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F. E. CLARK.

BOTTLE STOPPER AND STOPPERED BOTTLE.

APPLICATION FILED NOV. 5, 1906.

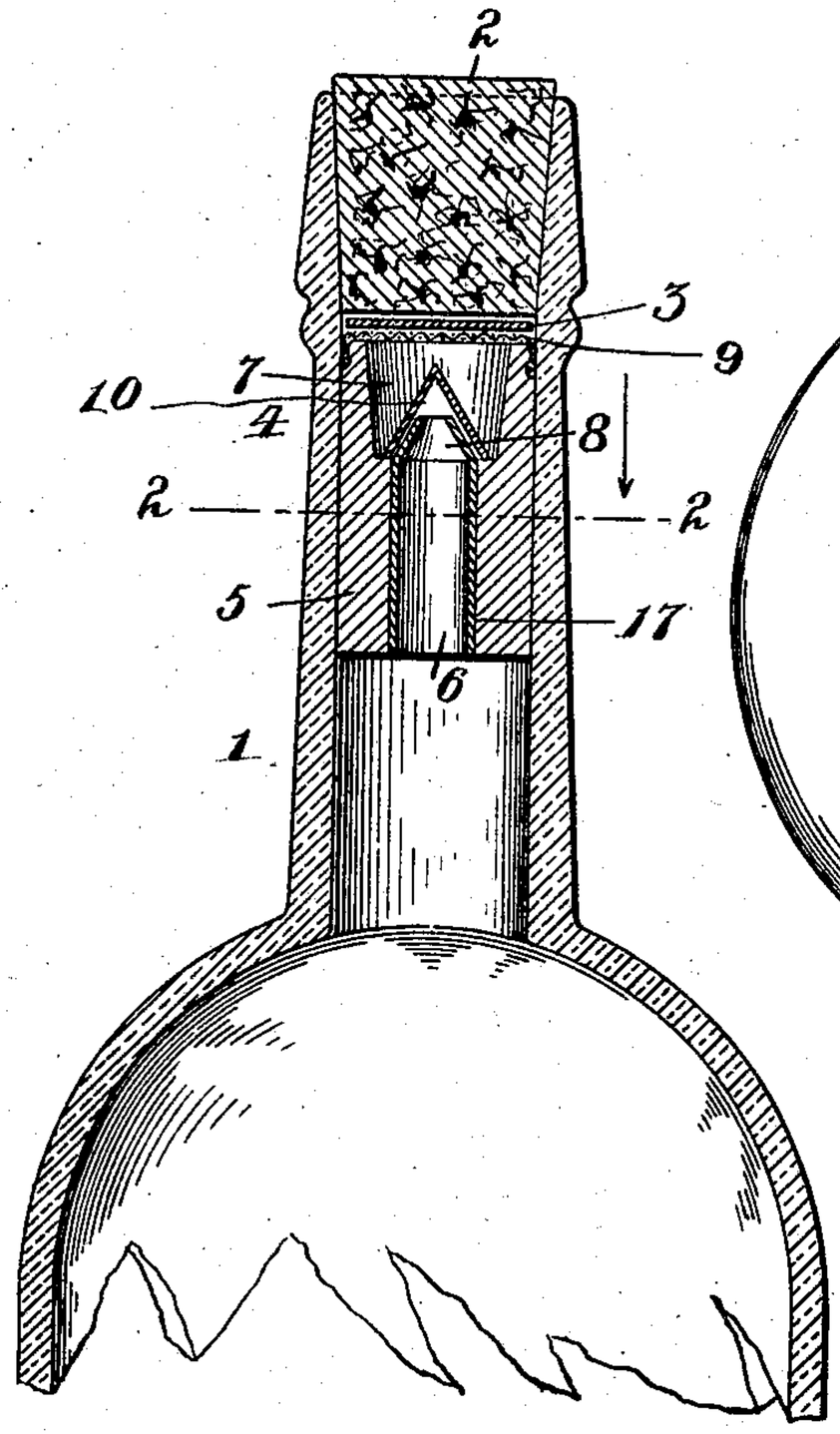

Fig. 1.

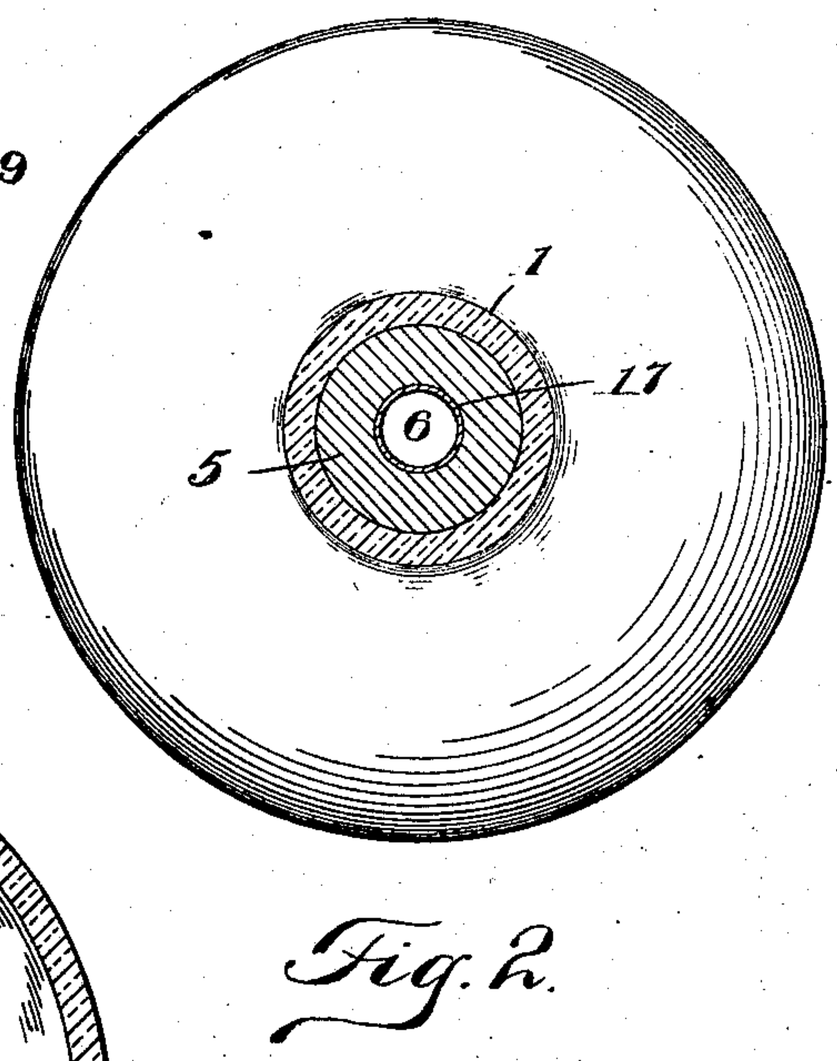

Fig. 2.

Witnesses
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UNITED STATES PATENT OFFICE.

FRANK EDWARD CLARK, OF NEW YORK, N. Y.

BOTTLE-STOPPER AND STOPPERED BOTTLE.

No. 867,703. Specification of Letters Patent. Patented Oct. 8, 1907.

Application filed November 5, 1906. Serial No. 341,963.

To all whom it may concern:

Be it known that I, FRANK EDWARD CLARK, a citizen of the United States, residing in Brooklyn, in the county of Kings, city and State of New York, have invented a new and useful Improvement in Bottle-Stoppers and Stoppered Bottles, of which the following is a description.

My invention relates to stoppered bottles that cannot be readily refilled without removal or mutilation of part of a stopper which is new with me, such removal or mutilation serving to warn purchasers or users of the bottle that it has been tampered with.

The object of my invention is to produce an economical and practical stopper for such purposes.

Referring to the accompanying drawings, Figure 1 is a central vertical section of the neck-portion of a bottle containing my new stopper and also containing a protecting disk therefor and an ordinary cork in the mouth of the bottle-neck; the cork, protecting disk and my new stopper being shown in central vertical section; Fig. 2 is a transverse section of my new stopper at a line corresponding to 2—2 of Fig. 1.

In the drawings illustrating the principle of my invention and the best mode now known to me of applying that principle, 1 is an ordinary bottle-neck; 2 the usual cork in the mouth of the bottle-neck; 3 a protecting disk, preferably of metal and mounted somewhat loosely in the bottle-neck between the lower end of the cork and my new stopper which is indicated at 4, and the preferred construction of which is as follows: a plug 5 of any suitable material, such as cork or rubber for examples, and adapted to be forced tightly into the lower portion of the bottle-neck, is formed with a lengthwise extending passage 6 for outflow of the bottle contents. The upper or outer end of this passage 6 communicates with a chamber 7 in the upper or outer end of the plug. Passage 6 has a tubular lining 17 of some suitable material, such as aluminium or hard rubber, for examples, the lining being contracted at its upper end 8 and mounted with its end 8 outwards, as shown, and extending into the chamber. The top of the chamber is covered with a cover 9 of light wire or other mesh, which incidentally serves as a strainer but is mainly intended to guard and limit the movements of the hollow cone-like valve 10 which is loosely mounted, base or inner end downwards, in said chamber.

When my new stopper is upright, the inner hollow end of the valve covers the upwardly projecting contracted end, and the interior walls of the valve rest on the outer wall of the contracted end 8. It is extremely difficult, if not practically impossible, to refill bottles provided with my new stopper, after being first filled, except by mutilating or removing the screen or guard, or cover 9. When it is attempted to refill the bottle, after my new stopper is in place, the liquid presses the cone-like valve home. It is desirable that the plug 5 should be of some yielding material so that the plug may be compressed when it is driven down into the bottle-neck. An advantage is that the bottle is always stoppered sufficiently to prevent evaporation and keep out dust even after the cork is withdrawn.

Cover 9 is easily destructible by any implement used to remove it, and its mutilation, if any, serves to show that the bottle has been tampered with or refilled. The disk 3 serves to prevent the point of a corkscrew or other implement used for withdrawing the cork or stopper 2 in the mouth of the bottle-neck from mutilating cover 9. Cover 9 is best made of thin wire mesh, which is readily flexible. If non-refillability is not considered, my invention may be availed of by depressing the flexible wire mesh against the upper end of the valve to hold the latter on its seat for stowage or transportation. By lifting the depressed portion of the flexible cover the valve may be given room for movement from its seat to permit the outflow of bottle contents. In this mode of use of my invention, the contents may be shaken or dropped out. Non-refillability is not, in all cases, a necessary feature of this invention, some forms of which may be used very conveniently for stoppering bottles containing perfumery, dentifrices or other fluid preparations.

What I claim is:

1. The herein-described bottle-stopper, comprising a lengthwise perforated plug having a valve chamber in its upper end and communicating with said perforation; a tubular lining for said perforation, the upper end of the lining being contracted and projecting into said chamber; a cup-like valve seated, open side down, on said contracted end; and a cover of meshed material for said chamber, fixedly secured to the plug.

2. The combination, with a bottle having a cork or stopper in the mouth of its neck with a bottle-stopper mounted in the lower portion of the bottle-neck and comprising a lengthwise perforated plug having a valve chamber in its upper end and communicating with said perforation; a tubular lining for said perforation, the upper end of the lining being contracted and projecting into said chamber; a cup-like valve seated, open side down, on said contracted end, and a cover of meshed material for said chamber fixedly secured to the plug; and a loose protecting disk mounted in the bottle-neck between said cover and the outer stopper.

3. A bottle stopper having a valve chamber and a lengthwise perforation communicating with said valve chamber; a valve in said chamber; a flexible guard of meshed material at the upper end of the stopper to keep the valve in the chamber; and a lining for said perforation projecting into the valve chamber.

In testimony whereof I have hereunto signed my name in the presence of two subscribing witnesses.

FRANK EDWARD CLARK.

Witnesses:

FLORENCE ATEN IVES,

M. HERSKOVITZ.