2 Sheets—Sheet 1.

J. H. SNYDER.

Machine for Bending Horseshoe Blanks.

No. 208,430. **Patented Sept. 24, 1878.**

Fig. 1.

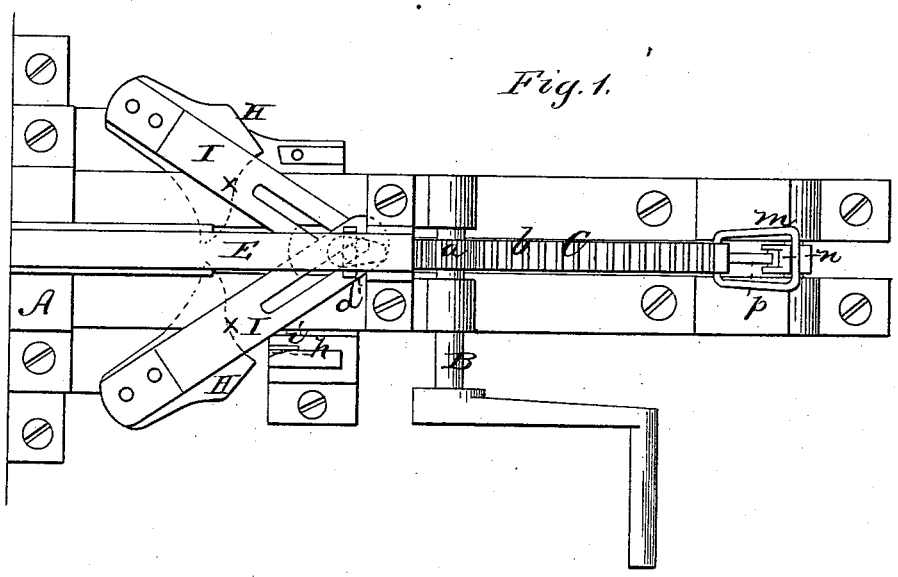


Fig. 2.

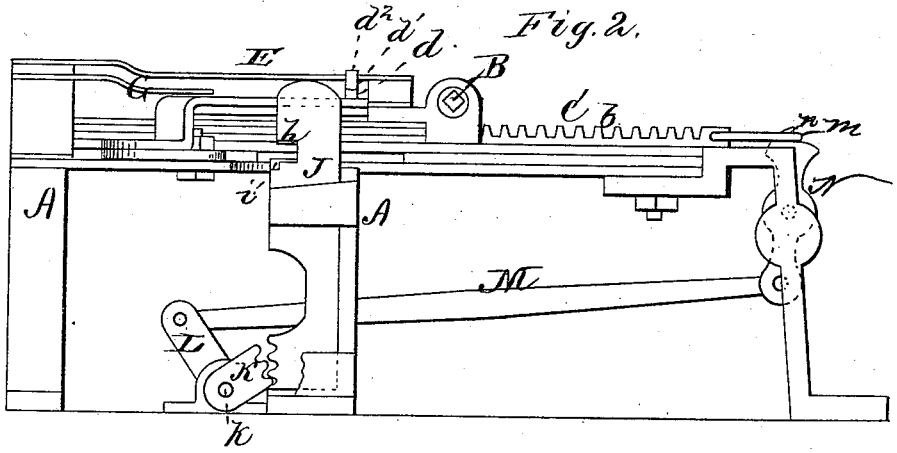
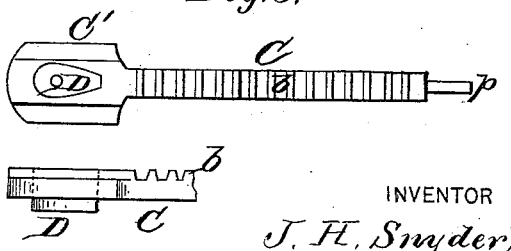


Fig. 3.



WITNESSES

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2 Sheets—Sheet 2.

J. H. SNYDER.

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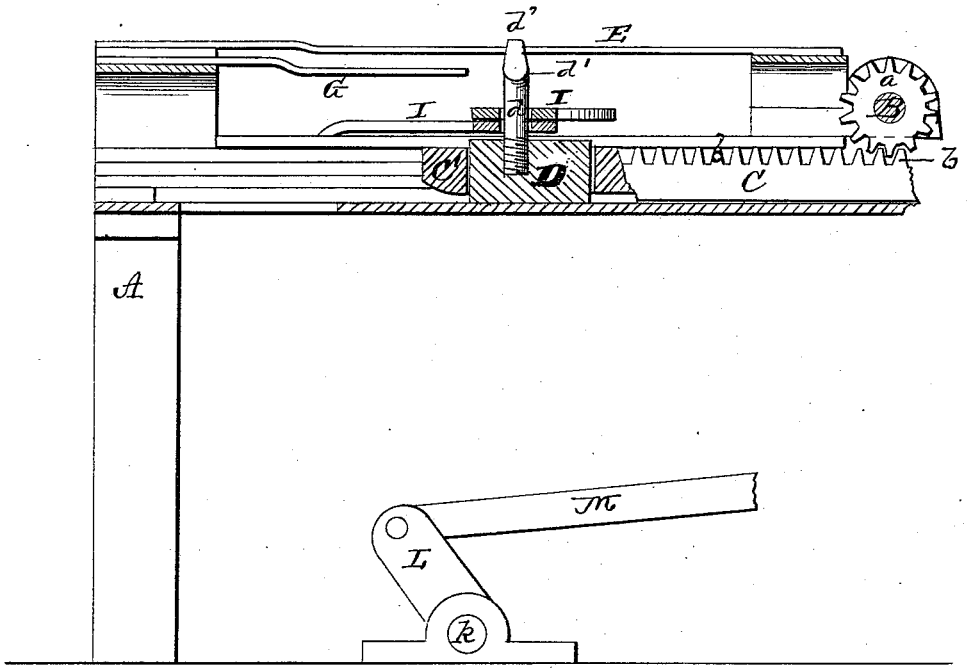
Fig. 4.



WITNESSES

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UNITED STATES PATENT OFFICE.

JOHN H. SNYDER, OF RICHMOND, VIRGINIA.

IMPROVEMENT IN MACHINES FOR BENDING HORSESHOE-BLANKS.

Specification forming part of Letters Patent No. **208,430**, dated September 24, 1878; application filed February 12, 1878.

To all whom it may concern:

Be it known that I, JOHN H. SNYDER, of Richmond, in the county of Henrico, and in the State of Virginia, have invented certain new and useful Improvements in Horseshoe-Benders; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

The nature of my invention consists in the construction and arrangement of a machine for bending horseshoe-blanks, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawings, in which—

Figure 1 is a plan view, and Fig. 2 a side elevation, of my invention. Fig. 3 is a detailed view of parts thereof. Fig. 4 is a longitudinal section of one end of the machine.

A represents the frame-work of my machine, constructed in any suitable manner to receive the various working parts. B is the driving-shaft, which is to move a slide, C, back and forth. This may be accomplished by providing said shaft with a pinion, *a*, to work in a rack, *b*, on the slide, and the shaft then operated by suitable means, so as to turn first in one direction and then in the other; or the shaft may be provided with a crank, and said crank connected by a pitman with the slide, when a continuous rotary motion of the shaft will give a reciprocating motion to the slide C. The front end of the slide C forms a head or plunger, C′, in the center of which is the former D, for the blank to be bent around. This former is movable up and down in the head or plunger C′, and when in its normal position it projects sufficiently far below the said head to have the blank bent around the former below the head.

In the top of the former D is fastened a post, *d*, having a cross-bar, d^1, at its upper end, with an upwardly-projecting lug, d^2, at each end of said cross-bar. These lugs d^2 form guides on the sides of a bar, E, to prevent any lateral movement of the head and former.

While the slide is completing its forward movement a forked inclined bar, G, fastened at the front end of the machine, and into which the post *d* passes, lifts the former D until its lower surface is flush with the lower surface of the head, thus releasing the blank which has been bent around the former, and allowing the same to fall down below the machine. During the backward movement of the slide C the post *d* passes out of the forked bar G, and the former D descends of its own weight, so as to be ready for the next blank.

The blank is bent around the former by means of two benders, H H, one on each side, pivoted to the frame A. These benders are curved substantially as shown by the dotted lines *x x* in Fig. 1, and are provided with longitudinally-slotted levers I I, and through the slots in these levers passes the post *d*, so that the forward and backward movement of the slide will operate the benders at the proper times to bend the blank around the former, and open them again for the next blank.

The bar from which the blanks are cut is rolled in a machine already patented to me, and such bar is fed into the bending-machine under a vertically-operating cutter or shear blade, *h*, against a stationary blade, *i*, the blade *h* being secured to a bar, J, having cogs on its side at the lower end. Into these cogs works a cogged arm, K, attached to a rocking shaft, *k*. This shaft is provided with an arm, L, connected, by a rod or bar, M, with the lower end of a lever, N, pivoted in the rear end of the frame A. The upper end of this lever is formed with a hook, *n*, beveled on its front side, as shown, for a bail, *m*, pivoted at the rear end of the slide C, to slide over and catch on said hook. At the rear end of the slide C is a rearwardly-projecting pin, *p*, as shown.

The operation of this part of my invention is as follows: As the slide C completes its backward stroke the pin *p* strikes the upper end of the lever N and turns the same, so that by the connections, as described, the bar J, with the blade *h*, is raised. At the same time the bail *m* passes over and catches on the hook *n*. When the slide C commences its forward movement the bail *m* pulls the lever N, so that

the blade *h* will cut off the blank in front of the plunger, so that the blank will just be ready to be bent when the plunger reaches the blank. The blank is then bent, as above described, and the bail *m* slides over the hook *n* as soon as the cutting is completed.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the slide C, with head C′, the former D, with T-rod *d*, and the pivoted benders H, with slotted arms I, passing over the rod *d*, substantially as and for the purposes set forth.

2. The combination of the slide C, with pin *p* and link *m*, lever N, with hook *n*, rod M, shaft *k*, with arm L and segment K, and the cogged bar J, with cutter *h*, all constructed substantially as and for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 30th day of August, 1877.

JOHN H. SNYDER.

Witnesses:
FRANK GALT,
J. M. MASON.