

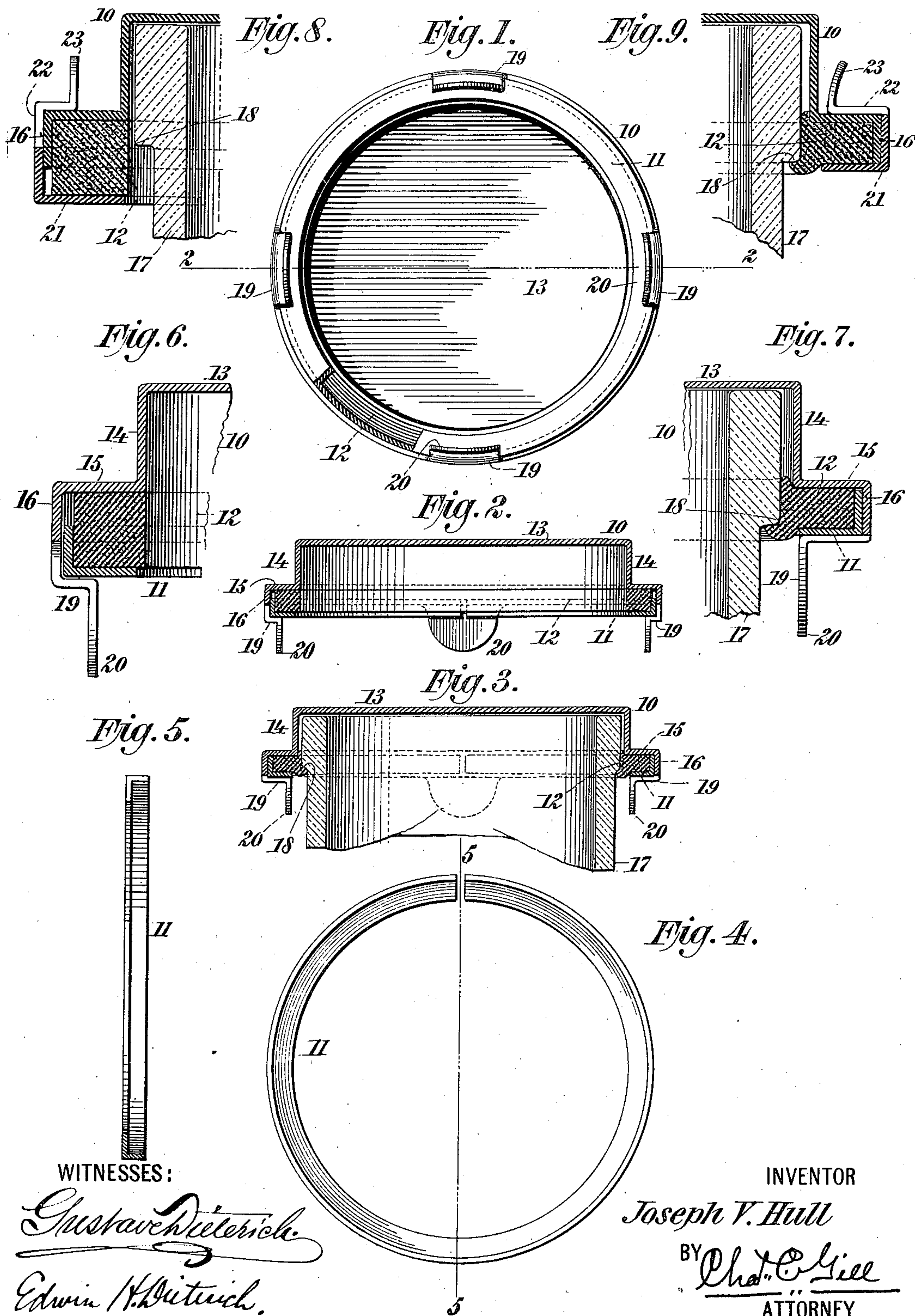
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PATENTED AUG. 6, 1907.

J. V. HULL.

CLOSURE FOR BOTTLES, JARS, AND OTHER RECEPTACLES.

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UNITED STATES PATENT OFFICE.

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CLOSURE FOR BOTTLES, JARS, AND OTHER RECEPTACLES.

No. 862,481.

Specification of Letters Patent.

Patented Aug. 6, 1907.

Application filed December 20, 1906. Serial No. 348,763.

To all whom it may concern:

Be it known that I, JOSEPH V. HULL, a citizen of the United States, and a resident of Brooklyn, in the county of Kings and State of New York, have invented certain
5 new and useful Improvements in Closures for Bottles, Jars, and other Receptacles, of which the following is a specification.

The invention relates to improvements in closures for bottles, jars and other receptacles; and it consists
10 in the novel features hereinafter described, and particularly pointed out in the claims.

The invention comprises, in its preferred form, a cap to be applied over the mouth of a bottle or the like and having its lower edges bent outwardly and then down-
15 wardly into right angular form producing a beading containing an annular outwardly projecting recess to receive a packing-ring in line with an annular shoulder formed on the bottle neck, and a removable locking-ring of angular formation in cross section adapted to the
20 annular beading on the cap and coöperating therewith in securing the said packing, the latter being held by the walls of said ring and said beading, and the lower outer edges of said beading being formed with tongues adapted, during the application of the closure, and the
25 vertical compression of the packing, to be pressed inwardly below said locking-ring and effect the firm securing together of said cap and ring in opposition to the resistance created by the packing. The aforesaid
30 tongues will preferably have extensions or finger-pieces left free of the surrounding parts to be grasped and pulled outwardly in a lateral direction from the locking-ring when it is desired to unseal the bottle and remove the cap. The sealing of the receptacle is accomplished by forcing the locking-ring in a direction
35 toward the annular projecting portion or beading of the cap and against the packing ring, the latter being thereby squeezed laterally against the bottle neck and the locking tongues being folded inwardly below the locking-ring so as to effectually lock said cap and ring to-
40 gether and enable them to resist the outward pressure exerted by the packing-ring.

The object of the present invention is to provide an effectual two-part cap or closure which may be conveniently applied to and removed from the bottle or
45 other receptacle, and hence it is that during the compression of the packing ring to seal the bottle the locking-tongues are made to effectually tie the cap and locking-ring together and are left in such exposed position and condition that they may be conveniently
50 turned back from their locking position to free the cap and locking-ring from each other and permit of the ready removal of the closure.

The invention will be fully understood from the detailed description hereinafter presented, reference being
55 had to the accompanying drawings, in which:

Figure 1 is a bottom view, partly broken away, of a closure embodying my invention, the parts being shown in the relation they bear to one another prior to the compression of the packing ring; Fig. 2 is a vertical section of same on the dotted line 2—2 of Fig. 1; Fig. 3 is
60 a view corresponding with Fig. 2 but illustrating the closure as applied to a jar, with the parts of the closure shown in the relation they occupy to one another after the vertical compression of the packing ring to effect the sealing; Fig. 4 is a detached top view of the locking-
65 ring which coöperates with the cap; Fig. 5 is a vertical section of same on the dotted line 5—5 of Fig. 4; Fig. 6 is an enlarged view reproducing the left-hand portion of Fig. 2 and illustrating the relation of the parts of the closure prior to the compression of the packing-ring; 70
Fig. 7 is a like view of the right-hand portion of Fig. 3 showing the relation of the parts after the vertical compression of the packing-ring and application of the closure to the neck of a receptacle, and Figs. 8 and 9 are
75 views corresponding with Figs. 6 and 7 but illustrating a modified form of the invention, Fig. 8 showing the relation of the parts before the vertical compression of the packing-ring, and Fig. 9 the relation of the parts after such compression.

The closure comprises a cap 10, locking-ring 11 and
80 elastic packing-ring 12, and said cap is formed with a top 13, sides 14 and annular right-angular projecting portion or beading created by the outwardly and downwardly extending parts 15, 16 at the lower edges of said
85 sides. The locking-ring 11 is of right-angular formation in cross section and is preferably, for convenience and cheapness of manufacture, in the form of a split-ring.

The receptacle or bottle to which the closure is shown applied is numbered 17 and is formed with a
90 shoulder 18 to be engaged by the packing-ring 12.

In the construction shown in Figs. 1 to 7 inclusive, the lower edges of the angular beading on the cap is formed with a series of locking-tongues 19, and the locking-ring 11 fits within the vertical sides 16 of said
95 beading, as shown in Figs. 6 and 7, said sides 16 and the vertical sides of said ring 11 being about equal in extent so that after the vertical compression of the packing ring 12 the upper edge of the locking-ring may about reach the horizontal portion 15 of the cap and said
100 sides of said beading and locking-ring form a uniform double thickness, as shown in Fig. 7.

In assembling the parts, the packing 12 may be placed upon the ring 11 and therewith introduced to the beading of the cap, the locking tongues 19 being bent inwardly to a limited extent below the locking-
105 ring 11, as shown in Figs. 2 and 6, to hold the parts together without at such time compressing the packing. The parts having thus been assembled in their initial relation to one another, the inner vertical edges of the packing are in line with the inner vertical walls of the
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sides 14 of the cap and the inner vertical edges of the horizontal portion of the ring 11 stand outwardly from said edges of said packing, as shown in Fig. 6. The parts having been assembled, the closure may be introduced upon the neck of the bottle or receptacle 17 and then subjected to further treatment for sealing the latter. After the closure has been placed upon the bottle, the sealing will be effected by pressure applied vertically against the lower horizontal surfaces of the locking ring 11 to compress the packing 12, while at the same time the top, sides and annular beading of the cap are held within a closely fitting socket in the capping-machine and prevented from expanding or becoming distorted, the effect of the vertical pressure applied against the locking ring 11 being that the said ring will be forced upwardly from the position in which it is illustrated in Fig. 6 to that shown in Fig. 7, and that the packing 12 will be compressed and squeezed outwardly against the neck of the bottle, a portion of the packing passing from the annular beading and against the bottle neck and extending partly above and partly below the shoulder 18 on said neck. During the compression of the packing the locking-tongues 19 are forced inwardly along the lower surfaces of the locking-ring 11. After the vertical compression of the packing has taken place the lower edges of the sides 16 of the beading on the cap will be found to have reached the lower edges of the locking-ring 11, as shown in Fig. 7, and thus the locking tongues 19 are permitted to be folded inwardly against the entire width of said ring, with a suitable portion of said tongues extending downwardly to form finger-pieces 20 for use in unsealing the bottle.

The tool for compressing the packing-ring to effect the sealing will engage the entire lower surface of the locking-ring 11 between the tongues 19 and during this compression the tongues 19 will be bent inwardly below the locking ring, so that upon the removal of the bottle from the capping-machine, said tongues may be relied upon for maintaining the ring 11 in position against the compressed packing. After the bottle has been sealed the beading on the cap will be composed of the parts 15, 16 and locking ring 11, the latter becoming locked to the cap and forming a continuation of the beading.

When it is desired to remove the cap from the bottle the finger pieces 20 will be grasped and pulled outwardly to bend the locking-tongues 19 from below the ring 11, this having the effect of enabling the packing to force the ring 11 downwardly and thereby free itself from sealing contact with the bottle neck, after which the cap may be lifted from the bottle.

It will be observed upon reference to Fig. 7 that the lower edges of the sides 16 of the beading do not fold under the locking-ring 11 but that only the fingers 19 pass below said ring, the purpose of this being to enable the ready and convenient unsealing of the bottle by simply pulling outwardly upon the locking-tongues 19.

In Figs. 8 and 9 I illustrate a modified construction of a portion of the invention in which I provide a locking-ring 21 to fit upon the exterior of the sides 16 of the beading on the cap and form said locking-ring with locking-tongues 22 extending upwardly to lap and finally lock upon the upper surfaces of said beading, said tongues 22 being provided with finger pieces 23 adapted to be grasped in the act of pulling the tongues

outwardly from the cap for unsealing the bottle. In the construction shown in Figs. 8 and 9 the vertical sides of the beading are of about the same extent as the vertical sides of the locking-ring, and when in the act of sealing the bottle the locking ring is pressed upwardly to compress the packing 12, only the tongues 22 will be forced inwardly upon the upper surface of the beading, hence the unsealing of the bottle may be readily accomplished by simply pulling said tongues outwardly to permit the packing to force the ring 21 downwardly and release itself from binding engagement with the bottle neck.

In both of the constructions presented, the locking tongues are of sufficient length to lap inwardly, when the bottle is sealed, to a considerable extent upon that side of the beading at which they may be located,—in Fig. 7 at the lower side of the beading and in Fig. 9 at the upper side thereof, whereby the parts become very securely fastened together and the bottle firmly sealed. One feature of the present invention is to render it convenient to unseal the bottle without the use of special tools and remove the cap therefrom, and in carrying out this feature of the invention I leave the ends or finger pieces of the locking-tongues 19 in such exposed position that they may be readily engaged or taken hold of for turning the tongues back from their locking position, this alone enabling the packing to free itself from its sealing condition and permit the removal of the cap.

What I claim as my invention and desire to secure by Letters-Patent, is:

1. A closure comprising a cap member having at the lower edges of its sides an annular projection or beading formed by carrying the metal outwardly and downwardly, a packing-ring within said beading, and a locking-ring member having a lower portion to engage said packing and vertical sides adapted to the sides of said beading, one of said members being formed with locking-tongues to be folded inwardly upon the beading when the packing is compressed therein to effect the sealing, and said tongues when forced outwardly permitting said packing to free itself from its sealing condition and said cap to be removed; substantially as set forth.

2. A closure comprising a cap member having at the lower edges of its sides an annular projection or beading formed by carrying the metal outwardly and downwardly, a packing-ring within said beading, and a locking-ring member having a lower portion to engage said packing and vertical sides adapted to the sides of said beading, one of said members being formed with locking-tongues to be folded inwardly upon the beading when the packing is compressed therein to effect the sealing and having extensions to form projecting finger-pieces, and said tongues when forced outwardly permitting said packing to free itself from its sealing condition and said cap to be removed; substantially as set forth.

3. A closure comprising a cap having at the lower edges of its sides an annular projection or beading formed by carrying the metal outwardly and downwardly and the said beading having at its lower edges downwardly extending locking-tongues, a packing ring within said beading, and a locking-ring having a lower portion to engage said packing and vertical sides adapted to the sides of said beading, said tongues upon the vertical compression of said packing to effect the sealing being adapted to be folded inwardly against said locking ring for binding the same against the compressed packing, and said tongues when forced outwardly permitting said packing to free itself from its sealing condition and said cap to be removed; substantially as set forth.

4. A closure comprising a cap having at the lower edges of its sides an annular projection or beading formed by

carrying the metal outwardly and downwardly and the said beading having at its lower edges downwardly extending locking-tongues, a packing ring within said beading, and a locking-ring having a lower portion to engage
5 said packing and vertical sides adapted to the sides of said beading, said tongues upon the vertical compression of said packing to effect the sealing being adapted to be folded inwardly against said locking-ring for binding the same against the compressed packing and to leave projecting portions thereof exposed to constitute finger-pieces,
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and said tongues when forced outwardly permitting said packing to free itself from its sealing condition and said cap to be removed; substantially as set forth.

Signed at New York city, in the county of New York and State of New York, this 18th day of December A. D. 15 1906.

JOSEPH V. HULL.

Witnesses:

ARTHUR MARION,
CHAS. C. GILL.