No. 718,801. PATENTED JAN. 20, 1903.

W. L. STRAUSS.

DROPPING MOUTHPIECE FOR BOTTLES.

APPLICATION FILED SEPT. 19, 1902.

NO MODEL.

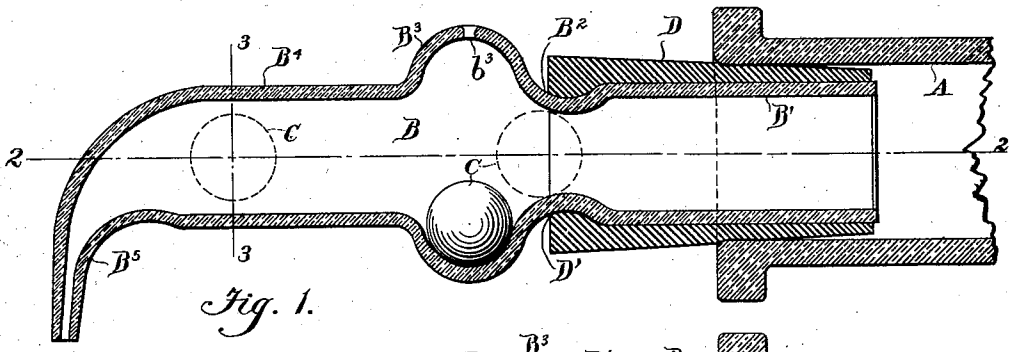

Fig. 1.

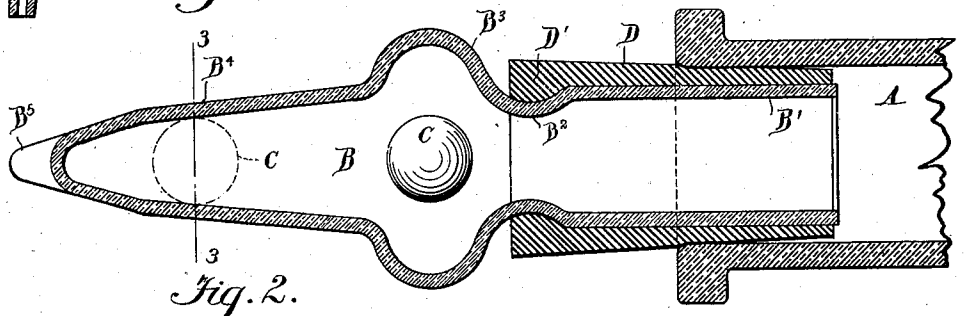

Fig. 2.

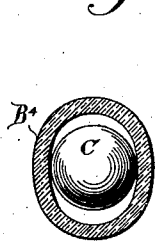

Fig. 3.

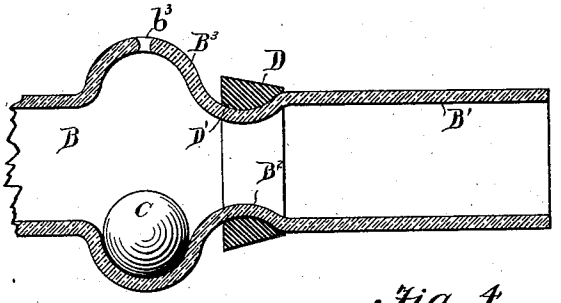

Fig. 4.

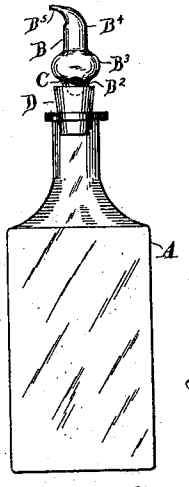

Fig. 5.

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DROPPING-MOUTHPIECE FOR BOTTLES.

SPECIFICATION forming part of Letters Patent No. 718,801, dated January 20, 1903.

Application filed September 19, 1902. Serial No. 123,975. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM L. STRAUSS, a citizen of the United States, residing in the borough of Manhattan, in the city and State of New York, have invented a certain new and useful Improvement in Dropping-Mouthpieces for Bottles, of which the following is a specification.

The invention is intended mainly for dropping medicine. I provide a detachable mouthpiece having a tapering portion elastically coated adapted to serve with bottle-mouths of a considerable range of sizes.

The main body of my removable mouthpiece is of glass. It incloses a ball which completely stops the passage when set in the upright position.

The seat against which the ball is arrested in its outward movement is flattened or out-of-round, so that the outward flow of liquid to effect the dropping is never stopped or materially retarded by the ball.

The forms of the parts are adapted to retain the ball in an ineffective position while the liquid retreats after each dropping operation.

The following is a description of what I consider the best means of carrying out the invention.

The accompanying drawings form a part of this specification.

Figure 1 is a vertical longitudinal section, and Fig. 2 a corresponding horizontal section on the line 2 2 in Fig. 1. Fig. 3 is a cross-section on the line 3 3 in Figs. 1 and 2. Fig. 4 is a section of a portion corresponding to Fig. 1, showing a modification. Fig. 5 is an elevation showing the device in a bottle in the upright position of disuse.

Similar letters of reference indicate corresponding parts in all the figures where they appear.

A is an ordinary bottle.

The main body of my detachable mouthpiece is a single piece of glass. I will when necessary refer to the whole body as B and will designate certain portions by supernumerals.

B′ is a cylindrical base, B^2 a contracted neck, and B^3 a smoothly-rounded collar.

The entire device is hollow, with both ends open. The thickness may be substantially uniform throughout. The enlargement, which I term the "collar" B^3, has a vent-hole b^3, which is uppermost when the bottle, with this device, is held in an approximately horizontal position for dropping.

B^4 is an extension nearly corresponding to B′, but out of round, and B^5 is a contracted point bent nearly at right angles.

Loosely imprisoned within the hollow collar B^3 is a ball C, of glass, of a different color from the main body. The ball is made truly spherical. The other parts are proportioned thereto, and the ball being introduced at a proper stage in the manufacture and imprisoned by contracting the portion B^2 cannot escape.

D is a sleeve, of soft vulcanized rubber, slipped over the part B′ and allowed to come to rest with its outer end matching in the contraction B^2. Its exterior is tapered, as shown. It is molded with an internal lip D′ at one end to take a firm hold in the contraction B^2.

When a bottle containing this mouthpiece is upright, the ball will drop inward and fit tightly against the interior of the contraction B^2. When it is in any approximately horizontal position required for dropping, the ball lies in the base of the hollow collar and exerts no influence. If in any exigency the bottle is so far inverted that the ball C rolls out of its place and moves or attempts to move outward toward the dropping-point B^5, it will be arrested in the portion B^4, and by reason of its seat while thus arrested being out of round it will not stop the passage. The liquid can always move forward past it with sufficient freedom.

The rubber sleeve D performs an important function not only in making the joint tight around in the interior of the bottle-mouth, but also in adapting the device to serve in bottles of different sizes. I can furnish extra sleeves of different thicknesses, by substituting which the device will allow for still wider variations in sizes of the bottle-mouth.

The conditions insure that the ball shall move inward and tightly stop the passage when the bottle is left in its ordinary upright position to remain out of use.

In what I esteem the most complete development of the invention a bottle is selected

to properly receive the device and the rubber sleeve D D′ is permanently set on the parts B′ B^2 by rubber cement.

The interior of the hollow collar should be carefully shaped. The diameter should be sufficient to allow the liquid to move very freely past the ball, especially in the retreating movement, when after the completion of a dropping operation the bottle is again returned to the upright position. The attendant after becoming accustomed to the use will always cause the bottle to assume the upright position gradually. It is important to do this in order to allow all the liquid, particularly if it is of a volatile character, to flow back into the bottle before the ball leaves its place in the periphery of the interior of the collar and assumes its central position against the contraction B^2, where it serves as a tightly-fitting valve. The flattened or otherwise out-of-round portion B^4 should be so gradually tapered that when the bottle is so completely inverted that the ball will roll into the part B^4 it will wedge itself into place and adhere a little, and on slowly turning the bottle back into the upright position the ball will be held by the slight friction. In this case, as in the other, after the liquid has retreated into the bottle a slight jar will liberate the ball and it will drop into the tightly-closed position shown in Fig. 5.

Modifications may be made without departing from the principle or sacrificing the advantages of the invention. The ball C may be of other material than glass, or it may be glass of the same color as the other parts. The sleeve D D′ may be of other elastic material than rubber. Cork may serve well.

I claim as my invention—

A dropping-mouthpiece for bottles having in combination with the loosely-inclosed ball C, a base B′ and contraction B^2 with an elastic sleeve D D′ fitted thereon, and the hollow collar B^3 and tapering out-of-round extension B^4 adapted to retain the ball while the excess of liquid retreats into the bottle, and contracted dropping-point B^5, all arranged to serve substantially as herein specified.

In testimony that I claim the invention above set forth I affix my signature in presence of two witnesses.

WILLIAM L. STRAUSS.

Witnesses:
MARC A. GUIGON,
M. F. BOYLE.