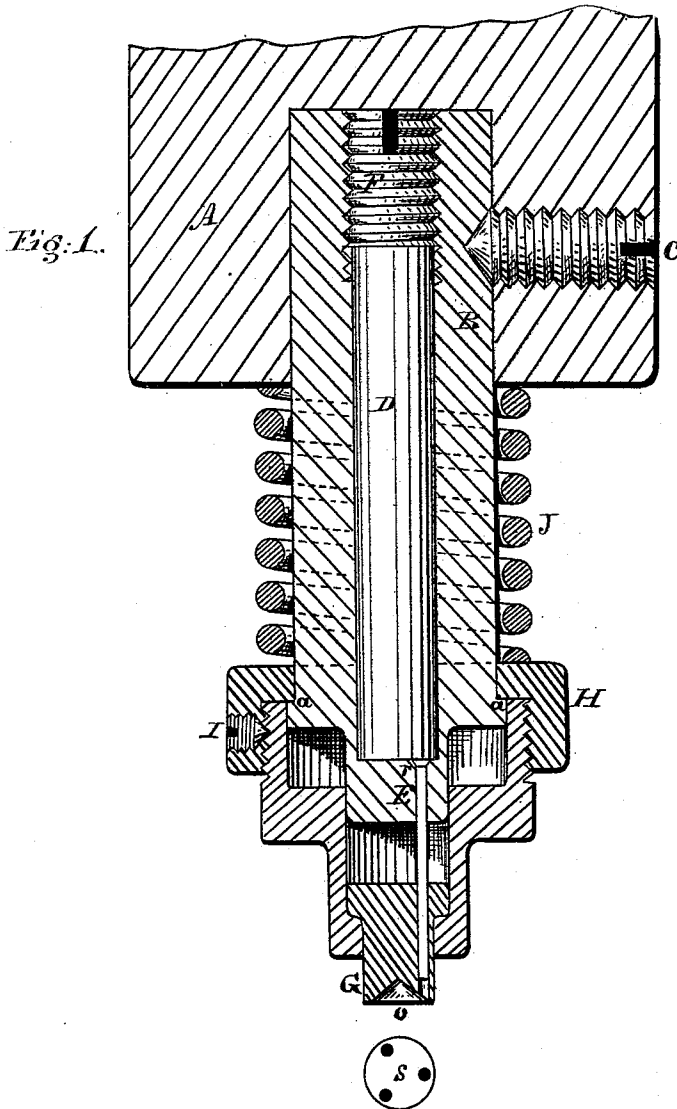


A. C. HOBBS.

DEVICES FOR PUNCHING THE HEADS OF CARTRIDGE SHELLS.

No. 177,067.

Patented May 9, 1876.



Witnesses

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UNITED STATES PATENT OFFICE.

ALFRED C. HOBBS, OF BRIDGEPORT, CONNECTICUT.

IMPROVEMENT IN DEVICES FOR PUNCHING THE HEADS OF CARTRIDGE-SHELLS.

Specification forming part of Letters Patent No. **177,067**, dated May 9, 1876; application filed March 9, 1876.

To all whom it may concern:

Be it known that I, ALFRED CHARLES HOBBS, of the city of Bridgeport, county of Fairfield and State of Connecticut, have invented a new and useful Device adapted to Machines for Punching Metals and other substances; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, making part of this specification—

Figure 1 being a central vertical section of a punching-machine representing the various parts in position.

My device consists in a yielding and self-adjusting protector to direct and support the punch in its operation, substantially in the manner herein described.

A in the annexed drawing represents the lower end of a plunger of a press, of any desired construction, and having the usual perpendicular or up-and-down motion of such device. B is a cylindrical punch-holder, which is secured to the lower end of the plunger A by means of a set-screw, C. This cylindrical punch-holder B is fitted in its interior with a rod, D, for holding the punch E or punches, as the case may be, in position, and is itself retained in place by means of the screw F in the upper part of the holder B. The lower end of this holder is left solid, with the exception of the opening to receive and admit the punch.

One practical method of securing the punch E in the solid end of the holder is to countersink the inner end of the opening through which it passes, and form a head, *r*, upon one end to correspond therewith, so that when the punch is inserted an even surface will be presented to the lower end of the rod D, and by means of the screw F at the upper end of the holder the punch will be forced down into its seat and firmly held there, as represented.

The movable and self-adjusting protector and guide for the punch is fitted to and receives the lower end of the cylindrical holder B, upon which it slides or moves up and down, and, to prevent its dropping off, rests in its lowermost position upon the shoulders *a a*, as shown in the annexed drawing. A bushing, G, constitutes the lower end of the punch pro-

jector and guide, the same supporting and guiding the punch close to the surface of the metal or substance being punched. To retain this protector in position upon the lower end of the cylindrical holder B, and that it may be readily removed to repair or change the punch, a collar, H, is fitted thereto, which rests upon the shoulders *a a* of the holder, thus permitting the protector to move or slide up and down thereon when in operation, and adjust itself to the surface of the material being punched. A set-screw, I, retains this collar in position upon the protector, and prevents it turning off, and a coiled spring, J, placed between the lower surface of the plunger A of the press and the upper surface of the collar H always presents the steel bushing G to the surface of the metal to be punched first, and, resting thereon, permits the punch to advance through it to punch the hole.

To illustrate my invention, I have adapted it to punching the fulminate-holes in a Berdan shell for a cartridge, using a cluster of three punches therefor, the lower end *o* of the steel bushing being countersunk to receive and fit the conical anvil *s* of the shell, so that this adjustable and yielding bushing may rest upon and surround the anvil during the punching, and is removed therefrom by the upward movement of the plunger A of the press after the withdrawal of the punches from the metal.

The operation of this device in punching is as follows: The shell being presented and properly supported upon a mandrel, the punching device descends, and the steel bushing G first coming in contact with the shell rests thereon, and permits the cylindrical holder B, by means of the coiled spring J, to continue its downward movement, forcing the punches E secured thereto through or into the metal to form the hole.

This device is particularly adapted to punching holes when the surface of the metal is presented at an angle to the face of the punches, as represented in the annexed drawing, in which position it would be difficult in manufacturing large quantities to punch the holes in the usual manner without supporting the punches.

It will be observed that the punches E are drawn into the steel bushing G when not in

operation, and where they remain protected until the bushing comes in contact with, and is stopped by, the surface of the metal to be punched, and that by means of this bushing always resting upon the surface of the metal while being punched the punches cannot be deflected sidewise, thereby destroying them and injuring the work.

Having thus fully described my invention,

what I claim therein as new, and desire to secure by Letters Patent, is—

The combination, with a punch-holder, of a punch or punches, yielding support, and guide-bushing, substantially as herein set forth.

A. C. HOBBS.

Witnesses:

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