C. A. & J. F. WILLIAMS.

MACHINES FOR FORMING SOCKETS ON HAMMERS AND OTHER TOOLS.

No. 176,255. Patented April 18, 1876.

Fig: 2.

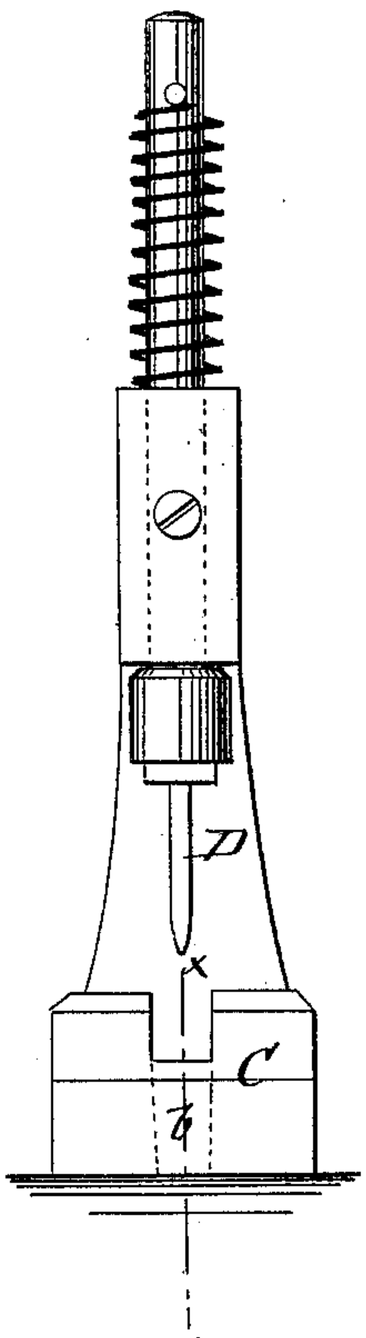


Fig: 1.

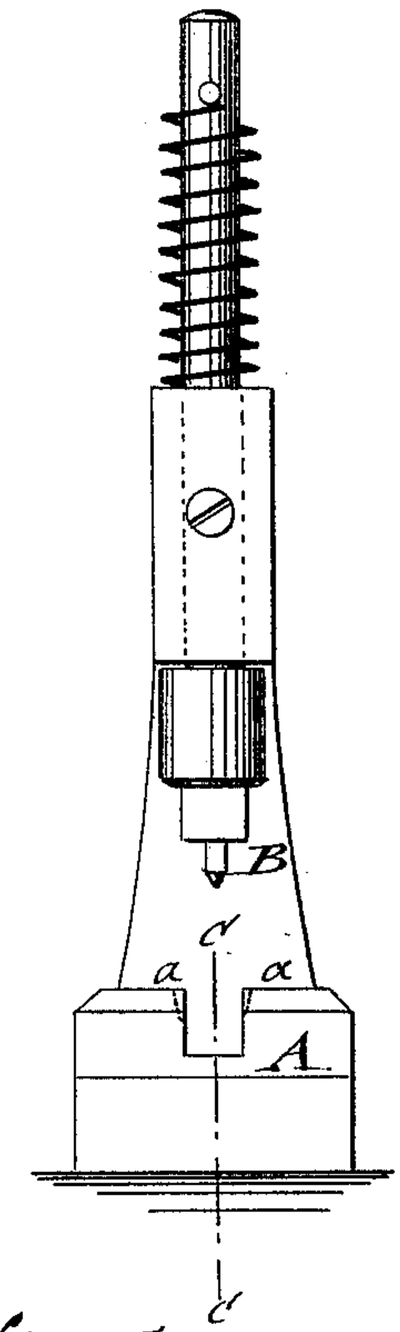


Fig: 5.

Fig: 3

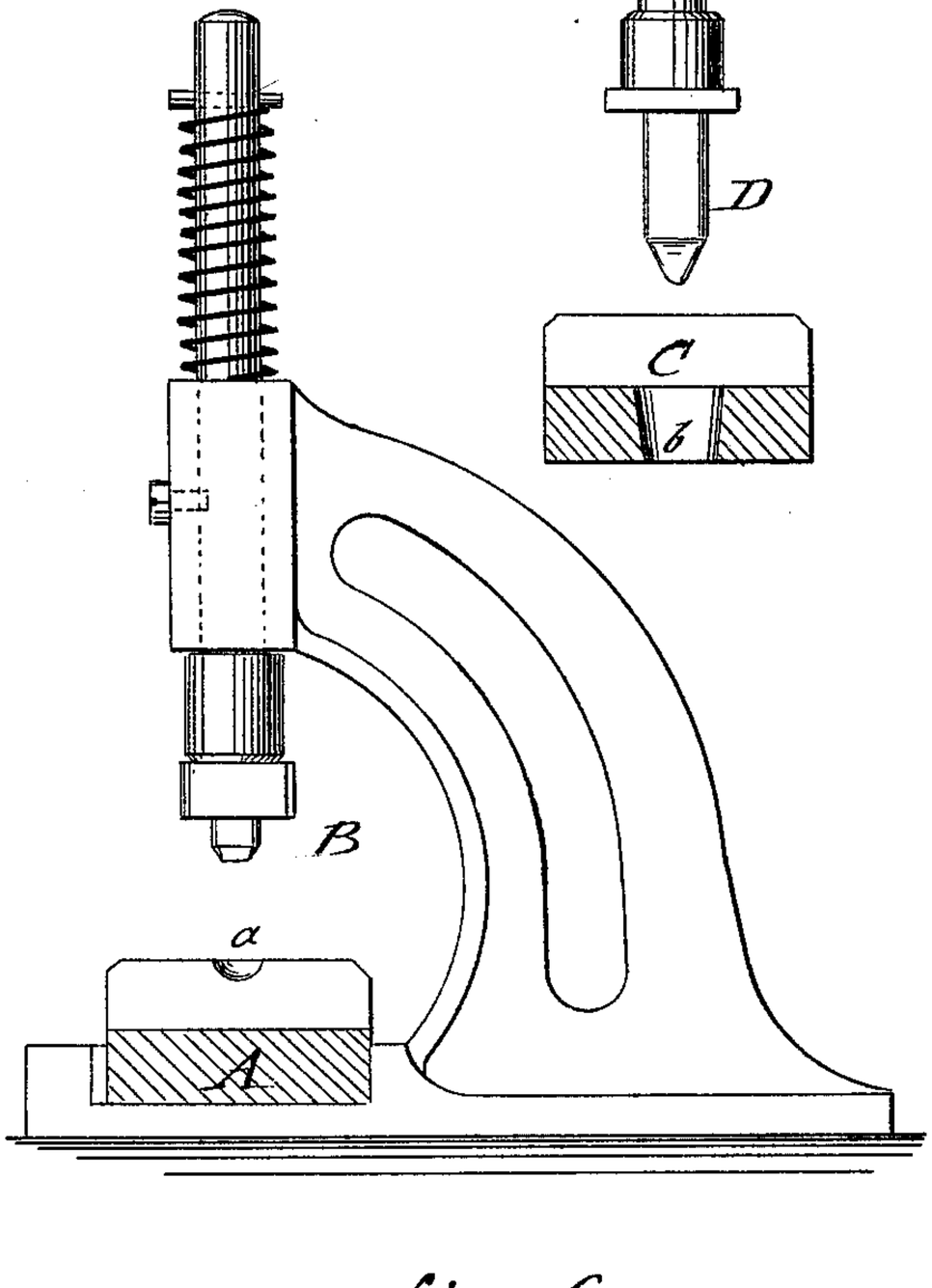


Fig: 6

Fig: 4.

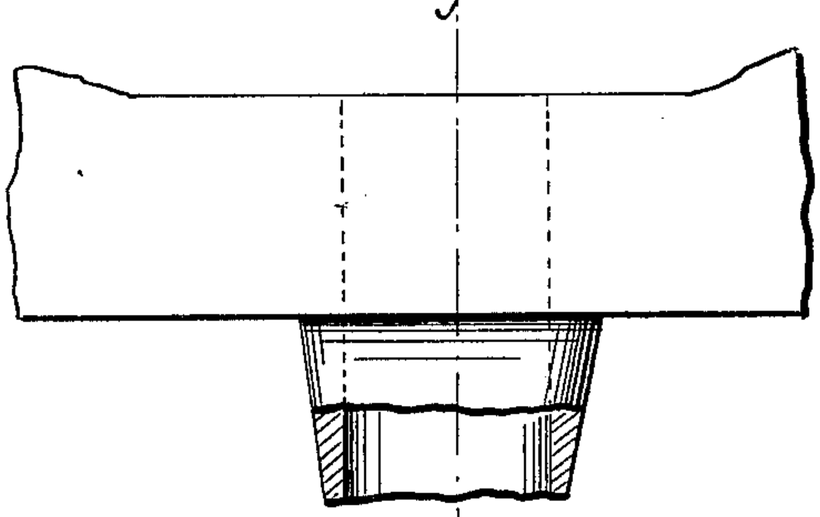


Fig: 8

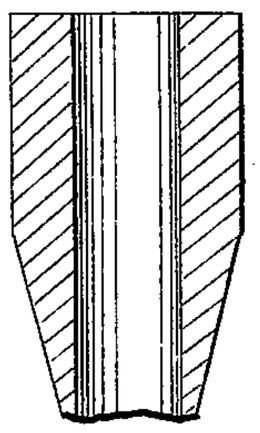
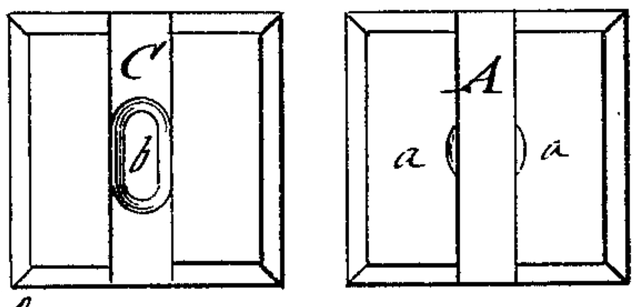


Fig: 7.



WITNESSES:

Chas. Nichols.
John Goettals

INVENTOR:

C. A. Williams.
BY J. F. Williams
Munn & Co
ATTORNEYS.

UNITED STATES PATENT OFFICE.

CHARLES A. WILLIAMS AND JOSHUA F. WILLIAMS, OF SKOWHEGAN, ME.

IMPROVEMENT IN MACHINES FOR FORMING SOCKETS ON HAMMERS AND OTHER TOOLS.

Specification forming part of Letters Patent No. **176,255**, dated April 18, 1876; application filed March 6, 1876.

To all whom it may concern:

Be it known that we, CHARLES A. WILLIAMS and JOSHUA F. WILLIAMS, of Skowhegan, in the county of Somerset and State of Maine, have invented a new and Improved Machine for Forming Sockets on Hammers and other Tools, of which the following is a specification:

In the accompanying drawing, Figures 1 and 3 represent, respectively, a front view and vertical transverse section on line *c c*, Fig. 1, of the spreading die and punch. Figs. 2 and 4 represent, respectively, front view and transverse section on line *x x*, Fig. 2, of the die and punch for shaping the socket on the hammer or other tool blank. Figs. 5 and 6 are, respectively, side view and transverse section on line *y y*, Fig. 5, of the hammer, with socket shaped thereon. Figs. 7 and 8 are, respectively, top views of the spreading and socket-shaping dies.

Similar letters of reference indicate corresponding parts.

The invention has reference to an improved method of punching and forming the handle-sockets on hammers, adzes, hatchets, and other tools with one heating, in an accurate and perfect manner; and the invention consists in a machine to which is exposed the hammer or other blank after heating, first to the action of a spreading or enlarging die and punch, and then to the action of the perforating and socket-shaping die and punch.

In the drawing, A represents the die and B the punch, to the action of which the blank is first exposed after being heated. The die A has no hole, but only a recess for the blank, which recess is enlarged by central concave indentations *a* at the upper part of the recessed die, so that the punch, when dropped, spreads or enlarges the sides of the blank at the part where the socket is to be formed. This spreading of the blank is necessary for the purpose of keeping the sides at a level with the top of the blank, and preventing their being drawn down by the action of the perforating-punch D. (Shown in Fig. 2.) Punch B does not pass entirely through the blank, but only to some depth, preparatory to the final punching of the same. The blank is, after spreading, placed into a shaping-die, C, to be exposed to the action of the perforating-punch D. The die C has the same recess as the spreading-die A, but no side indentations, being provided with a central downward-extending and tapering hole, *b*, of the outside shape of the socket to be formed. The punch D is larger than punch B, and enters, when brought down, the impression made by punch B, being sharp at the edge, and of the size of the socket-hole to be produced in the blank. The punch perforates the blank, and crowds or draws that portion of the stock that would naturally be punched out into the hole of the die, so as to form there the socket. The spread or enlarged portion of the blank is drawn in by the straight sides of die C, the straight sides of the punch and the hammer-face of shoulder immediately above the punch, so that the central part of the blank does not sink below the level of the bar, forming a perfect socket for the tool, and a complete head by one heating of the iron or steel, and without any possibility of a flaw or weak point in the socket part.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

The combination of spreading-punch B and die A, the latter having recess for blanks and central concave indentations, with a shaping die, C, having straight sides and tapering center hole, and the perforating-punch D, having straight sides and hammer-face above the shoulder, as and for the purpose set forth.

CHARLES A. WILLIAMS.
JOSHUA F. WILLIAMS.

Witnesses:
W. F. BACON,
J. C. HIGGINS.