

A. Reese,
Horse Shoe Mach^y
No. 97,117. *Patented Nov 23, 1869.*

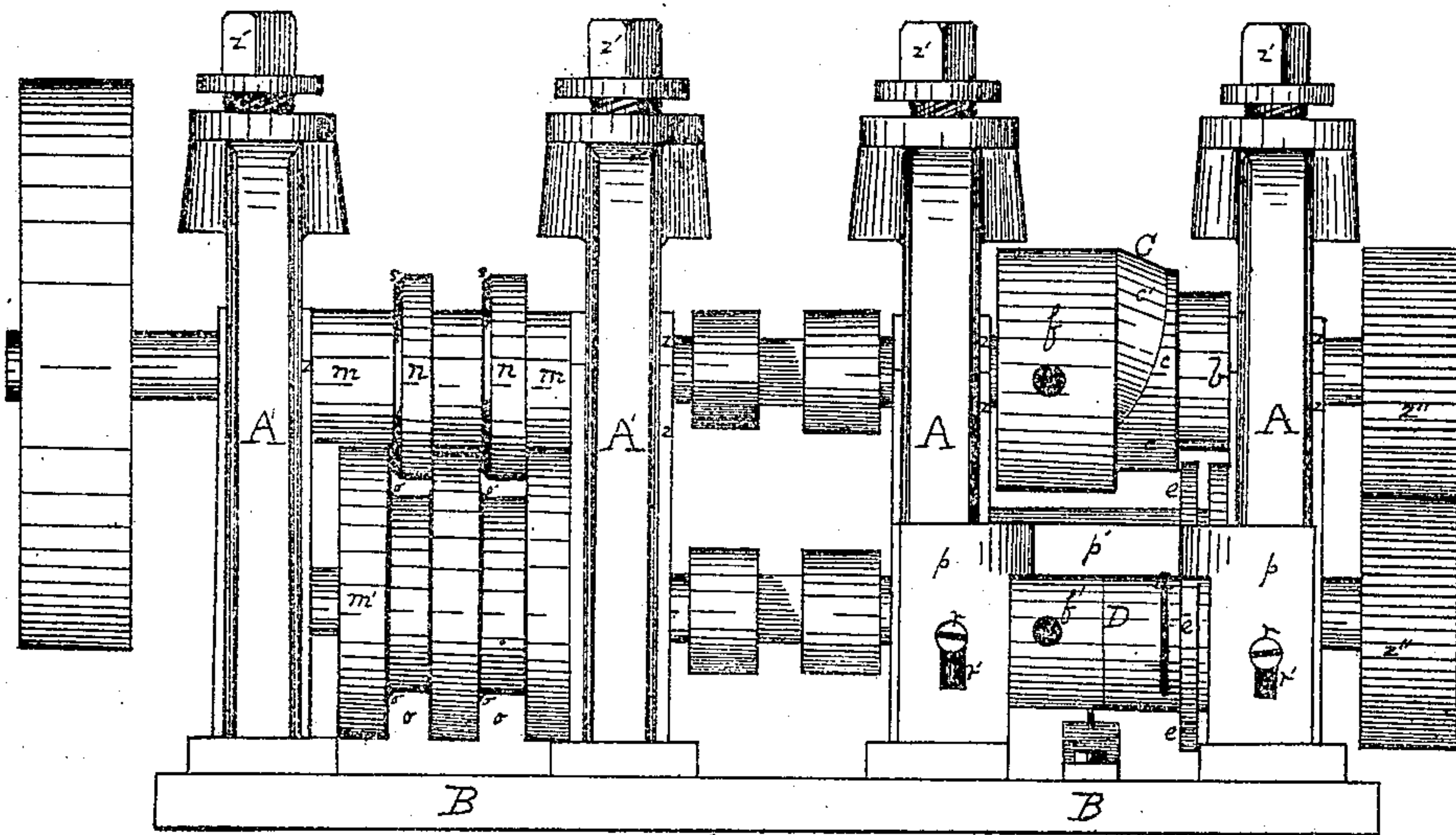
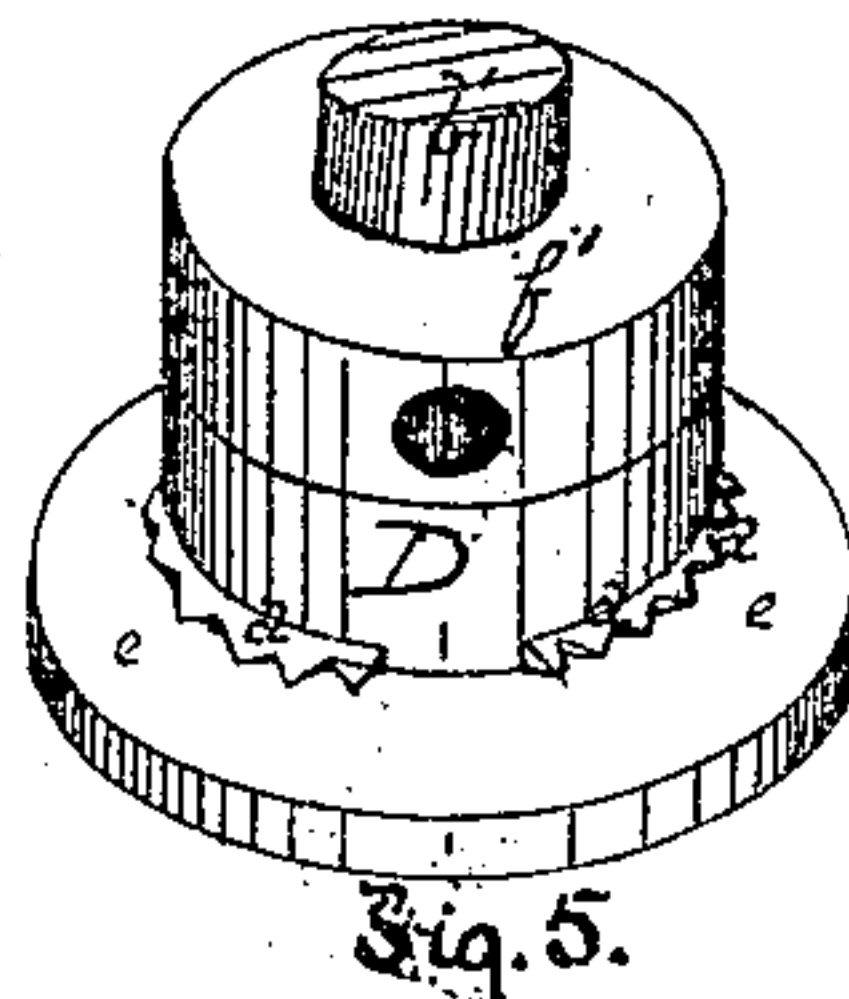
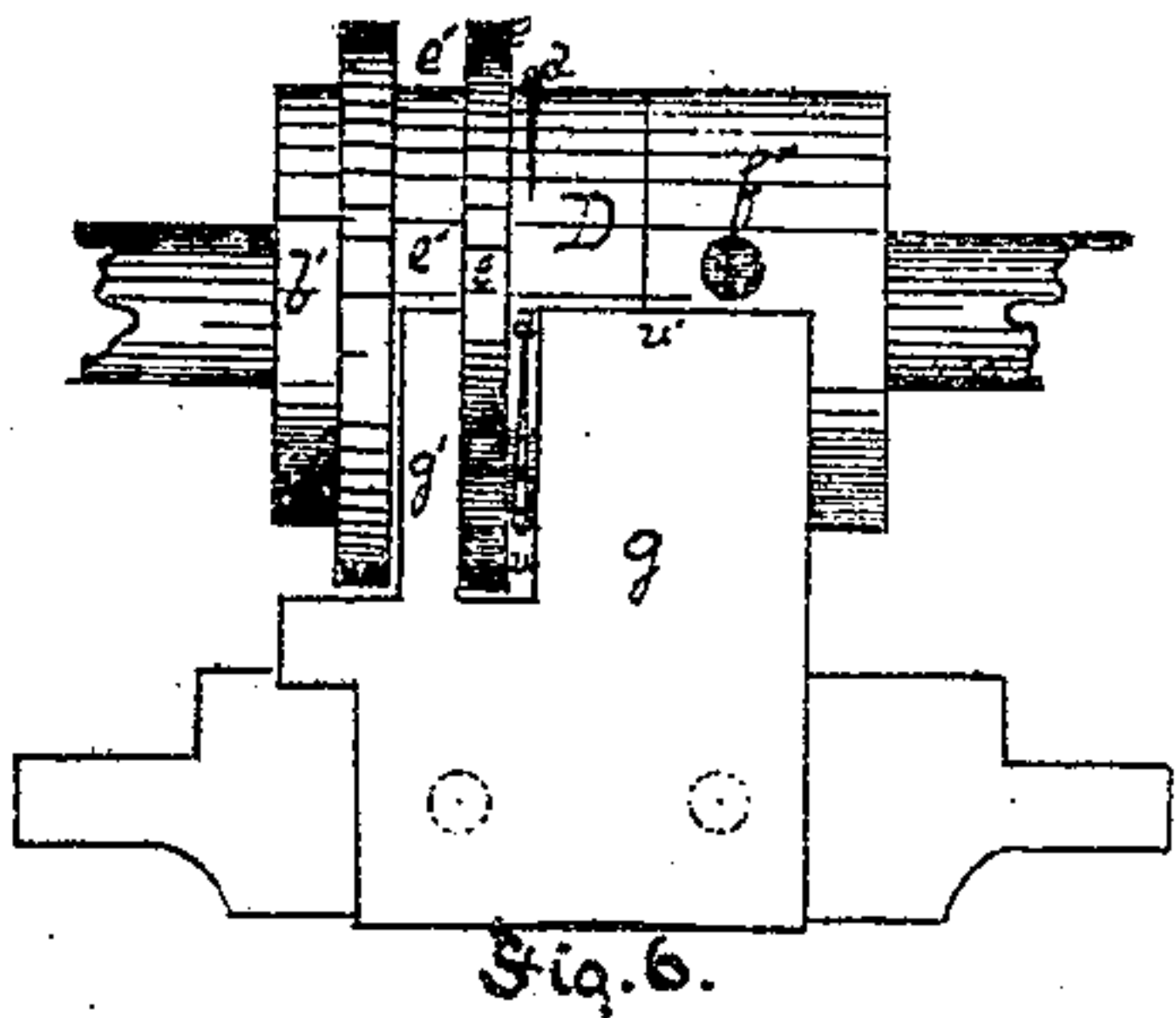
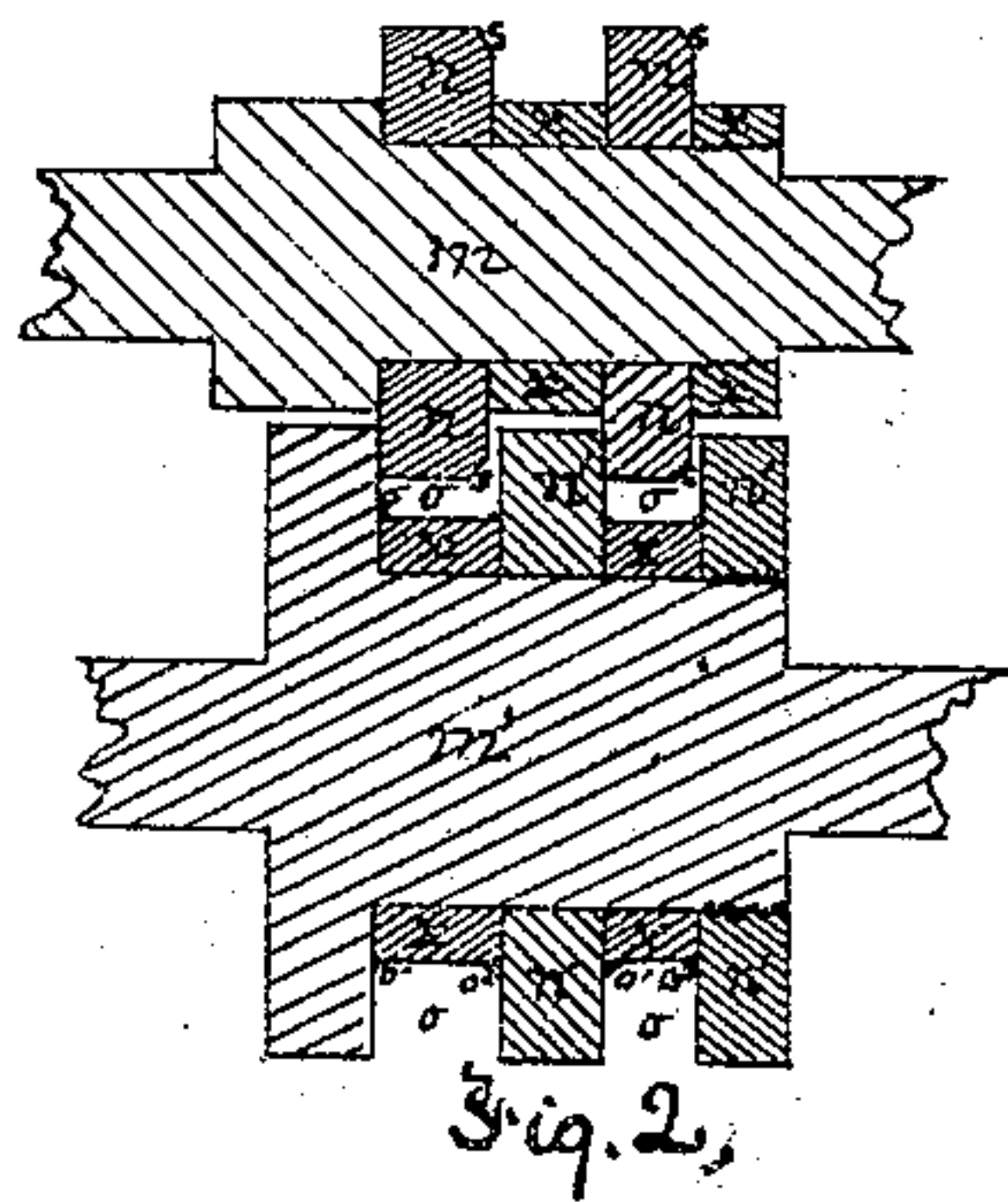
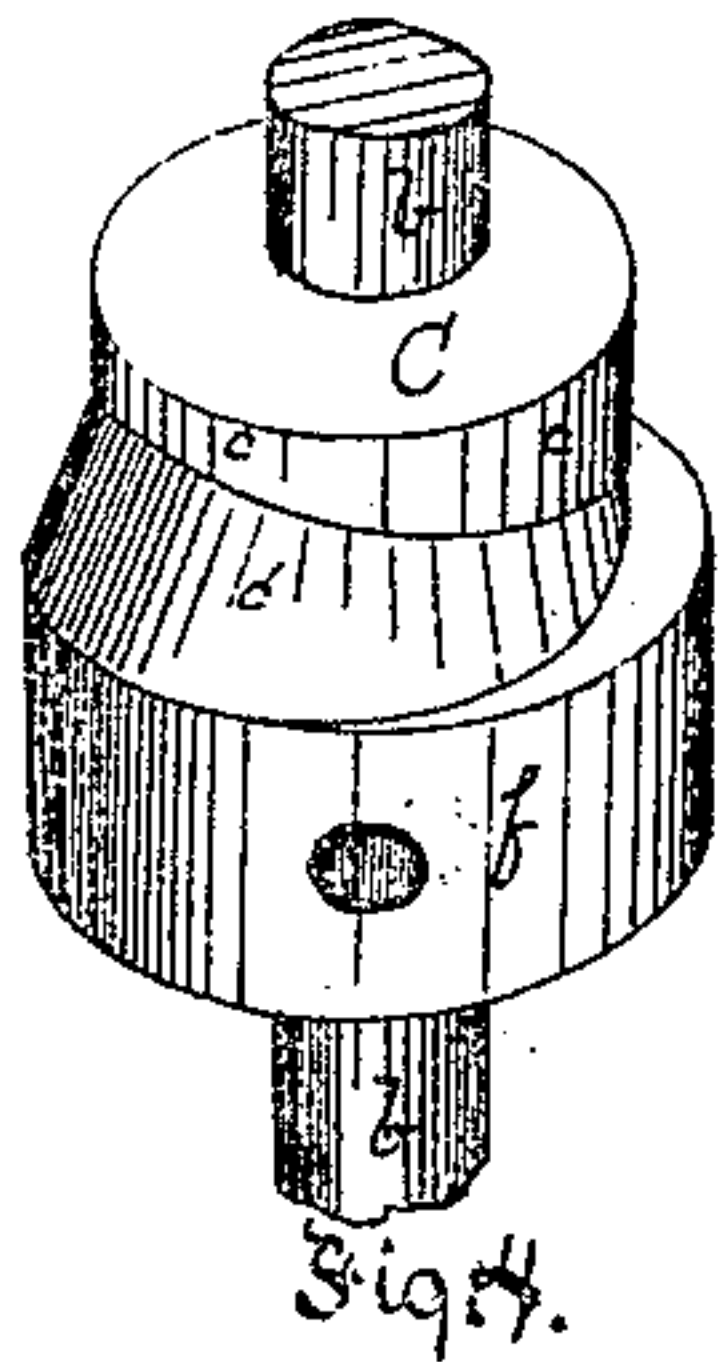
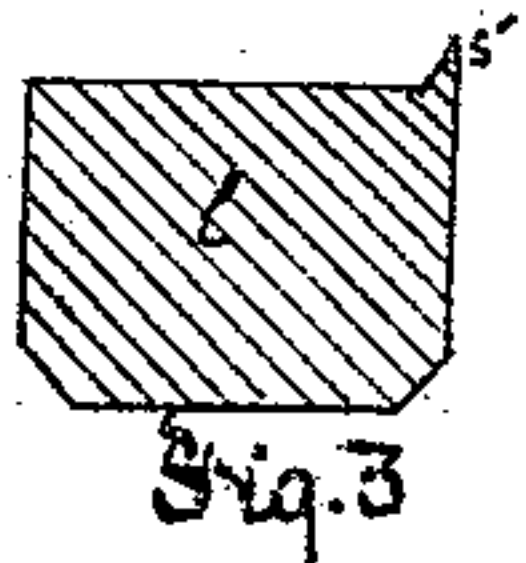


Fig. 1.



Witnesses:
R. C. Wrenshall
W. E. Wrenshall

Inventor:
Abraham Reese,
by Baker & Christy,
his Attys.

United States Patent Office.

ABRAM REESE, OF McCLURE TOWNSHIP, PENNSYLVANIA.

Letters Patent No. 97,117, dated November 23, 1869.

IMPROVED MACHINE FOR ROLLING BARS FOR HORSESHOES.

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

To all whom it may concern:

Be it known that I, ABRAM REESE, of McClure township, in the county of Allegheny, and State of Pennsylvania, have invented a new and useful Improvement in Machinery for Rolling Iron; and I 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 side elevation of a train of rolls, illustrative of my invention.

Figure 2 is a sectional view of the groove and collar by which a bead, or fillet is rolled on the edge of a horseshoe-bar, preparatory to creasing.

Figure 3 is a cross-section of a bar so rolled.

Figure 4 is a perspective view of the bevelling-ring I use in rolling horseshoe-blank bars.

Figure 5 is a like view of the creasing-ring.

Figure 6 is a plan view of the lower roll and delivery-guide.

Like letters of reference indicate like parts in each.

The nature of my invention consists—

First, in making cylindrical metallic rolls, with a slight groove in the corner of that collar, which projects into the main groove of the opposite roll, and forms one face of the bar, for the purpose of forming a bead, or fillet along one edge of the horseshoe-bar;

Second, in the construction and arrangement, on one of a pair of horseshoe-rolls, of a malleable-iron ring, for rolling the bevel required in horseshoe-blanks;

Third, in the construction and arrangement of a malleable-iron creaser and malleable-iron die-rings, in connection with a pair of horseshoe-rolls;

Fourth, an adjustable guide-rest on the feeding side of the rolls, in combination with a bevel-faced die or roll for rolling horseshoe-blank bars; and

Fifth, in the construction of a delivering-guide, having a projecting lug which enters into a groove in the rolls, for preventing the guide from moving laterally while the rolls are in operation.

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

A A' represent the housings of a train of rolls, supported on any suitable foundation B, the boxes *z* and adjusting-screws *z'* and gearing *z''* being of the usual or any known construction.

On one-roll, preferably the upper one *b*, I arrange a malleable-iron ring, C, of the form shown in fig. 4, a part of such ring having a smooth cylindrical face, *c*, for rolling those parts of the shoe-blank which in the shoe are to be flat or nearly, and the remainder of the working face of the ring having a bevelled die, *c'*, properly arranged for bevelling the face of the blank at and near those parts which are to form the toe of the shoe.

This ring C is fastened on to the roll and held in place by a nut, *f*, turned tightly up against it, or by other equivalent mechanical device.

The face of the ring C plays opposite to the malleable-iron ring D, arranged on the lower roll, which has creasers *d* of the same material arranged at suitable distances on the ring D, so as to crease the successive blanks at the proper points as they are passed through. This ring D is likewise held in place by a nut, *f'*.

The collar *e*, which comes next to the ring D, and against which is formed one edge of the blank bars, (the opposite end being allowed to spread in the opposite direction,) I also make of malleable iron, slip it on to the roll, and hold it up by the nut *f'*, as already described.

In the manufacture of horseshoes heretofore, cast-iron rolls have been used with steel creasers. Such rolls are objectionable, because the bevel-dies and collars, in reducing the iron bars to blanks of varying width and thickness, are subject to an amount of wear which ordinary rolls do not experience, and in consequence of which they speedily become worn. And as each size horseshoe-blank requires to be of a particular dimension, the rolls cannot be turned down so as to be again useful in making horseshoes of that size. Hence, new rolls are frequently required. But by the use of the malleable-iron rings C D and collar *e*, I secure not only greater durability in the working parts, (malleable iron being for such uses more durable than cast-iron,) but also so make them that the parts so subject to greatest wear shall be removable, so that when the faces of one set of rings are so worn out as to be useless, they can be removed, and new ones put in their places at small cost, and with the loss of but little time. The old ones, after being refitted, may be used on the same rolls, in rolling smaller-sized blanks.

I also find malleable-iron creasers superior to steel ones, as they are less likely to break; and I find the further advantage, that by making the working faces of malleable iron, I produce smoother and better-finished work.

The rolling is done in the usual way. The die *c'* bevels the upper face of the blank, and the creasers *d* crease the opposite face at the required points.

I have sometimes found a difficulty in rolling a full and perfectly-formed bead along the outer edge of the blank, between the creasers *d* and the adjacent collar *e*. To secure a bead as full and perfect as is required, I use a device shown in the rolls *m m'*, which represent a pair of metallic rolls, having collars *n n'* and grooves *o*, of suitable size for rolling horseshoe-bars.

One corner of the collar *n*, I cut away slightly, or cut therein a shoulder groove, or offset, *s*, so that when a bar is passed through a bead, *s'*, fig. 3, will be

rolled thereon. At the same time, if so desired or found necessary, I round up the corners in the bottom of the groove *o*, by fillets *o'*.

The bar *l* thus produced is then passed through the other rolls, *c* and *D*, in such position that the bead *s'* will come between the creasers *d* and the collar *e*. This bead being rolled down, will at these points be formed into a crease-bead, such as is required in a well-formed horseshoe as a support for the nail-heads.

The difficulty in the making of a well formed crease-bead exists not only in making horseshoe-blanks by rolling, but also in that class of machines where the blank is creased by swaging, and the usefulness of a bar having a bead rolled thereon as described, is equally great, whether the subsequent steps in the manufacture of the horseshoe are performed by rolling, swaging, or otherwise. Hence, I claim the manufacture of a beaded bar, as described, without regard to the mode in which it is worked up into horseshoes.

The malleable-iron parts hereinbefore referred to are made in any of the ways known in preparing malleable-iron castings.

In rolls such as those described, where the pressure of the rolls comes on the bar with a varying force at different points in the bar, it is necessary to have a firmly-fixed and accurately-adjusted feeding-guide.

To secure this, I fasten to the housings *A*, a guide-rest, *p*, and make it adjustable up and down by screws *r*, playing in slots *r'*. To the cross-bar *p'*, I bolt or otherwise securely fasten the guide-box, through which the bars are fed into the rolls. But a still greater difficulty exists in the tendency of the bars to follow the roll. Delivery-guides have been used, which operated close to the surface of the roll, but in horseshoe-rolls, such guides are apt to spring or wobble a little from side to side, till they come in the path of the creasers, when, of course, the effects are disastrous.

To remedy this evil, I make a groove, *e'*, in the roll

b', and then, on the delivery-guide *g*, make a lug, *g'*, which projects into the groove *e'*, and, as near as may be, is of the same width.

The guide *g* rests on an adjustable guide-frame, such as is above described, is notched, as at *u*, for the creasers *d*, and its end *u'* works closely to the face of the roll *b'*, or of the ring *D*, so as in all cases to deliver the bar therefrom. The lug *g'* prevents the guide *g* from moving laterally, so that it is held securely to its place.

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

1. In a machine for rolling bars for horseshoes, the malleable-iron die-rings *C* and *e*, and creaser *d*, combined with the rolls, as described.

2. A malleable-iron ring, *C*, having cylindrical and bevelled parts *c* *c'*, made separate from the roll, as described, and for the uses set forth.

3. The construction, herein described, of the tongue or collar *n* and groove *o* of the rolls *m* *m'*, in virtue of which there results a space between the working faces of the tongue and groove of the form, substantially as described, and substantially as shown at *o'*.

4. As a step in the manufacture of horseshoes, rolling a bead, *s'*, along the edge of one face of the bar, preparatory to creasing, substantially as described.

5. The delivery-guide *g*, having a lug, *g'*, entering the groove *e'*, substantially in the manner and for the purposes set forth.

6. The combination of the adjustable guide-rests *p* *p'* with the malleable-iron die-rings *C* and *D*, and the rolls *b* *b'*, substantially as described.

In testimony whereof, I, the said ABRAM REESE, have hereunto set my hand.

ABRAM REESE.

Witnesses:

A. S. NICHOLSON,
G. H. CHRISTY.