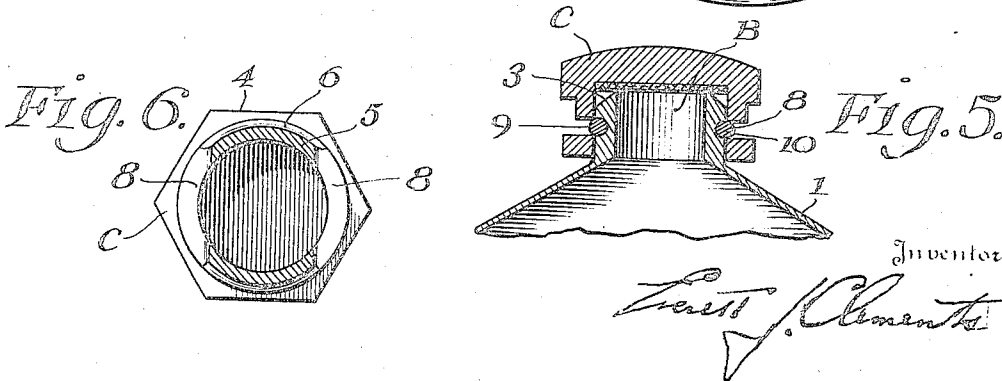
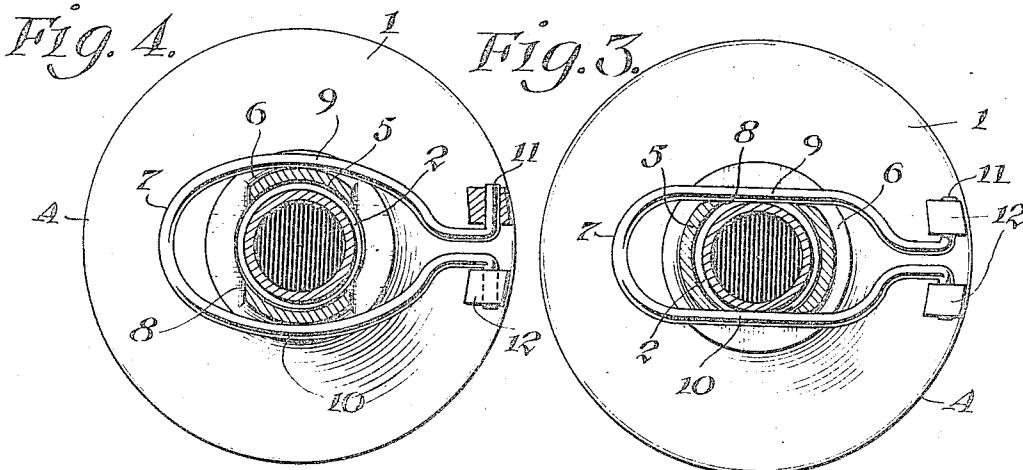
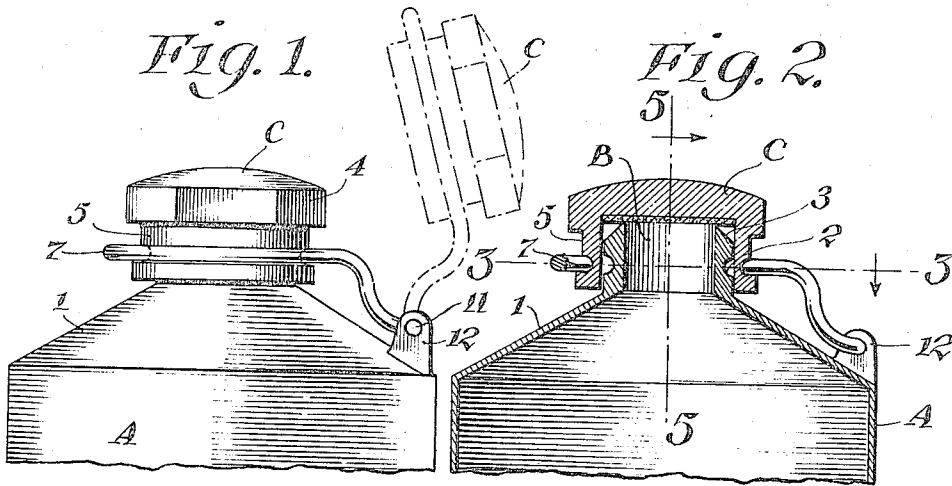


Nov. 4, 1924.

E. G. CLEMENTS
RECEPTACLE CLOSURE CAP

1,514,130

Filed March 7, 1923



Inventor

E. G. Clements

Patented Nov. 4, 1924.

1,514,130

UNITED STATES PATENT OFFICE.

EVERETT G. CLEMENTS, OF WASHINGTON, DISTRICT OF COLUMBIA.

RECEPTACLE CLOSURE CAP.

Application filed March 7, 1923. Serial No. 623,497.

To all whom it may concern:

Be it known that I, EVERETT G. CLEMENTS, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Receptacle Closure Caps, of which the following is a specification.

My invention relates broadly to improvements in receptacle closures and especially to closures for metal receptacles and collapsible tubes, such as are in common use for containing and dispensing tooth paste, shaving cream, artists' paints, etc. etc.

More particularly, my invention relates to means whereby the cap or closure is attached to the receptacle in such manner as to permit ready manipulation of the cap to open or close the receptacle, and providing a locking means between the cap and the neck of the receptacle.

The primary object of my invention therefore is to provide improved locking means for receptacle closures of this character by utilizing the cap securing means in a new and novel combination.

A further object of my invention resides in the formation of a cap and receptacle neck whereby the locking means may be readily operated by a partial turn of the cap in either direction.

A still further object of my invention is to provide a device of this character which will be simple and inexpensive in construction and positive and reliable in operation, all as will be hereinafter more fully described and claimed.

Referring to the accompanying drawings which are made a part hereof, and on which similar reference characters indicate similar parts:

Figure 1 is a side elevation of the upper portion of a conventional, collapsible tube embodying my invention and also shows, in dotted lines, the closure cap swung open on its hinged mounting;

Fig. 2 is a vertical transverse section taken through the middle of Fig. 1 to show the relation of the several elements in locked position;

Fig. 3 is a horizontal section taken on line 3—3 of Fig. 2 to expose a plan view of the several elements in locked position;

Fig. 4 is a view similar to that shown in Fig. 3 with the extended portions of the cap

turned to release the locking means from the neck of the collapsible tube.

Fig. 5 is a vertical section taken on the line 5—5 of Fig. 2, showing the relation of the several elements in locked position, and

Fig. 6 is a horizontal section taken through the cap.

In the drawings the portions indicated as A represent the body of a conventional collapsible tube, having a neck portion B forming a cylindrical extension of the upper end thereof, and a closure cap C.

All of these parts A, B and C with the exception of the attachments and modifications hereinafter to be described, may be of any well known or approved design providing they do not depart from the spirit of my invention.

The body of the collapsible tube A is preferably cone-shaped at its upper extremity 1 and terminates at the base of the cylindrical neck B. Formed on the periphery of the neck B is an annular groove 2 and the upper edge of the neck is beveled downwardly and outwardly to provide an inclined surface 3, the purposes of which will be apparent from the following.

The closure cap C is provided with a finger-gripping surface 4 adjacent its upper edge and is formed with a downwardly extending cylindrical wall extension 5 adapted to closely fit the neck B of the tube A. An annular groove 6 extends around the periphery of the wall 5 into which the sides of an elongated resilient wire loop 7 are adapted to engage. The inner wall of the annular groove 6 is cut away on diametrically opposite sides of the cap C, to provide elongated apertures 8, adapted to register with the annular groove 2, on the neck B, of the tube A, so as permit portions of the wire loop 7 to pass through the wall 5, and engage the groove 2, as is clearly shown by reference to Figs. 3 and 5.

The wire loop 7 is preferably formed from a single length of resilient wire flattened on opposite sides to provide parallel portions 9 and 10, the free ends of which are bent to oppose each other and provide trunnions 11 adapted to bear in aligned apertures in bosses 12 formed integral with or attached to the conical surface 1 of the tube A adjacent the outer extremity thereof.

In Figs. 1, 2, 3 and 5 the closure cap C is shown in closed and locked position with

the flattened portions 9 and 10, of the resilient wire loop hinge 7, extending through the apertured portion 8, of the wall 5, of the cap C, and engaging the annular groove 2, in the receptacle neck B.

When it is desired to remove the cap C from the neck B to open the receptacle A, the closure cap C is given a partial turn in either direction to assume the position shown in Fig. 4. The unapertured portions of the annular groove 6, in wall 5, are thus caused to cam the portions 9 and 10, of the resilient wire loop hinge 7, out of the annular groove 2, in the neck B, to free the cap C. The cap C may then be swung upwardly and backwardly on the wire loop hinge 7, as is indicated by dotted lines in Fig. 1.

To close and lock the cap C, on the neck B, from the position shown in dotted lines in Fig. 1, it is only necessary to give the cap C a partial turn in either direction, swinging it downwardly over the neck B and applying sufficient pressure with the finger on the top of the cap C to cause the portions 9 and 10, of the resilient wire loop hinge 7, to ride over the inclined surface 3, at the upper edge of the neck B, whereupon the portions 9 and 10 will snap into the annular groove 2 and securely lock the cap in closed position.

Although I have shown and described a preferred construction for accomplishing the objects heretofore enumerated, it will be understood that various modifications may be made therein without departing from the spirit of my invention as defined in the following claims.

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

1. In combination with a receptacle having a neck, a rotatable closure cap therefor, and resilient locking means engaging said cap and attached at one end to said receptacle, said cap and said means co-operating, under rotation of the cap, to move said means to a position to lock or unlock said cap with respect to said neck.

2. In combination with a receptacle and a rotatable closure cap therefor, resilient locking means pivotally connected to said receptacle and engaging said cap, said cap and said locking means co-operating under the rotation of said cap to retain the latter

in locked or unlocked position on said receptacle.

3. In combination with a receptacle, a closure cap adapted to rotate relative to said receptacle and formed with an annular groove, and resilient locking means fixed to said receptacle and co-operating with the groove on said cap to move said means to a position to lock or unlock said cap on said receptacle by the rotation of said cap.

4. In combination with a receptacle, a rotatable closure cap therefor having cam elements, and resilient locking means secured to said receptacle and said closure cap, said means being adapted to be moved by said cam elements upon the rotation of said cap to lock or unlock said cap on said receptacle.

5. In combination with a receptacle having a neck, a closure cap therefor having an aperture in the side thereof, and resilient locking means secured to said receptacle and said cap, said means being adapted to be moved to enter said aperture and engage said neck upon the rotation of said cap.

6. In combination with a receptacle having a neck, a rotatable closure cap therefor, and resilient locking means for said cap pivoted at one end to swing relative to said receptacle and constructed to be moved by the rotation of said cap to lock or unlock said cap on said receptacle neck.

7. In combination with a receptacle and a closure cap, resilient locking means connecting said receptacle and cap adapted to be actuated by rotary movement of said cap relative to said locking means to lock or unlock said cap on said receptacle.

8. In combination with a receptacle having a neck portion, and a groove surrounding said neck portion, a rotary closure cap for said neck portion having an annular groove and apertures registering with said groove, and locking means for said cap comprising an elongated resilient wire loop engaging with the annular groove in said cap and pivoted at its free end to said receptacle, said locking means being adapted to enter said apertures and engage the annular groove in said neck portion upon rotary movement of said cap relative to said locking means.

In testimony whereof I affix my signature.

EVERETT G. CLEMENTS.