

L. CARPENTER.
HORSESHOE CLIPPING AND BENDING MACHINE.
APPLICATION FILED OCT. 31, 1910.

1,014,451.

Patented Jan. 9, 1912.
2 SHEETS—SHEET 1.

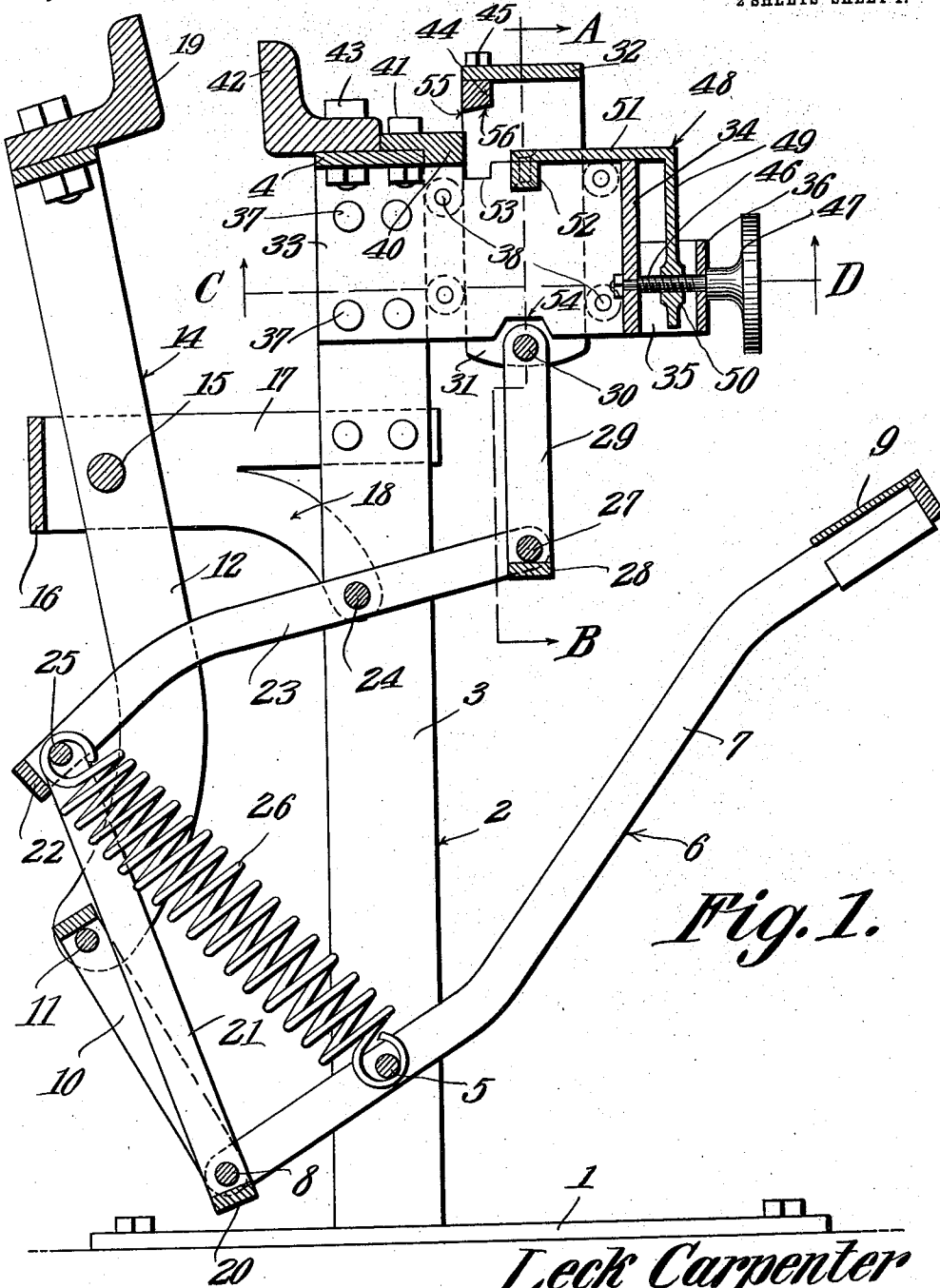


Fig. 1.

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Inventor,

Witnesses

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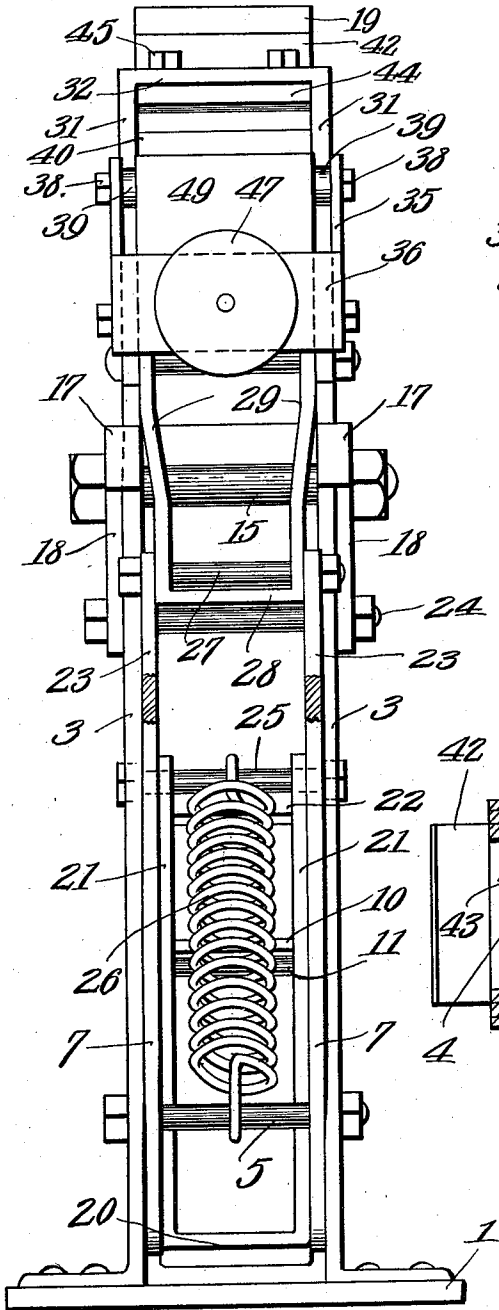


Fig. 2.

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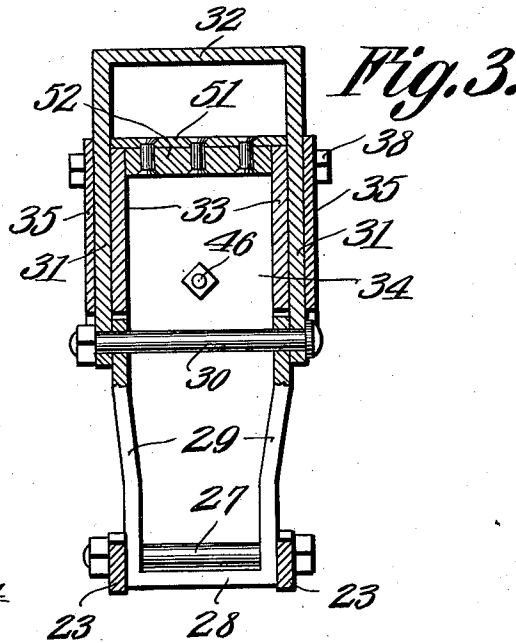


Fig. 3.

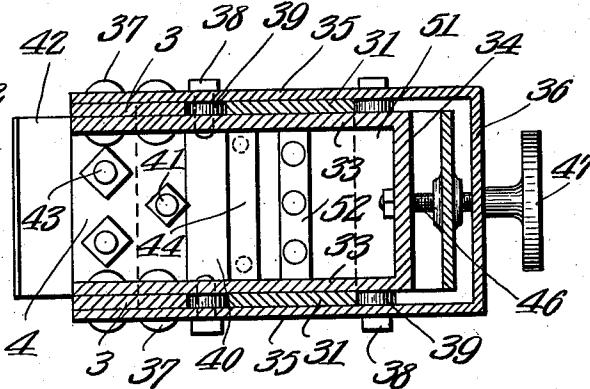


Fig. 4.

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UNITED STATES PATENT OFFICE.

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HORSESHOE CLIPPING AND BENDING MACHINE.

1,014,451.

Specification of Letters Patent.

Patented Jan. 9, 1912.

Application filed October 31, 1910. Serial No. 589,971.

To all whom it may concern:

Be it known that I, LECK CARPENTER, a citizen of the United States, residing at Stratford, in the county of Garvin and State of Oklahoma, have invented a new and useful Horseshoe Clipping and Bending Machine, of which the following is a specification.

The device forming the subject matter of this application is adapted to be employed in cutting horse shoes to a predetermined length, and in bending the ends thereof to fashion calks thereon.

It is the object of this invention to provide novel means for cutting the shoes and for bending them, in a single operation.

Another object of the invention is to provide an adjustable support upon which the shoe may be rested during the cutting and bending operations, the support cooperating with the bending mechanism proper, in effecting the bending of the shoe to fashion the calks therein.

Another object of the invention is to provide novel means for operating the bending member of the structure.

Another object of the invention is to strengthen and to improve devices of the sort to which this invention appertains, and to provide a combined bending and cutting machine, the component elements of which are united for operation in a novel and improved manner.

With the above and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

In the drawings, Figure 1 is a vertical longitudinal section, wherein some details are shown in elevation; Fig. 2 is a front elevation, parts being broken away; Fig. 3 is a vertical section upon the line A—B of Fig. 1; and Fig. 4 is a transverse section on the line C—D of Fig. 1.

The frame upon which the device is mounted comprises a base 1, to which a U-shaped standard 2 is secured, the sides of the standard 2 being denoted by the numeral 3 and the top of the standard being denoted

by the numeral 4. A pivot member 5 connects the sides 3 of the standard 2. Located between the sides 3 of the standard 2, and fulcrumed upon the pivot member 5 is a lower, foot lever, denoted generally by the numeral 6 in Fig. 1. This foot lever 6 comprises side members 7, connected at their rear ends by a pivot pin 8, the forward ends of the side members 7 being united by a foot plate 9. The extremities of a U-shaped link 10 are disposed between the side members 7 of the foot lever, a pivot pin 11 being extended through the link, adjacent its upper end.

The arms 12 of the U-shaped lever 14 are disposed upon the outside of the link 10 and are pivoted upon the pin 11. Intermediate its ends, the lever 14 which stands in upright position, is pivoted at 15 to a bracket 16, provided with diverging upper and lower arms 17 and 18, these arms of the bracket being secured to the sides 3 of the upright standard 2. At its upper end, the lever 14 carries a forwardly projecting clamping jaw 19.

The lower end of a U-shaped connection 20 is disposed between the side members 7 of the lower lever 6, and pivoted upon the pin 8, the arms 21 of the connection extending upwardly, and being united by a pivot pin 25.

A U-shaped upper lever 22 is pivoted at its rear end upon the pin 25, the arms 23 of the lever being disposed between the sides 3 of the standard 2, and being fulcrumed upon the securing member 24, which securing member serves as a means for binding the arms 18 of the bracket 16 upon the standard 2. A retractile spring 26 is secured at its lower end to the pivot member 5, and at its upper end to the pivot pin 25.

In the forward end of the upper lever 22 there is the pivot element 27, and a U-shaped link 28, disposed between the arms 23 of the upper lever, is supported upon this pivot element 27. The upwardly extended arms 29 of the link are disposed between the ends 31 of a carriage 32, the elements 29 and 31 being pivotally connected by means of a pivot pin 30. The extremities 33 of an inner guide 34 are disposed between the sides 3 of the standard 2 adjacent the top of the standard, and the extremities 35 of an outer guide 36 are disposed upon the outer faces of the sides 3 of the standard; the portions 33 and 35 being bolted or otherwise

secured as shown at 37 to the standard. The carriage 32 reciprocates between the portions 33 and 35 of the guides. The guides are connected by spaced pins 38 upon which rollers 39 are mounted, these rollers serving as antifriction elements on which the edges of the carriage 32 bear, as the carriage reciprocates between the guides.

A fixed primary cutting jaw 40 is overlapped upon the top of the standard 2, and secured thereto as shown at 41. The rear edge of the carriage 32 reciprocates in close relation to this primary cutting jaw 40. Secured to the top of the standard 2 to the rear of the fixed jaw 40 and abutting thereagainst, is a fixed clamping jaw 42, held in place by means of bolts 43 or the like. This clamping jaw 42 coöperates with the clamping jaw 19 which is secured to the upper end of the upright lever 14. Secured by means of bolts 45 or the like to the under face of the top portion of the carriage 32, as clearly seen in Fig. 1, is a movable cutting jaw 44. This movable cutting jaw 44 coöperates with the fixed cutting jaw 40, and, for convenience, the jaw 44 will be referred to hereinafter as the secondary cutting jaw. Likewise, for convenience, the jaw 44 and the carriage 32 constitute a bending member.

Referring to Fig. 1 it will be seen that the outer guide 36 extends forwardly beyond the inner guide 34. A screw 46 is rotatable in the guides 34 and 36, the screw 46, however, being held against longitudinal advancement in the guides. The outer end of the screw 46 may be provided with a head 47 for the convenient manipulation of the screw.

The invention further includes a slidable support, denoted generally by the numeral 48. This slidable support 48 includes a vertical arm 49 and a horizontal arm 51. The vertical arm 49 of the support is disposed between the ends of the guides 34 and 36, this vertical arm 49 being enlarged as at 50 to receive the screw 49, the screw 49 being threaded into this enlarged portion 50, so that when the screw is rotated by means of the head 47, the support 48 may be slid to and fro. As will clearly appear when Fig. 3 is examined, the horizontal arm 51 of the support 48 rests upon the upper edges of the extremities 33 of the inner guide 34. A firm supporting base for the member 48 is thus provided. Transverse sliding movement of support 48 is guarded against by means of a guide 52 depending from the rear end of the horizontal arm 51, this guide 52 registering closely between the extremities 33 of the inner guide 34. In the upper edges of the extremities 33 of the guide 34, and located adjacent the fixed primary jaw 40, are notches 53, adapted to receive the secondary jaw 44 when the carriage 32 moves downwardly. In the lower edges of the arms 33

of the inner guide 34, there are notches 54 adapted to receive the upper ends of the arms 29.

The operation of the device is as follows. The horse shoe having been heated in the forge, is placed upon the horizontal arm 51 of the support 48 and slid rearwardly, until the ends of the shoe enter between the movable secondary jaw 44 and the fixed primary jaw 40. If the foot lever 6 be now depressed the connection 20 will tilt the upper lever 22 causing the forward end thereof to move downwardly, the link 28 drawing the guide 32 downwardly and causing the edge 55 of the secondary jaw 44 to coöperate with the fixed jaw 40 in cutting off the rearwardly protruding ends of the shoe. If the depression of the carriage 32 is continued, the lower face 56 of the secondary jaw 44, engaging the ends of the shoe, will bend the same over the rear edge of the horizontal arm 51 of the support 48, thus fashioning calks in the heels of the shoe. A single operation therefore, will be effective to clip off the ends of the shoe and to bend the calks therein. It will of course be seen that when it is not necessary to clip off the ends of the shoe, the ends of the shoe may be maintained below the lower face 56 of the movable jaw 44, whereupon the shoe will be bent merely to form the calks, without being trimmed off. By manipulating the head 47 the screw 46 may be rotated, advancing and retracting the support 48 with respect to the secondary jaw 44. This operation will enable shoes of different thicknesses to be manipulated, and will, at the same time, to a considerable extent, regulate the lengths of the calks which are bent into the ends of the shoe. It will be readily understood that as soon as the foot of the operator is removed from the plate 9, the retractile spring 26 will serve to elevate the carriage 32 substantially into the position shown in Fig. 1 of the drawings.

When the rear end of the lower foot lever 6 is elevated, the link 10 will cause the lever 14 to tilt, moving the clamping jaw 19 toward the clamping jaw 42. These jaws 19 and 42 will be found useful in many ways. It is to be noted, moreover, that when the jaws 19 and 42 come into contact, the movement of the lower foot lever 6 is stopped, the downwardly sliding movement of the carriage 32 being likewise limited. Thus these clamping jaws 19 and 42 constitute a means for limiting the movement of the carriage.

Having thus described the invention, what is claimed is:

1. In a machine for cutting and bending horse-shoes, a frame; a primary cutting jaw fixed upon the frame; a carriage slidable in the frame and provided with a secondary cutting jaw coöperating with the primary

jaw; and a frame-carried support located below the primary jaw, and upon which the shoe to be cut may be advanced between the jaws for cutting, the secondary jaw cooperating with the support in bending the shoe over the edge of the support subsequent to the cutting of the shoe.

2. In a machine for cutting and bending horse-shoes, a frame; a primary cutting jaw fixed upon the frame; a carriage slidable in the frame and provided with a secondary cutting jaw cooperating with the primary jaw; a frame-carried, slidable support located below the primary jaw; and upon which the shoe to be cut may be advanced between the jaws for cutting, the secondary jaw cooperating with the support in bending the shoe subsequent to the cutting of the shoe; and means for advancing and retracting the support.

3. In a machine for cutting and bending horse shoes, a frame; a primary cutting jaw fixed upon the frame; a carriage slidable in the frame and provided with a secondary cutting jaw; and a frame carried support located below the primary jaw, and upon which the shoe may rest; one face of the secondary jaw cooperating with the primary jaw to cut the shoe, and another face of the secondary jaw cooperating with the support to bend the shoe subsequent to the cutting of the shoe.

4. In a machine for bending horse shoes, a frame comprising inner and outer guides;

a carriage slidable between the guides; a slidable support resting at one end upon one guide and at its other end disposed between the guides; means upon the carriage cooperating with the support to bend the shoe; and guide carried means engaging the last-named end of the support to advance and retract the support with respect to the bending means.

5. In a machine for bending horse shoes, a frame; spaced upper and lower levers pivoted to the frame; a connection between the levers; a bending member slidable in the frame; a member terminally pivoted to the upper lever and to the bending member; a shoe support slidable upon the frame over the edge of which support the bending member is adapted to turn the heels of the shoe; means for sliding the support; a lever pivotally supported intermediate its ends upon the frame; a link connecting the last-named lever and the lower lever; clamping jaws upon the intermediately supported lever and the frame; the said clamping jaws cooperating to limit the sliding movement of the bending member.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

LECK CARPENTER.

Witnesses:

E. L. GUNTER,
G. T. ELDRIDGE.