No. 769,132. PATENTED AUG. 30, 1904.

J. GRAHAM.

PACKAGE CLOSURE.

APPLICATION FILED MAY 27, 1903.

NO MODEL.

FIG. 1.

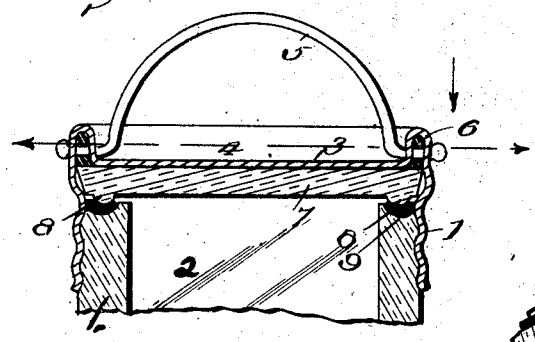


FIG. 2.

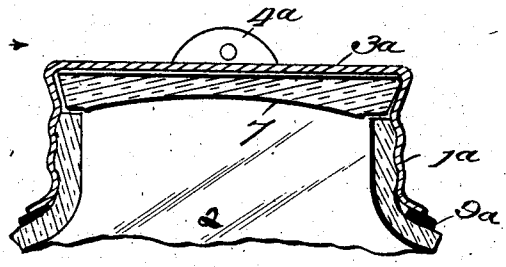


FIG. 3.

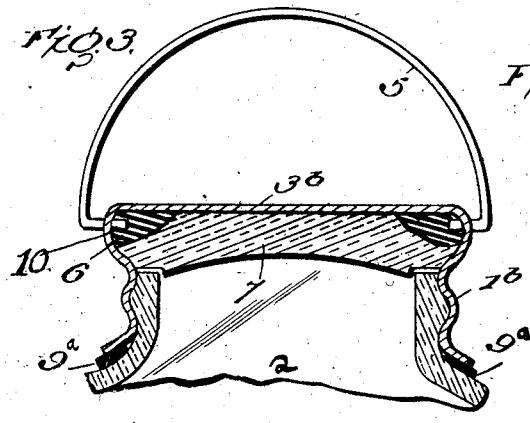


FIG. 4.

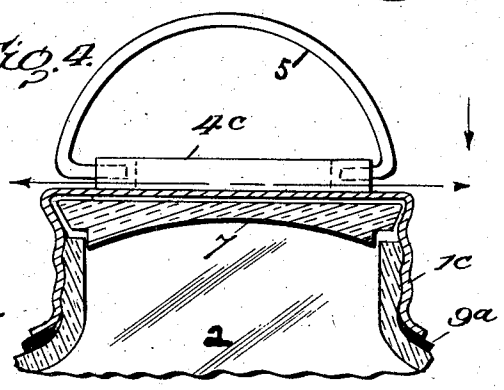
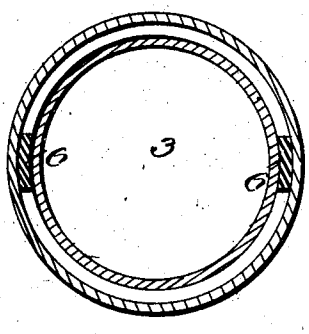


FIG. 5.



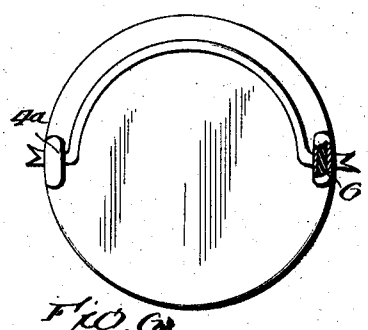


FIG. 6.

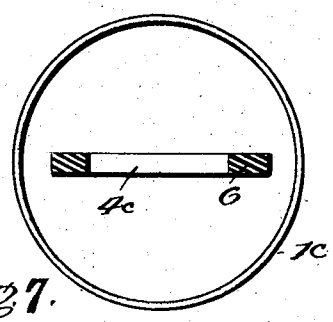


FIG. 7.

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No. 769,132. Patented August 30, 1904.

UNITED STATES PATENT OFFICE.

JOHN GRAHAM, OF PHILADELPHIA, PENNSYLVANIA.

PACKAGE-CLOSURE.

SPECIFICATION forming part of Letters Patent No. 769,132, dated August 30, 1904.

Application filed May 27, 1903. Serial No. 159,033. (No model.)

To all whom it may concern:

Be it known that I, JOHN GRAHAM, a citizen of the United States of America, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Package-Closures, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in closures for packages such as are used to convey liquids and other substances and protect the same from the action of the air, and relates more especially to that class of packages used as fruit-jars and the like where an air-tight sealing is desired and necessary.

My invention has for its object the provision of improved means for securing quick and efficient closure of the package and for providing ready means for handling the package; further, of means for readily removing the closure when same becomes bound by the action of the contents of the package or from any other cause and to so construct the closure that the device by which the packages are handled may be folded over on the package when not in use to allow for convenient packing or storing of the packages.

My invention further aims to construct a closure of the above type that will be extremely simple in construction, strong, durable, effective in its operation, and comparatively inexpensive to manufacture, and in describing the invention in detail reference will be had to the accompanying drawings, forming a part of this specification, and wherein like numerals of reference will be employed to designate like parts throughout the several views of the drawings, in which—

Figure 1 is a central vertical sectional view of my improved closure applied in position on a package, the latter being broken away. Fig. 2 is a like view of a modified form of construction. Fig. 3 is a like view of another modification, and Fig. 4 a like view of still another modified form. Fig. 5 is a horizontal sectional view taken through the form of closure shown in Fig. 1 looking toward the top. Fig. 6 is a top plan view of the form of closure shown in Fig. 2, showing the bail and also showing one of the bail-ears in section. Fig. 7 is a horizontal sectional view of the form of closure shown in Fig. 4 looking toward the top.

My invention comprises a metal closure-cap with a swinging or folding bail attached thereto; and the invention particularly consists in reinforcing the closure at the point where the ends of the bail engage the same in order that an air-tight seal may be effected, as well as strength added to the closure.

To construct the closure in accordance with the showing in Figs. 1 and 5 of the drawings, I provide a metal coupling or ring 1, which in this instance is shown as provided with threads to engage with like threads provided on the neck of the package 2. This coupling or ring comprises the annular threaded rim, which is adapted to be carried upwardly above the top 3 of the closure, being folded over to form the hollow annular rim or extension 4, lying in a plane above the top 3 and which is adapted to receive the ends of the bail 5, as shown in Fig. 1 of the drawings. The ends of this bail in this construction are preferably headed, as shown, after being inserted through the openings provided therefor in the annular rim or extension, and before the ends of the bail are inserted in position a filling 6, of solder or like metal or alloy, is poured into the annular rim or extension at the points where the bail ends enter, as shown in Fig. 5, so as to form an air-tight seal, yet allowing the free working of the bail, the metal fillings being bored to receive bail ends. With this form of closure it is preferable to employ a jar or package top 7, constructed with an annular shoulder or bead 8, which engages a rubber or other flexible gasket 9, laid within a groove provided therefor in the top of the jar or package 2. The bail 5, it will be observed, may be employed as a wrench for turning the cap onto the package or jar and for unscrewing the same as well. The metal filling being a reinforcement of the cap metal prevents tearing of the same, and when tightening, the top 3 coming in engagement with the jar or package top 7, forces the shoulder or bead of the latter tightly upon the flexi-

ble gasket to effectually seal the package. The bail when not in use may be folded over the top of the closure and in this form of construction is preferably constructed so the same will lie within the annular extension or rim 4 when folded.

In Fig. 2 of the drawings the same principle of invention is involved, with a modification in structure. In this form the annular threaded ring 1^a is slightly flared at its lower end to bind upon the flexible gasket 9^a, which in this instance is shown as placed on the exterior of the package-neck instead of on the top of the latter, as in Fig. 1. The cover-plate 3^a in this form of construction instead of being provided with the annular inverted-U-shaped rim or extension, as in Fig. 1, is only struck up at two diametrically opposite points to form the bail-ears 4^a, into which the ends of the bail 5 are inserted in the same manner as in Fig. 1. So, also, in this construction is employed a filling 6, of solder or like material, to form the air-tight seal and reinforce the cap metal. As this construction is shown applied to a package having the flexible gasket on the exterior of the neck, the jar or package top 7 fits directly upon the top of the package or jar neck, the latter being straight on the top and the cover having an annular shoulder, as shown, which will prevent sidewise or lateral movement of the cover 7.

In Fig. 3 substantially the same form of package is shown, the gasket 9^a being applied thereto in the same position and the cover 7 preferably of practically the same form as in Fig. 2. The rim 1^b is threaded, as in the other forms of construction, but is adapted to have its cover or top 3^b extended above the jar or package top 7, and the reinforcing-pieces 6 are inserted in the angle of the top 3^b and rim 1^b in the annular extension 10. The body of closure and the reinforcing-pieces are bored and the ends of the bail inserted therein, giving an air-tight seal.

In Figs. 4 and 7 the annular rim 1^c is threaded onto the neck of the package and (like in Figs. 2 and 3) has the lower end thereof flared to engage upon the flexible gasket 9^a. Practically the same form of jar-top 7 is employed in this construction as in Figs. 2 and 3. The top or cover plate 3^c in this construction is struck up in inverted-U shape in a straight line across the same to form the projection 4^c, into the ends of which the ends of the bail 5 engage and are held by the filling of solder 6 or like material poured into the struck-up portion of the plate.

In each of the constructions specifically described it will be observed that the same underlying principle exists, which is the forming of a cheap, simple, and effective cap or closure with a folding bail attached thereto and a metal filling around the ends of the bail to effect the air-tight joint and reinforce the cap metal, so that the bail may be used as a wrench. In practice I employ a metal for this filling which is readily adhesive to the metal from which the cap or closure is formed and preferably pour the same into the desired positions; then drill the holes through the metal into this metal filling to receive the ends of the bail, so that the latter is free to swing. It will be seen, therefore, that these metal fillings become virtually solid-metal projections or metal lugs, such as might be brazed, soldered, or riveted to the metal cap, but which would be much more costly than my invention. It is apparent that the forms of cap or closure shown may be employed without the metal fillings where air-tight seals are not necessary.

It is apparent that various slight changes may be made in the details of construction without departing from the general spirit of my invention.

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

1. A closure for packages, comprising a metallic cover, or cap embodying a downwardly-extending annular rim forming a coupler and having an upwardly-projecting ridge on its upper face, a bail having its ends pivoted in said ridge, and a metallic reinforcement of the metallic cover within the ridge around the portions of the bail that lie within the ridge, as and for the purpose described.

2. In a closure for packages, the combination with the package, of a closure embodying a cap having a downwardly-extending rim and an upwardly-extending ridge or extension on its upper face, a bail having its ends pivoted in said ridge or extension, a metallic reinforcement of the said cap disposed within the ridge around the ends of said bail and a non-metallic plate within the metallic cover for engagement with the upper end of the package, substantially as described.

3. A closure for packages, comprising a metallic cover embodying a downwardly-extending rim for engagement with the package, and an upwardly-extending ridge or extension on the upper face of said cap, a bail having its ends pivoted in said ridge, and reinforcing means formed within said ridge and surrounding the inwardly-projecting portions of the bail, substantially as described.

4. A closure for packages, comprising a metallic cap having a downwardly-extending rim for engagement with the package and an upwardly-extending ridge on its upper face, metal reinforcing-pieces carried by said cap within said ridge, and a bail having its ends pivoted in said metallic reinforcing-pieces as and for the purpose described.

5. A closure for packages comprising a cover having an annular downwardly-projecting rim to engage a package, and an upwardly-extended ridge-forming portion, a reinforcing

means disposed within said ridge, substantially as described.

6. In a closure for packages, a closure-cap comprising a metallic cap having a downwardly-extending portion to engage the package, and an upwardly-extending portion above the package, combined with metallic reinforcing-pieces within said upwardly-extending portion, and a bail having its ends pivoted in said reinforcing-pieces, substantially as described.

7. The combination with a package and cover therefor, of a closure-cap having a downwardly-extending portion to engage the package and hold the cover in position, an upwardly-extending portion carried by the cap, bail-securing reinforcing-pieces carried by said upwardly-extending portion, and a bail pivoted in said reinforcing-pieces with its ends enlarged, as and for the purpose described.

8. In combination with a package and the top thereof, a cap having a downwardly-extending rim, said cap having a portion thereof extending outwardly and spaced from said top, metallic reinforcing means engaging in said space and between the top and cap, and a bail having its ends pivoted in said outwardly-extending cap portion and engaged by said reinforcing means.

In testimony whereof I affix my signature in the presence of two witnesses.

JOHN GRAHAM.

Witnesses:
GEORGE F. KNIGHT,
AUGUST J. HECKMAN.