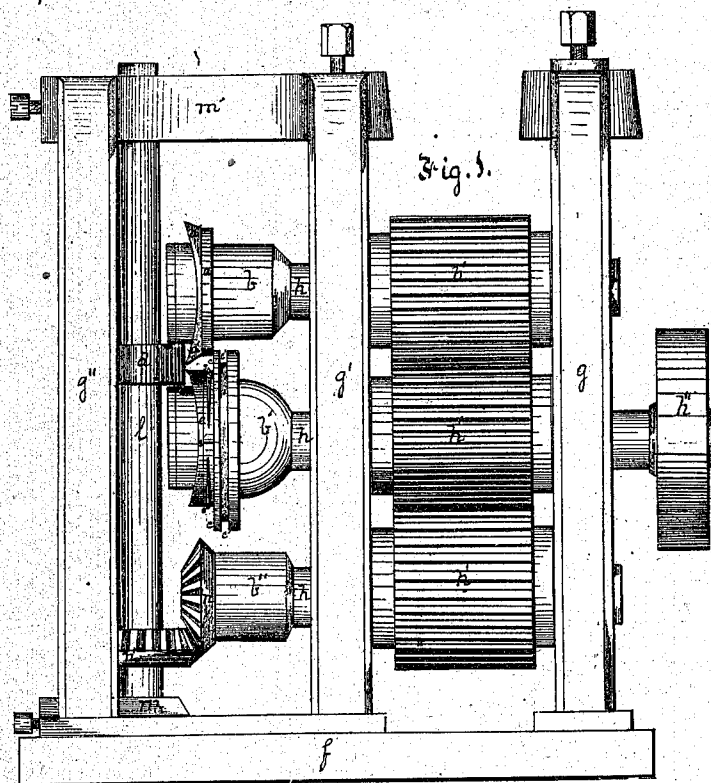


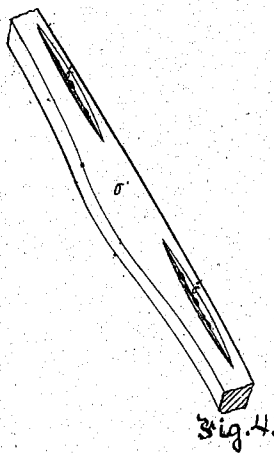
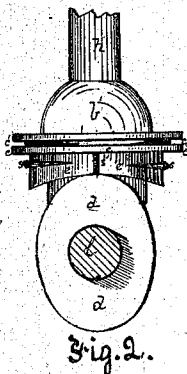
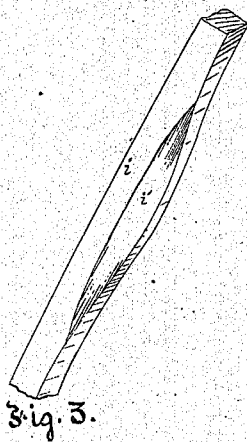
MACHINE FOR MAKING HORSESHOE BLANKS.

No. 105,490.

Patented July 19, 1870.



Rolling Iron of Varying Width and Thickness.



Witnesses:
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United States Patent Office.

ABRAM REESE AND JACOB REESE, OF PITTSBURG, PENNSYLVANIA.

Letters Patent No. 105,490, dated July 19, 1870.

IMPROVED MACHINE FOR MAKING HORSESHOE BLANKS.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern:

Be it known that we, ABRAM REESE and JACOB REESE, of the city of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Machine for Rolling Iron of Varying Width and Thickness; and we do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing making a part of this specification, in which—

Figure 1 is a front elevation of our improvement, with a suitable arrangement of dies and rolls for rolling horseshoe-blanks.

Figure 2 is an end view of the vertical, and a plan view of the lower horizontal rolls of fig. 1, the same face of the lower roll being shown in both figures, and

Figures 3 and 4 are perspective views of the opposite faces of a horseshoe-blank.

Like letters indicate like parts in each.

In the manufacture of horseshoe-blanks, the bar must be thickened and reduced in width at certain intervals to form the heel; at the toe it must be made thinner and wider; the upper face must be beveled on the inner edge, with a uniform taper from the toe part either way to near each heel, and the opposite face near the outer edge must be creased at proper intervals, and all the parts must, in every blank, be in the same relation to each other.

If a part of the work be done at one pass through the rolls, and the rest at one or more succeeding passes, a considerable waste will be experienced, not only from loss of heat in the bar, but also from the inaccurate feeding of the bars into the rolls.

The object of our invention is to roll horseshoe-bars and blanks of a width and thickness varying in different parts, but fixed and determinate in any one part, and that others skilled in the art may be enabled to make and use the same, we will proceed to describe its construction and mode of operation, with particular reference to the manufacture of horseshoe-blanks.

The foundation *f* and housings *g g' g''* are of any suitable construction.

In the housings *g g'* are the pinions *h'*, which mesh into each other, and to any one of which power is communicated by a band-wheel, *h''*, or in other known way.

The pinion-shafts *h* project through the opposite housing *g'*, and terminate in the cylindrical rolls *b b' b''*.

Just outside the ends of these rolls, and with its axis in the plane of their axis, is a shaft, *l*, its lower end resting in a step, *m*, and its upper end in the housing-frame *m'*. A miter-wheel, *n*, on the end of the roll *b'*, meshing into a miter-wheel *n'*, imparts to the shaft *l* the motion required.

At the end or on the face of the upper roll *b* is ar-

ranged a metallic ring or die, the inner part *a* of the face of which is cylindrical, and the outer part *a'* is beveled with an outward flare. But the breadth of this bevel, however, tapers, as shown.

The face of this ring *a a'* is designed to form the upper face of the shoe-blank, and its several parts are relatively shaped and proportioned, so as to produce this result.

The cylindrical part *a* forms the flat face *i*, or the face next the outer edge of the shoe-blank, and the beveled part *a'* forms the bevel face *i'* of the blank, the broadest part of the bevel *a'* forming the broadest part of the bevel *i'*, and each tapering either way therefrom.

At the end, or on the face of the next roll *b'*, a pair of collars is adjusted, by which a groove *c* is formed, for convenience in adjusting a guide such as is described in Letters Patent granted to Abram Reese, 23d November, 1869.

Outside the outer collar *c* is arranged a ring or die, *e*, which has a cylindrical face of varying width, and it is so adjusted with reference to the die-ring *a'* that the broadest parts of the two shall come opposite to each other. This ring *e* forms the lower face *o* of the blank.

The two rings *a a'* and *e* operate in the same plane, with their faces opposite each other, and between the two the blank is rolled, with its outer edge against the collar *c*, which prevents the spread of the iron in that direction, so that, as the bar is reduced, it can spread only outward between the face of the bevel *a'* and the corresponding face of the ring *e*. The rings, as shown, are fitted up for the rolling of two blanks at each revolution. They are fastened onto the rolls by keys, clamps, or in other known way.

In the lower ring *e* the creasers *s* are arranged at suitable intervals for forming the creases *o'* in the blank, and for the purpose of cutting the blanks apart a cutter, *s'*, is inserted at the proper point.

To secure the increased thickness desired in the heel, the ring *e* may be flattened slightly at the cutter *s'*, or the other ring, at the point corresponding thereto.

In order to make the iron thicker and narrower at the heel, a reducing pressure must be applied on its edge, which result we effect by means of a double cam or eccentric roll *d*, arranged on the vertical shaft *l*, at such point that its operative face shall come opposite the bite of the rings *a a'* and *e*. It is also so arranged that the face of greatest eccentricity shall come opposite to the narrowest part of the ring *e*, as shown in fig. 2, and come near enough to the collar *c* to swage up the bar edgewise, decrease its breadth, and increase its thickness, so as to form a heel part to the blank, of the desired form.

From the thickest and narrowest part of the heel,

any desired taper can be given to the blank, forward toward the toe, by shaping the face of the eccentric roll *d* accordingly. As shown, the eccentric *d* is, like the rolls described, designed for the making of two shoe-blanks at each revolution. All the rolls *b b'* and *d* should, of course, revolve in the same direction. The roll *d*, instead of having an eccentric face, may have an operative face of any desired curvature other than cylindrical.

In the use of such rolls for making horseshoe-blanks, we prefer to use bars which have previously had a bevel rolled along one edge, and, in such case, the thin edge should, in rolling, come next the vertical roll *d*.

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

1. The dies *a a'* and *e*, arranged on a pair of horizontal rolls, in combination with a collar *c* and vertical edging-roll *d*, substantially as described.

2. The subject matter of the last claim, in combination with the creasers *s*, substantially as described.

3. The dies *a a'* and *e*, in combination with creasers *s*, cutters *t*, and the roll *d*, arranged substantially as set forth.

In testimony whereof, we, the said ABRAM REESE and JACOB REESE, have hereunto set our hands.

ABRAM REESE.
JACOB REESE.

Witnesses:

JOHN GLENN,
THOS. B. KERR.