

W. M. SCHOLL.
METAL FORMING APPLIANCE.
APPLICATION FILED OCT. 18, 1909.

997,707.

Patented July 11, 1911.

2 SHEETS—SHEET 1.

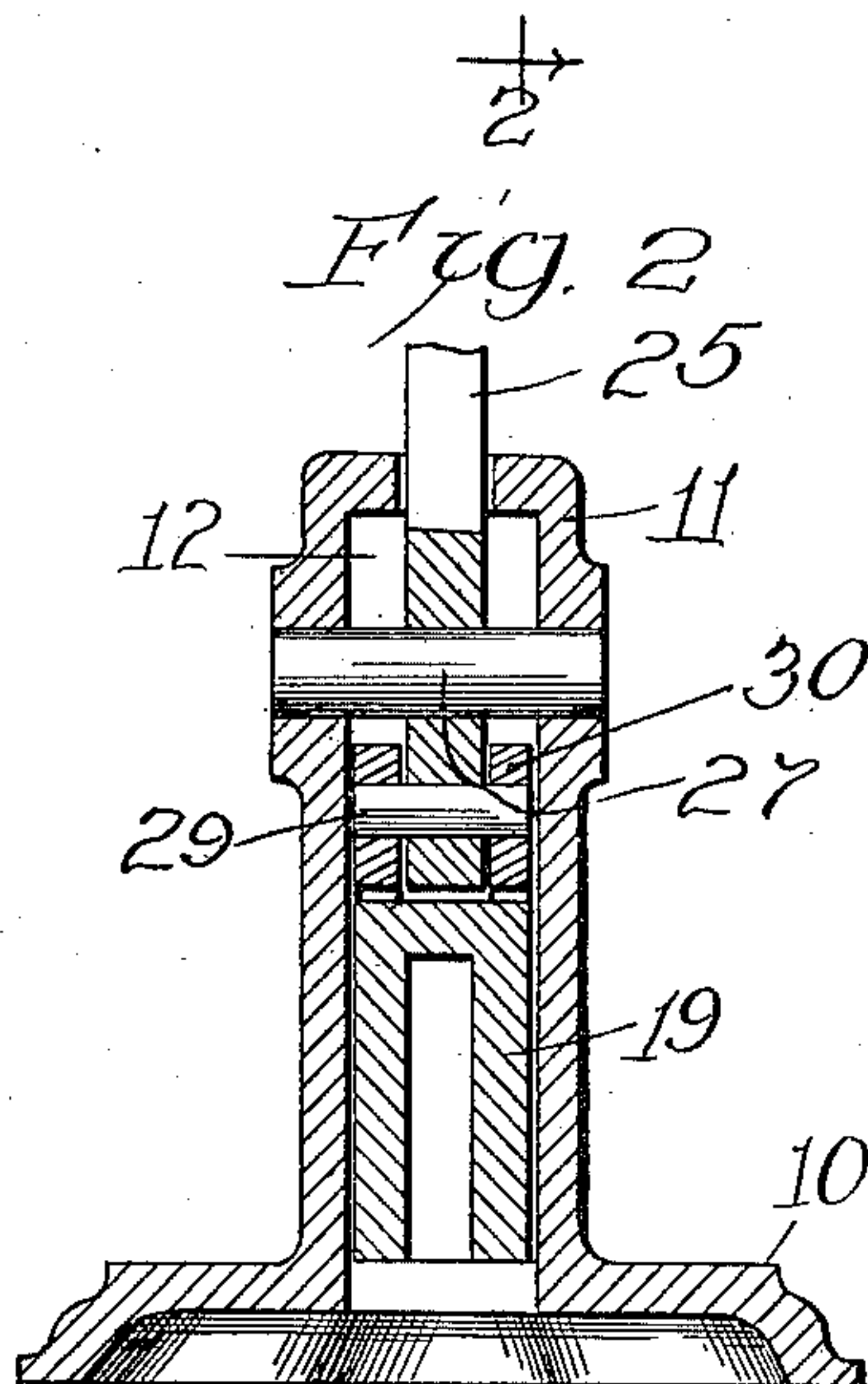
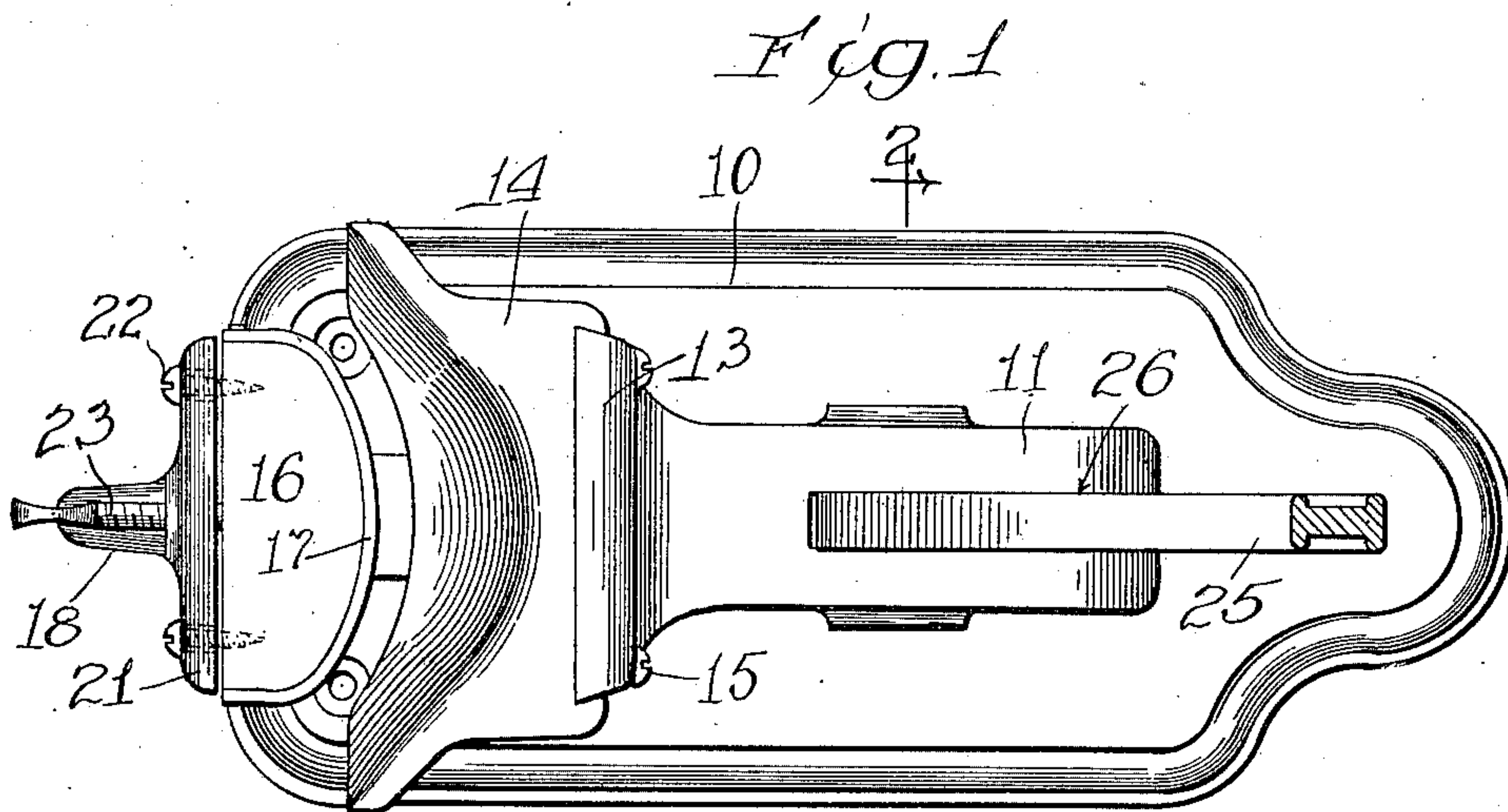
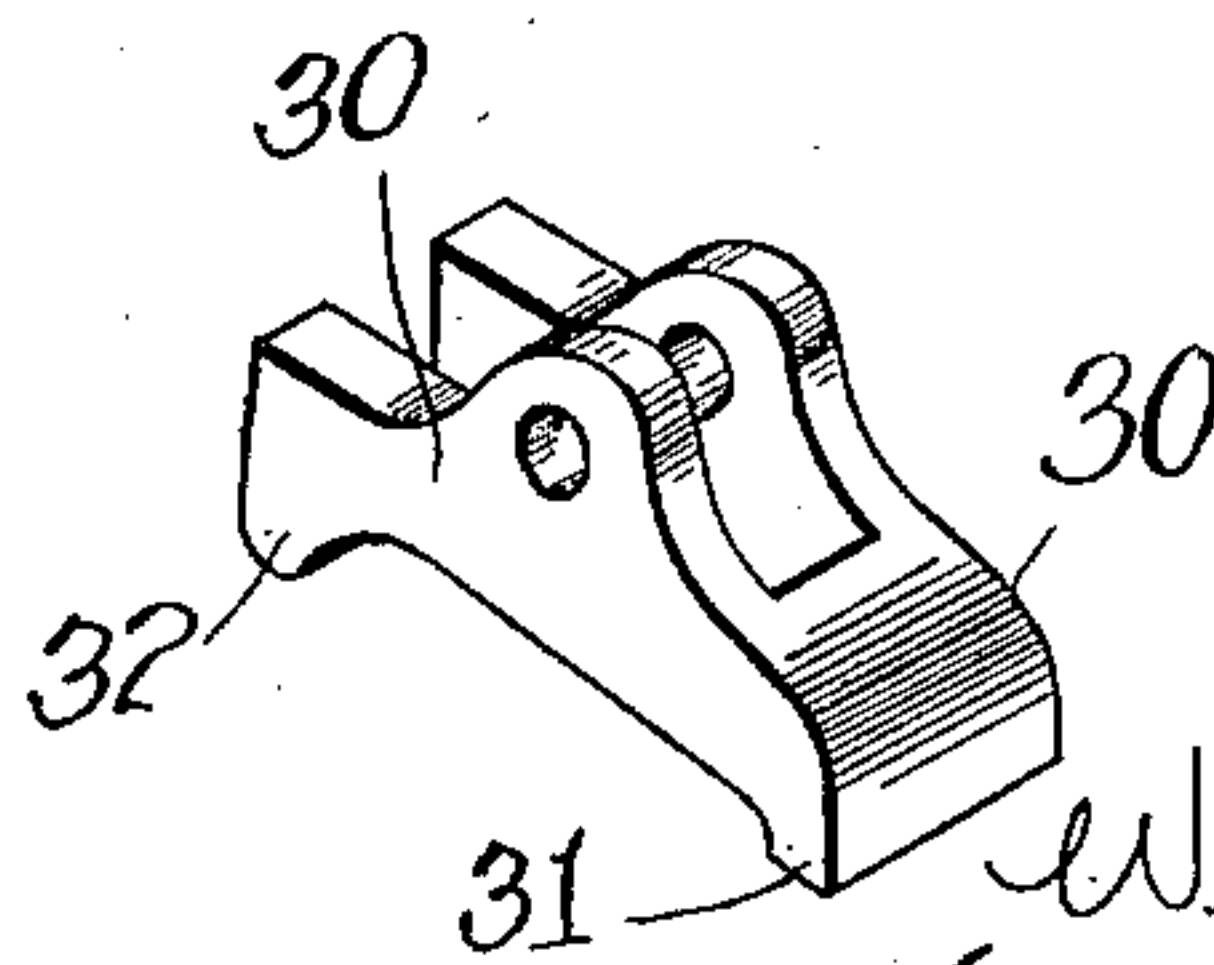


Fig. 3



Witnesses:
H. R. White
R. A. White.

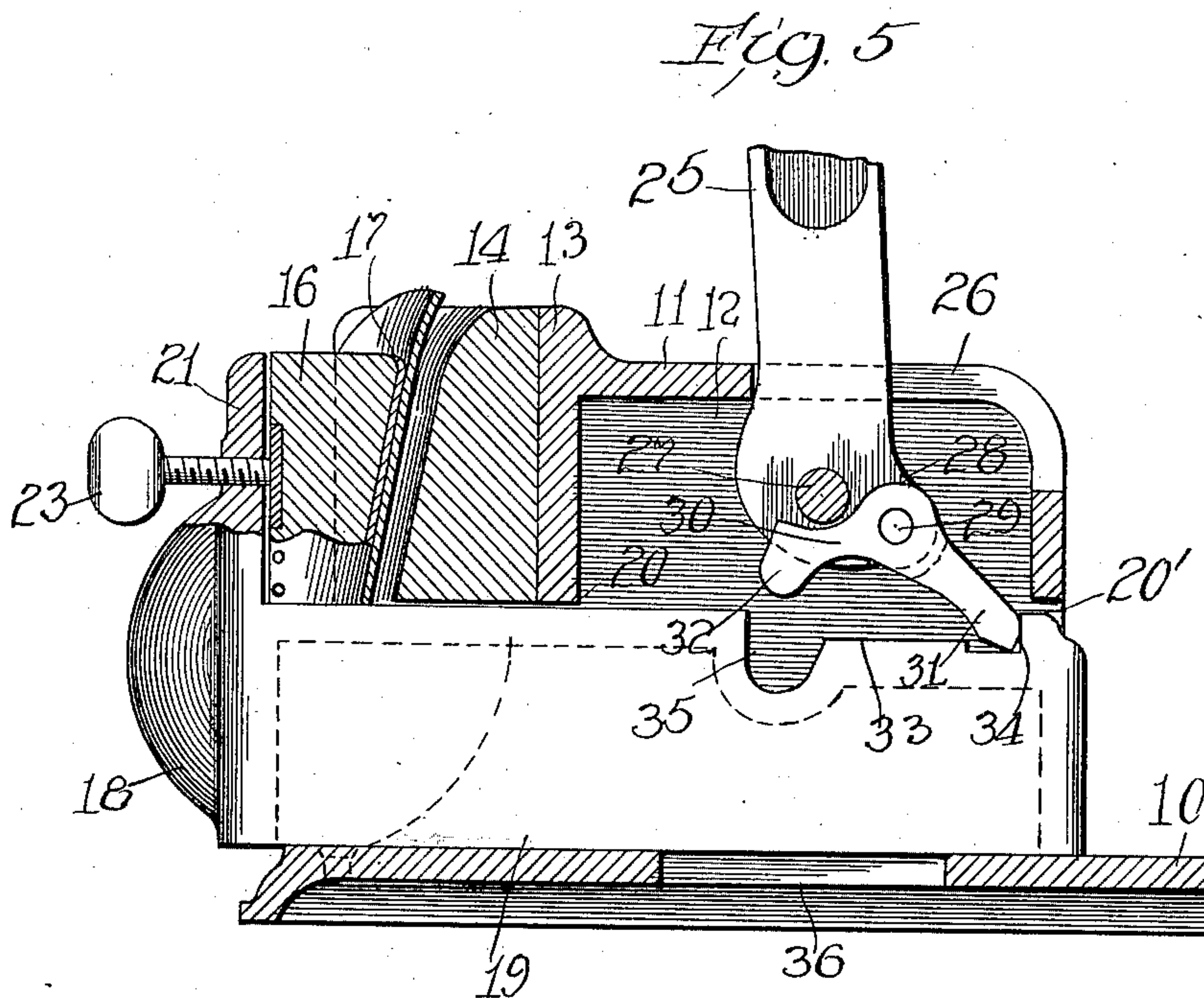
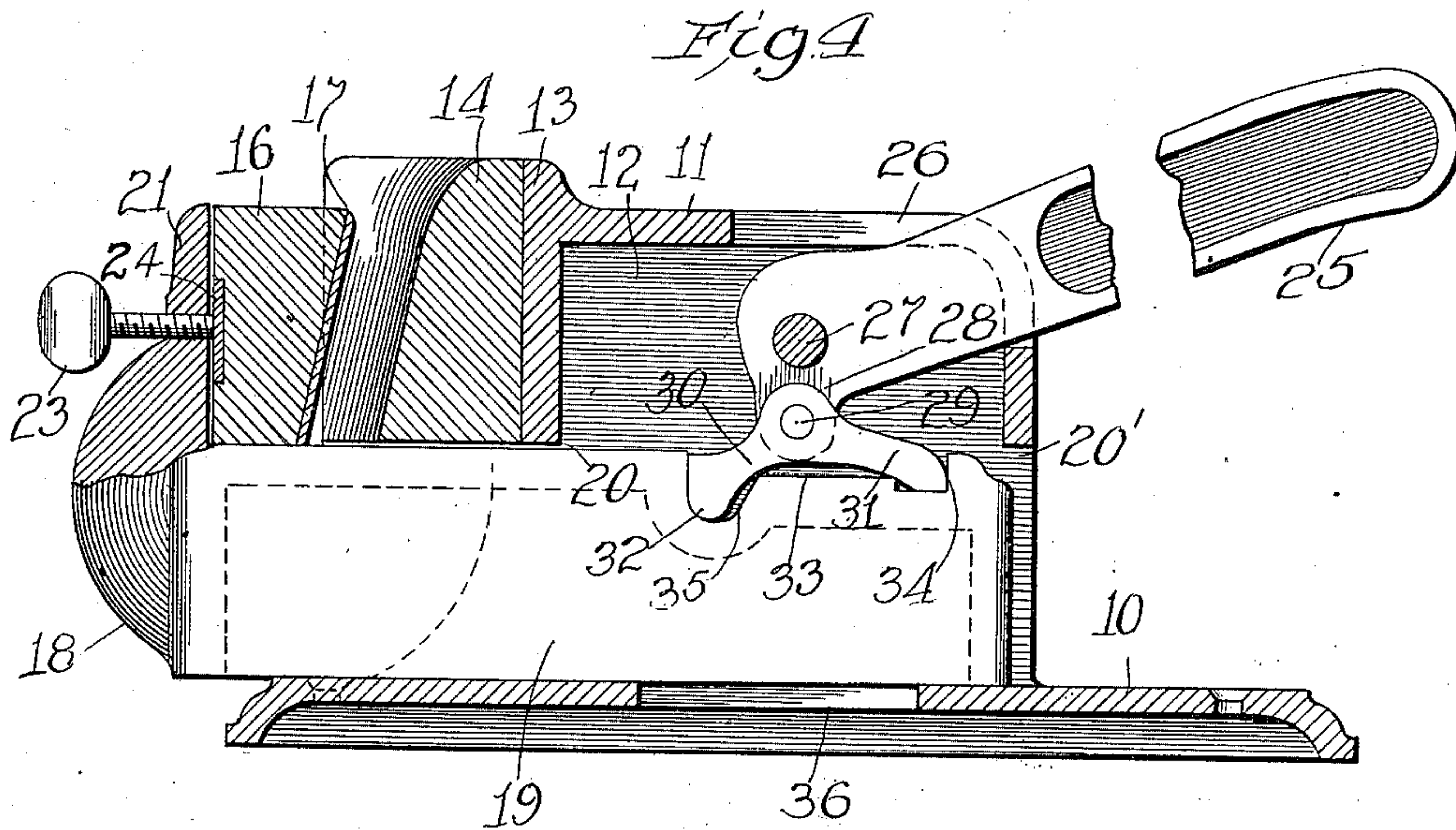
Inventor:
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By *Forde Bain & May*
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UNITED STATES PATENT OFFICE.

WILLIAM M. SCHOLL, OF CHICAGO, ILLINOIS.

METAL-FORMING APPLIANCE.

997,707.

Specification of Letters Patent. Patented July 11, 1911.

Application filed October 18, 1909. Serial No. 523,313.

To all whom it may concern:

Be it known that I, WILLIAM M. SCHOLL, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Metal-Forming Appliances, of which the following is a specification.

My invention relates to improvements in metal forming appliances, and has for its particular object to provide a satisfactory forming and clamping device wherein metal plates, such as the plates in instep arch-supports, may be clamped under bending pressure in forming them into any desired curvature.

It will be understood that the metal plates of instep-arch must often be given special curvatures to suit the requirements of particular users, and the device herein described is particularly adapted for receiving an arch-plate member of suitable outline and clamping such a plate with considerable pressure against a form as that by the effect of the pressure applied, and, if necessary, the supplemental peening or hammering of the clamped plate while being held, the plate may be brought to the desired form.

One of the particular objects of my invention is to provide a simple, easily operated, pressure-applying device, through which considerable pressure may easily be exerted upon the material to be formed and which will be self-locking in position of maximum pressure.

Other objects of my invention are to provide a construction which is cheap, easy of manufacture, durable, and not liable to get out of order.

In the drawings, wherein I have illustrated an embodiment of my invention, Figure 1 is a front elevation thereof, with the handle broken away; Fig. 2 is a cross section on line 2—2 of Fig. 1; Fig. 3 is a perspective view of the lever dog; Fig. 4 is a central vertical section with parts in opened position; and Fig. 5 is a similar view with parts in closed position.

Referring to the construction shown, indicates a base plate from which projects upwardly the integral housing, 11, generally in the form of a narrow, hollow, plinth, inclosing a working space, 12. The upper front portion of the housing is expanded into a supporting platform, 13, in which is

mounted a former or anvil, 14, appropriately shaped in its front surface for the work to be done. Various formers may, of course, be used with the appliance, and, for convenience, dove-tailed connection between the platform and the former may be effected and the former or anvil held by removable screws, 15. The general shape of the former or anvil for arch supports should be exaggeration of the normal arch of the plantar surface of the human foot.

For coöperation with the anvil, 14, there is provided a movable pressure block, 16, which is preferably in the form of a wooden block covered with a leather facing, 17, on its side toward the anvil for relative softness and yieldability, and carried by and adjustable upon a reciprocable beam, 18, the pressure block 16 being preferably considerably smaller than the arch of the anvil. The beam 18 has a stem, 19, which slides horizontally in rear of the anvil 14 through the openings 20 and 20', alining in the front and back faces of the housing 11, and it has an upwardly projecting head or bearing portion 21, to engage the pressure block 16. For conveniently associating the parts, I provide screws, 22, in the block 16, projecting through corresponding apertures in the portion 21 of the beam 18, and acting as limitation stops and positioning the studs, while in the center of the projection 21 of the beam 18, I provide a thumb screw, 23, which bears against the wear plate, 24, in the adjacent surface of the block 16.

The beam and its connected pressure block are movable by an operating lever, 25, projecting from an opening in the rear and upper edges of the housing 11, of suitable extent to give the desired range of movement. The lever is pivoted upon the pin 27, within the housing, and has adjacent said pin an eccentric portion 28, on which is pivotally mounted, as at 29, a connecting foot, 30, the pivot 29 being arranged to reach its point of closest proximity to the beam 18 when the lever 25 is depressed to its limits.

The foot 30 is bifurcated in part to straddle the lever end and provides at its outer end, most remote from the clamping part, a heel, 31, while at its bifurcated inner extremity it provides toes, 32. The portion of the stem 19 of the beam, with which said foot coöperates, is appropriately recessed, as at 33, for coöperation with said foot, one

end of the recess terminating in an outer shoulder, 34, for coöperation with the heel, 31, and the other end terminating in a notch, 35, providing an inner shoulder, and a space 5 in which the toes may rest.

In the operation of the device, the lever stands normally depressed, with the foot 30 as a whole thrown into proximity to the beam, so that both the heel and toe ends of 10 the foot engage the appropriate recess 33. As the lever handle is elevated, the foot moves rearward, carrying with it the beam, while the pivot 29 passes from vertical alinement with the pivot 27, to a line between the 15 lever pivot 27 and the shoulder 34, so that the heel portion 31 and the eccentric part 28 act like toggle links, locking when the lever reaches its final limit of movement. During this movement the toe 32 is with- 20 drawn from the recess 35, and, straddling the lever, the toes contact with pivot 27 when the toggle "locks," so preventing overthrow movement of the lever. Of course, the elevation of the lever puts any material 25 body which is interposed between the block 16 and the anvil 14 under pressure to an extent determined by the adjustment of the pressure block 16 by screw 23. On downward movement of the handle, 25, the toggle 30 lock is broken, the toe 32 moves quickly into its recess 35 in the beam 19, and then the beam is moved by the toe during the further depression of the lever 25, so relieving the tension on the material between the block 35 16 and the anvil 14, and restoring the clamp to open position.

The construction is such that the parts may readily be assembled and disassembled, it being necessary, in knocking down 40 the parts, only to withdraw the pivot pin, 27, withdraw the beam 18 from the housing, and pass the lever with the foot attached thereto out through a rear opening 36 in the base member 10.

It will be understood that I do not consider my invention as limited to the single use for which the particular device is shown as especially adapted, but that the construction described is widely applicable to lever- 50 operated pressure devices. The device shown, however, is particularly adapted to use in forming instep-arch supports, and in such use a plate of proper outline may be placed against the anvil and put under pressure as 55 shown in Fig. 4, the relatively small pressure block springing the plate into the curve of the anvil so that by sufficient applications of the clamping pressure, the plate may be "set" in the desired curvature. When a 60 curvature is desired which can not be compassed by the pressure action, the plate may be clamped tightly and then peened to the desired contour. Obviously, the anvil and pressure blocks may be changed as to size, 65 particular curvature and the like, as oc-

casion may require, and it will be apparent that these parts are intended for ready detachment or replacement.

What I claim is:

1. The combination of a guiding base, a 70 beam guidedly supported thereon, a lever for moving said beam, and a foot for forming connection between said lever and beam, pivoted to the lever between its ends and having its opposite ends arranged for oper- 75 ating engagement with the beam to move the latter in respectively opposite directions.

2. The combination of a guiding base, a movable beam guided thereon, a lever piv- 80 oted to the base a foot pivoted between its ends eccentrically to said lever and arranged to be rocked with reference to the beam by means of the lever, said beam providing 85 abutment for engagement of opposite extremities of said foot whereby it may be moved both up and down by appropriate movements of the lever.

3. The combination of a guiding base, a beam guidedly mounted thereon providing 90 separated shoulders therein, a lever pivoted to the base, a foot providing a heel normally contacting with one of said shoulders, and pivoted to the lever eccentrically to move 95 said beam in one direction with a toggle action when the lever is appropriately moved in one direction, said foot providing a toe upon the opposite side of the pivot point 100 arranged to act as a stop for the toggle movement aforesaid when the lever is moved in said direction to engage the oppo- 105 site shoulder of the beam to move the latter upon movement of the lever in the opposite direction to that first described.

4. In a device of the character described, a base, a housing projecting from said base, 105 a lever pivoted in said housing, a movable beam guided in said housing, and providing opposing shoulders on opposite sides of the lever pivot, a foot eccentrically pivoted to 110 said lever having a toe and heel adapted for engagement with the opposite shoulders of the beam when the foot pivot is in closest proximity to the beam, a stationary pres- 115 sure part carried by the housing, and a movable pressure part carried by the beam.

5. The combination of a hollow guiding base, a stationary anvil thereon, a movable pressure block, a moving beam therefor 120 guided in the base, a lever pivoted in the base, and a foot housed within the base, pivoted between its ends on the lever, and having its opposite ends arranged to coact with the beam to move it in either direction as 125 the lever is appropriately moved.

6. In an arch plate former, a base provid- 125 ing a projecting housing, an anvil mounted at right angles to the base at one end of the housing near the front thereof, the side edge of said anvil being spaced apart from the base, an L-shaped beam having its stem 130

sliding through said end of the housing between said edge of the anvil and the base, a pressure block carried by the head of the said beam overlying the working face of the anvil, a lever pivoted in the housing on the same side of the beam-stem as the anvil, and extending through a front opening of the housing, and operative connections between the lever and the beam comprising a foot pivoted to the lever for direct engagement with the beam to move it positively in either direction.

7. In an arch-plate former, a base providing a projecting housing, an anvil mounted on the front of said housing, a beam sliding through said housing back of the anvil, a lever pivoted to the base connected to operate the beam, a pressure block of relatively yieldable material carried by the beam, and means for adjusting the block on the beam to vary the limits of its movements with respect to the anvil.

8. The combination with relatively movable and stationary clamping parts, of a pivoted lever, a foot pivoted between its ends to the said lever, arranged, when said lever is moved in one direction, to engage the movable clamping element with one of

its ends, thereby to move said clamping element in one direction, and when said lever is moved in the opposite direction, to engage said clamping element with its other end, thereby to move said clamping element in the opposite direction.

9. The combination of a base member comprising a plate, a hollow housing projecting from said plate, an anvil mounted on the end of said housing relatively movable from the plate, a beam sliding through the housing between the plate and the anvil carrying portion of the housing, said beam carrying a part for coöperation with the anvil, a lever extending into and pivoted in the housing, and a foot, pivoted between its ends eccentrically to said lever, arranged wholly within the housing and having its opposite ends arranged for operative engagement with the beam to move the latter in respectively opposite directions.

In testimony whereof I hereunto set my hand in the presence of two witnesses.

WILLIAM M. SCHOLL.

In the presence of—

W. LINN ALLEN,

MARY F. ALLEN.