

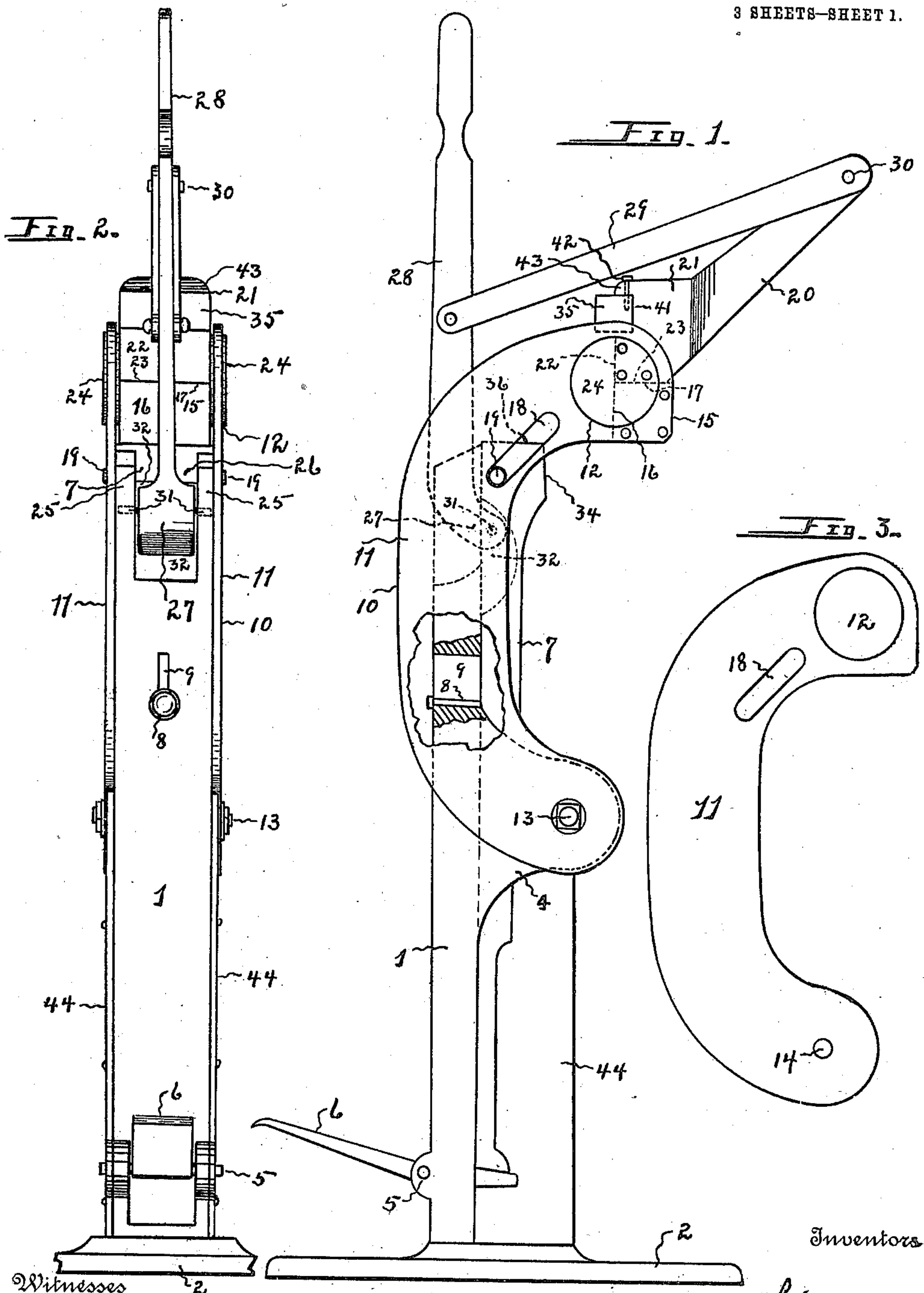
E. N. CHILDS & C. McMILLEN.  
CALK FORMER.

APPLICATION FILED DEC. 23, 1909. RENEWED OCT. 13, 1910.

984,194.

Patented Feb. 14, 1911.

3 SHEETS—SHEET 1.



Witnesses

H. C. Compton  
D. P. Blish

By

Elmer W. Childs and  
Christie McMillen,  
Hiram A. Sturges,  
Attorney

Inventors

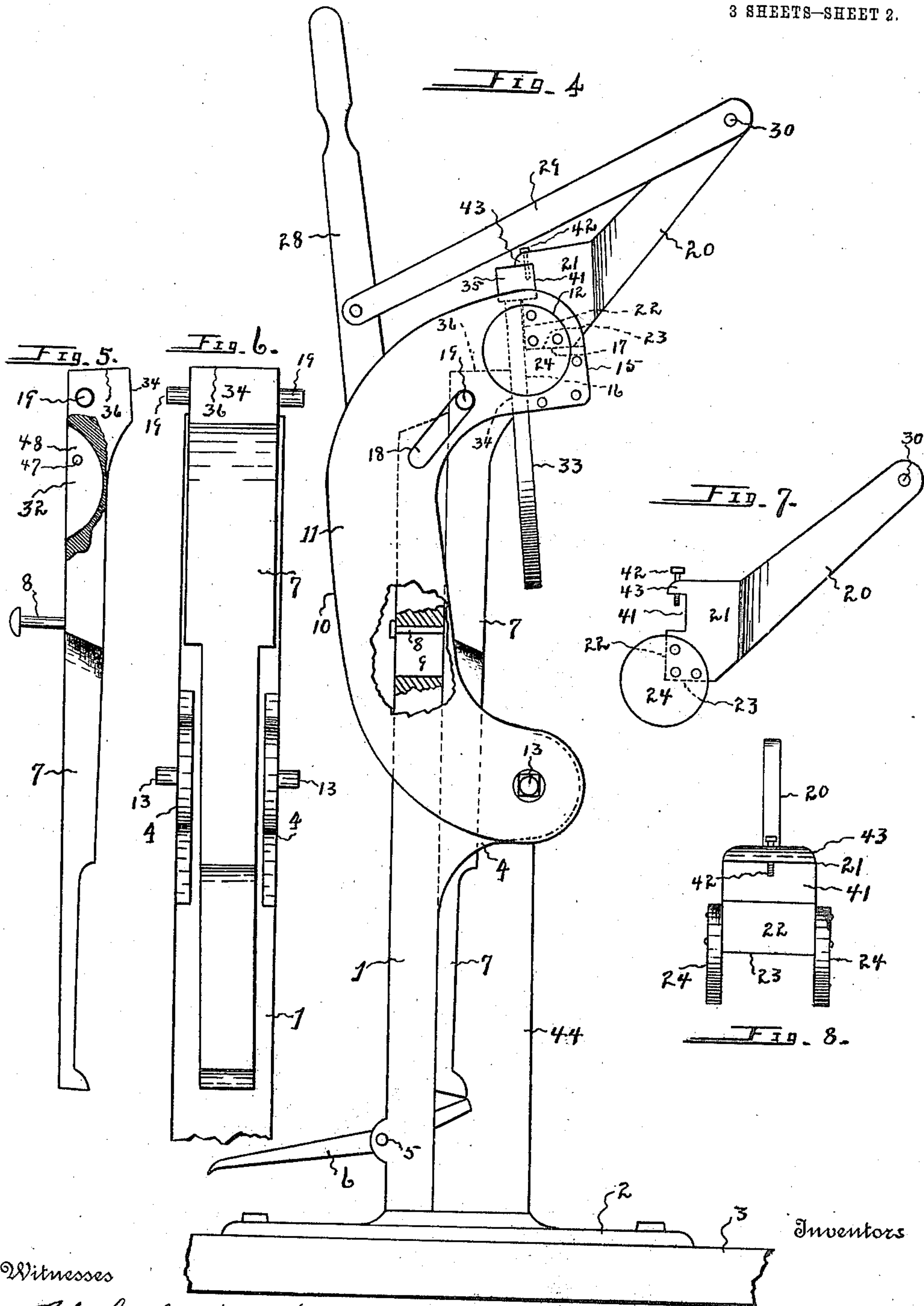
E. N. CHILDS & C. McMILLEN.  
CALK FORMER.

APPLICATION FILED DEC. 23, 1909. RENEWED OCT. 13, 1910.

984,194.

Patented Feb. 14, 1911.

3 SHEETS—SHEET 2.



Witnesses

H. C. Compton  
D. P. Blish

By

Elmer N. Childs and  
Christie McMillen  
Wiram A. Sturges, Attorneys

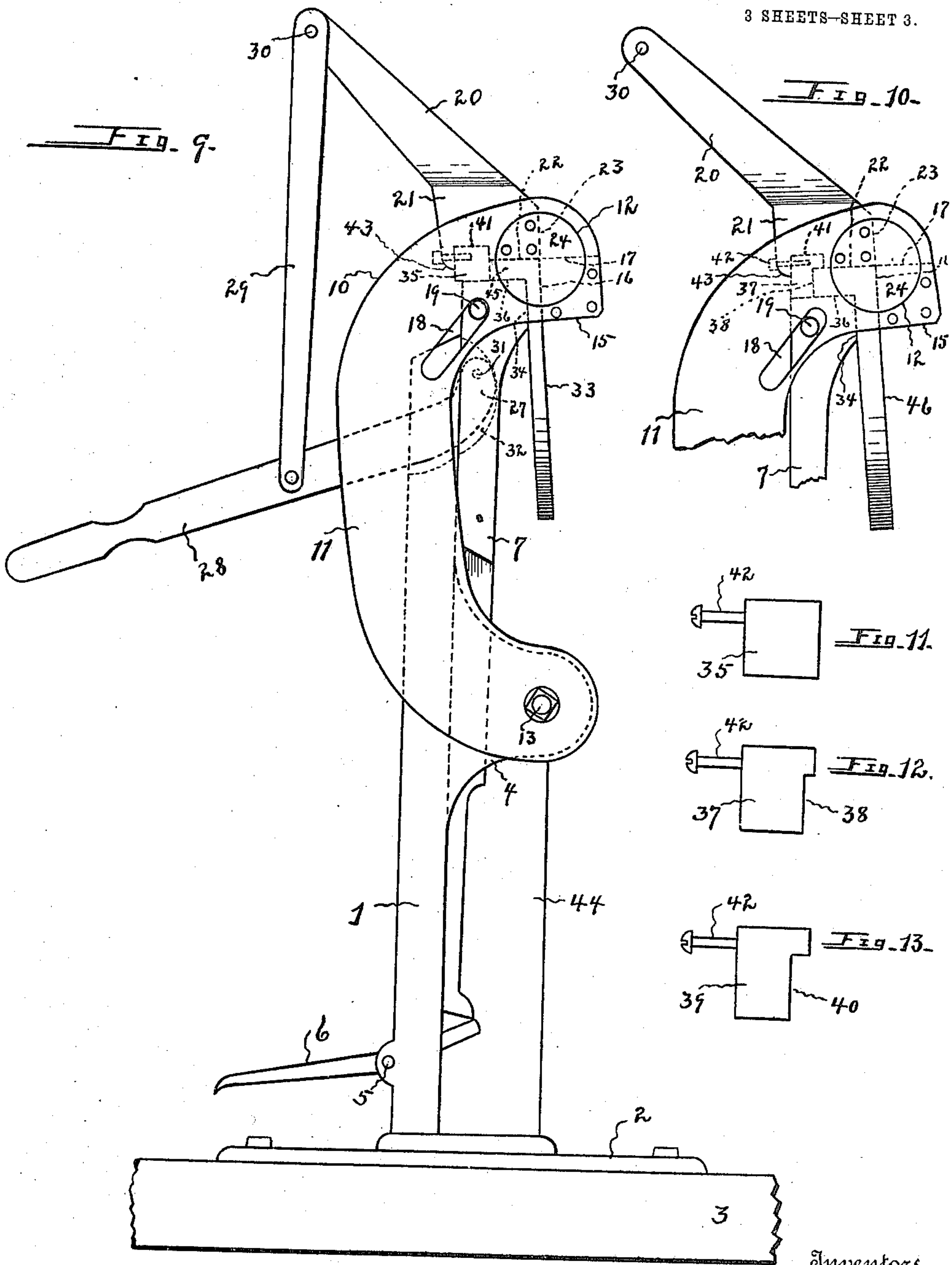
E. N. CHILDS & C. McMILLEN.  
CALK FORMER.

APPLICATION FILED DEC. 23, 1909. RENEWED OCT. 13, 1910.

984,194.

Patented Feb. 14, 1911.

3 SHEETS—SHEET 3.



Witnesses

H. C. Compton  
Q. P. Plish

By

Edmer N. Childs and  
Christie McMillen,  
Hiram A. Sturges  
Attorney



# UNITED STATES PATENT OFFICE.

ELMER N. CHILDS AND CHRISTIE McMILLEN, OF PERRY, IOWA.

## CALK-FORMER.

984,194.

Specification of Letters Patent.

Patented Feb. 14, 1911.

Application filed December 23, 1909, Serial No. 534,619. Renewed October 13, 1910. Serial No. 586,942.

*To all whom it may concern:*

Be it known that we, ELMER N. CHILDS and CHRISTIE McMILLEN, citizens of the United States, residing at Perry, in the county of Dallas and State of Iowa, have invented certain new and useful Improvements in Calk-Formers, of which the following is a specification.

This invention relates to an improved calk former, or implement for use in forming the heel calks of horseshoes, and has for its object, broadly, to provide a tool for this purpose comprising few and single parts so that its manufacture may be comparatively inexpensive, and by means of which the calks may be quickly and conveniently formed. The implement is not used in the formation of toe calks.

Another object is to provide means for conveniently forming heel calks for horseshoes which have a greater thickness than the body of the shoe.

The invention also has reference to certain adjustable features whereby calks of different lengths may be formed, and whereby calks may be formed upon horseshoes of different degrees of thickness.

The invention consists of the novel combination and arrangement of parts as described herein and claimed, and as illustrated in the drawing, it being understood that changes in form, size, proportion and minor details may be made within the scope of the claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawing forming a part of the application, Figure 1 is a side view of a calk forming implement embodying our invention, one of the links or side plates of the yoke being partly broken away, and a part of the standard being in section; also one of the housing plates is removed to disclose the lower part of the plunger. Fig. 2 is a front view of the device, a part of its base being broken away. Fig. 3 is a side view of one of the side plates of the yoke. Fig. 4 is a somewhat similar view to that shown in Fig. 1, the plunger being elevated, and the body of the horseshoe held between the contact block and the head of the plunger. Fig. 5 is a vertical, side view of the plunger, the same being partly in section. Fig. 6 is a vertical, rear view of the plunger, a part of the standard being added to the figure to clearly show the yoke sup-

ports or brackets employed. Figs. 7 and 8 are side and front views, respectively, of the block-holding and yoke-supporting link. Fig. 9 is a side view of the implement showing relative position of parts when a terminal of the shoe shown in Fig. 4 has been bent, and a calk formed. Fig. 10 is a detail to be considered in connection with Fig. 9, showing the upper part of the device, and illustrating the use of a recessed forming-block, this block being useful when it is desired to form long heel calks upon horseshoes; this view, considered in connection with Fig. 4 also illustrates facility of use in forming heel calks upon horseshoes having bodies of different degrees of thickness. Figs. 11, 12 and 13 are enlarged views of forming-blocks.

Referring now to the drawing for a more particular description, numeral 1 indicates a standard or supporting post, preferably having a base 2 which may be bolted or otherwise secured to the floor 3 or other suitable support, so that the standard will be stationary. The standard is provided midway between its ends, with a pair of rearwardly projecting brackets 4, best shown in Fig. 6, and at its lower end, pivotally mounted at 5, is treadle 6.

At 7 is indicated a plunger having a length somewhat less than that of the standard. It is adapted to have a seating, slidably, upon and rearwardly of the standard between brackets 4, and its lower end may rest upon the distal end of the treadle. The plunger is provided with a coupling pin 8 disposed within slot 9 formed longitudinally in the standard, and as thus described, a downward movement of the treadle will cause, obviously, an upward sliding movement of the plunger, pin 8 operating as a guide, and holding the plunger adjacent to the standard; and when the treadle is released, the plunger will slide downward on account of its weight.

At 10 is indicated a yoke or rock-lever upon which is mounted certain devices now to be described. It may be of any suitable form, but is shown herein as a pair of substantially U-shaped links or side bearing-plates 11, their upper ends being provided or formed with comparatively large, circular apertures 12.

At 13 upon brackets 4 are indicated posts or pivot studs; and the lower ends of plates 11 are mounted thereon, said ends having



apertures 14 formed therein for this purpose.

At 15 is indicated a spacing-block. It is provided with the contact-facet 16 and supporting-facet 17, these facets being disposed at substantially right angles with reference to each other. The spacing block is disposed horizontally between the upper arms of the U-shaped plates 11, at the terminals and inner edges of these arms, the inner edges of facets 16 and 17 being coincident with the center of aperture 12 when the parts are assembled.

At 18 are indicated slots formed and extending angularly in each of links 11, intermediate its aperture 12 and its body. Upon the sides and near the upper end of the plunger are provided trunnions 19 adapted to have seatings in slots 18. The spacing-block 15 has a length substantially equal to the width of standard 1, and when the parts are assembled, plates 11 are seated outwardly of and slidably upon the sides of the standard and outwardly of the sides of the plunger, said plates being held together by block 15 and their mounting upon posts 13; and the yoke thus described is adapted to have a limited rocking movement upon its pivotal mounting 13, this movement being limited by the length of slots 18.

We provide the block-sustaining or compression-link 20, having upon its lower end the head 21 of a width substantially equal to the length of block 15. Head 21 is formed with a contact-facet 22 and a bearing-facet 23, these facets being disposed substantially at right angles.

At 24 are indicated a pair of disks or pivots. They are mounted upon the sides of head 21, the centers of the disks being coincident with the inner edges of facets 22 and 23; and when the parts are assembled, the disks are seated in apertures 12.

As thus described, link 20 may have forwardly and rearwardly swinging movements, and when it has been swung rearwardly to its greatest extent, facet 23 will bear upon and will be supported by facet 17, and at this time facets 16 and 22 will be in alinement.

The upper end of the standard is chamfered to provide terminal arms 25 with the intervening recess or channel 26, and a recess 32 is formed in the front part and upper end of the plunger and in this recess may be disposed compression-head 27 of hand lever 28, said head being pivotally connected with the plunger by means of pivots 31 seated in openings 47 formed in the side walls 48 of said recess 32. Lever 28 is pivotally connected between its ends with one end of link 29, the opposite end of this link being pivotally connected at 30 with the upper end of link 20.

The adjustment of the parts mentioned is such, that when the hand lever is swung

downward or forwardly, the plunger will be elevated, and at this time the upper end of yoke 10 will swing forwardly until lugs 19 are disposed at the upper ends of slots 18.

In operation, to form heel calks, the body of the shoe 33, having substantially a uniform thickness, is inserted between plates 11 while at a welding heat, the parts of the implement being disposed as shown in Fig. 1. By operation of treadle 6 the plunger may be elevated and the parts will then be disposed as shown in Fig. 4. At this time the body of the horseshoe 33 will be firmly held between contact-facet 16 of block 15 and facet 34 of the head of the plunger, that part of the shoe near its upper terminal being in contact with facet 22 of head 21, the end of the shoe resting upon forming-block 35. Hand lever 28 may then be swung forwardly, which movement will cause the calk 45 to be formed, the parts then being disposed as shown in Fig. 9, facets 22 and 17 being in alinement. The calk is formed by compression between the several facets mentioned in conjunction with the upper surface or terminal facet 36 of the plunger, and when the calk is formed it will have a greater thickness than the body of the horseshoe, since all of the calk is disposed at that time below the plane described by the alining facets 22 and 17.

Heel calks of horseshoes may be formed very readily by use of the herein described implement, only a slight force being required in the manipulation of the levers, and thereby a great saving in labor is effected, as compared with the work required by use of hammer and anvil in the formation of these calks, by the old method.

In Figs. 10 and 12, forming-blocks 37 are shown, provided with recesses 38, of a limited depth and width. Forming-blocks similar to those indicated at 37 and 39 (Fig. 13) may be employed, and their recesses 38 and 40 may be of different depths and widths; these forming-blocks are useful since the bodies of horseshoes may vary in thickness, and in every instance the heel calks, when formed, have a greater thickness than the body of the shoe of which they are an integral part. Where the body of a shoe has a comparatively greater thickness than another shoe as, for instance, the shoe indicated at 46, a forming block is employed having a recess with a correspondingly greater depth and width; and therefore the forming-blocks are removably secured in head 21. A recess 41 is formed in head 21, and by means of pins or screws 42 which pass through ledge or jaw 43, the forming-blocks may be reliably secured, and by reason of these adjustable features, the blocks may be conveniently inserted or removed.

In order that the lower part of the plunger may be protected from exterior obstruction



tions, housing plates 44 may be employed, and may be secured upon the sides of the standard below the yoke, as shown.

In practice, the use of the treadle may ordinarily be dispensed with, since the plunger may be elevated by the downwardly swinging movement of the hand lever; but where both hands of the operator are required for handling and inserting the horse-shoe, the treadle will be convenient in use.

Having fully described the several parts of the calk former, and their uses, a further explanation as to operation, is unnecessary.

What we claim and desire to secure by Letters Patent is,—

1. In a calk former, the combination of a standard, a yoke comprising slotted bearing-plates disposed upon and having their inner ends pivotally mounted upon the sides of the standard, their outer ends being provided with a spacing block; a block-sustaining link disposed between and pivotally mounted upon the outer end of said plates; a plunger bar disposed adjacent to the standard intermediate the bearing-plates, said bar having a terminal facet and a contact facet and provided with lugs seated in the slots of said plates; means to actuate the plunger bar to dispose its contact facet adjacent to said spacing block, its terminal facet being disposed below the axis of the pivotal mounting of the block sustaining link; and means to cause swinging movements of said block sustaining link.

2. In a calk former, the combination with a standard having a longitudinal slot therein, of a yoke comprising slotted bearing-plates disposed upon and having their inner ends pivotally mounted upon the sides of the standard, their outer ends having a spacing-block secured therebetween; a block-sustaining link disposed between and pivotally mounted upon the outer ends of said plates; a plunger bar provided with a coupling pin seated in the slot of the standard and disposed intermediate the bearing plates, said bar having a terminal facet and a contact facet and provided with lugs seated in the slots of said plates; means to actuate the plunger bar to dispose its contact facet adjacent to said spacing block, its terminal facet being disposed below the axis of the pivotal mounting of the block-sustaining link; and means to cause swinging movements of said block-sustaining link.

3. In a calk former, the combination with an upright standard, of a yoke comprising U-shaped bearing-plates disposed upon and having their lower ends pivotally mounted upon the sides of the standard, their upper ends having a spacing-block secured therebetween, said plates having slots formed therein; a compression-link provided with a recessed head disposed intermediate and pivotally mounted upon the upper end of said

plates; a forming-block removably secured in said recess; a plunger-bar disposed adjacent to the standard intermediate the bearing-plates, said bar having a terminal facet and a contact facet and provided with lugs seated in the slots of said plates; means to actuate the plunger-bar to dispose its contact facet adjacent to said spacing block its terminal facet being disposed below the axis of the pivotal mounting of said link, and means to cause a swinging movement of said compression-link, the forming-block making contact with the terminal facet of said plunger-bar.

4. In a calk former, the combination with an upright standard having a slot formed longitudinally therein, of a yoke comprising U-shaped bearing-plates disposed upon and having their lower terminals pivotally mounted upon the sides of the standard, their upper terminals having a spacing-block secured therebetween, said plates having slots formed therein; a compression-link provided with a recessed head disposed intermediate and pivotally mounted upon the upper terminals of said plates, a forming-block removably secured in said recess; a plunger-bar provided with a coupling-pin seated in the slot of the standard and disposed intermediate the bearing-plates, said bar having a terminal facet and a contact facet and provided with lugs seated in the slots of said plates; means to actuate the plunger-bar to dispose its contact facet adjacent to said spacing-block, its terminal facet being disposed below the axis of the pivotal mounting of said compression-link, and means to cause a swinging movement of the compression-link, said forming-block making contact with the terminal facet of said plunger-bar.

5. In a calk-forming implement, the combination with an upright standard having a slot formed longitudinally therein, of a yoke comprising bearing-plates disposed upon and having their inner terminals pivotally mounted upon the sides of the standard, their outer terminals having a spacing-block secured therebetween, said plates having slots formed therein; a compression-link disposed intermediate and pivotally mounted upon the outer terminals of said plates, and provided with a recessed forming-block removably secured thereon; a plunger-bar provided with a coupling-pin seated in the slot of the standard and disposed intermediate the bearing-plates, said bar having a terminal facet and a contact facet and provided with lugs seated in the slots of said plates; means to actuate the plunger-bar to dispose its contact facet adjacent to said spacing-block, its terminal facet being disposed below the axis of the pivotal mounting of said compression-link; and means to cause a swinging movement of the compression-link,



said forming-block making contact with and its recess opening upon the terminal facet of said plunger-bar.

6. In a calk forming implement, the combination with a standard, of oppositely-disposed, slotted bearing-plates having their inner terminals pivotally mounted thereon, the outer terminals of said plates having a spacing-block secured therebetween; a compression-link disposed between and pivotally mounted upon the outer terminals of said plates, and provided with a recessed forming-block; a plunger-bar disposed adjacent to the standard between the bearing-plates, said bar having a terminal facet and a contact facet, and provided with lugs seated in the slots of said plates; means to actuate the plunger-bar to dispose its contact facet adjacent to said spacing-block, its terminal facet being disposed in a plane below the axis of the pivotal mounting of said compression-link; and means to cause a swinging movement of the compression-link, said forming-block making contact with and its recess opening upon the terminal facet of said plunger-bar.

7. An implement for forming heel calks of horseshoes, comprising an upright standard, oppositely-disposed, slotted bearing-

plates having their lower ends pivotally mounted thereon, and formed with circular apertures near their upper ends, said upper ends of said plates having a spacing-block secured therebetween; a compression-link disposed between and provided with oppositely-disposed disks seated in the circular apertures of said plates, and provided with a recessed forming-block; a plunger-bar disposed adjacent to the standard between the bearing-plates, said bar having a terminal facet and a contact facet and provided with lugs seated in the slots of said plates; means to actuate the plunger-bar to dispose its contact facet adjacent to said spacing-block, its terminal facet being disposed in a plane below the axes of the disks of said compression-link; and means to cause a swinging movement of the compression-link said forming-block moving in a direction of and its recess opening upon the terminal facet of said plunger-bar.

In testimony whereof we have affixed our signatures in presence of two witnesses.

ELMER N. CHILDS.

CHRISTIE McMILLEN.

Witnesses:

W. H. ELDER,

E. A. JEWELL.