I. P RICHARDS.

Metal Punch.

No. 104,769. Patented June 28, 1870.

Fig 1.

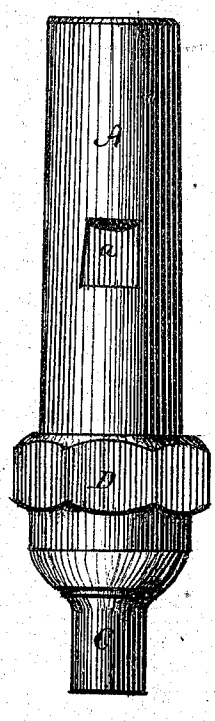


Fig 3.

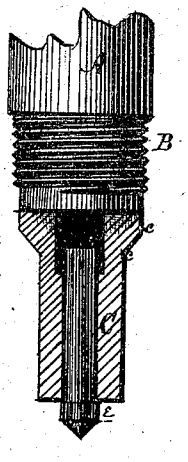
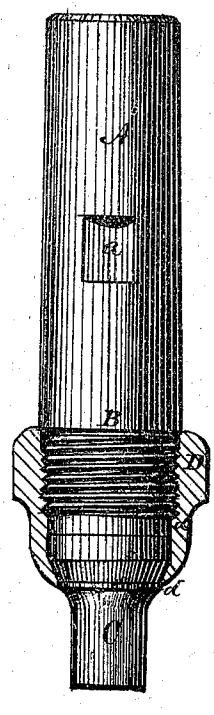


Fig 2.



WITNESSES.

Edw. L. Brown

Edward C. Ames

INVENTOR

Isaac P. Richards

UNITED STATES PATENT OFFICE.

ISAAC P. RICHARDS, OF WHITINSVILLE, MASSACHUSETTS.

IMPROVEMENT IN PUNCHES.

Specification forming part of Letters Patent No. **104,769**, dated June 28, 1870.

To all whom it may concern:

Be it known that I, ISAAC P. RICHARDS, of Whitinsville, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Punches; and I do hereby declare that the following specification, taken in connection with the drawings making a part of the same, is a full, clear, and exact description thereof.

Figure 1 is an elevation of a complete punch constructed with my improvement. Fig. 2 represents the same, with the coupling which unites the punch to the stock shown in section. Fig. 3 shows, partly in section, a punch adapted for punching nuts.

A in the several figures is the tapering shank or stock, which is to be made to fit the hole in the end of the power-press in which the punch is to be worked.

a is the seat for the end of the set-screw to bear against when the stock is secured in the press. The lower end of the stock is furnished with a screw-thread, B.

C represents the punch. Its face may be of any figure required, and may be adapted to punch nuts, washers, or blanks used in the manufacturing-jeweler's art.

The most convenient way to construct the punch is to take a piece of steel of suitable dimensions for the size of punch required, and drill a hole through its axis. It should then be placed upon an arbor and turned in a lathe, if a punch with a circular face is desired; otherwise it should be set in a planer and made into the geometrical solid needed. The upper end should be made with a bevel-faced shoulder, *c c*, as shown at Figs. 2 and 3.

D is a coupling, one portion of which is furnished with a female screw upon its inner surface to fit the screw B. The remaining portion of the coupling, from *d* to *d'*, has its surface the counterpart of the beveled head of the punch.

The arrangement of the punch with the stock and the means of coupling the two are obvious in the drawings.

For cutting out work with reference to a hole which has been already punched—as, for instance, in making nuts and washers—a central teat, *e*, is required. This in my improved punch can readily be inserted in the hole through the central axis of the punch, and be held by friction or other means. When the cutting-edge of the punch has become dulled, this teat can be readily removed to allow the face of the punch to be ground off.

In punches of this character as heretofore constructed, having the teat a part of the punch, it is necessary to draw the temper of the tool, and after refacing it in the lathe temper it again.

What I claim as my invention, and desire to secure by Letters Patent, is—

Constructing a punch separable from the holding-stock, with a hole through its axis, and with a removable teat, *e*, inserted in said hole, substantially as described, for the purposes specified.

ISAAC P. RICHARDS.

Witnesses:
EDW. D. BROWN,
ORVILLE PECKHAM.