O. G. GRAHAM & A. KILIAN.

MEANS FOR SEALING BOTTLES.

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1,117,371.

Patented Nov. 17, 1914.

Fig. 2.

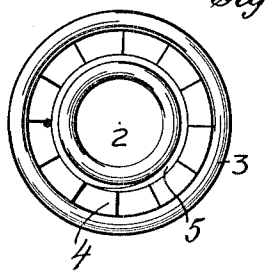
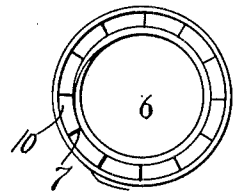


Fig. 3.



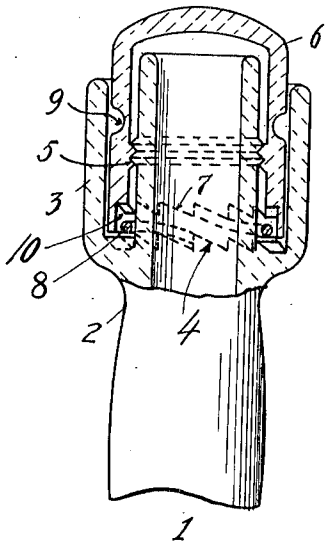


Fig. 1

Fig 4.



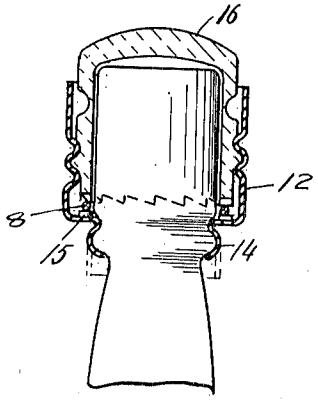


Fig. 5.

WITNESSES:

Emily Fagerstrom

G. Blaine Nissen

INVENTORS:

Otis G. Graham &

Adam Kilian.

BY

O. Martin

ATTORNEY

UNITED STATES PATENT OFFICE.

OTIS G. GRAHAM AND ADAM KILIAN, OF PORTLAND, OREGON.

MEANS FOR SEALING BOTTLES.

1,117,371. Specification of Letters Patent. Patented Nov. 17, 1914.

Application filed April 5, 1913. Serial No. 759,224.

To all whom it may concern:

Be it known that we, OTIS G. GRAHAM and ADAM KILIAN, citizens of the United States, residing at Portland, in the county of Multnomah and State of Oregon, have invented certain new and useful Improvements in Means for Sealing Bottles, of which the following is a specification.

This invention relates to bottles and similar receptacles, and has particular reference to improved means for sealing the mouth of the bottle.

The object of our invention is to provide means for sealing a bottle in such a manner that no person can break the seal without leaving positive proof that the seal has been broken.

A further object is the provision of means whereby the breaking of the seal leaves no ragged edges exposed, so that the bottle may be handled without danger to the purchaser.

With these objects in view our invention consists in the combinations and advantageous features hereinafter described and illustrated in the accompanying drawings, of which:

Figure 1 is a side elevation, partly in section, of the upper portion of a bottle embodying our invention, Fig. 2 shows the bottle from the top and with the sealing cap removed, Fig. 3 is a bottom view of the sealing cap, Fig. 4 shows the spring member by means of which the sealing is effected, and Fig. 5 shows a modification hereinafter fully explained.

The bottle 1 is made with the neck 2 of the usual shape internally, but it is made with an integral and external flange 3, and the latter is at the bottom provided with ratchet teeth 4. The flange, furthermore, carries on its inner periphery screw threads 5, which are proportioned to engage the threaded portion of the cap 6, which latter at the bottom is made with similar ratchet teeth 7. A split-ring 8 is first dropped into the space between the external flange 3 and the bottle neck, whereupon the cap is inserted and turned as far down as the co-acting screwthreads will permit, thereby compressing the split ring 8, the ends of which yieldingly press against the opposed ratchet faces. If anyone attempts to unscrew the cap 6, the ends of the split ring 8 will immediately lodge in the ratchet teeth and hold the cap locked in place. Of course, if sufficient power is applied, it is obvious that some part of the combination must give out or break, and glass is not strong enough to withstand a very severe pressure. Knowing then that some part must give out or break, it becomes important to design the device in such a manner that the mechanism will break at a predetermined place. For this reason the cap 6 is made with a very much contracted portion 9, and this portion is merely strong enough to stand the strain of screwing the cap into place. At any attempt to unscrew the cap against the strength of the interposed split ring 8, the said cap will break at the said contracted portion. The person purchasing the bottle and wishing to open the same, only needs to strike the top of the cap 6 gently against any convenient object of some hardness, and the cap will break off at the contracted portion. The said contracted portion is placed well below the crown of the flange 3, so that no ragged glass edge can possibly be exposed in breaking the cap 6. The bottle can thus safely be handled after breaking the cap. It is noticed that the bottom of the cap is made with an internal peripheral groove 10, within which the split washer 8 seats itself when the cap is turned into place. This construction is quite important, as the split washer in this manner is entirely hidden within the cap so that no tool can be inserted between the cap and the flange 3 and come within reach of said washer, with a view of dislodging the latter.

It may be found difficult, under certain circumstances, to make the bottle with the integral glass flange 3, and under such circumstances the said flange may be attached as shown in Fig. 5.

In order to slip the flange 12 over the bottle neck 13, the said flange is made with a straight shoulder-portion 14, and the latter is, after mounting, spun substantially to the shape of the bottle, as shown in full outline in Fig. 5. The cap 16 may remain substantially as above described, as does the split washer 8, but the flange 12 is, in punching and forming the metal, made with suitable projections 15, or otherwise shaped to engage the split washer and thereby to resist an attempt at unscrewing the cap. It may not be possible to spin the flange portion 14 into the shape shown, that is to say, so that it fits absolutely tight on the bottle neck, for the reason that said neck, in thus spinning the flange, would be apt to break. But it is

not necessary for the flange to fit, as no harm will result in turning the cap and flange together, but by interposing a piece of cork, rubber, or the like at the place of spinning, a perfect fit may be obtained.

It may be said that the cap 16, shaped to substantially fit the bottle neck, can be pulled off. But knowing the brittleness of glass, this is not likely to occur, as the said flange may be made from steel strong enough to withstand such attempt and still pliable enough to be spun into shape.

From the foregoing description it is seen that our sealing devices are externally placed on the bottle, the interior of which is in no way affected. The bottle is, before sealing, corked in the ordinary manner so that no leakage can take place. After the seal is once broken the bottle is used as any ordinary bottle, the broken glass-edge is well concealed, and nothing is left to interfere with the manipulation of the bottle.

We claim:

1. In a device of the character described, a bottle, an outer lip surrounding the neck of said bottle, a shoulder formed intermediate said lip and said neck, ratchet teeth integral with said shoulder, a glass screw cap having ratchet teeth at the bottom thereof, a resilient member interposed between said outer lip and said cap and engaging said ratchet teeth for the purpose of locking said cap in place, and an annular groove in said cap lying well below the top surface of said bottle, substantially as described.

2. In a device of the character described, a bottle, an outer lip forming part of said bottle, an inner neck concentric with said outer lip, a shoulder intermediate said outer lip and inner neck, ratchet teeth integral with said shoulder, a glass screw cap also having ratchet teeth integral therewith, means on said neck to engage said cap, a resilient member interposed between said outer lip and said cap to engage said ratchet teeth for the purpose of locking said cap in place, and an annular groove in said cap lying well below the upper surface of said outer lip, for the purposes set forth.

3. In a device of the character described, a bottle, an outer lip forming part of said bottle, an inner neck concentric with said outer lip, a flange on said neck, a glass cap threaded to engage said flange, a shoulder intermediate said outer lip and said neck, projections on said cap and said shoulder, a resilient member inclosed between said cap and neck to engage said projections, and an annular groove encircling said cap well below the upper surface of said outer lip in order that said cap may be easily broken on the line of said groove, substantially as set forth.

4. In a device of the character described, a bottle, an outer lip forming part of said bottle, an inner neck concentric with said lip, a flange on said lip, a glass cap threaded to engage said flange, a shoulder intermediate said outer lip and said neck, a resilient member at the bottom of said cap, ratchet teeth on said shoulder and said cap which are engaged by said resilient member for the purpose of holding said cap in place, said resilient member being inclosed between the cap and neck in order to be protected against tampering, and an annular groove in said cap lying well below the upper surface of said outer lip, said annular groove serving as a means to break said cap at a predetermined point, and said lip serving as a shield to protect said cap from accidentally breaking, substantially as described.

In testimony whereof we have hereunto affixed our signatures.

OTIS G. GRAHAM.
ADAM KILIAN.

In presence of—
G. BLAINE NISSEN,
O. O. MARTIN.