M. D. Marcy,

Bolt-Heading Machine,

No. 52,727. Patented Feb. 20, 1866

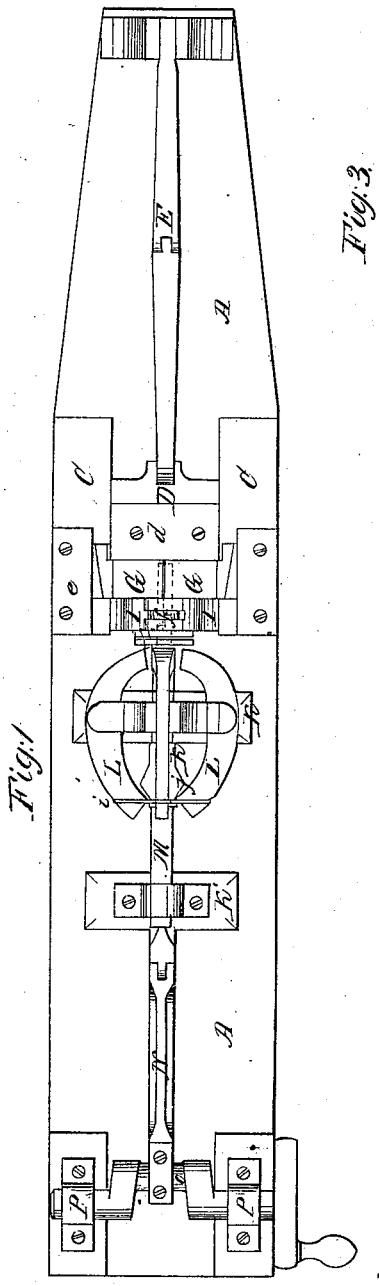

Fig. 1.

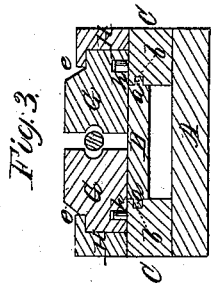

Fig. 3.

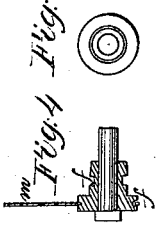

Fig. 4. Fig. 5.

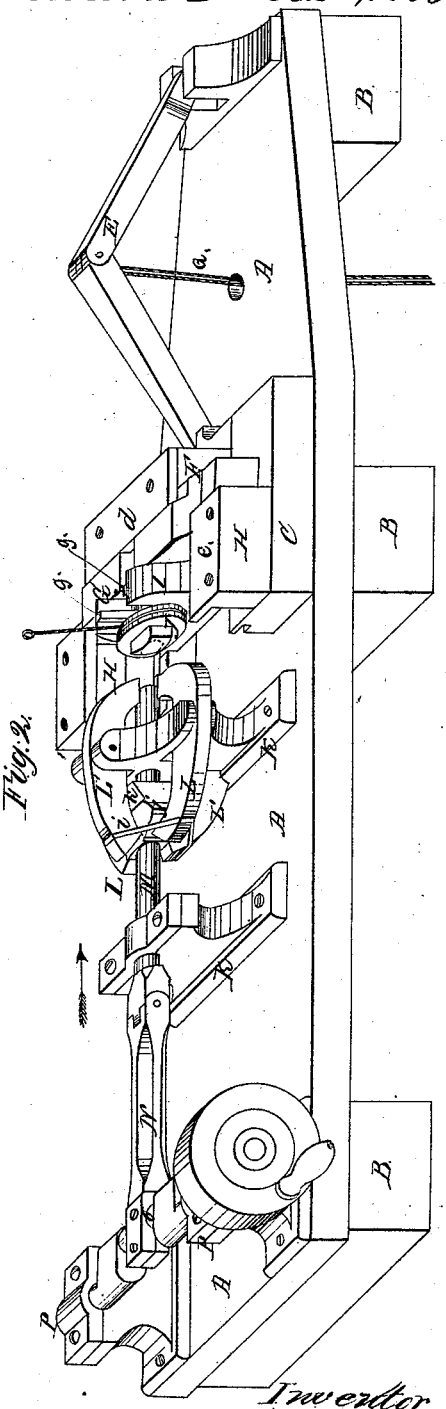

Fig. 2.

Witnesses;
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UNITED STATES PATENT OFFICE.

MERRICK D. MARCY, OF WORCESTER, MASSACHUSETTS.

IMPROVEMENT IN BOLT-HEADING MACHINES.

Specification forming part of Letters Patent No. **52,727**, dated February 20, 1866.

To all whom it may concern:

Be it known that I, MERRICK D. MARCY, of the city and county of Worcester, and State of Massachusetts, have invented certain new and useful Improvements in Bolt-Heading Machines; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and letters of reference marked thereon, forming a part of this specification, in which—

Figure 1 represents a plan or top view of my machine with bolt in holding-jaws, having the head nearly completed. Fig. 2 represents a perspective view of my machine with holding-jaws withdrawn to the proper position for removing the finished bolt. Fig. 3 represents a cross-section, looking in the direction of arrow 1, of the holding-jaws and adjacent parts when in position shown in Fig. 2, the line of section being near the front of the jaws. Fig. 4 represents a longitudinal section of the heading-die with finished bolt in it, and Fig. 5 represents a rear view of the heading-die J.

In the drawings, A represents the bed of the machine, which may be placed upon blocks or legs B B B. C C are two guideways fastened to the top of the bed A. They have grooves *b b* to receive the flanges *a a* of the sliding platform D, to the rear of which lever E is hinged. Upon the rear upper side of the sliding platform D is fastened the jaw-supporting block F, which has a front ledge or projection, *d*, under which the holding-jaws G G work, while their outer ends work under projections *e e* on the side guide-pieces, H H, fastened to the top of the guideways C C.

To the front of the sliding platform D is secured the bolster or buttress I, which is grooved or cut out to receive the heading-die J, the groove *f* in the latter fitting the flanges *g g* of the former. The outer ends of the holding-jaws G G are made wedging, the widest part being back, whereby, as they are forced forward by the depression of the elbow-lever E, they are forced toward each other by their incline or wedge-shaped ends coming in contact with the side guide-pieces, H H. Jaws G G have inclined grooves cut in their bottoms to receive the guide-pins *h h*, which project up from the pieces C C, whereby, when the jaws are withdrawn, as shown in Fig. 2, they will be automatically opened. (See Fig. 3.)

In front of the parts just described is a stand, K, in which are hinged the lever-hammers L L L′ L′, their rear ends being in this instance held down by an encircling-spring, *i*, for which any other suitable device may be substituted. The front end of hammer-rod M passes through and is supported by the stand K, while the rear end is supported in a stand, K′. A pitman, N, connects the rear end of the hammer-rod with the crank-shaft O, which is supported in suitable bearings P P.

Upon the hammer-rod M, and between the stands K K′, are two sets of inclined projections, *j* and *k*. The rear set, *j*, operate the lever-hammers L L, while the front set, *k*, operate the lever-hammers L′ L′. The rear set of projections, *j*, are double inclines, so that levers L L are operated twice at each revolution of the crank-shaft.

The front of the closed heading-die J is grooved out, and one end of a wire or iron rod, *m*, is wound therein to enable the operator by means thereof to lift out and put in the heading-die with facility.

The operation is as follows: Power being applied to shaft O by belt or otherwise, motion is communicated to the hammer-rod M and to hammer levers L L L′ L′. The operator now, by means of handle *m*, removes the heading-die J and inserts the blank, allowing the heated end to project the proper distance to form the bolt-head. After the blank and die have been inserted the operator depresses the elbow-lever, thus causing the jaws G G to close upon that part of the rod back of the heading-die, while the front heated end is forced forward to receive the upsetting blows from the hammer-rod M, while the two sets of lever-hammers alternately strike and square up the sides of the bolt-head.

It will be observed that the operation of upsetting the end of the rod to form the head can be regulated at the will of the operator, since the intensity of the action of the hammer-rod M upon the heated end of the iron depends upon the rapidity with which the operator forces down the elbow-lever E, as above described.

By my invention the heading mechanism

does not have to be stopped when the blank is inserted or when the finished bolt is removed. A gage can be applied to the piece F to regulate the distance the blank is to project beyond the heading-die.

The front of the lever-hammers may be arranged to receive dies to make the bolt-heads of different shapes.

The elbow-lever E may be drawn down by a foot-treadle attached to the chain or rope Q, or by any other suitable device. It can be thrown up by a spring or by a foot-treadle and rope arranged for that purpose. The piston hammer or rod M has a fixed reciprocating motion, and the blank is moved up toward it, as above set forth.

Having described my improved bolt-heading machine, what I claim as my invention, and desire to secure by Letters Patent, is—

1. The slotted bolster or buttress attached to the sliding platform for holding the heading-die, substantially as set forth.

2. In combination with the above, the closed heading-die, as shown, whereby it can be easily removed to disengage the finished bolt.

MERRICK D. MARCY.

Witnesses:
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