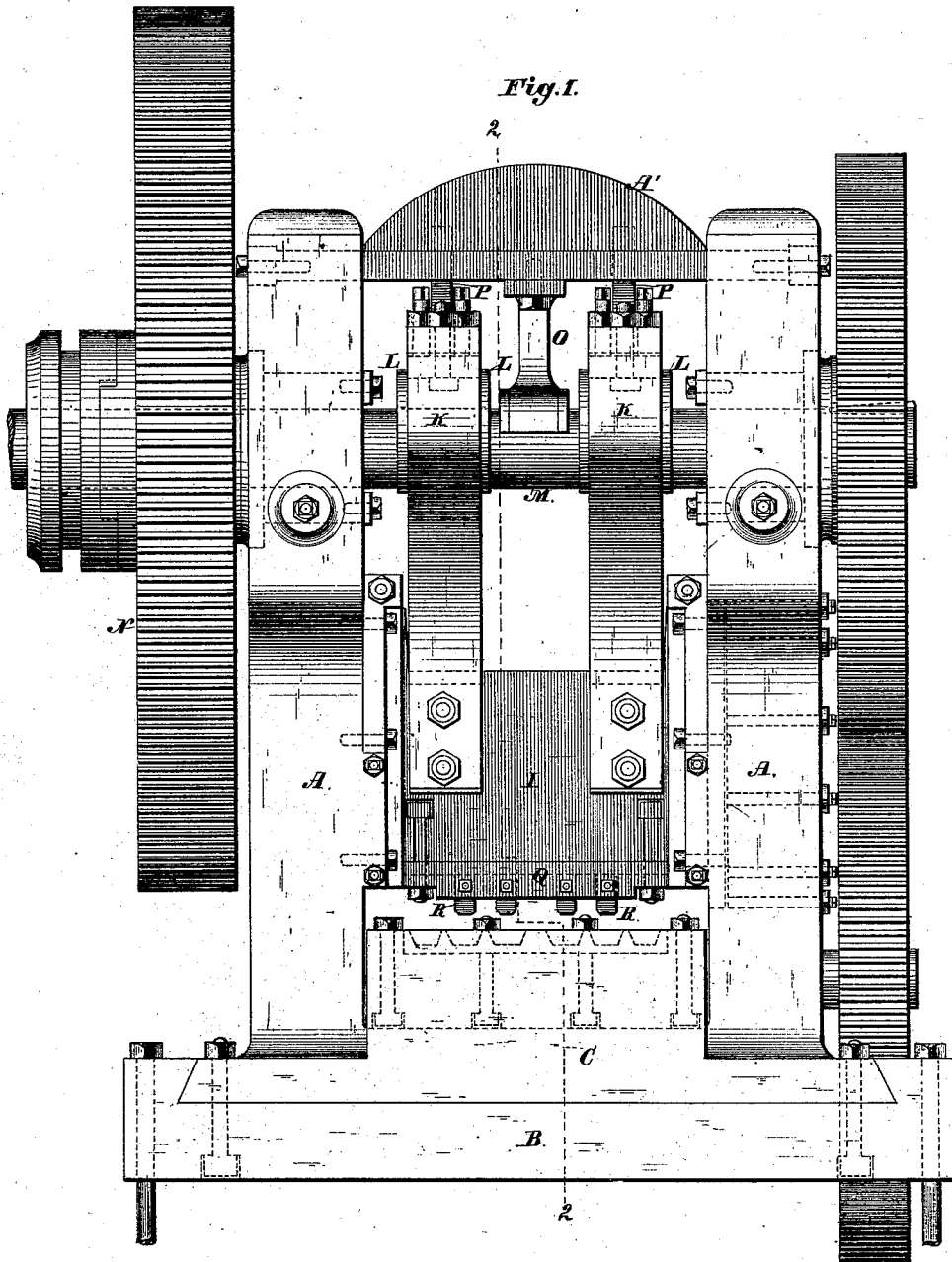


J. R. WILLIAMS.  
Creasing-Machine for Horseshoe-Blanks.

No. 225,253.

Patented Mar. 9, 1880.



Attest:  
*J. Henry Kaiser.*  
*Walter Allen*

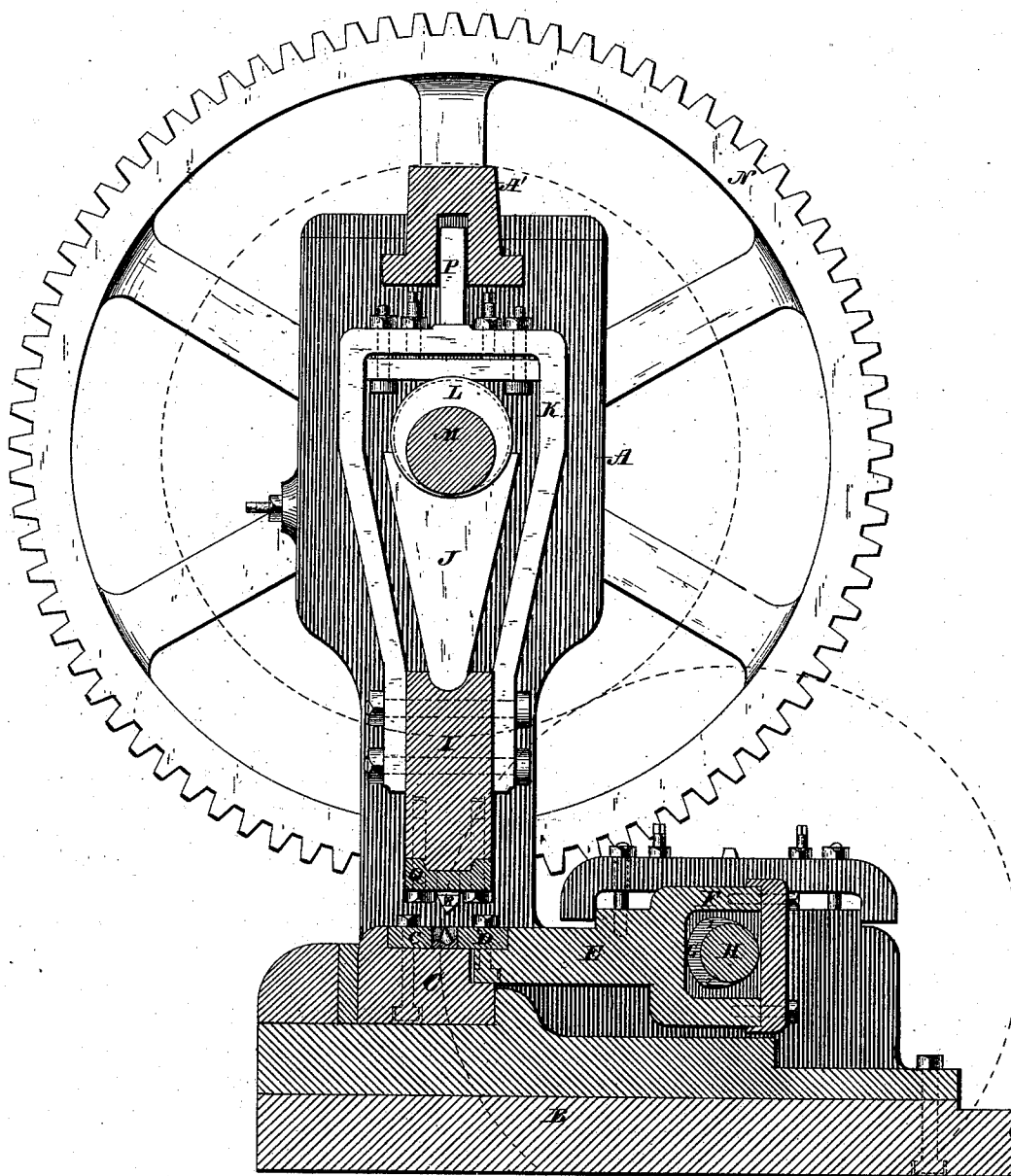
Inventor:  
*John R. Williams.*  
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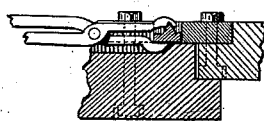
Fig. 2.



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Fig. 2<sup>a</sup>



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Fig. 3.

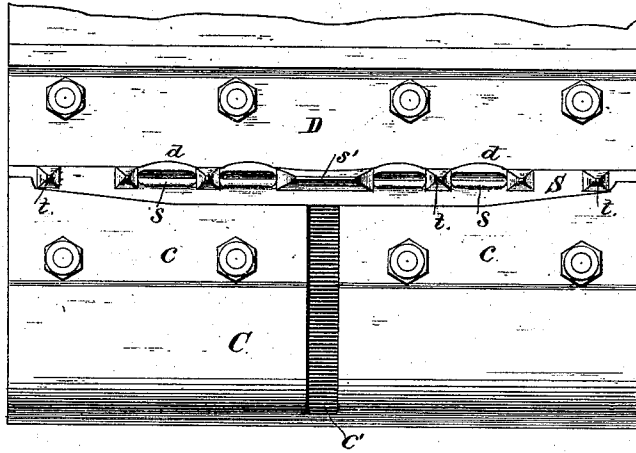


Fig. 4.

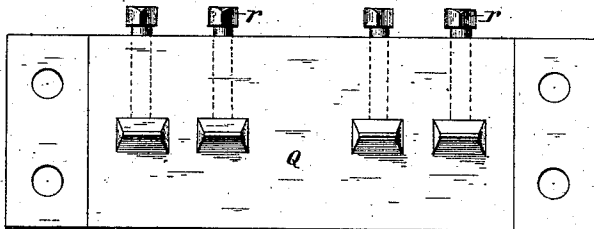


Fig. 6.

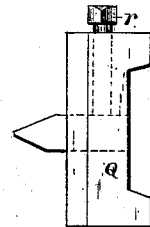


Fig. 5.

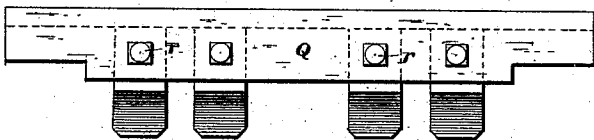
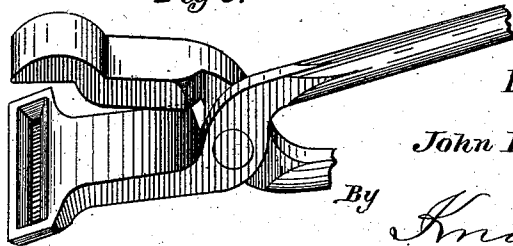


Fig. 7.



Fig. 8.



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# UNITED STATES PATENT OFFICE.

JOHN R. WILLIAMS, OF JOHNSTOWN, PENNSYLVANIA, ASSIGNOR TO  
CAMBRIA IRON COMPANY.

## CREASING-MACHINE FOR HORSESHOE-BLANKS.

SPECIFICATION forming part of Letters Patent No. 225,253, dated March 9, 1880.

Application filed February 26, 1879.

To all whom it may concern:

Be it known that I, JOHN R. WILLIAMS, of Johnstown, in the county of Cambria and State of Pennsylvania, have invented a new and useful Improvement in Creasing-Machines for Horseshoe-Blanks, of which the following is a specification.

My machine is constructed with a cross-head working between vertical guides and carrying creasing-punches, and with a bed-die or clamp, within which a horseshoe-blank is fastened, the clamp serving also as a swage to impart a horizontal taper to the heel portions of the blank, and at the same time expand the metal vertically so as to thicken the heel extremities, a moving die having depressions or pockets in its working-face to receive the metal displaced in forming the nail-crease, said bed-die having a gage-groove adapted to receive a pair of tongs having a lip to fit over the face of the blank, and a pocket to receive the toe-calk.

In order that my invention may be fully understood, I will proceed to describe it with reference to the accompanying drawings, in which—

Figure 1 is a front view of the machine. Fig. 2 is a vertical longitudinal section on the line 2 2, Fig. 1. Fig. 2<sup>a</sup> is a broken sectional view showing the tongs in the act of gripping a blank in the die. Fig. 3 is a plan of the bed-die or clamp, showing a blank in position. Fig. 4 is a view of the under face of the punch-stock with creasing-punches applied. Fig. 5 is a front view of same. Fig. 6 is an end view thereof. Fig. 7 is a front and side view of one of the punches. Fig. 8 is a perspective view of the head of the tongs, showing the pocket to receive the toe-calk.

A A represent standards rising from the bed B, supporting a stationary die-block, C, to which are bolted forming-dies *c c*.

The frame is constructed to form guides for a horizontally-sliding compressing-die, D, secured to a moving die-holder, E, to which is attached a yoke, F, encircling a cam, G, carried by a shaft, H.

The cam is constructed, as shown, with a concentric portion from 1 to 2, extending ninety

degrees, (more or less,) for the purpose of causing the moving die D to rest or dwell when in its foremost position, thus compressing and securely holding the blank while the creasing-punches descend, as hereinafter described.

The shaping-dies *c c* are changeable to suit the size and style of blank on which they are to operate, and are inclined forward and curved at their outer ends, so as to impart a horizontal taper, and consequently an increasing vertical thickness, to the blank toward its heel extremities, and to round the corners which will come on the inside when the blank is bent into the form of a shoe. A space, *c'*, between the inner extremities of the dies *c c*, and a corresponding groove in the die-holder C, receive the lower bit of the tongs and form a gage in setting the blank in the dies, the upper bit of the tongs being made with a suitable lip to fit over the face of the blank S, and with a pocket to receive the toe-calk *s'* thereof.

The moving die D is likewise changeable to suit different sizes and forms of blanks. In its face are formed pockets *d d*, to receive the metal displaced in forming the nail-creases *s s* in the blank S. These protuberances on the blank are subsequently removed by a machine which I make the subject of a separate application for Letters Patent. The center of the working-face of the die D is formed with a slight protuberance to press the toe-calk back sufficiently to keep it out of reach of the saws employed in trimming off the protuberances.

Between the standards A A a cross-head, I, slides vertically, being operated by thrust-blocks J and yokes K, the former abutting against and the latter encircling cams L L L on a horizontal shaft, M, which is driven by a gear-wheel, N, operated by a pinion on a pulley-shaft, or by other suitable means.

A' represents a strong cross-bar, constituting the upper part of the frame, from the center of which depends a strut, O, forming a bearing for the center of the shaft M. P P are studs extending upward from the upper cross-pieces of the yokes K, and working through the upper beam, A', of the frame in order to guide said yokes in a vertical path. The punch-stock Q is bolted to the face of

the cross-head I, and carries punches R R, of suitable shape to form the nail-creases in the surface of the blank. The form of the creasing-punches, in side view, is shown in Fig. 2. 5 The vertical section, Fig. 2, and plan, Fig. 3, both show a blank, S, in position in the jaws of the bed-die. The nail-creases are shown at s s. Calks produced after the manner described in my patent No. 182,732, granted the 10 26th September, 1876, are shown at t t; but these have no connection with my present invention.

The machine or dies forming the subject of this application are adapted for forming nail- 15 creases in horseshoe-blanks of any kind.

The creasing-punches are formed, as shown in Fig. 7, with the face  $r'$ , which makes the front wall of the crease as nearly vertical as practicable, the other face,  $r^2$ , which is presented toward the front of the machine and 20 rear of the blank, being inclined as much as necessary for strength. The object of this difference in form is to make the front wall as nearly vertical as can be done successfully 25 with punching-dies. The said outer walls are pressed over by the provision of protuberances in the face of the finishing-dies, as I have de-

scribed in another application for Letters Patent, in order to give an inward inclination to the nail-creases, especially at the front of the shoe. 30

The creasing-punches are of chilled iron, and are fixed in their stocks by set-screws  $r$ .

Having thus described my invention, the following is what I claim as new and desire 35 to secure by Letters Patent:

1. The moving die D, constructed with pockets or depressions  $d d$  in its working-face, to receive the metal displaced in forming the nail-creases, as described. 40

2. The combination of the dies  $c c$  and D, the latter provided with pockets  $d d$ , and the punches R, constructed and operated substantially as and for the purposes set forth.

3. Jointly, the gage-groove  $c'$  in the dies  $c c$ , 45 and the tongs described, having lips to fit over the face of the blank, and with a pocket to receive the toe-calk  $s'$ , substantially as set forth.

JOHN R. WILLIAMS.

Witnesses:

OCTAVIUS KNIGHT,  
WALTER ALLEN.