

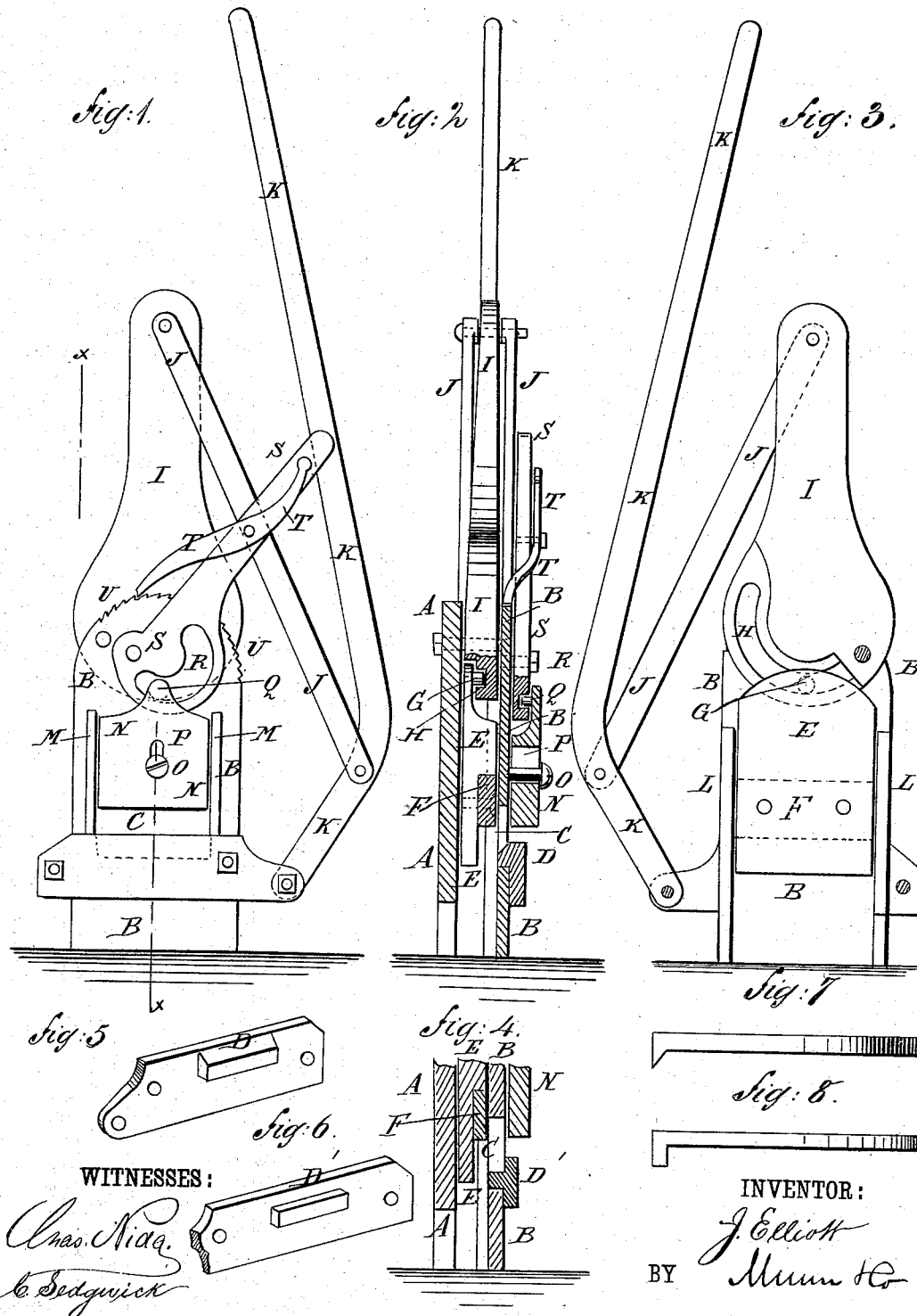
(No Model.)

J. ELLIOTT.

MACHINE FOR FORMING AND SHARPENING HORSESHOE CALKS.

No. 263,880.

Patented Sept. 5, 1882.



# UNITED STATES PATENT OFFICE.

JAMES ELLIOTT, OF JEFFERSON, WISCONSIN.

## MACHINE FOR FORMING AND SHARPENING HORSESHOE-CALKS.

SPECIFICATION forming part of Letters Patent No. 263,880, dated September 5, 1882.

Application filed April 22, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES ELLIOTT, of Jefferson, in the county of Jefferson and State of Wisconsin, have invented a new and useful Improvement in Machines for Forming and Sharpening Horseshoe-Calks, of which the following is a full, clear, and exact description.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a front elevation of my improvement. Fig. 2 is a sectional edge elevation of the same, taken through the line *xx*, Fig. 1. Fig. 3 is a rear elevation of the same, the back plate being removed. Fig. 4 is a sectional edge elevation of the lower part of the same, showing the die for forming dull calks. Fig. 5 is a perspective view of the die for forming sharp calks. Fig. 6 is a perspective view of the die for forming dull calks. Fig. 7 represents a horseshoe with a sharp calk. Fig. 8 represents a horseshoe with a dull calk.

The object of this invention is to facilitate the forming of the heel-calks and the sharpening of the heel and toe calks of horseshoes.

The invention consists in constructing a machine for forming and sharpening horseshoe-calks with two upright plates, between which slides a plate carrying a knife and operated by a cam-lever, to which power is applied by means of a hand-lever and connecting-bars. The front plate of the machine is provided with a sliding plate for clamping a shoe against a die secured in a slot in the said front plate, the said clamping-plate being operated by a cam-lever and held in place by a lever-pawl engaging with ratchet-teeth upon the upper edge of the said front plate, as will be herein- after fully described.

A is the back plate, and B is the front plate, of the machine, which plates are secured to each other at a suitable distance apart by bolts, and are designed to be bolted to a suitable supporting-frame.

In the lower part of the front plate, B, is formed a slot, C, to receive the end of a horseshoe, and the die D, upon which the calks are formed. The die D is made with a bevel upon the upper part of the inner side, as shown

in Figs. 2 and 5, when sharp or winter calks are to be formed. When dull or summer calks are to be formed the die D is replaced by a die, D', which is made with a rabbet, as shown in Figs. 4 and 6.

E is a plate which fits into and slides up and down in the space between the plates A B. The forward side of the lower part of the sliding plate E is rabbeted, and in the said rabbets is secured, by one or more bolts or rivets, the knife F, by which the calks are formed and the superfluous metal is sheared off. The knife F is made narrower than the rabbet in which it is placed, so that the lower part of the plate E will project below the said knife, to serve as a gage when inserting the heels of a horseshoe.

The forward side of the upper end of the knife-holding plate E is recessed or made thin, and to it is attached a pin, G, which projects into a curved groove, H, in the rear side of the widened lower end of the lever I. The lever I is pivoted at one side of the center of its lower end, to and between the plates A B, so that the groove H will act as a cam upon the pin G, to raise and lower the knife-holding plate E.

To the upper end of the cam-lever I are pivoted the upper ends of connecting-bars J, the lower ends of which are pivoted to the lever K at a little distance from its lower end. The lower end of the lever K is hinged to and between the projecting end of the die D and the end of a corresponding arm formed upon or attached to the back plate, A.

The knife-holding plate E is kept in place while moving up and down by ribs L or other guides, formed upon or attached to the inner side of one of the plates A B.

Upon the outer side of the front plate, B, are formed or to it are attached ribs M or other guides, between which the plate N moves up and down. The plate N is kept in place against the outer side of the front plate, B, by a bolt or screw, O, attached to the said plate B, and which passes through a vertical slot, P, in the said plate N.

To the inner side of the upper end of the plate N is attached, or upon it is formed, a pin, Q, which enters a curved groove, R, in the lower end of the lever S at one side of its cen-

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ter. The lever S at the other side of the center of its lower end is pivoted to the front plate, B, so that the curved groove R will act as a cam upon the pin Q, to lower and raise the plate N. With this construction, by operating the lever S the plate N will be forced downward to clamp the horseshoe against the upper side of the die D while the calks are being formed. The lever S is held in any position into which it may be adjusted by a lever-pawl, T, which engages with ratchet-teeth U, formed upon the upper edge of the front plate, B.

In using the machine the free ends of the levers K S are raised to raise the knife-holding plate E and the clamping-plate N. The heel of a horseshoe is then inserted through the slot C, and the lever S is operated to force down the plate N and clamp the shoe in place. The lever K is then operated to force the plate E downward and cause the knife F to bend the heel of the shoe downward against the die to form the calk and at the same time cut off the superfluous metal.

In sharpening toe-calks the calk is welded to the shoe, and the toe of the shoe is inserted in the slot C and clamped by the plate N. The knife-holding plate E is then forced down to cause the knife F to force the calk against the bevel of the die D, to give it form and then cut off the superfluous metal.

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

1. A machine for forming and sharpening

horseshoe-calks, constructed substantially as herein shown and described, and consisting of the plates A B, the die D, the plate E, having knife F and its operating levers and bars, and the clamping-plate N and its operating lever and holding-pawl, as set forth.

2. In a machine for forming and sharpening horseshoe-calks, the combination, with the front plate, B, having slot C and the die D, of the clamping-plate N, having pin Q, and the lever S, having cam-slot R, substantially as herein shown and described, whereby the horseshoe can be firmly held while being operated upon, as set forth.

3. In a machine for forming and sharpening horseshoe-calks, the combination, with the clamping-plate N and its operating-lever S, and the front plate, B, having ratchet-teeth U, of the lever-pawl T, substantially as herein shown and described, whereby the said clamping-plate will be locked in place, as set forth.

4. In a machine for forming and sharpening horseshoe-calks, the combination, with the plates A B and the die D, of the sliding plate E, carrying knife F and pin G of the lever I, having cam-groove H, the connecting-bars J, and operating-lever K, substantially as herein shown and described, whereby the said plate and knife can be readily forced down to operate upon the shoe, as set forth.

JAMES E. LIOTT.

Witnesses:

FRANK A. LANE,  
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