(No Model.)

C. DE WITT.

BOTTLE STOPPER.

No. 589,704. Patented Sept. 7, 1897.

Fig. 2.

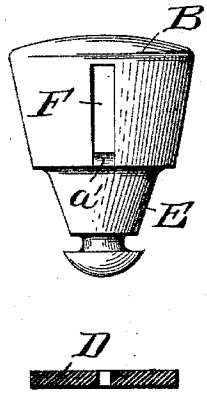
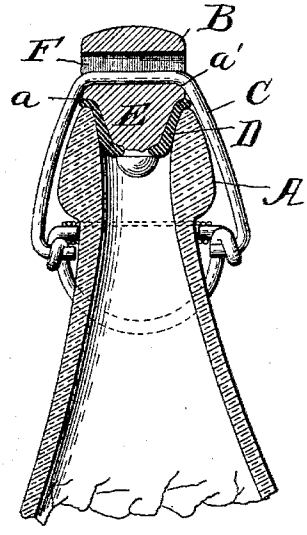


Fig. 1.



Witnesses:
J. B. McGirr.
J. P. Appleman.

Inventor.
Charles De Witt,
By Howson & Howson,
his Attys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

CHARLES DE WITT, OF BALTIMORE, MARYLAND.

BOTTLE-STOPPER.

SPECIFICATION forming part of Letters Patent No. 589,704, dated September 7, 1897.

Application filed January 6, 1897. Serial No. 618,179. (No model.)

To all whom it may concern:

Be it known that I, CHARLES DE WITT, residing in the city of Baltimore, State of Maryland, have invented certain new and useful Improvements in Bottle-Stoppers, of which the following is a specification.

My invention relates to bottle-stoppers, and more particularly to stoppers of that class in which a porcelain stopper-plug provided with a flexible washer is seated in the mouth of the bottle by means of a yoke or bail and lever, the latter acting to force the yoke or bail, which passes through a slot or opening in the stopper-plug, downwardly upon the mouth of the bottle, compressing the flexible washer between the nipple on the stopper and the sides of the stopper-mouth to hermetically seal the same. In this type of bottle-stopper many attempts have been made to secure a stopper with a slot-opening through which the bail could be passed after the said bail has been bent to its permanent form, in some of which the slot or opening has been made in the form of an inverted equilateral triangle, and in some this opening takes the form known as "heart-shaped," while in others this slot-opening is of circular cross-section with outwardly-flaring ends; but in all these forms a serious objection has been encountered in the use of the stopper in that it is found to be difficult to center the stopper properly, so that as it is seated upon the mouth of the bottle the stopper is generally slightly tilted, and when forced into its sealing position the washer is compressed to a greater extent on one side than on the other, thereby permitting the escape of gases arising from the liquid in the bottle and also allowing the ingress of air.

In another form of stopper now in use the slot is elongated and extends horizontally across the stopper, with the lower portion or base formed on a line of gentle curvature, and in this form continued use has developed, in addition to the objection of failure to properly center, another difficulty, in that the amount of material below the slot and between said slot and nipple is so diminished that when the pressure of the bail in seating the stopper is brought to bear upon the bottom of the slot the stopper, when made of porcelain or other frangible material, is crushed, thus destroying the stopper.

It is the object of my invention to so improve this class of stoppers, when made of a material which is liable to crush under ordinary usage, as to overcome both of the defects noted, and I effect this object by providing a narrow vertical slot in the stopper, having its vertical axis coincident with the axis of the bottle and having its walls in close contact with the bail passing through the slot, as hereinafter described and claimed with reference to the accompanying drawings, in which—

Figure 1 is a vertical sectional view of a portion of a bottle with my invention applied thereto. Fig. 2 is a side elevation of my improved stopper.

In the drawings, where the same reference-letters refer to the same or corresponding parts in both views, A designates a bottle-mouth in which is seated the bottle-stopper B, having downwardly-projecting nipple E and preferably conical in shape, around which nipple is seated a flexible washer D, which is compressed between the nipple, the shoulder *a* on said nipple, and the bottle-mouth A by means of a common bail C, which passes through the narrow vertical slot F, the vertical axis of which slot is coincident with the axis of the stopper-plug and bottle. The width of this slot is slightly greater than the diameter of the bail, so that when the stopper is brought into position over the bottle-mouth and the bail depressed the latter will always exert its pressure downwardly along the central axis and thereby insure the centering of the bottle-stopper.

The bottom of the slot F is rounded at *a'* to conform to the curvature of the bail at the bends, as shown in the drawings, and the nipple E is elongated so as to provide sufficient material between the bottle-mouth and the bail on the shoulder *a*, said bail snugly fitting the same.

It will be understood that vertical length of the slots is in all cases sufficient to permit the ready insertion of the bail into the slot when it is in the bent form, as shown in the drawings.

I claim as my invention—

1. The herein-described improvement in bottle-stoppers, consisting of a stopper-plug made of a material liable to crush under ordinary usage, having a downwardly-projecting elongated nipple provided with a washer adapted to be compressed between the nipple and the bottle-mouth when in position thereon, the said stopper-plug being provided with a vertically-elongated slot, said slot having its bottom rounded at the ends to conform to the curvature of the bail, in combination with a bail passing through said slot and fitting the same snugly and adapted to seat the stopper in the bottle-mouth, substantially as described.

2. The herein-described improvement in bottle-stoppers, consisting of a stopper-plug made of material liable to crush under ordinary usage, having a downwardly-projecting elongated nipple and a washer seated thereon and adapted to be compressed between the nipple and the bottle-mouth, when in position thereon, said stopper-plug having a rectangular vertical slot of slightly greater width than the diameter of the bail, and having its bottom rounded at the ends to conform to the curvature of the bail, in combination with a bail passing through said slot and fitting the same snugly, and adapted to center and seat the stopper in the bottle-mouth, substantially as described.

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

CHARLES DE WITT.

Witnesses:

ROBERT L. DE WITT,

CHARLES E. OUTRAM.