(No Model.)

W. H. BETTS.

BOLT HEADING MACHINE.

No. 475,657. Patented May 24, 1892.

Fig. 2

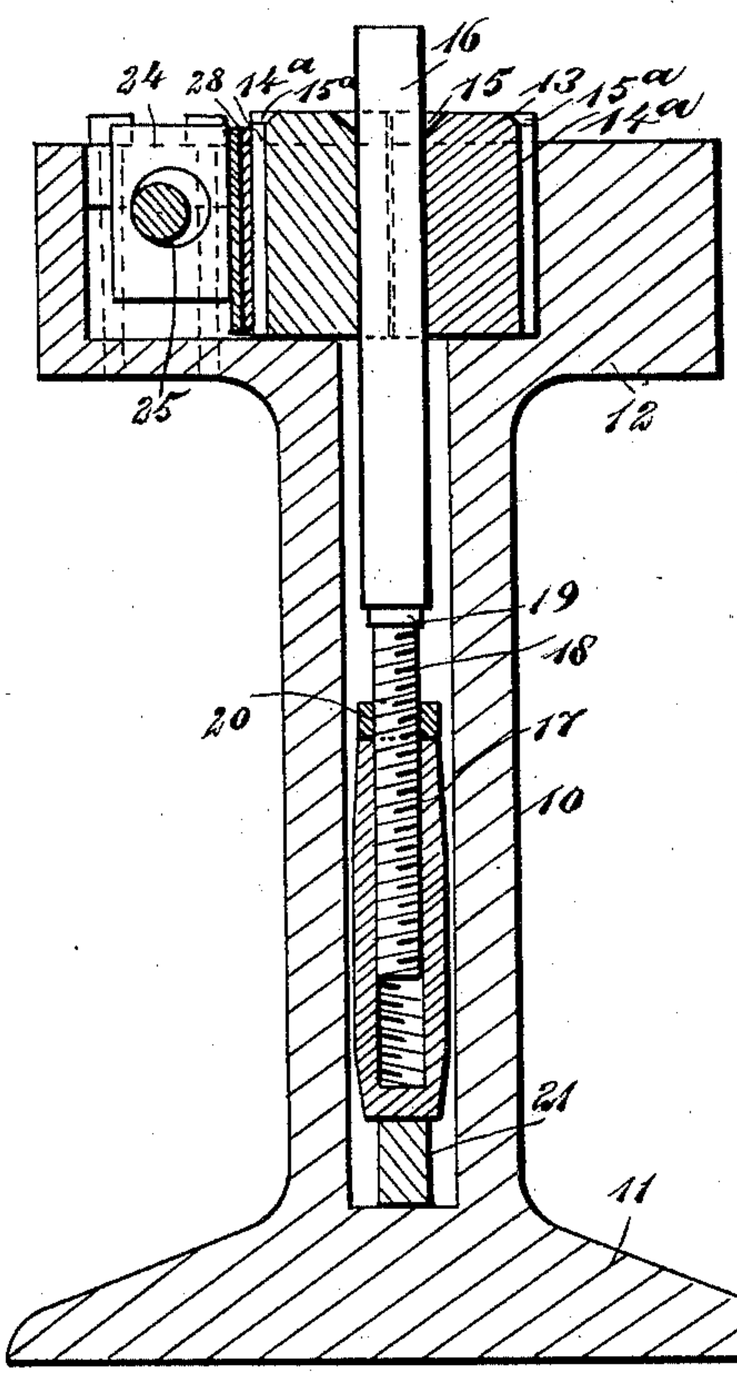


Fig. 1.

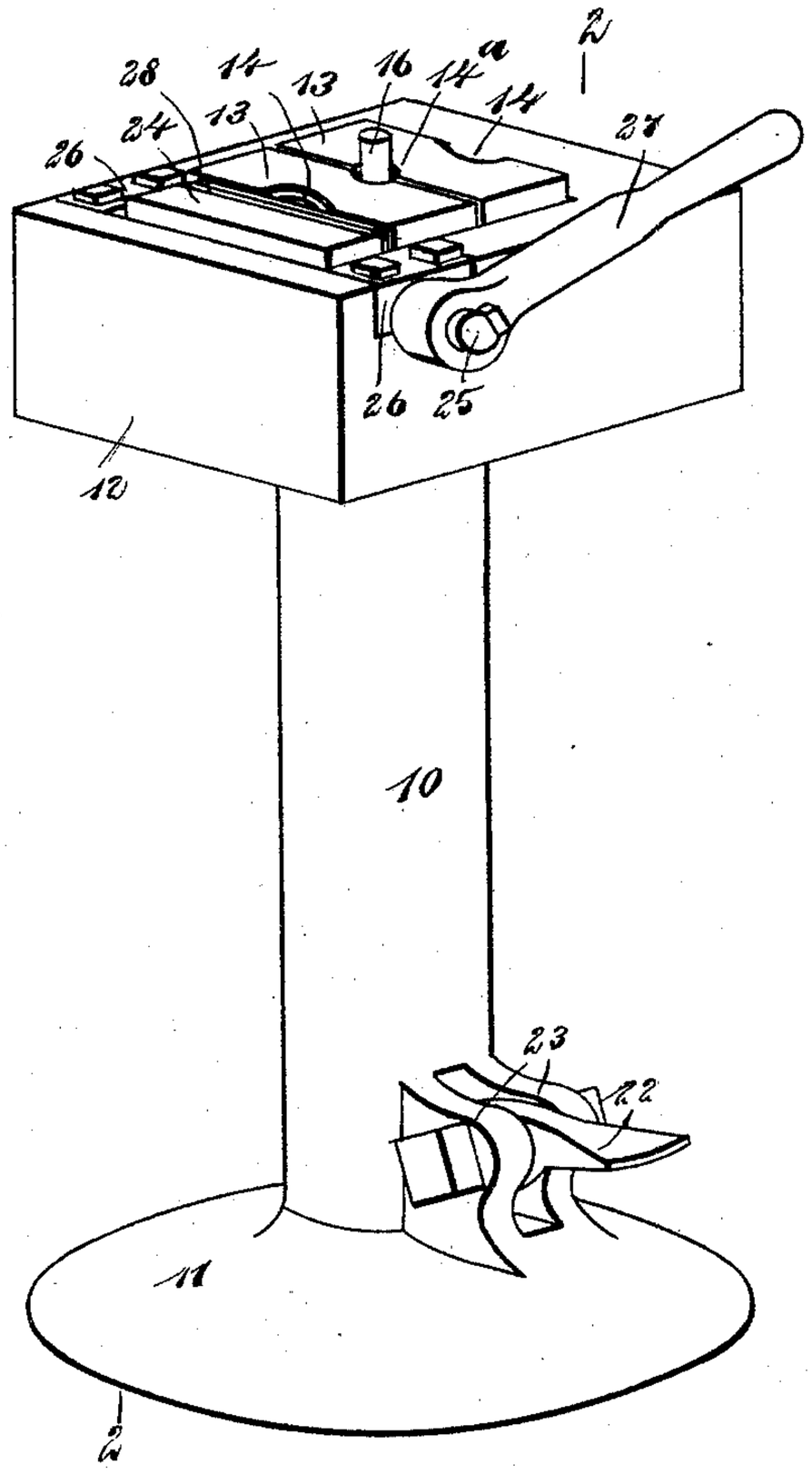
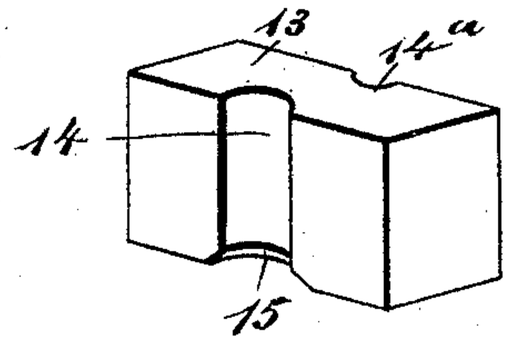


Fig. 3.



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WILLIAM H. BETTS, OF BROOKLYN, NEW YORK.

BOLT-HEADING MACHINE.

SPECIFICATION forming part of Letters Patent No. 475,657, dated May 24, 1892.

Application filed December 23, 1891. Serial No. 415,958. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. BETTS, of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Bolt-Heading Machine, of which the following is a full, clear, and exact description.

My invention relates to improvements in bolt-heading machines; and the object of my invention is to produce an extremely simple and durable machine for heading bolts, which machine is especially adapted for the use of blacksmiths and carriage-smiths and by means of which bolts may be rapidly and nicely headed.

To this end my invention consists in a bolt-heading machine the construction of which will be hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a perspective view of the bolt-heading machine embodying my invention, with a bolt in the machine and in position for heading. Fig. 2 is a vertical section of the same on the line 2 2 in Fig. 1. Fig. 3 is a detail perspective view of one of the bolt-dies.

The frame of the machine consists of a hollow column 10, which merges at one end in a solid base 11, adapted to rest upon the floor, and at its upper end in a box 12, which is preferably of a rectangular shape and is adapted to contain the bolt-holding dies 13. These dies are preferably made of steel and have centrally on opposite sides semi-cylindrical grooves 14 and 14^a of different sizes, which grooves terminate at one end in a square shoulder and at the opposite end in recesses 15 15^a, so that they are adapted to form either a flat head or a head adapted to fit a countersunk hole. These dies serve as an anvil, and when the bolt which projects through them has its head formed the end of the bolt is hammered down upon the upper faces of the dies.

The grooves 14 or 14^a, as the case may be, are adapted to fit a bolt 16, which bolt, when it is to be headed, is mounted in the dies and extends downward into the hollow column 10, in which is an ejecting-plunger comprising a body portion 17, having an interior threaded bore, a bolt 18, adapted to screw into the body and having a terminal head 19, and a nut 20, adapted to rest upon the upper end of the body 17 and hold the body and bolt in a fixed position in relation to each other.

The lower end of the ejecting-plunger rests upon the inner end 21 of the treadle-lever 22, which lever extends inward into the column 10 near the base 11 and is pivoted in lugs 23 on the base. Within the box 12, and near one end of the same, is a binding-block 24, which is mounted on a cam-shaft 25, extending transversely through the box and turning in bearings 26, and on one end of the cam-shaft 25 is a hand-lever 27, by means of which the shaft may be turned and the block 24 forced against the dies 13, thus binding the dies between the block and one side of the box 12. The binding-block is mounted loosely on the cam-shaft, and it will be seen that by turning the shaft in one direction the block may be moved away from the dies and by turning it in the opposite direction the block will be forced against them. In practice shims 28 are inserted after the dies have become worn between one of the dies and the binding-block, so that the necessary pressure on the dies may be produced.

The operation of the machine is as follows: The bolt 16 to be headed is dropped while hot between the two dies and in the registering grooves thereof, and it is held by the ejecting-plunger so that its upper end will project above the face of the dies, and it will be seen that this plunger may be adjusted to fit bolts of a certain length, so that they will all project the right distance above the dies. The lever 27 is thrown into the position shown in Fig. 1, thus forcing the binding-block against the dies and holding them securely in place, and the smith then hammers down the upper end of the bolt 16, thus spreading it on the top surface of the dies and forming its head.

If the bolt-head is to have a flat under side, the dies are arranged so that their square shoulders shall be uppermost, and if the bolt-head is to have a conoidal under side, so as to fit in a countersunk hole, the dies are adjusted so that the recesses 15 and 15^a will be uppermost. After the head is formed the lever 27 is thrown back, so as to loosen the dies, and the operator steps on the treadle 22, which throws up the ejecting-plunger and lifts the bolt from between the dies. The treadle mechanism is

necessary, as the bolt, when inserted hot between the dies, is inclined to stick.

It will be seen from the foregoing description that the machine is adapted to be rapidly operated and that the ejecting-plunger may be quickly and nicely adjusted so as to fit bolts of any length.

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

1. A bolt-heading machine comprising a hollow body having a box at its upper end, bolt-holding dies in the box, a cam-shaft extending transversely through the box near one end thereof and provided with a handle on one end, a binding-block mounted on the cam-shaft and adapted to engage one of the dies, an ejecting-plunger in the hollow body, and a treadle pivoted to the body and engaging the ejecting-plunger, substantially as described.

2. A bolt-heading machine comprising a hollow column having a box at its upper end, bolt-holding dies in the box, a transverse cam-shaft mounted in the box and provided with a handle at one end, a binding-block mounted upon the said shaft, an adjustable ejecting-plunger in the column, and a treadle pivoted to the column and having one end projecting into the column under the said plunger, substantially as herein shown and described.

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Witnesses:
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