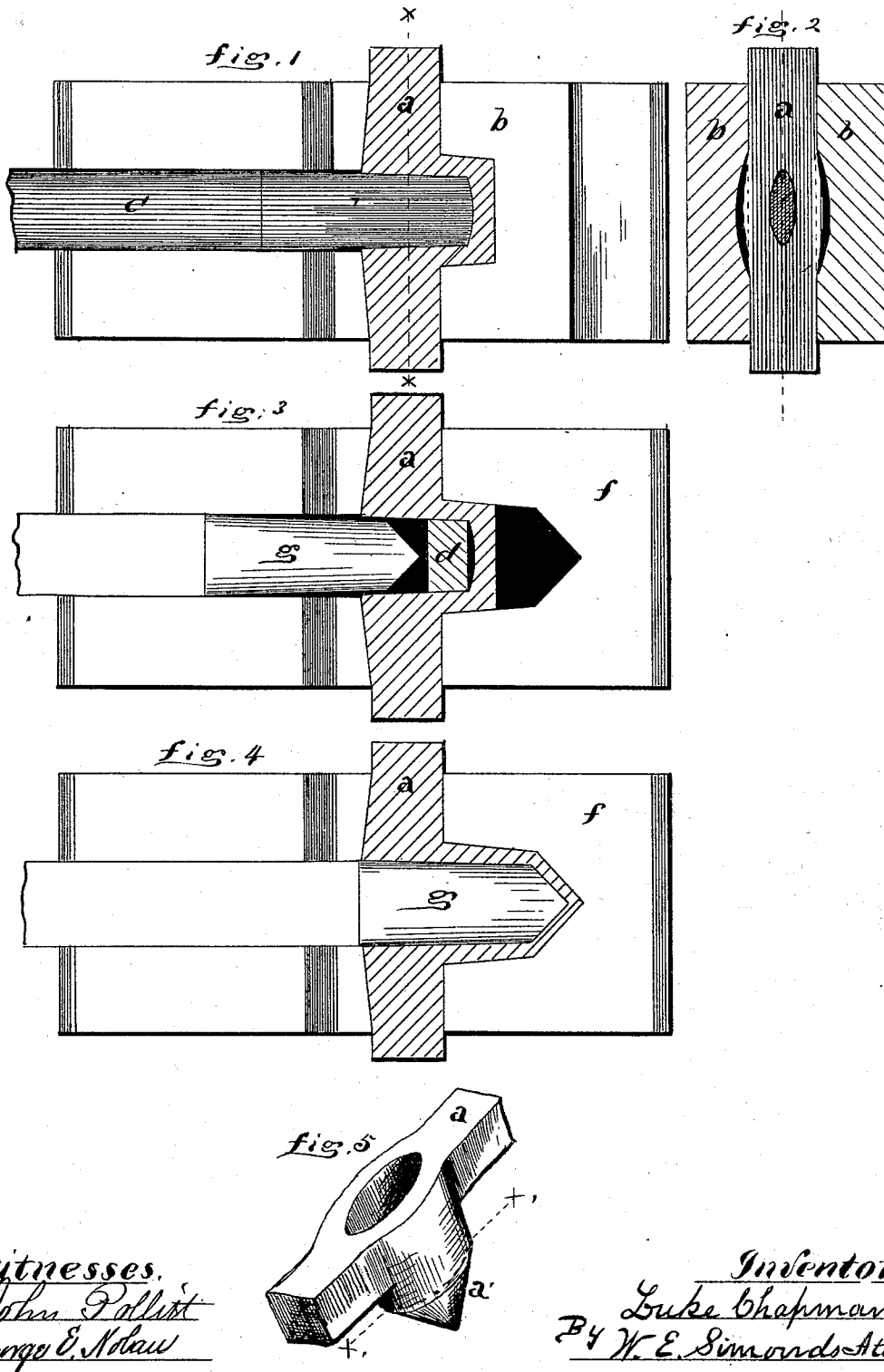


L. CHAPMAN.

ART OF FORMING THE EYES OF PICKS.

No. 172,247.

Patented Jan. 18, 1876.



UNITED STATES PATENT OFFICE.

LUKE CHAPMAN, OF COLLINSVILLE, CONNECTICUT, ASSIGNOR TO THE
COLLINS COMPANY, OF SAME PLACE.

IMPROVEMENT IN THE ART OF FORMING THE EYES OF PICKS.

Specification forming part of Letters Patent No. **172,247**, dated January 18, 1876; application filed
February 24, 1875.

CASE J.

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 in the Art of Producing Elongated Eyes for Pickaxes, and articles having similar elongated eyes, reference being had to the accompanying drawings, where—

Figure 1 is a face view of one of the two duplicate dies forming the first set, showing the stock inserted and operated upon by the punch. Fig. 2 is a view of the first set of dies, in transverse section, in the plane indicated by the dotted line *x x*, showing the stock inserted, and clamped and upset by the closing of the dies, but before being operated upon by the punch. Fig. 3 is a face view of one of the two duplicate dies forming the second set, showing the stock, (*i. e.*, the product of the first set of dies,) inserted ready to be operated upon by the punch. Fig. 4 is a view of the same as Fig. 3, except that the punch has operated on the stock. Fig. 5 is a view of the product of the second set of dies.

The bodies of pickaxes, adzes, and planters' hoes are usually made of iron, having steel welded in or on for the points or edges. This iron body is formed first, and is called the "poll." The dies and punches I make use of in putting this invention in practice are for forming and producing elongated eyes in such polls.

This invention is an improvement in the art of forming elongated eyes upon the bodies of picks and analogous articles; and it consists, first, in partly setting down and opening out the metal intended for forming the eye; second, inserting an additional piece of metal into the partly-formed eye; thirdly, welding said piece to the surrounding metal, and at the same time further elongating the eye.

The thickness of the stock-bar *a*, relative to the matrix of the dies, is shown in Fig. 1, and its breadth, (partly by dotted lines,) in Fig. 2.

I will explain this invention by showing its application to the production of an elongated eye upon a pick.

The bar *a* is heated to a proper heat, and grasped by the dies *b b*, which, moved by appropriate machinery, close together face to face, and, in thus closing, upset the bar, and force an extra amount of stock into the matrix of the die, as shown in Fig. 2. The punch *c* then advances, as shown in Fig. 1, making a hole into, but not through, the bar, and causing the metal to fill the matrix of the die. The punch *c* now retreats, the dies open, and the stock is removed. It is again heated, the heated additional stock-piece *d* is dropped into the hole formed by the punch *c*, and then grasped between the second set of dies *f f*, as shown in Fig. 3. The punch *g* now advances to position shown in Fig. 4, further elongating the eye, and perfectly welding and merging the piece *d* in the surrounding stock. The web-cap *a'* is sawed or ground off on the plane *x'*. The eye can be still further elongated by repetitions of this process.

I claim as my invention—

The herein-described improvement in the art of forming elongated metallic eyes, which consists in, first, partly setting down and opening out the metal intended to form the eye; second, inserting an additional piece of metal into the partly-formed eye; and, third, welding said piece to the surrounding metal, and at the same time further elongating the eye, all substantially as shown and described.

LUKE CHAPMAN.

Witnesses:

WM. EDGAR SIMONDS,
GEORGE E. NOLAN.