W. H. REID.

BOTTLE CLOSURE.

APPLICATION FILED SEPT. 25, 1909.

942,665. Patented Dec. 7, 1909.

Fig. 1.

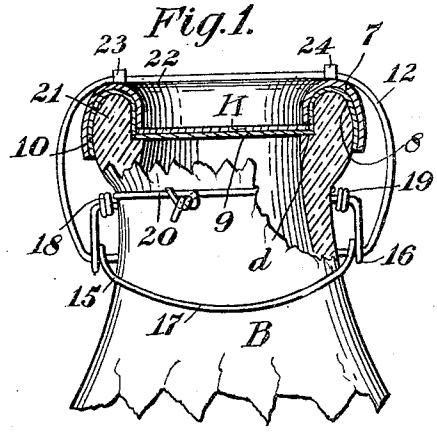
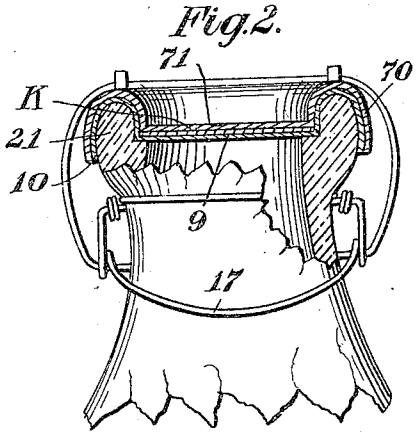


Fig. 2.



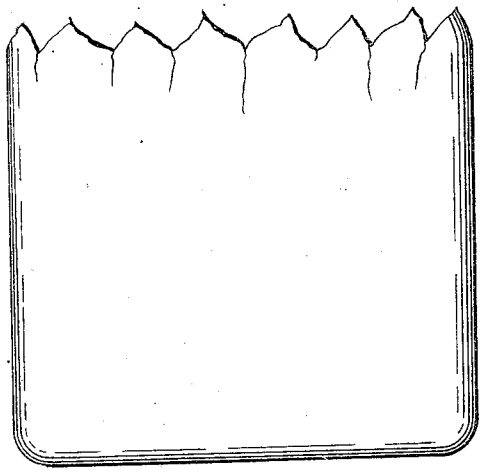


Fig. 3.

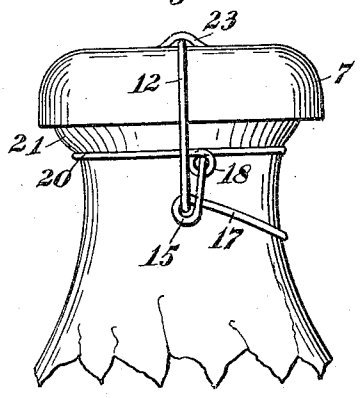


Fig. 5.

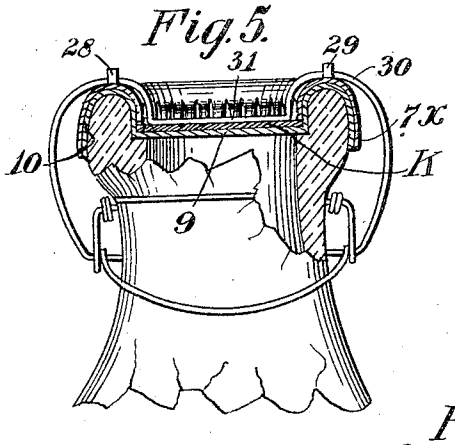


Fig. 4.

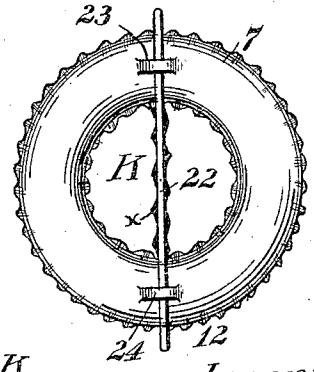
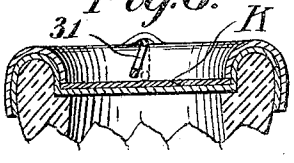


Fig. 6.



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BOTTLE-CLOSURE.

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To all whom it may concern:

Be it known that I, WILLIAM H. REID, a citizen of the United States, and residing in the borough of Brooklyn, city of New York, State of New York, have invented certain new and useful Improvements in Bottle-Closures, of which the following is a specification.

This invention has for its object to provide a bottle closure in which the clamping means are permanently attached to the bottle, and in which the stopper member is tightly pressed against the bottle mouth over its entire top or upper end portion.

A further object is to provide in such a closure a seal or safety device, in the nature of a cam bend in a securing member or bail, that will have a wiping movement over the face of the stopper member, in the operation of releasing the securing means; whereby a suitable adhesive can secure the cam to the stopper member, and such seal will be necessarily ruptured or broken when the clamping means are operated to release the stopper member; indicating that the closure has been disturbed, therefore preventing any improper tampering with the contents of the bottle.

In the accompanying drawings illustrating embodiments of my invention, Figure 1 shows in side elevation, partly in section, a bottle with the closure attachment. Fig. 2 shows a modified form of the cap member. Fig. 3 shows a side elevation. Fig. 4 is a plan view. Fig. 5 shows the form with the cam bend in section; and Fig. 6 is another section of the latter.

The cap member 7 of the closure is shown as annular, (except in Fig. 2), and has an annular channel 8, that opens downward in the position of use, and which is shaped to conform to the entire top or mouth portion of the bottle B, so that it can engage the mouth or upper end of the bottle on both sides of its top plane. The channel is practically semi-circular in form. This cap member is preferably formed of thin sheet metal, or other thin material, and is best made semi-circular on each side in cross section; but preferably has the outer edge extend lower down than the inner edge. Many of the bottles in use at present are formed with a ledge or abutment *d*, in the neck, to receive the usual disk stopper. Any suitable form of securing means can be used to clamp this cap member on the bottle mouth, preferably one that is permanently attached to the bottle and to the cap member.

A suitable stopper or hood is first placed on the bottle mouth, that in the form shown comprises a central disk or flat portion 9, having an outer channel part 10, preferably previously curved to correspond to the shape of the bottle end. This stopper is first placed on the bottle mouth with the central flat part fitting into the bottle neck or throat, and may rest on the ledge *d*, where that is provided. Then the ring cap member 7 is placed on top of the curved part of the stopper member on the mouth, and by the securing means for the cap member, clamped in this position. By this means the stopper member is securely held on the bottle mouth, and the flat central portion of the stopper member will serve to effectually close the bottle. Where the stopper member is made of comparatively strong paper or material, no other closing means is needed. But if desired the stopper member may be formed of thin light paper, and a disk K used that is placed into the cup portion of the stopper member, being of a size to snugly fit therein, before the cap member 7 is applied and the cap member will engage the margins of the disk K and retain it in position. By such arrangement the bottle is securely stoppered, and the entire mouth of the bottle is protected from being soiled, so that when the closure is removed, and the contents poured out, it will not come into contact with any dirt or germs, in flowing over the mouth or end of the bottle. Furthermore, the disk K, being exposed plainly to view, can display various printed matter, such as the dairy company, the contents of the bottle, the date, etc.

The securing means for the cap member, as shown in Figs. 1 and 4, comprises a bail 12 pivoted at its ends in sockets 15 and 16, formed in a lever 17. This lever 17 has its ends pivoted in sockets 18 and 19 in a wire ring 20, fast on the bottle neck just below the bead 21 of the bottle; which bead prevents the ring from being drawn upward. This arrangement of securing means is similar to the securing means in general use, with a flat cap. The bail 12 is shown in Figs. 1–4, as having a straight top part 22, that is pivoted to the cap member 7, by eyes 23 and 24 on the cap member on opposite sides thereof, as shown. By swinging the lever wire 17, the bail 12 is tightened and released in the

usual manner, and the cap member can be swung over the bottle and brought down on the stopper, or stopper and disk, and then drawn tightly down by the lever and bail, and securely clamp the cap.

In Figs. 5 and 6, the bail 30 does not pass straight across between the eyes 28 and 29, of the cap member 7ˣ, but is depressed to form a cam bend 31, whose middle part is straight and in engagement with the central part of the stopper member, or with the disk K, where such is used. This cam portion will swing on the axis passing through the eyes 28 and 29, and will sweep over the disk K, in the clamping and releasing operation. When the bottle is filled and the closure is positioned to clamp the stopper, a suitable adhesive x is applied to the cam portion and adjacent part of the disk K, or stopper. Since the closure cannot be removed or even loosened without first swinging the bail and hence the cam, the cam must swing across the disk K and rupture the adhesive that forms a seal, that will indicate any tampering with the contents of the bottle. This seal may consist of paraffin applied in molten form, or sealing wax, or glue.

In the modification shown in Fig. 2, the cap member 70 has the central portion 71 closed or solid, and is not made annular. With this form, the disk K, or the central portion of the stopper member is not visible. The central solid portion of the cap member serves to protect the stopper member.

In Figs. 4 and 5 the cap member is shown as having both its margins formed with flutes or corrugations allowing slight expansion to conform to different sized bottles. These flutes on the inner edge are formed preferably irregular or unsymmetrical, so that where they engage the stopper member, or the disk K, paraffin or wax can be applied, and constitute a seal; for it would be practically impossible to replace the stopper or disk in precisely the previous position, and removal would be indicated. Also the fluted inner edges will better engage the margin of the disk K and hold it in position.

Having thus described my invention, what I claim is:—

1. In a bottle closure, a cap member having an annular channel opening downward and shaped for engagement with the bottle mouth over substantially its entire top portion, a stopper member of fibrous material having its marginal portion concavo-convex and located between the cap member and the bottle mouth, a bail pivoted on the cap member on opposite sides and having a cam portion between its pivoted portions extending down to the plane of the inner edges of the cap member when the bail is in clamping position, and securing means for the bail.

2. In a bottle closure, a cap member having an annular channel opening downward and shaped for engagement with the bottle mouth over substantially its entire top portion, a stopper member of fibrous material having its marginal portion formed concavo-convex and located between the cap member and the bottle mouth, a bail pivoted on the cap member on opposite sides and having a cam portion between its pivotal portions extending down to the plane of the inner edges of the cap member when the bail is in clamping position, securing means for the bail, and sealing means attaching the cam portion to the adjacent member.

3. In a bottle closure, a cap member having an annular channel opening downward and shaped for engagement with the bottle mouth over substantially its entire top portion, a stopper member of fibrous material having its marginal portion concavo-convex and located between the cap member and the bottle mouth, a disk on the central portion of the stopper member and engaged by the cap member, and securing means for clamping the cap member on the bottle.

4. In a bottle closure, a cap member having an annular channel opening downward and shaped for engagement with the bottle mouth over substantially its entire top portion, a stopper member of fibrous material having its marginal portion concavo-convex and located between the cap member and the bottle mouth, a disk on the central portion of the stopper member and engaged by the cap member, a bail pivoted on the cap member on opposite sides and having a cam portion between its pivoted portions extending down to engage the said disk member, and securing means for the bail.

5. In a bottle closure, a cap member having an annular channel opening downward and shaped for engagement with the bottle mouth over substantially its entire top portion, a bail pivoted on the cap member on opposite sides and having a cam portion between said pivoted portions extending down to the plane of the inner edges of the channel portion when the bail is in clamping position, and securing means for the bail.

6. In a bottle closure, a cap member having an annular channel opening downward and shaped for engagement with the bottle mouth over substantially its entire top portion, a bail pivoted on the cap member on opposite sides and having a cam portion between said pivoted portions extending down to the plane of the inner edges of the channel portion when the bail is in clamping position and a lever member attached to the bail for clamping the cap member on the bottle mouth.

7. In a bottle closure, a cap member substantially semicircular in section on each side and shaped for engagement with the bottle mouth over substantially its entire top portion, a bail pivoted on the cap mem-

ber on opposite sides and having a cam portion between said pivoted portions extending down to the plane of the inner edges of the cap member channel portion when the bail is in clamping position, and a lever member pivoted to the bail for clamping the cap member on the bottle mouth.

8. In a bottle closure, a cap member having an annular channel opening downward and shaped for engagement with the bottle mouth over substantially its entire top portion, a stopper member of fibrous material having its marginal portion concavo-convex and located between the cap member and the bottle mouth, and securing means for clamping the cap member and stopper member on the bottle, the cap member having fluted margins.

9. In a bottle closure, a cap member having an annular channel opening downward and shaped for engagement with the bottle mouth over substantially its entire top portion, a stopper member of fibrous material having its marginal portion concavo-convex and located between the cap member and the bottle mouth, a disk on the central portion of the stopper member and engaged by the cap member, and securing means for clamping the cap member on the bottle, the cap member having fluted margins.

10. In a bottle closure, a cap member having an annular channel opening downward and shaped for engagement with the bottle mouth over substantially its entire top portion, a bail pivoted on the cap member, and a lever attached to the bail for clamping the cap member on the bottle mouth, the cap member having fluted margins.

11. In a bottle closure, a cap member substantially semicircular in section on each side and shaped for engagement with the bottle mouth over substantially its entire top portion, a bail pivoted on the cap member, and a lever attached to the bail for securing the cap member on the bottle mouth, the cap member having fluted margins.

12. In a closure for bottles having a comparatively wide and thick mouth, the combination of an annular cap member of concavo-convex section on each side shaped to hold a stopper member in engagement with the entire top portion of the bottle mouth, a bail member pivoted on opposite sides on the cap member and having a cam loop portion between the pivotal portions extending down to the plane of the inner edges of the cap member, the bail being pivotally attached to the bottle.

13. In a closure for bottles having a comparatively wide and thick mouth portion, the combination of a stopper member comprising a hood of fibrous material having a flat central portion and a curved marginal portion and a disk placed on the central part of the hood, an annular cap member of concavo-convex section on each side shaped to engage both said stopper members and hold them on the bottle mouth, a bail member pivoted on the cap member on each side and having a cam loop portion between the pivotal portions alining with the plane of the inner edges of the cap member and engaging the stopper member, the bail being pivotally attached to the bottle to clamp the cap member and stopper members on the bottle.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses, this twenty-fourth day of September, 1909.

WILLIAM H. REID.

Witnesses:
J. R. FRITH,
G. A. RICHARD.