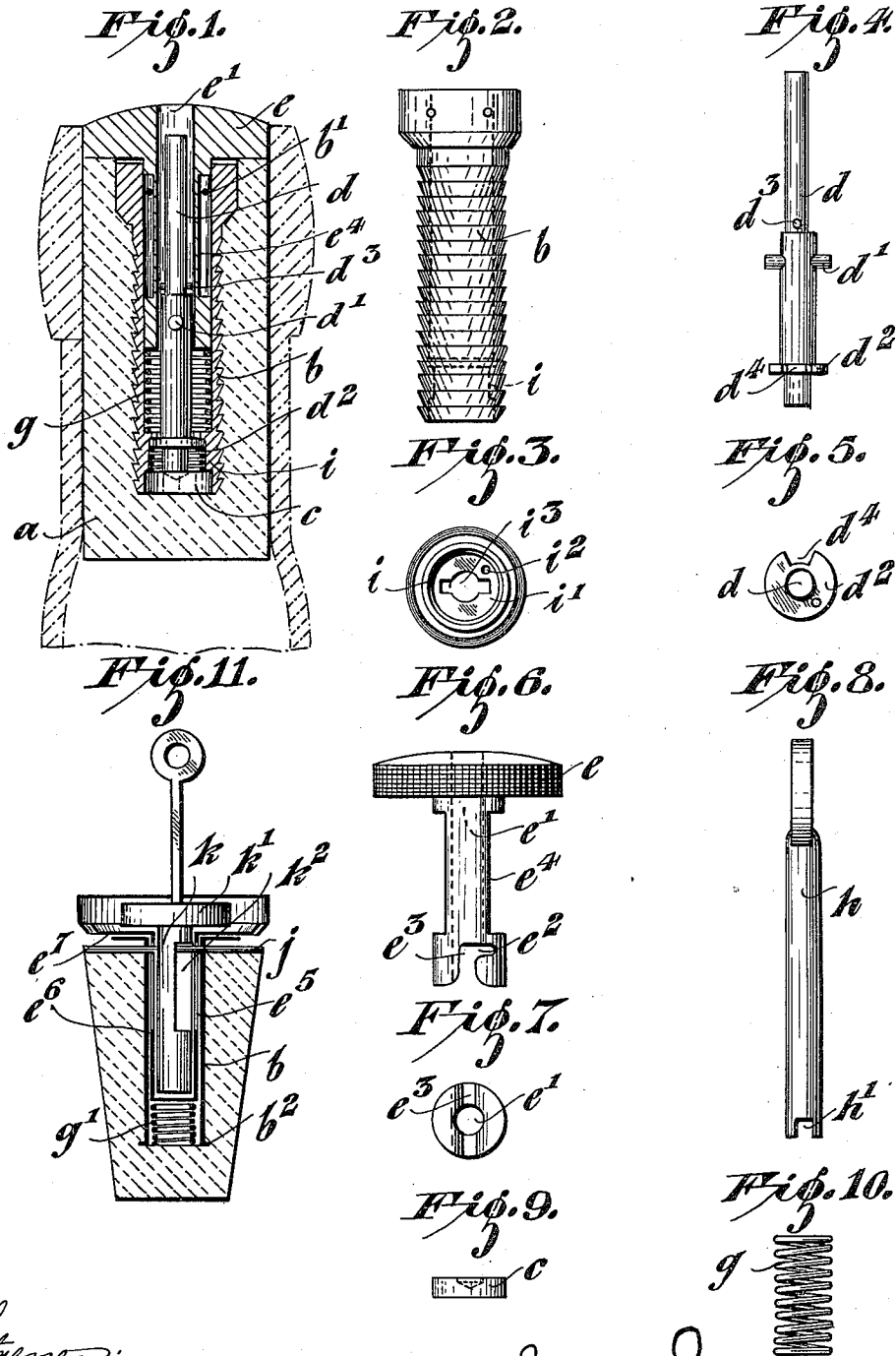


J. S. FOLEY & H. N. COLLIS.
CORK OR CLOSURE MEMBER FOR BOTTLES, CONTAINERS, AND THE LIKE.
APPLICATION FILED OCT. 5, 1912.

1,060,534.

Patented Apr. 29, 1913.



Witnesses:
H. C. Hummer
W. R. R. R.

Inventors:
James Samuel Foley
and Harry Keith Collis
by B. Singer Atty

UNITED STATES PATENT OFFICE.

JAMES SAMUEL FOLEY, OF WEST BROMWICH, AND HARRY NEILD COLLIS, OF STOUR-BRIDGE, ENGLAND.

CORK OR CLOSURE MEMBER FOR BOTTLES, CONTAINERS, AND THE LIKE.

1,060,534.

Specification of Letters Patent.

Patented Apr. 29, 1913.

Application filed October 5, 1912. Serial No. 724,093.

To all whom it may concern:

Be it known that we, JAMES SAMUEL FOLEY, a subject of the Kingdom of Great Britain, residing at 5 High street, West Bromwich, in the county of Stafford, consulting engineer, and HARRY NEILD COLLIS, a subject of the Kingdom of Great Britain, residing at Hampton Lodge, Stourbridge, in the county of Worcester, England, solicitor, have invented a certain new and useful Improved Cork or Closure Member for Bottles, Containers, and the Like, of which the following is a specification.

This invention comprises a new or improved cork or closure member for bottles, containers, and the like.

By this invention the cork or closure member is such that it cannot be withdrawn by the use of a cork-screw or equivalent member. When the cork or closure member is in position within the neck of the bottle the cap or top of the closure member lies flush with the upper edge of the bottle neck. By inserting a key and unlocking the cork or closure member the cap or top thereof which is combined with or in the form of a telescopic member may be withdrawn by the key or may automatically project for a suitable distance, in such a manner as to present a part which can be gripped by the hand and the removal of the cork thereby effected. When the cork is replaced and the cap or telescopic member is depressed into its flush position it may be automatically locked in that flush position and the cork cannot be removed except by again inserting the key. All metal parts may be inclosed within a wall of cork or equivalent material in such a manner that the contents of the bottle do not under any circumstances come into contact with the metal.

In order that this invention may be clearly understood and more readily carried into practice, reference may be had to the appended explanatory sheet of drawings, upon which:—

Figure 1 is a sectional elevation of a cork according to the present invention. Fig. 2 illustrates the hereinafter described lining. Fig. 3 is an inverted plan of Fig. 2, showing the hereinafter mentioned cup-shaped member. Fig. 4 illustrates the hereinafter mentioned spindle. Fig. 5 is an inverted plan

of the spindle shown in Fig. 4. Fig. 6 is an elevation of the main cap and stem. Fig. 7 is an inverted plan of the stem forming part of the member shown in Fig. 6. Fig. 8 is an elevation of the key. Figs. 9 and 10 separately illustrate details shown in Fig. 1. Fig. 11 illustrates in sectional elevation a modified form of cork according to the present invention.

According to a convenient method of carrying out the present invention a vertical hole is bored in the cork or stopper *a* extending downwardly from the top but being in the form of a blind hole closed at the bottom. A tubular lining *b* advantageously enlarged at its upper extremity is suitably secured within said hole advantageously by upwardly inclined saw tooth serrations provided around its outer surface so that after pressing it into the hole it is effectively retained therein. A hollow shank or tubular member is adapted to slide within said lining, said tubular member having at its one extremity the main head *e* of the cork or stopper which may lie flush with the extremity of the bottle neck or may project to facilitate removal of the cork or stopper. Pins *b*¹ or other suitable means may be provided to prevent the sliding tubular member or shank from rotating and also to limit its longitudinal movement. For this purpose portions of the outer surface of the sliding member may be flattened at *e*⁴ and horizontal pin members *b*¹ may be secured at both ends to the lining *b* to take a position adjacent to said flattened portions and to engage with the shoulders at the extremities of said flattened portions.

Rotatably secured at its lower extremity co-axially within the lining *b* is a spindle *d* mounted in such a manner that it may have a restricted rotation. The diameter of said spindle is reduced for approximately one half of the way down from the top so that a tubular key *h* may be inserted around this reduced upper portion of the spindle and within the hollow stem of the main cap *e* to engage with pins or projections *d*³ upon the spindle *d* and provide for the rotation of the latter. At a position a little below the reduced portion of the spindle lateral projections *d*² are provided thereon adapted to engage with bayonet slots *e*² in the tubular

stem of the main cap *e* so that by virtue of the rotation of the spindle *d* the cap may be secured or released as desired. The reduced part of the spindle *d* may be omitted to thereby provide for the insertion of a solid key suitably shaped at its extremity to engage with the spindle and effect the rotation of the latter.

For the purpose of rotatably securing the co-axial spindle within the lower extremity of the lining an inverted cup member *i* is fixed within the lower end of the lining before the latter is inserted into the cork. The web top *i*¹ of said cup is perforated to provide for the spindle being assembled through it and the perforation *i*³ is suitably enlarged or shaped to permit of the passage of the projections *d*¹ at or about the center of the spindle *d*. The spindle *d* is furnished with a flange *d*² adapted to take a position immediately below the upper horizontal web of the cup member. Said flange has a cut away part at *d*⁴ adapted to receive a pin or stud *i*² on the under side of the web *i*¹ of the fixed cup member by which means the rotation of the spindle is restricted as aforementioned. After the spindle has been assembled a closure disk or member *C* is secured within the extreme lower end of the lining *b*. Said closure may have a coned central seating to form a bearing for the extremity of the spindle below the flange thereon and between the flange and closure, and connected at its end to these two members, a coiled spring may be incorporated concentrically around the spindle to control the rotation of the latter so that upon depressing the cap toward the cork or stopper into its flush position, the spindle automatically rotates until its projections engage with the bayonet slots in the tubular stem of the cap, thereby securing the latter until the spindle is again rotated in the reverse direction by the key. A spring *g* may be incorporated between the cup member and the lower extremity of the stem upon the main head to automatically project the latter upon the bayonet engagement being released by the key.

In the modification shown in Fig. 11, the lining *b* is flanged at its upper extremity and may be divided at its lower part into tongs by vertical slits and each of the said tongs is turned outwardly in the form of a tooth *b*² in such a manner that the tongs can be contracted for the insertion of the lining, after which by inserting a mandrel the tongs can be expanded into engagement with the cork to thereby securely retain the lining in position. The cap *e* has its stem or shank hollow as in the previous case, but such stem is advantageously closed at the bottom. Vertical elongated slots or perforations *e*⁵ are provided one in each side of the sleeve stem and a transverse pin *j* suitably mount-

ed passes through said elongated slots so permitting of a restricted vertical sliding movement of the stem in relation to the cork or stopper and lining. Inside of the stem or sleeve *e*⁶ the rotating member *k* is mounted conveniently having a flange top *k*¹ which may take a position between the enlarged top *e*⁷ of the sleeve member inside the main cap or cover of the cork or stopper. Said rotating member has a vertical slot or recess *k*² extending upwardly from the bottom and at the top of said slot or recess a side-way opening is made or side way openings one on each side. The transverse pin *j* aforementioned is enabled to take a position within the vertical slot and when the rotating member *k* is in its lowermost position, as is the case when the sleeve and cap are in the position in which the latter is flush with the neck of the bottle, the rotating member revolves until the transverse pin occupies a position in the lateral recess or recesses at the upper extremity of the vertical slot or cut *k*². The rotating member acts and is retained in such position of engagement by the influence of a suitable incorporated spring. By inserting a key through the cover of the cork or closure member the rotating member *k* may be turned until the transverse pin *j* is in line with the slot *k*² in the rotating member after which the cap, sleeve and rotating member may be bodily lifted by the key until the transverse pin butts against the lower extremities of the elongated slots in the sleeve member *e*⁶. The cap may then be grasped by the hand for which purpose it may be serrated and the entire cork or closure member thereby removed, the pull being transmitted through the medium of the transverse pin to the lining and thence to the cork body. Upon reinsertion of the cork the depression of the cap enables the rotating member to spring back into its engaging position so holding the parts in their locked condition. If desired a spring *g*¹ may be disposed within the tubular lining and underneath the sleeve member to press upwardly upon the latter, so that upon unlocking the main cover springs up into the projecting position automatically. The key may be introduced centrally and vertically through the cover, the shank of the key entering a vertical perforation in the top of the rotating member and the ward or wards of the key may take a position in a recess or recesses in the top part of the rotating member *k*. Said recess or recesses is or are advantageously of segmental form so that in the process of turning the key to the right in order to unlock the cork the ward or wards of the key bear at one side of the recess to turn the rotating member, after which the key may be turned in the reverse direction and withdrawn without necessitat-

ing a reverse movement of the rotating member.

What we claim as our invention and desire to secure by Letters Patent is:—

5 1. The combination with a bottle and a stopper therefor having a bore, of a lining anchored in said bore, a spindle in said lining provided with a cap locking pin and a key pin, means restricting rotation of said
10 spindle with respect to said lining, a cap for the top of said stopper having a hollow shank surrounding said spindle and provided with a slotted portion for engagement with said cap pin, means preventing rotation of
15 said cap with respect to said lining but permitting longitudinal movement with respect thereto, and a key adapted for insertion into said hollow shank to engage said key pin and rotate said spindle to release said cap,
20 substantially as described.

2. In combination with a bottle and a stopper therefor having a bore, of a lining anchored in said bore, a spindle in said lining provided with a cap locking pin, means
25 restricting rotation of said spindle with respect to said lining, a cap for the top of said stopper having a hollow shank surrounding said spindle and provided with a slotted portion for engagement with said
30 cap pin, means preventing rotation of said cap with respect to said lining but permitting longitudinal movement with respect thereto, and means for turning said spindle to release said cap, substantially as
35 described.

3. In combination with a bottle and a stopper therefor having a bore, a lining anchored in said bore, a cap for said stopper having a hollow shank adapted to extend
40 into said lining, rotatable means in said lining for locking said cap against withdrawal from said stopper, and a device for oper-

ating said means to release said cap, substantially as described.

4. The combination with a bottle and a stopper therefor having a bore, a lining anchored in said bore, a cap for said stopper having a hollow shank adapted to extend into said lining, means preventing rotation of said cap with respect to said lining but
50 permitting longitudinal movement with respect to said lining, rotatable means in said lining for locking said cap against withdrawal from said stopper, and a device for operating said means to release said cap,
55 substantially as described.

5. The combination with a bottle and a stopper therefor having a bore, a cap for closing the top of said stopper having a shank projecting into said bore, means preventing rotation of said cap with respect to
60 said stopper but permitting longitudinal movement relative thereto, and means in said bore for locking said cap against withdrawal from said stopper and adapted for operation to release said cap, substantially
65 as described.

6. The combination with a bottle and a stopper therefor having a bore, of a cap structure for closing the top of said stopper, means preventing rotation of said cap structure with respect to said stopper but permitting longitudinal movement with respect
70 thereto, and means in said bore for locking said cap against withdrawal from said stopper and adapted for operation to release said cap, substantially as described.
75

In witness whereof we have hereunto set our hands in the presence of two witnesses.

JAMES SAMUEL FOLEY.

H. NEILD COLLIS.

Witnesses:

ARTHUR H. BROWN,
HOLLIS BROWN.