F. Bruso,

Bolt Making.

No. 107,160. Patented Sep. 6. 1870.

Fig. I.

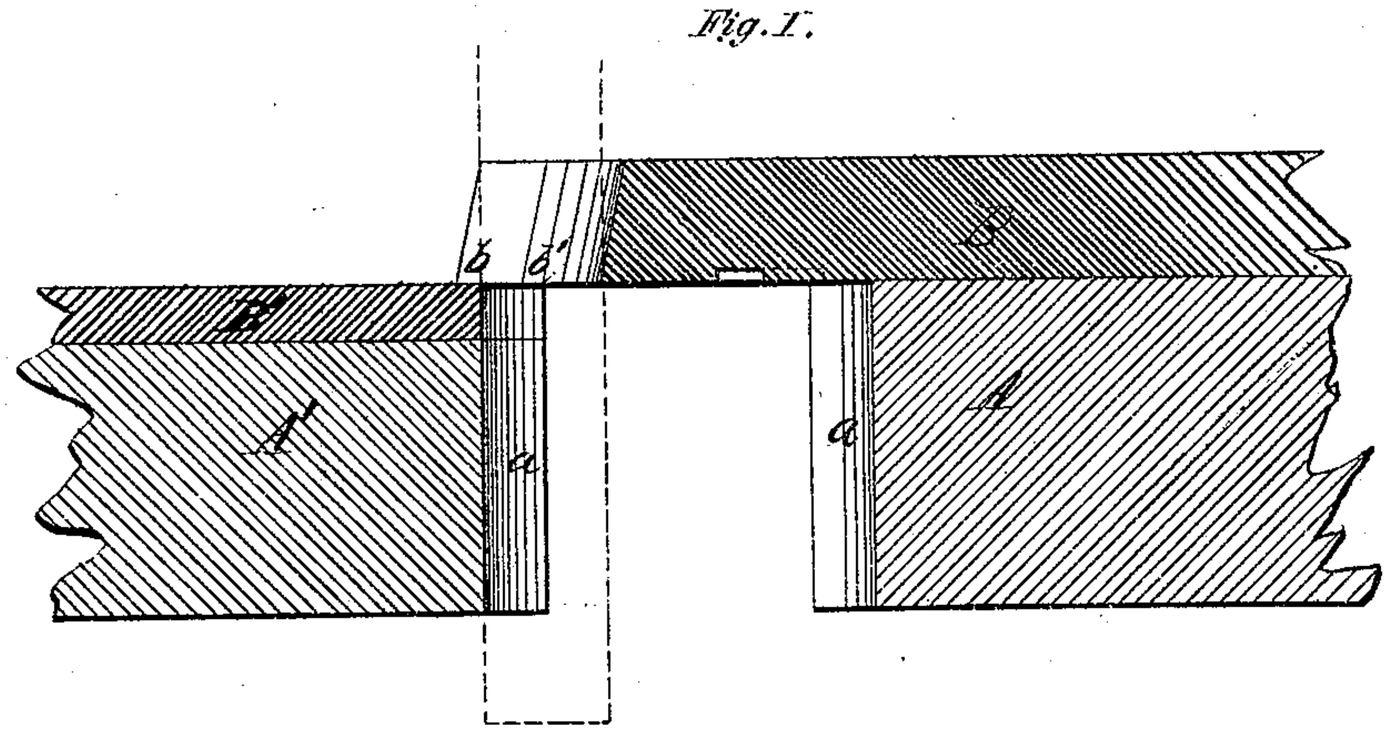


Fig. II.

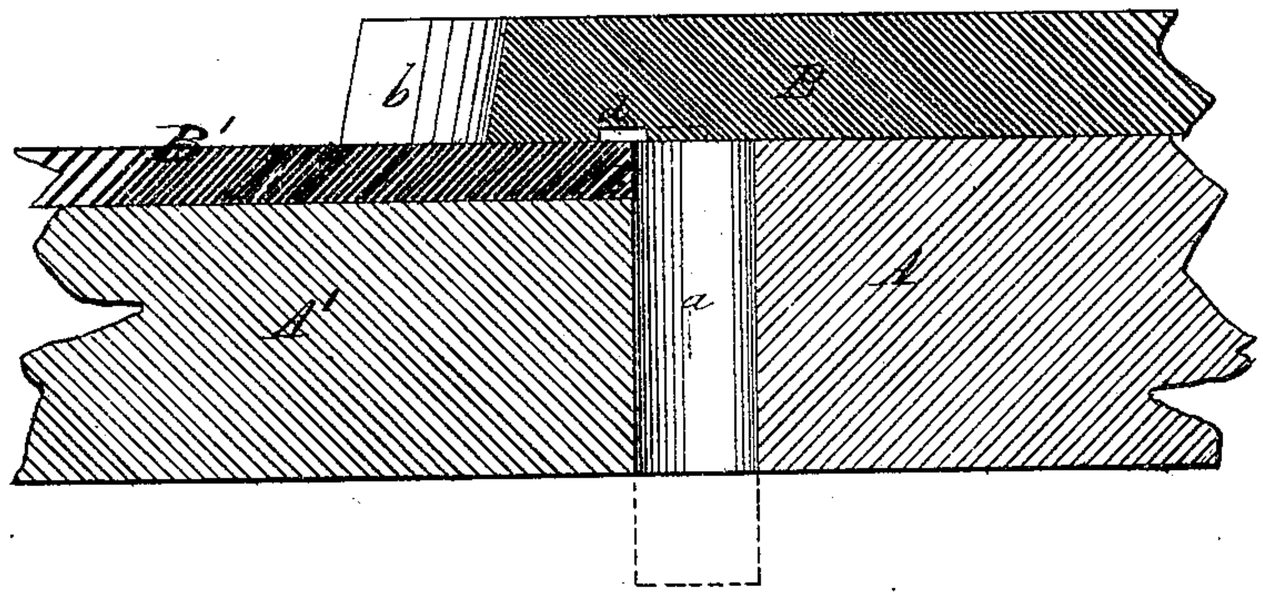


Fig. III.

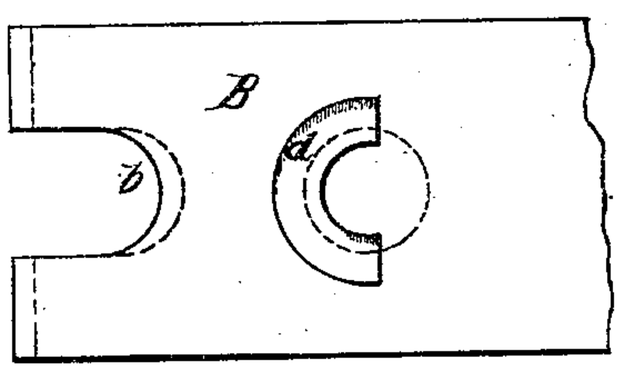
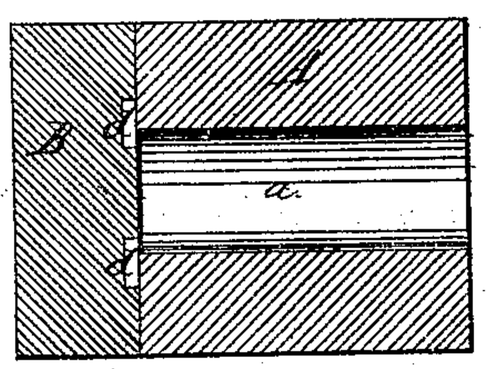


Fig. IV.



Witnesses

Victor H. Becker

Jno. J. Bonner

Frederick Bruso Inventor

by Forbush & Wyatt

Attys.

United States Patent Office.

FREDERICK BRUSO, OF BUFFALO, NEW YORK.

Letters Patent No. 107,160, *dated September* 6, 1870.

IMPROVEMENT IN DIES FOR HEADING BOLTS.

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

I, FREDERICK BRUSO, of the city of Buffalo, in the county of Erie and State of New York, have invented a certain Improvement in Machines for Making Rivets, of which the following is a specification.

In the accompanying drawing—

Figure I is a section of the clamping-jaws and shears of an ordinary rivet-machine, represented in the act of cutting off a blank rivet from a rod, which is shown in dotted lines.

Figure II is a similar view, with the parts in the position they are when the head of the rivet is formed.

Figure III is a face or side view of the end of the stationary shear-bar, showing a semi-annular recess formed therein.

Figure IV is a cross-section of Fig. II in line *x x*.

Like letters of reference designate like parts in each of the figures.

A A′ are two clamping-jaws or heads, each provided with a semicircular groove, *a*, of the length of the shank of the rivet.

The head A is stationary, and has attached or secured to it, in any suitable way, a shear-bar or blade, B, provided with a semicircular cutting-edge, *b*, which projects beyond the groove *a* in the head, as shown in Figs. I and II.

The clamping-head A′ is provided with a shear-bar or blade B′, the cutting-edge *b′* of which coincides with the groove in the clamping-jaw, as represented.

The combined head A′ B′ thus formed has a reciprocating movement imparted to it by means of a cam or other suitable means, in the manner of the ordinary rivet-machines in use.

The parts being in the position shown in Fig. I, the rod from which the rivets are to be formed is inserted between the cutting-edges *b b′*, when a movement of the head A′ B′ toward the stationary jaw A severs a blank from the rod, and clamps it between the two jaws, as shown in Fig. II. While held in this position, the end of the blank which projects beyond the griping-bars is upset by a suitable die, which forms the head of the rivet.

The construction and operation of the machinery above described are old and well known, and requires no further description.

The action of the shears in cutting off the blank leaves a film of metal or a thin serrated edge to the end of the blank, which is partially wedged between the cutting-edge *b′* and the face or side of the stationary shear-bar B, which now forms a stop, against which the end of the blank abuts, while the head of the rivet is being formed by the pressure of the upsetting-die against the opposite end. In thus forming the head, the upsetting-die presses against the edges of the griping-bars A A′, the latter and movable one of which forces the cutting-edge *b′* against the particles of metal thus wedged between it and the face of the shear-bar B, which soon breaks and dulls the edge, thereby necessitating the frequent removal of the shear B′, and the re-sharpening of the same.

The object of my improvement is to prevent this effect on the cutting-edge of the movable shear; and

The invention consists in forming a semi-annular recess or groove in the face of the stationary shear-bar, and so arranging the same that, when the parts are in the position for forming the head of the rivet, this recess will be immediately back of the semicircular cutting-edge of the movable shear, and, by forming a space for the serrated edge of the blank, prevent the wedging of the same against the cutting-edge *b′*, and the consequent dulling of the latter.

In the drawing—

d represents this semi-annular groove or recess formed in the face or side of the shear-bar B.

The dotted lines in Fig III show the position of the end of the rivet as it is forced against the bar B during the operation of upsetting the head thereon.

This construction and arrangement of the groove *d*, by forming a space back of the cutting-edge *b′*, and contiguous serrated edge of the rivet, effectually prevent the cutting-edge from being pressed against these overlapping particles, which can thus freely project into said recess, as are clearly illustrated in the drawing.

The importance of my improvement in the saving of time, and labor, and wear of the shear-blade, is obvious.

What I claim as my invention is—

The semi-annular recess *d*, formed in the face of the shear-bar B, and arranged with the cutting-edge *b′* and clamping-jaws A A′, substantially as hereinbefore set forth.

FRED. BRUSO.

Witnesses:

JAY HYATT,

JNO. J. BONNER.