

No. 769,866.

PATENTED SEPT. 13, 1904.

W. H. W. JONES.
JAR OR BOTTLE CLOSURE.
APPLICATION FILED DEC. 5, 1903.

NO MODEL.

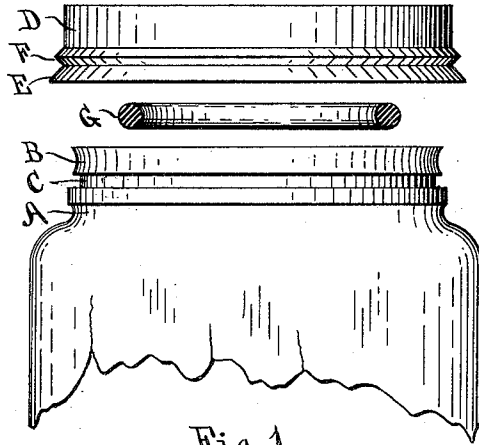


Fig. 1.

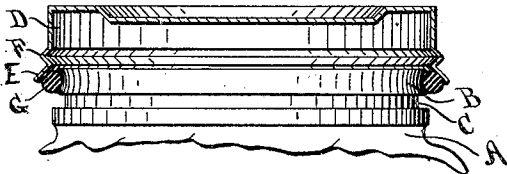


Fig. 2.

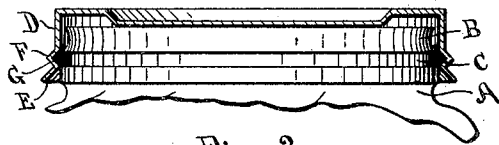


Fig. 3.

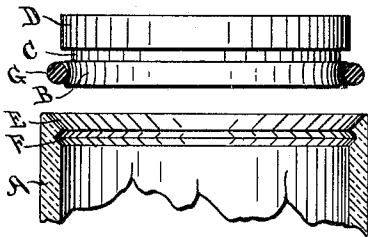


Fig. 4.

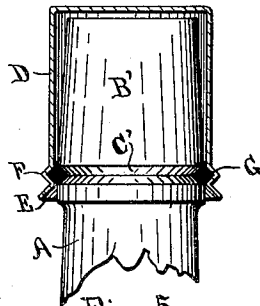


Fig. 5.

WITNESSES:

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WILLIAM H. W. JONES, OF WAVERLY, NEW YORK.

JAR OR BOTTLE CLOSURE.

SPECIFICATION forming part of Letters Patent No. 769,866, dated September 13, 1904.

Application filed December 5, 1903. Serial No. 183,857. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. W. JONES, a citizen of the United States, residing at Waverly, in the county of Tioga and State of New York, have invented certain new and useful Improvements in Jar or Bottle Closures, of which the following is a specification.

My invention relates to improvements in that class of closures in which a cap, cover, or stopper is secured to the mouth of a jar, bottle, or other vessel by means of a rubber or other suitably-elastic packing-ring located in oppositely-disposed grooves on the two parts; and the object of my improvements is to so arrange these grooves that the closure will be effective to render the joint tight, not only to prevent the ingress of air when the contents of the vessel are packed in a vacuum, but also to prevent the escape of contained gases which may be in or produced in the contents by fermentation or otherwise.

A further object is to provide a simple closure of this nature whereby the cap or cover may be quickly and readily set in place, securely locked by the packing alone, and afterward easily removed without the use or requirement of special tools.

I attain my object by means of the arrangement of the several parts, as illustrated in the accompanying drawings, in which—

Figure 1 represents a side elevation of a jar with the cap or cover removed; Fig. 2, a vertical section of the same with the cover in place ready to make the closure; Fig. 3, a similar section showing the position of the parts when the closure is made; Fig. 4, a modification showing my invention as applied to an inside stopper, and Fig. 5 a modification showing its application to a bottle.

Like letters of reference designate like parts in the several views.

Referring first to Figs. 1 to 3, in which I have illustrated my preferred form of the closure as applied to an exterior cap or cover for a jar, A represents the neck of the jar, said neck being provided just below its rim with a shallow curved groove B, immediately below which groove is a second groove, C, of square section. D represents the cap or cover, which may be of metal, glass, or other

material, said cover being provided with a flaring edge or rim E, immediately above which is a triangular groove F, the position of said groove F being such that when the cover is in place it will come directly opposite the groove C, as shown in Fig. 3. G is a combined packing and locking ring, of rubber or other suitably-elastic material, and it is of smaller diameter than groove B or C in order that it may be drawn tightly into said grooves by its own tension. In assembling the parts the ring G is sprung over the rim of the jar-neck into the groove B, the object of said groove being to hold this ring in place upon the neck of the jar until the cover is brought into place for making the closure. The cover is then placed with its flaring edge E resting upon the top of the ring G, as shown in Fig. 2, after which, with an even pressure all around, the cover is pressed down upon the neck of the jar, thereby compressing the ring G, at the same time forcing it over the edge of groove B into groove C and also causing the flaring edge E to ride over the ring until the groove F is opposite the groove C, when the ring G will expand, thereby filling both grooves. The inside diameter of the cover is somewhat greater than the outside diameter of the neck of the jar in order to facilitate the movement of the packing-ring from groove B into and between grooves C and F, the packing being pinched between the edges of said grooves when the joint is made. The ring G is of such cross-sectional area that when it is brought into place between the two grooves F and C it will still be in a compressed state, whereby it will press into and fill the angles of the grooves, thereby exerting pressure between the opposing sides of the grooves in such a manner as to firmly lock and hold the cover in place. As the rubber shrinks with age this compression of the packing-ring within the grooves is particularly essential if the joint is to continue air-tight, as is required, especially where the contents of the jar are packed in a vacuum. It will be readily seen that an air-tight joint is thus attained under all conditions, and in practice it will be found that by reason of the angular form given to the two grooves it will require an

exceedingly-strong force to remove the cap D from the jar if such force be applied in the direction of the axis of the jar and that therefore this form of closure will not only prevent ingress of air when the jars are packed in vacuum, but also secure the cap from being blown off by reason of internal pressure due to fermentative or effervescent gases contained in the contents of the jar. The cover is, however, easily removed in either case by simply prying up one side by means of a knife-blade or other convenient instrument, the difference in diameters between the cover and neck permitting this tilting off of the cover.

In Fig. 4 I have shown a modification in which my invention is applied to an inside stopper, in which form it may be applied either to the neck of a bottle or to a larger jar-opening. It will be noted that the relative positions of the grooves are the same in this modification, there being simply a transposition, the grooves B and C being formed on the stopper, while the incline E and groove F are formed on the inside of the neck of the bottle or jar.

In Fig. 5 I have shown my invention as applied to the outside of a bottle-neck. In this case the long incline B' takes the place of the groove B in the other forms and also allows for the tilting of the cap when removing it. I have also shown the groove C' in this modification as being of triangular form, corresponding with the groove F on the cap, inasmuch as I may make use of this form of the groove on both parts. I prefer, however, the square-shaped groove upon one of the parts, since the ring when expanded into a groove of this form effects a stronger lock between the parts. Instead of giving the groove F a triangular form I may also give it a square form, corresponding with the groove C, without departing from the spirit of my invention. Moreover, if one only of the grooves be given the angular cross-section and the other conditions remain the same it will still come within the scope of my invention.

I am aware that heretofore a jar-closure has been made in which semicircular grooves are provided to receive the packing-ring between the neck of the jar and the cap, and I do not, therefore, claim this type of closure,

broadly, as my invention. My invention lies in the angular formation of the packing-grooves and in the manner of assembling and locking the parts together by means of the compressed packing-ring, as hereinbefore described.

I therefore claim as my invention and desire to secure by Letters Patent—

1. The combination, with a jar or other vessel having a circumferential groove at its mouth, of a cap having a circumferential groove registering with the first-named groove, one of said grooves being of angular cross-section, and an elastic ring located in and between said grooves and held therebetween in a compressed condition, whereby the cap is positively locked and the vessel hermetically sealed.

2. The combination, with a jar or other vessel having a circumferential groove at its mouth, of a cap having a circumferential groove registering with the first-named groove, one of said grooves being of angular cross-section, and an elastic ring located in and between said grooves, the grooved portions of said jar and cap being so arranged and proportioned as to insert and compress the elastic ring within and between said grooves when the cap is pressed into position to complete the closure, whereby the cap is positively locked and the vessel hermetically sealed.

3. The combination with a jar or other vessel having a circumferential groove at its mouth, of a cap having a circumferential groove registering with the first-named groove, one of said grooves being of angular cross-section, a preliminary supporting-surface on one of said parts contiguous to the groove thereon, a flaring or outwardly-inclined surface on the other part contiguous to its groove, and an elastic ring inserted and compressed by means thereof within and between said grooves when the cap is pressed into position to complete the closure, whereby the cap is positively locked and the vessel hermetically sealed.

In testimony whereof I have affixed my signature in presence of two witnesses.

WILLIAM H. W. JONES.

Witnesses:

A. S. DIVEN,
M. E. VERBECK.