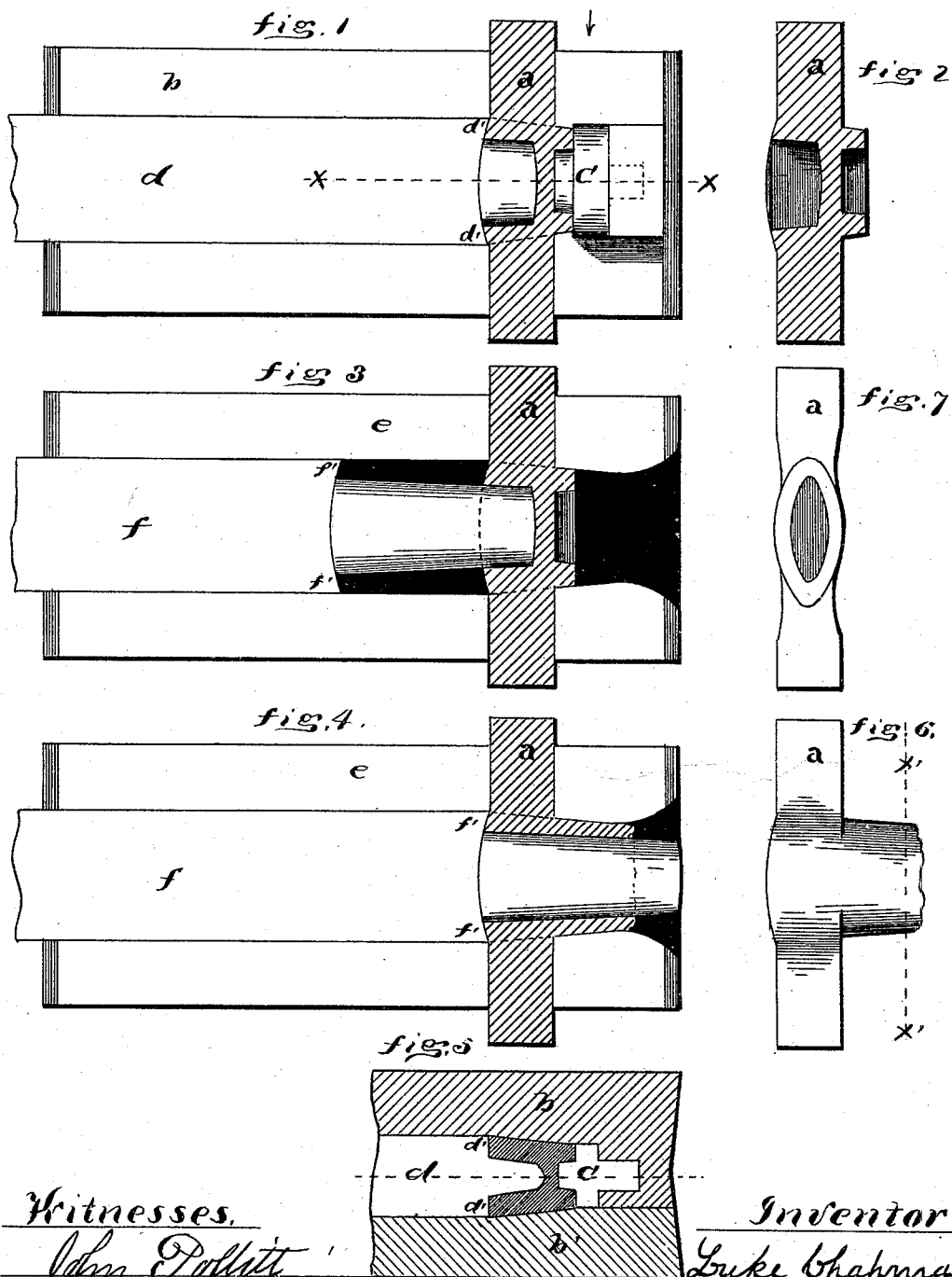


L. CHAPMAN.

DIES AND PUNCHES FOR FORMING THE EYES OF PICKS.

No. 172,253.

Patented Jan. 18, 1876.



Witnesses.

John Pollitt
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UNITED STATES PATENT OFFICE.

LUKE CHAPMAN, OF COLLINSVILLE, CONNECTICUT, ASSIGNOR TO THE
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IMPROVEMENT IN DIES AND PUNCHES FOR FORMING THE EYES OF PICKS.

Specification forming part of Letters Patent No. **172,253**, dated January 18, 1876; application filed
February 24, 1875.

CASE I.

To all whom it may concern:

Be it known that I, LUKE CHAPMAN, of Collinsville, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements pertaining to Dies and Punches for Producing Elongated Eyes for Pickaxes, Adzes, Hammers, and other tools and articles generally, having similar elongated eyes, of which the following is a specification, reference being had to the accompanying drawings, where—

Figure 1 is a face view of one of the two portable dies, forming the first set made use of, showing the stock inserted and operated upon. Fig. 2 is a view of the stock, after being operated upon by the first set of dies, in central longitudinal section. Fig. 3 is a face view of one of the two dies forming the second set made, showing the stock as it comes from the first set, inserted and ready to be operated upon. Fig. 4 is a view similar to Fig. 3, except that the stock has been operated upon. Fig. 5 is a view of the first set of dies, stock inserted and operated on, in longitudinal section on the plane indicated by the dotted line xx . Fig. 6 is a side view of the product of the second set of dies. Fig. 7 is a bottom view of the piece shown in Fig. 6.

The novelty consists in the use of a stationary punch within the matrix of the dies, which forms a hole or partial eye in the bottom of the stock, in combination with a shouldered punch, which forms a hole or partial eye in the top of the stock, the shoulder of the punch availing to form the top of stock immediately around the punch, and also causing the metal to fill the matrix of the dies.

The stock-bar a , commonly of wrought-iron, is properly heated, and then grasped between the dies b b' , which are moved by appropriate machinery. The stationary punch c is fast in the die b . The punch d now moves down to its work, as represented in Figs. 1 and 5, punching a partial eye in the top of the bar,

the shoulder d' forming the stock immediately around the punch, and causing the metal to fill the matrix of the dies, so as to somewhat elongate the eye and cause the stationary punch c to punch a partial eye in the under or opposite side of the bar. The punch d now retreats, the dies open, the stock is taken out, again heated and similarly grasped between the second set of dies e . The punch f now moves down to its work, as represented in Fig. 4, fully punching and elongating the eye, the shoulder f' again forming the top of bar. These dies now unclose (the punch having retreated) and the stock is taken out. The ragged end of the eye is sawed off about on the plane indicated by the dotted line $x'x'$, and the ends of the stock-bar are finished, by common processes, into pickax shape.

I have shown these dies and punches as adapted to producing an elongated eye upon a poll for a pick-ax. By proper change in the matrices of the dies the same principles are applicable to the production of elongated eyes upon other tools and articles.

I am aware that a United States Patent issued prior to the date of this application shows the combination of clamping-dies, stationary punch, and movable punch; and I do not claim such combination broadly, but only when the punch-channel is enlarged to permit the use of a shouldered punch, which insures the filling of the matrix of the dies with stock, and at the same time gives form to the top of the bar.

I claim as my invention—

The combination of the die b , bearing the stationary punch c , with the shouldered punch d , all substantially as and for the purpose set forth.

LUKE CHAPMAN.

Witnesses:

WM. E. SIMONDS,
GEORGE E. NOLAN.