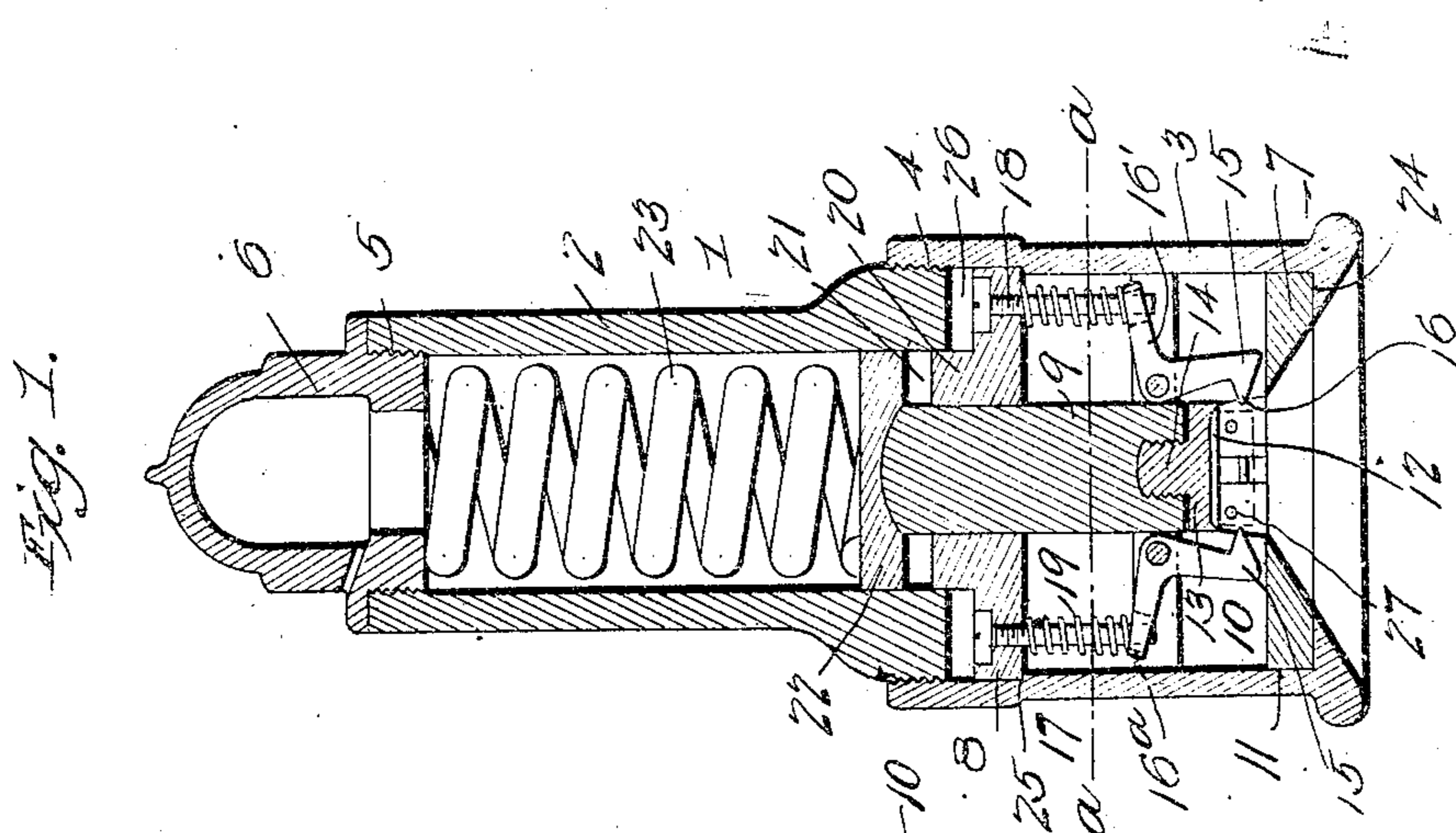
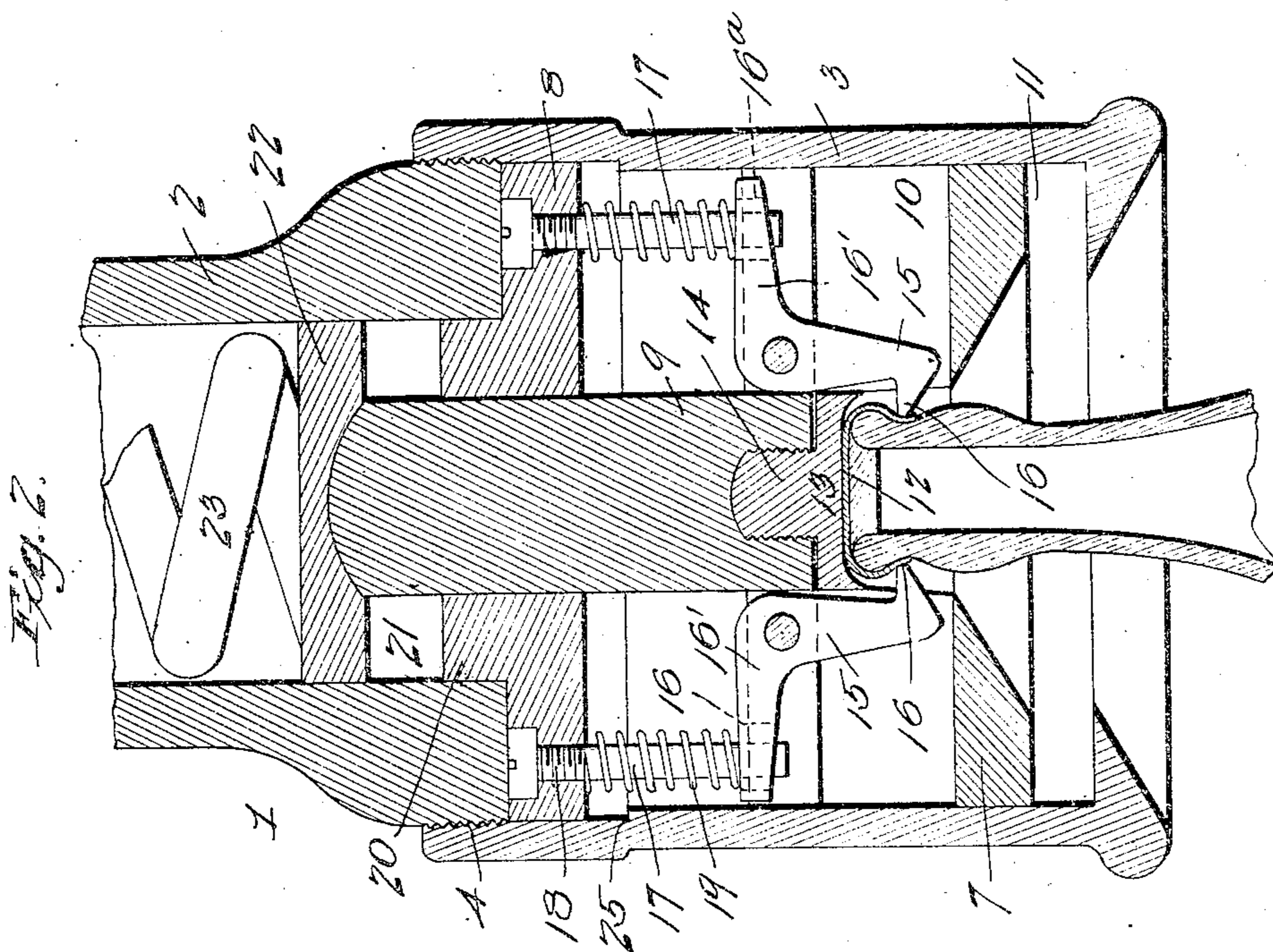


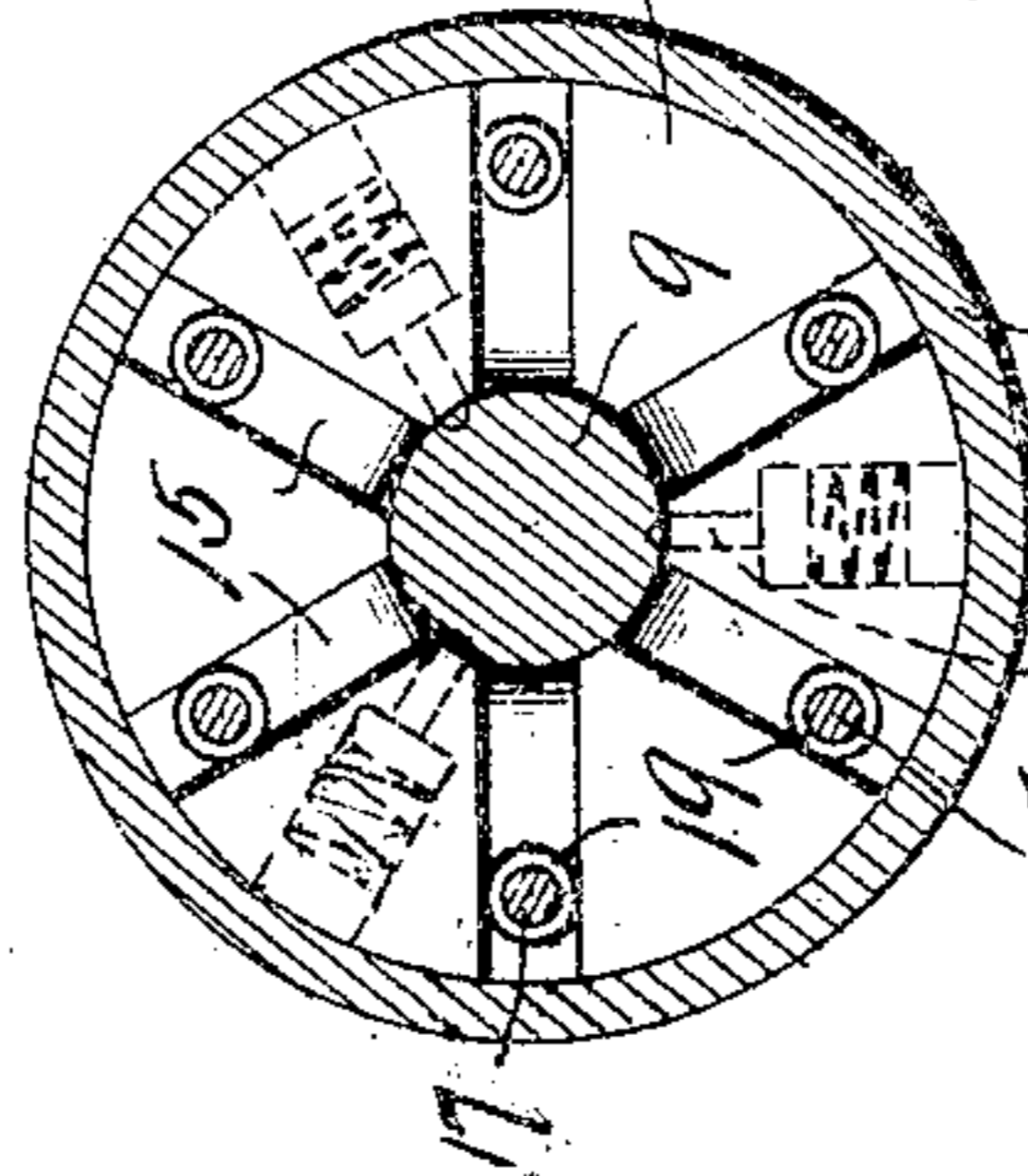
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E. D. SCHMITT.
SEALING HEAD FOR BOTTLE SEALING MACHINES.
APPLICATION FILED MAY 27, 1907.



Witnesses
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UNITED STATES PATENT OFFICE.

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SEALING-HEAD FOR BOTTLE-SEALING MACHINES.

No. 880,408.

Specification of Letters Patent.

Patented Feb. 25, 1908.

Application filed May 27, 1907. Serial No. 376,036.

To all whom it may concern:

Be it known that I, EDWARD D. SCHMITT, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Sealing-Heads for Bottle-Sealing Machines, of which the following is a specification.

This invention relates to improvements in sealing heads for use in applying hard metal flanged caps to a bottle having a locking surface or shoulder adjacent to its mouth.

It will be understood that the head about to be described may be employed with any suitable means for depressing it, or in connection with any suitable bottle support or means for raising said support to get the desired sealing pressure.

In the drawings:—Figure 1 is a central sectional view of the head with a bottle seal therein in dotted lines; Fig. 2 is a similar view, showing the parts about in the position they assume at the time of locking the flange of the seal, the upper end of a bottle having a cap thereon being shown in section; Fig. 3 is a cross section about on line *a—a* Fig. 1.

The numeral 1 designates the head casing which is generally cylindrical in form and comprises in the main, the upper section 2 and the lower section 3. The lower section is enlarged to receive and accommodate the locking mechanism and the lower part of the plunger. In order that the parts may be conveniently assembled, I attach the lower part of the casing to the upper part by means of threads 4, and the upper end of the casing is internally threaded as indicated at 5 for the reception of the screw cap 6.

The plunger is composed of two independently movable parts, which at some time have a movement in common, but the movement of one part is arrested or retarded at the point where it is desired to actuate the seal locking devices.

The numeral 7 designates the lower plunger part and the numeral 8 designates the upper part. The plunger stem 9 carries at its lower end a head 10 that fits snugly within the bore 11 of the lower part of the casing. The head 10 is provided with a cavity 12, and the upward movement of the seal therein in placing it in the head is limited by a head 13 having a shank 14 threaded into the stem 9. The adjustment of this head 13 serves to

vary the sealing pressure of the plunger, or

the point at which the required or desired sealing pressure is applied to the seal and bottle. The head 10 is provided with a plurality of radial recesses preferably six in number, in which are pivoted levers 15. The lower ends of these levers present indenting noses or points 16, which are adapted to be projected at proper times simultaneously into the seal cavity. The upper arms of the levers are perforated as indicated at 16^a for the passage of the lower ends of rods 17, which are threaded as indicated at 18 near their upper ends by which means they are firmly held in the upper plunger part 8. These rods are surrounded by spiral springs 19 whose upper ends engage the under face of the part 8 with their lower ends resting upon the arms 16' of the levers 15. The upper plunger part 8 has a central reduced portion 20 that extends slightly into the bore 21 of the upper part of the casing. The upper end of the plunger stem 9 is provided with a cross head 22, upon which rests the lower end of the sealing spring 23, the upper end of said sealing spring being in engagement with the screw cap 6. Against this spring the lower part of the plunger moves upwardly or yieldingly in the sealing operation.

The downward movement of the lower plunger part is limited by a ledge 24 formed on the lower part of the casing. The upper plunger part 8 rests normally upon a shoulder 25 in the lower part of the casing, and a space 26 is left between the upper surface of the plunger part 8 and the lower edge of the upper casing part, to allow for the necessary movement upward of the part 8 in the sealing operation.

In operation, a cap is placed in the seal holding cavity where it may be held temporarily by the ends 27 of spring backed holding pins 28, or by friction, or in fact, by any suitable means. When the head is lowered or the bottle raised, the lower plunger part will, in the initial movement, move upward against the influence of the spring 23. The plunger part 8, by reason of the yielding connection between the locking levers and said part, in the way of the springs 19, will also be moved upwardly, until the upper surface of the part 8 engages the lower edge of the upper part of the casing, when further upward movement of this part will be prevented. At or about this point, it will be

desired to lock the seal upon the bottle and a slight further upward movement of the lower part of the plunger against the influence of the spring 23, will cause the locking levers to be rocked, through the rod, and spring connection, yieldingly into engagement with the flange of the seal, indenting it at intervals under the locking shoulder. By reason of the yielding movement of the levers, the danger of crushing the bottle in the application of the seal, is eliminated. The tension of the springs 19 in the final locking movements is considerable, sufficient to properly indent and lock the seal.

15 Modifications in the described construction may be made within the spirit of this invention, and while I have described the sealing head as especially adapted for applying hard metal flanged caps to bottles having an annular locking surface or shoulder adjacent to their mouths, it will be understood that the heads would be equally adapted for applying caps or covers to vessels other than bottles, such as glass jars, cans, etc., it being obviously only necessary to vary the dimensions of the head parts to accommodate them to such additional uses.

Claims.

1. A sealing head for bottle sealing machines, comprising a casing, a plunger in said casing formed in two parts capable of a movement in common, means for arresting the movement of one of said parts, seal locking devices mounted in the plunger and adapted to be operated when the movement of one of the parts is arrested.

2. A sealing head for bottle sealing machines comprising a casing, a plunger formed in two parts capable of a movement in common with each other, seal locking devices rockably mounted in the plunger, yielding connections between said devices and one part of the plunger, through which the seal operating devices are operated when the movement of one of the plunger parts is arrested.

3. A sealing head for bottle sealing machines, comprising a casing, a yielding plunger in said casing formed in two parts capable of a movement in common with each other, means for arresting the movement of the upper part of said plunger, a plurality of seal locking devices rockably mounted in the lower plunger part, yielding connections between said seal locking devices and the upper plunger part through which the said locking devices are actuated when the movement of the upper part of the plunger is arrested.

4. A sealing head for bottle sealing machines, comprising a casing, a yielding plunger, formed in two parts, the lower part having a seal holding cavity therein, the said parts being capable of a movement in common with each other, a plurality of seal locking levers pivoted in the lower plunger part,

springs interposed between the upper plunger part and the arms of the seal locking levers whereby, when the movement of the upper part of the plunger is arrested, the seal locking levers will have their lower ends yieldingly projected into the seal holding cavity to lock the seal, means for arresting the movement of the upper plunger part and a sealing spring backing the lower plunger part, all substantially as and for the purpose set forth.

5. A sealing head for bottle sealing machines comprising a casing, a yielding seal applying plunger within said casing and formed in two parts capable of a movement in common with each other, means for arresting the movement of the upper part, the lower part having a seal holding cavity therein and a plurality of spring backed pins having their ends projected into said cavity to temporarily hold the seal, a plurality of seal locking devices rockably mounted in the lower plunger part, springs interposed between the upper plunger part and the seal locking devices, whereby, when the upper part of the plunger is arrested, the seal locking devices will be yieldingly projected into the seal cavity to lock the seal upon a bottle.

6. In combination, in a machine for applying bottle seals, a yielding seal applying plunger having a seal holding cavity therein, a plurality of radially arranged rockable seal locking devices mounted in said plunger and having seal indenting points, means for rocking said locking devices to cause their indenting ends to lock the flange of a cap upon a bottle, an element forming the dome or top of the seal holding cavity and capable of permanent adjustment, whereby the distance between the indenting points of the seal locking devices and the dome or top of said seal holding cavity may be varied.

7. A sealing head for bottle sealing machines, comprising a casing, a plunger in said casing formed in two parts capable of a movement in common, the lower part of the plunger having a seal holding cavity therein, means for arresting the movement of one of said parts, seal locking devices mounted in the plunger and adapted to be operated when the movement of one of the parts is arrested, an element forming the dome or top of the seal holding cavity and capable of permanent adjustment whereby the distance between the indenting points of the seal locking devices and the dome or top of said seal holding cavity may be varied, substantially as and for the purpose set forth.

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

EDWARD D. SCHMITT.

Witnesses:

TITIAN W. JOHNSON,
OTTO A. SCHMITT.