

(No Model.)

J. A. RICHARDS.
HORSESHOE ANVIL AND CLAMP.

No. 354,236.

Patented Dec. 14, 1886.

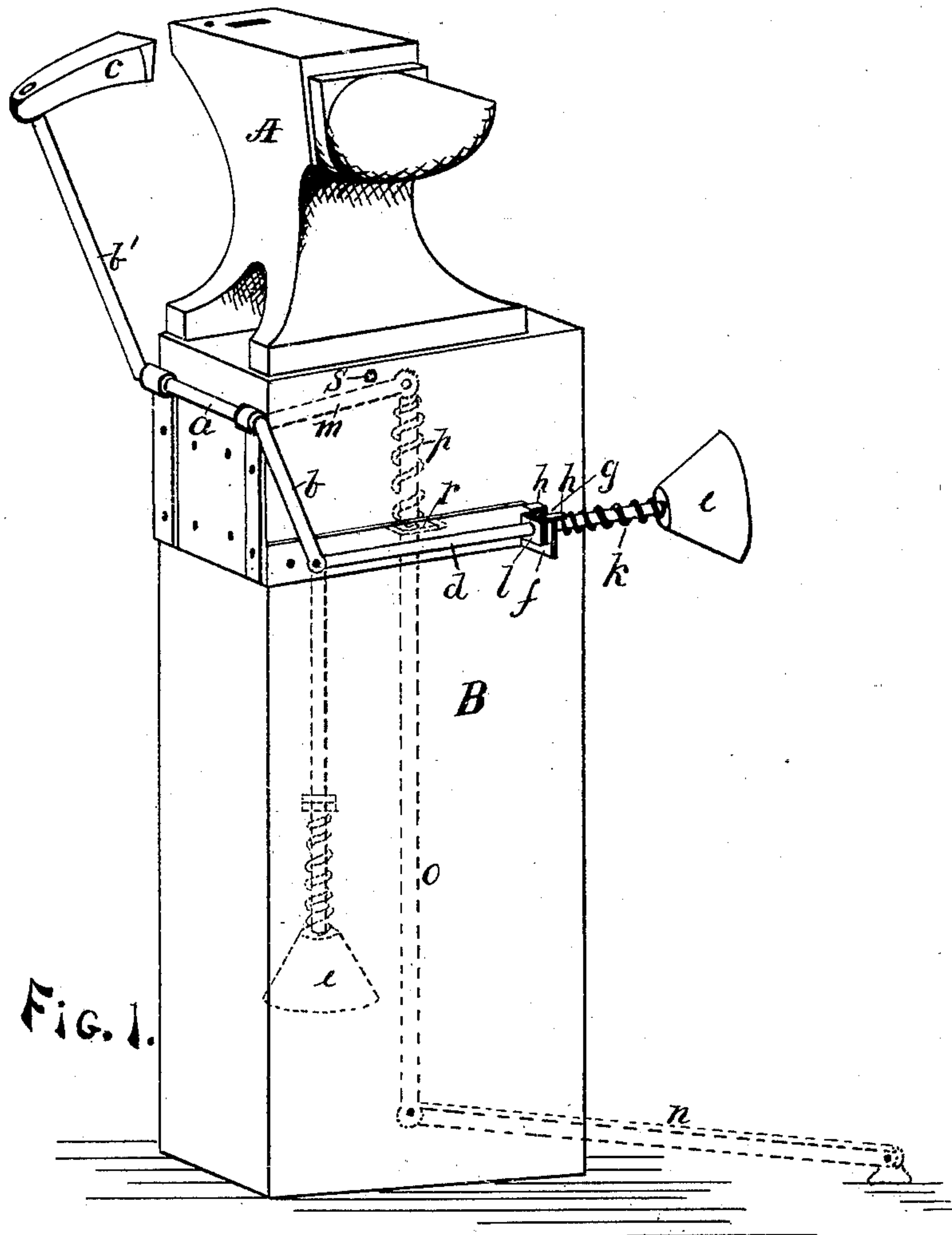


Fig. 1.

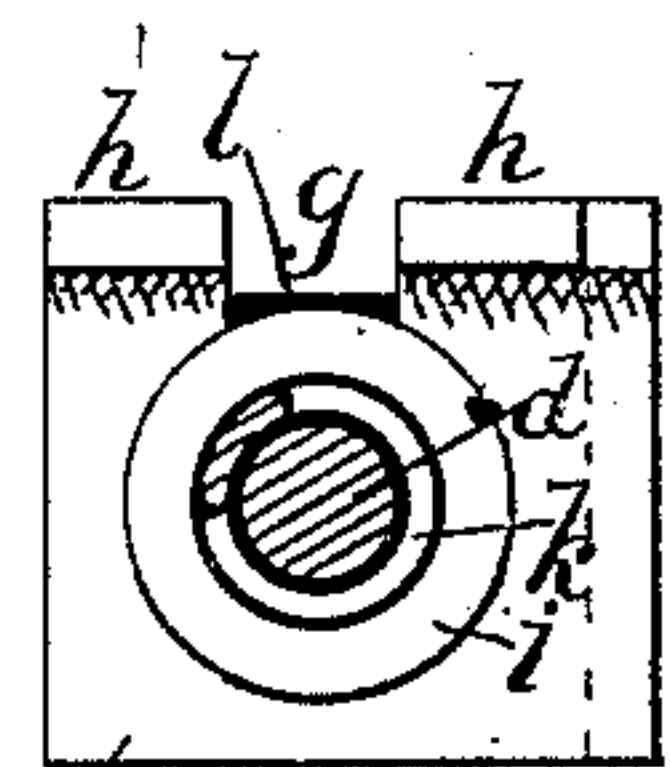


Fig. 3.

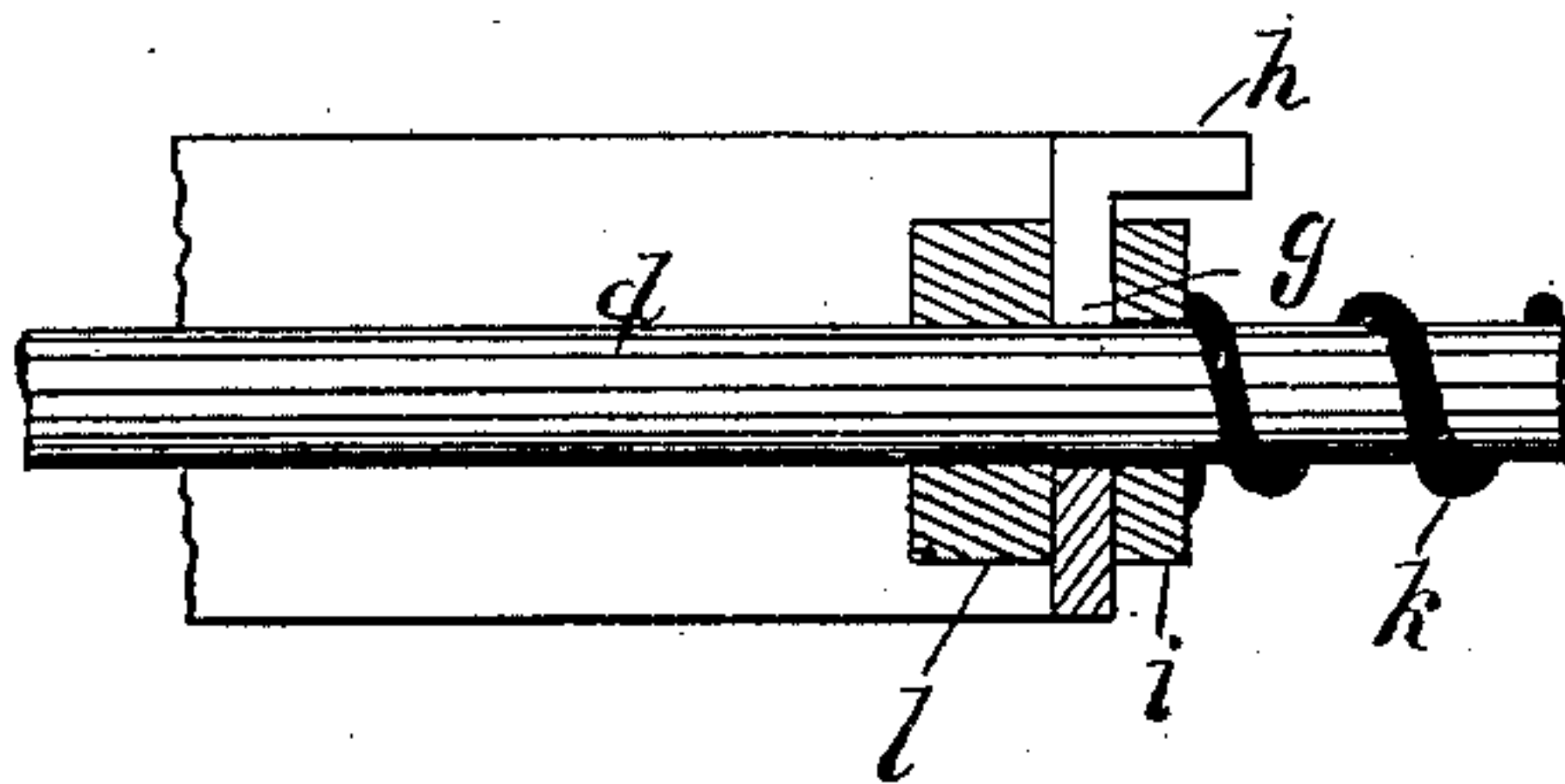


Fig. 2.

Witnesses

Luther V. Moulton,
Sarah A. Moulton.

Inventor

James A. Richards
By Attorney

UNITED STATES PATENT OFFICE.

JAMES ALFRED RICHARDS, OF GRAND RAPIDS, MICHIGAN.

HORSESHOE ANVIL AND CLAMP.

SPECIFICATION forming part of Letters Patent No. 354,236, dated December 14, 1886.

Application filed March 8, 1886. Serial No. 194,505. (No model.)

To all whom it may concern:

Be it known that I, JAMES ALFRED RICHARDS, a citizen of the United States, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented a new and useful Attachment for Anvils, of which the following is a specification.

My invention relates to improvements in attachments to blacksmiths' anvils, to aid in forming the iron with the hammer.

In forming a right angle in a piece of iron it is usual to do so by bending the iron over the edge of the anvil with the hammer by alternately striking in the direction of the top and side of the anvil. In so doing the iron is first bent into a curve, the middle of which is at or near the edge of the anvil. In striking the iron on either side of this point there is nothing to prevent the iron from moving away from the anvil at the other side, and the desired form cannot be quickly obtained.

The objects of my invention are to provide means for holding the iron firmly to the side of the anvil while striking upon the upper surface, thereby more readily securing the desired form; also, to provide means for operating the device either by the knee or foot at pleasure; also, to provide an apparatus that may be used for either holding or striking the iron, as occasion may require. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a perspective of my device, together with an anvil and anvil-block; Fig. 2, an enlarged view of a portion of the knee attachment, shown partly in section; and Fig. 3, an end view of the same.

A is an ordinary blacksmith's anvil, and B the usual block for supporting the same. To this block is journaled a rock-shaft, *a*, having attached the arms or levers *b b'*. To the end of the lever *b'* is attached the head *c* in such position that its end will strike the side of the anvil at or near the top when brought in contact with the same by rotating the shaft *a*. To the end of the lever *b* is pivoted a rod, *d*, which extends horizontally across the side of and a short distance beyond the block B, where it terminates in a pad or knee-rest, *e*. This rod is supported at one end by the lever *b*, and near the other end by a bracket or plate, *f*, projecting from the side of the block B, having a notch,

g, in which said rod rests and slides freely in the direction of its length. To prevent the rod from coming out of the notch *g*, the plate *f* is turned at right angles at either side of said notch, forming projections *h h*, which engage with a washer, *i*, which slides freely on the rod *d*. Between this washer and the pad *e* is a spring, *k*, which forces the washer away from the pad. *l* is a stop secured to the rod *d*, which, coming in contact with the plate *f*, prevents any further movement of the head *c* away from the anvil A.

A lever, *m*, may be attached to the shaft *a*, having attached a treadle, *n*, by means of the rod *o*, upon which is a spring, *p*, to force the lever *m* upward, said spring resting upon a plate, *r*, through which the rod *o* passes. A pin, *s*, inserted in the block B serves as a stop in this case.

The operation of my device is as follows: After heating in the usual way, the iron is placed between the anvil and the head *c* and the latter brought in forcible contact with the iron by pressing the knee against the pad *e*. The iron can then be quickly brought to an angle by striking backward and downward upon the face of the anvil, the inertia and pressure of the head *c* serving to retain the portion gripped in form and position. When desirable, the device may be used as a hammer by alternately applying and removing the pressure upon *e*, the spring *k* serving to move the head *c* away from the anvil A at each stroke. In like manner the same operations may be performed by placing the foot upon the treadle *n*, instead of pressing the knee against the pad *e*. When out of use, the rod *d* may be removed from the notch *g* by compressing the spring *k* and retracting the washer *i* from beneath the projections *h h*. The rod then will hang in the position shown by the dotted lines. If the lever *m* and treadle attachments are not used, the head *c* will swing down alongside the block B, thus being out of the way. If the lever *m* and treadle attachments are used, the same result is secured by removing the pin *s*.

I am aware that clamps for holding irons against the sides of anvils, said clamps attached to pivoted arms and actuated by treadles, have been used. I do not claim these, broadly.

What I claim is as follows:

1. In combination with an anvil and mova-

ble head, the levers *b* and *b'*, shaft *a*, and rod *d*, having attached the pad *e*, substantially as described.

2. In an anvil attachment, in combination
5 with the head *c*, levers *b b'*, and rod *d*, having the pad *e*, the plate *f*, spring *k*, and stop *l*.

3. In an anvil attachment, the combination,
with the rod *d*, having the pad *e*, spring *k*, and
stop *l*, the plate *f*, having the notch *g* and pro-
10 jections *h h*, and the washer *i*, substantially as
described.

4. In an anvil attachment, a movable head

supported and actuated by pivoted levers at-
tached to a rock-shaft, said levers operated by
a rod having attached a knee-pad, a spring, a
washer, and a stop, said rod supported by a
notched plate having projections to engage
with said washer, substantially as described. 15

JAMES ALFRED RICHARDS.

Witnesses:

FRED. J. PROVIN,

A. L. SKINNER.