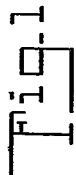
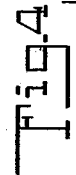


APPLICATION FILED FEB. 17, 1911.

Patented Jan. 30, 1912.



WITNESSES
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UNITED STATES PATENT OFFICE.

ARON JOHNSON, OF NEW YORK, N. Y.

COMPENSATOR.

1,016,155.

Specification of Letters Patent.

Patented Jan. 30, 1912.

Application filed February 17, 1911. Serial No. 609,104.

To all whom it may concern:

Be it known that I, ARON JOHNSON, a citizen of the United States, and a resident of the city of New York, borough of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Compensator, of which the following is a full, clear, and exact description.

This invention relates to a new and improved attachment for a bottle-capping machine whereby a support is provided for the bottle during the capping operation which will remain stationary under normal conditions, but which will yield when a bottle of abnormal length is being capped.

The device disclosed in the present application is an improvement upon that disclosed in my United States co-pending application, Serial No. 548,767, filed March 12, 1910.

An object of this invention is to provide a device which will be simple in construction, inexpensive to manufacture, strong and durable.

A further object of this invention is to provide a support for a bottle during the capping operation, which is counterweighted, said counterweight, however, being held normally stationary by means of a tensioning apparatus which will yield at a predetermined pressure to allow for different sizes of bottles.

These and further objects, together with the construction and combination of parts, will be more particularly described hereinafter and set forth in the claims.

Reference may be had to the accompanying drawings, in which like reference characters denote corresponding parts in the several views, and in which—

Figure 1 is a fragmentary vertical section; Fig. 2 is a fragmentary view partly in section to show the underlying structure; Fig. 3 is a vertical section taken on the line 3—3 of Fig. 2; and Fig. 4 is a horizontal section taken on the line 4—4 of Fig. 2.

Referring more particularly to the separate parts as embodied in the form shown in the drawings, 1 indicates a table or top of the frame of the bottle-capping machine, which is provided with an opening 2, in which is movably mounted a support 3. The support 3 is located subjacent the capping mechanism 5, which is adapted to cap one or more bottles 6 by coming down over the

top thereof with a considerable pressure. The top of the support 3 may be provided with a resilient pad 7, so as to prevent the breakage or marring of any of the bottles. The upward motion of this support 3 may be limited in any suitable manner, as by means of the peripheral flange 8, which engages the casing 9, in which the support slides. For the purpose of maintaining the support 3 in its uppermost position, it is secured to one end of a lever 10, which is pivoted intermediate its ends in any suitable manner, as at 11, and which is further provided at its opposite end with a weight 12. The weight 12 forms a counterbalance for the support 3, but it is held from movement, except under extraordinary conditions, by a locking mechanism which will now be described.

The weight 12 is provided with a bracket 13, on which are secured a plurality of rollers 14, the latter being engaged by a plurality of arms 15, which are pivotally connected at their upper ends, as at 16, and are provided with cam faces at their lower ends, at 17, where they abut against the rollers 14. These arms are normally held in intimate contact with the rollers 14, by means of a plurality of springs 18, the tension of which may be adjusted in any suitable manner, as by means of the bolts 19. It will be noted that when the arms 15 are in the position indicated in Fig. 2, they extend in almost substantial alinement with the pivots 16 and the pivots of the rollers 14, so that they prevent the upward motion of the weight 12, and thus, the downward motion of the support 3. The inward motion of the arms 15 is limited by means of stops 20. A cushion 21, of any suitable material, such as rubber, may be provided beneath the bracket 13 to absorb the shock incident to the return of the weight.

In order that the support 3 may not rise with too sudden an action when the bottle has been removed from the top thereof, the lower part of the support is provided with an enlargement 22, which forms a piston adapted to entrap air in an enlarged cavity 23 formed in the casing 9, which forms a shock-absorber permitting the support 3 to come up gradually and preventing it from rising with a bang, due to the pull of the counterweight 12.

The operation of the device will be readily understood when taken in connection with

the above description. When a bottle of a normal size is being capped, a certain pressure will be exerted by the capping mechanism 5 on the bottle, which will be transmitted to the support 3. This pressure, however, is not sufficient to overcome the pressure of the springs 18, which are screwed up to the requisite tension, which will prevent the arms 15 from sliding off the rollers 14. These arms 15, while not exactly in alinement with the pivots 16 and the pivots of the rollers 14, are so nearly in alinement that it will require a considerable force to exert the requisite cam action on the arms 15, necessary to overcome the tension of the springs 18. The force necessary to overcome the tension on the springs 18 would be greater than that normally necessary to cap a bottle. For this reason, the weight 12, and thus the support 13, will remain stationary during ordinary capping operation. If, however, a bottle of abnormal length should be placed between the support 3 and the capping mechanism 5, then a force greater than that necessary to cap the bottle will be applied by reason of this excessive length. This force will be transmitted to the weight 12, so that the rollers 14 will force the arms 15 outwardly against the tension of the springs 18, permitting the weight to rise, and thus, the support 3 to sink the required amount necessary to take up the excessive length of the bottle. When the bottle which is being capped is removed, the weight 12 will automatically return to its original lowermost position, and the arms 15 will spring back above the rollers 14, again locking the parts in their normal position. The force necessary to overcome the action of the springs 18 may be regulated by regulating the tension of the springs 18, by means of the screw-bolts 19.

It will thus be seen that there is provided a simple and efficient device which will form a rigid support for a bottle of normal length, yet which will yield to the excessive force placed thereon by the interposition of a bottle of abnormal length between it and the cap-affixing mechanism.

While I have shown one embodiment of my invention, I do not wish to be limited to the specific details thereof, but desire to be protected in various changes, alterations and modifications which may come within the scope of the appended claims.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. The combination with a bottle support, of a counterweight for said bottle support, a plurality of rollers on said counterweight, a plurality of pivoted arms engaging said rollers to prevent the movement of said counterweight, and springs for engaging

said arms and adapted to hold them in superposed relation with respect to said rollers.

2. The combination with a bottle support, of a counterweight for said support, a pair of rollers extending from opposite sides of said counterweight, a pair of cam levers pivoted adjacent the opposite sides of said counterweight and adapted to engage said rollers so as to prevent the movement of said counterweight, and springs for holding said arms in locking engagement with said rollers.

3. The combination with a bottle support, of a counterweight for said support, a pair of rollers extending from opposite sides of said counterweight, a pair of cam levers pivoted adjacent the opposite sides of said counterweight and adapted to engage said rollers so as to prevent the movement of said counterweight, springs for holding said arms in locking engagement with said rollers, and stops for limiting the movement of said arms.

4. The combination with a bottle support, of a counterweight for said support, a pair of rollers extending from opposite sides of said counterweight, a pair of cam levers pivoted adjacent the opposite sides of said counterweight and adapted to engage said rollers so as to prevent the movement of said counterweight, and means for adjusting the tension on said springs.

5. The combination with a table having an opening therein, of a bottle support slidably mounted in said opening and having its surface normally on the level with the surface of said table, said bottle support having a cushion in the upper face thereof, and also having means for limiting its upward motion, a lever pivotally connected to said bottle support at one end, a counterweight connected to said lever at the other end, rollers mounted on opposite sides of said counterweight, cam arms pivotally mounted adjacent to the opposite sides of said counterweight and having beveled ends engaging said rollers so as to prevent the movement of said counterweight and said support, springs engaging said arms on opposite sides so as to force said arms inwardly in locking position relative to said rollers, means for limiting the motion of said arms, and screw-bolts for adjusting the tension on said springs.

6. The combination with a casing having an opening therethrough, of a support extending through said opening in said casing and adapted to form a rest for a bottle, said support having an enlarged portion adapted to act as a piston in said opening, and said opening in said casing being of sufficient magnitude at some portions to contact with said piston and at other portions to contact with the rest of said support,

whereby an air chamber is formed between said support and said casing which is adapted to entrap air so as to limit the shock due to sudden movement of said support relative to said casing, and means for moving said support relative to said casing.

7. The combination with a casing, of a bottle-support movably mounted in said casing, and means for holding said bottle-support in its uppermost position substantially rigid under normal pressure, adapted to yield under an abnormal pressure due to an abnormally long bottle being acted upon,

said means comprising a pair of pivotally-mounted arms converging toward each other, and a pair of horizontally-disposed springs normally urging said arms toward each other and adapted to yield under an excessive pressure on said support.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ARON JOHNSON.

Witnesses:

H. WHITING,
PHILIP D. ROLLHAUS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."