

W. ACHESON & W. H. RIDLEY.

Improvement in the Manufacture of Hoes.

No. 127,288.

Patented May 28, 1872.

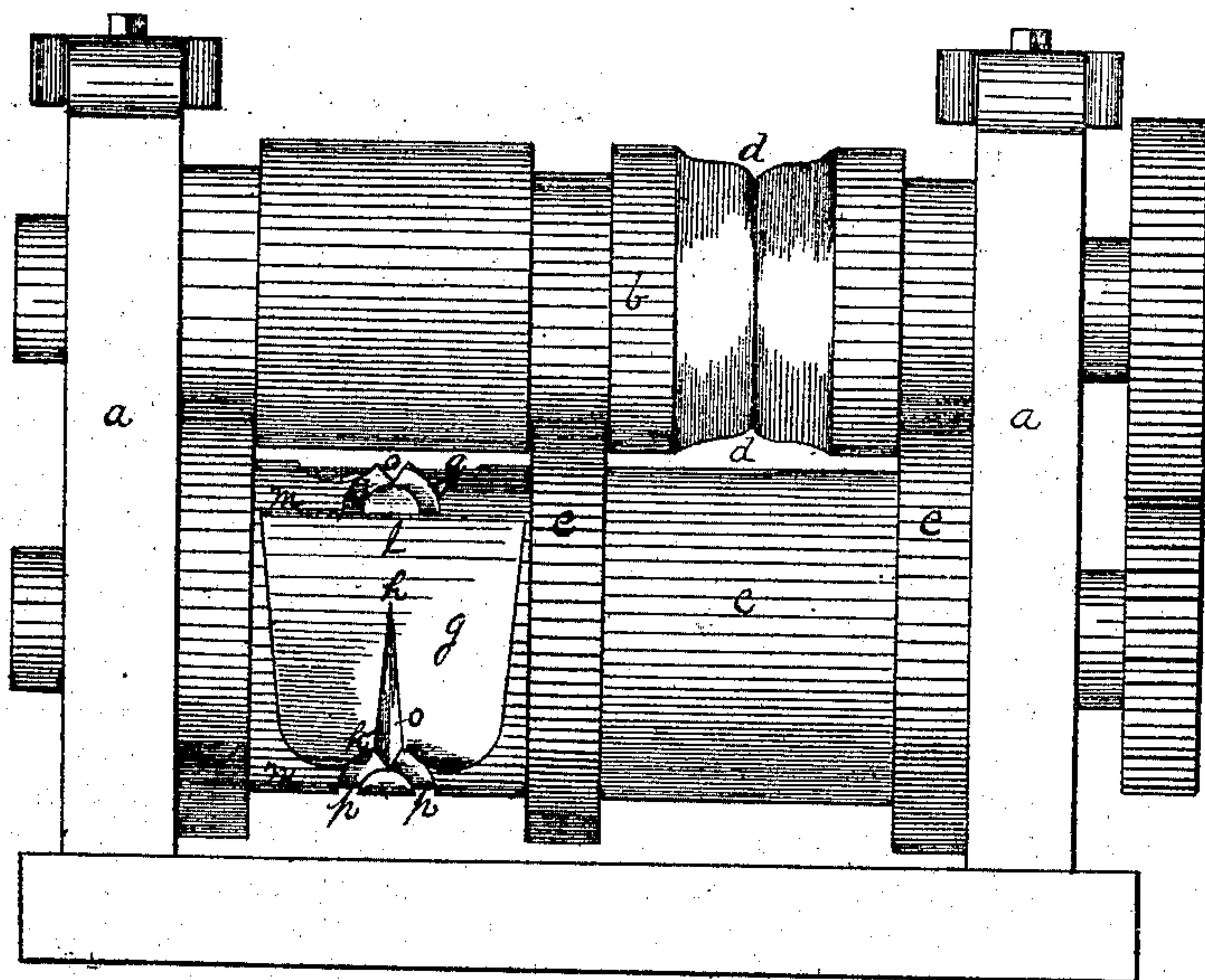


Fig. 1.

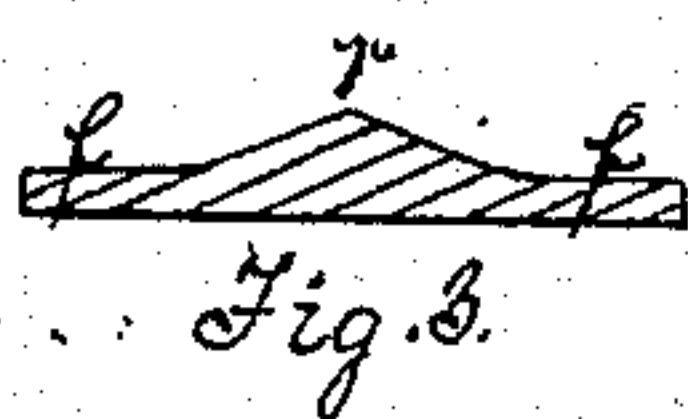


Fig. 3.

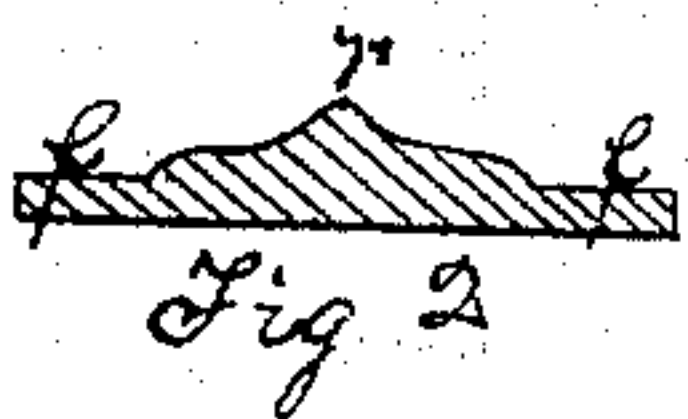


Fig. 2.

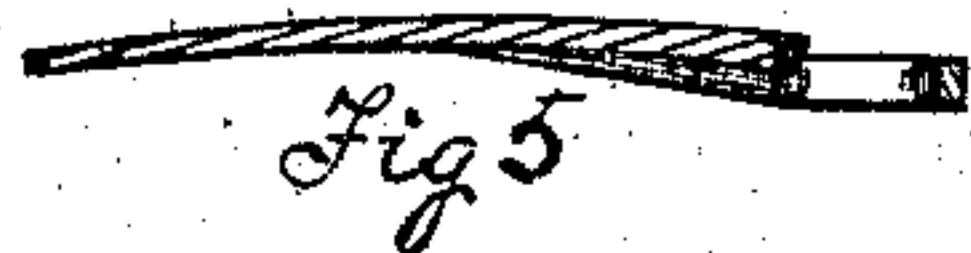


Fig. 5.

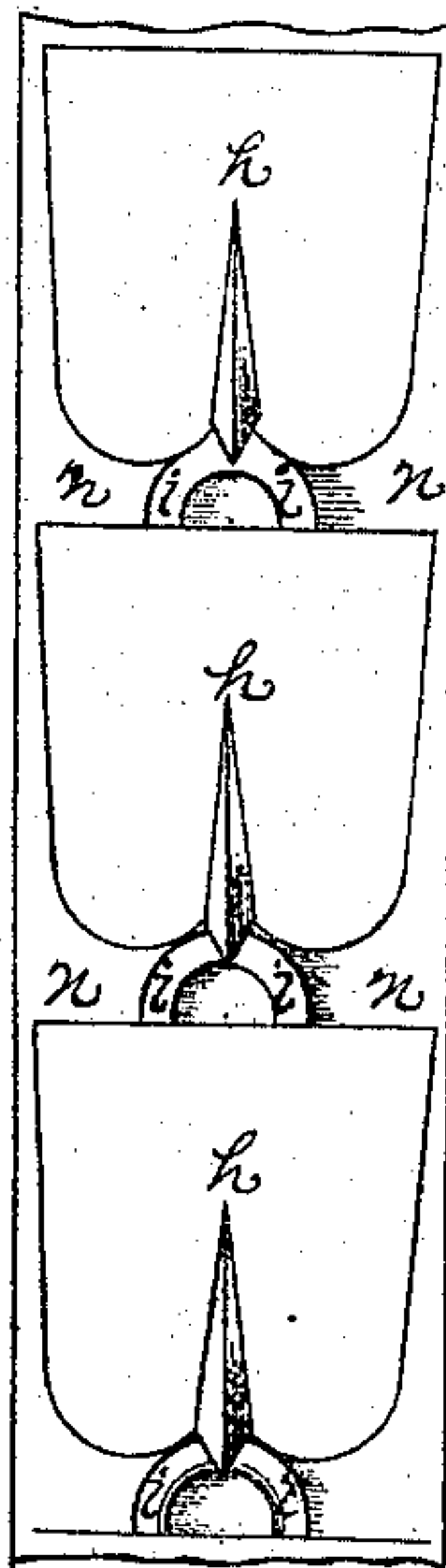


Fig. 4.

Witnesses  
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# UNITED STATES PATENT OFFICE.

WILLIAM ACHESON AND WILLIAM H. RIDLEY, OF PITTSBURG, PA.

## IMPROVEMENT IN THE MANUFACTURE OF HOES.

Specification forming part of Letters Patent No. 127,288, dated May 28, 1872.

### SPECIFICATION.

*To all whom it may concern:*

Be it known that we, WILLIAM ACHESON and WILLIAM H. RIDLEY, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in the Manufacture of Hoes; and we do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing forming part of this specification, in which—

Figure 1 is a side elevation of a pair of rolls, showing two grooves, one for forming a blank and the other for rolling the hoes from the blank. Figs. 2 and 3 are sectional views of bars formed in the first groove of the rolls, and from which the hoes are rolled. Fig. 4 is a view of the bar after it has passed through the dies; and Fig. 5 is a sectional view of a finished hoe, showing the taper given to it by the eccentric die.

Like letters of reference indicate like parts in each.

Our invention relates to the construction of rolls and roller-dies for the manufacture of blanks for hoes.

To enable others skilled in the art to make and use our invention, we will describe its construction and mode of operation.

In proper housings *a* we place a pair of rolls, *b c*, the upper one, *b*, having a groove, *d*, cut into its face, and the lower one, *c*, having a plain face. The groove *d* is bounded on both sides by the collars *e*. In this groove is formed the blank-bar, shown in Fig. 2, of which one side is flat and the other flattened along the margins, as at *f f*, and having a raised central portion, as at *r*, the flattened and raised portions being, respectively, of uniform thicknesses throughout the length of the bar. The bar shown in Fig. 3 is a modification of the same, answering equally well. The straight or parallel faces of the rolls are set a little apart to form the straight parts *f f* of the blank. In the same or in another pair of rolls we roll the blank just described into hoes of the shape

shown, tapering the blade in thickness longitudinally from the head to the end. In the face of the roll *c* we cut a series of dies, *g*, for forming the hoe-blank. The dies are made eccentric from the head *k*, swelling to the edge *l*, so as to make the hoe tapering to the edge, as shown in Fig. 5, to obviate the necessity of grinding it down. The roll *b* is made plain in the face, and is raised so as to mesh in between the collars *e e* on the roll *c*. The faces of the rolls are set a little apart so as to allow room for the excess of metal, which, in the operation of rolling, spreads out over the part *m* between the dies, forming the pin *n*, which connects the unfinished hoes in Fig. 4. The stem *h* is formed in the groove *o*, and the lugs *i i*, from which, by a subsequent operation, the eye of the hoe is made, are formed by the groove *p*. The metal in the ridge or rise *r* in the center of the blank goes to form the stem *h* and lugs *i i*. The blank is made slightly narrower than the groove in which the hoe is formed, so as to reduce the edge pin.

The operation is similar to the usual way of rolling iron. The blank being rolled in the first groove of the rolls from suitable iron, is heated and passed through the second groove, from whence it comes in the shape shown in Fig. 4.

As hoes have heretofore been made—*i. e.*, by forging—much loss is sustained by the cracking and splitting of the metal along the edges, and much time and labor are expended in grinding them down. By the use of our improvement these difficulties are entirely obviated, and, moreover, a much larger quantity can be produced in a given time than by the old method, and that with little or no skilled labor.

After the hoe-blanks have been made they are cut apart, trimmed of the pin, the eye forged up, and the hoe otherwise finished for market in the usual way.

What we claim as our invention is—

1. In a pair of rolls the series of dies *g* for forming a connected series of hoe-blanks, said

dies being made eccentric so as to make the hoe-blank tapering from the head down to the cutting-edge, substantially as described.

2. The bar of connected hoe-blanks produced by rolling, substantially as described and shown.

3. The blank-bar from which the bar of connected hoe-blanks is rolled, of the shape described and shown.

In testimony whereof we, the said WILLIAM ACHESON and WILLIAM H. RIDLEY, have hereunto set our hands.

WILLIAM ACHESON.  
WILLIAM H. RIDLEY.

Witnesses:

W. N. PAXTON,  
THOS. B. KERR.