J. BERGMANN.

Manufacture of Hoes.

No. 207,238. Patented Aug. 20, 1878.

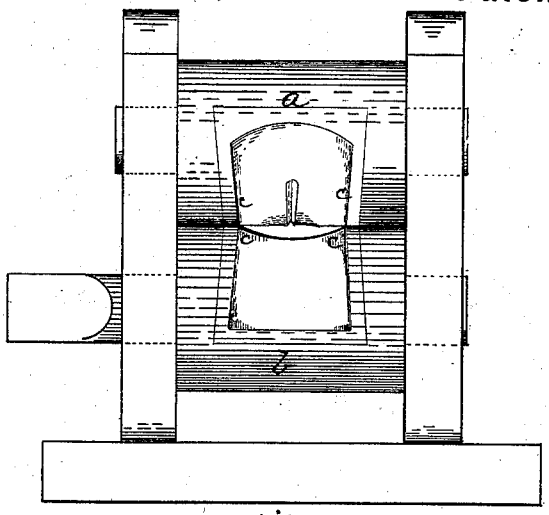

Fig. 1.

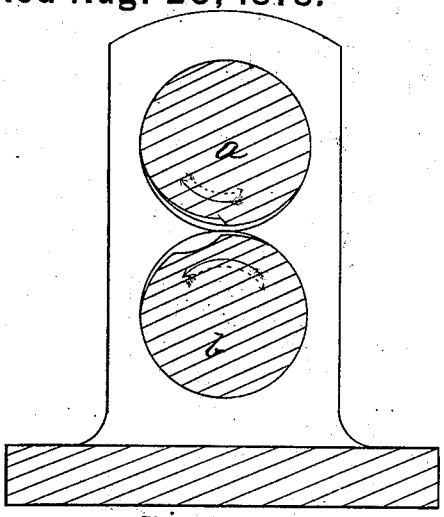

Fig. 2.

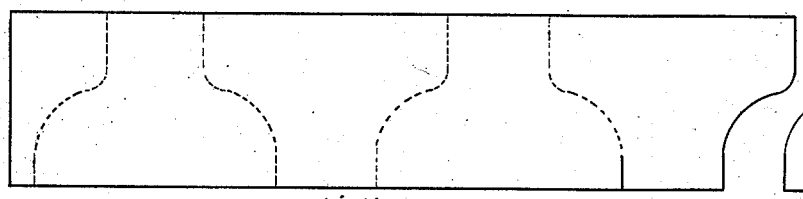

Fig. 3.

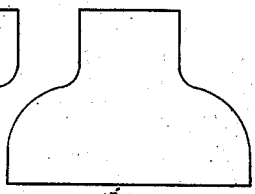

Fig. 4.

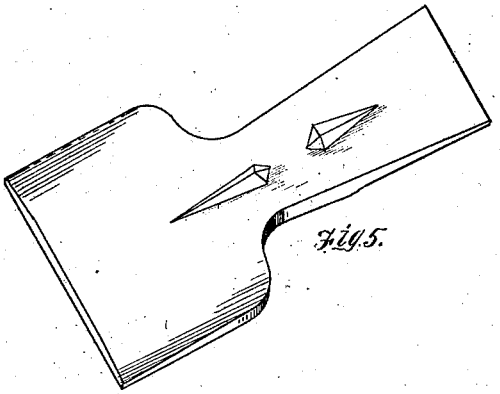

Fig. 5.

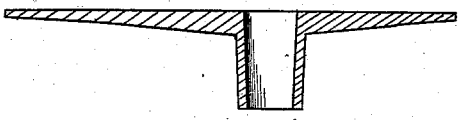

Fig. 6.

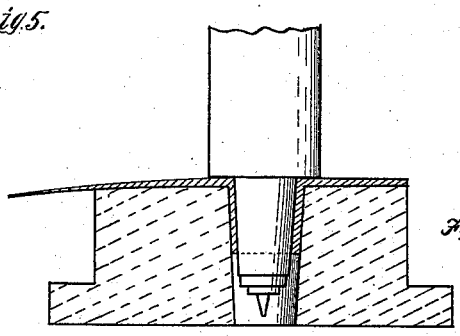

Fig. 7.

WITNESSES.

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UNITED STATES PATENT OFFICE.

JOHN BERGMANN, OF BEAVER FALLS, PENNSYLVANIA, ASSIGNOR TO HIMSELF AND JOHN PEDDER, OF SAME PLACE.

IMPROVEMENT IN THE MANUFACTURE OF HOES.

Specification forming part of Letters Patent No. **207,238**, dated August 20, 1878; application filed July 10, 1878.

To all whom it may concern:

Be it known that I, JOHN BERGMANN, of Beaver Falls, in the county of Beaver and State of Pennsylvania, have invented a new and useful Improvement in the Manufacture of Hoes; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing, making part of this specification, in which—

Figure 1 is a side view of my improved machine for rolling hoe-blanks. Fig. 2 is a vertical section of the same. Figs. 3, 4, 5, and 6 are views of blanks at various stages of manufacture of a double-blade weeding-hoe; Fig. 7, diagram of punch for setting up the solid eye.

Like letters of reference indicate like parts.

My invention relates to the manufacture of solid-eye hoes in such manner as to greatly reduce the amount of labor involved and stock lost by the present methods.

The blanks I make by cutting alternately right and left from a straight flat bar, as shown in Fig. 3. This makes a blank like Fig. 4. I then pass the blank through the rolls *a b*, which are provided with eccentric dies, that draw it out into a double-taper form—that is to say, tapering it in the direction of the length of the blade from the eye on both sides. If it is desired to taper off the sides of the blank, it can be done by making the dies of the desired form, as at *c*. I prefer to make the double taper of the blank at several passes in rolls substantially of the form shown—that is, with a taper extending both ways from the eye; but it may be done in single-taper dies by drawing down one end first, and then turning the blank and drawing down the other end by several passes.

In one of the rolls is a groove which forms a bead on the blade. A circular groove may be made to form a ring of metal on the blank around the eye at the time of rolling the double taper, as it does not involve any more labor or any difference in the operation of making the double taper.

Thus I produce a blank which is drawn down in the blade at the proper point, and with a thick portion where it is needed in the subsequent operation of forming the eye.

The blank I produce is very superior to all former blanks, and costs much less to manufacture. The shape of the dies in the rolls is to be varied to suit the specific shape of the hoes desired to be made.

I then form a solid eye to the blank by means of the dies and punches shown in the patent of Walter Baker of May 21, 1861, and which I have illustrated by Fig. 6, or by other suitable means, the excess of metal in the eye portion being especially useful for this purpose. This hoe is shown by Fig. 7.

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

The method herein described of forming solid-eye hoes, consisting in the following steps: first, cutting the form alternately from a suitable bar; secondly, tapering the blank each way from the portion intended for the eye; and, finally, setting up the eye by suitable dies, the whole substantially as specified, whereby a large amount of stock is saved and labor avoided.

In testimony whereof I, the said JOHN BERGMANN, have hereunto set my hand.

JOHN BERGMANN.

Witnesses:
F. W. RITTER, Jr.,
C. E. MILLIKEN.