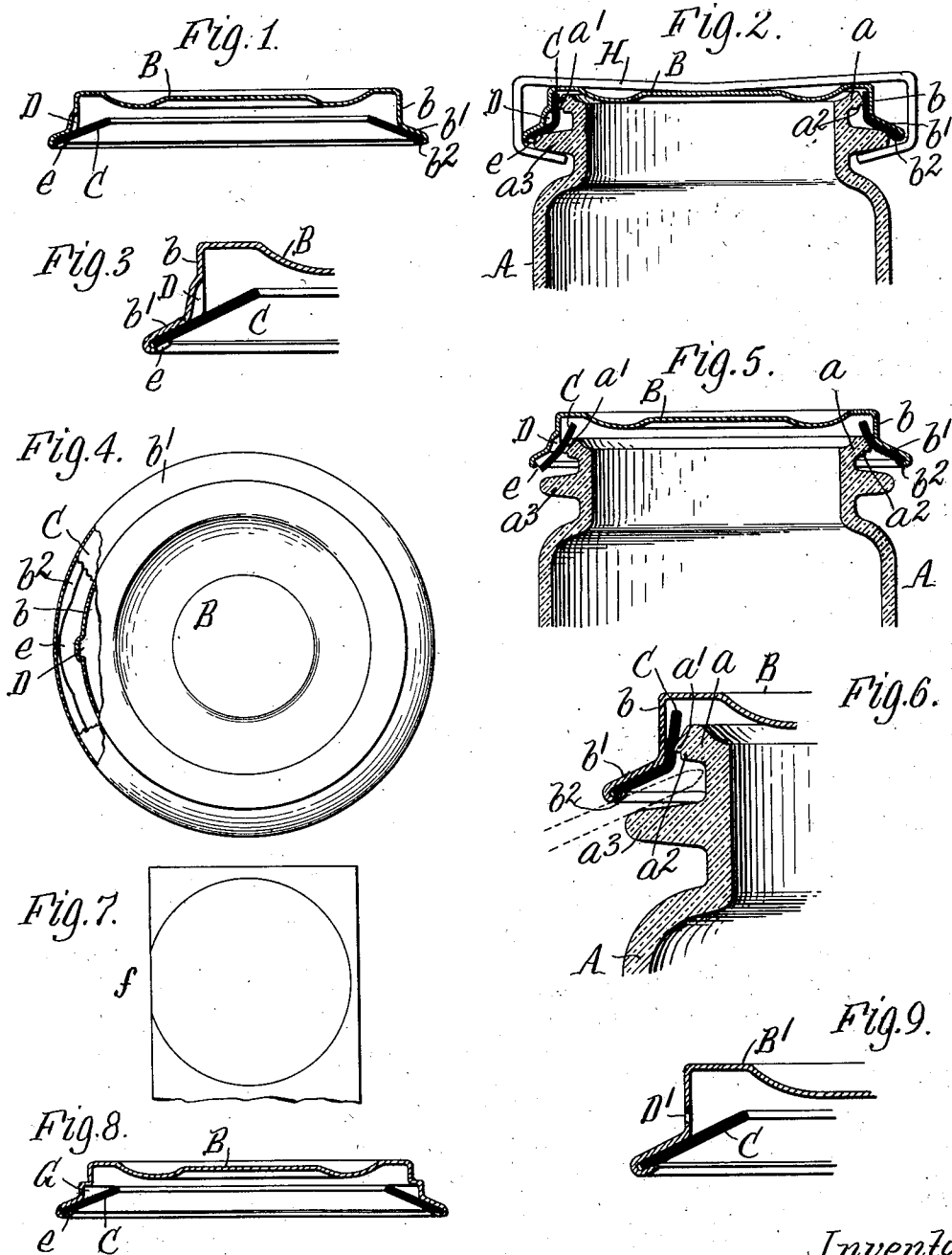


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CLOSURE FOR JARS AND THE LIKE.
APPLICATION FILED JUNE 11, 1908.

933,122.

Patented Sept. 7, 1909.



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UNITED STATES PATENT OFFICE.

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CLOSURE FOR JARS AND THE LIKE.

933,122.

Specification of Letters Patent.

Patented Sept. 7, 1909.

Application filed June 11, 1908. Serial No. 437,912.

To all whom it may concern:

Be it known that I, ALEXANDER L. SCHRAM, a citizen of the United States, residing at Hillsboro, in the county of Montgomery and State of Illinois, have invented a new and useful Improvement in Closures for Jars and the Like, of which the following is a specification.

This invention relates more particularly to improvements in jar closures of the sort disclosed in Letters Patent No. 734,140, granted to me July 21, 1903. In said patented closure a jar cover or cap is employed which is provided with a permanently attached inwardly-projecting rubber gasket which is adapted to extend up between the wall of the cover and a lip surrounding the mouth of the jar to form a tight joint between the jar and the cover. A vent hole is provided in the wall of the cover above the point of attachment of the gasket thereto which allows the air to escape from the jar in forcing the cap down over the mouth of the jar, until the cover is fully seated, when the gasket is compressed between the wall of the cover and the lip of the jar at or above the vent hole so as to effectually cut off communication between the hole and the interior of the jar and hermetically seal the jar. It is impractical or very difficult in manufacturing the caps to punch the vent holes, which are very small, with clean cut edges, and the rough inbent edges of the holes sometimes puncture the rubber gaskets, which allows air to leak into the jar and break the seal, or permits the contents to ooze out and spoil the appearance. The holes also have to be punched after the covers are made, thus adding to the labor and cost of manufacture thereof.

One object of this invention is to produce a practical and reliable closure of this type for fruit jars and analogous vessels having an air vent passage which will not puncture or injure the rubber gasket and which is made in stamping or drawing the cover into form and without requiring a special additional operation.

In said patented closure the gasket extends horizontally inwardly from the rim of the cover, and it is found in using the device that if the covers are carelessly placed on the jars it is possible for the edge of the gasket to catch underneath the lip of the jar at one

side and prevent the proper sealing of the jar.

Another object of the invention is to so form the cover and secure the gasket thereto that the gasket will extend upwardly into the cover in conical form, thereby making it practically impossible for the edge thereof to catch under the lip of the jar and so that the gasket assists in centering the cover on the jar.

Still another object of the invention is to improve jar closures of this sort in the respects hereinafter described and set forth in the claims.

In the accompanying drawings; Figure 1 is a sectional elevation of a jar cover embodying the invention. Fig. 2 is a fragmentary sectional elevation of the same in place on a jar. Fig. 3 is a fragmentary sectional elevation, on an enlarged scale, of the cover. Fig. 4 is a plan view, partly in section, of the cover. Fig. 5 is a fragmentary sectional elevation of a jar with the cover placed loosely thereon. Fig. 6 is a fragmentary sectional elevation thereof, on an enlarged scale, indicating the manner of detaching the cover. Fig. 7 is a plan of a portion of the sheet from which the cover blanks are stamped. Fig. 8 is a sectional elevation of a cover of modified construction. Fig. 9 is a fragmentary sectional elevation of another modification.

Like letters of reference refer to like parts in the several figures.

A represents the upper portion of a fruit jar, bottle or analogous vessel, having a neck provided with a wide mouth surrounded by a laterally-projecting lip or flange *a*. The lip is preferably of the shape shown, being beveled, or wider at the bottom than at the top, and having a relatively sharp or thin sealing edge *a'* against which the cover gasket is pressed to make a tight closure, and also having a shoulder *a²* below the sealing edge *a'* for a purpose which will be explained. The neck of the jar is also preferably provided below the lip with an outwardly projecting collar or flange *a³*.

The cover or cap has a crown or head B with a substantially upright annular wall *b* which is adapted to surround the lip of the jar, and a rim or flange *b'* which extends outwardly from the lower edge of the upright wall *b*.

C represents the annular packing gasket of rubber, or other suitable flexible elastic material, which is securely attached at its outer edge to the under side of the rim of the cover, preferably by the inturned outer edge b^2 of the rim. The gasket normally projects inwardly from the rim some distance beyond the upright wall b of the cover, and is adapted to bend upwardly and be clamped tightly between this upright wall and the lip a of the jar when the cover is forced down into place on the jar. In the patented cover the rim is horizontal and the gasket extends horizontally inwardly therefrom, but in the present device the rim is made flaring or conical, which causes the gasket, which before being secured to the cover is flat, to converge upwardly and inwardly into the crown of the cover, or assume a conical form, as shown in Figs. 1 and 3.

In securing the cover on the jar it is placed over the jar mouth with the gasket resting or bearing on the lip a and pressed down until firmly seated against the collar a^3 . As the gasket converges upwardly it acts to center the cover on the jar, and the cover would have to be held in a very awkward position, with one side tilted up very high, to make it possible to catch the edge of the gasket under the lip of the jar. The cover could not therefore be improperly placed on the jar without making a special effort to do so.

Instead of puncturing the upright wall b of the cover to provide the air vent hole, a vent groove or channel, D, is pressed in the upright wall b of the cover at its lower edge, and a break or gap e , Figs. 3, 4 and 5, is made adjacent to the vent groove D in the inturned edge b^2 of the cover which secures the gasket, thus leaving the outer edge of the gasket free or disconnected from the cover rim for a short distance at this point, and affording a passage between the gasket and the rim of the cover for the escape of air from the jar when placing the cover thereon.

The covers are pressed or drawn into shape from circular blanks, and by stamping the blanks from a strip of metal which is slightly narrower than the diameter of the blank, as indicated in Fig. 7, a short straight edge is left on the blank at one side, as shown at f , which leaves the gap e in the edge of the cover when the latter is pressed into shape from the blank. The vent groove D is formed by the dies which shape the cover, and the gap e being formed in stamping the cover blanks it will be seen that no special operation is necessary in providing the vent passage.

In placing the cover on the jar the engagement of the lip a with the gasket tends to open the gap or slit between the disconnected

edge portion of the gasket and the rim of the cover, as shown in Fig. 5, the vent groove D and gap thus together affording a passage between the gasket and walls of the cover through which the air can escape freely from the jar. When the cover is pressed down into the proper position on the jar the gasket is compressed between the lip a and the upright wall b of the cover at or slightly above the vent groove D, as shown in Fig. 2, to close the vent passage, so as to make a tight joint and hermetically seal the jar. The collar a^3 on the jar also bears against the gasket near its outer edge, as shown in Fig. 2, and supplements the other joint between the lip and the upright wall of the cover in making the closure perfectly air tight.

The gap e formed as described is the preferred way of making the opening between the gasket and the cover, but an opening formed in any other way and leading from the space between the gasket and the rim adjacent to the vent groove will produce the same result.

Fig. 8 shows a cover in which the lower portion of the upright wall is of larger diameter than the upper portion, thereby forming an internal shoulder with a continuous annular vent groove or channel G below it. This groove coöperates with the gap e at the edge of the rim in the same manner as the groove D in the first construction, to form a passage for the escape of air from the jar. When the gasket is compressed between the lip a and the wall of the cover above the groove G, it effectually cuts off communication between the groove and the interior of the jar and seals the jar as in the other construction.

Fig. 9 illustrates the conical gasket C applied to a cover B' having a vent hole D' in its upright wall. The conical shape of the gasket performs the same functions in this cover as in the other, of centering the cover on the jar and preventing the gasket from catching under the lip a in applying the cover.

The cover is retained on the jar and hermetically closes the same by the atmospheric pressure when it has been properly applied, and no additional fastening means are necessary. If, however, an additional retaining device is desired as an extra precaution against the cover being dislodged in packing and shipping the filled jars, an ordinary U-shaped wire clip H can be placed over the cover with its inbent ends engaging under the collar a^3 of the jar, as shown in Fig. 2. The collar, therefore, affords a shoulder for holding the retaining clip, and another and important function of the collar is to provide a projecting part at the upper end of the jar by which it can be suspended in the molding machine in making the jars, so that

the jar does not have to be suspended from the sealing lip. If the lip is used as the suspending part it is liable to be distorted, which prevents it from forming a proper seal.

To remove the cover, it is pried up at one side with a knife or other sharp implement inserted between the rim of the cover and the collar a^3 of the jar, to admit air to the jar, after which the cover can be easily lifted off of the jar. The shoulder a^2 on the lip a beneath its sealing edge acts as a guard to prevent the knife from engaging and injuring the sealing edge. The sealing edge can therefore be made sharp so as to insure a perfect closure without danger of its being broken in opening the jar and thereby rendering the jar unfit for use a second time.

I claim as my invention:

1. A vessel cover or top having an annular wall provided with a vent groove, and a packing gasket which is secured to said cover and projects from said annular wall below said vent groove and is adapted to extend up between said annular wall and the wall of the vessel to close said vent groove, the cover having provision for the escape of air from the space between said gasket and said wall of the cover below said vent groove while the cover is being placed on the jar, substantially as set forth.

2. A vessel cover or top having a wall provided with a vent groove, and a packing gasket which is secured to said cover and projects from said wall and is adapted to extend between said wall and the wall of the vessel to close said vent groove when the cover has been forced into place on the jar, the cover having provision for opening said groove to the atmosphere whereby the air can escape from the jar through said groove while the cover is being placed on the jar, substantially as set forth.

3. A vessel cover or top having an annular wall provided with a vent groove, and a packing gasket which is secured to the cover and projects from said annular wall below said groove and is adapted to extend up between said annular wall and the wall of the vessel to close said vent groove, said gasket being disconnected from the cover at a point adjacent to said vent groove whereby air can escape from the jar through said groove while the cover is being placed on the jar, substantially as set forth.

4. The combination of a vessel having a sealing lip surrounding its mouth, a cover having an annular wall which is adapted to surround said lip and is provided with a vent groove, and a packing gasket which is secured to and projects laterally from the

cover below said vent groove and is adapted to extend up between said annular wall and said lip to close said vent groove, said cover being constructed so that an opening is provided between said gasket and the cover below said vent groove while the cover is being placed on the jar, substantially as set forth.

5. The combination of a vessel having an external sealing lip surrounding its mouth, and a collar which projects outwardly below said lip, a cover which is provided with an annular wall surrounding said lip above said collar and having a vent passage and which is also provided with a flexible gasket adapted to be compressed between said annular wall and said sealing lip to close said vent passage, and means which engage said collar and hold said cover firmly down on said collar whereby said collar supplements said sealing lip in effecting a tight closure of the vessel, substantially as set forth.

6. The combination of a vessel having a lip surrounding its mouth and provided with a sealing edge and below the same with a guard shoulder for said sealing edge, a cover having an annular wall which surrounds said lip and is provided with a vent passage, and a flexible gasket which is adapted to be compressed between said annular wall and said lip to close said vent passage, substantially as set forth.

7. The combination of a vessel having a sealing lip surrounding its mouth, a cover having an annular wall which surrounds said lip and is provided with a vent passage, and a flexible gasket which is secured to and normally converges upwardly and inwardly from said annular wall below said vent passage and is adapted to extend up between said annular wall and said sealing lip to close said vent passage, substantially as set forth.

8. The combination of a vessel having a sealing lip surrounding its mouth, a cover having an annular wall which surrounds said lip and is provided with a vent passage and with a downwardly-flaring rim below said vent passage, and a flexible gasket which is secured to said rim and normally converges upwardly and inwardly from said annular wall and is adapted to extend up between said annular wall and said sealing lip to close said vent passage, substantially as set forth.

Witness my hand, this 30th day of May, 1908.

ALEXANDER L. SCHRAM.

Witnesses:

J. J. FREY,

H. K. FINK.