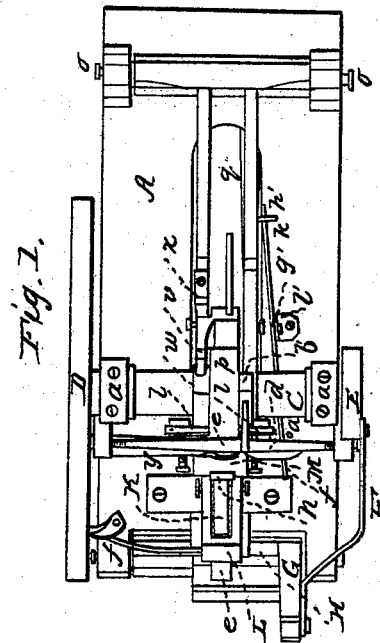
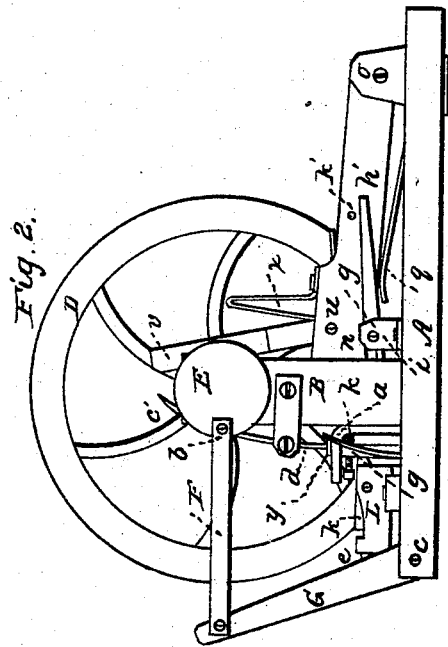
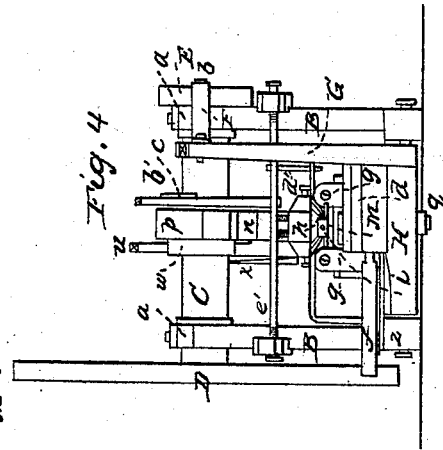
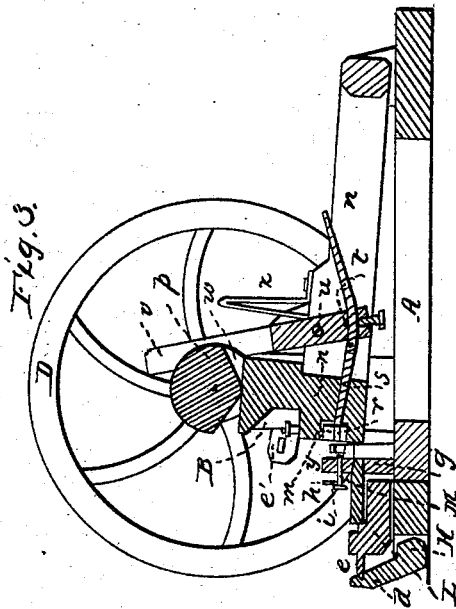


H. G. REED.  
Rivet Machine.

No. 3,945.

Patented March 12, 1845.



# UNITED STATES PATENT OFFICE.

HORATIO G. REED, OF SCITUATE, MASSACHUSETTS.

## IMPROVEMENT IN MACHINES FOR MAKING RIVETS.

Specification forming part of Letters Patent No. 3,915, dated March 12, 1845.

*To all whom it may concern:*

Be it known that I, HORATIO G. REED, of Scituate, in the county of Plymouth and State of Massachusetts, have invented certain new and useful Improvements in Machinery for Manufacturing Rivets, Screw-Blanks, or such other articles of similar character as may be successfully made by the same; and I do hereby declare that the following description and accompanying drawings taken in connection constitute a full and exact specification of the construction and operation of my said invention.

Figure 1 of the drawings above mentioned represents a top view or plan of my improved rivet-machine. Fig. 2 is an elevation of the side opposite to that on which the fly-wheel is situated. Fig. 3 is a longitudinal central and vertical section. Fig. 4 is an elevation of the end at which the wire to be converted into rivets is introduced into the machine.

A strong bed-plate, A, Figs. 1, 2, 3, 4, of the dimensions required to sustain the several operative parts, to be hereinafter described, has two standards, B B, extending vertically from it, and supporting in suitable boxes, a a, on their tops, a main horizontal shaft, C. The said shaft has a fly-wheel, D, upon one end, and is to be driven or put in revolution about its axis by manual or other suitable power properly applied to it. Upon the other end of the shaft is a crank-pulley, E, to the side of which, and between the circumference and center of which, one end of a connecting-rod, F, is secured by a crank-pin, b, upon which the rod plays. The other end of the rod is jointed to the top of a lever, G, which extends upward from a horizontal shaft, H, turning on screw centers or pivots c c, (see Figs. 1, 2,) passing through ears or projections of the bed-piece. The heading-tool K is confined in a sliding frame, L, which moves to and fro in a longitudinal direction, and is moved forward by a short projection, d, which extends upward from the shaft H, and is connected with the rear end of the sliding frame L by a pitman, e. A spring, f, draws back the heading-frame after the operation of heading the rivet has been performed. Just above the heading-tool is a stationary plate or rest, M, which is supported on the top of suitable standards, g g, which rise upward from the

bed-plate A, as seen in the drawings. This said rest-plate has a small guide or ear, h, projecting vertically from or near its rear edge, a round hole, i, being formed or bored through the said guide horizontally and longitudinally, and on a level with the upper surface of the rest-plate, in order to receive the wire from which the rivets are to be cut, which wire is passed through the said hole and bears or rests upon the rest-plate. The stationary die k is placed directly in front of the rest-plate, as seen in Fig. 3. The wire passes over its upper surface, or through a small notch cut therein, and is pressed down into the same by a spring, l. The movable die or cutter which severs the rivet-blank from the wire consists of a block, m, of hardened steel, applied to the end of a lever, n, which moves vertically upon screw centers or pivots o o, and is depressed by a cam or eccentric, p, arranged upon the main shaft, and raised by a spring, q, attached to the bed-plate. The movable die or cutter m is placed and moves in contact with the front vertical face of the fixed die k. When elevated to its highest position, the wire from which the rivets are to be made is forced forward and enters a hole or passage, r, bored horizontally through the die or cutter m, and of a diameter just sufficient to receive the wire. A piston, s, is inserted in the passage r, as seen in Fig. 3, the said piston being jointed to the lower end of an upright lever, t u v, which turns on a fulcrum, w, in the lever N. The upper leg of the lever t u v is forced against an eccentric, w, (fixed upon the main shaft,) by a spring, x. The eccentric w should be formed in such manner that as soon as the movable cutting-die has descended far enough below the fixed die to separate the rivet-blank from the wire it shall throw the upper part of the lever t u v forward, and thereby cause the piston s to advance a short distance in the passage r, so as to push out the rivet-blank as far as may be necessary, in order to enable the heading-tool to make the head when it advances and perform the heading operation. As soon as the head is formed, (the cam or eccentric being so shaped as not to move the lever while the operation of making the head is being effected,) the eccentric should press the lever far enough forward to cause the piston to move in its passage and

expel the rivet therefrom, which drops out of the machine.

The next portion of the apparatus is that by which the wire is forced forward or fed into the machine as wanted as fast as the rivets are formed. Directly over and nearly down upon the rest-plate M a bent spring bar or lever, *y*, is arranged as seen in the drawings, the same turning upon a fulcrum, *z*, at one or its lower end, or that end which rests upon the bed-plate. The lower edge of that part of the said bar immediately over the plate M rests upon the wire or rod from which the rivets are made. The said bar has certain motions given it—that is to say, it is raised from the wire and carried back and depressed upon the wire, and then carried forward, so as to move the wire forward with it, and cause its end to enter the passage *r*, and pass into the same until it abuts against the piston *s*. The said bar is forced back by a spring, *a'*, which presses against its end. It is forced forward by a cam, *b'*, (on the main shaft,) which acts against the arm *c* of a lever formed of two arms, *c'* *d'*, extending from a horizontal shaft, *e'*, the arm *d'* extending a short distance through a hole in the end of the bar *y*. The bar is raised by a lever, *f'* *g'* *h'*, turning on a fulcrum, *g'*, in the top of a standard, *i'*, applied to the bed-plate. One end, *f'*, of the lever extends directly underneath the bar *y*, while the other end, *h'*, passes under a pin or stud, *K'*, inserted in the side of the lever N. Thus when the lever N is depressed, it raises the bar *y* off the wire. At the proper time the spring or elasticity of the bar *y* brings it down upon the wire and holds it thereupon until the bar is advanced to carry the wire forward.

The operative parts of my rivet-machine being now described, it remains only for me to state that it will be seen that the movable cutting-die performs another operation besides that of cutting off the wire-blank—viz., that of holding the blank during the operation of heading the same—which I believe has never before been accomplished in any machine for making rivets or other articles of like nature.

By inspection of other rivet-machines patented it will be seen how much such an improvement simplifies the mechanism and with how few parts the operation of manufacturing rivets are conducted.

Having thus set forth the nature and principles of my invention, that which I claim is as follows, viz:

1. The spring bar or lever *y*, in combination with or as applied to the rest-plate M, and arranged and operating substantially as set forth, for the purpose of conveying or feeding the wire into the cutting-dies, in manner as described.

2. The improvement by which the proper adjustment and holding of the rivet-blank during the operation of forming the head thereon and the discharging of the rivet from the apparatus after its formation are effected, the said improvement consisting in arranging within the movable cutter the forcing mechanism or movable piston, &c., connected with it, the whole operating and being arranged substantially as set forth.

HORATIO G. REED.

Witnesses:

R. H. EDDY,  
JOHN NOBLE,