

No. 694,596.

Patented Mar. 4, 1902.

F. W. WOOD.
RIVET MAKING MACHINE.

(Application filed Apr. 6, 1901.)

(No Model.)

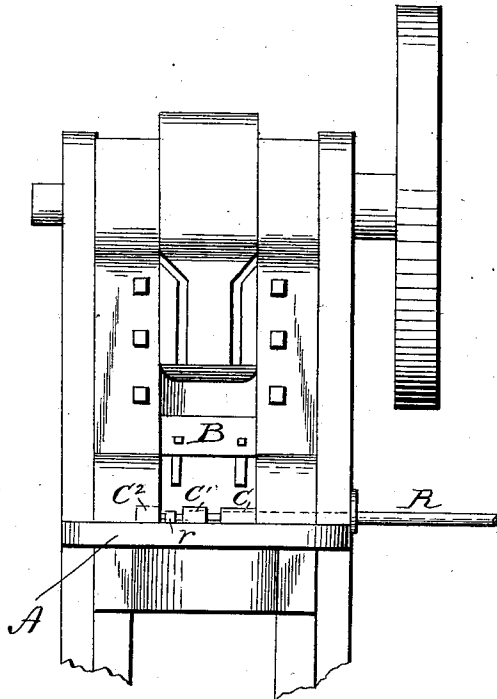


Fig. 1.

Fig. 4.

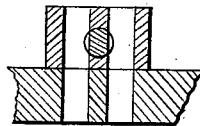
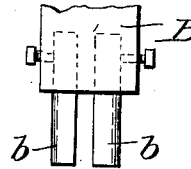


Fig. 2.

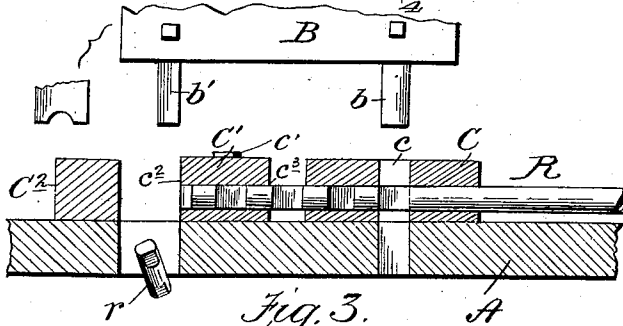
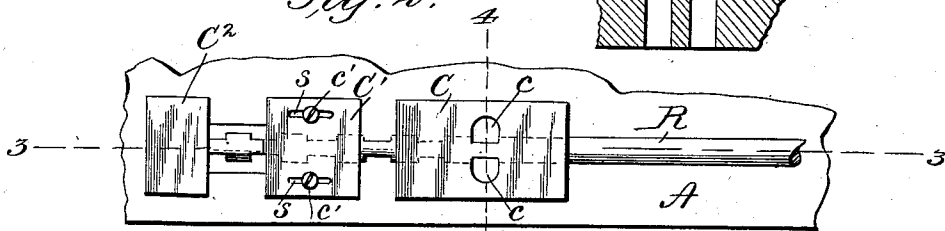
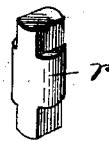


Fig. 3.

Fig. 5.



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UNITED STATES PATENT OFFICE.

FRANK W. WOOD, OF INDIANAPOLIS, INDIANA.

RIVET-MAKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 694,596, dated March 4, 1902.

Application filed April 6, 1901. Serial No. 54,673. (No model.)

To all whom it may concern:

Be it known that I, FRANK W. WOOD, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Rivet-Making Machines, of which the following is a specification.

My said invention consists in an improved machine for the manufacture of the rivets for sprocket or bicycle chains whereby such rivets may be turned out very rapidly, economically, and a more perfect rivet result than by the usual mechanism and method.

Referring to the accompanying drawings, which are made a part hereof, and on which similar reference characters indicate similar parts, Figure 1 is an elevation of a press such as may be used in the practice of my invention. Fig. 2 is a top or plan view of the bed of said press, showing the dies mounted in position thereon; Fig. 3, a central vertical section through the same on the dotted line 3 3 in Fig. 2; Fig. 4, a transverse section on the dotted line 4 4 in Fig. 2, and Fig. 5 a detail perspective view of one of the finished rivets.

In said drawings the portions marked A represent the bed of the press, B the reciprocating head carrying the punches, and C C' die-plates on said bed. The press, including the bed A, head B, and all its operating mechanism, may be of any appropriate construction and design, preferably with a suitable automatic feeding device (not shown) to feed along the rod R, from which the rivets r are made, and needs no special description, being illustrated for the purpose of making an understanding of the invention more clear only. The die-plate C is mounted in fixed position on the bed A and is formed with a longitudinal perforation of the size of the rod from which the rivets are to be made, through which said rod is fed by any appropriate feeding mechanism. It is also provided with two vertical perforations c, which intersect said longitudinal perforation on opposite sides, their adjacent faces being flat or formed to suit the desired shape of the rivet and the outside portions oval or any suitable shape in cross-section. The die-plate C' is

mounted to be adjusted on the bed A by means of slots s and set-screws c', which pass therethrough into suitable perforations in said bed. It has a longitudinal perforation directly in line with the longitudinal perforation in plate C and of exactly the size desired for the finished rivet, being formed of chilled steel and with sharp cutting edges, so that after the operation in plate C as the rod is forced through plate C' all burs and irregularities on the surface will be removed and the body of the rivets thus made uniform in size and of perfect shape as most desired for the purpose of a journal for the link center mounted thereon when in use. It is removably mounted to allow for grinding both cutting-faces c² and c³. A stop C² is movably mounted at an appropriate point to limit the movement of the rod as it is fed forward to secure the desired length of rivet and insure that all the rivets shall be of uniform length.

Mounted on the reciprocating head B are a pair of die-punches b, corresponding in cross-sectional form to the die-apertures c in plate C and adapted to pass therethrough as said head B reciprocates. A cutting die or punch b' is also carried on said head and is positioned to cooperate with the edge c² of plate C' to cut off the rivets in the center of the portion cut out of the sides of the rod by the dies b.

The operation is: The rod being fed through plate C, the dies b come down through the die-apertures c and cut out short portions from opposite sides of the rod. The rod is then fed forward step by step until its end strikes stop C², when the die b' comes down and cuts off the rivet r of perfect finished form, having the flattened ends adapted to enter appropriate apertures in the side links and the center portion adapted to form a journal for the center link of the chain. The cutter-die b is formed with a concaved edge to fit the convex surface of the rod, as shown at the left of Fig. 3, so that the operation of cutting will not flatten said rod or rivet. The operation continues until the rod is entirely made up into rivets, and one rod can be fed after another, so that the manufacture of the rivets is very rapid at comparatively small

cost, while a very superior article is the result.

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

1. In a rivet-making machine, the combination, of the die-plate having an aperture through which the wire is fed, and intersecting apertures through which the slabbing-dies operate, a die having an aperture surrounded by a cutting corner or edge through which the rivets are forced to trim or form them, a reciprocating die-head carrying the slabbing-dies and also a severing-die arranged to cooperate with the opposite end of the trimming-die to cut the rivets at the proper points, substantially as set forth.

2. In a rivet-making machine, the combination, of the die-plate C having a longitudinal perforation to hold the rod or wire to be operated upon and intersecting transverse perforations on each side thereof, the second die-plate C' having a perforation of the size and form desired for the finished rivet, and formed with hardened cutting edges to remove any irregularities therefrom as it is forced therethrough, and the die-block B carrying the pair of dies *b b* for slabbing the rivet, and the cutting-die *b'* for cutting it off

at the proper point as it projects from the die-plate C', substantially as set forth.

3. In a machine for making rivets, the combination of the die-plate having longitudinal and transverse intersecting perforations, a second die-plate having a longitudinal perforation with cutting edge, in line with the longitudinal perforation in said first-named plate, and a cutting-die adapted to cut off the rivets at the outer edge of said second plate, substantially as set forth.

4. In a machine for making bicycle-chains, rivet-forming dies, comprising a plate with a longitudinal perforation through which the rod is to be fed and transverse intersecting perforations, a second plate with a longitudinal perforation for removing surface irregularities, a stop, and a reciprocating die-head carrying dies to "slab" the rod, and cut off the rivets simultaneously, substantially as set forth.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 30th day of March, A. D. 1901.

FRANK W. WOOD. [L. S.]

Witnesses:

ROLLA M. MALPAS,
I. N. RICHIE.