

G. E. HOLTON.
BUR REMOVING PUNCH FOR HORSESHOES.
APPLICATION FILED AUG. 27, 1910.

983,997.

Patented Feb. 14, 1911.

4 SHEETS—SHEET 1.

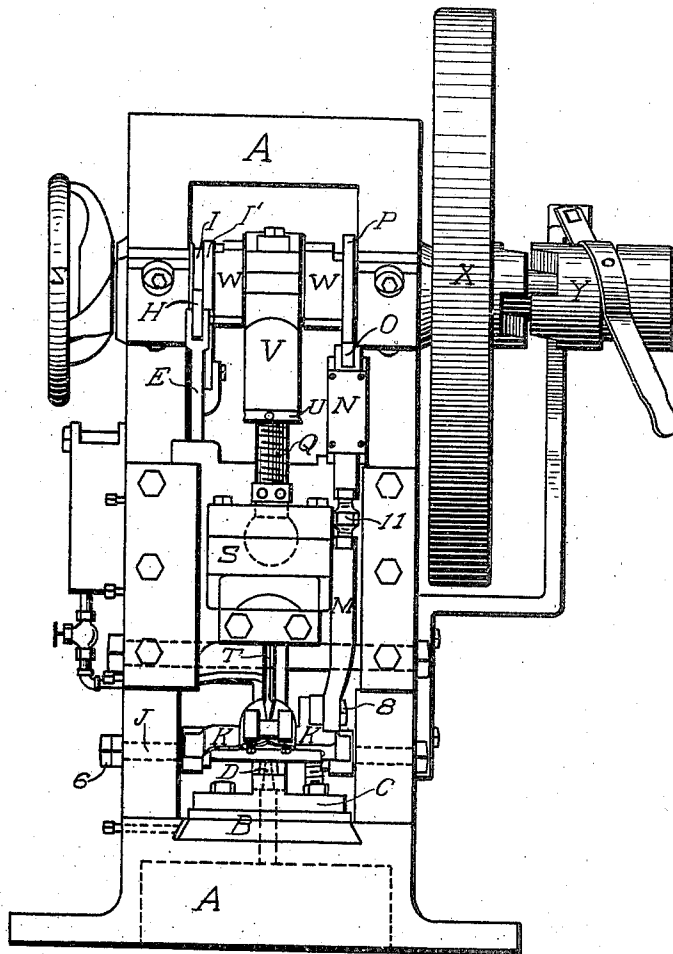


FIG. 1.

Witnesses.

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Eli Smith A. Sheldrake

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By

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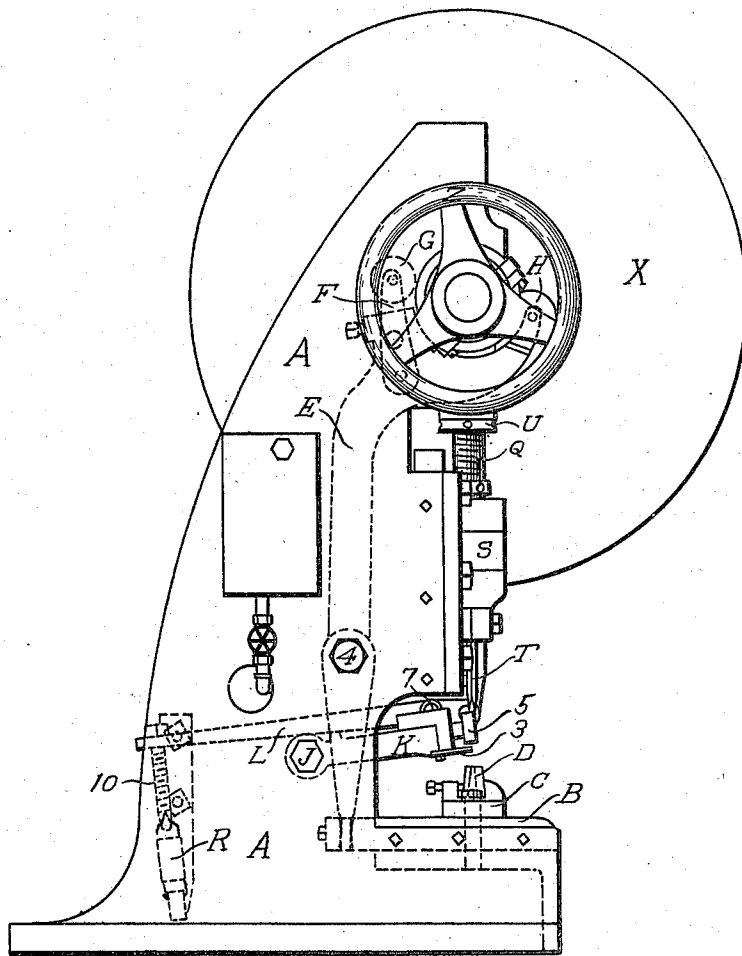


FIG. 2.

Witnesses
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4 SHEETS—SHEET 3.

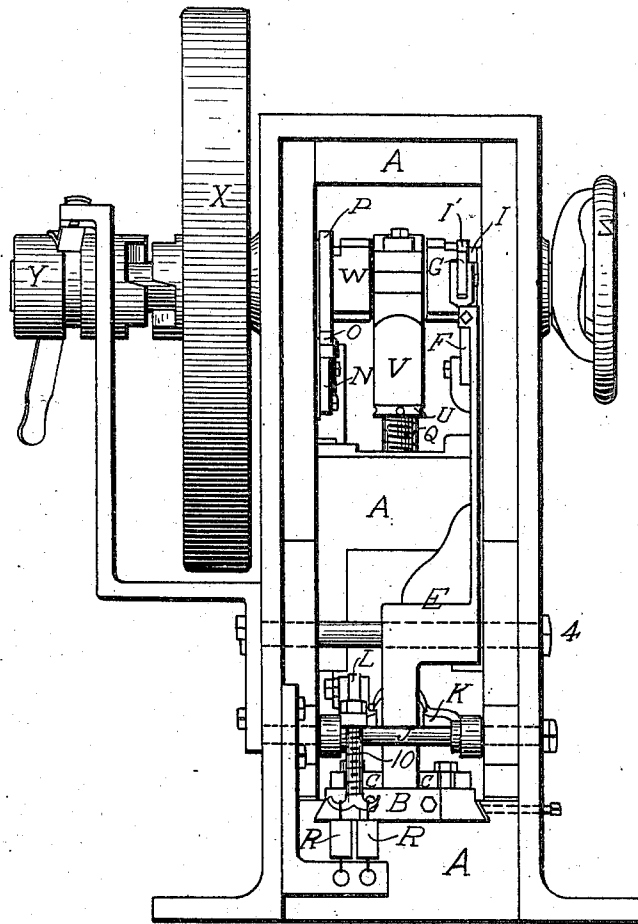


FIG. 3.

Witnesses:

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4 SHEETS—SHEET 4.

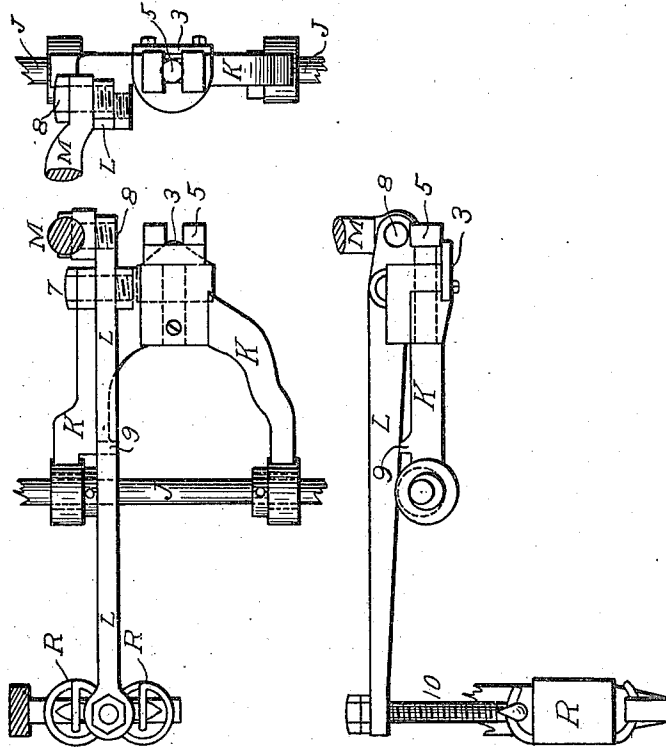


FIG. 4.

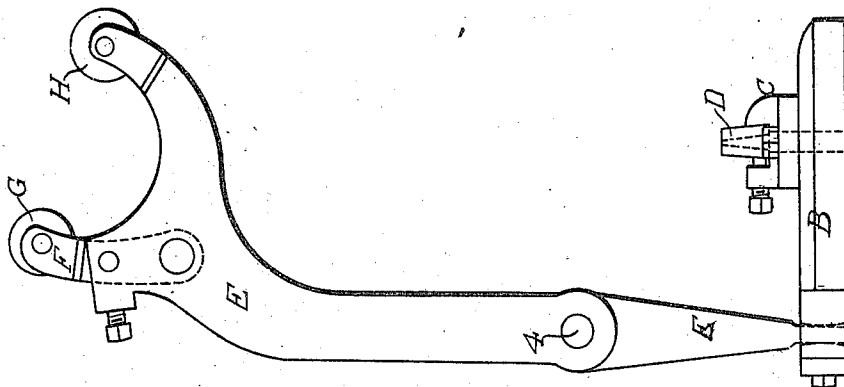


FIG. 5.

Witnesses.
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UNITED STATES PATENT OFFICE.

GEORGE E. HOLTON, OF CATASAUQUA, PENNSYLVANIA.

BUR-REMOVING PUNCH FOR HORSESHOES.

983,997.

Specification of Letters Patent. Patented Feb. 14, 1911.

Application filed August 27, 1910. Serial No. 579,269.

To all whom it may concern:

Be it known that I, GEORGE E. HOLTON, a citizen of the United States, residing at Catasauqua, in the county of Lehigh and State of Pennsylvania, have invented certain new and useful Improvements in Bur-Removing Punches for Horseshoes, of which the following is a specification.

My invention relates to a machine by a single operation to punch nail holes in horse and mule shoes and at the same time remove the bur left on the underside of the shoe in the punching of the holes therein; and in such connection the present invention relates to the general constructive arrangement of such machine, in which before the punch leaves the shoe a clamping device operated by a cam or equivalent means on the main crank-shaft descends and holds the shoe firmly against a die and then after the punch leaves the shoe a cam and lever give the die a backward motion sufficient to shear off the bur, which the punch has left on the underside of the shoe and when the clamping device releases the shoe, the die returns to its position under the punch. The above defined operations being repeated for each revolution of the main crank shaft.

The nature and general scope of my invention will be more fully understood from the following description taken in connection with the accompanying drawings forming part hereof, in which—

Figure 1, is a front elevational view of a horse and mule shoe nail hole punching machine, embodying main features of my said invention. Figs. 2 and 3, are respectively, side and rear elevational views thereof. Fig. 4, is a view partly in plan and in broken section of the means for clamping the shoe; and Fig. 5, is a view in plan and in elevation of one arrangement of means for removing the burs from the underside of a shoe, after the nail holes have been punched therein.

Referring to the drawings A, is the metal standards for the working parts of the machine.

W, is the crank-shaft on which is mounted the loose fly-wheel or pulley X. Motion from the said fly-wheel or pulley is transmitted to the crank-shaft W, by means of a sliding clutch Y. The crank-shaft W, may be turned by hand while adjusting the punch T, by throwing out the clutch and using the hand wheel Z, which is keyed to the shaft

W. V, is a crank end cross-head connection for providing required motion to the cross-head S. A tool-steel punch T, is firmly fastened in the cross-head S, by means of a clamp and bolts or other fastening means. The distance of the punch T, from the die D, is regulated by an adjusting screw Q, one end of which has a ball-and-socket joint in the cross-head S, the other end screwing into the crank end cross-head connection V, and is locked after adjusting by means of a lock-nut U.

B, is an iron table slide to which is fastened the die seat C. The die D, is fastened in the die seat C, by means of a set-screw. The parts B, C and D, together are moved forward and backward by means of a lever E. This is termed a grubbing lever which is equipped with an adjustable arm F, to take up wear of cams I and I¹, and rolls G and H. The cam I¹, is so keyed to the said shaft W, as that the die D, is moved directly under the punch T, when it descends. After a hole has been punched in the shoe and the punch has receded so as to clear the shoe, by half an inch, more or less, the cam I, operates to give the table slide B, and die D, a backward horizontal motion sufficient to shear off the bur left on the underside of the shoe by the action of the punch T. In order to shear off this bur the shoe must be held firmly against the die D, and must be prevented from moving horizontally. The holding of the shoe in a position to accomplish such a result is by means of a steel plate 3 and jaw 5. The plate 3, and jaw 5, are part of and move with the grubbing yoke K. This yoke K, is connected to the standard A, by and moves around the shaft J. The shaft J, is eccentrically arranged at the two points, where the grubbing yoke K, is attached to it, after the loosening the lock-nut 6, on the shaft J, it can be turned and the eccentrics will throw the grubbing yoke K, backward or forward to suit the width of the shoe being punched. The lock nut 6, is then jammed and need not be moved, until a wider or narrower shoe, is to be punched. The grubbing yoke K, is held away from the die D, by a lever L, and tension springs R. The lever L, is fastened to the yoke K, by means of a bolt 7, and has for a fulcrum a boss 9, on the grubbing yoke K. The power for lifting the yoke K, is furnished by the springs R, whose tension is adjusted by means of a bolt 10. Fastened

to the other end of the lever L, by means of a bolt 8, is an adjustable rod M, which can be lengthened and shortened by an adjusting bolt 11. The upper part of rod M, slides in the guide N, and is fitted with a steel roller O, bearing on a cam P. The cam P, moves the rod M, and this in turn pushes down on the yoke K. The cam P, is so keyed to the shaft that the yoke K, descends and holds the shoe, while the punch is leaving and until the die D, moved by its cam and lever, has completed the backward motion, which shears off the bur left on the underside of the shoe by the punch. The springs R, then raise the grubbing yoke K, and the operation is complete, and ready for another hole to be punched and then to have the bur removed therefrom, by a single continuing operation of the machine.

Having thus described the nature and objects of my invention, what I claim as new and desire to secure by Letters Patent is:—

1. A machine of the character described, comprising a punch, a die, a clamping device operating to hold a shoe to the die and means while the shoe is still clamped to said die to give a backward movement to the die after the punch has been withdrawn.

2. A machine of the character described, comprising a punch, a die, a clamping device

operating to hold a shoe to the die, means to free the punch from the shoe, means to give a backward movement to the die after the punch has been withdrawn and means to release said clamping device from the shoe.

3. A machine of the character described, comprising a punch, a die, a clamping device, a shaft having a cam, said device actuated by said cam to hold a shoe, means to free the punch from the shoe, means to give a backward movement to the die after the punch has been withdrawn and to release said clamping device.

4. A machine of the character described, comprising a punch, a die, a clamping device, a shaft having a cam, said device operated by said cam to hold a shoe firmly against said die, a cam and lever to actuate said die, means to give a backward movement to the die after the punch has been withdrawn and means to release the shoe from said die.

In testimony whereof, I have hereunto set my signature in the presence of two subscribing witnesses.

GEO. E. HOLTON.

Witnesses:

GEORGE MYCROFT,

JULIUS GUTMAN.