(No Model.)

G. W. CONSTANTINE.

METAL PUNCH.

No. 264,629. Patented Sept. 19, 1882.

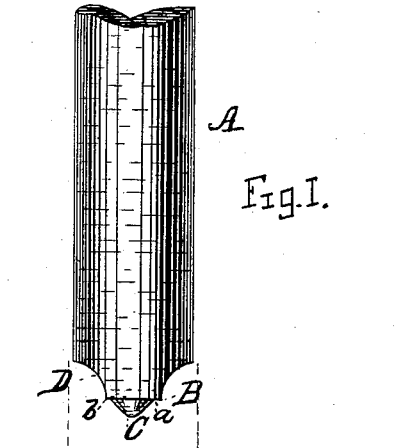


Fig. I.

Fig. II.

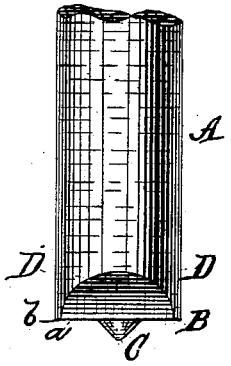


Fig. III.

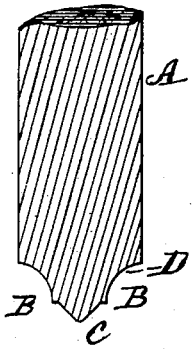
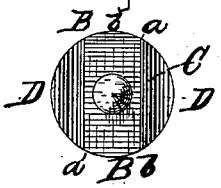


Fig. IV.



WITNESSES

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METAL-PUNCH.

SPECIFICATION forming part of Letters Patent No. 264,629, dated September 19, 1882.

Application filed October 13, 1881. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. CONSTANTINE, a citizen of the United States of America, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Metal-Punches; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to certain new and useful improvements in the construction and configuration of metal-punches, whereby a punch is provided which is durable, and which will punch a hole with a smooth interior and with parallel sides with the minimum of power, which punch may be easily and economically constructed with the ordinary tools.

My improved punch in operation will make a clean cut or puncture in the heaviest boiler-iron by performing a uniform shearing cut nearly its entire depth as the tool is forced or driven into the iron. It will not injure or displace the fibers of the metal in proximity to the perforation, and to this end my invention consists in a punch which is provided with a base of less lateral diameter but of the same longitudinal diameter as the body of the punch, and provided with cutting-edges which extend from the base upwardly.

My invention also consists in a punch provided with a flat central base of less lateral than longitudinal diameter, with parallel edges, said base being provided with a centering-point, and curved cutting-edges extending upwardly from said base.

My invention is illustrated in the accompanying drawings, in which Figure I is a side view of the punch, with a portion of the bed-plate and punched metal in section, also a side view of a piece of metal removed by the punch. Fig. II is also a side view of the punch in a different position. Fig. III is a sectional view, and Fig. IV is an end or plan view of the punch.

The letter A designates the body of the punch, the upper end of which is secured to the punching-machine in the usual manner. The lower end of this punch is provided with a flat base, B, with parallel sides *a*. The ends *b b* have outwardly-curved peripheries and conform to the shape of the punch. The base B, near its center, is provided with a conical projection or centering-point, C. The concave sides or cutting-edges D extend from the base B inwardly and upwardly, as shown, which cutting or shearing edges D reduce the lateral diameter of the base.

This punch may be made by the ordinary tools. It requires nothing new to manufacture it. Its sides may be milled, planed, or filed away, or otherwise removed, which operation completes the punch. Thus all old-style punches may be converted in this manner to new and useful ones.

This punch may be easily repaired or altered. Also, in the attempt to provide a punch which will divide the resistance upon the same the strength of the punch has been sacrificed by reducing the diameter, and it has been found that punches which are provided with projections or supplemental cutters do not accomplish the desired end in heavy or thick iron. By my improved construction a shearing cut is performed as the punch is forced through the metal, and, besides its simplicity in its construction, it leaves the sides of the metal in which it punches a hole smooth nearly its entire depth and with parallel sides, and it does not injure the texture of the metal through which it passes.

It is evident that the punch may be made otherwise than round, as it may be oval, square, or other desired shape.

What I claim is—

1. A metal-punch provided with a flat base with parallel edges which extend across the whole diameter of the punch, and concave shearing-edges, substantially as shown.

2. As a new article of manufacture, a metal-punch consisting of the following organized parts: a flat base with parallel edges which extend across the whole diameter of the punch, said base being provided with a centering-point and upward concave shearing-edges, substantially as shown.

GEORGE W. CONSTANTINE.

Witnesses:
D. D. KANE,
A. G. HEYLMUN.