

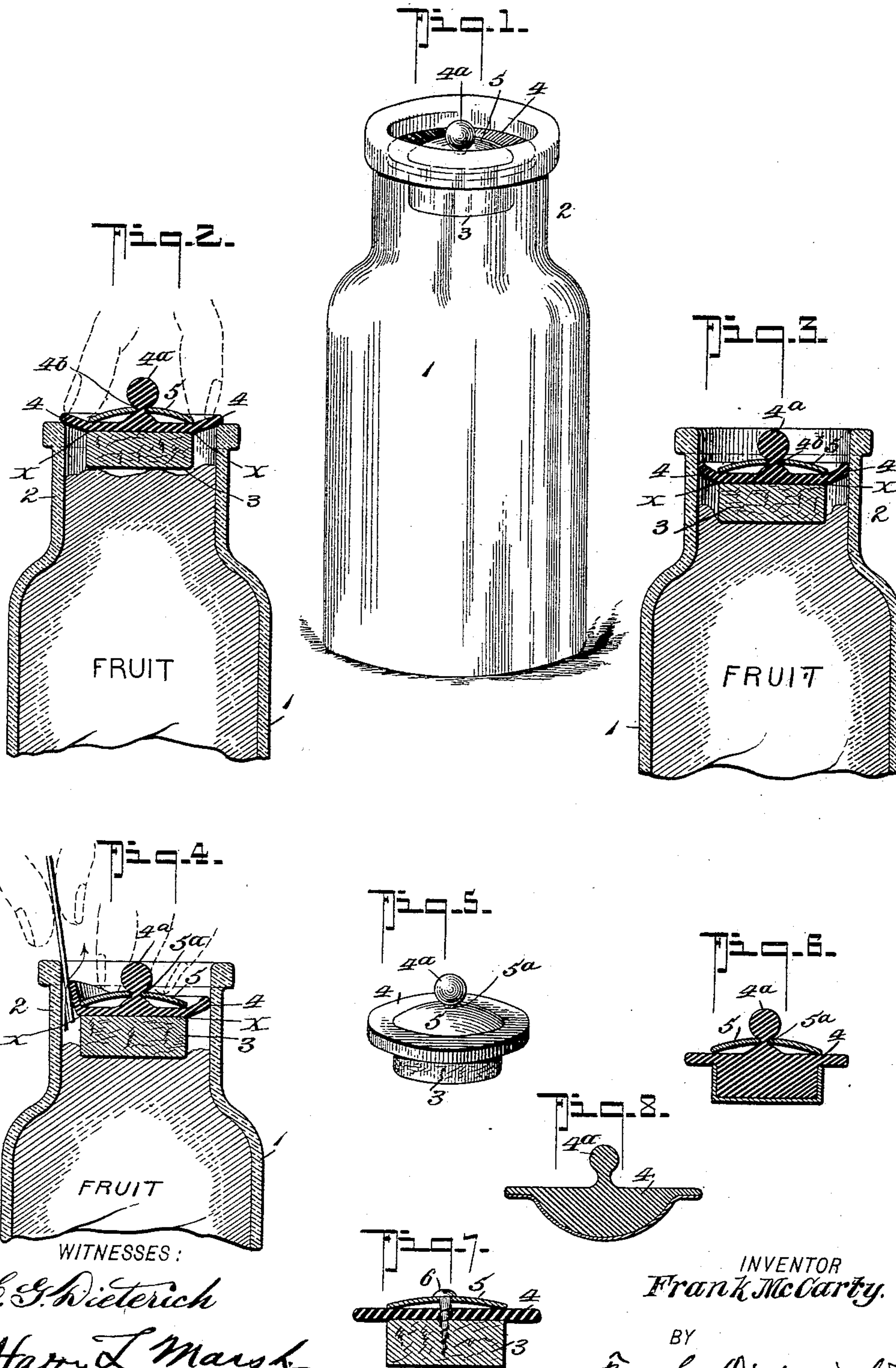
No. 620,663.

Patented Mar. 7, 1899.

F. McCARTY.  
BOTTLE OR JAR STOPPER.

(Application filed Nov. 15, 1898.)

(No Model.)





# UNITED STATES PATENT OFFICE.

FRANK McCARTY, OF MARTIN'S FERRY, OHIO, ASSIGNOR OF ONE-THIRD TO  
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## BOTTLE OR JAR STOPPER.

SPECIFICATION forming part of Letters Patent No. 620,663, dated March 7, 1899.

Application filed November 15, 1898. Serial No. 696,535. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK McCARTY, residing at Martin's Ferry, in the county of Belmont and State of Ohio, have invented a new and Improved Bottle or Jar Stopper, of which the following is a specification.

This invention while relating generally to an improved closure means for bottles, jars, and other vessels whereby the same may be securely stopped and made air-tight for the purpose of preserving fruit and other articles more specifically has for its purpose to provide a closure means especially adapted for use as a fruit-jar stopper.

One of the most serious objections to fruit-jars now in general use, particularly those of the Mason type, which have the neck portion blown or otherwise formed with interlocking means, such as threads or lateral projections, with which laps having screwing or other interlocking means engage, is that the interlocking portions of the jars or bottles by reason of a rapid and economical manner of manufacture are not always uniform, which makes it difficult at times to properly engage the cap members of the said interlocking means on the bottle-neck and frequently leaves the caps insecure, producing a very unsatisfactory closure of the jar and even causing the fruit or other contents of the jar to spoil on account of the same not being stopped or closed in air-tight. Another objection to such form of jars and closure devices, particularly relating to the Mason jar, is that owing to the construction of the cap it is difficult to detect immediately after the cap is applied whether the same is screwed down tight, such improper capping of the jar being frequently difficult to discover until after fermentation of the contents of the jar has taken place.

My invention primarily seeks to provide a closure or stopper device of a very simple and inexpensive construction which can be quickly fitted air-tight into the bottle-neck and readily removed without the exercise of strain on the hand, such as is usually necessary in the removal of the ordinary screwing cap.

Another and essential feature of my invention is to provide a closure means especially adapted for use with bottles or jars having smooth—that is, non-threaded—necks and which is capable of being so connected therewith that it can be ascertained at a glance if the same is adjusted completely air-tight or not.

With these objects in view my invention comprehends the peculiar and novel construction of stopper or closure device such as will be first described in detail and then specifically pointed out in the appended claims, reference being had to the accompanying drawings, in which—

Figure 1 is a view of a fruit-jar equipped with my improved stopper device. Fig. 2 is a section of a portion of the jar and the stopper, illustrating the manner of fitting the stopper into the bottle-neck. Fig. 3 is a similar view showing the stopper in place. Fig. 4 illustrates the manner in which the stopper can be removed. Fig. 5 is a detail view of the stopper. Fig. 6 is a detail view of a modified form of the same, and Fig. 7 is a detail of another modification thereof hereinafter referred to. Fig. 8 illustrates a further modification hereinafter referred to.

In the accompanying drawings, 1 indicates the jar or bottle, which has its neck 2 made with a smooth external and internal face.

The closure device or stopper comprises a bottom or bearing plug 3, made of cork or other material which does not affect the taste of the fruit or other contents. This plug 3, it will be noticed, is of a considerably less diameter than the diameter of the bottle-neck, the purpose of which will presently appear, and the said plug is secured by cement or other means to the under side of the stiff-rubber washer or disk 4, of a slightly-greater diameter than the internal diameter of the bottle-neck.

5 indicates a metal plate which serves as a reinforce to hold the disk against the plug 3 and also to prevent the said disk member being separated from the plug by reason of use and reuse, which might readily occur



were the plate 5 omitted, as the rubber disk when pressed down into the bottle would tend to pull away or separate it from the plug at the point indicated by X. It will also be noticed by reference to the drawings that the plate 5 is of a convexed shape, so as to have a spring-pressure against the disk 4, its ends just lapping the outer edge of the plug 3, at which point the said plate bears against the disk 4 with the greatest pressure. The plate 5 may be secured to the disk and plug by a screw 6, as indicated in Fig. 7; but I prefer on the score of economy in manufacture and additional advantages to hold the same in place by the means shown in Figs. 1 to 6, inclusive, which consists of forming the disk with a vertical bulbular member 4<sup>a</sup>, having a reduced neck 4<sup>b</sup>, said member 4<sup>a</sup> also serving the additional purpose of a finger-piece whereby to easily lift the stopper out of the bottle-neck, such operation being effected by inserting a knife-blade or other thin implement between one edge of the disk and the bottle-neck, as indicated in Fig. 4, to permit the air to enter under the stopper and lifting the same by pulling on the finger member 4<sup>a</sup>.

When arranged as shown in Figs. 2 and 3, the plate 5 is made with a central aperture 5<sup>a</sup>, through which the member 4<sup>a</sup> is squeezed, and when passed therethrough by reason of its expansion said member will securely lock the plate in place, as the contracted neck 4<sup>b</sup> thereof will fit snugly over the aperture on the plate 5, as shown.

The manner in which my improved stopper is applied to the jar is clearly illustrated in Fig. 2, by reference to which it will be seen that after the jar has been filled to a point near the top the stopper is inserted by pressing the plug down against the fruit and forcing the edges of the disk 4 down to the position shown in Fig. 3. It should be stated, however, that the fruit in practice remains uninjured, as a very little pressure is applied to the same after the sides of the rubber disk engage the neck, the plug portion in the applying of the stopper serving more as a guide to properly steady the complete device during the operation of placing it in position.

By constructing the stopper in the manner described the same can be readily pushed into the neck of the bottle, preferably to a point low enough so that the finger-piece will not project above the upper end of the bottle-neck, whereby to admit of the close packing of the jars or bottles upon each other in tiers. Another and important advantage in such form of closure is that should there be any leak the same can be observed at a glance.

As the stopper projects entirely within the neck, a pocket or chamber is provided above it for the insertion of additional sealing means, either cement or a loose mixture, as the character of the contents of the bottle may make desirable.

By making the plug portion of a less diameter than the bottle-neck a collection-space surrounding the plug is provided, which permits of any gaseous pressure under the stopper exerting force on the plug laterally, and thereby relieve the stopper from receiving the full internal pressure in an outward direction, which would occur if the plug were of a size to snugly fit within the bottle-neck.

In Fig. 6 I have shown a slight modification of my invention. In this form the entire body of the stopper is made of rubber, the plug portion being in this form preferably covered with some suitable material which will not taint the fruit or other contents by contact therewith.

In Fig. 8 I have illustrated a further modification of my invention in which the stopper is made of a solid piece of rubber, the body portion of which is made of a convexed form, while the peripheral edges terminate in a disk rim to engage the sides of the bottle-neck. By making the stopper solid and of convexed form a suitable central bearing portion is provided to press on the top of the bottle contents and a surrounding space produced, and the body by reason of its being of solid rubber having sufficient rigidity, so that the use of the bearing-plate 5 therewith can be dispensed with.

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

1. A stopper, comprising a body portion of less diameter than the bottle-neck which it is adapted to fit, whereby the contents of the bottle can pass between the lower part of the stopper portion and the bottle-neck when squeezed up by the pressure of the stopper thereagainst, said stopper portion having a grip member at the top, whereby it can be withdrawn from the bottle; and an elastic annular rim forming a part of the stopper-body and disposed at a point below the grip portion thereof, said elastic rim being of greater diameter than the bottle-neck it is to fit, all being arranged substantially as shown and for the purposes described.

2. A stopper, comprising an elastic disk of greater diameter than the bottle-neck which it is constructed to fit; a plug of less diameter than the bottle-neck; a metal spring held on the disk to press it against the plug member and means for securing the several parts together as and for the purposes described.

3. A stopper, comprising a plug portion, an apertured spring-metal plate and an elastic disk, said disk having an integral finger-piece adapted to be forced through the aperture in the metal plate and having a reduced neck to engage with and lock the metal plate on the elastic disk, all being arranged substantially as shown and described.

4. As a new article; a fruit-jar stopper, comprising a body formed of elastic material,



said body having a pendent plug member and an annularly-extended disk portion at the upper end thereof, and a centrally-projected finger-piece having a neck portion and a  
5 spring-metal bearing-plate centrally apertured, said plate being adapted to slip over the elastic finger-piece and be held locked thereby to rest on the top or disk portion of the elastic body, all being arranged substantially as shown and for the purposes described.

FRANK McCARTY.

Witnesses:

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J. E. REYNOLDS.