

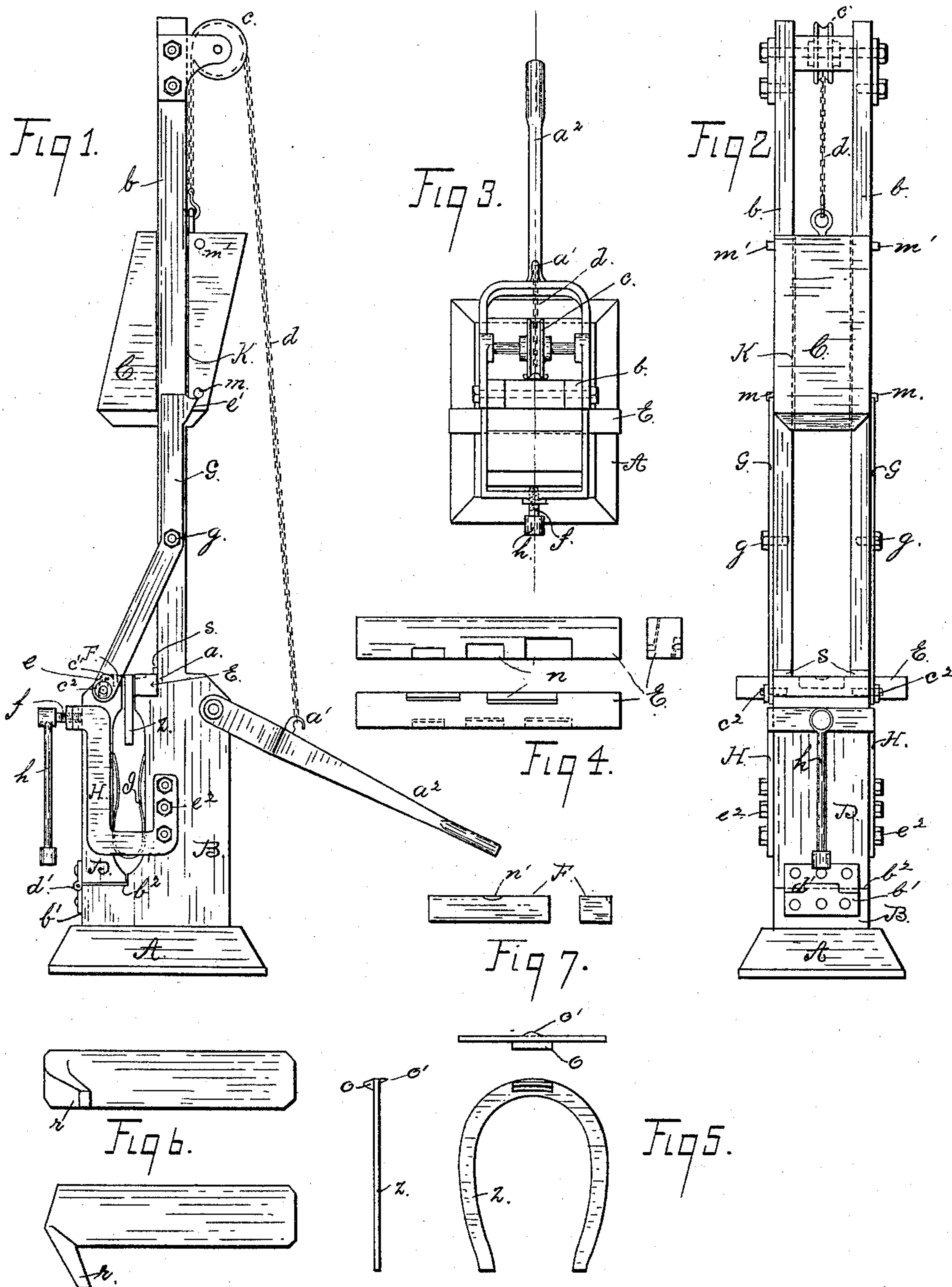
(No Model.)

C. E. SCHROEDER.

MACHINE FOR WELDING CALKS TO HORSESHOES.

No. 433,423.

Patented July 29, 1890.



Witnesses
Frank J. Robinson
A L Orrell

Inventor
Charles E. Schroeder.
By his Attorney Chas. C. Titman.

UNITED STATES PATENT OFFICE.

CHARLES E. SCHROEDER, OF CROWN POINT, INDIANA, ASSIGNOR OF ONE-HALF TO JULIUS L. F. SCHROEDER, OF SAME PLACE.

MACHINE FOR WELDING CALKS TO HORSESHOES.

SPECIFICATION forming part of Patent No. 433,423, dated July 29, 1890.

Application filed March 26, 1890. Serial No. 345,412. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. SCHROEDER, a citizen of the United States, residing at Crown Point, in the county of Lake and State of Indiana, have invented a certain new and useful Improvement in Machines for Welding Calks on Horseshoes, of which the following is a specification.

My invention relates to improvements in machines for welding calks on horseshoes; and it consists in certain peculiarities of the construction and novel arrangement of the different parts thereof, as will be hereinafter more fully set forth and specifically claimed.

The objects of my invention are to afford a machine for the above-named purpose which shall be inexpensive, simple in construction and operation, durable, and more effective and rapid in its work than the ordinary manner of welding.

In order to enable others skilled in the art to which my invention pertains to make and use the same, I will now proceed to describe it, referring to the accompanying drawings, in which—

Figure 1 is a view in side elevation of my machine. Fig. 2 is a front view of the same; Fig. 3, a plan view; Figs. 4 and 7, detail views of the dies or molds; Fig. 5, detail views of the shoe, showing the calk welded thereon; and Fig. 6, an illustration of the calks before they are attached to the shoe.

Similar letters refer to like parts throughout the different views of the drawings.

A represents the base or platform made of suitable size, form, and material, upon which the machine rests or may be secured in any desired manner.

B is a block or anvil constructed of proper material, but usually of iron, and formed at its front upper portion with a rectangular recess *a* for the reception and retention of one of the die plates or molds, as will be presently explained. To the sides of this anvil or block and at about the middle of the upper portion thereof are rigidly secured two upright standards *b b* of suitable length, which are provided near their tops with a grooved pulley *c*, over which passes a chain or cord *d*, which is connected at one end to the drop-hammer C

and at the other end to a hook *a'* on the lever *a²*, which lever or handle is loosely secured at one end to the anvil, and is designed to be used when it is desired to raise the hammer which travels up and down between the two standards, as is clearly seen by reference to Fig. 2 of the drawings.

As shown in Fig. 1, I preferably form the front of the anvil with a slight inward curve and extend the lower portion thereof a little beyond a vertical line drawn from the outer edge of the rectangular recess *a*. On the top of this extended portion *b'* is formed another recess *b²* or suitable surface, upon which rests the lower portion of the piece D, which is usually made of iron and of sufficient length to be flush at its top with the upper surface of die-plate E when it is retained in the recess *a*.

The piece D is secured at its lower end to the extended portion *b'* of the anvil by means of a hinge *d'*, and is formed at its upper end with a rectangular recess *c'*, (shown by dotted lines in Fig. 1,) for the reception and retention of the die plate or mold F, the upper surface of which plate or mold when inserted and retained in the said recess will be flush with the top surface of the plate E lying adjacent thereto. On each side of the piece D and near the top thereof is provided a pin *c²* or projection, which are inserted and operate in suitable slots *e* in the lower ends of the arms G, which arms or levers are bent about their middle and fulcrumed to the outside of each of the standards *b*, as at *g*, the upper portion of each of the arms being formed with a shoulder *e'* for supporting the hammer until it is required to let it drop. At proper points on each side of the anvil are secured, by means of bolts *e²* or otherwise, the ends of a guide piece or yoke H, which fits snugly around the piece D and prevents any lateral movement thereof, yet permits of a free inward and outward movement. Through the front part of this yoke or guide is a screw-threaded hole, into which is inserted a suitable screw *f*, having on its outer end a handle *h* for operating the screw, and thereby clamping the piece D at its top to the upper portion of the anvil, as is apparent. Between the piece D and the front of the anvil is

placed a suitable spring I, which forces the piece D from the anvil when not held there by the screw. As shown in Figs. 1 and 2 of the drawings, the hammer is formed with a
 5 groove k on each side thereof, into which the standards fit, thus forming a guide for the hammer in its movements. It will also be seen that near the top and bottom of the hammer and on each side thereof I provide
 10 pins or lugs m and m' , which are designed to engage with the shoulders e' on the levers G, thereby offering a support for the hammer. The grooves k are preferably formed, as shown, diagonally across the surface of the
 15 sides of the hammer; but I may form them longitudinally therewith without departing from the spirit of my invention.

In Figs. 4 and 7 I have shown the die-plates, which are preferably made of steel and formed
 20 with one or more depressions $n n'$, of any desired size and form, the depressions n being adapted to form the calk o on the bottom of the shoe, and the one n' in the plate F to form the toe-piece o' on the top of the toe of
 25 the shoe Z, as illustrated in Fig. 5 of the drawings.

Fig. 6 shows the ordinary steel calks as they appear before being welded to the shoe. As shown, they are formed at one end with a
 30 pointed prong or prick r , so that it may be easily attached and retained at the proper place on the shoe while both shoe and calk are being heated to the welding degree. On the front of each of the standards $b b$, just
 35 above the recess a , I provide a lug or projection s , which assists in holding the plate E in position, as will be readily understood by reference to Figs. 1 and 2.

The operation of my device is simple and
 40 as follows: The die-plates E and F are placed in the recesses a and c' , respectively, and the hammer is raised by means of the handle a^2 and chain d to the position shown in Fig. 1, when the pins m on the hammer will engage
 45 with and rest upon the shoulders e' , thus sustaining the hammer until the blow is required. The calk is then secured at the proper place to the shoe by driving the prong r into it, which holds them together while being heated,
 50 after which the shoe, with the calk-piece attached, is placed between the dies E and F, the calk being permitted to extend a little above the upper surfaces of the plates and retained in said position by turning the screw-
 55 handle h , which operation will cause the up-

per portion of the piece D to clamp or press the shoe against the upper front portion of the anvil, thus firmly holding the shoe in the vise formed by the anvil and piece D. It will be noticed that at the same time the clamp-
 60 ing is done by turning the handle h the lower ends of the arms G are forced inward, thereby withdrawing the shoulders at the upper ends from under the pins m and releasing the ham-
 65 mer, which falls with great force on the calk, thus firmly uniting it to the shoe, and simultaneously forming the calk o and toe o' by forcing the heated metal into the depressions $n n'$. When a light blow of the hammer is
 70 required, it may be raised till the pins m' rest on the shoulders e' , when the operation above described may be repeated.

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

1. In a machine for welding calks on horse-shoes and analogous purposes, the combination of an anvil B, having the recesses $a b^2$, and the standards $b b$, having the lugs s and pulley c , with the piece D, having the recess
 80 c' and hinged to the anvil at its lower end, the yoke H, having the screw-handle h , the hammer C, having the guide-grooves k and means for raising and tripping the same, and the die-plates E F, having the depressions n
 85 n' , all constructed, arranged, and operating substantially as shown and described, and for the purpose set forth.

2. In a machine for welding calks on horse-shoes, the combination of an anvil having the
 90 recesses $a b^2$ and the standards $b b$, secured to its upper portion, and having the lugs s and pulley c , with the piece D, having the recess c' and pins c^2 and hinged to the anvil at its
 95 lower end, the yoke H, having the screw-handle h , the levers G, having the slots e and shoulder e' , the hammer C, having the guide-grooves k and pins $m m'$, the chain d , handle a^2 , and die-plates E F, having the depressions $n n'$,
 100 all constructed, arranged, and operating substantially as shown and described, and for the purpose set forth.

In witness whereof I have hereunto set my hand and affixed my seal this 21st day of March, 1890.

CHARLES E. SCHROEDER. [L. s.]

In presence of—

JOHANNES KOPELKE,
 GEORGE VOLK.