2 Sheets—Sheet 1.

H. W. KIP & E. RIECKEL.

DIES FOR MAKING HAMMERS.

No. 189,232. Patented April 3, 1877.

Fig. 1.

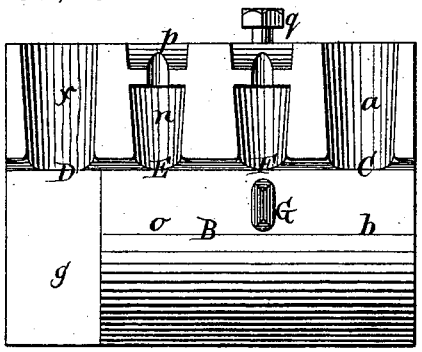


Fig. 2.

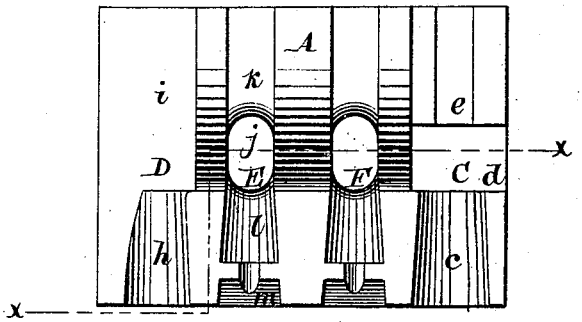
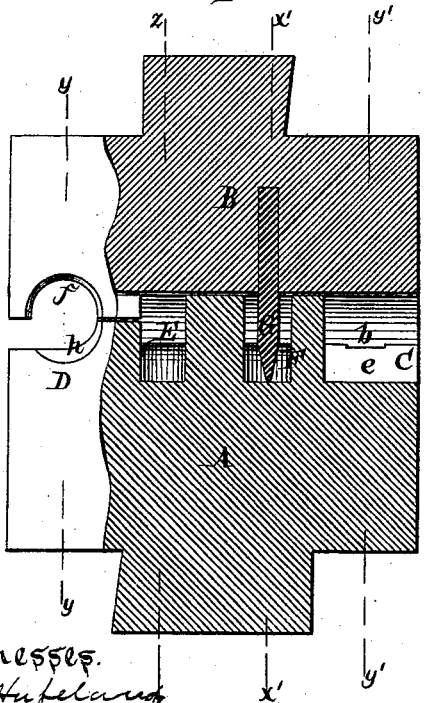


Fig. 3.



Witnesses.
Otto Hufeland
Robt E. Miller.

Fig. 4.

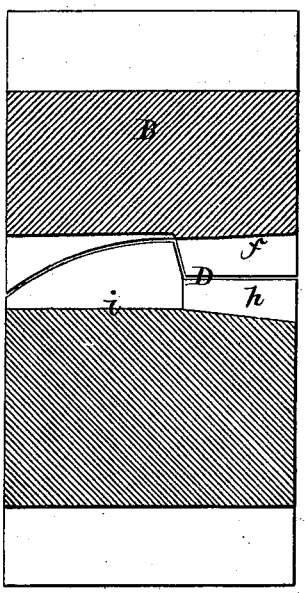
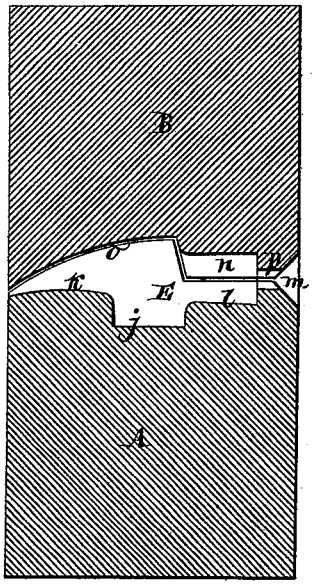


Fig. 5.



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2 Sheets—Sheet 2.

H. W. KIP & E. RIECKEL.

DIES FOR MAKING HAMMERS.

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Fig. 6.

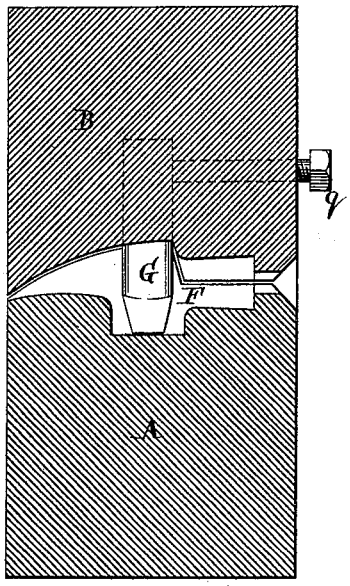
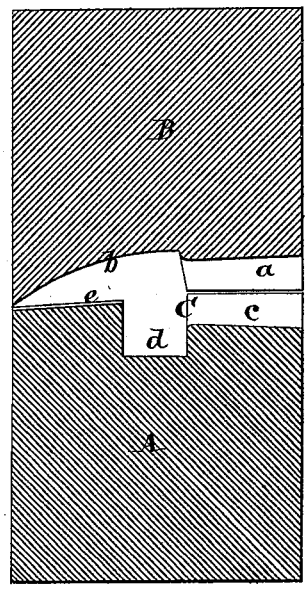


Fig. 7.



Witnesses.
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Robt E. Miller.

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Ernst Rieckel
by
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their attorneys

UNITED STATES PATENT OFFICE.

HENRY W. KIP AND ERNST RIECKEL, OF BUFFALO, NEW YORK.

IMPROVEMENT IN DIES FOR MAKING HAMMERS.

Specification forming part of Letters Patent No. **189,232**, dated April 3, 1877; application filed December 13, 1876.

To all whom it may concern:

Be it known that we, HENRY WELLS KIP and ERNST RIECKEL, both of Buffalo, in the county of Erie and State of New York, have invented a new and useful Improvement in Dies for Making Adz-Eye Hammers, which improvement is fully set forth in the following specification, reference being had to the accompanying drawing, in which—

Figure 1 represents an inverted plan of the upper die. Fig. 2 is a plan of the lower die. Fig. 3 is a transverse section of the die when put together. Figs. 4, 5, 6, and 7 are longitudinal sections of the same in the planes *y y*, *z z*, *x' x'*, and *y y'*, Fig. 3, respectively.

Similar letters indicate corresponding parts.

This invention relates to a die which contains four distinct impressions, by the successive action of which the end of a bar of iron is brought in the form required for an adz-eye hammer, and the eye is punched ready for the reception of the handle.

In the drawing, the letter *a* designates the lower part of our die, and the letter B its upper part. Each of these parts contains four impressions, C D E F, which co-operate with each other, as shown in Figs. 7, 4, 5, and 6, respectively. When the dies are placed together, the form of the impression C is such as shown in Fig. 7, the upper die containing a semicircular cavity, *a*, and a curved plain extension, *b*, while the lower die contains a semicircular cavity, *c*, a rectangular depression, *d*, and a flat rectilinear extension, *e*. The heated end of the bar of iron from which the hammers are to be formed is placed on the lower die A, over the impressions *c d e*, and as the upper die is brought down the cavities *a* and *c* form the poll, a portion of the metal is forced down into the rectangular depression *d* to produce the solid adz-eye, and by the combined action of the curved extension *b* and the flat extension *e* the metal is stretched to form the claw.

By the action of the second impression D of our die the poll of the hammer is rounded. For this purpose the upper die B is provided with a semicircular impression, *f*, and with a flat extension, *g*, and the lower die A with a partly round and partly flat impression, *h*, and with a flat extension, *i*. These flat extensions are so arranged that they do not act upon the claw part of the hammer unless the same is turned up edgewise, while the poll part of the hammer is placed in the impression *h*, where it can be turned round, and as the upper die is brought down in quick succession, said poll is rounded by the combined action of the impressions *f* and *h*. After having been shaped by the dies C and D, as above stated, the hammer is exposed to the action of the impression E in the die. (See Fig. 5.) That part of the impression E which is contained in the lower die A consists of a socket, *j*, a slightly-curved flat extension, *k*, a semicircular cavity, *l*, and a cutter, *m*, while that portion of the impression E which is contained in the upper die B consists in a semicircular cavity, *n*, a curved extension, *o*, and cutter, *p*. The socket *j* is intended to receive and shape the solid eye of the blank, and the ends of this socket are oval and slightly tapering, while its sides are perpendicular and its bottom is smooth and flat. The sides of the extension *k* are perpendicular. By the co-operation of the curved extension *o* and the extension *k* the claw is brought to the required shape, the solid eye is depressed into the socket *j*, and the poll of the hammer is rounded off by the co-operation of the cavities *l* and *n*, and at the same time the cutters *m* and *p* partly separate the hammer from the bar, leaving a connecting-piece which can easily be broken. After the claw, the eye, and the poll of the hammer have thus been brought in the desired shape, the blank, which is still connected to the bar, as above stated, is introduced between the impressions F, the shape of which, in the upper and lower dies, respectively, closely resembles that of the impression E, (see Fig. 6,) with the addition of a punch, G, which is secured in the upper die B, and which serves to open the solid eye of the hammer-blank when the same is in the socket of the impression F in the lower die. A set-screw, *q*, retains the punch in the upper die.

When the blank has been treated as above stated the hammer is finally trimmed, punched, split, bent, ground off, and finished in the ordinary manner.

By these means the manufacture of adz-eye hammers is effected with great economy in labor and in stock.

What we claim as new, and desire to secure by Letters Patent, is—

1. The dies A B, with the impressions C D E F and the punch G, for forming, drawing out, shaping, finishing, and punching the hammer-blank, all constructed and operating substantially in the manner herein shown and described.

2. Jointly, the surfaces *a b* and *f g* on the hammer-face, and the surfaces *c d e* and *h i* on the anvil-block, substantially as and for the objects set forth.

3. Jointly, the surfaces *a b f g* and *n o* on the hammer-face, and the surfaces *c d e h i* and *k l* on the anvil-block, substantially as and for the purposes set forth.

In testimony that we claim the foregoing we have hereunto set our hands and seals this 1st day of November, 1876.

HENRY WELLS KIP. [L. S.]
ERNST RIECKEL. [L. S.]

Witnesses:
JAS. L. RARE,
RALPH JOHNSON.