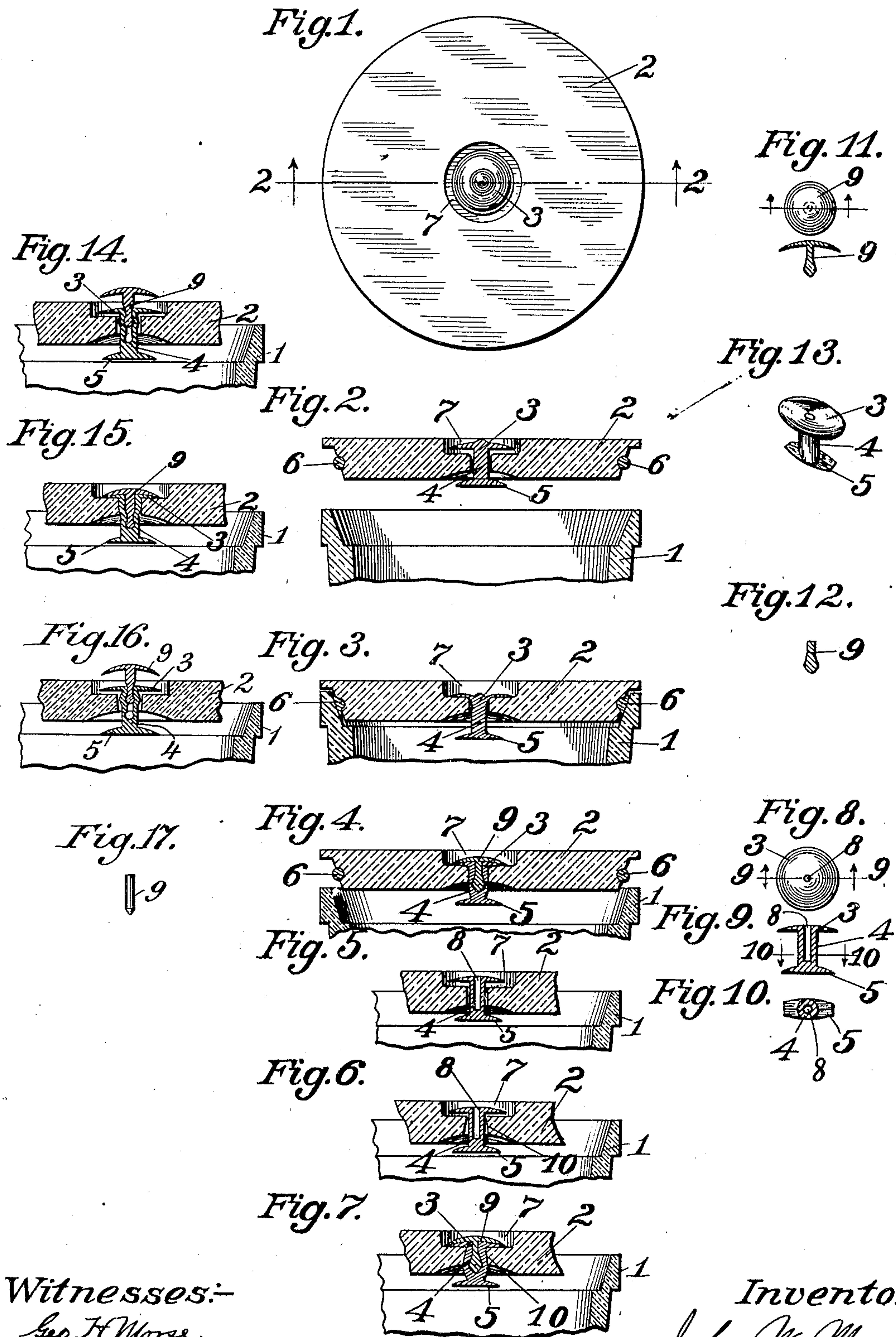


J. W. MOODY.
JAR CLOSURE OR COVER AND THE LIKE.
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Witnesses:-

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UNITED STATES PATENT OFFICE.

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JAR CLOSURE OR COVER AND THE LIKE.

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To all whom it may concern:

Be it known that I, JOHN W. MOODY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Jar Closures or Covers and the Like, of which the following is a description.

My invention relates to jars, glass cans, or other similar receptacles, and more particularly to the cover or closure for the same, and means for hermetically sealing the vent aperture in the same, and has for its object the production of a simple, inexpensive, durable and efficient device for the purpose described.

To this end, my invention consists in the novel construction, combination and arrangement of parts herein shown and described, and more particularly pointed out in the claims.

In the drawings, wherein like reference characters indicate like or corresponding parts,—Figure 1 is a plan view of the cover or closure; Fig. 2 is a sectional view taken on line 2—2 of Fig. 1, also showing the top of the receptacle; Fig. 3 is a sectional view taken on line 2—2 of Fig. 1, showing the cover in place, and a vent sealed by producing a vacuum in the receptacle; Fig. 4 is also a section taken on line 2—2 of Fig. 1, showing a cover and part of the receptacle and a modified form of plug and expanding pin; Fig. 5 is a partial section of the cover and receptacle showing the plug with the expanding pin removed; Fig. 6 is a partial section of the cover and receptacle showing a modified form of vent, and plug for the same; Fig. 7 is a partial section of the same, showing the position of the plug and expanding pin when the air is exhausted from the receptacle; Fig. 8 is a top view of the preferred form of plug shown in Figs. 4 and 5; Fig. 9 is a section of the said plug taken on the line 9—9 of Fig. 8; Fig. 10 is a cross-section of same, taken on line 10—10 of Fig. 9; Fig. 11 shows a capped expanding pin in a plan view and section; Fig. 12 is a cross-section of a similar pin without the cap; Fig. 13 is a perspective view of my preferred form of plug; Fig. 14 shows a slightly modified form of plug and expanding pin; Fig. 15 shows the position of the same when the air within the receptacle has been exhausted; Fig. 16 shows the same

form of pin, the vent in the cover being slightly tapered outward at the top. Fig. 17 shows a cylindrical form of expanding plug.

Referring to the drawings,—1 is a portion of a jar or receptacle, and 2 is a cover for the same. In the preferred form of cover, I provide a vent or exhaust opening in the cover adapted to receive a plug similar to that shown in the drawings. This plug is preferably made of rubber or other similar elastic or expansible material, and consists of a head 3, a neck 4, and an extension 5, at the end of the neck opposite the head. If desired, the top or cover 2 may be recessed or countersunk around the vent, as at 7, the bottom of the recess being preferably ground to give a good seat for the head of the plug. To hermetically seal the juncture between the receptacle 1 and the cover 2, when the air in the receptacle, is exhausted I preferably place a washer 6 made of rubber or other suitable material on the cover 2, as shown, or on the top of the jar. When the receptacle is filled with the desired contents, the cover 2 is placed in position with the plug inserted in the aperture, and the air exhausted. If the contents of the jar are heated or hot, the air within the receptacle will expand and a part will exhaust through the vent. To take out the remaining air, any suitable mechanical means may be employed, preferably any common form of air-pump. As the air is exhausted and a vacuum formed, the plug rises slightly and allows the air to escape, but drops back to its seat on the cover when the air attempts to return, acting similar to a check-valve.

To prevent the plug from being accidentally drawn out of the aperture while exhausting the air, I preferably provide a transverse extension 5 on the base of the same. This transverse extension also holds the plug in place in the aperture, whenever desired, as in shipping or otherwise. When the air is exhausted, the plug is substantially in the position shown in Fig. 3, the vacuum within the receptacle firmly retaining it in such position, and the hermetically sealing washer 6 and the plug preventing the passage of air back into the receptacle.

Figs. 8, 9, and 10 show a slightly modified form of plug than that shown in Figs. 2 and 3. In this form, a small opening or recess 8 extends partially through the neck of the

plug in a longitudinal direction, and is adapted to receive an expanding pin 9, preferably formed substantially as that shown in Figs. 11 and 12. In Fig. 11, the pin is provided with a cap at the outer end thereof, while in Fig. 12 it is without the cap, but enlarged at one end. If preferred, however, the pin may be made cylindrical and without the cap. When this pin is forced in recess 8, as indicated in Fig. 4, it expands the neck 4 of the plug, preferably causing it to fill the clearance space between the neck of the plug and the walls of the vent opening through the cover, thus more effectively closing the vent. When the cap is provided on the expanding pin, it tends to hold down the outer edge of the top 3 of the plug, and in this manner more effectively seal the same, and protect the top of the plug from accidental displacement.

In the preferred construction, the vent aperture is slightly tapered outward (see 10, Figs. 6 and 7) toward the bottom to form a frustum of a cone, in which construction the expanding pin will firmly lock the plug in place, similar to a dove-tail lock. The expanding pin may be removed by inserting the point of a knife or similar instrument under the head of the pin and lifting the same out of its seat, when by displacing the top of the flexible plug to one side air may be admitted, breaking the vacuum, when the cover or top may be readily disconnected and removed from the receptacle. The receptacles when placed on the market may also have a paper label or the like, placed on the top of the cover, so as to cover the vent or recess 7, thus effectively covering the vent opening, further sealing the same.

On the form shown in Figs. 14 and 15, the expanding pin is enlarged at the cap or outer end, and is positioned (during the exhausting process) as shown in Fig. 14. After the air is exhausted it is forced into the position shown in Fig. 15, pressing the upper part of the neck of the plug against the walls of the aperture. In this form the vent may be tapered toward the inner side of the cover, if desired as shown in Fig. 16.

Before using any form of the plugs shown, they are preferably dipped in, or smeared with glycerin, or a similar article.

Having thus described my invention it is obvious that various immaterial modifications may be made in the construction and arrangement of the same, hence I do not wish to be understood as limiting myself to the exact form shown.

What I claim and desire to secure by Letters Patent is:—

1. In a device of the kind described, a receptacle, a closure for the same, comprising a cover provided with means for hermetically closing the juncture between the two, said cover being provided with a vent aper-

ture, in combination with a flexible plug for said aperture, comprising a head constructed to cover the aperture, a neck adapted to loosely extend through said aperture, and a transverse extension at the inner end of the plug, adapted to extend across the aperture to prevent accidental withdrawal of the plug.

2. In a device of the kind described, a receptacle, a closure for the same, comprising a cover provided with means for hermetically closing the juncture between the two, said cover being provided with a vent aperture, in combination with a flexible expandible plug for said aperture, comprising a head adapted to cover the aperture, a neck adapted to loosely extend through said aperture, and a transverse neck at the inner end of the plug adapted to extend across the aperture to prevent accidental withdrawal of the plug during the exhausting process, said plug provided with a longitudinal recess extending partially through the plug, and an expanding pin adapted to be forced into the recess to expand the plug and force the same against the wall of the aperture.

3. In a device of the kind described, a receptacle, a closure for same, comprising a cover provided with means for hermetically closing the juncture between the two, said cover being provided with a vent aperture, in combination with a flexible plug for said aperture, comprising a head adapted to cover the aperture, a neck adapted to loosely extend through said aperture, and a transverse extension at the inner end of the plug, adapted to extend across the aperture to prevent accidental withdrawal of the plug, said plug provided with a longitudinal recess extending partially through the plug, and an expanding pin provided with an enlarged end and adapted to be forced into the recess to expand the plug and force the same against the wall of the aperture.

4. In a device of the kind described, a receptacle, a closure for same, comprising a cover provided with means for hermetically closing the juncture between the two, said cover being provided with a vent aperture, in combination with a flexible plug for said aperture, comprising a head adapted to cover the aperture, a neck adapted to loosely extend through the said aperture, and a transverse extension at the inner end of the plug, adapted to extend across the aperture to prevent the accidental withdrawal of the plug during the exhausting process, said plug provided with a longitudinal recess extending partially through the plug, and an expanding pin provided with an enlarged end and a cap, said pin adapted to be forced into the recess to expand the plug and force the same against the wall of the aperture.

5. In a device of the kind described, a receptacle, a closure for the same, comprising

a cover provided with means for hermetically closing the juncture between the two, said cover being provided with a slightly tapered vent aperture, in combination with
 5 an expansible plug for said aperture, comprising a head adapted to cover the aperture, a neck adapted to loosely extend through said aperture, and a transverse extension at the inner end of the plug, adapted to extend
 10 across the aperture, to prevent the accidental withdrawal of the plug, said plug provided with a longitudinal recess extending partially through the plug, and an expanding pin provided with an enlarged end, said
 15 pin adapted to be forced into the recess to expand the plug and force the same against the wall of the aperture.

6. In a device of the kind described, a receptacle, a closure for the same, comprising
 20 a cover provided with means for hermetically closing the juncture between the two, said cover being provided with a slightly tapering vent aperture, the cover being countersunk around said aperture, in combination with an expansible plug for said aperture, comprising a head adapted to cover the aperture, a neck adapted to loosely extend through said aperture, and a transverse extension at the inner end of the plug, adapted
 25 to extend across the aperture to prevent accidental withdrawal of the plug, said plug provided with a longitudinal recess extending partially through the plug, and an expanding pin provided with an enlarged end
 30 and with a cap, said pin adapted to be forced into the recess to expand the plug and force the same against the wall of the aperture.

7. In a device of the kind described, a receptacle, a closure for the same, comprising
 40 a cover provided with means for hermetically closing the juncture between the two, said cover being provided with a vent aperture, in combination with a flexible plug for said aperture, comprising a head, a neck,
 45 and a transverse extension at the inner end of the plug, adapted to extend across the aperture to prevent the accidental withdrawal of the plug, said plug provided with a longitudinal recess extending partially
 50 through the plug, and a capped expanding pin enlarged at its ends, said pin adapted to be forced into the recess to expand the neck of the plug.

8. In combination, a receptacle having an
 55 opening, a closure for said opening, a packing medium for sealing said opening and closure, said closure having an air vent therein, and a valve of yielding material having a part extending through said vent

for retaining it in association with the closure. 60

9. In combination, a receptacle closure having a vent, a valve-member for said vent, a stem part connected with the valve extending through said vent, and a retaining-
 65 member on the opposite side of the vent from the valve-member, connected with said stem part, one of said members being adapted for passage through the vent, and constructed to normally resist passage. 70

10. In combination with a receptacle closure having a vent therethrough, a valve of yielding material having a stem extending through the vent, and a vent retaining projection near the end of said stem adapted to
 75 resist the withdrawal of the stem from the vent.

11. In combination with a receptacle closure having a vent therethrough, a valve for closing the vent, a connecting part passing
 80 through the vent and at one end attached to the valve, and a yielding retaining member secured to the other end of said connecting part, said retaining member being adapted for passage through the vent, and constructed to normally resist passage. 85

12. In combination with a receptacle closure having a vent therethrough, a rubber structure comprising a valve, a valve stem extending through the vent, and a valve retaining projection on said stem adapted to normally resist passage through the vent, but adapted to permit removal of the valve from the closure.

13. The combination of a receptacle closure having a vent opening, a valve adapted to fit against the upper side of said vent opening and provided with a stem fitted in said vent opening, and a stop on the lower end of the stem separate from the closure to
 100 prevent the accidental separation of the valve from the closure.

14. A receptacle closure having a vent opening, and a stem extending through the vent opening and provided at its outer end
 105 with a valve to close against said vent opening and at its inner end with a stop to prevent accidental separation of the valve from the closure, the stem, valve and stop being integral. 110

In testimony whereof, I have hereunto signed my name in the presence of two subscribing witnesses.

JOHN W. MOODY.

Witnesses:

CHARLES E. HYDE,
 ROY W. HILL.