

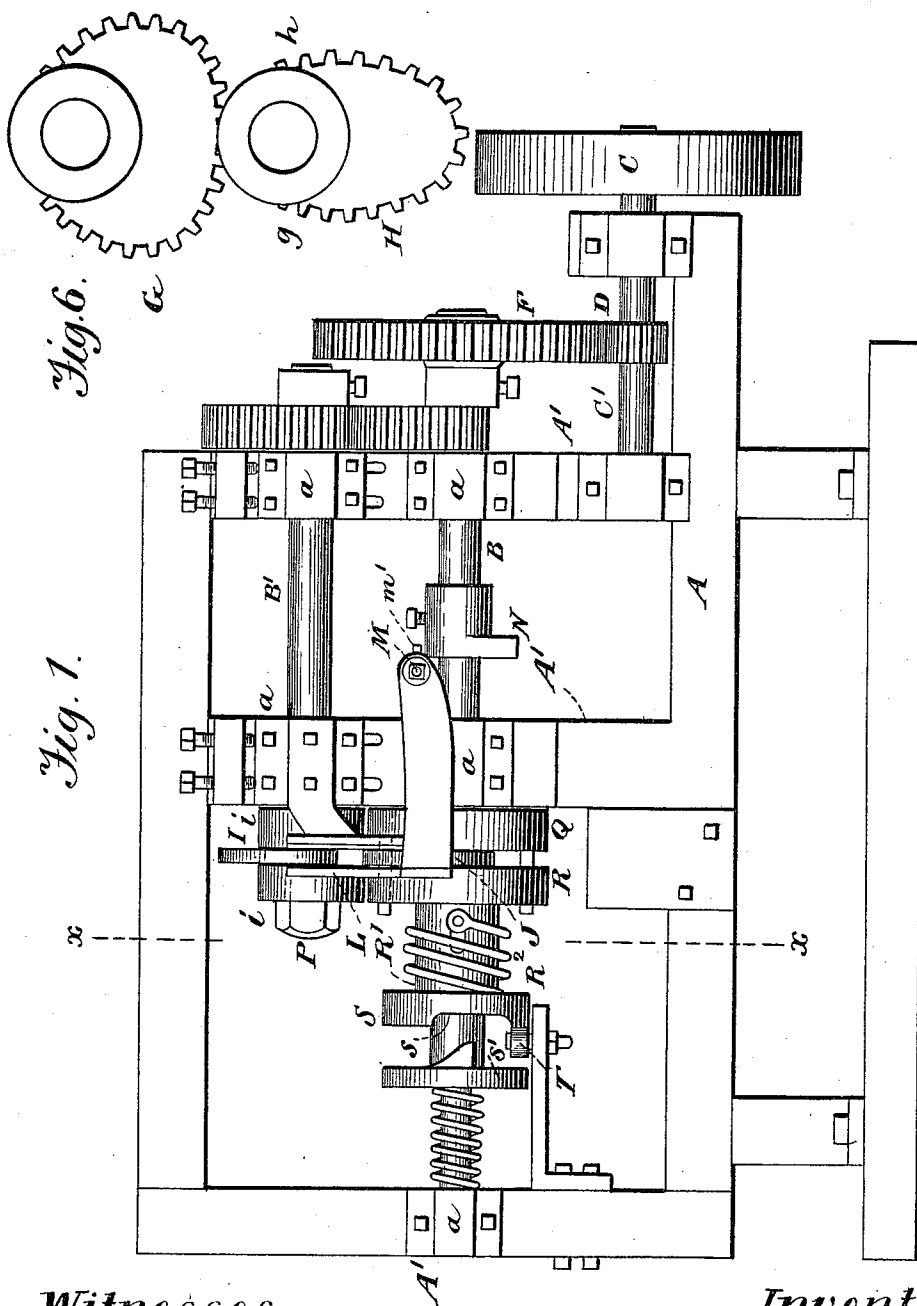
(No Model.)

2 Sheets—Sheet 1.

C. T. STARBUCK.
HORSESHOE MACHINE.

No. 461,598.

Patented Oct. 20, 1891.



Witnesses.
A. Ruppert,
C. B. Fowler.

Inventor.
Calvin T. Starbuck
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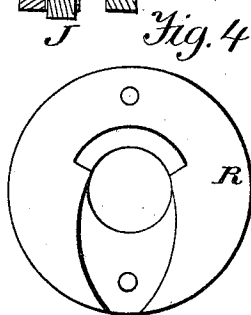
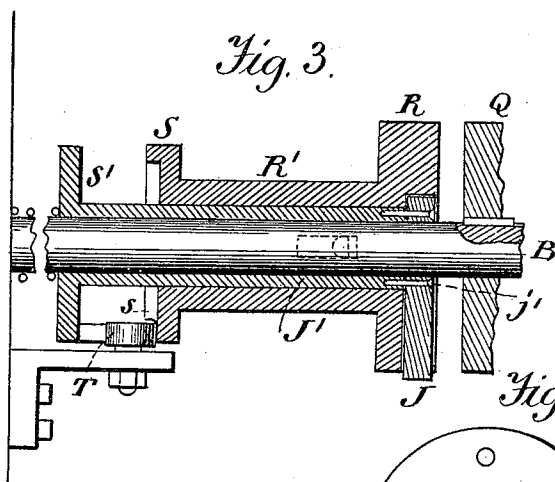
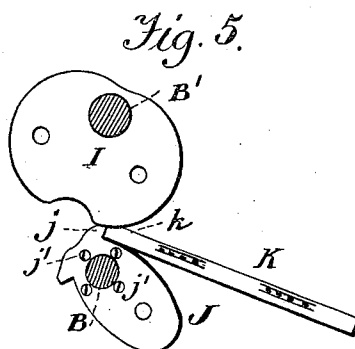
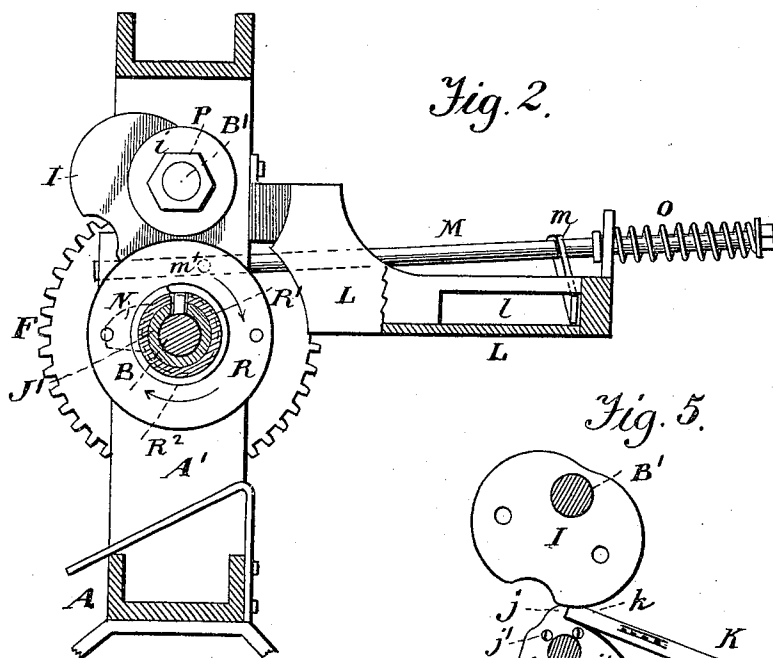
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UNITED STATES PATENT OFFICE.

CALVIN T. STARBUCK, OF AVONDALE, ALABAMA.

HORSESHOE-MACHINE.

SPECIFICATION forming part of Letters Patent No. 461,598, dated October 20, 1891.

Application filed December 13, 1890. Serial No. 374,605. (No model.)

To all whom it may concern:

Be it known that I, CALVIN T. STARBUCK, a citizen of the United States, residing at Avondale, in the county of Jefferson and State of Alabama, have invented certain new and useful Improvements in Horseshoe-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention relates to the manufacture of horseshoes by machinery; and it consists in the means employed for that purpose, as hereinafter described and claimed.

Figure 1 of the drawings is a front view of my horseshoe-machine; Fig. 2, a section on line *xx* of Fig. 1. Fig. 3 is a section of the former and connections; Fig. 4, an elevation of disk R; Fig. 5, detail view of swage, former, and horseshoe-blank; Fig. 6, elevation of eccentric gears.

In the drawings, A represents the frame, which may be elevated on legs or in any other way, and B B' two shafts in the same vertical plane. These shafts are arranged in bearings *a* in the three vertical posts A' of the frame. The upper shaft will preferably have its bearings made adjustable by any suitable means.

C is the drive-pulley on a short shaft C', which also carries the pinion D, meshing with the large spur-wheel F on the lower shaft B. The shaft B also carries the eccentric spur-wheel H, meshing with a corresponding spur-wheel G on the upper shaft B'. In the eccentric spur-wheel H the outline from *g* to *h* is similar in form to an ordinary horseshoe, while the remainder of the periphery is a true circle, through whose center passes the shaft.

On each of the shafts B B' is arranged one part of the means for shaping the shoe, that on the upper being the swage I and that on the lower being the former J.

K is a horseshoe-blank, with its end *k* placed against the shoulder *j* of the former and its body in the trough L, which has a slot *l* in the side thereof. In this slot moves a pusher-arm *m* of the rod M, which has a side cam or stud *m'*, moved forward by the revolving cam N on the shaft B, and a retracting-spring O. This mechanism automatically feeds the blank to

swage and former I J, which then bend and swage it into the desired shape, first swaging one heel, then bending it around the former, and finally swaging the other heel. The swage I is clamped on the upper shaft between two collars *i* by the shaft-nut P. The former J is made fast to the inner sleeve J' by the screws *j j*.

R is a loose disk connected by a sleeve R' with a disk S, so that all may be slid away from the disk Q by a spring R² whenever the notch *s* comes opposite to the friction-roll T, this occurring once during each revolution of the shafts. When the roll T drops into the notch *s* of the disk or collar S, the sleeve R', with disk R, recedes from the disk Q and from the shoe confined between disks Q R. At the same time the cam on the roll *s'* strikes the traveler or roll T, causing the inner sleeve J', with the former J, to recede from the disk Q to a distance equal to the backward movement of disk R and the thickness of the shoe. This causes the former J to be pulled entirely into the recess in disk R and out of the shoe, leaving nothing to hold the shoe.

It will be observed that the eccentric spur-wheel G on shaft B' is of the irregular form shown in Fig. 6 of the drawings.

Having thus described all that is necessary to a full understanding of my invention, what I claim as new, and desire to protect by Letters Patent, is—

1. In a horseshoe-machine, the combination, with the shafts B B', arranged in the same vertical plane, of the eccentric spur-wheel H, having the outline from *g* to *h* in the form of a horseshoe and the remainder a true circle, the wheel G of an irregular form, adapted to mesh with said wheel H, the swage I, and the former J, all substantially as shown and described.

2. In a horseshoe-machine, the combination, with the former J, having the shoulders *j j*, of the trough L, having a side slot *l*, the rod M, having arm *m* and stud *m'*, and the revolving cam N on shaft B', whereby the blank may be automatically fed to the former, as set forth.

3. In a horseshoe-machine, the combination, with the former J, connected to inner sleeve by screws, the disks R S, connected by

a sleeve R', and the spring R², the disk S being notched at s to work a friction-roll s', for the purpose set forth.

4. In a horseshoe-machine, the disk Q, connected to shaft B, with pin made fast to said disk and passing through the former J and disk R, said disk R being thus caused to rotate with shaft B, as and for the purpose described.

10 5. In a horseshoe-machine, the combination of the following instrumentalities: the shafts B B', carrying eccentric spur-wheels

G H and shoe-shapers I J, the disks Q R, the notched disk S, connected by the sleeve R' with the disk R, the friction-roll S', the spring N, and the automatic feed mechanism, all arranged to operate together, substantially as shown and described. 15

In testimony whereof I hereto affix my signature in presence of two witnesses.

CALVIN T. STARBUCK.

Witnesses:

ALFRED HERLICH,
JNO. S. KENNEDY.