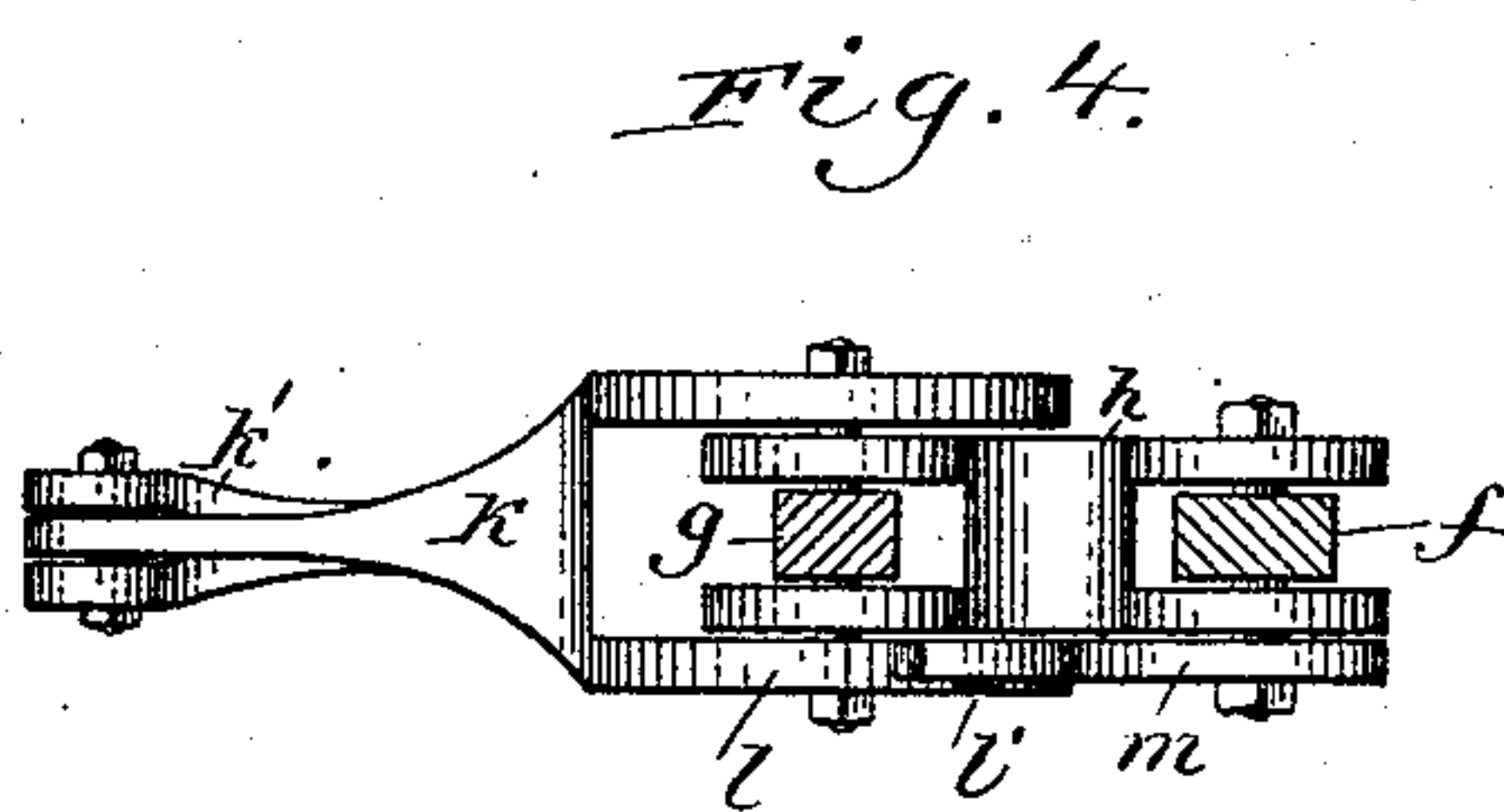
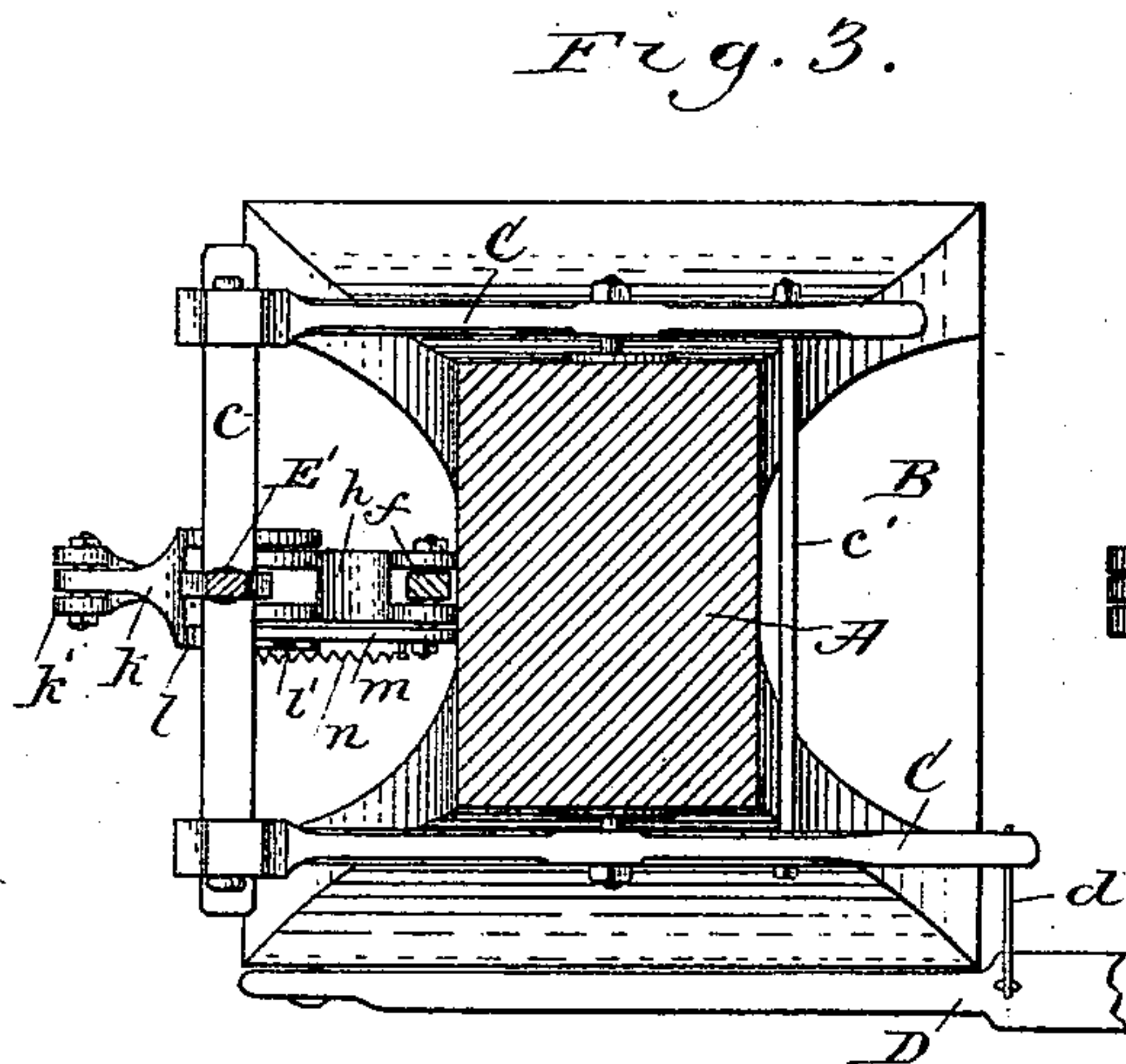
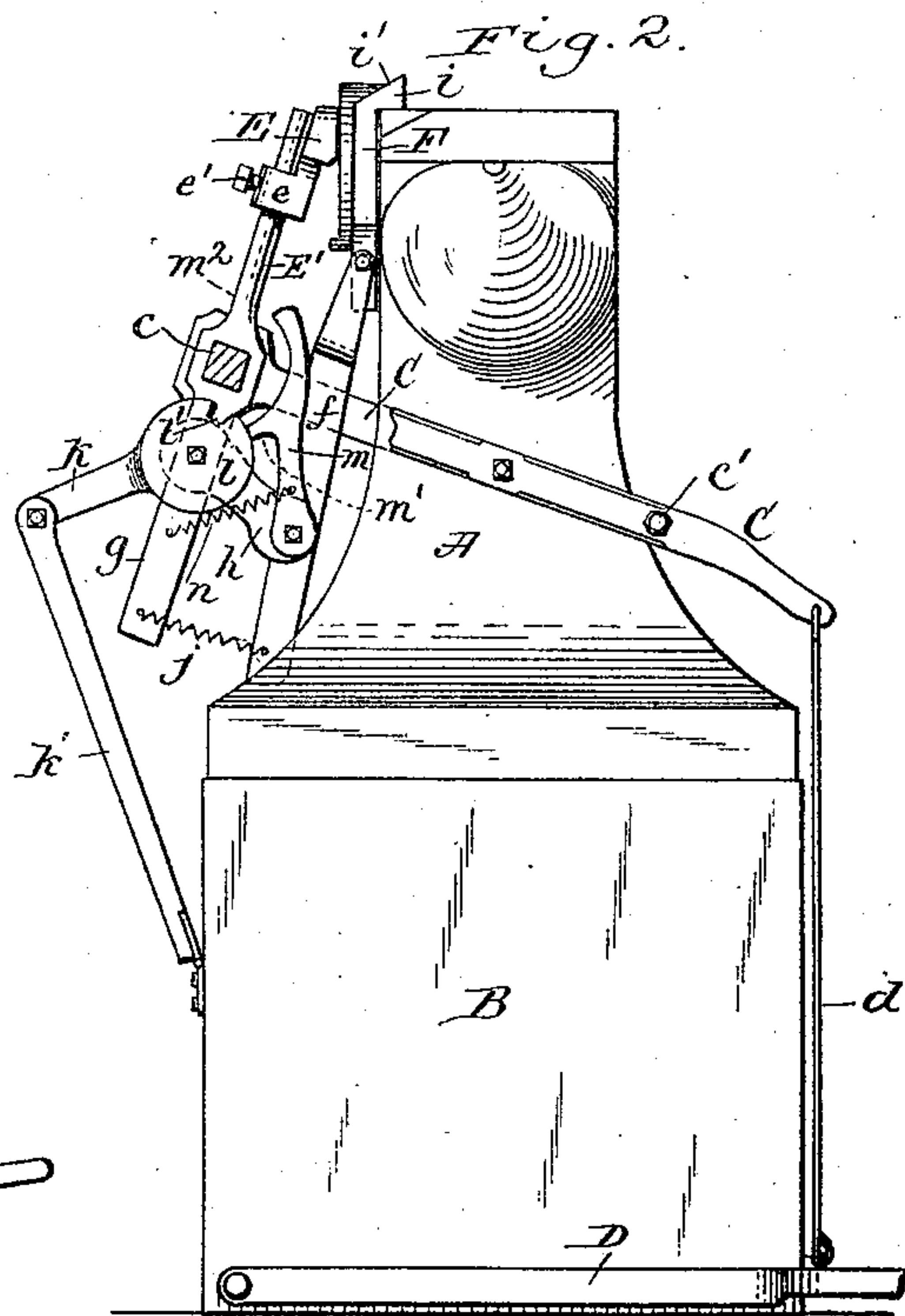
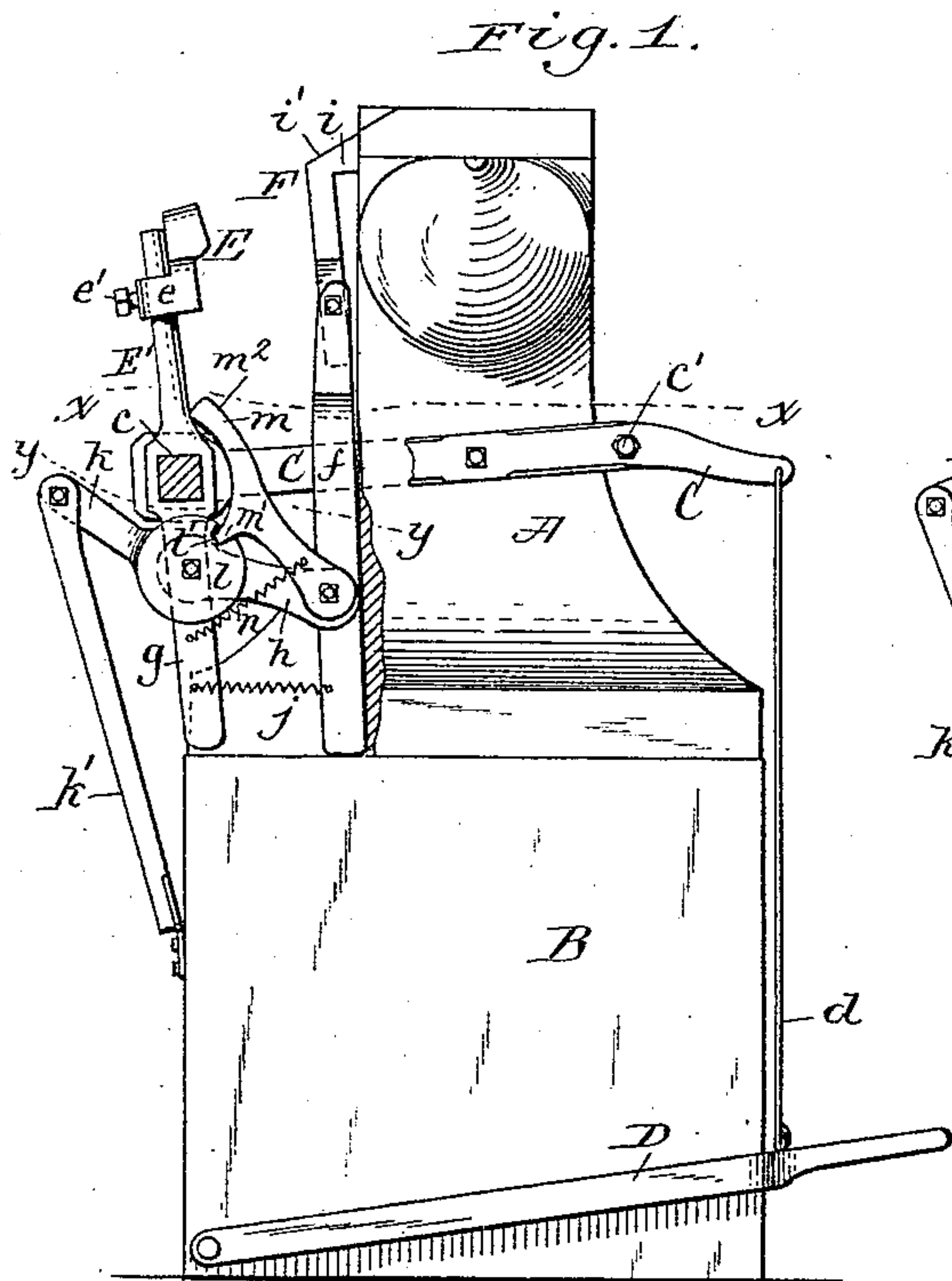


(No Model.)

G. C. CARPENTER.
FARRIER'S ANVIL.

No. 437,355.

Patented Sept. 30, 1890.



Witnesses:

Chas. J. Buchheit
Emil J. Neuhart

G. C. Carpenter Inventor.
By Wilhelm Krumm
Attorneys.

UNITED STATES PATENT OFFICE.

GILES C. CARPENTER, OF FILLMORE, NEW YORK.

FARRIER'S ANVIL.

SPECIFICATION forming part of Letters Patent No. 437,355, dated September 30, 1890.

Application filed January 27, 1890. Serial No. 338,218. (No model.)

To all whom it may concern:

Be it known that I, GILES C. CARPENTER, a citizen of the United States, residing at Fillmore, in the county of Allegany and State of New York, have invented a new and useful Improvement in Farriers' Anvils, of which the following is a specification.

This invention relates to that class of anvils which are provided with a vise for holding a horseshoe in place during the operations of forming and sharpening the calks.

The object of my invention is to produce an inexpensive vise attachment of simple construction, which is readily applied to the anvil, and which may be moved out of the way below the working-face of the anvil when not required for use, so as to permit other work to be placed upon the anvil and conveniently manipulated.

In the accompanying drawings, Figure 1 is a sectional end elevation of an anvil provided with my improved vise attachment, showing the vise in an inoperative position below the working-face of the anvil. Fig. 2 is a sectional end elevation of the anvil and vise, showing the latter in its operative position with a horseshoe clamped therein. Fig. 3 is a horizontal section in line $x x$, Fig. 1. Fig. 4 is a similar view in line $y y$, Fig. 1.

Like letters of reference refer to like parts in the several figures.

A represents the anvil, and B the block upon which the anvil rests.

C C represent two rock-levers pivoted between their ends to opposite sides of the anvil. These rock-levers are connected at their rear ends by a cross-bar c and in front of the anvil by a tie-bolt c' . The levers C are rocked or oscillated upon their pivots by a treadle D, pivoted at its rear end to one side of the anvil-block B and connected by a rod d with the front arm of the rock-lever C above the same. The ends of the cross-bar c are preferably seated in openings formed in the rear ends of the rock-levers C C, which permit the rock-levers to be adjusted toward and from each other for different sizes of anvils.

E represents the outer jaw of the vise, which is secured to the cross-bar c , so that the jaw is raised and lowered with the cross-bar and caused to approach and recede from the rear

side of the anvil. The jaw E is connected with the cross-bar c by means of a shank or lever E' , the jaw being provided with a socket e , which fits over the upper end of the lever E' , and is secured thereto by a set-screw e' , whereby the jaw is made adjustable on the shank or lever E' .

F represents a vertically-movable inner jaw arranged adjacent to the rear side of the anvil opposite the outer jaw E, and which is pivoted to the bifurcated upper end of an upright bar f by a transverse bolt, so as to be capable of swinging toward and from the anvil. The lower portion of the bar f is pivotally connected with an arm g , which latter forms a downward extension of the shank E' of the outer jaw E, by a link h , which permits the bar f and the jaw attached thereto to move vertically with reference to the outer jaw. The inner jaw F is provided at its upper end with a forwardly-projecting lip or shoulder i , which is adapted to engage over the adjacent edge of the anvil when the vise is in an operative position, so as to support the jaw and its depending bar f upon the anvil. The upper face of the jaw is inclined or beveled, as shown at i' , to form a shaping-seat for the calks of the horseshoe.

j is a spiral spring connecting the lower ends of the bar f and the arm g , and which tends to hold the inner jaw and the upper end of the bar f against the side of the anvil.

k represents a rearwardly-projecting arm or link pivoted at one end to the arm g of the outer jaw and at its other end to an upright supporting-bar k' . The bar k' is attached at its lower end to the supporting-block B, preferably by a hinge, as shown. The inner end of the arm k is bifurcated and pivoted to the arm g by the same bolt which connects the link h to said arm, as represented in Figs. 1, 2, and 4.

l is a circular head formed at the inner end of the arm k and having a notch or recess in its periphery.

m is a locking pawl or catch pivoted to the lower portion of the depending-bar f of the inner jaw and provided on its rear side with a nose or projection m' , which is adapted to enter the notch of the head l .

n is a spiral spring attached at one end to

the pawl *m* and at its other end to the arm of the outer jaw *E*, and which holds the pawl against the notched head *l*. The locking-pawl is provided above its nose *m'* with an arm or extension *m*², which projects into the path of the cross-bar *c*, connecting the two rock-levers *C C*, so that when said cross-bar is raised it rides over the extension of the pawl, thereby swinging the latter toward the anvil and disengaging its nose from the notch in the head *l*.

When the vise is in its inoperative position, as represented in Fig. 1, the jaws *E F* are open and stand below the working-face of the anvil, and the nose of the locking-pawl is interlocked with the notched head of the arm *k*. When the pawl *m* is engaged with the notched head of the arm *k*, the latter and the link *h*, which connects the bars *f* and *g* of the two jaws, form together a rigid lever which finds its fulcrum at the upper end of the supporting-bar *k'*. By this arrangement the inner jaw is given a greater throw than the outer jaw *E* upon depressing the treadle and is caused to move upward in advance of the outer jaw. As soon as the locking-pawl is disengaged from the arm *k* this lever action no longer continues, and the further depression of the treadle does not affect the inner jaw, the further movement of the outer jaw being transmitted only to the link *h*, connecting the inner jaw and the arm *g* of the outer jaw, but not to the inner jaw itself. Upon first depressing the treadle the rock-levers are swung on their pivots and both jaws *E F* are raised; but, owing to the temporary rigidity of the connection between the inner jaw and the arm *k*, the inner jaw is caused to rise in advance of the outer jaw until its lip *i* engages over the edge of the anvil and supports the jaw and its bar *f* upon the anvil. The continued downward movement of the treadle causes the cross-bar *c* to ride over the extension of the locking-pawl *m* and release the latter from the notched head *l* of the arm *k*, thereby breaking the rigid connection between the depending bar *f* of the inner jaw and the arm *l* and allowing the inner jaw to remain at rest, while the inward and upward movement of the outer jaw continues until it strikes the inner jaw or the horseshoe placed between the jaws. The inner jaw is thus raised to its highest position, in which its lip overlaps the edge of the anvil only during the first part of the stroke of the treadle, while the outer jaw is raised and moved toward the inner jaw during the entire downward stroke of the treadle. The horseshoe is clamped between the jaws of the vise with its calk resting upon the beveled upper face of the inner jaw in a well-known manner, the horseshoe being gripped so long as the foot is kept upon the depressed treadle. Upon releasing the treadle the weight of the outer jaw and connecting parts causes the jaw to drop from the inner jaw, which latter remains supported

upon the anvil. Upon again depressing the treadle to clamp another shoe the inner jaw remains at rest and the outer jaw is closed against the shoe placed against the inner jaw.

When the vise is not required for use, the inner jaw is pushed away from the anvil to disengage its lip from the edge of the anvil, when the jaw will drop below the working-face of the anvil, where it is out of the way and does not interfere with the ordinary use of the anvil.

By my improved mechanism the inner jaw of the vise is raised to its operative position and the outer jaw moved toward the same by a single depression of the treadle without requiring the inner jaw to be placed in position upon the anvil by hand, thereby bringing the vise into service with readiness and convenience when required.

I claim as my invention—

1. The combination, with a rock-lever and an outer jaw attached thereto, of an inner jaw vertically movable with reference to the outer jaw and a differential connection between the two jaws, whereby the inner jaw is caused to ascend in advance of the outer jaw, substantially as set forth.

2. The combination, with a rock-lever and an outer jaw attached thereto, of an inner jaw vertically movable with reference to the outer jaw and a differential connection between the two jaws which is automatically disengaged from the inner jaw when the latter is elevated to its normal position, substantially as set forth.

3. The combination, with the anvil, of a rock-lever pivoted to the anvil, a treadle connected therewith, an outer jaw attached to the rock-lever, an inner vertically-movable jaw connected to the outer jaw and provided with a supporting lip or shoulder, a supporting-bar attached to the anvil-block or other stationary part, a connecting-link attached at one end to said supporting-bar and at its other end to the outer jaw, and a locking pawl or catch attached to the inner jaw and adapted to interlock with the connecting-link, substantially as set forth.

4. The combination, with the anvil, of a rock-lever pivoted to the anvil, a treadle connected therewith, an outer jaw attached to said rock-lever, an inner vertically-movable jaw connected to the outer jaw and provided with a supporting lip or shoulder, a spring whereby the inner jaw is held against the anvil, a supporting-bar attached to the anvil-block or other stationary part, a connecting-link attached at one end to said supporting-bar and at its other end to the outer jaw, and a locking pawl or catch attached to the inner jaw and adapted to interlock with said connecting-link, substantially as set forth.

5. The combination, with the anvil, of rock-levers pivoted to opposite sides of the anvil and connected at their rear ends by a cross-bar, a treadle connected with said levers, an

outer jaw secured to said cross-bar, an inner vertically-movable jaw provided with a supporting lip or shoulder, a link connecting the inner jaw with the outer jaw, a link attached
5 at one end to the outer jaw and having a notched head, a supporting-rod to which the opposite end of said link is attached, and a locking pawl or catch attached to the inner jaw and provided with an extension project-
ing into the path of the cross-bar connecting to the rock-levers, substantially as set forth.

Witness my hand this 11th day of January, 1890.

GILES C. CARPENTER.

Witnesses:

S. S. HAMILTON,
A. N. HUBBARD.