

No. 697,282.

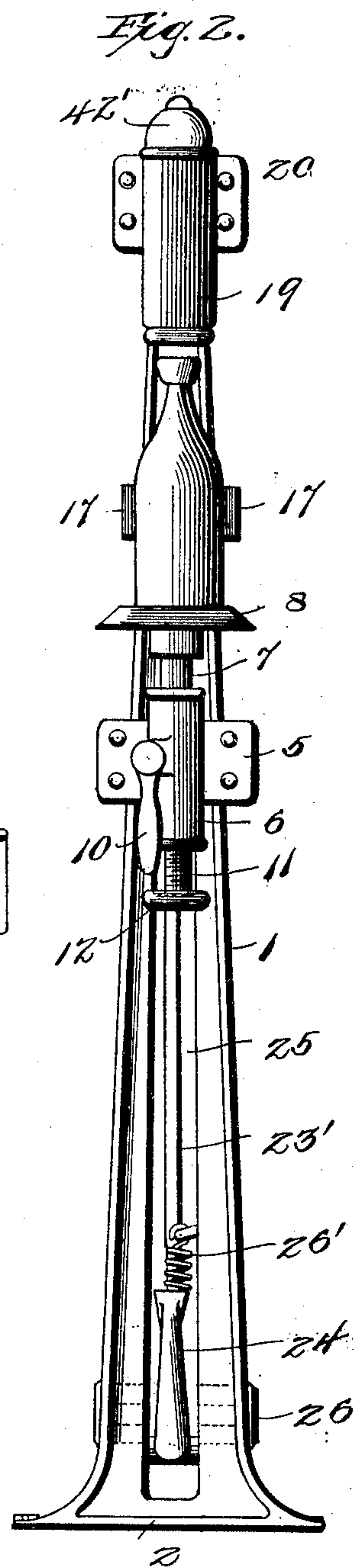
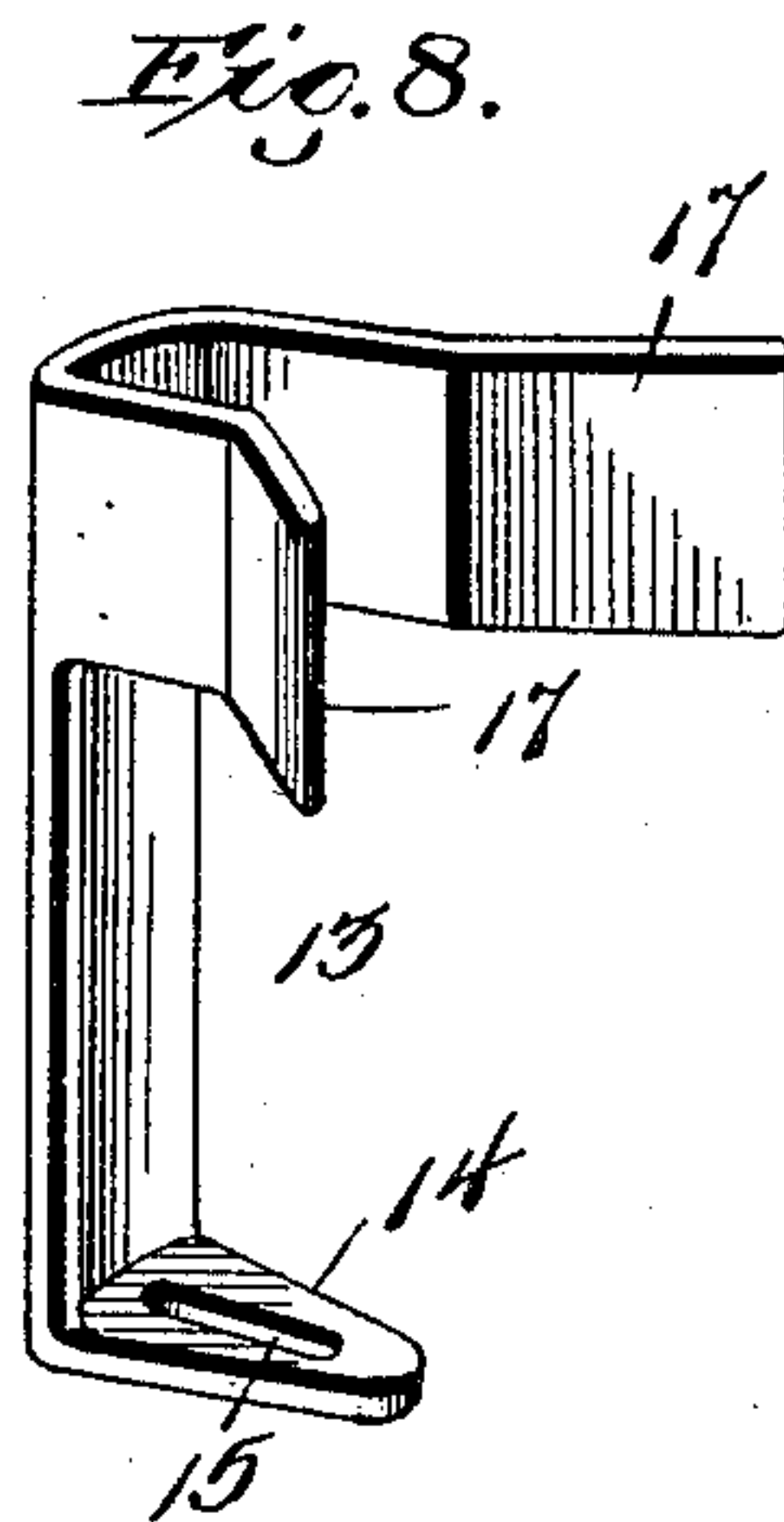
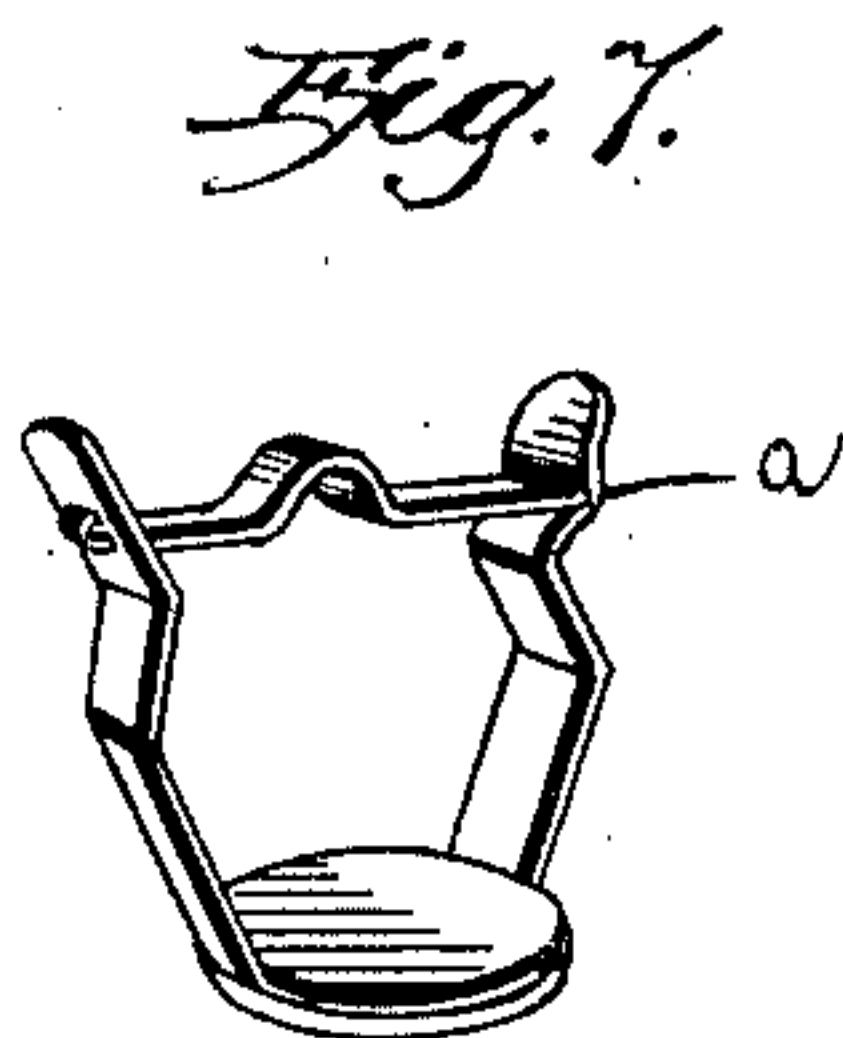
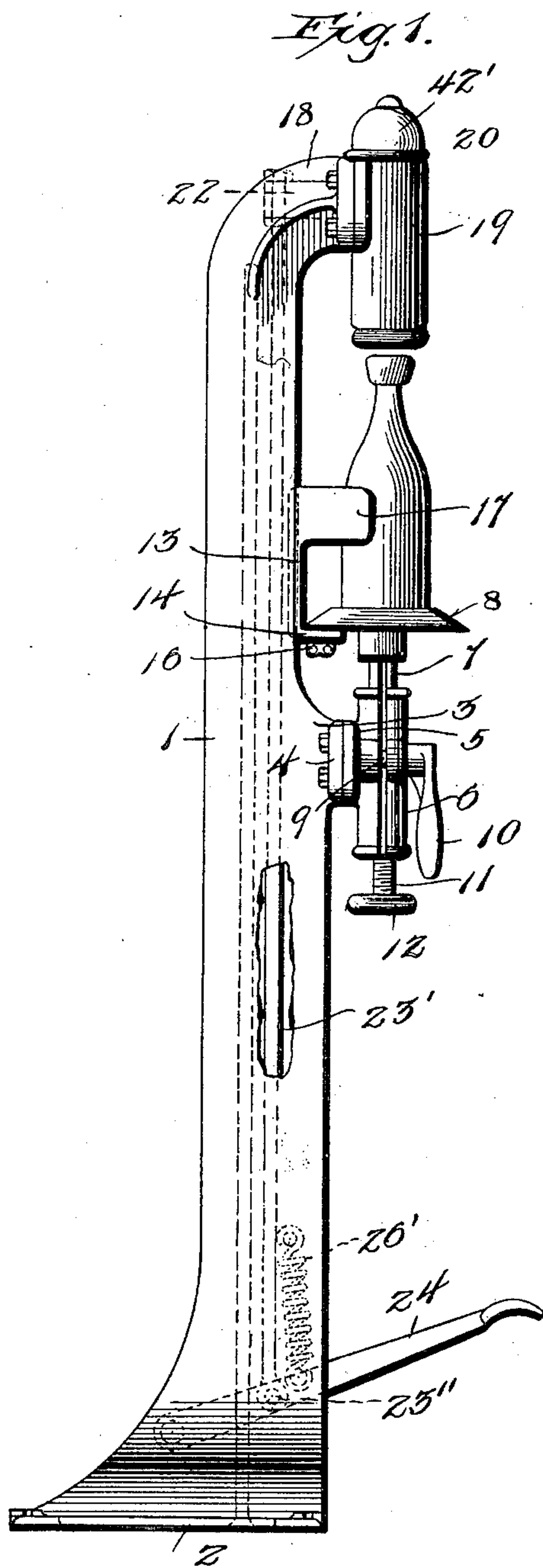
Patented Apr. 8, 1902.

E. D. SCHMITT.  
MACHINE FOR APPLYING BOTTLE SEALS.

(Application filed Dec. 31, 1901.)

(No Model.)

2 Sheets—Sheet 1.



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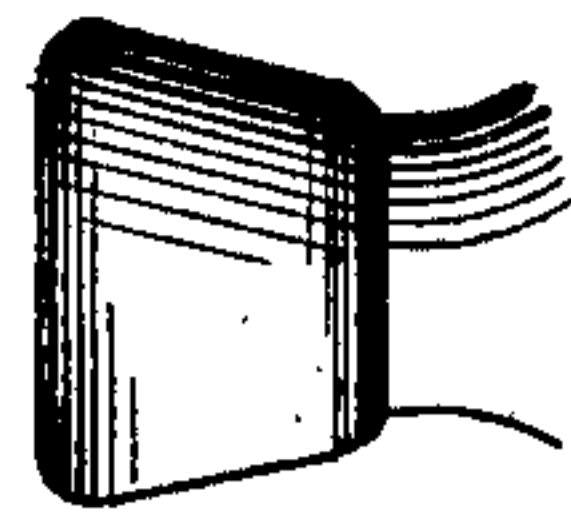
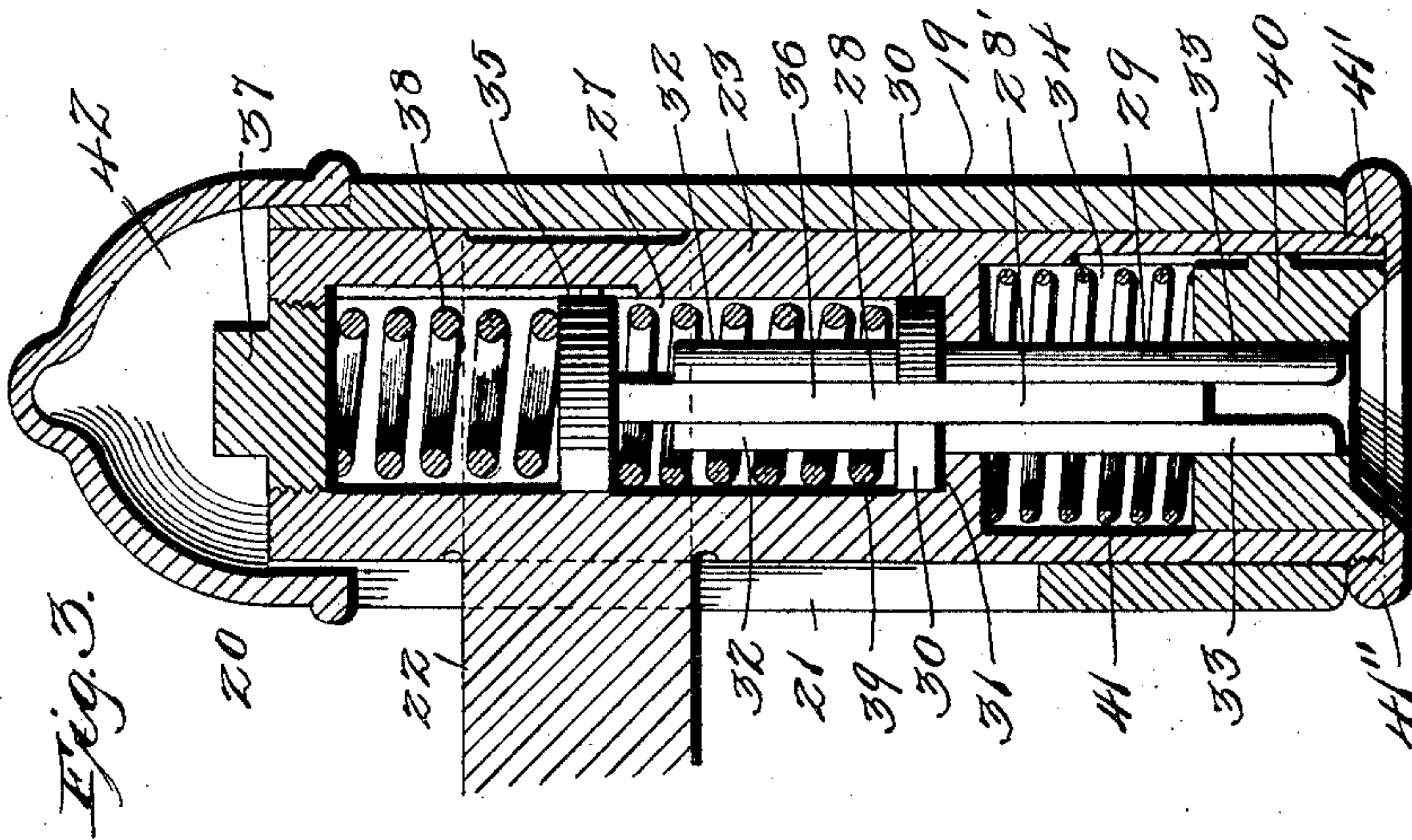
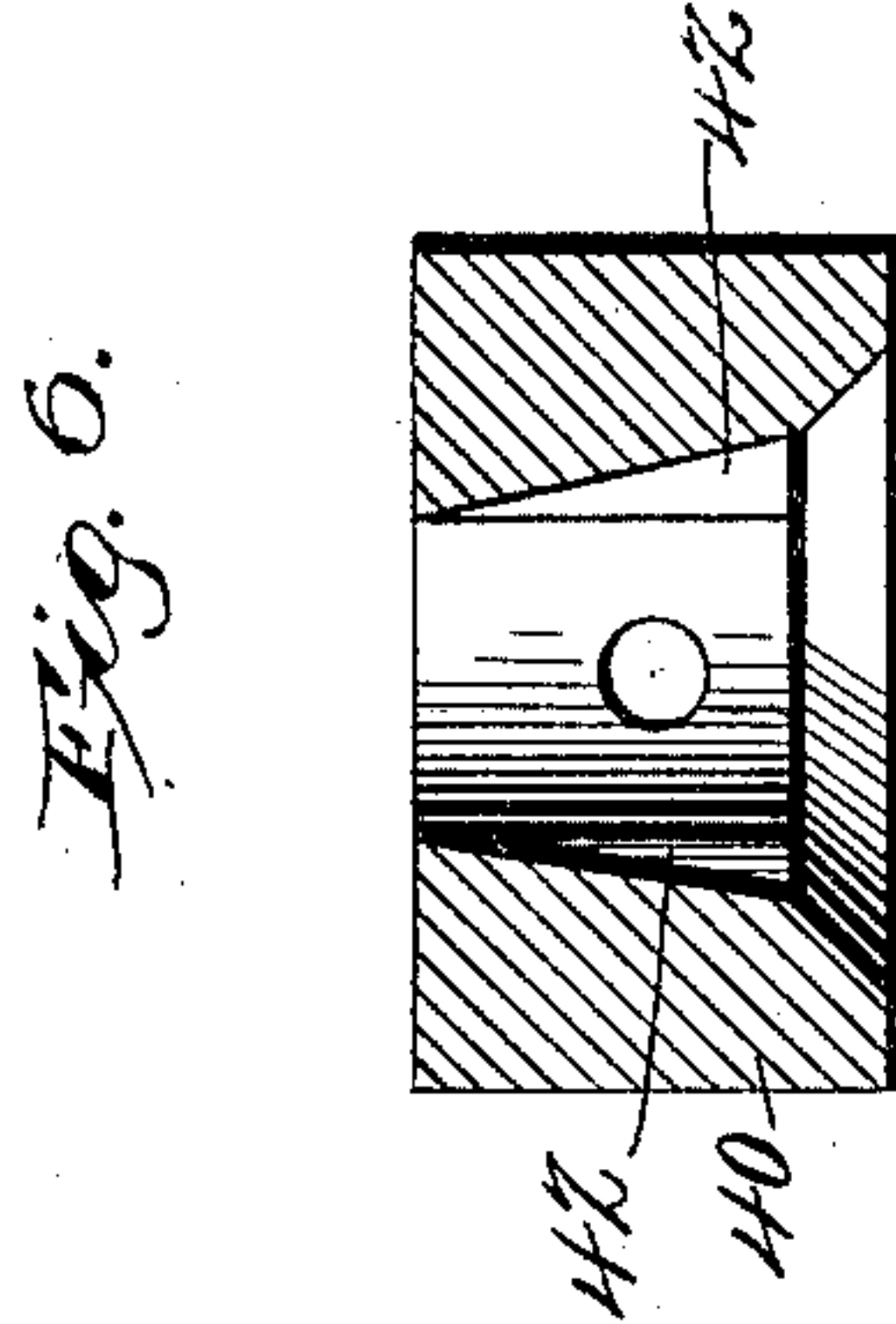
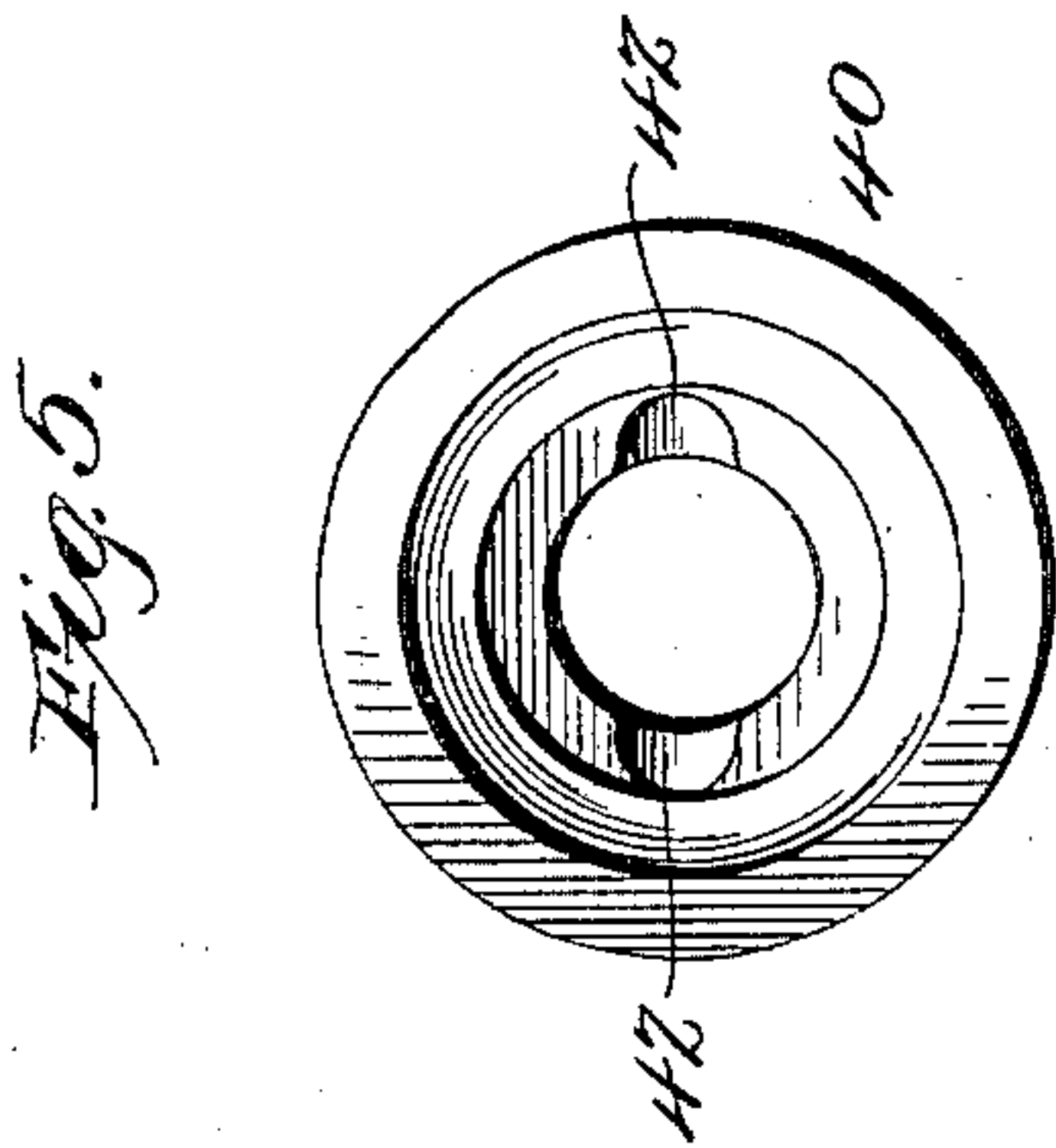
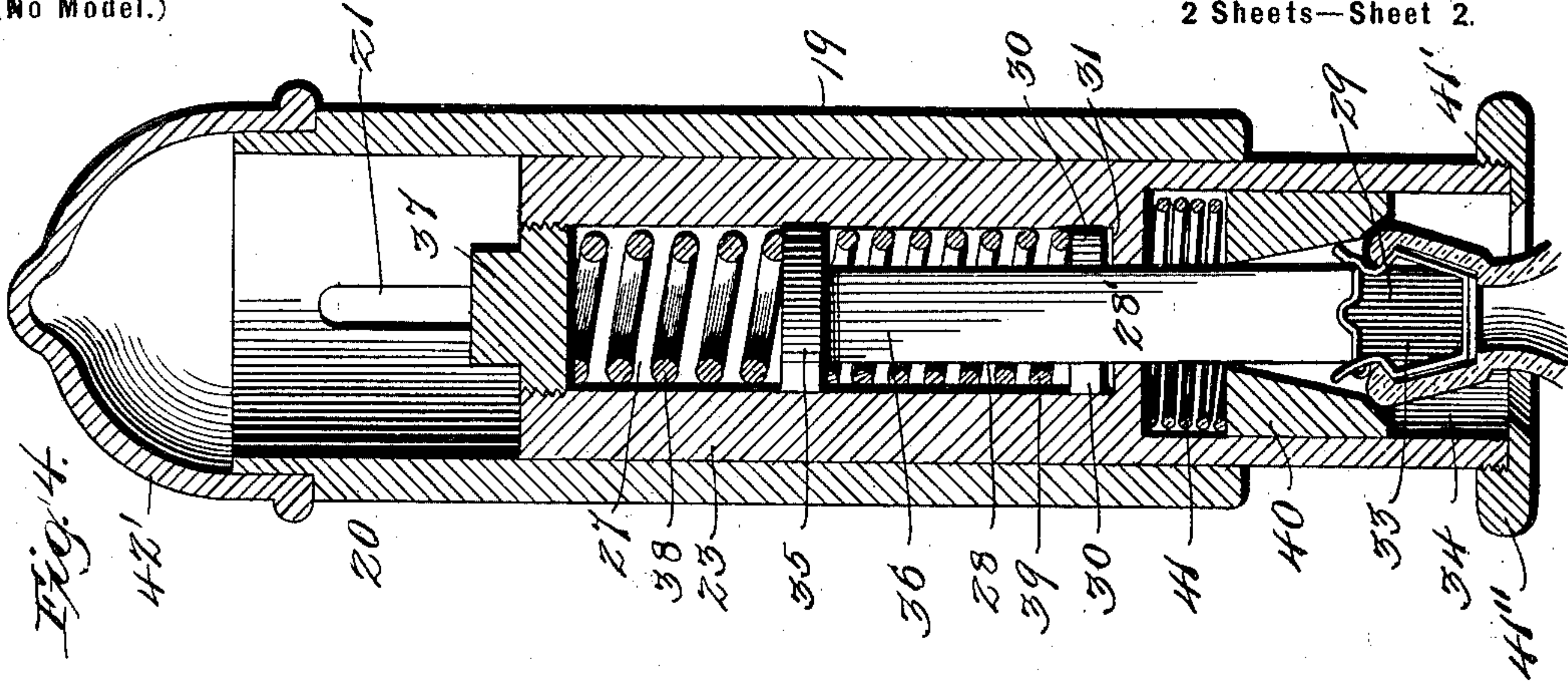
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MACHINE FOR APPLYING BOTTLE SEALS.

(Application filed Dec. 31, 1901.)

(No Model.)

2 Sheets—Sheet 2.



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# UNITED STATES PATENT OFFICE.

EDWARD D. SCHMITT, OF BALTIMORE, MARYLAND, ASSIGNOR, BY MESNE ASSIGNMENTS, TO UNIVERSAL SEAL AND STOPPER COMPANY, OF BALTIMORE, MARYLAND, AND CAMDEN, NEW JERSEY, A CORPORATION OF NEW JERSEY.

## MACHINE FOR APPLYING BOTTLE-SEALS.

SPECIFICATION forming part of Letters Patent No. 697,282, dated April 8, 1902.

Application filed December 31, 1901. Serial No. 87,952. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD D. SCHMITT, a citizen of the United States, residing at 2444 Woodbrook avenue, in the city of Baltimore, and State of Maryland, have invented certain new and useful Improvements in Machines for Applying Bottle-Seals; 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 characters of reference marked thereon, which form a part of this specification.

This invention relates to machines for applying bottle-seals, and more especially for applying a seal of special construction illustrated in the accompanying drawings, as well as seals that would require the same, or substantially the same, mechanical operation to seat them and lock them in place.

The object of the invention is to so construct the sealing-head as a whole that the operating parts therein will effectively seat the seal and lock the same in place in the inside of the bottle-neck in such a manner that the danger or risk of chipping or otherwise injuring the bottle or seal will be impossible.

A further object is to provide a simple and durable machine of this character in which the parts are not likely to get out of order.

Other objects and advantages resulting from the construction shown and described will later become apparent.

In the drawings, Figure 1 is a side elevation of the machine; Fig. 2, a front elevation thereof; Fig. 3, a central vertical section of the sealing-head, the parts thereof being in the position they occupy before the sealing operation. Fig. 4 is a sectional view of the head with the parts thereof in final operative position, showing a seal seated in the bottle-neck. This view is taken transversely of the line upon which Fig. 3 is taken to more clearly show the construction of the seal and the positions of the operative parts of the plunger relative to said seal. Fig. 5 is a bottom plan view of the lower slidable portion of the head adapted to be engaged by the bottle-head in

the sealing operation. Fig. 6 is a sectional view of this slidable portion, showing the grooves for guiding and holding the seal in putting the same in place before the sealing operation; and Fig. 7 is a perspective view of a seal which may be applied by this machine. Fig. 8 is a perspective view of the centering device for holding and centering the bottle upon the bottle-supporting table.

Referring to the drawings, the numeral 1 represents the frame, preferably formed of cast-iron with a widened base 2, through which pass bolts or screws to fasten the machine firmly in place upon the floor or other support. This frame is formed with a forward extension 3, having laterally-extending plates 4, to which, by means of bolts or otherwise, I fasten the plate 5 integral with a split sleeve 6, in which is adjustably held a short shaft 7, carrying the bottle-supporting table 8, the shaft 7 being held in any adjusted position by a suitable screw 9, operated by a hand-lever 10. The shaft, and consequently the table, is raised or lowered in the sleeve for adjusting purposes by, preferably, a screw 11, provided with a head 12, by which said screw may be conveniently turned. The numeral 13 indicates the bottle-centering device provided with a lower horizontal arm 14, having an elongated slot 15 therein for the passage of a set-screw 16, which secures the device to the underside of the table, as shown, and permits of adjustment to and from the center of said table. The upper part of this device is formed with two diverging arms 17, which embrace the bottle and hold it in proper position upon the table.

Rigidly secured by bolts or otherwise to the slightly-overhanging portion 18 of the frame is a sleeve 19, forming a part of the sealing-head 20, which will now be described. This sleeve is provided with a vertical slot 21, through which extends rearwardly an arm 22, preferably integral with a vertically-movable plunger-carrying core 23. The arm 22 is adjustably secured to the upper end of a vertical rod 23', pivoted at its lower end at 23'' to the foot-lever 24, which is in turn pivoted in the cut-away portion 25 of the frame at 26.



As is usual in machines of this character the foot-lever is held normally raised by a spring 26', which in the present instance also keeps the plunger-carrying core 23 normally raised in the sleeve.

In carrying out my invention I bore the core cylindrically, as indicated by the numeral 27, for the reception of the compound plunger 28, preferably, though not necessarily, formed in three pieces, one piece constituting the upper member 28', which, as will presently appear, serves to lock the seal in the bottle-neck in the sealing operation, and a two-part lower member 29, which serves to seat the seal in the bottle-neck. Each part of the lower member is provided with a head 30, resting upon a shoulder 31 in the core when the parts are in normal position, and each part is also provided with an upper extension 32, extending into the bore 27, and each lower part has a leg 33, which terminates at a proper point in the cylindrical chamber or bore 34. The upper member is provided with a head 35 and a stem 36, operating between the parts 33 of the lower member, and this stem terminates considerably above the ends of the lower plunger member for a purpose that will become apparent. Interposed between the under side of a screw-plug 37 and the head 35 of the upper plunger member is a strong spiral spring 38, and between the under side of said head and the heads 30 of the lower member is a spring 39, preferably not so strong as the spring 38. Between the under side of the shoulder 31 and a slidable lower portion 40 is a spring 41, preferably much weaker than either of the springs just mentioned.

The lower end of the core is externally screw-threaded, as indicated by the numeral 41', to adapt it to receive the internally-screw-threaded ring 41''. This ring serves to hold the slidable portion 40 in place in the core. The slidable lower portion 40 is provided with a central opening for the passage of the legs of the lower plunger member and the reception of the stem of the upper member in the sealing operation, as shown in Figs. 5 and 6. This slidable portion is further provided with two oppositely-disposed inclined grooves 42 for the reception of the arms of the seal and to guide it into its proper place in the head.

To add to the neatness of the construction, I preferably cover the head with a metallic cap 42', which can be readily removed when it is desired to reach the screw-plug to adjust the tension of the upper springs or to remove the operating parts of the plunger.

Having described the mechanism of the machine, I will now describe its operation.

A filled bottle is placed upon the table concentric with the sealing-head and a seal, such as is illustrated in the drawings, is placed in the head. The foot-lever is now depressed, which will, through the medium of the rod 23', cause the plunger-carrying core to descend until the bottle-head comes in contact

with the slidable lower portion 40 in the core, and this portion will be moved upwardly against the tension of spring 41, thus guiding the legs of the lower plunger member into the bottle-neck. A further downward movement of the core will seat the seal under the yielding pressure of spring 39, and a still further downward movement of the core will bring the upward extensions 32 in contact with the under side of the head of the upper plunger member, when both plunger members will move upwardly together for a very short distance against the yielding pressure of the strong spring in the upper part of the core. This movement will bring the lower end of the stem 36 into engagement with the locking means of the seal and cause the same to enter the depression *a* in one arm of the seal. Upon releasing the foot-lever all of the parts will be returned to normal position by the spring operating on the foot-lever to return the plunger-carrying core and the springs in the core to return the plunger parts.

I claim—

1. A machine for applying bottle-seals, comprising an outside sleeve, a vertically-movable core in said sleeve and containing a compound plunger, the parts thereof being spring-pressed and each member capable of a movement independent of the other in the core, one of said plunger members being adapted to seat the seal in the inside of the bottle-neck, and the other adapted to engage the locking means of the seal to lock said seal in place therein, substantially as described.

2. A machine for applying bottle-seals, comprising an outside stationary sleeve, a vertically-movable core in said sleeve containing a compound plunger, the parts thereof being spring-pressed and each member capable of a movement independent of the other in the core, one of the plunger members being adapted to seat the seal in the inside of the bottle-neck, and the other to engage the locking means of the seal to lock said seal in place in the bottle-neck upon the downward movement of the core, and means for so moving the core, and means for restoring the core to normal position after each operation, substantially as described.

3. A seal-applying machine, comprising an outside stationary sleeve, a vertically-movable core in said sleeve and containing a compound plunger, the parts thereof being spring-pressed and each member capable of a movement independent of each other in the core, one member being adapted to seat the seal in the inside of the bottle-neck, and the other to engage the locking means of the seal to lock said seal in place therein upon the downward movement of the core, a vertically-movable spring-pressed lower portion, slidable in said core and adapted to be engaged by the bottle-head in the downward movement of said core to guide the ends of the plunger members into proper position to operate upon the seal, substantially as described.



4. A seal-applying machine, comprising an outside stationary sleeve, a vertically-movable core in said sleeve and containing a compound plunger, the parts thereof being spring-pressed and each member capable of a movement independent of the other in the core, one member being adapted to seat the seal in the inside of the bottle-neck, and the other to engage the locking means of the seal to lock said seal in place therein upon the downward movement of the core, a vertically-movable spring-pressed lower portion slidable in relation to said core and adapted to be engaged by the bottle-head in the downward movement of the core to guide the ends of the plunger member into proper position to operate upon the seal, means for moving the core downward in the sleeve, means for restoring the core to normal position after each operation, and a bottle-supporting table below said core and means for adjusting said table vertically, substantially as described.

5. A seal-applying machine comprising an outside stationary sleeve, a vertically-movable core in said sleeve, bored to receive a

compound plunger, comprising a two-part lower member adapted to seat the seal in the inside of the bottle-neck, and an upper member adapted to engage the locking means of the seal to lock the same in place in the bottle-neck, each member being capable of a movement independent of the other in the core, a spring interposed between the two members, and a spring bearing on the upper member, a vertically-movable spring-pressed lower portion, slidable in relation to the core and adapted to be engaged by the bottle-head in the downward movement of the core to guide the ends of the plunger members to proper position to operate upon the seal, and means for restoring the core to normal position after each operation, substantially as described.

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

EDWARD D. SCHMITT.

Witnesses:

JOHN W. HEWES,

MABEL E. STEARNS.