(No Model.)

W. N. BRICKEY.

MACHINE FOR PUNCHING AND FORMING CALKS ON HORSESHOES.

No. 494,623. Patented Apr. 4, 1893.

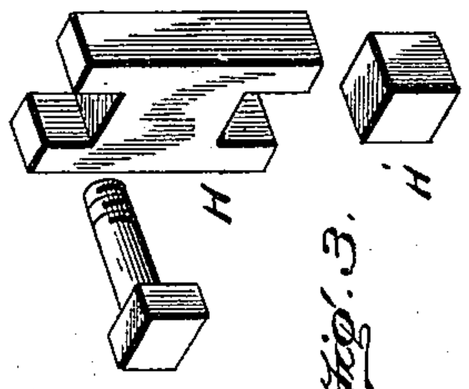

Fig. 3.

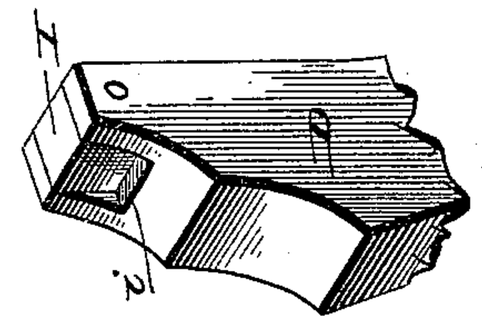

Fig. 2.

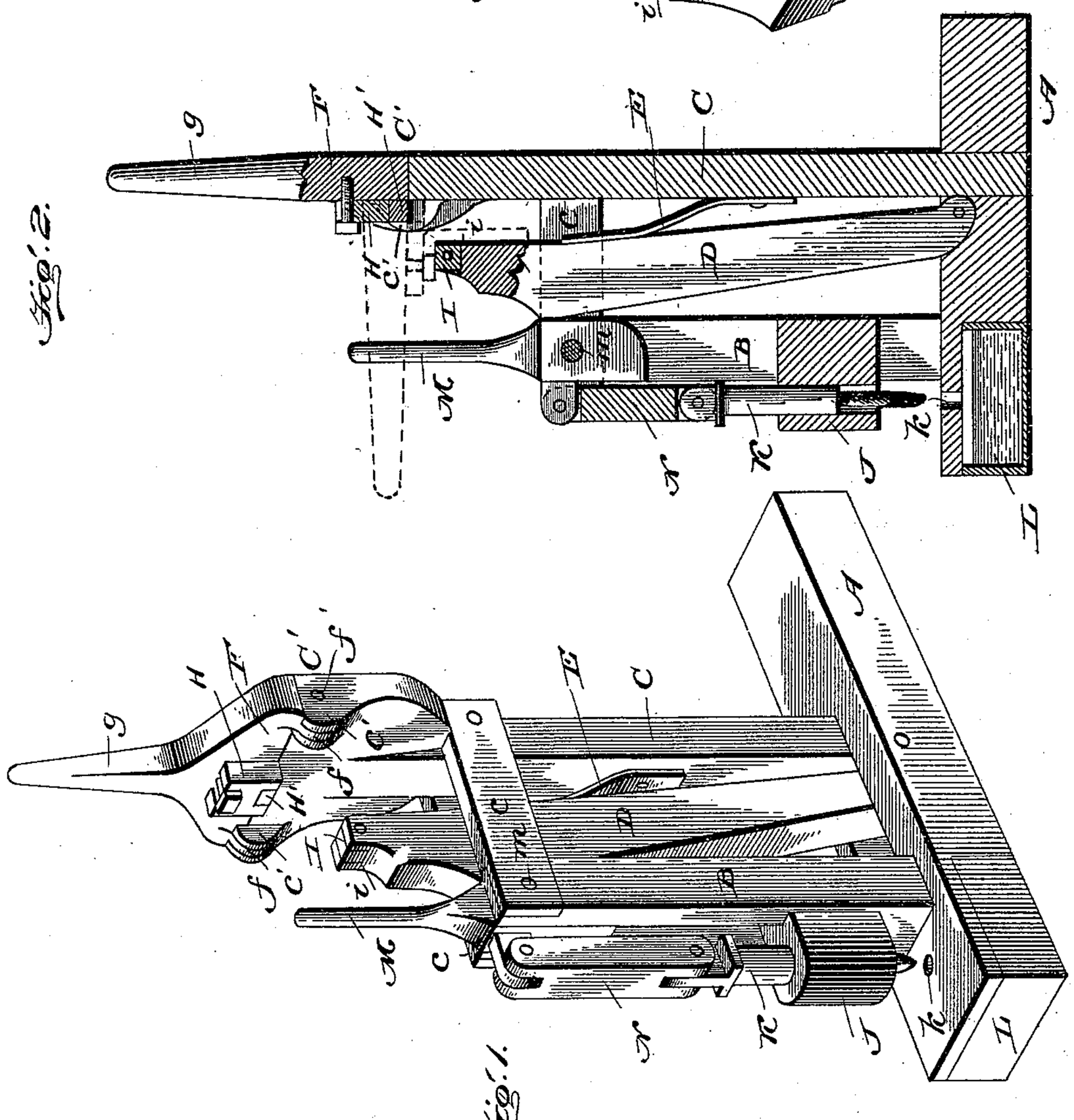

Fig. 1.

Witnesses:
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UNITED STATES PATENT OFFICE.

WILLIAM NELSON BRICKEY, OF MORRILLTON, ARKANSAS.

MACHINE FOR PUNCHING AND FORMING CALKS ON HORSESHOES.

SPECIFICATION forming part of Letters Patent No. 494,623, dated April 4, 1893.

Application filed October 20, 1892. Serial No. 449,501. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM NELSON BRICKEY, a citizen of the United States, residing at Morrillton, in the county of Conway and State of Arkansas, have invented certain new and useful Improvements in Machines for Punching and Forming Calks on Horseshoes; and I do 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My present invention relates to a novel machine or implement by which calks can be formed on horse shoes and the holes punched therein to receive the nails by which the shoe is fastened on the animal's foot.

The object of my present improvement is, first, to provide simple and effective means whereby the calks can be quickly, easily and accurately formed on the horse shoe; second to quickly punch or force the nail-holes in the shoe and without requiring the shoe to be reheated after the calks have been formed and prior to the punching of the holes; thirdly to prevent the punch-die from becoming over heated by the provision of means which serves to cool the die each time it passes through the hot metal of the shoe; and finally to simplify the construction and render the same efficient and reliable in operation.

With these and other ends in view, the first part of my invention consists in the combination with a vertical upright or standard, of a pivoted clamp-bar which is arranged alongside of the standard and has a die or anvil mounted in its upper end, a die-carrying head or plate pivoted to the fixed standard and adapted to carry a die in a holder which operates to bend the metal of the shoe to form a calk thereon, and a lever fulcrumed to a fixed support and bearing against the pivoted clamp and anvil bar to hold the latter in position to clamp the work between itself and the fixed standard.

The second part of my invention consists in the novel means for punching the holes in the shoe and keeping the punch-die cool, which means consists of a reciprocating die guided in a fixed guide on the frame, the lever, a link pivoted at its ends to the die and the lever, and a tank adapted to contain water or other liquid and arranged in the bed of the machine to receive the punch die after the same passes through the hot metal of the shoe, whereby the reciprocating die is immersed in water or liquid at each stroke thereof. And finally the invention consists in the peculiar construction and arrangement of parts which will be hereinafter fully described and pointed out in the claims.

The invention is fully illustrated in the accompanying drawings, forming a part of this specification, and in which:

Figure 1 is a perspective view of my improved calk-bending and punching implement or machine. Fig. 2 is a vertical sectional view thereof. Fig. 3 is a detail enlarged view of a part of the calk-forming devices, more clearly showing the form thereof on an enlarged scale.

Like letters of reference denote corresponding parts in the several figures of the drawings, referring to which:—

A designates the bed of my improved calk-forming and punching machine especially adapted for use by blacksmiths and others in manipulating shoe-blanks to be fitted to the feet of horses and other animals. On this bed is erected the supporting frame B, and the vertical standard or upright C, which parts are rigidly and firmly secured to the bed and connected together by the horizontal struts or bars *c*, *c*, which also serve as the guides for the free end of the clamp and anvil bar D. This bar D is arranged in a vertical position alongside of and close to the fixed upright or standard C, and the upper end of this anvil and clamp bar is fitted and guided between the horizontal bars *c c* while the lower end of said vertical bar D is pivoted to the bed A of the machine. The upper free end of the vertical pivoted bar D is adapted to bear or impinge against the front face of the vertical fixed standard C, in order to hold or clamp the work between said bar D and the standard C; and normally this free end of the vertical pivoted bar is forced or thrown away from the fixed standard C by means of the spring E which is interposed between the bar and standard or otherwise connected in any

suitable manner to accomplish the purpose. The upper end of the vertical standard C is enlarged to form a head C′ which is of greater width than the lower part of the standard, and at the sides of this head are provided ears *c′* between which are fitted corresponding ears *f* on the die-carrying plate F, the lugs *c′*, *f*, being pivotally connected together by means of transverse pintles *f′* to adapt the die-carrying plate to be turned at an angle to the length of the standard C or to be raised in line therewith. This bending pivoted plate F has its upper end provided with a handle *g* by which the plate can be readily turned, and on the lower central part of the plate is bolted or otherwise secured a die holder H, having its lower end provided with a notch or socket adapted to receive a die H′ of the proper size and shape to form the calk on a shoe. The upper end of the vertical pivoted bar D is forked or recessed at *i* to enable the same to receive a corresponding die I, and between these dies H′, I, the metal is bent to form the calk on the shoe.

The dies may be of different sizes to adapt them to bend the calks on shoes of different sizes, and any desired set of dies can be readily fitted in the sockets of the die holder and the end of the clamp and anvil bar D.

On the upright fixed frame B of the machine is rigidly secured a vertical hollow guide J, and through the passage in this guide works a reciprocating punching die K, the lower end of which is adapted to pass through a perforation *k* in the bed A.

Immediately below the guide and the reciprocating punch die, I provide a liquid holding tank L which is suitably formed or secured in the bed A of the machine, and when the reciprocating punch passes through the perforation *k* it is immersed directly in the liquid contained in the tank L so that the punch is cooled by the direct application of water thereto after each time it passes through the heated metal.

The reciprocating punch is operated by means of a lever M which is fulcrumed at an intermediate point of its length to the frame B of the machine, as at *m*, and to this lever is pivotally connected one end of a link N which has its other end connected directly to the punch, as shown. This lever M is so arranged that its inner end is adapted to bear directly on the vertical pivoted bar D in order to force the same inward to hold the work between its free end and the fixed standard C; and this lever M thus serves a two-fold purpose, *i. e.*, to reciprocate the punch and to force the pivoted bar into position to hold the work between said bar and the standard.

The operation of my invention may be described as follows:—The lever being raised, the spring will force the free end of the pivoted bar D away from the head of the standard, and after the proper dies have been fitted in the bar and the holder on the pivoted plate, and the shoe-blank heated, the latter is fitted between the pivoted bar and the fixed standard so that one end thereof lies between the two dies. The lever M is now operated to force the end of the bar tightly against the shoe-blank, and the pivoted plate now turned at right angles to the standard so as to bend the end of the shoe blank and form the calk on the same. The lever is then operated to release the pivoted bar and blank, the latter turned so that its other end is between the dies, the lever again operated to clamp the pivoted bar on the blank, and finally the pivoted die-plate is turned to form the other calk. The shoe-blank is now removed and placed in position beneath the punch, and the latter is operated by means of the lever so as to punch the holes in the shoe-blank to receive the nails. At each operation of the punch, it enters the water in the tank and is thus kept in a cool condition.

By means of this machine or implement the shoe-blank can have its calks formed thereon and the holes punched therein without reheating the blank, which is a very great advantage as it enables the workman to quickly finish the shoe.

The device is simple and durable in construction, reliable and effective in service, and cheap of manufacture.

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

1. A shoe-calk bending machine comprising a base or support, a fixed standard, a vertical pivoted bar carrying a die at its free end, and having the lower end pivoted in the base, a bending plate pivoted on the standard and provided with a die holder, a lever for moving the pivoted bar to hold the work between said bar and the standard, and a spring engaging the pivoted bar to return it to its normal position, as and for the purpose described.

2. A shoe calk bending machine comprising a vertical fixed standard, the bending plate pivoted to the upper end of the standard, a vertical bar alongside of the standard, having its lower end pivoted to the bed and its upper end adapted to carry a die, a die holder carried by the pivoted bending plate, and a lever operating against the free end of the pivoted vertical bar, as and for the purpose described.

3. The combination with the base or bed, the standard thereon, and the fixed guide, of a reciprocating punch fitted in the guide, a lever fulcrumed on a suitable support, a link intermediate of the lever and the punch, and the tank below the punch and adapted to contain a liquid in which the punch is immersed after it passes through the heated metal, as and for the purpose described.

4. A calk-bending and punching machine comprising a suitable bed containing a liquid-holding receptacle, a standard erected on

the bed, a vertical bar pivoted to the bed and adapted to carry a die at its upper end, a pivoted bending plate on the standard and provided with a die holder, a reciprocating punch guided above the tank, and a lever linked to the punch and adapted to bear, at its inner end, against the pivoted vertical bar, as and for the purpose described.

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

WILLIAM NELSON BRICKEY.

Witnesses:
R. A. BAIRD,
GEO. M. RAPIER.