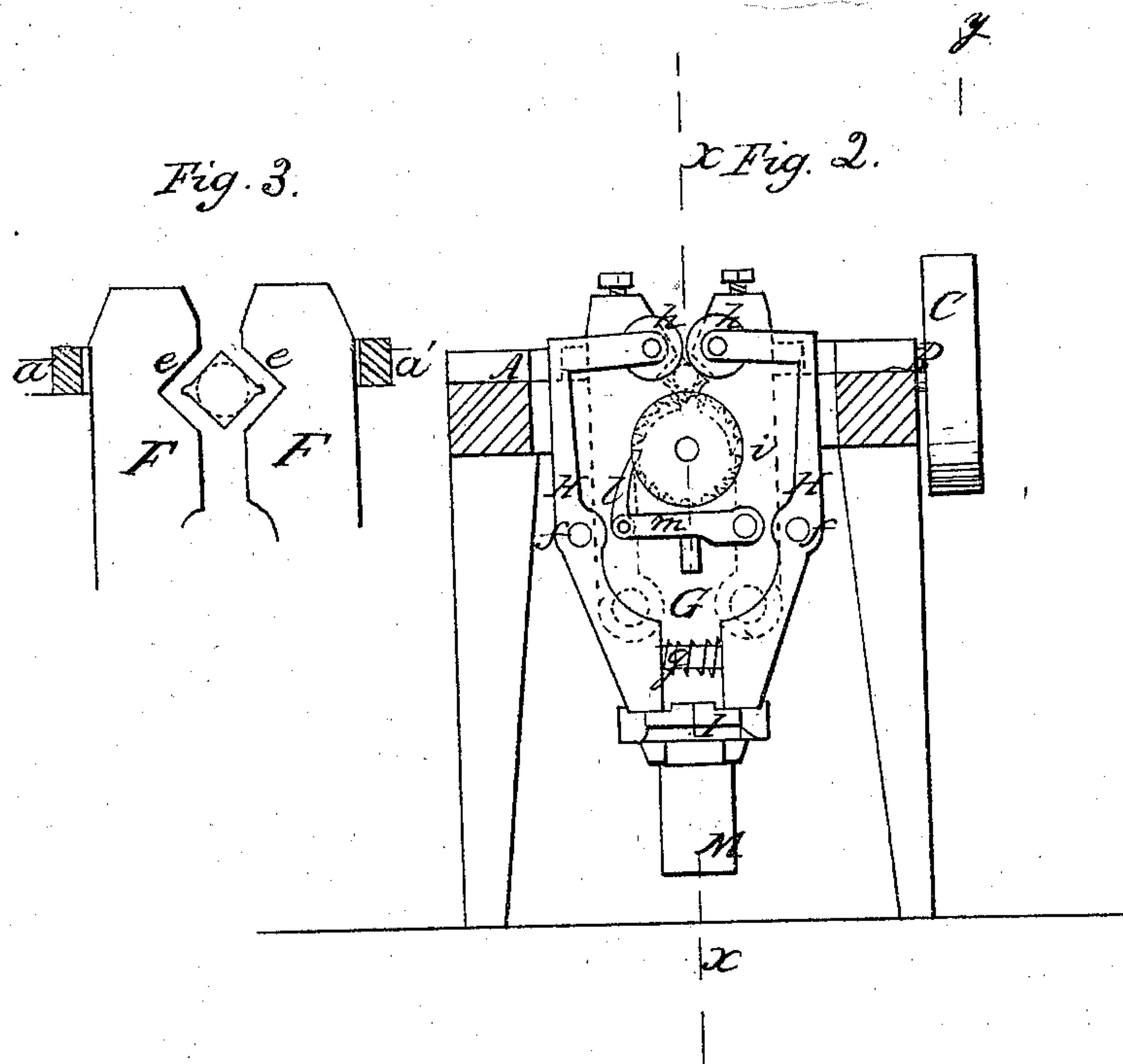
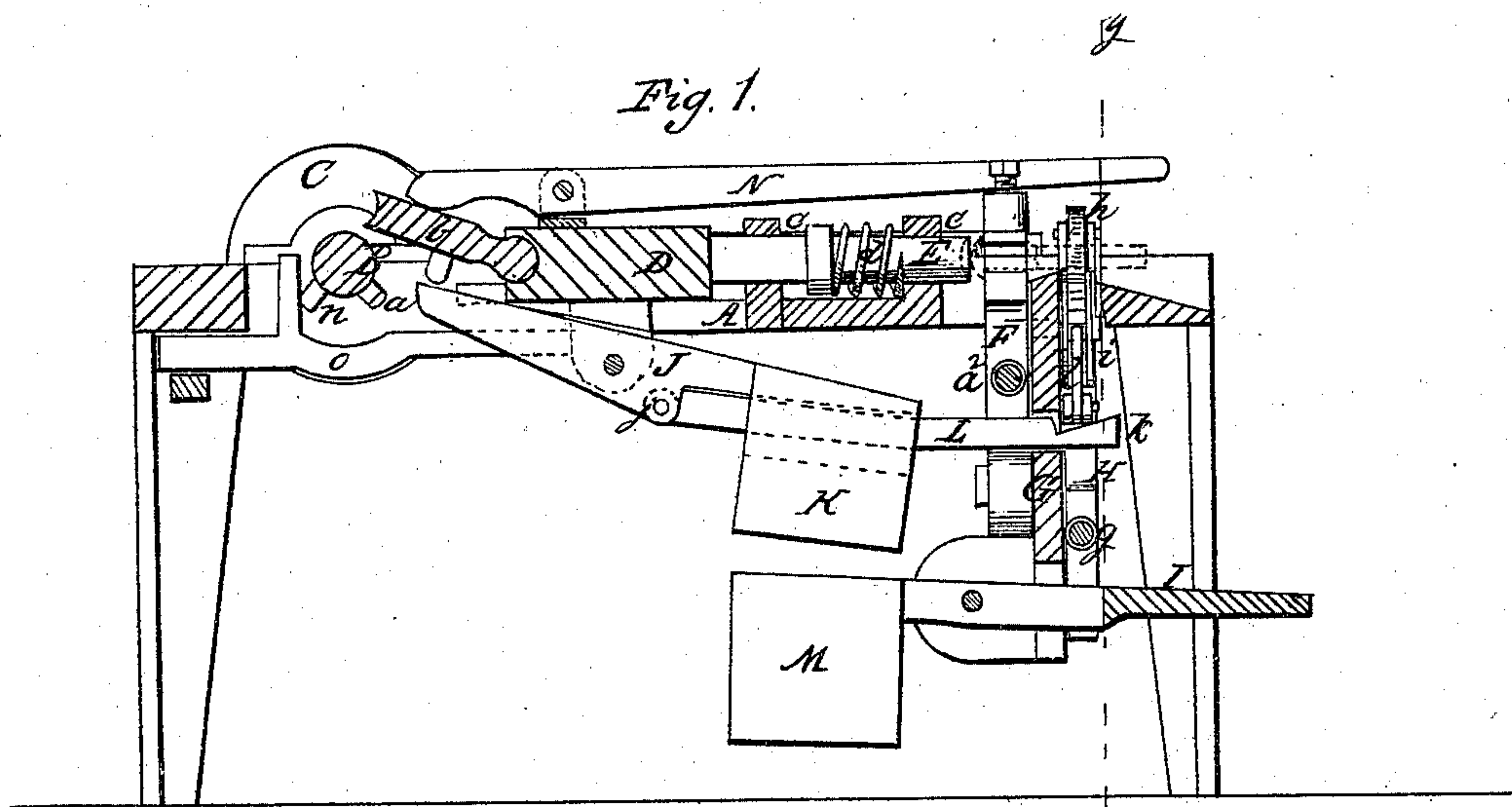


E. & P. Coleman,
Bolt Heading Machine,
No 15,729, Patented, Sept. 16, 1856.



UNITED STATES PATENT OFFICE.

E. COLEMAN AND P. COLEMAN, OF PHILADELPHIA, PENNSYLVANIA.

HEADING BOLTS.

Specification of Letters Patent No. 15,729, dated September 16, 1856.

To all whom it may concern:

Be it known that we, E. COLEMAN and P. COLEMAN, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in Machines for Heading Bolts; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1. is a longitudinal vertical section of our improvement, *x, x*, Fig. 2, showing the plane of section. Fig. 2, is a transverse vertical section of ditto, *y, y*, Fig. 1, showing the plane of section. Fig. 3, is a detached front view of the jaws.

Similar letters of reference indicate corresponding parts in the several figures.

Our invention consists in the employment or use of a rotating device attached to the machine, and constructed, arranged and operating in connection with other parts as will be presently shown and described, whereby the bolt is turned intermittently within the jaws during the process of heading and the usual bur which is now formed on bolts, below the heads, avoided.

To enable those skilled in the art to fully understand and construct our invention, we will proceed to describe it.

A represents a horizontal platform or bed plate which may be supported at any suitable height by a framing.

B, represents a shaft placed at one end of the bed-plate and having a driving pulley C, at one end. The shaft B, has a projection *a*, upon it, which acts against a pitman or arm *b*, attached to or connected with a slide D, which is fitted in the bed plate A, and has a heading die E, attached to it, said die working through guides *c, c*, on the bed-plate. A spiral spring *d*, is placed around the die E.

F, F, represent two jaws which are pivoted to a pendent plate G, attached to the underside of the bed plate. These jaws have each a right angular notched die *e*, fitted in them, which dies, when the jaws are closed, form a square to receive and grasp the bolts, as shown clearly in Fig. 3.

H, H, represent two levers which are pivoted at *f*, to the pendent plate G. The lower ends of the levers H, pass through slots in a treadle I, which is secured in the lower end

of the plate G, and a spiral spring *g*, is placed between the lower parts of the two levers. The upper ends of the two levers H, H, are bent over horizontally toward each other and have each a roller *h*, inserted in them and directly underneath the two rollers *h*, a ratchet roller *i*, is placed, the axis of the roller *i*, being attached to the plate G.

J, is a lever secured to the underside of the slide D. This lever has a weight K, at one end, and the opposite end bears against the pitman or arm *b*, and keeps it elevated above the projection *a*, on the shaft B. To the lever J, an arm L, is attached by a pivot *j*, said arm passing through the plate G, and having an incline *k*, upon it, which actuates a pawl *l*, attached by a lever *m*, to the plate G, as shown in Fig. 2.

The inner end of the treadle I, has a weight M, upon it.

N, is a lever attached to the upper part of the slide D.

The shaft B, has projections *n*, upon it, which act against arms *o*, attached to the slide D.

Operation: The blanks, shown in red, being properly heated, are placed one at a time between the two jaws F, F, and motion being given the shaft B, in any proper manner, the pitman or arm *b*, is depressed by means of the lever N, and the projection *a*, on the shaft B, will strike against the pitman or arm *b*, and the slide D, will be shoved forward, the die E, partially forming the head on the blank. The jaws F, F, are closed so that the dies *e, e* will grasp the blank while the head is being formed, by bars *a', a'*, attached to the slide D. The slide D, and die E, are drawn back in consequence of the projections *n*, on the shaft B, striking against the arms *o*, and the lever L, is also drawn back, being connected with the slide D, the jaws F, being expanded by a spring *a²*, and the incline K actuates the pawl *l*, and the treadle I, being depressed by the foot of the attendant, the rollers *h, h*, grasp the blank, which is rotated between the jaws or rather the dies, in consequence of the pawl *l*, rotating the ratchet roller *i*, the rollers bearing against the blank. The blank is rotated a quarter of a revolution so that its position between the dies is changed. The lever N, is again operated or raised by the attendant and the die E, is again pressed

forward as before, the operation being repeated till the head is formed, and the blank rotated each time the slide D, moves backward.

- 5 By having the blank rotated and changed in position between the dies *e, e*, each time the die E, moves forward to form the head, the usual bur is prevented from being formed on the blanks, adjoining the heads.
- 10 These burs are produced by the spaces between the faces of the dies *e, e*, and become more apparent, as the dies become worn, because the faces of the dies cannot be pressed together sufficiently close to prevent a space
- 15 being formed for a portion of the metal to be forced into and leave a ridge or bur. By our improvement, this objection is obviated.
- Having thus described our invention, what

we claim as new and desire to secure by Letters Patent, is—

1. The levers H, H, with rollers *h, h*, attached to them and the ratchet roller *i* attached to the pendent plate G, the above parts being arranged and operated as shown for the purpose specified.

2. We further claim the heading die E, and jaws F, F, provided with dies *e, e*, when arranged as shown, so as to operate conjointly with the rollers *h, h*, and *i*, for the purpose set forth.

EBENEZER COLEMAN.
PHILEMON COLEMAN.

Witnesses:

GEO. W. BASTRAM,
JOHN I. CAFFERTY.