

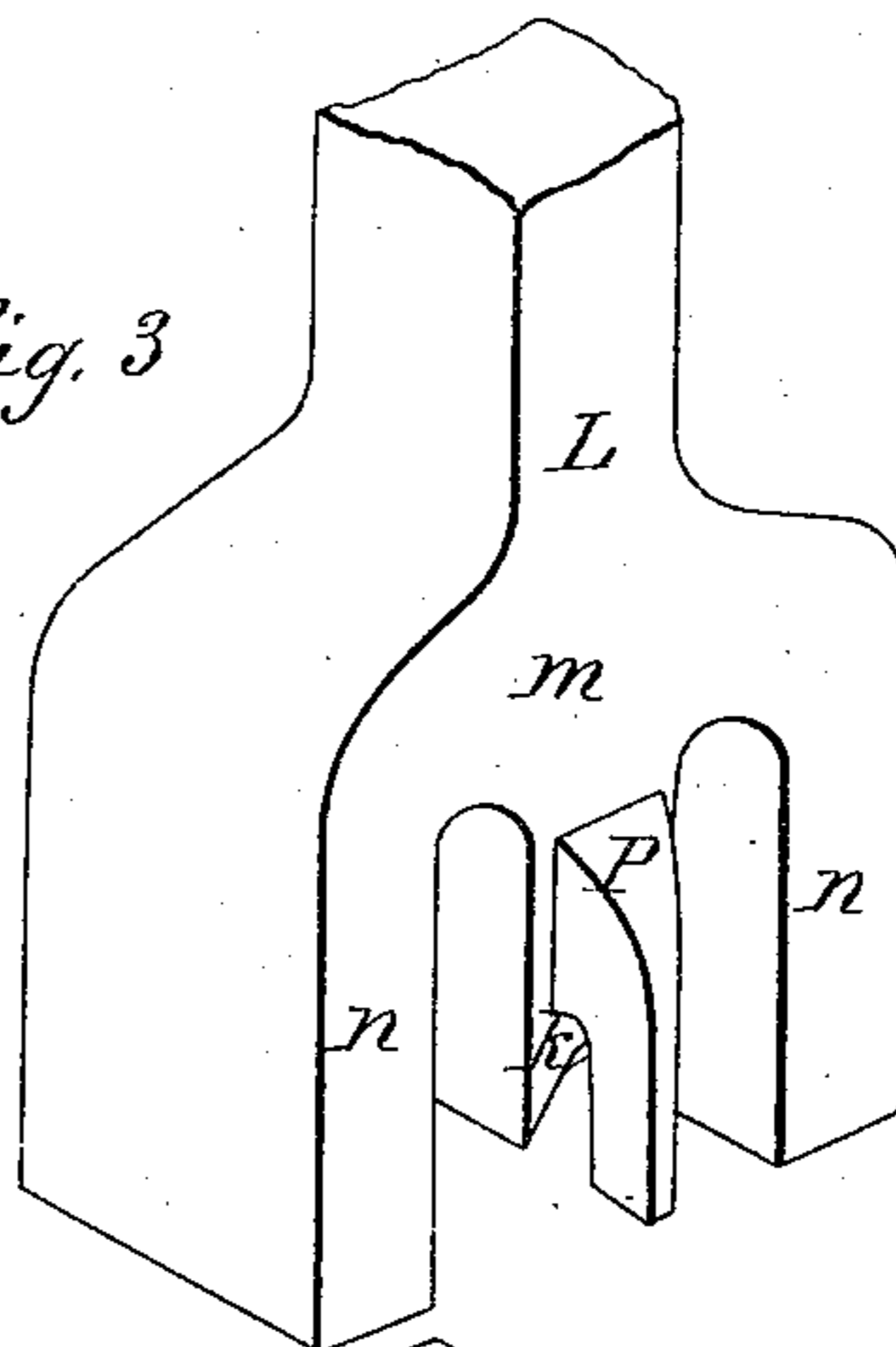
*I. Dodge.*

*Making Axes.*

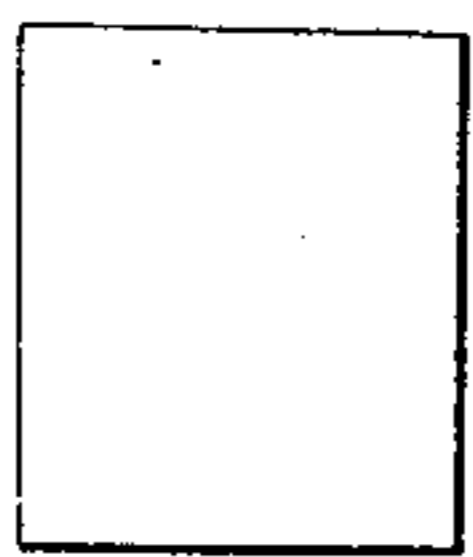
*N<sup>o</sup> 18,087.*

*Patented Sept. 1, 1857.*

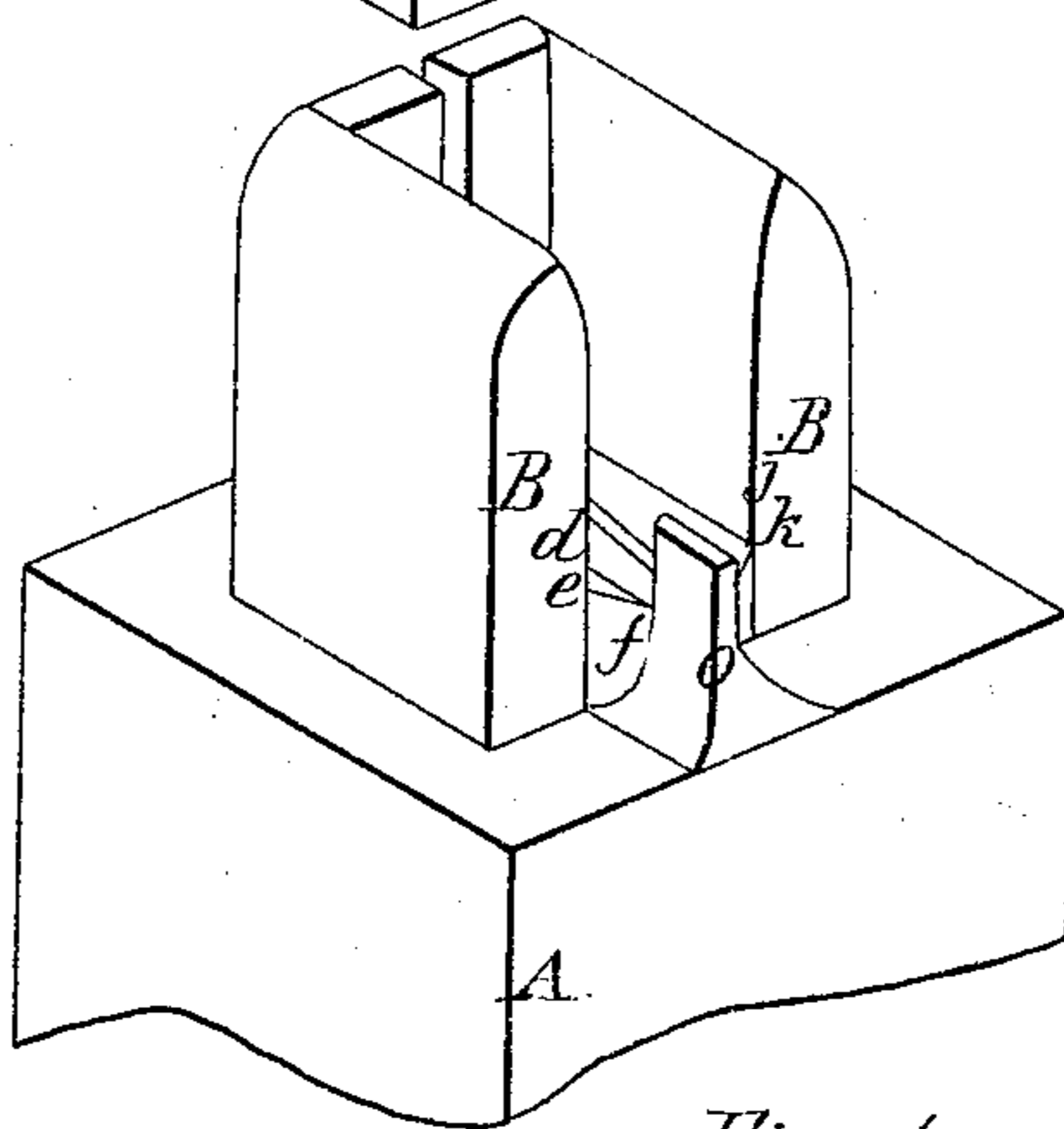
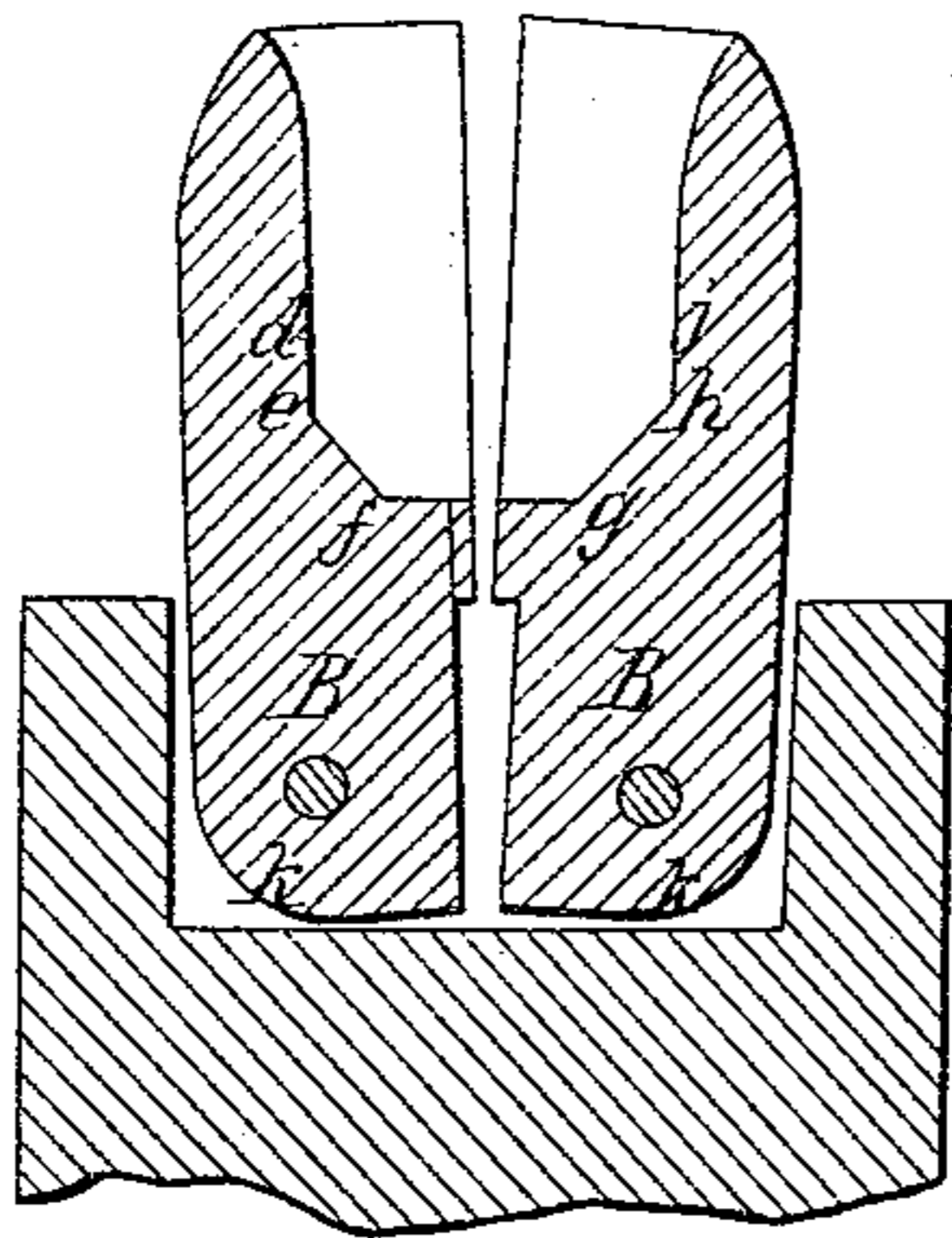
*Fig. 3*



*Fig. 4*

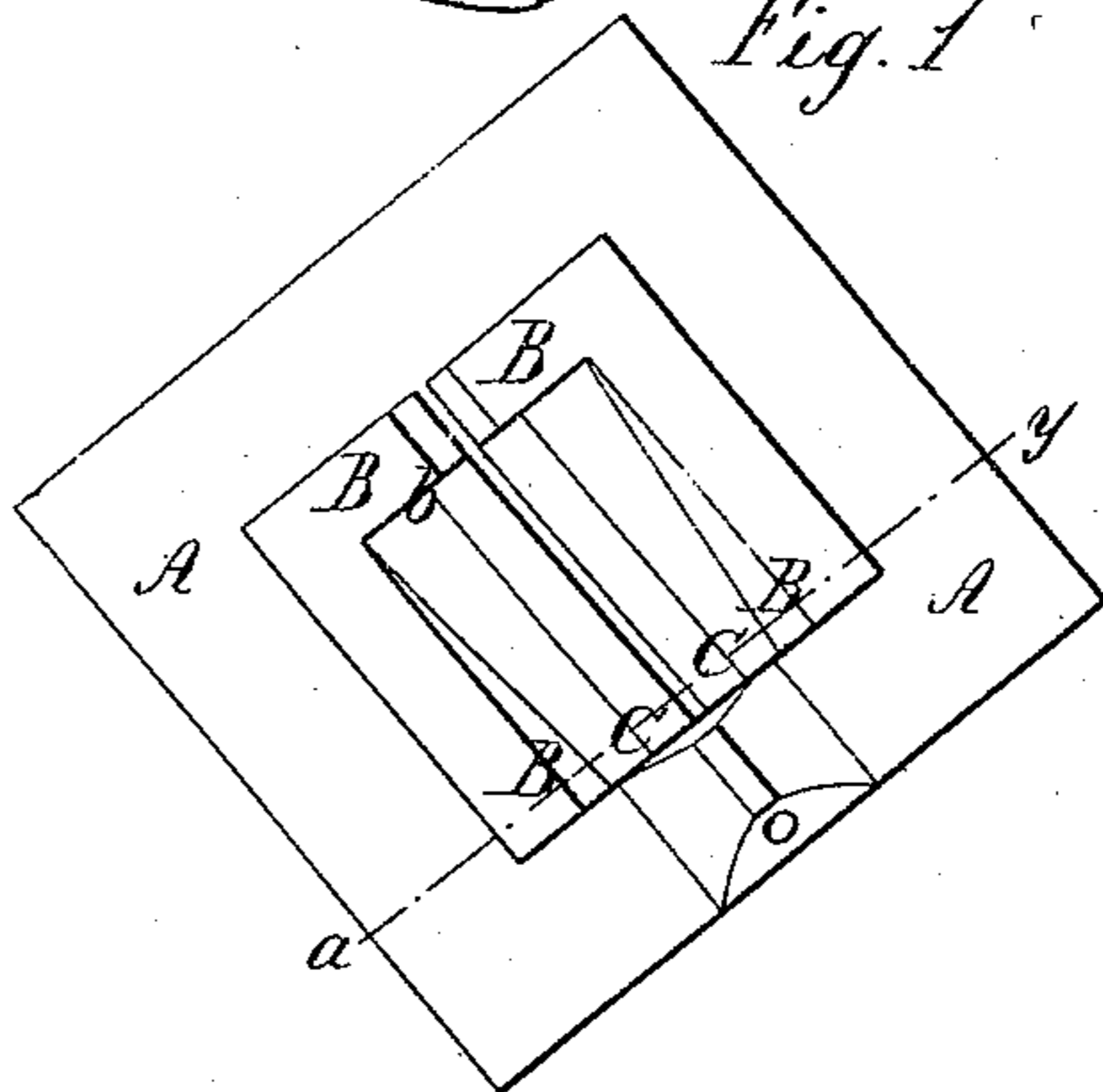
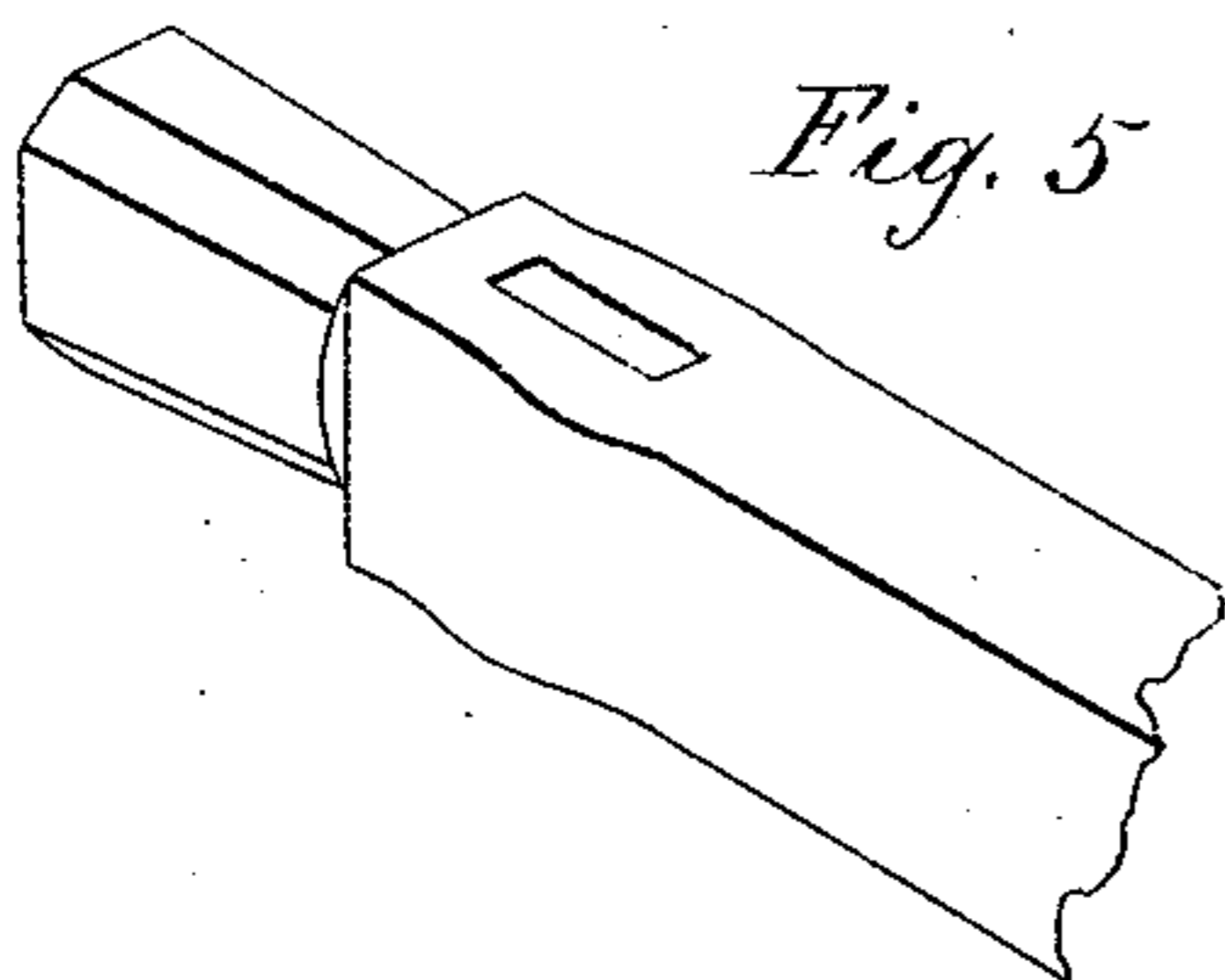


*Fig. 2*



*Fig. 1*

*Fig. 5*



*Witnesses*

*R. H. DeWitt*  
*Dudley W. DeWitt*

*Inventor*

*Levi Dodge*

# UNITED STATES PATENT OFFICE.

LEVI DODGE, OF COHOES, NEW YORK.

## MACHINE FOR SWAGING HATCHET-HEADS.

Specification of Letters Patent No. 18,087, dated September 1, 1857.

*To all whom it may concern:*

Be it known that I, LEVI DODGE, of Cohoes, Albany county, State of New York, have invented a new Machine for Swaging Hatchet-Heads and Punching the Eyes Therein at One Operation; and I do declare the following specification, with the drawings hereto appended as part of the same, to be a full and complete description thereof.

Figure 1 is a plan of the swaging block and cheeks. Fig. 2 represents the same in a cross section through *a—y* Fig. 1. Fig. 3 is a perspective view of the swaging block and former. Fig. 4 is a cross section of the bar of iron to be operated upon. Fig. 5 is a perspective view of the hatchet head as formed by the swaging operation.

The hatchet's head is of the hammer form. Similar letters in the different figures, denote the same parts of the apparatus.

The swaging block is a strong iron base A having attached to it two recessed iron cheeks B, B, which when placed together serve as a mold for the lower half of the hammer head. For that purpose the recess between them from *b* to *c* (Fig. 1) is just as deep as the proposed hammer head and flares inwardly being wider across in every direction at *b* than at *c*. The lower part of the recess is shaped semi-octagon, from *d* along to *e*, *f*, *g*, *h*, *j*. These cheeks are sunk at their lower ends into the block A and pivoted within a socket or cavity at *k*, *k*, and so formed at bottom as to allow of slight motion to the right or left in order to permit them to be opened at top, (as shown in Figs. 2 and 3,) in order to admit with facility the bar, Fig. 4, within their grasp. This bar is in cross-section a little larger than the intended head is at its neck both in depth and width and will just fill up the space between the cheeks at *c—h*, they being spread as shown in the drawing.

The bar which is long enough to form the head and blade of the hatchet being heated and inserted into the block and placed with its extremity close against the

back of the recess the former L is brought in play. This former is as shown in the drawing a metal tongue, (*l*,) fitting exactly within the cheeks B, B, when they are closed together, connected by an upper cross piece *m* with two outer bars parallel with *l* and fitted to close tight upon B, B, and keep them close to *l* when driven downward. The bottom of *l* is fitted semi-octagonwise to correspond with the shape of the bottom of B, B, so that when it is driven down to its proper place the two together form the mold or die for the hammer head of the hatchet.

On the block A, and in front of the center of the cheeks is fixed a punch O fitted to form the lower part of the eye of the hatchet; and to *l* is attached a corresponding punch P fitted to meet O as it comes down and form the upper part of the eye.

The operation of the machine is simple. The iron bar being heated is placed within the cheeks B, B, which are opened to receive it, the former L is then placed over the cheeks and driven down by any of the usual mechanical devices. As it advances it not only drives the metal of the bar before it, but closes the cheeks upon *l* enabling it to complete the hatchet head, by an effective compression of the metal into the mold or die formed by the cheeks and former.

This machine is to be used in making heads for hammers as well as hatchets and that without reference to the figure of the head, whether polygonal as described or conical or cylindrical—and for all other tools, &c., for which it shall prove fitted.

What I claim and desire to secure by Letters Patent is—

The apparatus above described, viz: the block, cheeks, and former, to be constructed and operated substantially and for the purposes set forth in the within specification.

LEVI DODGE.

Witnesses:

REID VARUK DE WITT,  
DUDLEY W. DE WITT.