No. 697,281. Patented Apr. 8, 1902.

# E. D. SCHMITT.

## MACHINE FOR APPLYING BOTTLE SEALS.

(Application filed Sept. 28, 1901.)

(No Model.) 2 Sheets—Sheet 1.

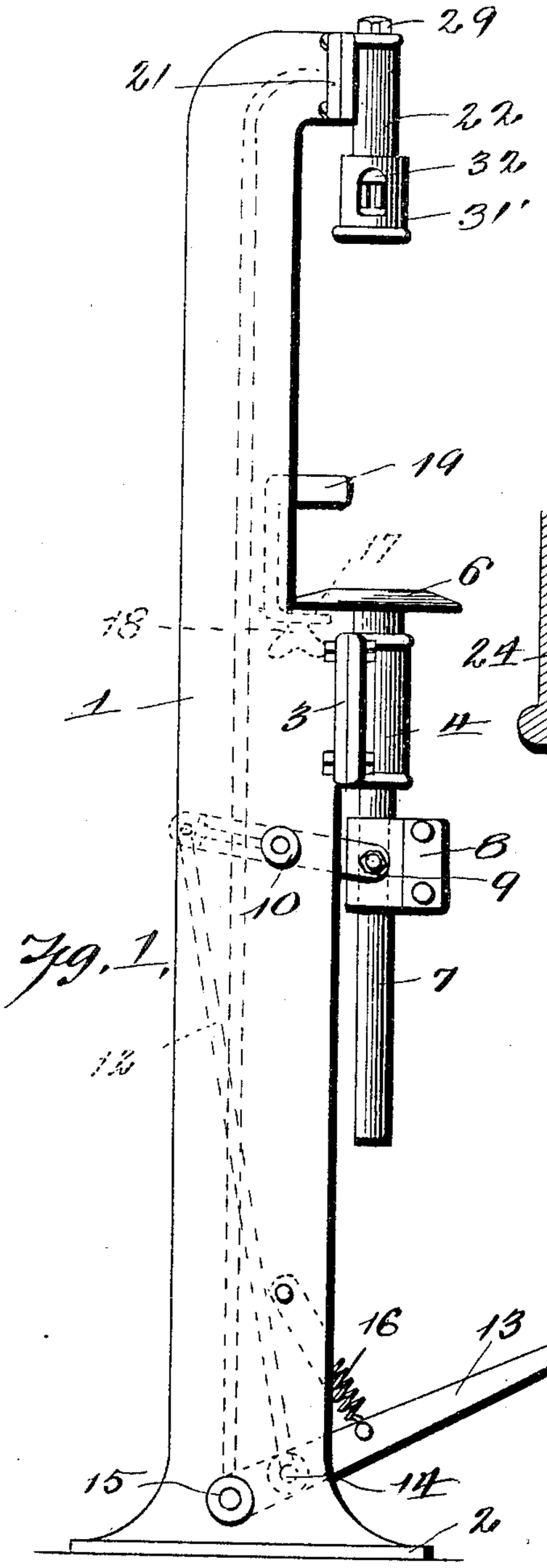


Fig. 1.

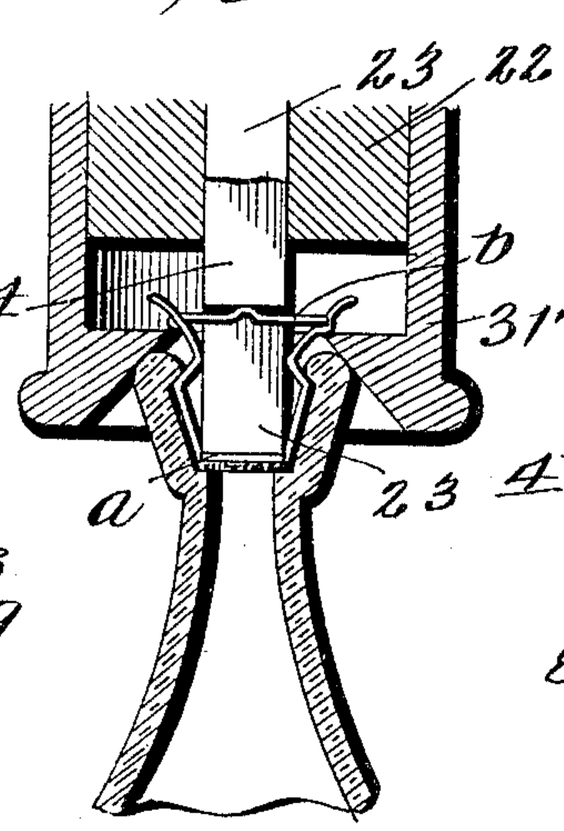


Fig. 6.

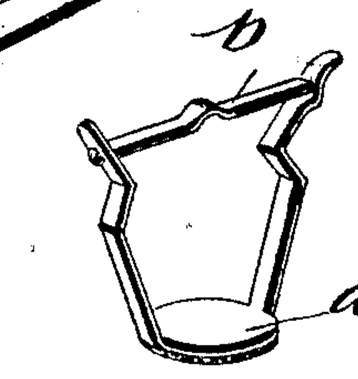


Fig. 8.

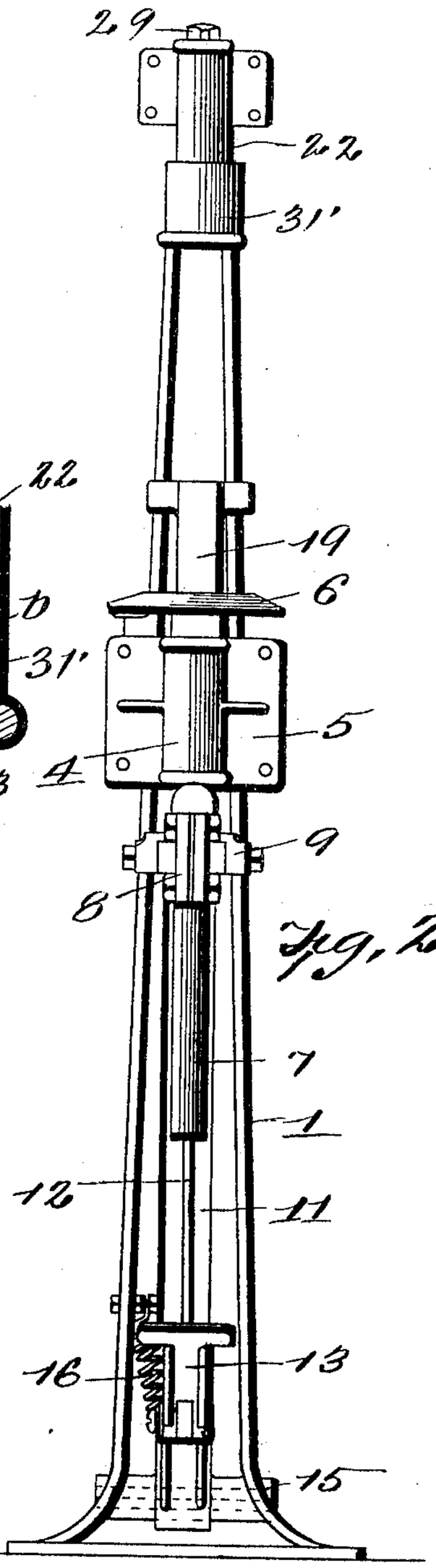


Fig. 2.

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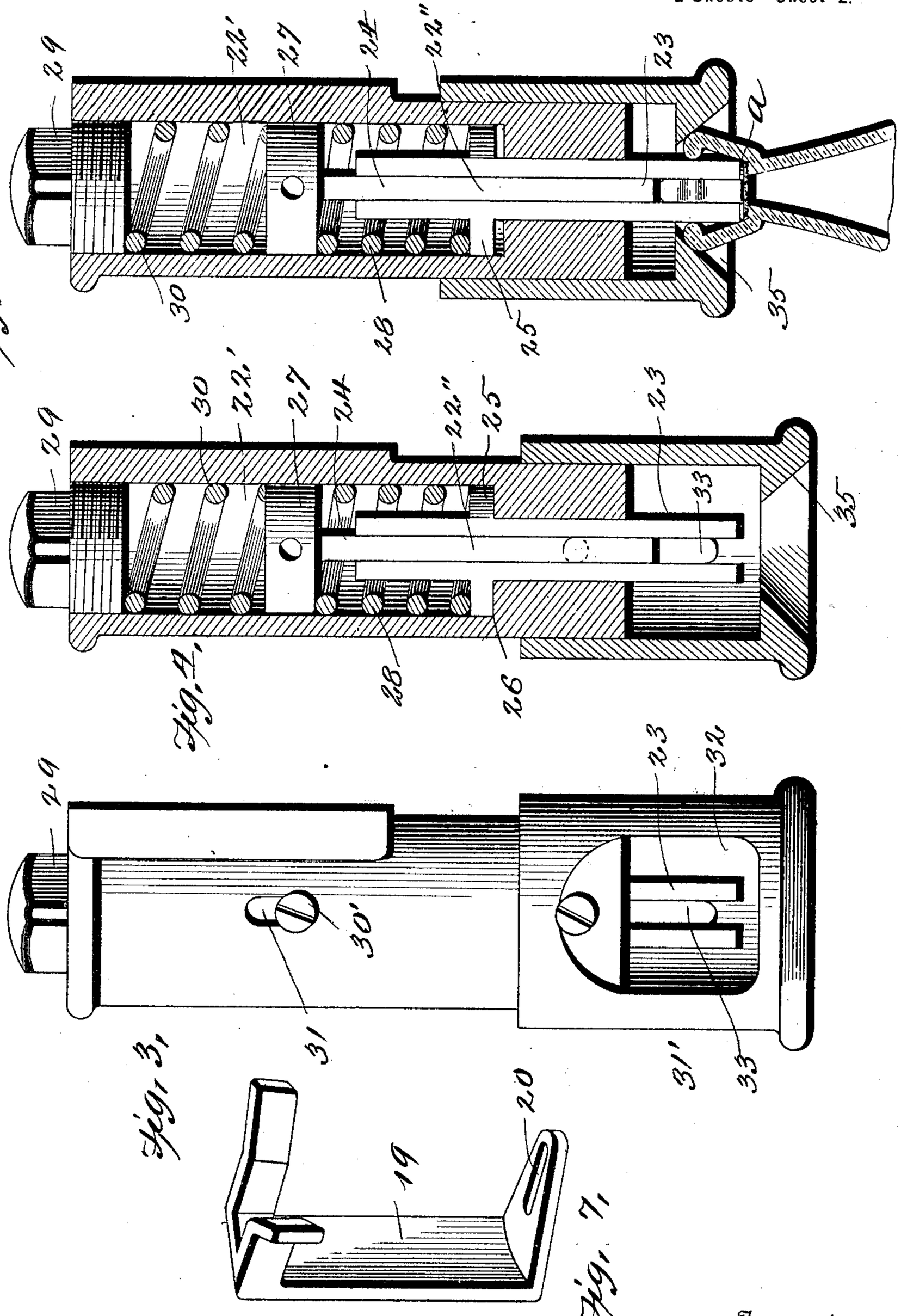
## MACHINE FOR APPLYING BOTTLE SEALS.

(Application filed Sept. 28, 1901.)

(No Model.) 2 Sheets—Sheet 2.




Witnesses
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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 CAMDEN, NEW JERSEY, AND BALTIMORE, MARYLAND, A CORPORATION OF NEW JERSEY.

## MACHINE FOR APPLYING BOTTLE-SEALS.

SPECIFICATION forming part of Letters Patent No. 697,281, dated April 8, 1902.

Application filed September 28, 1901. Serial No. 76,875. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD D. SCHMITT, a citizen of the United States, residing at Baltimore city, in the 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 letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to improvements in machines for applying bottle-seals, and more particularly to machines of this character for sealing bottles containing quiet liquids.

The object of the invention is to provide a machine of simple construction and efficient to apply a seal of special construction, illustrated in the accompanying drawings, as well as seals that may require the same movements in the sealing operation, to which mere mechanical skill would adapt said machine.

Other objects looking to the general improvement of machines of this character will become apparent in the course of the following description.

In the drawings illustrating the invention, Figure 1 is a side elevation of the machine. Fig. 2 is a front elevation thereof. Fig. 3 is an enlarged side elevation of the sealing-head. Fig. 4 is a central vertical section of the same with the parts in normal position. Fig. 5 is a similar view of the head, showing the position of the parts after the seal has been applied. Fig. 6 is a section of the lower portion of the head with parts broken away, the said section being taken transversely to that of Figs. 4 and 5. Fig. 7 is a detail perspective view of the centering device, and Fig. 8 is a perspective view of the seal that the machine is especially adapted to apply.

In the drawings the numeral 1 designates a metallic frame provided with a widened base 2 and cast with a plate 3 about midway thereof, to which is rigidly secured a sleeve 4, provided with plates 5, through which and the plate 3 pass bolts, whereby the sleeve is firmly supported.

The numeral 6 indicates the bottle-supporting table, supported upon a shaft 7, capable of vertical movement in the sleeve. Vertically adjustable on the shaft 7 is a collar 8, embraced by the arms of a yoke-lever 9, mounted upon pivot 10 and extending through the cut-out portion 11 of the frame.

A connecting-rod 12 has its upper end connected to the rear end of the yoke-lever and its lower end connected to the foot-lever 13 at 14, just in advance of the pivot 15 of said foot-lever, the said lever being held normally raised by the spring 16, suitably connected to the lever and to the frame. The spring 16 also serves to keep the bottle-supporting table normally sealed and in position to be raised when the foot-lever is depressed.

The under side of the table is provided with a boss 17, to which is held by a short bolt 18 the centering device or guide 19, the said bolt passing through an elongated slot 20 in the lower horizontal portion of the device, so that the arm can be moved toward and from the table center to support the bottle directly below the sealing-head, which will now be described.

The upper part of the frame has a slight bend to bring it approximately above the table and is cast with a plate 21 thereon, to which is attached, preferably by bolts, as shown, a similar plate, preferably cast integral with the sealing-head 22. The sealing-head in the present instance is stationarily held and bored, as at 22′, to receive a compound plunger 22″, composed of a lower member 23, adapted to seat the seal in the operation of the machine, and an upper member 24, adapted to lock the same in place in the bottle-neck. The plunger in the concrete is preferably composed of three parts, two parts composing the lower member and one the upper member; but as the parts constituting the lower member work in unison I shall hereinafter refer to them as the "lower" member. Each part of the lower member is provided with a circular shoulder 25, adapted to rest upon the shoulder 26 in the upper portion of the head when the parts are in normal position. The upper member is provided with a cross-head 27, which fits snugly in the bore of the head and works vertically therein for a short dis-

tance. Interposed between the cross-head 27 and the shoulder 25 is a spiral spring 28, and between the said head and screw-plug 29 is a similar spring 30, the purpose of which springs is to yieldingly resist the upward movement of the plunger members during the sealing operation. The upward movement of the upper plunger member is limited by a short-headed pin 30′, passing through a slot 31 in the wall of the head and into the said cross-head.

Surrounding the lower bored portion of the head and slidably mounted thereon is the lower head portion 31′, provided at one side with an opening 32, through which the seal may be conveniently passed in placing it between the extremities of the lower plunger member, in position to be seated in the chamber in the bottle-neck in the sealing operation. The lower head portion is also provided with a slot 33, through which passes a short-headed pin, which screws into the bored portion of the head and serves to prevent the part 31 from becoming separated from the upper head portion and limits its upward movement upon said portion. The slidable portion is provided with the usual centering-surface 35, engaged by the bottle in its upward movement.

I may magnetize the lower plunger member or so much thereof as is helpful in holding the metallic seal in place preparatory to the sealing operation.

In operation the seal shown is placed between the extremities of the lower plunger member, where it will be held either by friction or by reason of the magnetic attraction of said member. A bottle is placed upon the table and raised by the depression of the foot-lever until its mouth engages the beveled under surface of the lower slidable portion of the head, which engagement and a continuation of the upward movement of the bottle will raise the part 31 until the lower extremities of the plunger member (having a bearing on the circular part *a* of the seal) seats the seal in the bottle-neck under the yielding pressure of the springs 28 and 30. When the seal is securely seated, the lower plunger member will have been sufficiently raised to cause the upper plunger member to engage the locking-tongue *b* of the seal, forcing it to the locked position shown in Figs. 5 and 6.

While I have illustrated and prefer to use a bottle-supporting table below the sealing-head which is capable of vertical movement to and from said head, it is evident that the sealing-head could be used to advantage attached to any suitable support and the bottle made to engage the head by hand or otherwise.

I claim—

1. In a bottle-sealing machine, the combination with a sealing-head provided with a spring-pressed plunger having ends adapted to extend into the bottle-neck and adapted to seat the seal therein, of a spring-pressed locking-plunger adapted to engage the locking means of the seal to lock said seal in place after it has been seated in the bottle, a slidable lower portion adapted to be engaged by the bottle-head to slide said portion to bring the seal-seating-plunger ends into the mouth of the bottle to seat the seal, and the locking-plunger into engagement with the locking means to lock the seal, substantially as described.

2. In a bottle-sealing device, the combination with a sealing-head provided with a compound plunger, the parts thereof being spring-pressed and capable of independent movement, one member being adapted to seat the seal in the bottle-neck, and the other to engage the locking means of the seal to lock it on the inside of the bottle-neck, a slidable lower head portion adapted to be engaged by the bottle-head to slide said portion to bring the seal-seating member into the mouth of the bottle for the purpose set forth, and the locking member into engagement with the locking means of the seal to lock the seal in place, substantially as described.

3. In a machine for applying bottle-seals, the combination with a sealing-head provided with a compound plunger, the parts thereof being spring-pressed and capable of independent movement, one member being adapted to seat the seal within the bottle-neck and the other to lock it in place therein, a lower slidable portion adapted to be engaged by the bottle-head to slide it on the upper portion to bring the seal-seating member into the bottle-mouth to seat the seal, and the locking-plunger into engagement with the locking means of the seal to lock said seal in place, and means for moving the bottle against the lower head portion, substantially as described.

4. In a machine for applying bottle-seals, the combination with a sealing-head provided with a compound plunger the parts thereof being held normally seated by springs or their equivalents, and capable of independent movement, one member being adapted to engage the seal to seat it in the bottle-neck and the other to engage the locking means to lock the said seal, a lower slidable portion provided with an underneath centering-surface to be engaged by the bottle to slide the slidable portion to bring the seating member of the plunger into the bottle-mouth, and the locking member into engagement with the locking means of the seal for the purpose set forth, a vertically-movable bottle-supporting table below the head, and means for raising the same, and means for returning the table to normal position, substantially as described.

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

EDWARD D. SCHMITT.

Witnesses:
JOHN W. HEWES,
WALTER G. SMITH.