

No. 738,055.

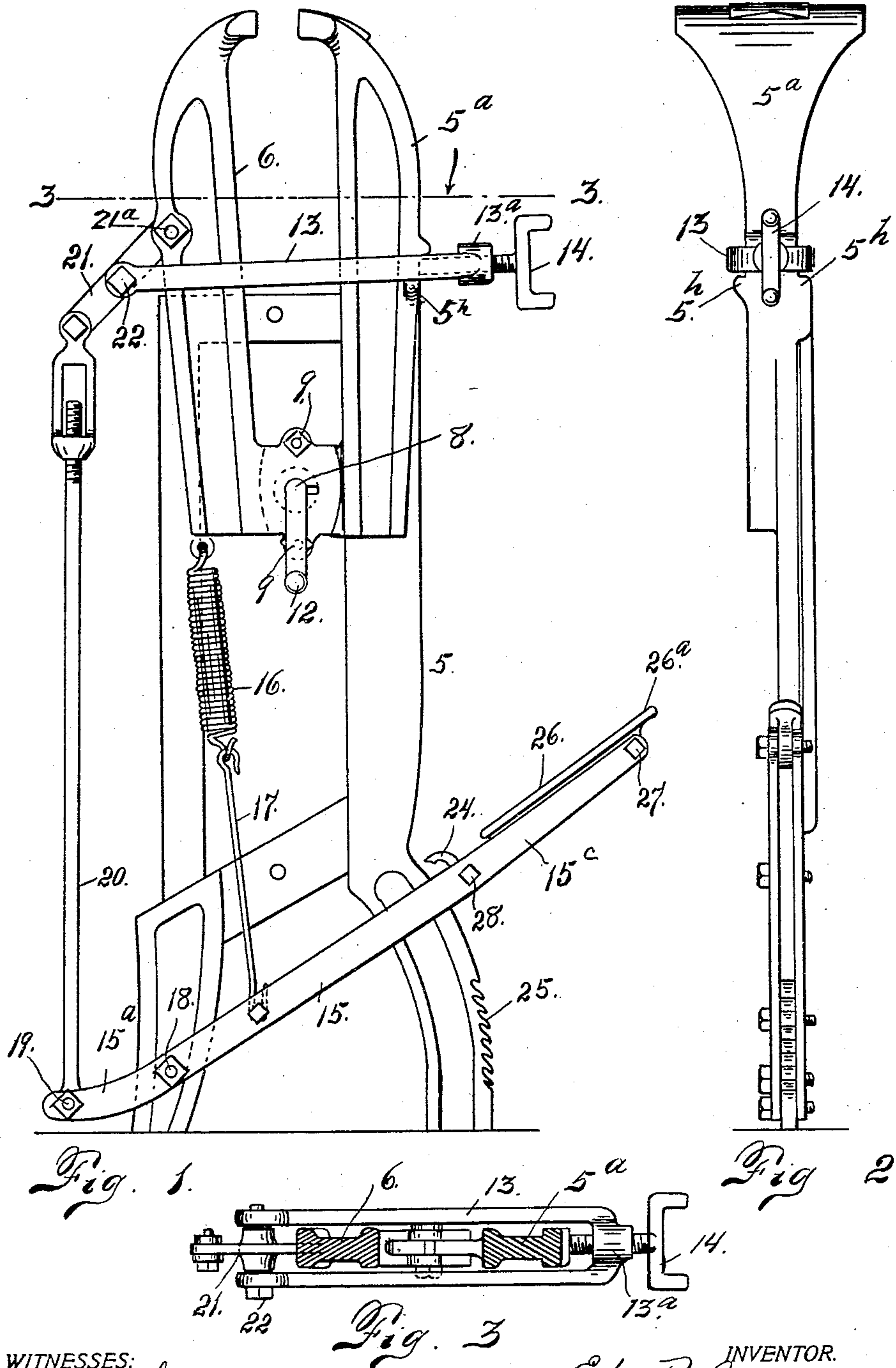
PATENTED SEPT. 1, 1903.

E. B. NEWNAM.
FOOT VISE.

APPLICATION FILED AUG. 6, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



WITNESSES:
Otto C. Haddock.
Dena Nelson.

INVENTOR.
Edw. B. Newnam.
BY *A. J. O'Brien*
ATTORNEY.

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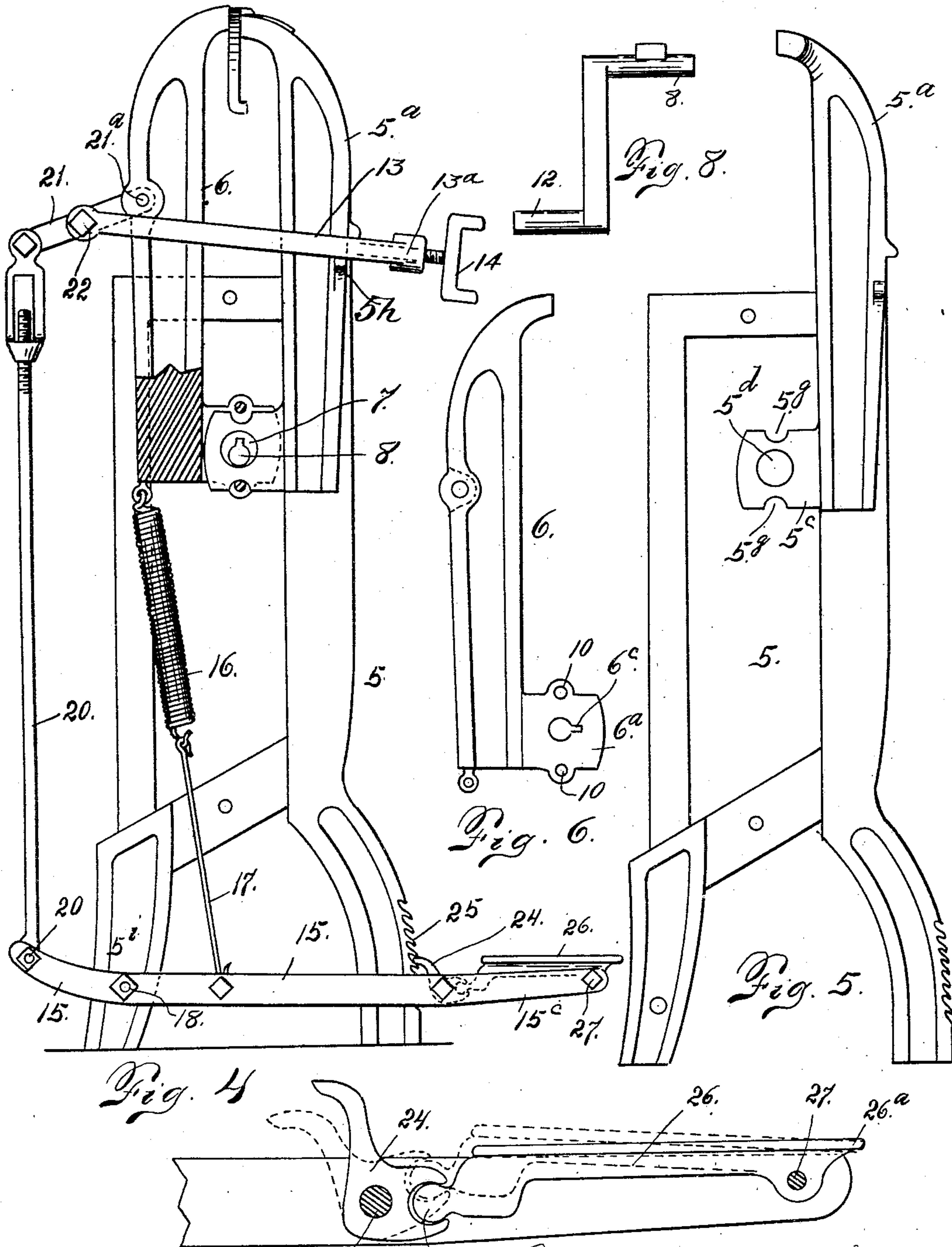
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UNITED STATES PATENT OFFICE.

EDWARD B. NEWNAM, OF DENVER, COLORADO.

FOOT-VISE.

SPECIFICATION forming part of Letters Patent No. 738,055, dated September 1, 1903.

Application filed August 6, 1902. Serial No. 118,655. (No model.)

To all whom it may concern:

Be it known that I, EDWARD B. NEWNAM, a citizen of the United States of America, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Foot-Vises; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in foot-vises of the class set forth in United States Letters Patent Nos. 556,433 and 663,819 and issued to me March 17, 1896, and December 11, 1900, respectively; and to this end the invention consists of the features, arrangements, and combinations hereinafter described and claimed, all of which will be fully understood by reference to the accompanying drawings, in which is illustrated an embodiment thereof.

In the drawings, Figure 1 is a side elevation of my improved foot-vise. Fig. 2 is an edge view of the same. Fig. 3 is a horizontal section taken on the line 3-3, Fig. 1, looking downwardly. Fig. 4 is a side view of the device, partly in section, showing one of the jaws elevated above the other and with a horseshoe in place. Figs. 5 and 6 show in detail the main portions of my improved device. Fig. 7 is an enlarged fragmentary view of the foot-lever, illustrating the locking device.

The same reference characters indicate the same parts in all the views.

Let the numeral 5 designate the framework of the device, which, as shown in the drawings, is cast in a single piece and provided with a jaw 5^a at the top. The movable jaw 6 is provided with a bifurcated projection 6^a, which straddles a portion 5^c, formed on the part 5. The part 5^c is provided with an opening 5^d, in which is located an eccentric disk 7, apertured to receive a spindle 8, which is journaled in the part 6^a and provided with a feather or spline which engages a corresponding groove in the disk, whereby the two parts are made to turn together. One member of the bifurcated part 6^a is provided with a groove to receive the spline of the spindle, whereby the latter may be inserted and re-

moved at pleasure. The parts 6^a and 5^c are connected by bolts 9, which pass through openings 10, formed in the part 6^a. By tightening the nuts on these bolts the parts 5^a and 6^c may be clamped together as tightly as desired. The part 5^c is provided with upper and lower recesses 5^s in line with the bolts 9, whereby the jaw 6 is allowed to move up and down in response to the turning of the eccentric disk. The spindle 8 protrudes from the part 6^a and is provided with a crank 12 for convenience of manipulation. When this crank is raised, the jaw 6 is lifted to the position shown in Fig. 4, whereby the metal of the horseshoe is prevented from spreading over the top of the jaw 6 and forming a projection on the flat side of the shoe during the operation of forming a calk thereon.

The jaws 6 and 5^a are surrounded by a yoke 13, resting on shoulders 5^h, formed on the jaw 5^a. The extremity 13^a of this yoke is provided with a threaded opening in which is inserted a hand-screw 14, whose inner extremity bears against the stationary jaw 5^a. By means of this screw and the yoke the position of the movable jaw with reference to the stationary jaw may be regulated at will. The lower extremity of the jaw 6 is connected with the foot-lever 15 by means of a coil-spring 16 and a rod 17. The lever 15 is fulcrumed on the lower part 5^a of the frame, as shown at 18. Its short arm 15^a is pivotally connected, as shown at 19, with the lower extremity of an extensible rod 20, whose upper extremity is connected with a lever 21, the latter being fulcrumed, as shown at 22, on one extremity of the loose yoke 13. The extremity of the lever 21 remote from the rod 20 is pivotally connected with the movable jaw 6 of the device, as shown at 21^a.

Pivotally mounted on the long arm 15^c of the foot-lever, as shown at 23, is a locking-dog 24, whose upper extremity is adapted to engage ratchet-teeth 25, formed on the lower part of the frame. The foot-lever is double or composed of two pieces spaced apart. The dog 24 is located between the two parts of the lever. The fulcrumed bolt 18 is threaded in both parts, whereby the space between them is kept uniform. Also located between the two parts of the foot-lever is a lever 36, fulcrumed at 27 near its outer extremity and

near the outer extremity of the foot-lever. The long arm of the lever 26 is connected with the dog 24 by a knuckle-joint, as shown at 28, and normally has a tendency to hold the dog disengaged from the ratchet-teeth 25. When it is desired to throw the dog into engagement with the ratchet-teeth, it is only necessary to place the foot on the outer extremity 26^a of the auxiliary lever 26, beyond its fulcrum 27. Then pressure at this point will throw the auxiliary lever and the dog to the dotted-line position in Fig. 7 and to the full-line position in Fig. 4.

From the foregoing description the use of my improved foot-vise will be readily understood. The space between the jaws when open is regulated by means of the hand-screw 14. The jaw 6 is moved toward the jaw 5^a by forcing the foot-lever downwardly. This is accomplished by placing the foot of the user upon the auxiliary lever 26, between the points 27 and 28, and applying sufficient force for the purpose. During this downward movement of the long arm of the foot-lever the dog 24 is held out of engagement with the ratchet-teeth 25. As soon as the foot-lever has reached its limit of downward movement the dog is forced into the locking position or into engagement with the ratchet-teeth 25 by moving the foot outwardly to engagement with the extremity 26^a of the auxiliary lever, as heretofore explained. As the long arm of the foot-lever is moved downwardly its opposite arm is raised, moving the rod 20 upwardly and actuating the normally inclined power-lever 21, which as it approaches the horizontal position moves the jaw 6 toward the right (referring to Fig. 1) and causes it to grip whatever may be placed between the two jaws. The movable jaw is locked in the gripping position by means of the dog 24, which when thrown into engagement with the ratchet-teeth 25 is held in that position until released by virtue of the tension or upward pull of the spring 16, acting through the rod 17. This spring tension is sufficient to overcome the normal tendency of the auxiliary lever 26 to disengage the dog from the ratchet-teeth. To unlock the dog it is only necessary to press on the auxiliary lever between the points 27 and 28. When the dog is in the locked position, the lever 26 projects above the foot-lever far enough to allow the auxiliary lever sufficient independent movement to unlock the dog, as will be readily understood. The raised position of the auxiliary lever is clearly indicated by dotted lines in Fig. 7. As soon as the locking-dog is released from the ratchet-teeth the spring 16 will throw the foot-lever to the position shown in Fig. 1, thus opening the jaw 6 or moving it away from the jaw 5^a to the full extent of its movement.

Having thus described my invention, what I claim is—

1. In a foot-vise, the combination of a stationary jaw, a movable jaw, a yoke embrac-

ing the two jaws, a power-lever fulcrumed on the yoke having one arm pivotally connected with the movable jaw, a foot-lever, a rod connecting the foot-lever with the other arm of the power-lever, a locking-dog pivotally mounted on the foot-lever, an auxiliary lever mounted on the foot-lever connected with the locking-dog and normally holding the latter in the released position by gravity, the frame being provided with teeth which the locking-dog is adapted to engage when thrown to the locking position.

2. The combination with a stationary frame and two jaws, of a power-lever fulcrumed in suitable proximity to one of the jaws, one arm of the lever being suitably connected with the jaw, a foot-lever, a rod connecting the two levers, a locking-dog pivotally mounted on the foot-lever, and an auxiliary lever fulcrumed on the foot-lever and having one extremity connected with the locking-dog to hold the latter normally in the released position, the frame being provided with teeth which the locking-dog is adapted to engage when thrown to the locked position.

3. The combination with the jaws of a vise, of a power-lever fulcrumed on a movable support and connected with a movable jaw, a foot-lever, a suitable connection between the two levers, whereby the levers and the movable jaw may be simultaneously actuated, a locking-dog pivotally mounted on the foot-lever, an auxiliary lever fulcrumed on the foot-lever and having one extremity connected with the locking-dog to hold the latter normally in the released position, the frame being provided with teeth which the locking-dog is adapted to engage when suitably actuated, substantially as described.

4. In a vise, the combination with a stationary frame, of a foot-lever fulcrumed thereon, a locking-dog pivotally mounted on the foot-lever, the frame being provided with notches or teeth, and an auxiliary lever fulcrumed on the foot-lever and having one extremity connected with the locking-dog to hold the latter normally in the released position by gravity, the locking-dog being adapted when moved in opposition to the normal holding tendency of the auxiliary lever, to engage the ratchet-teeth and lock the foot-lever in any desired position of adjustment.

5. In a vise, the combination with a suitable frame, and a foot-lever fulcrumed thereon, of a locking-dog pivotally mounted on the foot-lever, an auxiliary lever fulcrumed on the foot-lever and connected with the locking-dog by a knuckle-joint to hold the latter normally in the released position, the frame being provided with notches or teeth which the locking-dog is adapted to engage, substantially as described.

6. The combination with a frame, of a spring-held foot-lever fulcrumed thereon, a locking-dog pivotally mounted on the foot-lever, and an auxiliary lever carried by the foot-lever and fulcrumed thereon, the auxiliary lever

being connected with the locking-dog by a knuckle-joint and normally having a tendency to hold the dog in the released position, the frame having notches or teeth which the locking-dog is adapted to engage.

5 7. In a foot-vise, the combination with a stationary jaw, a movable jaw, and a loose yoke embracing the two jaws, of a power-lever fulcrumed on the yoke and connected with the
10 movable jaw, a foot-lever bifurcated, a rod connecting the two levers, a locking-dog mounted on the foot-lever between its two members and adapted to engage teeth formed on the frame, and an auxiliary lever also
15 mounted on the foot-lever between its two members, projecting above the same and having a normal tendency to hold the locking-dog in the unlocked position.

20 8. In a vise, the combination of a suitable frame provided with a stationary jaw having an apertured projection, a movable jaw having a bifurcated part straddling the apertured projection of the stationary jaw, an eccentric disk located in the opening of the stationary

jaw's projection, a crank-pin suitably connected with the eccentric disk and journaled in the bifurcated part of the movable jaw, whereby the latter may be raised and lowered at will, bolts passed through openings formed in the bifurcated part of the movable jaw
30 above and below the projection of the stationary jaw, the last-named projection being fashioned to permit the movable jaw to be raised and lowered, a power-lever connected with the movable jaw, a foot-lever, a suitable connection between the two levers, a locking-jaw
35 pivotally mounted on the foot-lever, and an auxiliary lever fulcrumed on the foot-lever and connected with the locking-dog by a knuckle-joint, the frame being provided with
40 teeth which the locking-dog is adapted to engage.

In testimony whereof I affix my signature in presence of two witnesses.

EDWARD B. NEWNAM.

Witnesses:

DENA NELSON,
IDA E. O'BRIEN.