

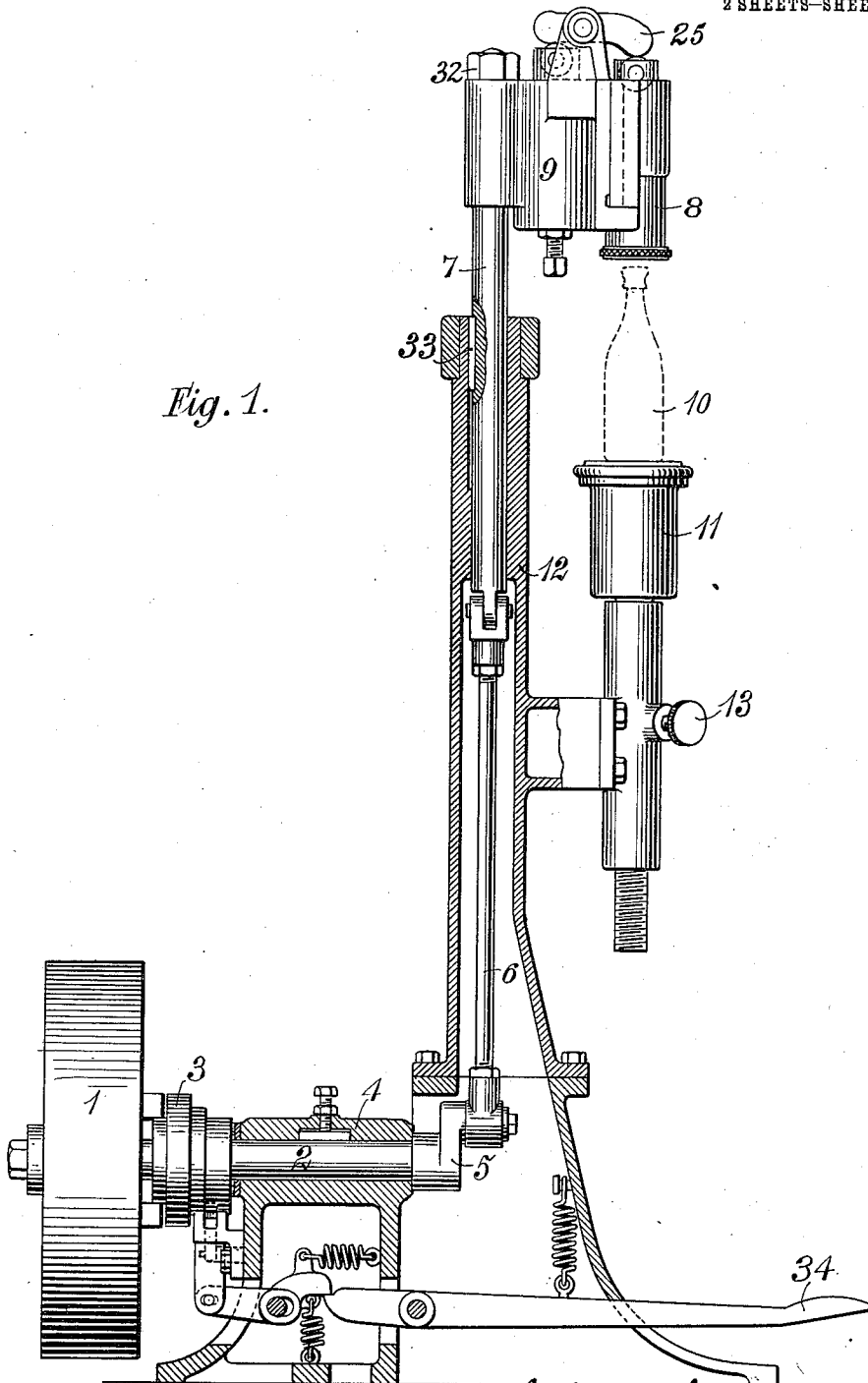
C. WINTER.
MACHINE FOR APPLYING BOTTLE SEALS.
APPLICATION FILED DEC. 30, 1908.

1,013,351.

Patented Jan. 2, 1912.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses:
Raphael Better
Oliver B. King

Charles Winter Inventor
By His Attorney
Holladay C. Messinger

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2 SHEETS—SHEET 2.

Fig. 2.

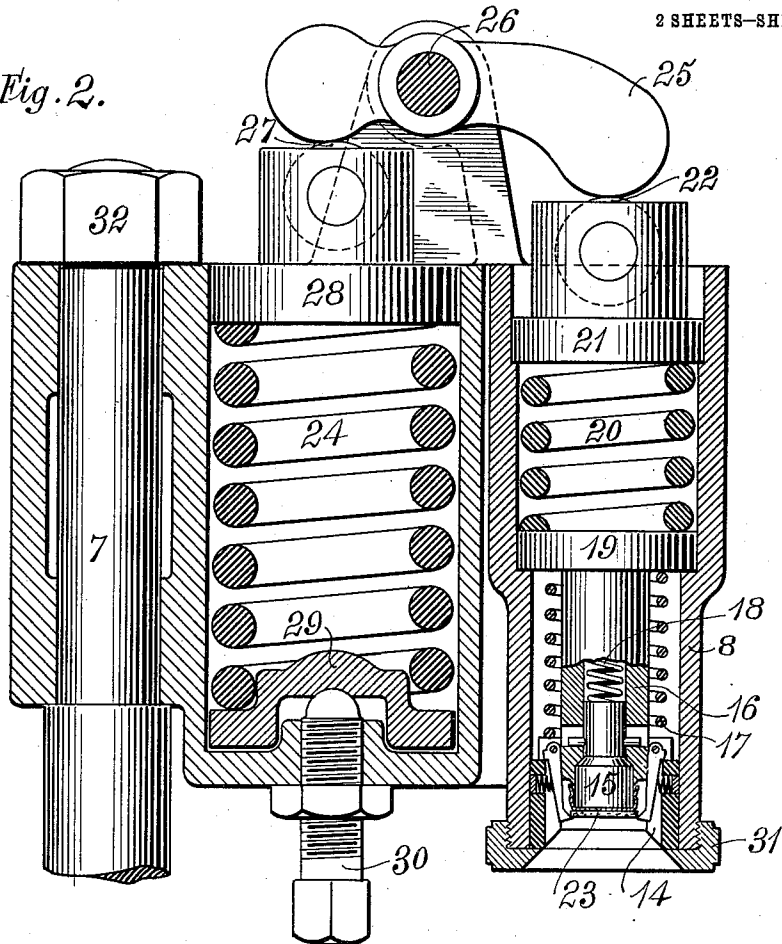
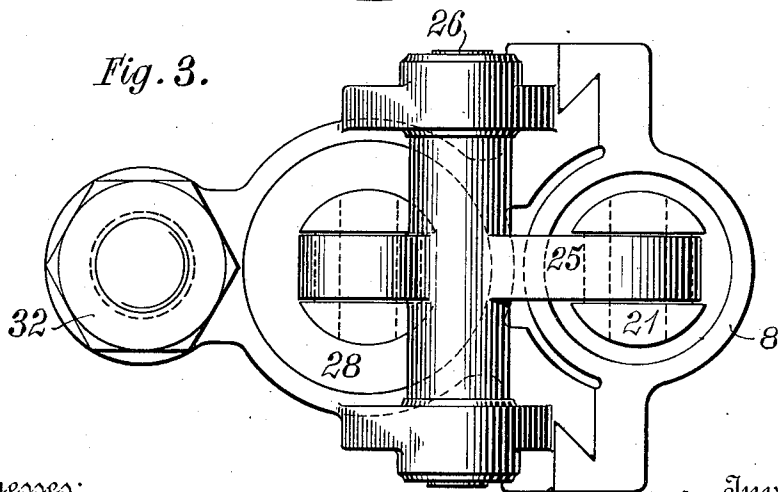


Fig. 3.



Witnesses:
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Inventor
Charles Winter
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UNITED STATES PATENT OFFICE.

CHARLES WINTER, OF WOODBURY, NEW JERSEY, ASSIGNOR TO STAR SEAL COMPANY,
A CORPORATION OF NEW YORK.

MACHINE FOR APPLYING BOTTLE-SEALS.

1,013,351.

Specification of Letters Patent.

Patented Jan. 2, 1912.

Application filed December 30, 1908. Serial No. 469,963.

To all whom it may concern:

Be it known that I, CHARLES WINTER, a citizen of the United States, residing in Woodbury, county of Gloucester, State of New Jersey, have invented certain new and useful Improvements in Machines for Applying Bottle-Seals, of which the following is a specification.

My invention relates to machines for applying bottle seals to bottles, and particularly to a machine of this character which is power driven.

The object of my invention is to simplify the construction and mode of operation of such a machine, and particularly to do away with the customary compensating devices attached to the seat on which the bottle is placed and designed to prevent breakage incident to the variation of size of the bottles.

In a hand or foot operated sealing machine the extent of movement of the sealing head may be controlled by the operator, and therefore if a tall bottle is to be sealed he does not force the sealing head down as far as he would with a short bottle. Hence the excess pressure encountered in these machines is not great and may be taken care of in the sealing head itself. On the other hand, in a power operated machine, if the sealing head is rigidly mounted, as in a manual machine, the extent of movement of the head is always the same and therefore a variation in the height of the bottles results in a variation in the degree of pressure exerted thereon by the head. In the case of a large bottle there would be an excess of pressure which might break the bottle, and for that reason it has been customary in all sealing machines in which the sealing operation is performed by direct pressure as distinguished from a spinning operation to have compensating devices in the seat for the bottle for the purpose of absorbing the excess pressure. By my invention I dispense with the compensating devices in the base for the bottle by having my sealing head yieldingly mounted with respect to the driving mechanism, so that the movement of the head with respect to the bottle will automatically stop as soon as its exerted pressure reaches a certain point, no matter what the size of the bottle may be, and fur-

ther movement of the driving mechanism will be taken up in the yielding mounting of the sealing mechanism.

Referring to the drawings, Figure 1 is a side elevation partly in section of a complete machine embodying my invention. Fig. 2 is a vertical section on an enlarged scale of the sealing head and its mountings. Fig. 3 is a plan view of the same.

1 is a driving pulley loosely mounted on the shaft 2, and 3 is a clutch keyed to the shaft 2 and adapted to engage the pulley at the desired time. The shaft 2 is mounted in a long bearing 4 and carries at the end away from the pulley a crank 5, through which crank 5 and the link 6 and the rod 7 the sealing head 8 and its mountings 9 are reciprocated. The bottle 10 is placed on a seat 11 mounted on the side of the main frame 12 of the machine. The height of the bottle seat may be adjusted by releasing the thumb screw 13 and screwing the seat up or down to the desired point and setting it there by the thumb screw. From this general description of the machine, its operation, broadly considered, will be understood to be as follows: The bottle seat being adjusted to the desired position, a seal is placed in the sealing head and the bottle to be sealed placed on its seat. Power being continuously applied to the driving pulley, the clutch is operated to cause the crank 5 to make one revolution, which draws the sealing head down over the bottle to seal it, and then raises the sealing head out of the way so that the bottle can be removed.

The sealing head proper consists of a casing 8 in which there is a chuck or seal holder 14, a seating plunger 15 and a bending plunger 16. The seal holder and the seating plunger are backed by springs 17 and 18 respectively, which springs abut against the under side of an annular enlargement 19 at the upper end of the bending plunger. The bending plunger is backed by a spring 20, which spring abuts against a plug 21 having journaled in its upper end a roller 22. When the sealing head is brought down over the bottle, the seal holder is forced up against the spring, and the seal 23 is released. Further movement of the sealing head forces the seal into the bottle and the seating plunger seats it therein. The seal

holder and the seating plunger are thus forced up into the casing until the top of the seal is forced up against the bending plunger and the flange of the seal bent into locking engagement with the bottle. In the bending operation the spring 20, which is stronger than the springs 17 or 18, is used, and a certain amount of excess movement of the sealing head will be taken up in this spring. The amount of excess movement, however, which can be taken up in this spring 20 is limited, and therefore it is necessary to provide additional means for this purpose in case an unusually large bottle is being sealed. I accomplish this object by an auxiliary spring 24, which is brought into play only when the elasticity in the sealing head itself is nearly or entirely exhausted. When the spring 20 in the sealing head is sufficiently compressed, the plug 21 and its roller 22 are forced up against the lever 25 fulcrumed on a pin 26 rigidly mounted in the carriage which carries the sealing head. The other end of this lever 25 bears against a roller 27 in a plug 28, which bears against the top of the spring 24. From this it will be seen that any excess movement of the sealing head which is not taken care of in the sealing head itself will be taken up in the auxiliary spring 24. The strength of the spring 24 may be adjusted to a certain extent by means of the plug 29 and the set screw 30.

A screw cap 31 permits the removal of some of the working parts of the sealing head without disturbing its mountings. The sealing head and its mountings are rigidly connected to the rod 7, as by the nut 32. The key 33 in the rod 7 coöperates with a

groove in the frame of the machine to guide the sealing head.

The details of the clutch and the mechanism for operating the same need not be here described in detail beyond stating that when the foot lever 34 is depressed, the clutch 3 and consequently the shaft 2 are connected to the pulley during one complete revolution and then disconnected, so that when the operator is ready to seal the bottle he merely depresses the foot lever and holds it down until the sealing head has been brought down over the bottle and returned to its original position, when he releases the lever preparatory to another operation.

Having described my invention, what I claim is:

1. In a machine for applying seals to bottles, a sealing head, comprising a seating plunger and a bending plunger, a spring, and a lever interposed between said sealing head and said spring adapted to transmit excess pressure from said sealing head to said spring.

2. In a machine for applying seals to bottles, a sealing head, comprising a seating plunger and a bending plunger, a spring, means for adjusting the strength of said spring, and means interposed between said sealing head and said spring adapted to transmit excess pressure from said sealing head to said spring.

In witness whereof I have hereunto set my hand this 24th day of December, 1908.

CHARLES WINTER.

Witnesses:

FRANCIS B. DAVIS,
HALLACK A. PENROSE.