C. B. DAVIS.

DRENCHING BOTTLE.

APPLICATION FILED MAY 11, 1909.

942,057.

Patented Dec. 7, 1909.

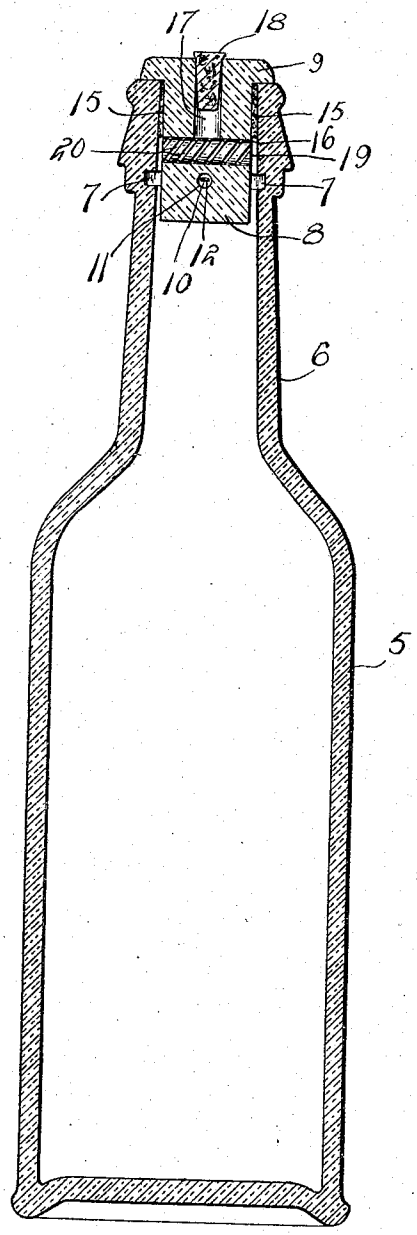

Fig. 1.

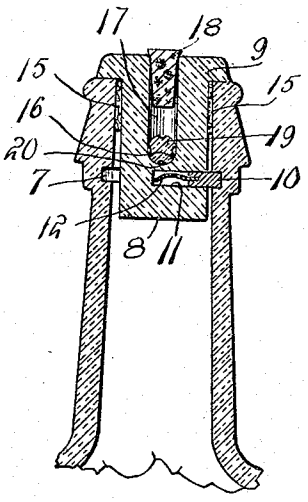

Fig. 2.

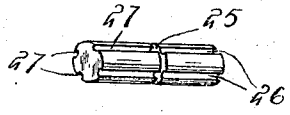

Fig. 3.

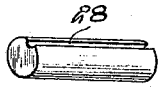

Fig. 4.

Witnesses

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UNITED STATES PATENT OFFICE.

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DRENCHING-BOTTLE.

942,057. Specification of Letters Patent. Patented Dec. 7, 1909.

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To all whom it may concern:

Be it known that I, CLAUDE B. DAVIS, a citizen of the United States, residing at Manchester, in the county of Chesterfield, State of Virginia, have invented certain new and useful Improvements in Drenching-Bottles; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to drenching bottles and it has for its object to provide a cheap and simple structure wherein a limited quantity of a liquid will be discharged at each shake of the bottle in inverted position.

A further object of the invention is to provide a structure that can be readily manufactured and one furthermore wherein refilling of the bottle excepting by the vacuum process or with a liquid under pressure, will be impossible.

Further objects and advantages of the invention will be understood from the following description.

In the drawings forming a portion of this specification and in which like numerals of reference indicate similar views, Figure 1 is a vertical sectional view through a bottle equipped with the present invention. Fig. 2 is a vertical section through the neck portion and the bushing in the neck of a bottle, and showing a means for holding the bushing within the neck of the bottle. Figs. 3 and 4 are perspective views showing modifications of the plug employed.

Referring now to the drawings, there is illustrated a bottle 5 having a neck 6 which at a point intermediate of its ends is provided with a groove 7 that circumscribes its inner face, the exterior of the neck being bulged as illustrated to correspond.

In connection with the neck of the bottle there is employed a cylindrical bushing 8 having a radiating flange 9 at its upper end which is adapted to rest upon the upper edge of the neck of the bottle, the diameter of the bushing 8 being somewhat less than the internal diameter of the bottle neck, while the length of the bushing below the flange 9 is sufficient to reach somewhat below the groove or channel 7. To hold the bushing within the neck of the bottle, there is provided a latch consisting of a wooden plug 10 which is slidably disposed in a radial recess 11 in the lower end portion of the bushing. In the inner end of the plug 10 is engaged a rubber stem 12 which because of its elastic properties, serves to urge the plug from the recess. When the bushing is to be placed in the bottle neck, the plug is first pressed back into the recess 11 and the bushing is then passed into the upper end of the bottle neck and upon being pressed downwardly, is finally seated and at that time the plug 10 is brought into position opposite the channel or groove 7. The elastic stem then serves to force the plug outwardly of the recess and into the channel or groove and the plug thus serves to lock the bushing in position. As above stated, the diameter of the bushing is somewhat less than the interior diameter of the bottle neck and to prevent egress of liquid from the bottle between the bushing and the inner wall of the neck, a collar 15 of cork or other compressible material is disposed upon the bushing against the flange 9, the external diameter of this collar being such that it will closely fit within the upper end portion of the neck, when the bushing is positioned as above described.

Disposed radially of the bushing 8 at a point above the recess 10, is a cylindrical passage 16 and communicating with this passage 16 is an axial cylindrical passage 17 that opens through the top end of the bushing as illustrated. In the passage 17 is engaged a stopper 18.

With the structure as above described, upon removal of the stopper 18, the bottle may be readily filled by pouring through the passages 17 and 16 and may be emptied in the corresponding manner.

To prevent pouring of a liquid into the bottle through the passages of the bushing, and at the same time to permit egress of the liquid when the bottle is shaken in an inverted position, a plug 19 is provided for the passage 16, this plug being of a diameter to fit the passage snugly and having, in the form illustrated in Fig. 1 of the drawings, helical grooves 20 extending from end to end thereof, these grooves being so positioned that when the plug is in place, they will all communicate with the passage 17 and thus form a means for passage of liquid from the bottle to the passage 17 and thence outwardly from the bottle. It has been found in practice that these grooves may be made of such size as to permit of egress of liquid when the bottle is shaken in an inverted position, and at the same time to prevent pour-

ing of a liquid back into the bottle. It is of course essential that the cross sectional area of the grooves 20 be less than the diameter of an air bubble such as would seek to force its way out of the bottle when liquid was forced into it.

Instead of giving the grooves 20 a helical arrangement, there is shown in Fig. 3 of the drawings a cylindrical plug having midway of its end a circumscribing groove 25 that communicates with the passage 17 and leading to this groove 25 are longitudinal grooves 26 and 27 that open through the ends of the plug.

In the construction shown in Fig. 4 of the drawings, there is illustrated a single longitudinal groove 28 which opens through both ends of the plug and communicates with the passage 17.

It will be seen that with the present structure there is provided a bottle from which the contents may be removed by shaking the bottle in an inverted position, while with the means usually to hand, the bottle cannot be refilled. Furthermore by use of the plug with its grooves, proper sized passages are obtained, it being impossible to cast a glass bushing with the passage 16 of sufficiently small diameter, by reason of the fact that the core would burn out in the operation.

It will be understood that in practice modifications of the specific construction shown may be made and that any suitable materials and proportions may be used for the various parts without departing from the spirit of the invention.

What is claimed, is:—

1. The combination with a bottle and the neck thereof, of a bushing held within the neck of the bottle and provided with a passage communicating both interiorly and exteriorly of the bottle, and a plug fitted in the passage and grooved from end to end.

2. The combination with a bottle and the neck thereof, of a bushing held within the neck of the bottle and having intercommunicating transverse and longitudinal passages communicating respectively with the interior and exterior of the bottle, and a plug fitted in the transverse passage and grooved from end to end, the groove of the plug communicating with the longitudinal passage of the bushing.

3. The combination with a bottle and the neck thereof, of a bushing held within the neck of the bottle and having intercommunicating transverse and longitudinal passages communicating respectively with the interior and exterior of the bottle, and a plug fitted in the transverse passage and grooved helically from end to end, the grooves of the plug communicating with the longitudinal passage of the bushing.

4. The combination with a bottle and the neck thereof, of a bushing held within the neck of the bottle and having intercommunicating transverse and longitudinal passages communicating respectively with the interior and exterior of the bottle, and a plug fitted in the transverse passage and having a plurality of grooves extending from end to end and having communication with the longitudinal passage of the bushing.

In testimony whereof, I affix my signature, in presence of two witnesses.

CLAUDE B. DAVIS.

Witnesses:
C. L. PETTIT,
W. W. ARCHER.