P. C. LIEBER.

RETAINER FOR BOTTLE CAPPING MACHINES.

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1,290,256. Patented Jan. 7, 1919.

Fig. 1.

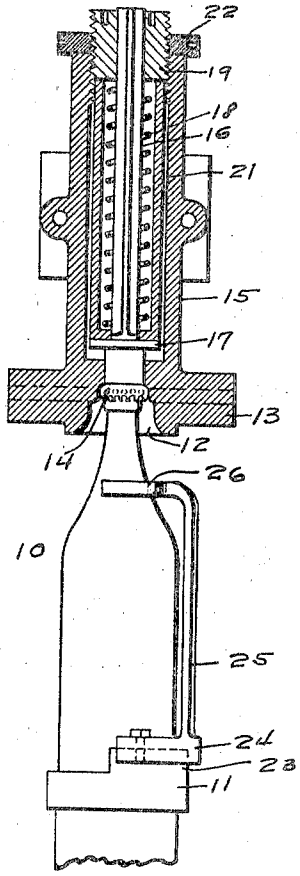


Fig. 3.

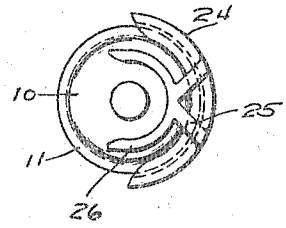
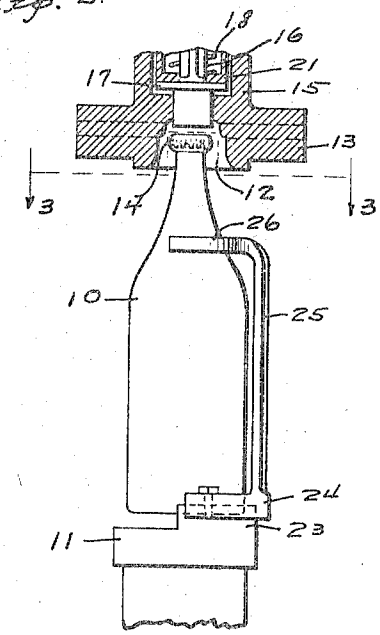


Fig. 2.



Inventor
PETER C. LIEBER

By Lockwood & Lockwood
Attorneys.

THE HORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

PETER C. LIEBER, OF INDIANAPOLIS, INDIANA, ASSIGNOR TO PROGRESS MACHINE COMPANY, OF INDIANAPOLIS, INDIANA, A CORPORATION.

RETAINER FOR BOTTLE-CAPPING MACHINES.

1,290,256. Specification of Letters Patent. **Patented Jan. 7, 1919.**

Application filed April 14, 1917. Serial No. 161,963.

To all whom it may concern:

Be it known that I, PETER C. LIEBER, a citizen of the United States, and a resident of Indianapolis, county of Marion, and State of Indiana, have invented a certain new and useful Retainer for Bottle-Capping Machines; and I do hereby declare that the following is a full, clear and exact description thereof, reference being had to the accompanying drawings, in which like letters refer to like parts.

This invention relates to bottle capping machines or crowning machines for securing and clenching the caps to bottles.

The particular feature of this invention consists of means secured to said machine which will engage the bottle and cause it to drop back on the support when for any reason the cap or mouth of the bottle should become locked in the throat of the capping device or should be stuck to the plunger. Often in the crowning machines now in use the bottle will remain fast to the throat or plunger for some reason, and be carried away thereby from the bottle support so that it often becomes broken or miscarried. In order to prevent this occurence there is provided a pair of fingers which are secured to the bottle support and are in position to engage the neck of the bottle if it is lifted from the support, and cause the bottle to be disengaged from the plunger or throat and returned to the support thereby preventing any damage occurring from it sticking thereto.

The bottle capping machine or crowner shown herein is the same as that shown in my Patent No. 1170241 of February 1, 1916. However it should be understood that this invention is not limited to any particular kind of bottle capping machine. As here shown the capping device or plunger remains stationary while the bottle support is moved upward to cause the bottle to engage the plunger and be capped thereby, but this same device may also be used on bottle capping machines in which the bottle support is stationary and the capping device moves downwardly to engage the cap and bottle.

The full nature of the invention will be understood from the accompanying drawings and the following description and claims:

Figure 1 is an elevation of a bottle and the upper part of the bottle support and a central vertical section through the crowning head, showing the retaining fingers in side elevation. Fig. 2 is the same as Fig. 1 with a portion broken away, showing the bottle being engaged by the fingers. Fig. 3 is a cross section on the line 3—3 of Fig. 1.

In the drawing 10 indicates a bottle for which a support 11 is provided, the upper end of the bottle projecting into the rigid tapering throat 12 of the crowning head plate 13. As shown in Fig. 1, the bottle is in position to have a crown 14 applied thereto, the bottle support 11 and the crowning head being relatively movable as is usual in this class of machines as will be readily understood by those skilled in the art. As will be seen from the drawing the spring encompassing sleeve on the plunger is in engagement with and stopped by the plug 19 to positively limit the upward movement of the plunger at the instant that the throat 12 of the capping plate 13 limits the upward movement of the cap and mouth of the bottle 10. Within the casing 15 extending upward from said head plate there is a centrally located plunger 16. Said plunger has a shoulder near its lower end below which a contracted portion of the plunger projects through a vertical opening concentric with the throat 12, but of smaller diameter than said throat, as shown. Above the shoulder 17 a spiral spring 18 acts downward, said spring surrounding the plunger and engaging the plug 19 which screws into the upper end of the casing 15. Therefore, said plug 19 is vertically adjustable and by it the tension of the spring 18 may be regulated and the upward movement stopped.

A sleeve or barrel 21 surrounds the spring 18 and lies between it and the casing 15 and rests upon the lower shoulder 17 of the plunger, but stops at a point somewhat below the plug 19 near the upper end of the plunger so as to permit ample compression of the spring. A lock nut 22 is screwed on the plug 19. The casing 15 and screw plug 19 are arranged so that the plunger will have only a slight movement and the upward

movement is yieldingly limited by coöperation of the spring and the plug 19. As the throat and plunger wear, the wear is taken up by screwing down the plug 19 accordingly.

Mounted on the projection 23 of the bottle support 11 and secured thereto there is a semi-circular finger support 24 which has integral therewith and extending upwardly the standards 25 which come together at the top and are integral with a pair of fingers 26 which are semi-circular in shape so as to extend partly around the neck of the bottle as shown in Fig. 3. When the bottle is in normal position as shown in Fig. 1 the fingers do not engage it but loosely surround a portion of it, but when the bottle is lifted off of this support by the capping mechanism as shown in Fig. 2 the fingers engage the neck and cause it to be released from the capping mechanism so that it will drop back on to the support, thereby preventing it being carried out of position.

As best shown in Fig. 3, the free ends of the fingers 26 extend beyond the vertical axial center of the bottle so that the bottle will be so engaged by said fingers as to cause the bottom of the bottle to swing toward the standards 25 rather than outwardly, thereby causing the bottle to return to the support 11, and not be thrown therefrom, should the neck of the bottle stick in the capping machine and the bottle be elevated from its support.

By this arrangement there is no danger of swinging the bottle in such manner as to break the neck thereof or throw the same from its support. The fingers 26 are elevated a sufficient distance above the support 11 so as to cause said fingers to fit loosely around the bottle and accommodate bottles of varying heights and formations, and also to first suspend the weight of the bottle from the capping device, should the bottle stick, which will usually release the bottle before it comes in contact with the fingers.

The invention claimed is:

1. In a bottle capping machine including means for capping bottles, a bottle support associated with said means, and rigid non-bending fingers secured on said bottle support adapted to extend more than half way around the neck of said bottle so as to engage and release the bottle and prevent the lower end from swinging clear of the support when suspended from the capping means by the mouth of the bottle sticking therein.

2. In a bottle capping machine including means for capping bottles, a bottle support, a projection extending partly around one side of said support, a base having upwardly extending standards secured to said projection, and rigid non-yielding fingers on the upper end of said standard the free ends of which project beyond the vertical axial center of the bottle, whereby the lower end of the bottle will be swung toward said standards whenever the bottle is suspended from the capping means by the mouth of the bottle sticking therein.

In witness whereof, I have hereunto affixed my signature.

PETER C. LIEBER.

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