No. 749,422. PATENTED JAN. 12, 1904.

E. E. CHAPMAN.

CLOSURE.

APPLICATION FILED AUG. 5, 1902. RENEWED SEPT. 4, 1903.

NO MODEL.

Fig 1

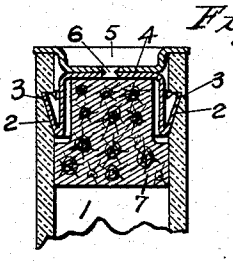


Fig 2

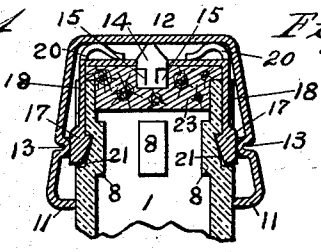
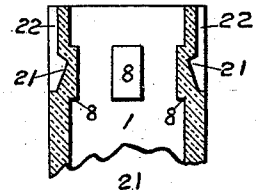


Fig 3



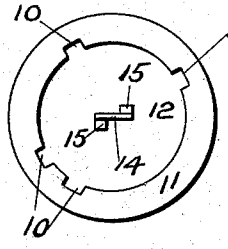


Fig 6

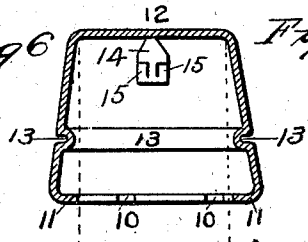


Fig 5

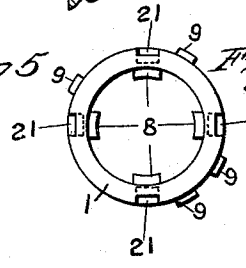
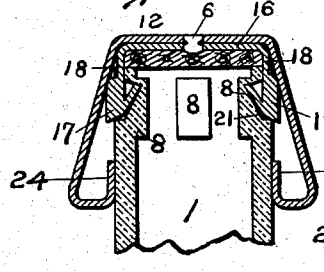


Fig 4

Fig 8



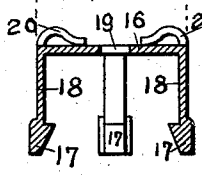
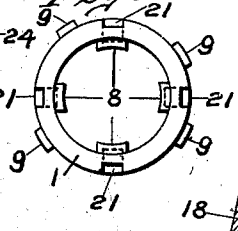


Fig 7

Fig 11



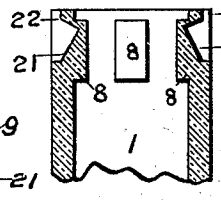


Fig 10

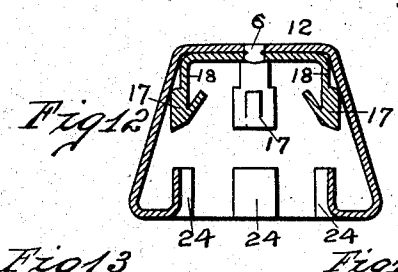


Fig 12

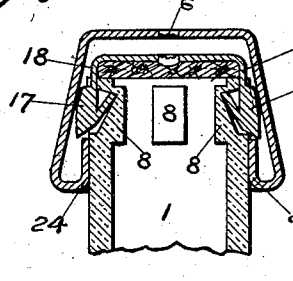


Fig 9

Fig 13

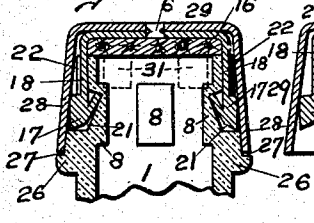


Fig 15

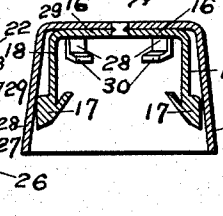


Fig 14

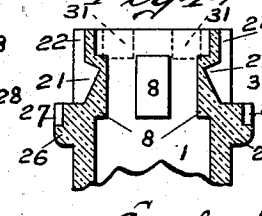
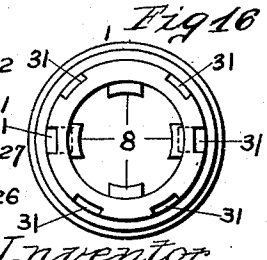


Fig 16



Witnesses
Chas. A. Fiege
Mill G. Cates.

Earle E. Chapman Inventor
By Charles L. Rogers
his Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 749,422. Patented January 12, 1904.

UNITED STATES PATENT OFFICE.

EARLE E. CHAPMAN, OF LOS ANGELES, CALIFORNIA, ASSIGNOR TO THE STANDARD BOTTLE CLOSURE COMPANY, OF LOS ANGELES, CALIFORNIA, A CORPORATION OF CALIFORNIA.

CLOSURE.

SPECIFICATION forming part of Letters Patent No. 749,422, dated January 12, 1904.

Application filed August 5, 1902. Renewed September 4, 1903. Serial No. 171,926. (No model.)

To all whom it may concern:

Be it known that I, EARLE E. CHAPMAN, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Closure, of which the following is a specification.

This invention relates to means for preventing the fraudulent refilling of vessels, and particularly to the production of closures for vessels; and some of the objects of the invention are to provide such a closure as will be easy and cheap of construction, while being efficient for the purpose intended.

Another object of this invention is to provide a closure constructed to engage the vessel when in position thereupon and to be incapable of removal therefrom, except by being twisted or rotated upon the vessels, so as to disconnect from the main portion of the closure the parts of the latter in engagement with the vessel.

It is also an object of this invention to combine with such a closure a vessel constructed to receive the engaging portions of the closure, no two of said portions being arranged similarly, thereby requiring a certain construction of closure for each vessel used in order to prevent the use of vessels of one manufacturer or producer by another.

A further object of the invention is to provide a vessel constructed to prevent the introduction of a stopper after the closure has been secured in position and then removed from the vessel.

With these and other objects in view the invention consists, essentially, in the construction, combination, and arrangement of parts, substantially as more fully described in the following specification, and illustrated in the accompanying drawings, forming part of this application, in which—

Figure 1 is a sectional view of a portion of a vessel equipped with a closure constructed in the form of a plug. Fig. 2 is a sectional view of a closure embodying a cap or cover instead of a plug. Fig. 3 is a sectional view of a portion of the vessel with the cap or cover removed. Fig. 4 is a top plan view of the construction shown in Fig. 3. Figs. 5 and 6 are sectional and bottom plan views, respectively, of the cap or cover. Fig. 7 is a sectional view of the engaging portion detached. Fig. 8 is a sectional view of a portion of a vessel provided with a modified form of the construction before shown. Fig. 9 is a similar view illustrating the cap or cover after having been twisted off from the engaging portion thereof and showing the manner whereby the cap or cover effects the disengagement of said portion from the vessel. Fig. 10 is a sectional view of a portion of the vessel, showing the other parts removed. Fig. 11 is a top plan view of the same. Fig. 12 is a sectional view of the cap or cover and engaging portion, and Figs. 13 to 16 show other constructions.

Similar characters of reference designate corresponding parts throughout the several views.

Referring to the drawings, and particularly to Fig. 1 thereof, the reference character 1 designates a portion of a vessel, which may be of any desired construction or material, as this invention is in no manner limited to use with any particular character of vessels, and it will be understood that this invention is equally capable of employment and use with a plug or stopper or other form of closure as with a cap or covering.

It will be noted that the underlying principle or characteristic function of this invention is the removal of the closure by rotating or twisting the same upon the vessel until the main portion of the closure is disengaged or removed from the vessel by breaking off the engaging portion of the closure.

In the construction shown in Fig. 1 of the drawings the neck of the vessel is provided with recesses 2 upon the interior thereof and preferably having inclined faces or walls to receive the fingers or projections 3 upon the disk or spider 4, which is connected with a plug or stopper 5 of any suitable construction by means of a breakable rivet or connection 6, constructed to be twisted off or severed in-

termediately by the rotation of the plug or stopper 5. After the vessel has been filled a cork 7 is introduced into the neck thereof, after which the closure before described is forced down into the neck of the vessel above the cork until the fingers or projections 3 expand into and engage within the recesses 2 in the neck 1 of the vessel, and when in this position the vessel is securely closed and the closure cannot be removed therefrom without being broken or injured so as to require a new closure. As the vessel of each manufacture is constructed with the recesses 2 in different relative position within the neck, only that closure having engaging portions arranged in the same relative position with said recesses can be used upon such vessel. When it is desired to open the vessel, it is only necessary to rotate or twist the plug or stopper 5 until the connection 6 between the latter and the engaging portion is twisted off or severed, whereupon the plug or stopper 5 can be readily removed, after which said portion can be disconnected in any suitable manner and the cork can be taken out.

Adverting to the construction illustrated in Figs. 2 to 7, inclusive, there is illustrated a portion of a vessel provided with internal ribs or extensions 8 to prevent the introduction of a stopper to permanently close the vessel, and upon the outside of the vessel-neck are formed or secured guiding and directing lugs or bars 9, constructed to pass through notches 10 in the inwardly-directed rim 11 of the cap or cover 12, so as to center and direct the latter into proper position up the vessel when being forced down thereupon, and the position and number of said lugs may be arranged in a predetermined order or manner upon the vessels of each user or bottler in order that the closures manufactured for a certain user or bottler are incapable of use upon any other vessels than those employed by that particular user or bottler. If found desirable in practice, the cap or cover 12 may be provided with an intermediate annular recessed portion 13, Figs. 2 and 5, and with a depending breakable projection 14, having engaging fingers and wings 15 to pass beneath and engage the head 16 of the engaging portion, which is provided with engaging devices 17, carried by spring arms or projections 18, formed on or connected with the head 16, the latter being provided with a slot 19 for the passage of said projection 14, Fig. 7, of the drawings. In order to form a firm connection between the engaging portion and the cap or cover and prevent the disengagement of the latter from the former, spring-pressure arms 20 may be formed on or connected with said portion, Figs. 2 and 7, so that when the cover is in position upon the neck of the vessel over the engaging portion there will be no play or looseness between the parts. The vessel is preferably provided with external recesses 21, with which communicate guideways or channels 22 to receive the engaging devices 17 when the engaging portion is secured in position.

The operation of this invention will be readily understood from the foregoing description when taken in connection with the construction illustrated in Figs. 2 to 7 of the drawings. After the vessel has been filled a disk or packing 23 is secured in the orifice of the vessel, after which the engaging portion is forced thereover until the engaging devices 17 enter the recesses 21 in the neck of the vessel, whereupon the cap or cover 12 is twisted or rotated upon the neck of the vessel until the notches 10 of the former register with the guiding-lugs 9 upon the latter, thereby permitting the descent of the cap or cover and directing the passage of the projection 14 thereof through the slot 19, so that the expansible wings 15 engage the head 16, when the annular recessed portion 13 forces the engaging devices 17 securely into the recesses 21, thereby retaining the latter in constant engagement. When it is desired to remove the cap or cover after having been so secured in position, it is only necessary to rotate or twist the cap or cover, which may be milled for that purpose, until the projection 14 thereon is broken off, whereupon the cap or cover may be removed and the engaging portion disconnected, as will be readily understood.

Referring now to Figs. 8 to 12, inclusive, there is illustrated a construction substantially similar to that before described and shown, with the exception that the pressure-arms 20 are removed and that the cap or cover rest directly upon and in contact with the head 16 of the engaging portion, with which it is connected by a rivet or connection 6, which is constructed to be severed, as illustrated in Fig. 9, by the rotation of the cap or cover 12 upon the vessel-neck, substantially as before explained.

In the construction illustrated in Figs. 8 to 12 the edge of the cap or cover is provided with disengaging extensions 24 to disengage the engaging devices 17 from the recesses 21 of the vessel-neck as the cap or cover is being removed therefrom. (See Fig. 9 of the drawings.) The operation of this construction is otherwise similar to that before described, and detail explanation thereof will not be required.

In Figs. 13 to 16, inclusive, there is illustrated still a further modification of this invention, wherein is provided another construction that may be employed for the purpose of securing to each user or bottler the exclusive use of the vessel designed for use with the particular closure employed by such user or bottler. In this construction there is provided a vessel having a neck 1, constructed with an annular enlargement or shoulder 26, cut away or recessed at 27 to receive the rim

28 of a cap or cover 29 to prevent the introduction of an instrument beneath said rim in a fraudulent attempt to open the vessel without destroying the closure, and above said enlargement or shoulder the vessel is preferably provided with recesses 21, with which communicate guideways or channels 22 to receive and guide the engaging portions 17 into said recesses, said engaging portions being carried by arms 18 upon a head or spider 16, breakably connected by connection 6 with the cap or cover, substantially as before explained; but upon the head or spider are preferably secured or connected indicating-fingers 30, corresponding in number and position to the indicating-ways 31 upon the exterior of the vessel-neck, Fig. 16 of the drawings.

It is not desired to confine this invention to the specific construction, combination, and arrangement of parts herein shown and described, and the right is reserved to make all such changes in and modifications of the construction herein described and shown as come within the generic character of the invention, which covers, broadly, the disengagement of a closure from a vessel by a tort or rotation, which breaks off the engaging portion of the closure.

I claim—

1. The combination with a vessel having a neck constructed to be engaged of a device having an engaging portion constructed to engage said neck, and to be removed by a tort or rotation of said device whereby the engaging portion of the latter is broken off.

2. The combination with a vessel constructed to be engaged of means having an engaging portion for effecting such engagement and to be broken by the rotation thereof upon the vessel in the operation of opening the latter.

3. The combination with a vessel having recesses in the neck thereof of a device to close the same having breakable portions constructed to engage said recesses when forced into position and to be broken off therein when the device is rotated in the operation to open the vessel.

4. The combination with a vessel having a neck constructed to be engaged and to prevent the introduction of the stopper of a device constructed to engage said neck when forced thereupon and to be removed therefrom by rotation to break off the portion of the device engaging the vessel.

5. The combination with a vessel having a neck constructed to prevent the introduction of the stopper and having external guiding-lugs of a device constructed to be guided into engagement with said neck by said lugs and to be removed therefrom by rotation thereupon to break off that portion of said device in engagement with said neck.

6. The combination with a vessel having recesses in the neck thereof and having internal extensions to prevent the introduction of a stopper of a cap or cover carrying engaging and breakable portions constructed to engage said recesses when the device is in position and to be disconnected from the cap or cover by the rotation thereof upon the vessel.

7. The combination with a vessel having recesses in the neck thereof of a cap or cover therefor and an engaging portion to engage said neck and having breakable connections with said cap or cover.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EARLE E. CHAPMAN.

Witnesses:

C. W. HOLLISTER,

L. B. ALDESETE.