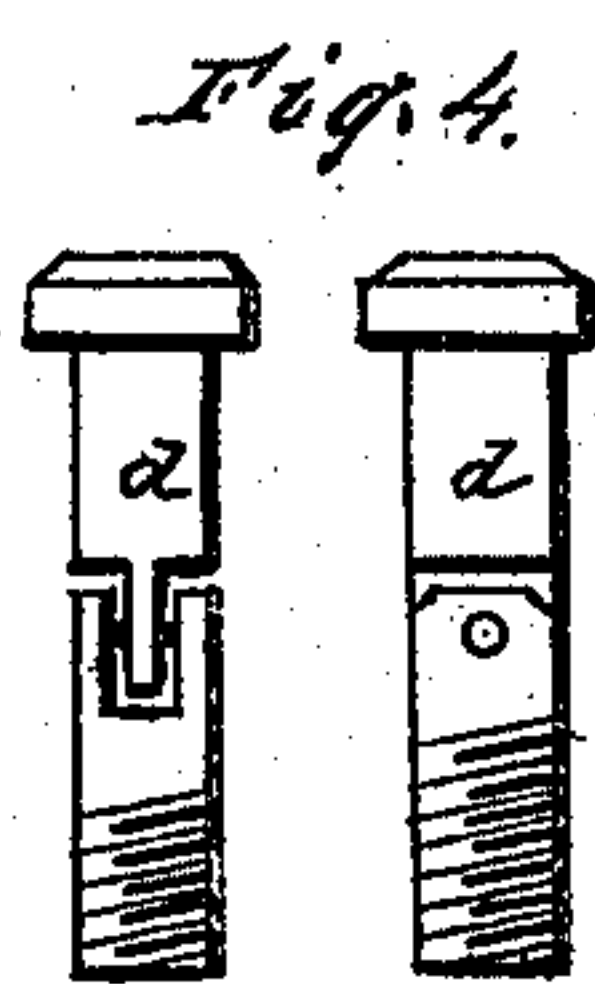
*Patented Mar. 9, 1869.*



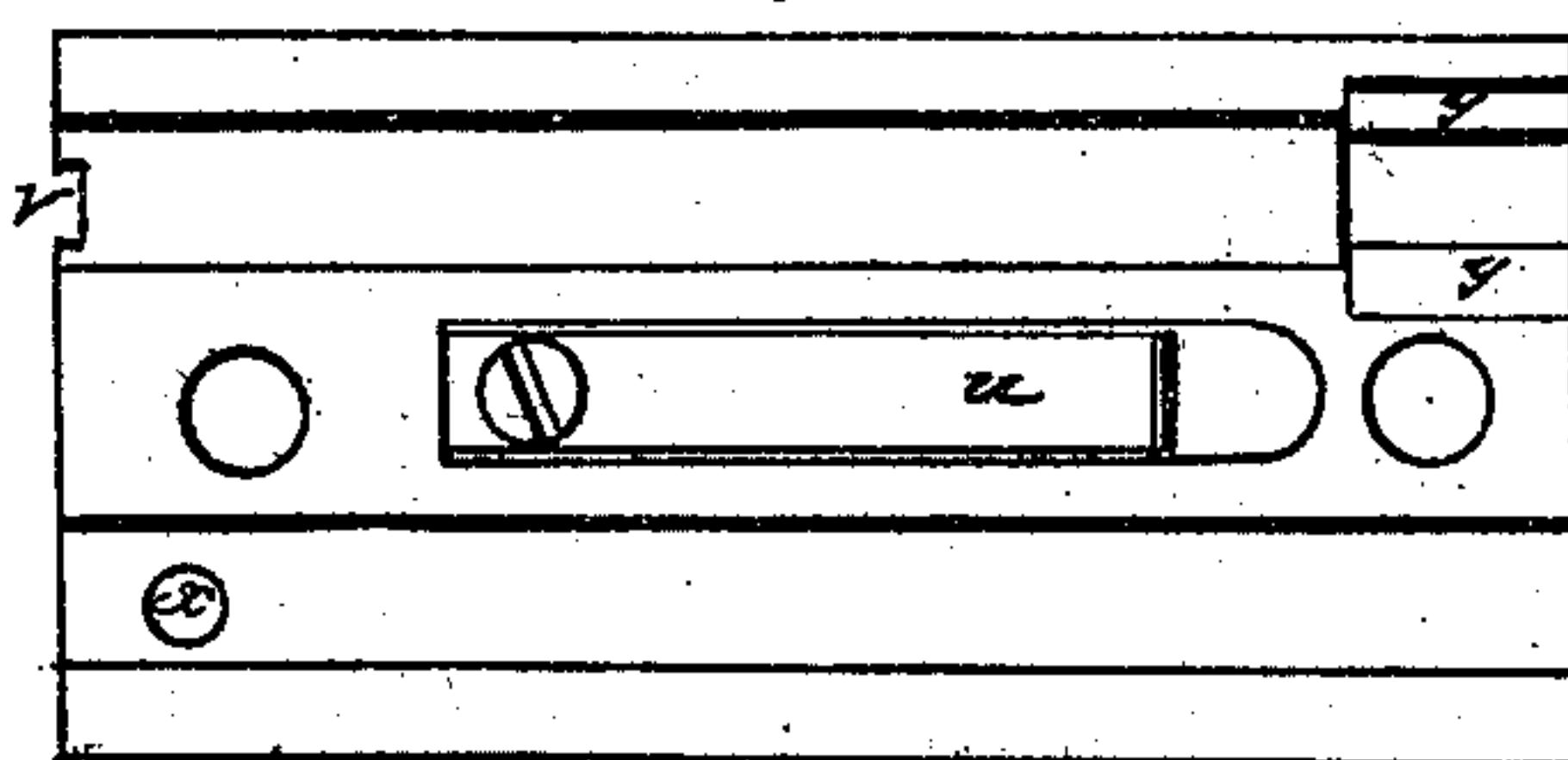
*Fig. 1.*



*Fig. 2.*



*Fig. 4.*



*Fig. 3.*

*Witnesses:*  
*James P. Green*  
*John H. Green*

*Inventor:*  
*John M. Wood,*  
*Chipman, Hosmer & Co.*  
*attys*

# United States Patent Office.

JOHN M. WOODS, OF WASHINGTON, MISSOURI.

Letters Patent No. 87,747, dated March 9, 1869.

## IMPROVED DEVICE FOR HEADING BOLTS.

The Schedule referred to in these Letters Patent and making part of the same.

*To all whom it may concern:*

Be it known that I, JOHN M. WOODS, of Washington, in the county of Franklin, and State of Missouri, have invented a new and valuable Improvement in Bolt-Heading Machines; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a side view of my bolt-heading machine;

Figure 2 is a front view;

Figure 3 is a sectional view; and

Figure 4 is a detail.

My invention relates to devices for fashioning bolts preparatory to cutting screw-threads thereon or otherwise; and

It consists in constructing a portable machine for that purpose, easily adjustable to an anvil or bench, and in which the bolts may be readily formed by novel and expeditious means.

The letter A of the drawings represents a vise, the lower end of which is adjustable to an anvil or bench, and held firmly therein by means of the key *a*.

The jaws of this vise are marked *b* and *c* respectively, and they are held together by the bolts *d* and *s*, in the manner represented. The bolt *d* is hinged, as shown, on fig. 4.

The letter *u* is a spring, adjusted between the jaws of the vise, as shown, and serves to force them asunder when the bolt is completed and ready for removal.

The bolt *s* has a shoulder upon one side of the vise, and a thread and nut at the other, as shown, between which the jaws have play adapted to the size of the dies in which the bolt is formed.

On the long end of bolt *s*, I attach the lever C, by means of a hinge, as shown. This lever extends from the hinge above mentioned, to a point near the ground or floor, where it is formed to receive the operator's foot and serve as a treadle.

The upper end of lever C is bent around, as shown on fig. 1, and formed in the shape of an arm, with its

extremity extended to the right and left, and resting against the outside of the jaw *c*. I call this part of lever C the elbow-lever *v*.

The letter *y* represents dies, cut in half sections, one of which is affixed to each of the jaws of the vise, in the manner shown, and they are removable at will.

The upper ends of these dies are made sharp and flush with the top of the jaws, or they may be reamed out, as the operator desires. In the former case, the lower end of the bolt-head will be formed flat, and in the latter it will be bevelled.

The letters *v* and *x* represent openings, one at the bottom, and the other in the side of the hollows that hold the iron rods, and they are designed as passages for the cinders, &c., from such rods.

To operate my device, I first heat the rod of iron to a red heat in the fire, and then place it in the dies *y*. I then press downward with a foot upon the treadle-bottom of lever C. This movement brings the bottom of elbow-lever *v* against the jaw *c*, and force it, with great power, against the jaw *b*. By this means, the rod is grasped firmly by the dies.

I next strike with a hammer upon the end of the rod, above the dies, and thereby form a head thereon, of the size required. When this is accomplished, the foot is withdrawn from the treadle, and the bolt released.

What I claim as my invention, and desire to secure by Letters Patent, is—

The improved device herein described, consisting essentially of the two jaws, with the shank for entering a hole in the anvil or bench, and with the openings *v* and *x*, for the removal of cinders, &c., and the foot-lever C, all constructed and arranged substantially as described.

In testimony that I claim the above, I have hereunto subscribed my name, in the presence of two witnesses.

JOHN M. WOODS.

Witnesses:

HENRY SCHULTE,

JOHN P. COLEMAN.