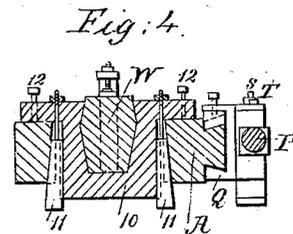
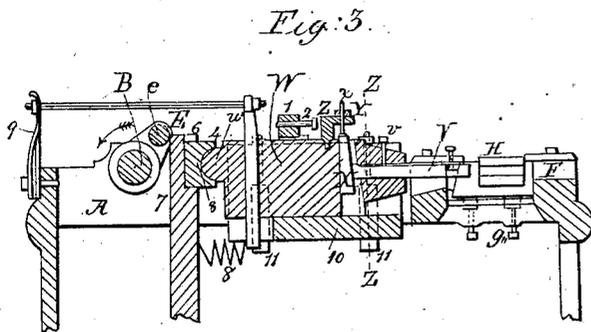
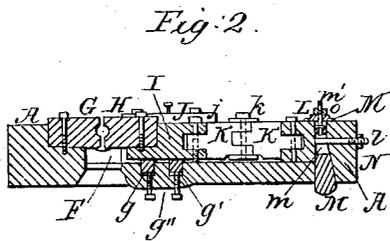
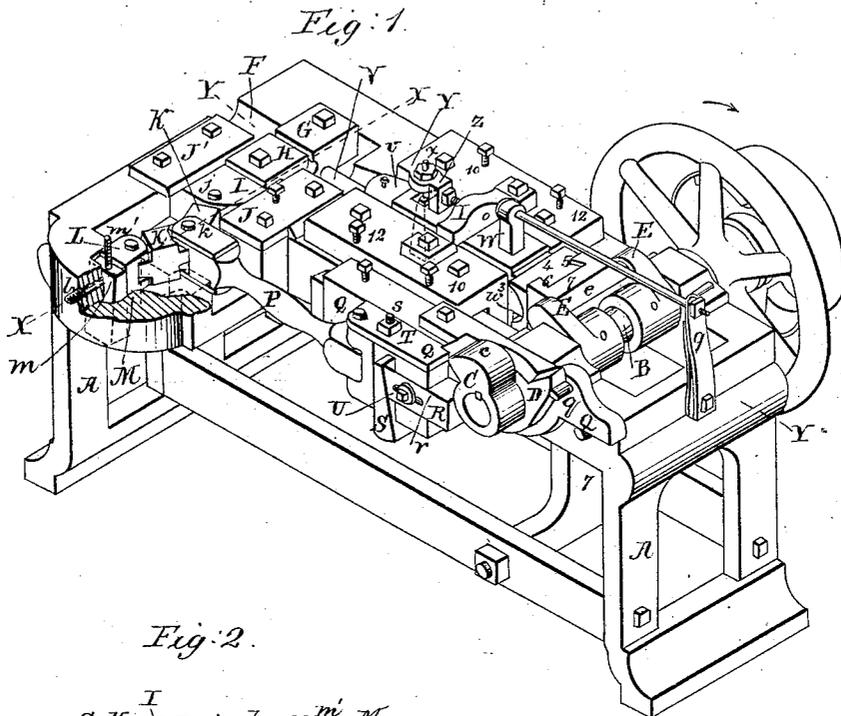


J. C. REED.  
Bolt-Heading Machine.

No. 62,565.

Patented Feb. 5, 1867.



Witnesses  
E. Boussier.  
A. H. Laymann.

Inventor  
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by Knight Bros  
attys

# United States Patent Office.

JOHN C. REED, OF CINCINNATI, OHIO, ASSIGNOR TO HIMSELF AND  
SAMUEL E. HUTCHINSON, OF THE SAME PLACE.

Letters Patent No. 62,565, dated March 5, 1867.

## IMPROVED BOLT AND RIVET MACHINE.

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

### TO WHOM IT MAY CONCERN:

Be it known that I, JOHN C. REED, of Cincinnati, Hamilton county, Ohio, have invented a new and useful improvement in Bolt-Heading Machines; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

The object of this improvement is to enable all the working parts of a bolt or rivet-heading machine to work truly together, and to be set accurately up as fast as they wear.

Figure 1 is a perspective view of a machine embodying my improvements.

Figures 2, 3, and 4 are vertical sections at the lines  $x x$ ,  $y y$ , and  $z z$ , respectively.

A is a suitable frame, supporting and guiding the various operating parts. Journalled horizontally in the said frame is a driving-shaft, B, carrying cams C, D, and E, of which the cams C and D serve to close and open the clamp, and the cam E serves to advance the heading punch, as hereinafter explained. F is a channel through which the blanks are fed to the clamps. G is the stationary jaw of the clamp. H is the movable jaw, its cross-head I occupying guides J J in the frame, and being hinged at  $j$  to a toggle, K K'  $k$ , whose other end is hinged to a lug, L, having a shank,  $l$ , which, traversing a slot,  $m$ , in the wedge M, is screw-threaded, to take a nut, N, on the outside of the frame. The wedge M has a screw-threaded shank,  $m'$ , to take a nut, O, which bears, through the intervention of a washer, M', upon the top of both frame A and lug L; said washer thus serving the double purpose of holding down the lug, and as an abutment for the nut O in drawing up the wedge M. The two jaws of the clamp rest upon plates  $g g'$  which may be set up or let down, so as to bring every part of each jaw to a common plane by means of four set-screws, a portion of which are shown at  $g''$ , figs. 2 and 3. Pivoted to the knee of the toggle is a rod, P, whose other end is pivoted to a sliding head, Q, which contains an adjustable block, R, that can be caused to protrude, more or less, from the head by the elevation or depression of a wedge, S, whose screw-threaded shank  $s$  takes a nut, T, which bears upon the top of the sliding head. A slot,  $r'$ , in the block R, and a bolt, U, traversing said slot, enable the attendant to first effect, and then firmly secure, the specific adjustment of the block R. C is a cam, which, bearing against the block R, acts, at each rotation of the shaft B, to straighten the toggle, and thus close the clamp. The portion  $c$  of said cam which closes the clamp is continued at the same radial distance a considerable portion of the cam's circumference, in order to enable it to hold the clamp shut during the operation of the heading-punch. D is a cam, whose impingement against a shoulder,  $g$ , of the sliding head Q, operates to retract said head, and thus open the clamp. The heading-punch V is secured by set-screw  $v$  in a sliding head, W; which head is slotted vertically for a screw-shanked wedge, X  $x$ , having a nut, Y, which nut bears upon a perforated ear, Z, which projects from the sliding head W, and receives the shank  $x$  of said wedge. The sliding head W is straddled by a bridge, 1, that receives a screw-threaded gauge-pin, 2, whose advance or retraction in the bridge determines the degree of protrusion of the blank beyond the clamp, and consequently the amount of metal in the head of the bolt. The head W terminates at its rear end in a semi-cylindrical projection or knuckle,  $w$ , which occupies a corresponding depression, 3, in a step, 4; which step has a dove-tail, 5, that engages and slides vertically in a corresponding mortise, 6, in a vibrating shoe, 7, whose lower end is journalled to the frame, and whose upper portion is at the proper juncture, namely, just after the closing of the clamps, acted upon by the cam E so as to advance the punch V, and thus form the desired bolt-head. The shoe 7 is held snugly to the knuckle by means of a spiral or other spring, 8. The retraction of the head W is effected by a spring, 9. The sliding head W is supported in a guide, 10, whose lateral adjustment is effected by screw-shanked wedges 11, similar to those before described, and whose vertical adjustment is effected by means of set-screws 12, which bear upon the frame. The cam E may have an anti-friction roller,  $e$ . The step 4 being capable of sliding vertically in the vibrating shoe 7, prevents any binding action of the former in the latter, which, were they united together, would ensue from the respectively curved and rectilinear paths of these members.

I have selected to illustrate my invention a machine adapted for heading bolts, but the improvement is obviously equally applicable to rivet-heading machines.

I claim herein as new, and of my invention—

1. The block R, in combination with the sliding head Q, cam C, and screw-shanked wedge S, arranged substantially as described.

2. The described arrangement of stationary and movable clamp-jaws G and H', cross-head I, toggle K K', screw-shanked wedge M, and tightening-nut N, for the purpose set forth.

3. In the described combination the screw-threaded heading-gauge 2, the screw-shanked wedges X and 11, and set-screws v and 12, for adjustment of the length of stroke of the heading-punch, substantially as set forth.

4. The arrangement of sliding head W, knuckle w, sliding step 4, and vibrating shoe 7, substantially as described.

In testimony of which invention I hereunto set my hand.

JOHN C. REED.

Witnesses:

GEO. H. KNIGHT,  
JAMES H. LAYMAN.