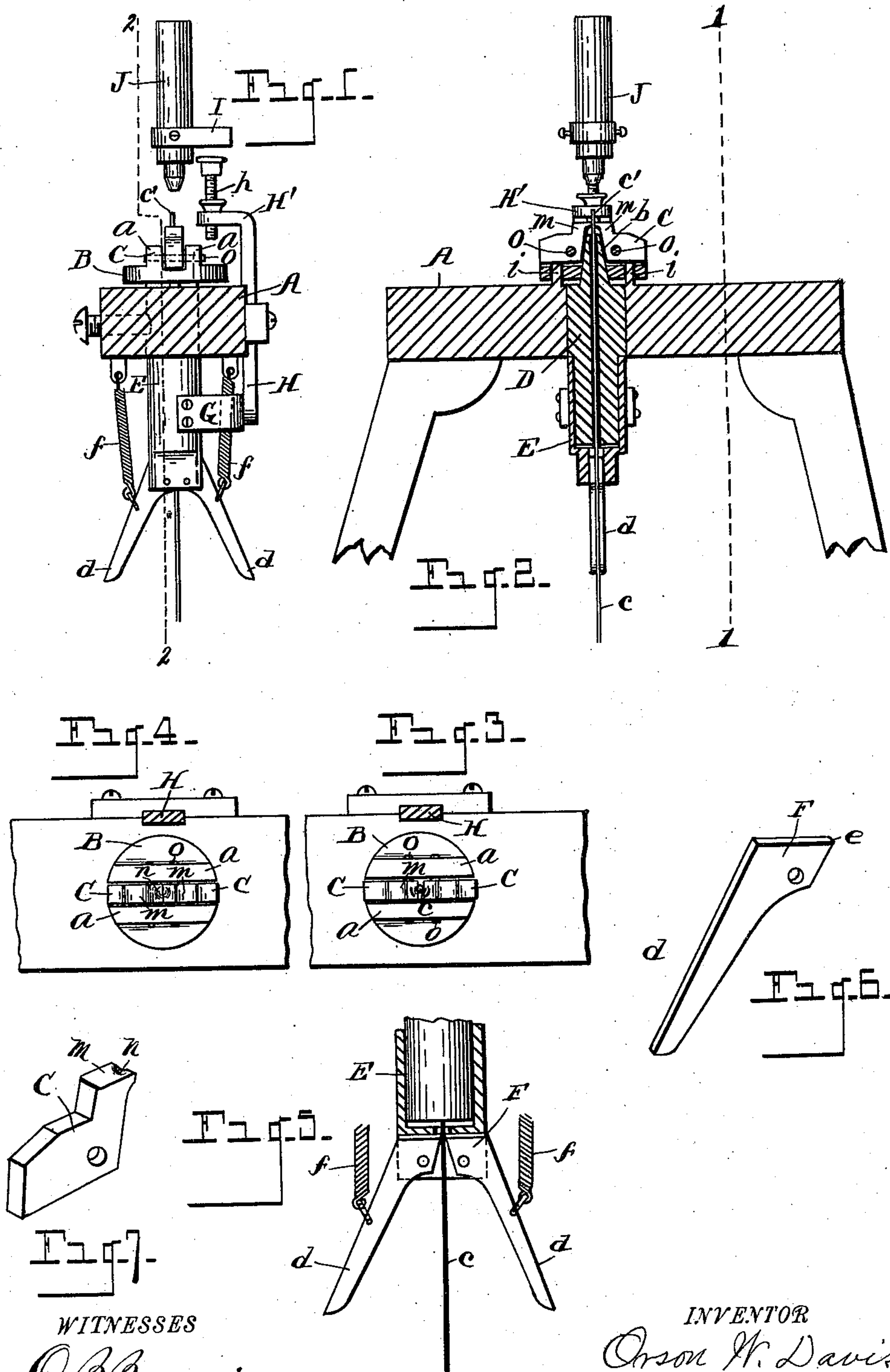


(No Model.)

O. W. DAVIS.
RIVETING MACHINE.

No. 576,556.

Patented Feb. 9, 1897.



WITNESSES

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RIVETING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 576,556, dated February 9, 1897.

Application filed April 11, 1896. Serial No. 587,093. (No model.)

To all whom it may concern:

Be it known that I, ORSON W. DAVIS, a citizen of the United States, residing at Adrian, in the county of Lenawee, State of Michigan, have invented certain new and useful Improvements in Riveting-Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to an improvement in riveting devices; and it consists in the construction and arrangement of parts hereinafter fully set forth, and pointed out particularly in the claims.

The objects of the invention are to provide simple and effective means of cutting off the wire rivet and heading it on both sides of the work by one operation; also, in providing an automatic feed for the wire, so as to properly regulate the length of each successive rivet, thereby effecting great saving in material and of time and labor in the operation of riveting, which objects are attained by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a view of my improved riveting device as attached to the bolster-plate of an ordinary foot-power punching-press, the actuating-lever and the sliding head of the press for holding the upper swage not being shown and the bolster-plate being in section as on line 1 1 of Fig. 2. Fig. 2 is a vertical section as on line 2 2 of Fig. 1. Fig. 3 is a plan view of the cutting and heading dies of the under swage, showing the wire from which the rivet is formed in position between them. Fig. 4 is a like view showing said dies closed. Fig. 5 is an enlarged detail, partly in section, of the wire-feeding mechanism. Fig. 6 is a perspective of one of the wire gripping and feeding jaws. Fig. 7 is a perspective of one of the cutting and swaging dies.

Referring to the letters of reference, A designates the bolster-plate of an ordinary foot-power press in which is located the under swage, consisting of a circular head-block

B, having the parallel flanges *a* crossing the diameter thereof and between which are pivoted the opposed cutting and swaging dies C.

Fixed securely in the bolster-plate of the press is a central stem D, which is provided with a tapered upper end *b*, which enters centrally the head-block B and upon which said block is mounted. The conical end *b* of the stem D extends upward between the dies C, and passing longitudinally through said stem is an aperture through which the wire *c*, of which the rivets are formed, is fed between the cutting edges of said dies, as clearly shown in Fig. 2. Embracing the lower end of said stem D is a vertically-movable sleeve E, which is provided with a slotted opening in the lower end thereof, in which are pivoted the eccentric wire-gripping jaws F, having the extended arm *d*, to which is attached one end of a coiled spring *f*, the opposite end of said spring being attached to the under face of the plate A. The gripping-points *e* of said jaws stand in opposed juxtaposition and in line with the aperture leading through the stem D, and the wire *c* in entering said stem passes between the points of said jaws, as clearly shown in Fig. 5.

Attached to the vertically-movable sleeve E is a yoke G, to which is secured the lower end of a vertically-movable bar H. The upper end of said bar is provided with a right-angled portion H', through which passes a screw *h*, having a thumb-wheel at its upper end, which is located in the path of an arm I, which is secured to and projects from the upper swage J, whereby, as the upper swage descends, the arm I engages the screw of the movable bar H, forcing said bar downward and depressing the sleeve E, carrying the wire-feeding jaws F. Said jaws in this downward movement, because of the manner in which they are hung, slide over the wire *c*, which passes between them. This downward movement of the sleeve and jaws places a stress upon the springs *f*, the force of which, after the upper swage is raised, will raise said sleeve to its normal position, at the same time causing the points *e* of the jaws F to bite the wire *c* and carry upward a sufficient length of said wire to form the succeeding rivet, which projects through the dies C, as shown

at C'. The length of the wire which is fed upward through the dies by means of the spring-actuated jaws F is regulated by means of the set-screw *h*, which gages the movement of the sleeve E, carrying said jaws, as will be well understood.

In the operation of this improved riveting-machine the wire *c* is caused to protrude through the dies C sufficiently to form the length of rivet required. The work to be riveted is placed over said wire and rests upon the dies C, the projecting end of said wire passing through the rivet-hole in the work to be riveted in line with the upper swage J, when, by a foot-lever or any suitable means for the purpose, the upper swage J is brought down upon the upper end of the wire which forms the rivet, the impact of which heads over the upper end of the wire and at the same time forces slightly downward the head-block B, carrying the dies, bringing the tail of said dies into contact with the fixed pins *i*, projecting vertically from the plate A, causing the cutting-jaws *m* of said dies to swing inward and sever the wire *c*, which passes between them. The cutting-jaws *m* of the dies C are provided on their upper faces adjacent to their cutting edge with a semicircular concavity *n*, which, when said dies are closed, forms a head which shapes and swages the head of the rivet upon the under side of the work, completing at one stroke the severing of the wire which forms the rivet and the heading of said wire on each side of the work to be riveted, providing also for the feeding of a sufficient length of the wire through the jaws to form the succeeding rivet through the operation of the vertical movable bar H and the sleeve connected therewith, carrying the spring-actuated feeding-jaws, as before described.

It will be understood that the dies forming the lower swage may be of any size for the work required and of any shape to give the desired formation to the head of the rivet.

It will be understood that upon the raising of the upper swage the wire *c* is carried upward through the action of the springs *f* between the cutting edges of the dies, which drop back upon the pivots *o* to afford a passage for said wire, completing in one operation not only the severing and riveting of the wire in the work, but providing as well for the intermittent feeding of the wire for each successive operation.

Having thus fully set forth my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a riveting-machine, the combination with the wire-feeding mechanism, of the mov-

able cutting and swaging dies between which the wire is fed, the reciprocal plunger moving in line with said dies, and onto the upper end of the rivet, and at the same time actuating said dies to sever the wire and form a swage for heading over the rivet on the under side by the impact of the plunger which also forms a head upon the upper side of the rivet.

2. In a riveting-machine, the combination with the cutting and swaging dies, of the pivoted jaws between which the wire is fed, the movable sleeve carrying said jaws, and the springs attached to the arms of said jaws and to a fixed support, a movable bar attached to said sleeve, a reciprocal plunger adapted to engage said bar whereby the feeding-jaws are actuated to intermittently feed the wire in proper lengths to form each successive rivet.

3. In a riveting-machine, the combination of the pivoted cutting and swaging dies mounted in a movable head, a reciprocal plunger carrying a heading-swage which operates in line with said dies, the actuated feeding-jaws engaging the wire which is fed between said dies, the connection between said jaws and the reciprocal plunger whereby by an operation of said plunger the rivet is cut and headed on both sides and the wire is fed through said dies a sufficient length to form the successive rivet.

4. In a riveting-machine, the combination of the pivotally-mounted cutting and swaging dies between which the wire to form the rivet is fed, said dies being mounted to meet at their cutting-points and having a registering concavity in their upper face, the movable head in which said dies are mounted, the stop mounted on a fixed support and engaging the heel of said dies, the movable plunger carrying a heading-swage mounted in line with said dies whereby by an operation of said plunger the wire is severed and the rivet headed on each side of the work.

5. In a riveting-machine, the combination with the cutting and swaging dies, the reciprocal plunger in line therewith, the feeding-jaws mounted in a reciprocal sleeve, the springs attached to the arms of said jaws and to a fixed support, the reciprocal bar attached to said sleeve, and the adjustable set-screw carried by said bar projecting into the path of said plunger.

In testimony whereof I affix my signature in presence of two witnesses.

ORSON W. DAVIS.

Witnesses:

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R. D. HILL.