

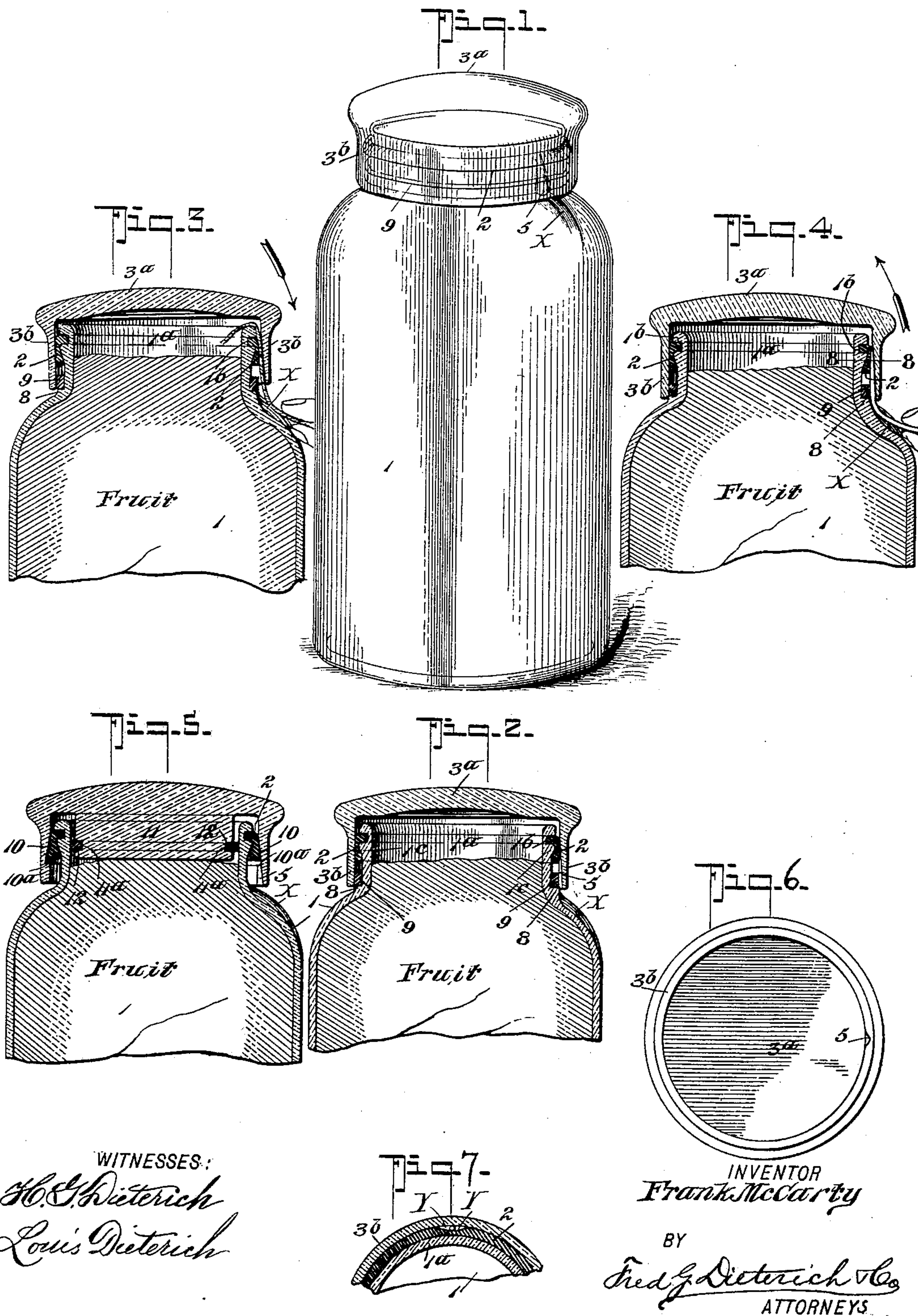
**No. 633,469.**

**Patented Sept. 19, 1899.**

**F. McCARTY.**  
**JAR CLOSURE MEANS.**

(Application filed Mar. 28, 1899.)

(No Model.)





# UNITED STATES PATENT OFFICE.

FRANK McCARTY, OF MARTIN'S FERRY, OHIO.

## JAR-CLOSURE MEANS.

SPECIFICATION forming part of Letters Patent No. 633,469, dated September 19, 1899.

Application filed March 28, 1899. Serial No. 710,790. (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 certain new and useful Improvements in Jar-Closure Means, of which the following is a specification.

This invention relates to closure means, and particularly refers to improvements in that type of closure devices disclosed in my Patent No. 620,663, dated March 7, 1899, and also in my copending application filed March 14, 1899, No. 709,087.

My present invention primarily has for its object to simplify the construction of the form of jar-closure means above referred to and to materially reduce the cost of the manufacture of the same.

This invention embodies the same general construction of parts shown in my copending application; but instead of providing a stopper equipped with the sealing washer or gasket and adapted to fit the jar or bottle neck closure member it is made in the nature of a cap, and the jar or bottle neck is constructed to hold the seal or washer, the neck portion of the jar being also provided with means whereby the sealing member can be manipulated in the operation of applying and removing the cap to open a vent for the egress or ingress of air within the jar or bottle to create or break the vacuum therein that holds the closure-cap down to an air-tight position.

Another feature of this invention lies in the novel arrangement of the sealing-gasket upon the bottle or jar neck and the closure-cap, whereby the cap will have a yielding or expansive movement without breaking the air-tight joint and whereby the said closure-cap will give slightly with the varying air or gaseous pressure within the jar produced during the condensation or fermentation of the jar contents, and thereby reduce the danger of the cap-closure blowing off or the jar or bottle neck breaking to the minimum.

Again, this invention seeks to provide a jar-closure constructed on the lines of my invention as set out in my patent aforesaid with a supplemental gasket to the more positively create an air-tight connection of the closure upon the bottle or jar neck.

With these several objects in view my present

invention comprises certain details of construction and novel combinations of parts, all of which will be first described in detail and then be specifically pointed out in the appended claims, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of a fruit-jar embodying my improvements. Fig. 2 is a vertical section of the upper end of the jar and the closure means, the cap being held down to an air-tight position. Fig. 3 illustrates the manner in which the cap is applied to the jar. Fig. 4 illustrates the manner of removing the cap. Fig. 5 is a sectional view of a slightly-modified form of my invention. Fig. 6 is an inverted plan view of the cap member shown in Fig. 1, and Fig. 7 is a detail section on the line 8 8 of Fig. 4.

In the present form of my invention the jar or bottle 1 has its neck portion made with a smooth internal face 1<sup>a</sup> and its outer face formed with an annular groove 1<sup>b</sup>, in which is fitted a rubber washer 2, which washer is made of greater diameter than the internal diameter of the closure-cap, the purpose of which will presently appear. At the lower edge of the groove 1<sup>b</sup> the neck portion is made with an outwardly-beveled bearing-shoulder 1<sup>c</sup>, the purpose of which is to reduce the space between the neck and the inner wall of the cap, whereby to produce a tight clamping or squeezing of the rubber washer against the said shoulder when the members are fitted together, as clearly shown in Fig. 2.

The closure-cap in my present invention is preferably formed entirely of glass; and it consists of a solid-top member 3<sup>a</sup> and a pendent annular flange 3<sup>b</sup>, the inner wall of which is made smooth, said flange being of a sufficient length to extend a short distance below the rubber washer 2 on the jar-neck when the cap is closed down.

The internal diameter of the cap is less than that of the washer 2, whereby to cause the pendent wall of the cap to tightly squeeze the said washer within the space intervening the cap-flange and the bottle or jar neck, particularly in the plane with the enlarged or beveled portion of the neck.

So far as described it will be readily seen that as the washer is held on the bottle or jar neck the cap can be more quickly and con-



veniently fitted in place than can be done in the other form of my invention disclosed in my copending applications aforesaid.

Among other advantages in constructing the jar and cap in the manner herein set out is that the jar and cap can be made by unskilled labor, whereas in the other forms of my invention above referred to skilled labor has been found necessary to properly shape the parts.

To facilitate the applying and removing of the cap and also to produce a more perfect vacuum within the bottle, and in consequence hold the cap tightly upon the said bottle, such bottle at a suitable point (indicated at X) has a slight external notch or groove with which a groove 5, formed on the internal face of the cap, is adapted to be brought into register, whereby to admit of the insertion of a pin or other wire piece for throwing back the washer sufficiently to provide an air-vent Y (see Fig. 7) for the admission of air in the jar to break the vacuum and permit a ready removal of the cap, (see Fig. 4,) it being understood that in fitting the cap in place the air in the jar can be made to escape by holding a piece of string or pliable wire over the washer until after the cap has been pressed tightly down to allow air to escape through the orifice Y, after which the wire or string can be withdrawn.

To further increase the sealing of the cap, the neck of the bottle is made with a second external annular seat 8 to receive a flat rubber washer 9, with which the lower end of the cap-flange is made to engage.

By arranging the main sealing-washer as described and combining with it a supplemental washer it is manifest that the cap will be permitted to have a vertical movement upon the neck. This movement of the closure-cap I have found a very desirable one for the reason that in putting up fruit, and particularly when the jars are very warm, on account of the full expansion of the rubber washer it is impossible to force the caps down to their extremelimit. Hence, as the jar and its contents cool, the contraction of these parts, as well as the increase of vacuum within the jar, will draw the cap more tightly down against its seats upon the washers.

Again, in case of fermentation or excess of gas within the jar under pressure, the cap will rise slightly without breaking the air-seal, thereby reducing the danger of the jar-neck breaking and the cap blowing off to the minimum. To still further prevent the cap from blowing off and permit it having vertical movement upon the jar, the sealing-face of the cap-flange may be provided with an annular beveled groove 10, the lower end of which terminates in a horizontal ledge 10<sup>a</sup>. This groove is so arranged that when the cap is squeezed down to a point where the ledge is below the lower edge of the washer 2 it permits the lower edge of the washer to expand and project within the said beveled groove,

and when such is the case, should there be any tendency of the cap blowing upward, the ledge 10<sup>a</sup> would catch against the gasket or washer and it would be, to a certain extent, held from blowing off, it being understood that when the cap is provided with grooves for the insertion of a pin or other article the lower edge of the washer 2 can be readily squeezed inward to permit an influx of air between the cap-flange and the washer to enter the jar and break the vacuum.

As a still further modification of my invention I have shown in Fig. 5 the cap made with a pendent plug member which is adapted to fit within the top of the jar-neck, and said member (indicated by 11) is formed with an annular groove 11<sup>a</sup>, adapted to receive the washer 12, which forms in such construction a supplemental washer which assists in forming a complete air-tight-seal connection of the cap with the top of the jar. This latter form of cap, however, is more particularly adapted for use when the cap member is made of metal or other material than glass.

From the foregoing description, taken in connection with the accompanying drawings, it is thought the complete operation and the advantages of my invention will be readily understood.

One the most advantageous features of my present form of invention is that as the rubber gasket is fitted upon the outer side of the bottle or jar neck the contents of the jar are not held in contact therewith, and all danger of the contents becoming tainted or the gasket becoming quickly rotted is thereby avoided.

By arranging the cap and jar-neck portions as described the cap member can be made by unskilled labor, as it is not absolutely necessary that the relative diameters of the bottle-neck and the cap be absolutely accurate under all conditions, for the reason that the rubber washer is made of a sufficiently large diameter to compensate for any slight irregularity of the said relative diameters. This is a very important point in the manufacture of this form of closures, as in my copending application to insure a perfect fitting of the stopper within the jar-neck it is necessary that the said stopper be accurately made to secure a proper operation of sealing of the same within the jar when carelessly applied.

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

1. A jar-closure, comprising in combination with the jar or bottle neck having an external annular groove; a washer held within the groove adapted to lap over the external face of the bottle-neck, and a supplemental washer engaging the bottle-neck, said bottle-neck having an external guide or groove as X; a closure-cap having pendent portions adapted to engage both washers, whereby to form independent yielding closure-surfaces, said cap having a groove extended from the lower edge upwardly, whereby the said



groove can be made to form an extension of the external groove of the bottle-neck, substantially as shown and for the purposes described.

- 5 2. A jar-closure, comprising a bottle-neck having an external annular groove and a washer seated therein; of a closure-cap having a pendent member adapted to fit over the jar-neck and compress the external washer  
10 against the neck; said cap having a central pendent portion of less diameter than the jar-

neck, adapted to fit down into the said neck, and a washer projected annularly from the said central pendent member, adapted to engage with the internal face of the jar-neck, all 15 being arranged substantially as shown and described.

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Witnesses:

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