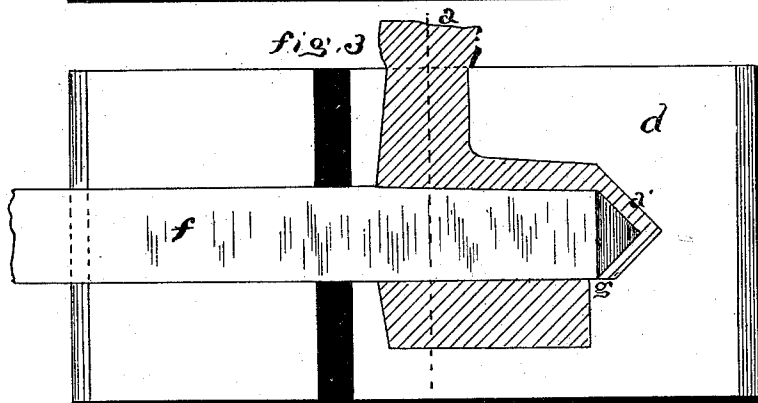
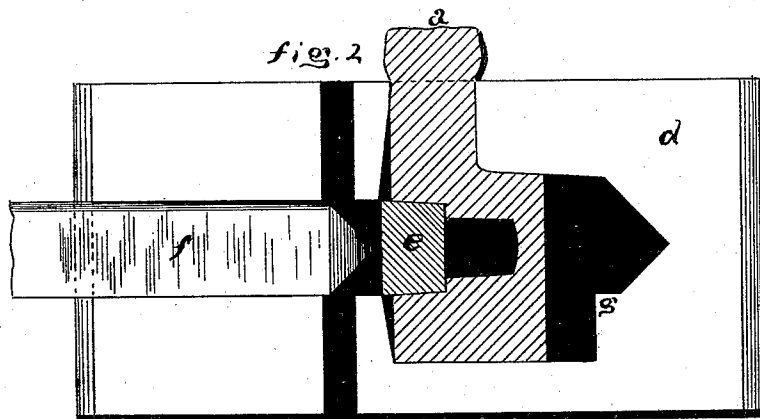
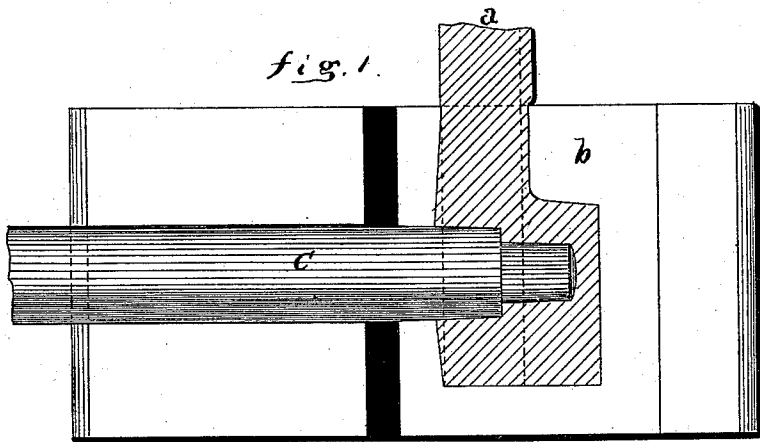


L. CHAPMAN.

DIES AND PUNCHES FOR FORMING THE EYES OF ADZES.
No. 172,256. Patented Jan. 18, 1876.

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Witnesses.

John Pollitt
George E. Kolau

Inventor.

Luke Chapman
By W. E. Simonds
Atty.

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fig. 6

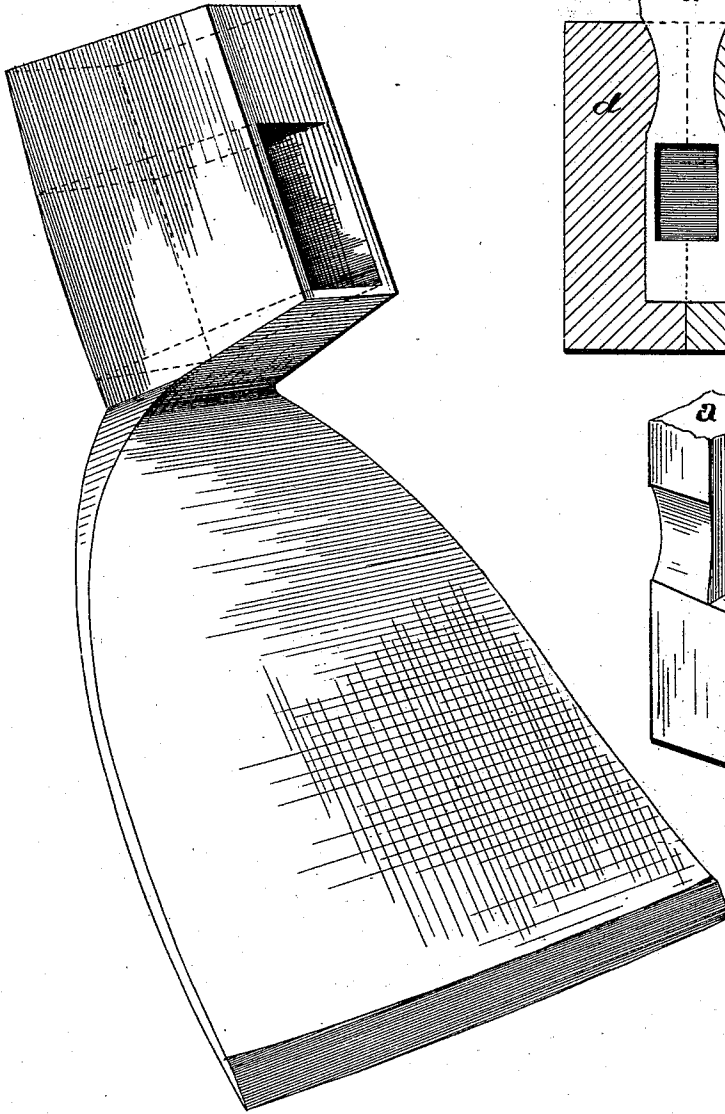


fig. 4.

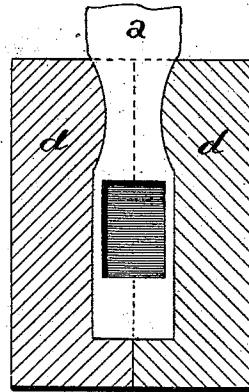
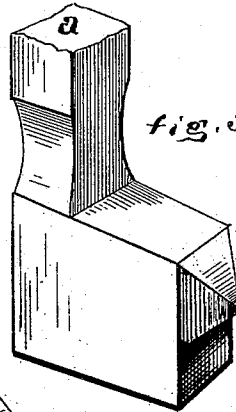


fig. 5.



Witnesses.

John Pollitt
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UNITED STATES PATENT OFFICE.

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

IMPROVEMENT IN DIES AND PUNCHES FOR FORMING THE EYES OF ADZES.

Specification forming part of Letters Patent No. **172,256**, dated January 18, 1876; application filed February 24, 1875.

CASE D.

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 the manufacture of Solid-Head Adzes, of which the following is a specification, reference being had to the accompanying drawing, where—

Figure 1 is a face view of one of the two duplicate dies forming the first set, showing the stock, after being operated on, in longitudinal section. Fig. 2 is a face view of one of the two duplicate dies forming the second set, with the product of the first set (in longitudinal section) inserted ready to be operated upon. Fig. 3 is a view the same as Fig. 2, except that the punch has advanced and done its work. Fig. 4 is a view in cross-section of the second set of the dies, looking upon the top of stock after it has been operated upon. A cross-section of the first set of dies appears substantially the same. Fig. 5 is a view of the product of the second set of dies. Fig. 6 is an enlarged view of the tool into which the forging shown in Fig. 5 is finally worked.

These solid-head adzes are usually made of iron or steel, or iron and steel. The bar or stock of the appropriate size is cut up into proper lengths before manipulation, and the stock is properly heated before submission to the dies. The dies are made to close together, face to face, by proper machinery with all the requisite force, and the punch is worked by proper machinery and with the requisite power. One end of the stock *a* is heated and then clamped between the first set of dies *b*, upsetting the stock and forcing an extra amount thereof into the matrix of the dies. This matrix is substantially rectangular in cross-section, and of the relative depth shown in Fig. 1. The punch *c*, circular in cross-section, then comes forward or down to the position shown in Fig. 1, making a corresponding hole in the stock, and causing the stock to fill the matrix. This stock is now taken out of this first set of dies

and similarly clamped between, and in the second set of dies *d d*, and the additional stock-piece *e* is dropped into place, it being previously properly heated. This position of the parts is shown in Fig. 2. The punch *f*, rectangular in cross-section, and having a pyramidal point, now advances, as shown in Fig. 3, and does its work, the lower part of the matrix of the dies being of a shape corresponding to the shape of the point of the punch, but with a shoulder at *g*. A cap-web, *a'*, is left under or forward of the punch, which is partly severed from the stock by the action of the punch on the shoulder *g*. The additional stock-piece is merged into the stock by this operation. The forging which comes from these dies is shown in Fig. 5. The cap-web *a'* is sawed off, and the forging is then worked into the finished shape shown in Fig. 6.

I intend to have other patents on dies and punches of even date herewith—one marked "Case B" and one marked "Case E," in the former of which I show dies and punches for making eyes for round or oval eyed adzes, and in the latter for making eyes for holes. These herein-described dies and punches differ from the dies and punches shown in both said cases in the shape of the punches and in the shape of the matrices of the dies, and I do not intend to cover and claim herein dies or punches of the shapes shown and described in either of said cases.

I claim as my invention—

1. The combination of the dies *b b* with the round punch *c*, when all are constructed, arranged, and designed for operation and use substantially as shown and described.
2. The combination of the dies *d d* with the square punch *f*, when all are constructed, arranged, and designed for operation and use substantially as shown and described.

LUKE CHAPMAN.

Witnesses:

WM. E. SIMONDS,
GEORGE E. NOLAN.