

No. 677,475.

Patented July 2, 1901.

G. SCHRADE.
CENTER PUNCH.

(Application filed Nov. 14, 1900.)

(No Model.)

Fig. 1.

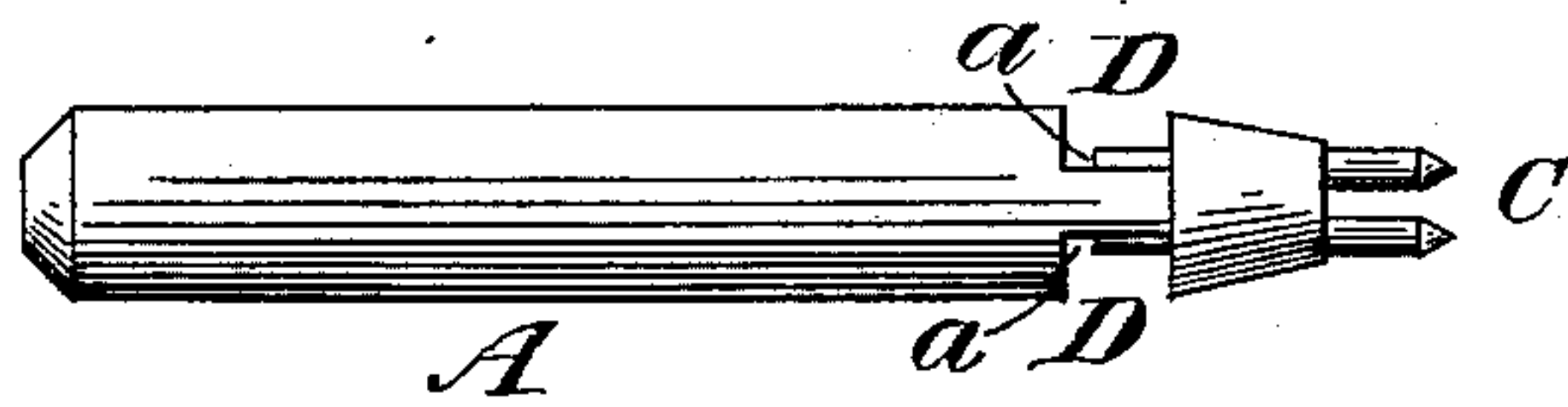


Fig. 2.

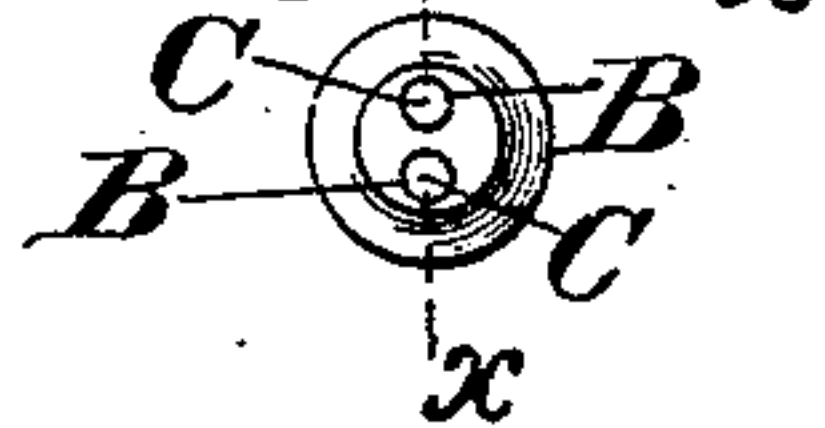


Fig. 3.

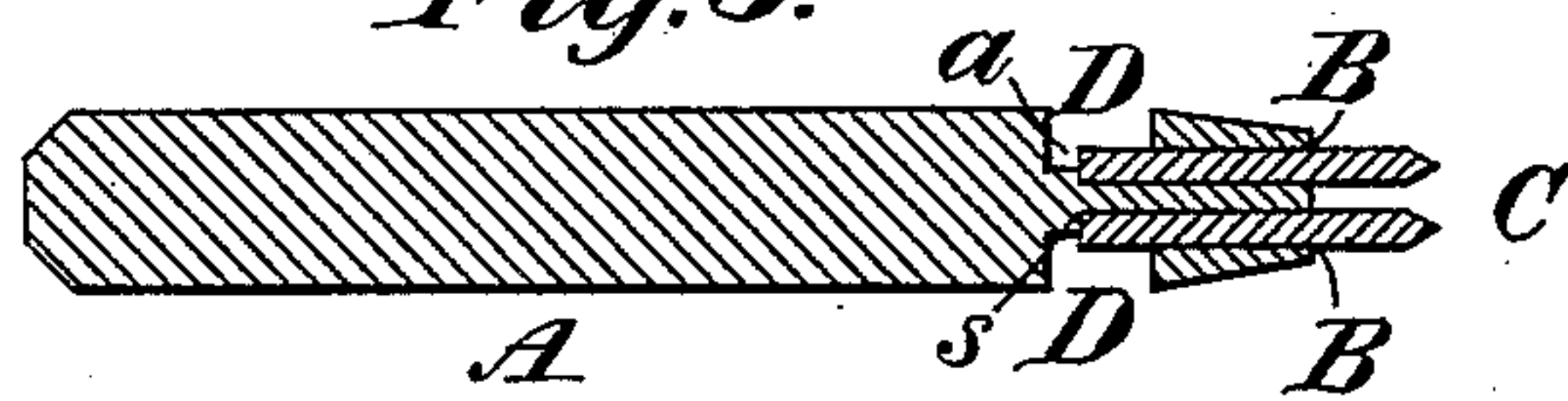
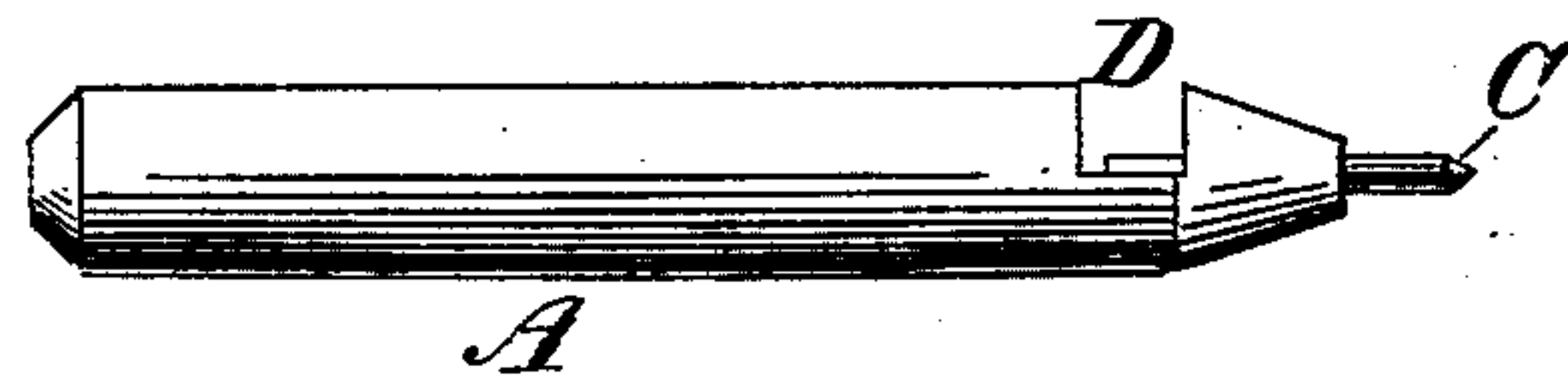


Fig. 4.



WITNESSES:

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GEORGE SCHRADE, OF WALDEN, NEW YORK.

CENTER-PUNCH.

SPECIFICATION forming part of Letters Patent No. 677,475, dated July 2, 1901.

Application filed November 14, 1900. Serial No. 36,538. (No model.)

To all whom it may concern:

Be it known that I, GEORGE SCHRADE, of Walden, in the State of New York, have invented new and useful Improvements in Center-Punches Not Heretofore Known or Used, of which the following specification is a description, reference being had to the annexed drawings, making a part thereof.

My invention relates to that class of instruments used by makers of metal dies and similar work in making the center of holes to be drilled.

The object of my invention is to provide a simple and efficient tool by means of which the work of centering and also exact spacing may be accomplished without the aid of other devices for marking off the points to be centered.

In the drawings, Figure 1 is a side view of my improved tool. Fig. 2 is an end view. Fig. 3 is a central longitudinal section on the line *x x* of Fig. 2. Fig. 4 is a view showing the construction of stock for one punch-point.

A is the body or stock of my improved tool, which should be of metal. In the end of this stock are the sockets B B to receive the steel punch-points. These sockets should be drilled in the end of the stock, so that their centers will be the exact distance apart desired to be spaced and centered—say one-eighth of an inch or other space in accordance with the drill to be used in making a die or in other spacing. In practice the distance apart of the sockets will vary with the size of the centering-tool and spacing required for different work.

C C are the punch-points, which should be made of hardened steel.

In order to secure the retention of the punch-points in the sockets, I preferably bend them before hardening, so they will be slightly off a true straight line, while the sockets are drilled perfectly true and straight. When the punch-points are then driven into place, by reason of the slight bend in them they will bind against the sockets and be retained therein by friction. The inner end of the punch-point will rest on and bear against the base at the bottom of the sockets.

On opposite sides of the stock are formed, respectively, suitable recesses D D to afford access to the base of the punch-points, so that

the latter may be reached and pried out in case of necessity.

Preferably the socket for the punch-point will terminate above the lower margin of the recess D, and the sockets B B should not extend entirely across the face of the recesses D D, but will form a shoulder *s*, on which the punch-point will rest. This leaves a small space at *a a*, so that an instrument may be introduced under the base of the punch-point to pry it out in case of necessity.

It will be observed that the stock A is made separate from the punch-points and may be formed complete with its socket or sockets bored and the recesses or slots D D cut therein. The punch-points are then prepared separately from steel wire and subsequently inserted. In case the punch-points become fractured from use they can be readily pried out and replaced with new ones, leverage being attainable where the base of the punch-point projects over the shoulder *s* at the bottom of the socket at *a a*. The recess or slot also gives access to the entire socket from the bottom, so as to readily introduce an instrument to clear it from any obstruction in case the punch-point should be fractured at a point between the recesses and the mouth of the socket.

It will be observed that where the feature of a spacer is not required the stock may be made for one punch-point only, as shown in Fig. 4.

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

1. As an improved article of manufacture a center-punch having a metal stock to receive the blow on one end and two punch-points only, set in the other end of said stock at opposite sides of the center of said end and at a fixed distance apart laterally, whereby a plurality of centers, equally spaced, may be conveniently marked, substantially as shown and described.

2. A center-punch consisting of a metal stock to receive the blow of a hammer on one end and two removable punch-points inserted in the opposite end of said stock, at a fixed distance apart laterally, whereby a plurality of centers, equally spaced, may be conveniently marked, as and for the purposes shown and described.

3. As an improved article of manufacture, a center-punch having a stock adapted to receive the blow of a hammer on one end, two punch-points set removably in sockets in the opposite end of said stock, at a fixed distance apart laterally, said stock having lateral recesses to afford access to the bottom of said sockets, as and for the purposes set forth.

4. The stock of a center-punch consisting of a metal body adapted to receive the blow of a hammer on one end and with two sockets in the other end to receive centering punch-points, at a fixed distance apart laterally, substantially as shown, and for the purpose described.

5. The stock for a center-punch consisting of a metal body adapted to receive the blow of a hammer on one end, with two punch-point sockets at the other end at a fixed distance apart laterally, said stock having lateral recesses to afford access to the bottom of said sockets, substantially as and for the purpose set forth.

6. As an improved article of manufacture a center-punch and spacer consisting of a stock having lateral recesses in its respective sides, sockets in its end for punch-points at a fixed distance apart laterally, punch-points in said sockets the sockets extending, respectively, partially through the said recesses, the depth of the recesses being sufficient to expose a portion of the punch-point when inserted in the socket, substantially as shown and described.

7. The stock for a center-punch consisting of a metal body adapted to receive the blow of a hammer on one end, with punch-point socket in the other end and recess in the side, said socket extending partially through the said recess, and the recess extending only partially through the socket, substantially as shown and described.

8. The stock for a center-punch consisting of a metal body adapted to receive the blow at one end with two punch-point sockets at the other end at a fixed distance apart laterally, and recesses in the respective sides of said stock, said sockets extending partially through the recesses and the recesses extending only partially through the sockets substantially as shown and described.

9. As an improved article of manufacture a center-punch consisting of a metal stock adapted to receive the blow of a hammer on one end, having recess in its side, socket in its end for a punch-point, punch-point in said socket, the socket extending partially through said recess, the depth of the recess being sufficient to expose a portion of the punch-point when inserted in the socket and leave a space between the base of the punch-point and the floor of the recess, substantially as shown and described.

GEORGE SCHRADE.

Witnesses:

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