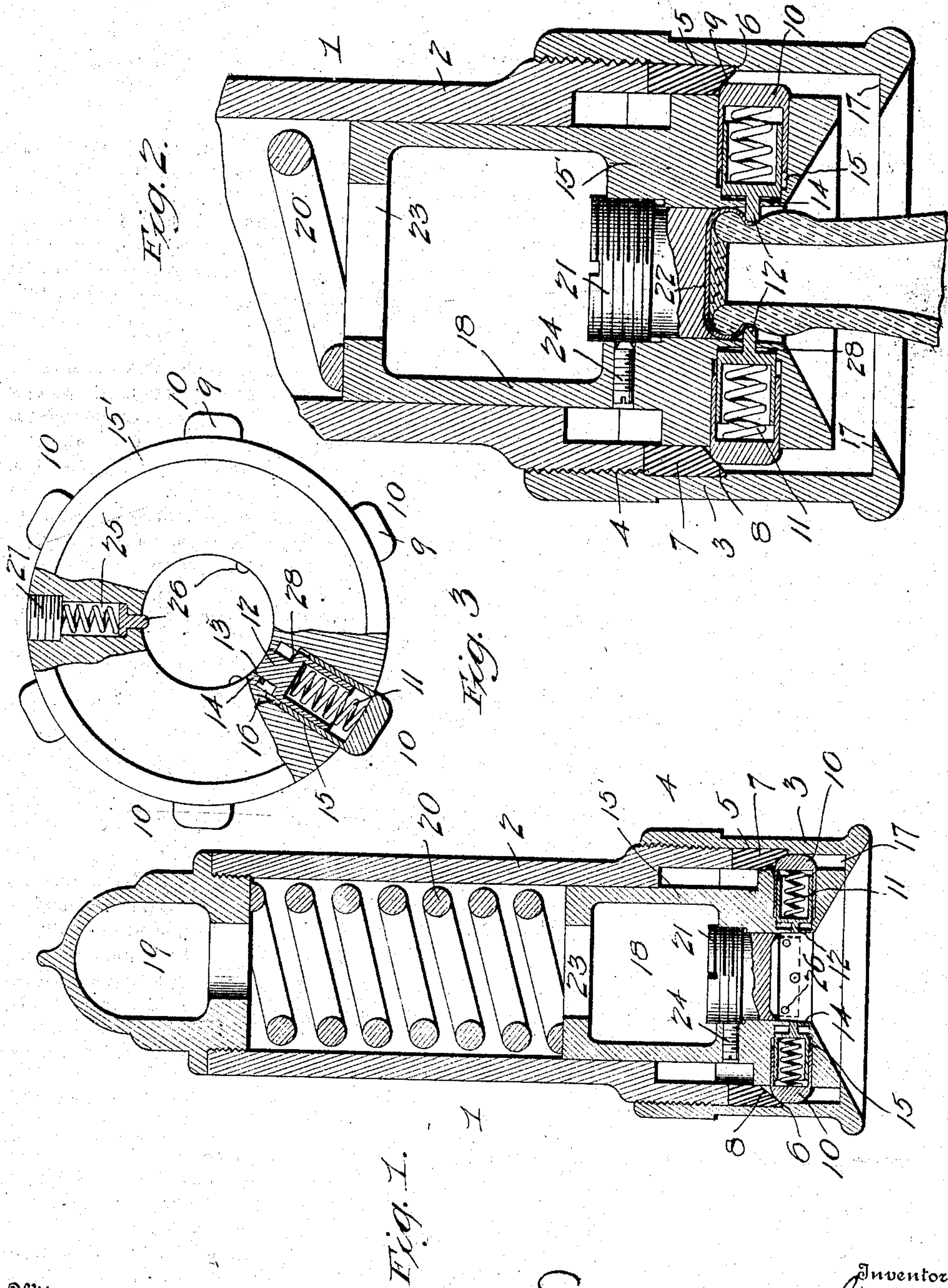


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E. D. SCHMITT.
SEALING HEAD FOR BOTTLE SEALING MACHINES.

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SEALING-HEAD FOR BOTTLE-SEALING MACHINES.

No. 867,214.

Specification of Letters Patent.

Patented Sept. 24, 1907.

Application filed May 11, 1907. Serial No. 373,075.

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 machines for applying bottle caps, whereby the flange of the cap is crimped, pinched or indented at intervals into locking engagement with a locking surface or shoulder on a bottle.

I do not deem it necessary to illustrate other parts of a machine for applying the seals, and it will be understood that the head about to be described may be employed with any suitable mechanism by which it will be depressed or a bottle seat raised with relation to the head, to get the desired sealing pressure, it being immaterial to this invention, whether the head is depressed, the seat raised, or whether both parts are moved toward each other, so long as the required sealing pressure is brought about.

In the drawings: Figure 1 is a central section of a sealing head embodying my invention, with a bottle cap in dotted lines in the seal holding cavity therein; Fig. 2 is an enlarged sectional view of the lower part of the head, showing the parts in about the position they assume at the time the seal is locked on the bottle, the upper portion of a bottle with a seal thereon being shown in section; and Fig. 3 is a bottom plan view of the plunger, partly broken away to show the arrangement of the seal locking pins or devices and the pins for temporarily holding the cap, preparatory to the sealing operation.

Referring to the drawings, the numeral 1 designates the head casing formed preferably in two sections 2 and 3. The upper portion of the casing is threaded externally near its lower end as indicated at 4 for the reception of the internally threaded upper wall of the larger lower part of the casing, thus so connecting the parts that they may be readily separated or put together in getting access to the interior parts, or in assembling said parts. The lower portion of the casing is rabbeted as indicated at 5, thus forming a narrow shoulder 6 upon which shoulder is seated a ring 7 presenting a bevel or cam surface 8, which surface is simultaneously engaged by the rounding or cam surfaces 9 of a plurality of radially arranged laterally movable seal locking devices 10. The seal locking devices are formed of two telescoping cups, the parts of which are adapted to move together, against the influence of springs 11, one of which is contained in each locking device. The outer cups are rounded as shown, to present the cam surfaces 9, while the inner cups are provided with pins 12 which extend through openings 13 in the pin walls 14 of the

radial recesses 15 in the plunger 15'. These recesses are bored out sufficiently as shown at 16, to permit the outer cups to move into said recesses when the plunger is moved upwardly. The plunger is limited in its downward movement by a ledge 17 on the lower part of the casing and is formed with a hollow extension 18, which extends a short distance up into the upper part of the casing. Between this extension and the screw cap 19 is interposed the sealing spring 20.

The numeral 21 designates a screw plug whose under face is cupped out as indicated at 22 to form a seat for the upper part of the seal. This plug may be conveniently reached for adjusting purposes through an opening 23 in the extension 18, and I preferably provide a set screw 24 by which the plug may be securely held in adjusted position. It will be seen that by adjusting the screw plug 21, either up or down, as the exigencies of the case may require, the sealing pressure exerted upon the cap and bottle will be varied, as well as the point of engagement between the seal indenting points of the locking devices and cap flange.

Between the seal locking devices I provide a number of recesses 25, shown in Fig. 3. These contain spring-backed pins 26, whose forward ends extend slightly through the interior wall of the plunger into the seal cavity and are for the purpose of temporarily holding the seal. The recesses for these springs and pins are closed by screws or plugs 27, against which the outer ends of the springs abut.

In operation, the head is depressed toward a bottle, which may be supported upon any suitable seat, or the bottle and seat may be raised toward the head, and in either event, the plunger will be moved upwardly in the casing against the influence of the sealing spring, and as the plunger so moves the rounding cam surfaces 9 of the seal locking devices will simultaneously engage the bevel or cam surface of the ring 7, forcing said devices yieldingly inward projecting the pins into engagement with the flange of the bottle cap, indenting it at intervals into locking engagement with the shoulder on the bottle.

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.

In order to return the pin carrying part of each seal locking device to normal position, I preferably employ a spring 28 for the pin carrying part of each locking de-

vice, which may be in the form of a split ring. When the seal locking devices are in normal position or in the position shown in Figs. 1 and 3, the springs 11 will have their tension relieved, leaving the spring ring 28 free to act to retract the pins 12 from the seal holding cavity in the plunger.

Claims.

1. In a machine for applying bottle seals, a spring-backed seal applying plunger having a plurality of radially arranged recesses therein, a yielding seal locking device in each of said recesses formed of two telescoping members, the inner member having a seal indenting point and the outer member a cam surface, and a spring interposed between said members, a stationary cam element adapted to engage the outer members of the locking devices upon the upward movement of the plunger, whereby said devices are projected forward to lock the flange of a cap on a bottle.

2. In a machine for applying bottle seals, a seal applying plunger having a plurality of substantially radially arranged recesses therein, a yielding seal locking device in each of said recesses formed of an inner member having a seal indenting point and an outer member having a cam surface, means for guiding said members with relation to each other and a spring interposed between said members, and a stationary cam element adapted to engage the outer members of the locking devices upon the upward movement of the plunger, whereby said devices are projected forward to lock the flange of a cap on a bottle.

3. In a machine for applying bottle seals, a spring-backed seal applying plunger having a plurality of substantially radially arranged recesses therein, a yielding seal locking device in each of said recesses formed of two telescoping members, the inner member having a seal in-

denting point and the outer a cam surface, a spring interposed between said members, and a stationary ring in the path of movement of the seal locking devices, whereby said devices are projected forward upon the upward movement of the plunger to lock the flange of a seal upon a bottle.

4. In a machine for applying bottle seals, a spring-backed seal applying plunger having a seal holding cavity therein and a plurality of radially arranged recesses, a yielding seal locking device in each of said recesses formed of two telescoping members, the inner member having a seal indenting point and the outer member a cam surface, a spring interposed between said members, a stationary cam element adapted to engage the outer members of the locking devices upon the upward movement of the plunger, whereby the seal indenting points are projected into the seal holding cavity to lock the flange of a cap on a bottle, and a plurality of radially arranged spring-backed pins with their ends normally projected into the seal holding cavity for temporarily holding the cap.

5. In combination, in a machine for applying bottle seals, a seal applying plunger having a seal holding cavity therein, and a plurality of substantially radially arranged recesses, a seal locking device in each recess, each having a seal indenting point, means for operating said locking devices upon the upward movement of the plunger, and a plug 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.