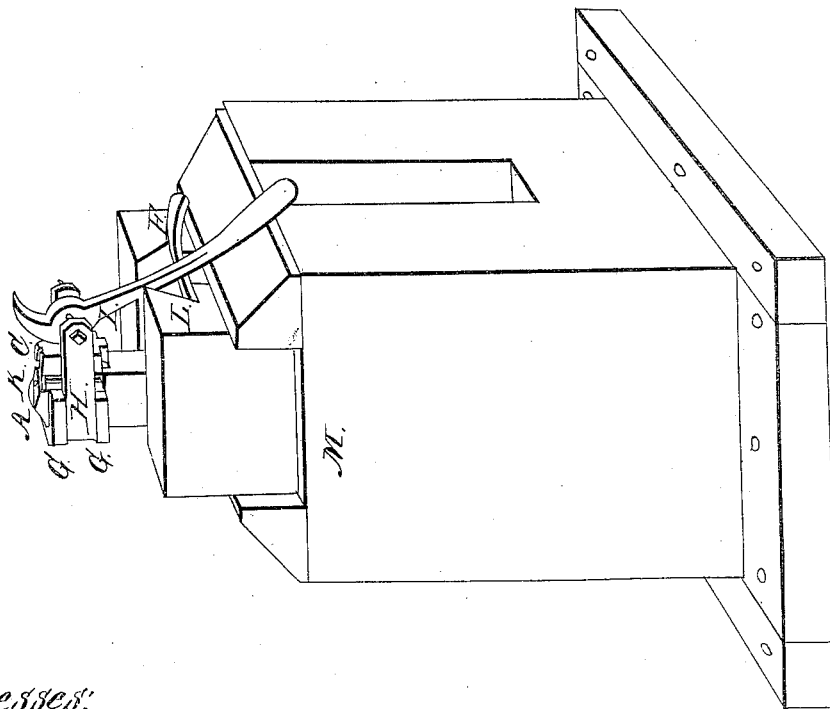
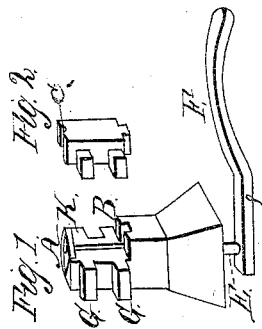


*F. A. Cannon,*

*Making Rivets,*

*No. 1,335,*

*Patented Sept. 25, 1839.*



*Witnesses:*  
*Geo. S. Jackson*  
*Nathl. Dearborn*

*Inventor:*  
*Francis A. Cannon*

# UNITED STATES PATENT OFFICE.

FRANCIS A. CANNON, OF BOSTON, MASSACHUSETTS.

## MACHINE FOR MAKING RIVETS.

Specification of Letters Patent No. 1,335, dated September 25, 1839.

*To all whom it may concern:*

Be it known that I, FRANCIS A. CANNON, of Boston, in the county of Suffolk and Commonwealth of Massachusetts, have invented a new and useful Machine for Making Metallic Rivets of Any Required Size or Form with Ease and Great Rapidity and for Every Use to which Metallic Rivets are or can be Applied; and I hereby declare that the following is a full and exact description thereof.

This machine consists of a foundation-block of cast iron (L, see drawings,) 12 inches long, 7 inches in width, and  $6\frac{1}{2}$  inches high, placed upon a block of wood or stone, of any convenient height, in the same manner as a blacksmith's anvil. The size of the said foundation-block may be varied according to the size of the rivets intended to be manufactured. In the top of the foundation-block, is a horizontal transverse opening of the dovetail form, intended to receive the base of the dies, hereinafter described, and to retain the same in a vertical position. This opening in a foundation block of the size above mentioned, is  $2\frac{1}{2}$  inches deep, 3 inches wide at the bottom, and 2 inches wide at the top—and extends the whole width of the block "L." On the bottom of this dovetail opening is cut a groove along the center thereof one inch in width, and one inch in depth, which admits a horizontal iron tripping lever "F" that passes under the seat of the die "A." This groove, at a point about three inches from the face of the foundation block "L," is suddenly deepened to  $1\frac{3}{4}$  of an inch—thereby forming a fulcrum for the iron tripping lever "F" which is crooked at the point where the groove deepens, so as to correspond to the cavity of the groove. This lever can be depressed by a slight blow of a hammer, so that the inner end may strike against the bottom of the die "A," the part of the groove nearest the face of the block being cut out to a proper inclination, so as to let the outer end of said lever turn on its fulcrum, about three-fourths of an inch below the horizontal position.

The dies are square prisms of cast-iron rising about five inches above the top of the foundation-block, and are made to stand firmly in a vertical position, by the lower part thereof being expanded in a pyramidal form, so as to fit exactly into the horizontal

dovetailed opening in the foundation block above described.

Each die, is bored through the center "D" vertically—the bore being of the exact size of the rivet required to be made. Upon the upper end of each die a vertical section is made through the center of the prism and the bore, to the depth of three inches, "B" also a horizontal section—whereby a parallelepiped is removed. The piece removed by these two sections is supplied by another parallelepiped called the face-plate "C" which has in it a segmental groove corresponding exactly to that bored in the standing part of the die "A." This face-plate, fitting into the space, shoulder or recess "B," and also fitting onto or under the head-plate hereinafter mentioned, is held firmly in its place, or released therefrom by a clutch-lever of wrought iron—"I," about 16 inches in length, the clutch "H" being supported horizontally near and about the head of the die, by two projections or fillets "G" one-fourth of an inch thick; corresponding projections being made upon the face-plate "C."

The clutch lever "I" acting upon a fulcrum formed by a bolt passing through the ends of the clutch is pressed against the face-plate "C" during the operation of forging. The head of the rivet is formed by a steel plate called the head-plate, "K," fitted into a dovetailed groove upon the top of the die and fastened thereon by a small rivet, or screw, or in any other convenient mode. The head-plate has a hole through its center, a little larger than the caliber of the die, this hole being rimmed out on the upper side of the head plate according to the size and shape of the rivet-heads required to be made. The head-plate "K," can be removed at pleasure and replaced when worn out, and being interposed between the head of the rivet to be forged, and the joints formed by the junction of the standing part of the die and the face-plate "C" prevents the marks of these joints from being impressed upon the shoulder of the rivet, and also, serves to guide the upper end of the face-plate, when it is brought up against the standing part of the die, so that the cavities thereof shall exactly correspond—and the face-plate is prevented from slipping either way during the process of forging.

By the foregoing description it will be perceived that what I term the die "A" is simply a mold for the formation of the rivet which can be either cylindrical, conical, pyramidal, or of any other form, as also of any size which may be required. The face-plate "C" is made movable in order to permit the easy and immediate ejection of the rivet when made; and this operation is performed by means of an iron core, which fits loosely into the cavity of the die which holds the shank of the rivet. The lower end to the core "E" rests upon the horizontal tripping-lever "F." The length of the core is regulated by the length of the shank of the rivet.

The operation of this rivet-machine may be thus described, viz: Iron, copper, or other metallic wire is cut into such lengths as the rivet, intended to be made, requires, allowing sufficiently for the head of the rivet. A quantity of these pieces are heated to redness in an oven or furnace of a suitable construction. The operator then takes one piece at a time in the tongs, points it into the die-hole, or mold "A," presses the face plate "C" hard up by means of the clutch-lever "I" and with a blow of his hammer, or sledge drives home the piece of wire until its lower end rests upon the iron core "F" and by the same blow the head of the rivet is formed on the head-plate "K."

The clutch lever "I" is then raised so as to release the face plate "C" and a blow of the hammer is struck upon the tripping-lever "F" which, striking the lower end of the core "E" suddenly, forces the rivet quite out of the die or mold "A" which is then ready to receive another piece of wire.

All the molds are similar in their external form; the bore is varied to suit the different sizes of rivets, and so also is the bore of the head-plate—the length of each particular rivet, after the wire is cut, is regulated by the length of the movable core, aforesaid.

I do not claim as my invention the method of making rivets by means of the jaws and lever, but

What I do claim as new and wish to secure by Letters Patent is—

The head-plate "K" in combination with the mold or die "A" and face plate "C" for the purpose and in the manner herein described.

In witness whereof I, the aforesaid FRANCIS A. CANNON, hereto subscribe my name in the presence of the witnesses whose names are hereunto subscribed, on this third day of September, A. D. 1839.

FRANCIS A. CANNON.

Witnesses:

R. N. LEUCE,  
WILLIAM WHITING.