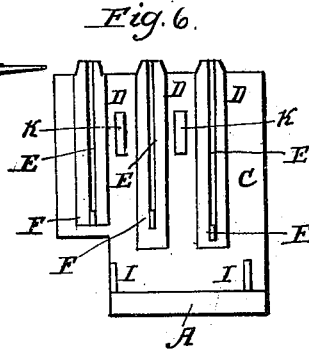


Bolt Heading Machine.

No. 7,586.

Patented Aug. 20, 1850.



UNITED STATES PATENT OFFICE.

J. VAN BROCKLIN, OF MIDDLEPORT, NEW YORK.

MACHINE FOR HEADING BOLTS, RIVETS, &c.

Specification of Letters Patent No. 7,586, dated August 20, 1850.

To all whom it may concern:

Be it known that I, JOHN VAN BROCKLIN, of Middleport, in the county of Niagara and State of New York, have invented a new and useful Improvement on the Machine for Heading Bolts, Spikes, Rivets, &c., which is described as follows, reference being had to the annexed drawings of the same, making part of this specification.

- 10 In the annexed drawings, Figure 1 represents a perspective view of my machine, the hinged jaw being closed and the hand lever, with its swage or piston header, depressed and in a position to head the bolt.
- 15 Fig. 2 is a vertical transverse section, the parts being in the same position seen in Fig. 1. Fig. 3 is ditto the hand lever being elevated to a vertical position, and the hinged jaw open, the bolts being headed and discharged. Fig. 4 is a transverse sectional view of the upper portion of the jaws closed, the hand lever being in the same position seen in Fig. 1, and the swage or piston header forced down and the bolt headed.
- 20 Fig. 5 is a plan or top view of the jaws and dies as closed. Fig. 6 is an elevation of the inside of the stationary jaw showing the arrangement of the dies.

Similar letters on the several figures refer to corresponding parts.

- The nature of my invention and improvement consists in forming in the lower portion of a box or holder of a hand lever N, a flaring or bell mouthed cavity R, for the purpose of embracing the upper tapered ends of the dies, when the hand lever is down or nearly in a horizontal position, and the movable jaw closed by a cam lever, as represented in Figs. 2 and 4, by which the dies are clamped firmly together during the operation of heading the bolt, while at the same time the ends of the dies act as a guide to cause the holding and heading box to assume its proper position before the descent of the piston header or swage, and prevents the metal being forced out between the top joints of the dies and bottom of the cavity R, during the operation—the heading of the bolt being effected by means of a swage or piston header, made to descend, by the action of a sledge or hammer, which expands the end of the bolt laterally in the lower portion of the opening in which the piston header moves, and thus forms the head of the bolt between it and the ends of the dies; the size of said opening in which the piston

moves governing the lateral expansion of the metal and hence the size of the bolt head. The bolts being headed, the hand lever P, is raised to a vertical position and the movable jaw opened by the cam lever and the headed bolt or bolts discharged from between the dies.

A is a bed plate to which the stationary and movable jaws are secured, placed upon a bench or supported by legs, and having openings B through which the headed bolts descend; C, the stationary jaw, cast with and projecting vertically from the bed plate A, on the inside of which there is a series of dovetailing grooves, or channels, which decrease in width at their lower ends, into which are placed correspondingly shaped cast iron dies D, whose sides or faces are provided with cavities E, which are of a shape and size equal to half the thickness of the intended bolt to be headed, there being a seat F at the bottom of each cavity to support the rod or bolt, while being headed.

G is the movable jaw secured parallel to the stationary jaw by means of a strong bolt H, passed horizontally through the lower portion of the movable jaw, and two strong ears I, I, on which said jaw is made to move toward or from the stationary jaw C in the arc of a circle, there being similar dovetailing grooves or channels on the inside of the movable jaw, opposite to those in the stationary jaw, into which are placed like cast iron dies J, also having cavities therein equal to half the thickness of the intended bolt, and extending the length of the same. The adjacent faces or sides of these dies are made to project from the sides of the jaws, so that when the same are closed a space will be left between the jaws for allowing of the ready discharge of the bolts after being headed, the cavities in the dies corresponding precisely with each other and forming, when closed, a cavity of the exact size and shape of the bolt.

K, K, are two arms projecting from the inside of the stationary jaw through openings in the movable jaw, to whose ends is secured a cam lever L, by a bolt on which it turns, the inner or cam end thereof being formed in such a manner as to project into a loop or staple M, affixed to the side of the movable jaw, so that on raising the end of the lever its cam end will strike against the stationary dies, and on the descent of the

same, its curved or cam end will catch against the loop or staple and thus open the jaw and discharge the bolts.

N, is a hand lever attached by means of a bolt to an ear or stud O projecting upward from the stationary jaw. Near the confined end of this hand lever N, there is cast at right-angles to the same a box or holder P, having a flaring cavity or recess R in its end next to the dies, and of the same size, to receive the tapered ends of the dies. Within this box or holder P there is placed a swage or piston header T made of cast steel, and having a cap or head T' on its upper end to receive the action of the sledge or hammer, and two pins (*a a*) projecting therefrom through openings in the sides of the box or holder of a length equal to the movement of the swage or piston header.

The opening in the box or holder in which the piston header moves is directly over the cavity of the dies when closed, and the bolt between the same, is made to project above the dies and into the lower portion of said opening, as seen in Fig. 2, sufficient to form the head of the bolt when expanded by the piston header.

Q, is a spring secured to the hand lever and extending beneath the pins *a a* of the swage or piston header, T on either side of the box or holder P as seen in Fig. 1, for the purpose of elevating the swage or piston header immediately after the head of the bolt has been formed, and holding it in that position until the sledge or hammer descends, which may be arranged and operated in any convenient way. The sides of the box or holder P are recessed as seen at *p* Fig. 1 to permit the play of the ends of the spring bar Q, and also to form shoulders (*c c*) which govern the descent of the swage or piston header, and thus leaves a space between the top of the dies, and bottom of the swage or piston header when at its full descent, equal to the thickness of the head of the bolt.

The cavities in the dies may be of any required length and size and the rod from

which the bolts are to be made, is cut to suit the same and heated to a red heat at one end, which is placed uppermost between the dies, and the head formed while thus heated.

There may be a hand lever and swage or piston header to each divided die, operated simultaneously, or separately. The adjacent sides of the dies may be made flush with the sides of the jaws, in which case the bolt H and fulcrum of the cam lever L must be changed and brought nearer to the stationary jaw.

This machine may be adapted to the heading of rivets, in which case there is a rod (made to project up into the cavity of the dies) attached to the end of a lever secured to the bolt of the movable jaw and extending outward for the purpose of throwing the rivet out from between the dies after being headed, by the descent of its outer end, which forces the rod and rivet upward.

Having described the nature of my improvement and the operation of the same I am aware that spikes and bolts have been headed in a box, I therefore do not claim the box with the movable header therein, but

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

Attaching to, or forming in, the lower part of the box or holder a flaring or bell mouthed cavity, such as R which embraces the tapered ends of the dies, when the box is down, or in a vertical position, and clamps them firmly together, while at the same time, the cavity acts as a guide to cause the heading box to assume its proper position, and prevents the metal from being forced out between the ends of the dies and bottom of the cavity in the box during the operation of heading.

In testimony whereof I have hereunto signed my name before two subscribing witnesses.

JOHN VAN BROCKLIN.

Witnesses:

WM. P. ELLIOT,
J. L. SMITH.