No. 756,601. PATENTED APR. 5, 1904.

W. D. DOREMUS.

BOTTLE STOPPER.

APPLICATION FILED JULY 24, 1903.

NO MODEL.

Fig. 1.

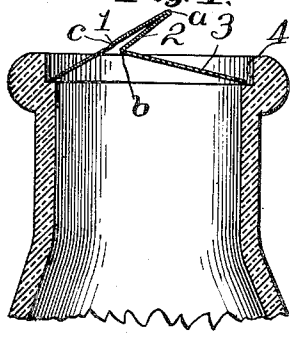


Fig. 2.

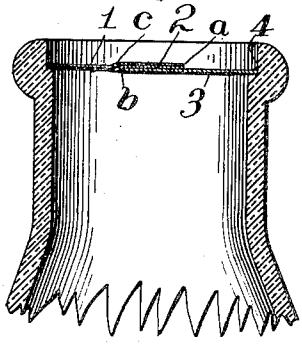


Fig. 3.

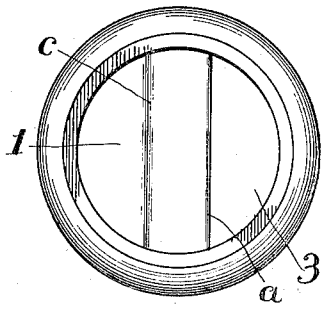


Fig. 4.

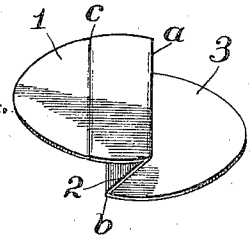
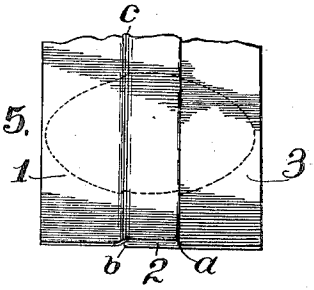


Fig. 5.



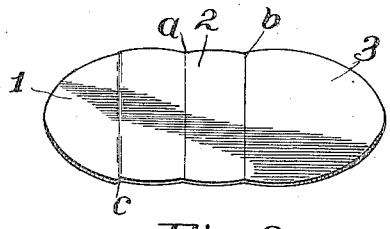


Fig. 6.

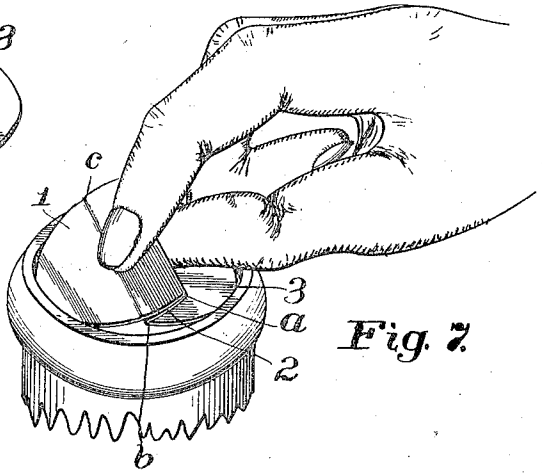


Fig. 7.

Witnesses
Milton Lenoir
Watts T. Eslabrook

Inventor
Willard D. Doremus
by Edwin G. Hodges
his Attorney

No. 756,601. Patented April 5, 1904.

UNITED STATES PATENT OFFICE.

WILLARD DELMONT DOREMUS, OF WASHINGTON, DISTRICT OF COLUMBIA.

BOTTLE-STOPPER.

SPECIFICATION forming part of Letters Patent No. 756,601, dated April 5, 1904.

Application filed July 24, 1903. Serial No. 166,872. (No model.)

To all whom it may concern.

Be it known that I, WILLARD DELMONT DOREMUS, a citizen of the United States of America, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Bottle-Stoppers, of which the following is a specification.

My invention relates to an improvement in stoppers for milk-bottles; and the primary object is to provide a stopper which can be easily and quickly removed by grasping a part of it between the thumb and finger and lifting it from the bottle. At the same time a tight seal is provided as heretofore, but the necessity of inserting an instrument for the removal of the stopper is avoided, and the stopper in consequence may be removed and put back in the bottle until the entire contents of the bottle has been used without its being mutilated or its perfect efficiency in any wise impaired.

With these objects in view my invention consists of a disk of suitable material having a flat fold across the center, which may be used as a flap for facilitating the removal of the stopper and likewise its insertion in the bottle-neek and which when in place furnishes a reinforcing or strengthening rib across the center of the stopper, thereby supporting it at the point where it is naturally weakest and increasing the rigidity with which the stopper is held in the bottle.

My invention further consists in certain novel features of construction and combinations of parts, which will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view showing the first position taken by the stopper in applying it to the bottle or the last position before removing it. Fig. 2 is a sectional view showing the stopper in position. Fig. 3 is a plan view showing the stopper in its closed position. Fig. 4 is a view of the stopper partly folded. Fig. 5 is a view of a portion of the blank from which the disk is cut. Fig. 6 is a view of the stopper unfolded or pulled out in a distorted position, and Fig. 7 is a perspective view showing the manner of applying or removing the stopper.

My improved stopper is cut from any suitable material—such as cardboard, for example—of the desired thickness, and it comprises three parts, (designated by the numerals 1, 2, and 3,) which when folded along the lines or chords *a b* constitute a circular disk the center of which is three-ply, one part being folded or superimposed over the other, so that a reinforce is made at this point which affords strength and support to the stopper when in position and, still more important, furnishes a flap to be grasped by the thumb and finger, as illustrated in Fig. 7, when the stopper is to be removed from the bottle or when it is to be placed therein.

The outer section 1 is offset from the point where it lies opposite the fold or chord *b* to its outer edge by a slight bend *c*, which throws it into the plane, or approximately into the plane, of the section 3, as indicated in Figs. 2 and 5, and in this manner the edge or chord *b* affords a support for the bend *c*, which rests against it when the stopper is flattened out into its normal position, as indicated in Fig. 2.

In applying the stopper it is grasped between the thumb and finger, as indicated in Fig. 7, and its outer ends are inserted into the seat 4, formed in the mouth of the bottle. By slight pressure exerted by the finger the stopper is flattened out, the ends moving endwise after the manner of a toggle-joint until they reach the wall of the seat, where they stop, forming a tight joint, when the stopper is pushed in to its fullest extent, as shown in Fig. 2. When thus inserted, its position is maintained by the frictional contact of the edges of the stopper against the wall of the bottle-mouth.

When it is desired to remove the stopper, the thumb or finger nail is placed beneath the edge or chord *a*, and the central flap is thus lifted, whereupon it is grasped between the thumb and finger and the stopper is removed. In this way the stopper may be re-

moved with the utmost facility without the necessity of an instrument for doing it and without impairing the stopper in the slightest degree, thus making it possible to reinsert, always sealing the bottle perfectly, as many times as it is necessary to open and close the bottle in pouring out its contents.

It will be seen that the stopper is practically flat when in place, so that nothing is left above the edge of the bottle to catch or be caught in anything. Likewise it will be seen that the stopper is in the form of a perfect disk, the entire periphery of which fits with precision the wall of the bottle-mouth, in that way forming a tight seal. Again, it will be observed that the construction is such that comparatively thin material can be used, while at the same time possessing an adequate amount of strength, owing to the three-ply character of the disk through the center, and above all I desire to emphasize the fact that it is never necessary to puncture the stopper in order to remove it from the bottle, as this is accomplished with the utmost ease by simply lifting and then grasping the central flap to take the stopper from the bottle.

It is evident that slight changes might be resorted to in the form and arrangement of the several parts described without departing from the spirit and scope of my invention, and hence I do not wish to limit myself to the exact construction herein set forth; but,

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. As an article of manufacture, a bottle-stopper comprising a disk having a three-ply center and single ply from the three-ply center to the edge.

2. As an article of manufacture, a bottle-stopper comprising a disk, having a center composed of superimposed layers which extend diametrically across the disk.

3. As an article of manufacture, a bottle-stopper comprising a disk, the central portion of which is overlapped, whereby to reinforce and strengthen the stopper through the center.

4. As an article of manufacture, a bottle-stopper cut in the form of a disk from a blank having a plait-like fold through the center, whereby the stopper comprises a plurality of members having superimposed centers.

5. As an article of manufacture a bottle-stopper composed of flexible material having parallel bends diametrically across at or near the center, whereby a central flap is formed which normally rests flat on the disk and which may be utilized as a handle to grasp the stopper and which reinforces and supports the stopper when in its normal position.

6. As an article of manufacture, a bottle-stopper, cut in the form of a disk and having two parallel bends, from which bends the ends of the disk extend in opposite directions whereby a central flap is formed which has a toggle-joint action in the operation of applying the stopper to the bottle.

7. As an article of manufacture, a bottle-stopper in the form of a disk folded at the center and offset in one member adjacent to one of the folds whereby to bring the opposite ends into or substantially into the same plane, and to afford a support for the inner edge of the offset portion.

8. A closure for bottles, &c., comprising a disk a part of the upper side of which terminates in a chord or finger-engaging edge within the periphery of the disk.

9. A closure for bottles, &c., comprising a disk a part of the upper and lower sides of which each terminate in a chord.

10. A closure for bottles, &c., comprising a disk having a finger-engaging portion at the upper side and lying against the disk with its edge disposed within the periphery of the disk.

11. A closure for bottles, &c., comprising a disk having finger-engaging portions at opposite sides lying against the disk with their edges disposed within the periphery of the disk.

12. A closure for bottles, &c., comprising a disk having a superimposed fold lying against the disk and terminating in a chord.

13. A closure for bottles, &c., comprising a disk having folds at opposite sides lying against the disk and each terminating in a chord.

14. A closure for bottles, &c., comprising a disk the material of which is folded in opposite directions forming folded edges and layers beyond said edges.

15. A closure for bottles, &c., comprising a disk the material of which is folded in opposite directions above and below an intermediate part or layer and so that the folded edges will be within the periphery of the disk.

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

WILLARD DELMONT DOREMUS.

Witnesses:
HENRY L. BRYAN,
VERNON E. HODGES.