

C. W. SCHMIDT & A. MACKIE, JR.

NON-REFILLABLE BOTTLE.

APPLICATION FILED DEC. 14, 1908.

937,473.

Patented Oct. 19, 1909.

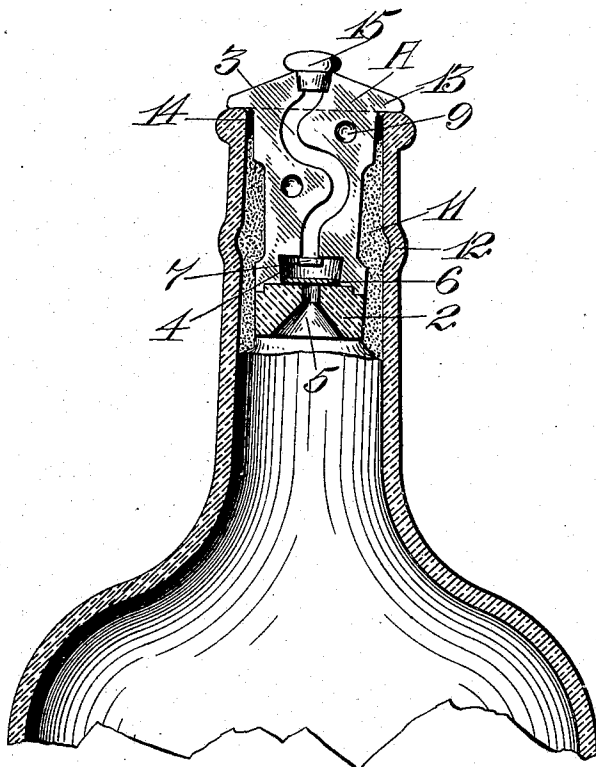


Fig. 1.

Fig. 2.

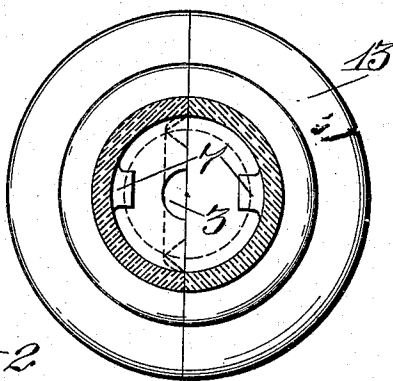
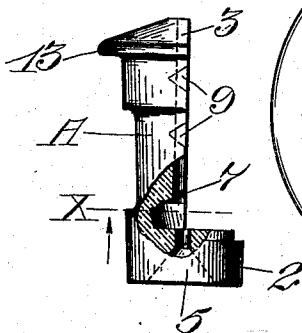
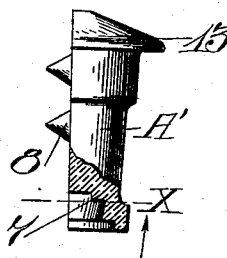


Fig. 4.

Fig. 3.



WITNESSES.

W. H. H. H.
R. A. B.

INVENTORS

C. W. Schmidt
A. Mackie, Jr.
BY *Geo. H. Strong*
ATTORNEY.

UNITED STATES PATENT OFFICE.

CARL W. SCHMIDT, OF PIEDMONT, AND ALEXANDER MACKIE, JR., OF ALAMEDA,
CALIFORNIA.

NON-REFILLABLE BOTTLE.

937,473.

Specification of Letters Patent.

Patented Oct. 19, 1909.

Application filed December 14, 1908. Serial No. 467,515.

To all whom it may concern:

Be it known that we, CARL W. SCHMIDT, of Piedmont, Alameda county, California, and ALEXANDER MACKIE, Jr., of Alameda, Alameda county, California, both citizens of United States, have invented new and useful Improvements in Non-Refillable Bottles, of which the following is a specification.

Our invention relates to non-refillable bottles, and particularly bottles for use as shakers for removing the liquid contents, such as sauces and the like.

Its object is to provide a simple, cheap, practical closure or stopple for bottles, which, when once applied to any sort of a bottle after the bottle has been filled, will absolutely prevent the refilling of the bottle without the destruction of the latter.

The invention consists of the parts and the construction and combination of parts as hereinafter more fully described and claimed, having reference to the accompanying drawings, in which—

Figure 1 is a longitudinal section, showing our non-refillable bottle. Fig. 2 is a side elevation of one of the halves forming the stopple, partially broken away. Fig. 3 is a similar view, showing the other half. Fig. 4 is an enlarged section on line X—X of Figs. 2 and 3.

Our invention comprises a stopple made in two parts or sections A and A'. One of the sections, as A, is longer than the other, with a base portion 2 of the full circumference of the stopple and forming an abutment for the lower end of the section A' to seat against when the parts are assembled. One of these sections, as A, is provided with a sinuous groove 3 which forms, when the sections are assembled, an outlet for the discharge of the liquid from the valve chamber 4. This valve chamber 4 is inclosed by both the sections A and A', and the inlet to this valve chamber is through a tapered port 5 in the base ring 2. The valve chamber 4 is of sufficient size and shape to accommodate a flat, thin disk or wafer 6 which is preferably of some non-corroding material, as glass, and which has a considerable seating area on the bottom of the valve chamber 4 when the bottle stands upright. The top of the valve chamber 4 around the opening into the discharge passage 3 is provided with one or more bosses or projections 7 which operate to hold the disk 6 suffi-

ciently above the opening into the passage 3 when the bottle is inverted, so as not to interfere with the escape of the contents of the valve chamber when the bottle is inverted.

The stopple portions A and A' and the disk 6 may be of any suitable size, shape and material. Preferably these several parts are of glass, with the members A and A' cemented together after the disk 6 has been put in place. Advantage has here been taken of the known property of a flat piece of glass to cohere when moistened to a similar flat glass surface; the opposed surfaces being smooth, and when air is excluded, it being almost impossible to lift one from the other. Consequently, in the present case, the opening of the flared port 5 into the valve chamber is comparatively small with respect to the area of the disk 6, so that the disk 6 has a substantial portion of its area normally resting on a flat, correspondingly smooth seat in the bottom of the valve chamber.

The opposing flat faces of the parts A and A' are preferably provided with some suitable interlocking means, as, for instance, the dowel projections 8 on one member engaging the recesses 9 in the other member, so as to insure proper registration of the parts.

The sections A and A' are suitably turned down between their ends to provide an annular pocket which is preferably of irregular depth, to receive a filling of cement, as 11; and if desired, the neck of the bottle may be provided with a bulge, as represented at 12, into which the cement is received to form an anchorage for the stopper. Furthermore, the tops of the sections A and A' are provided with an overhanging ledge or flange 13 adapted to seat on top of the mouth of the bottle, and so prevent the insertion of any instrument for the purpose of removing the cork or digging out the cement, and a protective gasket 14.

In operation, assuming the bottle to have been filled and the stopple suitably inserted and anchored or cemented therein so as to render it impossible to remove without actually breaking off the neck of the bottle, the contents may be discharged by inverting the bottle and giving it a shaker effect; the pressure of the contents on the under side of the disk readily releasing the latter from its seat, and the liquid flowing out around the

sides of the disk and between the bosses 7 and out through the sinuous passage 3. Of course, by making the bosses 7 large enough, and providing passages of suitable size
5 around the disk, the liquid in the bottle may be discharged in any suitable quantity, and with or without shaking.

The moment the bottle is set upright the disk will fall back on its seat, and cohesion
10 will cause it to stick to its seat, so as to render it absolutely impossible to lift by inserting any instrument into the valve chamber, assuming that it were possible to insert such an instrument. The passage 3 may be nor-
15 mally closed by a stopper 15.

Having thus described our invention, what we claim and desire to secure by Letters Patent is—

In a non-refillable bottle, the combination
20 of a stopple having a body portion fitting in the bottle and an end cap portion forming an overhanging annular flange seating on top of the bottle neck, said body portion fitting within the bottle and having circumferential
25 cement securing means therefor, said overhanging flange protecting the cement, said cap and body portion of the stopple divided lengthwise into two complementary sections,

one section longer than the other, with the longer section having a cylindrical base portion against which the bottom of the shorter section abuts, and which cylindrical base portion is in continuation of the shorter section, said two sections above said base portion when assembled inclosing a valve chamber, 30 which chamber has a sinuous outlet upward through the cap and between the sections, said sinuous outlet comprising a groove entirely within one section and one wall of the groove formed by the opposed plain sur- 40 face of the opposite section, and an inlet through said base portion, and a flat disk valve in the valve chamber having a substantial seating area over the mouth of said inlet, and projections in the valve chamber and 45 around the outlet forming a support for said disk valve to maintain the outlet open when the bottle is inverted.

In testimony whereof we have hereunto set our hands in presence of two subscribing 50 witnesses.

CARL W. SCHMIDT.

ALEXANDER MACKIE, JR.

Witnesses:

J. A. SANDS,

R. P. BROMLEY.