

C. SCHROEDER.
CLOSURE FOR CONTAINING VESSELS.
APPLICATION FILED OCT. 26, 1904.

Fig. 1.

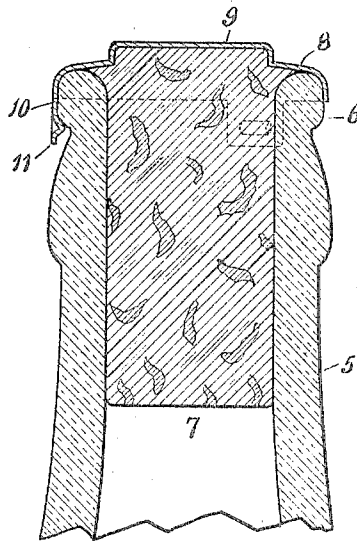


Fig. 2.

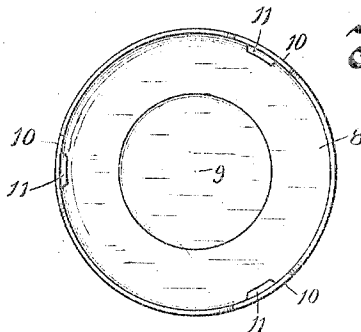


Fig. 3.

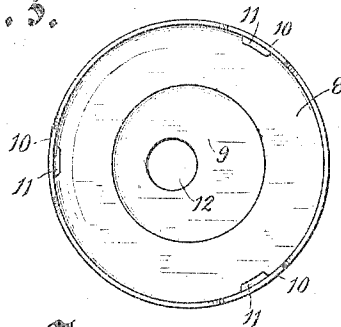
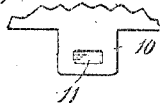


Fig. 4.



Witnesses.

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CLOSURE FOR CONTAINING VESSELS.

No. 797,377.

Specification of Letters Patent.

Patented Aug. 15, 1905.

Application filed October 26, 1904. Serial No. 230,009.

To all whom it may concern:

Be it known that I, CONRAD SCHROEDER, residing in Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented a new and useful Improvement in Closures for Containing Vessels, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

My invention has relation to improvements in closures for containing vessels.

Bottles or containing vessels which are closed by means of a long cork have heretofore been required to have the interior of the neck of the bottle of a particular form—that is to say, the interior of the neck from the open mouth downwardly for a desired distance was required to be of convex form, so as to provide an upper flaring or widened portion, a central narrow or restricted portion, and a lower flaring or widened portion. This has been found necessary for the reason that the cork after being forced into the neck of the bottle will shrink and on account of this shrinkage if it is forced into a straight-neck bottle spaces are left which afford opportunity for the escape of the gas generated by the contents of the bottle or vessel, which of course is very detrimental to the contents. It is for this reason that bottles of the particular construction above described are employed in cases where the closure is to be effected by corking. In bottles of the construction referred to the upper and lower widened portions provide room or space for expansion of the cork, and even though the cork subsequently shrinks there is no opportunity for the escape of gas through the spaces left by such shrinkage, owing to the restricted or choked portion of the bottle-neck which compresses the cork tightly at the point of location of said restricted portion.

A form of stopper known as the "Crown" stopper has come into general use. This stopper consists of a cap having a filling disk or washer, usually of cork, beneath its top and provided at its outer edge with a depending crimped flange, the crimped portion of the flange being adapted to engage beneath a specially-formed external shoulder of the bottle. It is impossible in the art of making bottles to have a special finish or construction for the interior of the bottle-neck and also a special finish or construction for the

exterior of the bottle-neck—that is to say, it would be impossible under ordinary methods to construct a bottle having its interior neck portion of the convex shape heretofore explained and at the same time have a special form of shoulder on the exterior surface of the neck of the bottle, so that one bottle might be closed either by a straight long cork or closed by the so-called "Crown" stopper. In consequence bottles for the so-called "Crown" stoppers, as well as stoppers of a more or less analogous character, are provided with a straight or unfinished interior neck portion and a specially prepared or finished externally-shouldered portion. It is impossible to close bottles of this construction effectually by the ordinary cork stoppers, inasmuch as, as heretofore stated, when the corks shrink spaces are left for the escape of gas. As many customers call for bottles or vessels equipped with the ordinary cork stoppers and others for the bottles equipped with the "Crown" or analogous stoppers, it has been necessary for brewers and others to carry a large quantity of each style of bottle, thereby entailing in many instances a great outlay of money, whereas if only one style of bottle finish could be used for both styles of closures this great expense would be very materially minimized.

It is therefore the primary object of my invention to provide a form of cap or cover which will permit the style of bottle used for "Crown" or analogous stoppers—i. e., the bottle provided with a substantially straight neck portion and a specially-prepared externally-shouldered portion—to be closed not only by the "Crown" and like closures, but also by the ordinary cork closures without the objections being present, which have heretofore been alluded to.

A further object of my invention resides in the improved construction of a cap or cover adapted to be fitted over the cork of a containing vessel or bottle and of such construction that the cork and cap may by the use of a hand corkscrew or by the use of an ordinary cork-pulling mechanism be removed together or simultaneously with but a minimum of trouble.

Still further, my invention has for an object the provision of an improved means for releasably holding the cap or cover to an external shoulder formed on the containing ves-

sel or bottle-neck and intended for use in connection with my improved form of cap or cover, as hereinafter more specifically described.

With the above and other incidental objects in view the invention consists of the devices and parts or their equivalents, as hereinafter set forth.

In the accompanying drawings, Figure 1 is a vertical sectional view, on an enlarged scale, of the upper portion of a bottle equipped with my improved form of closure. Fig. 2 is an under view of the closure or cap removed from the bottle. Fig. 3 is an under view of a modified form of said cap, and Fig. 4 is a view of a fragment of the cap to show clearly the means for releasably locking said cap to the exterior of the bottle-neck.

While the closure illustrated in the accompanying drawings is shown in connection with a bottle, yet it should be understood that it may be applied to any form of containing vessel for liquids or other contents.

Referring to the drawings, the numeral 5 indicates the upper portion of a form of bottle in which the interior of the neck is straight or substantially straight and the exterior of the neck is provided with an annular shoulder 6, the interior of the neck of the bottle being adapted to be closed by means of an ordinary cork 7.

My improved form of closure, as illustrated in Figs. 1 and 2, consists of a cover usually of metal and preferably tin, adapted to be applied over the upper end of the cork 7 and to be secured to the bottle in any desirable manner. This cover or plate is provided with an outer flat portion 8, which is adapted to bear upon the top edge of the bottle-mouth and upon the outer edge of the cork, and a centrally-raised portion 9, which forms a space to accommodate the protruding end of the cork.

In the use of my invention the cork 7 is forced into the bottle-neck, so as to leave the upper end of the cork projecting slightly above the plane of the mouth of the bottle. My improved form of cap or closure is then forced over the bottle-mouth and over the upper end of the cork with the flat outer portion 8 of the cap resting upon the top edge of the bottle-mouth and also upon the outer edge of the upper protruding end of the cork. The cap is then secured in place in any desirable manner. The operation of thus forcing the cap over the protruding end of the cork causes the inclined flat surface 8, in conjunction with the shoulder formed between said surface and the top surface 9, to have a wedging action on the edge of the cork, and thus force said edge firmly against and in close contact with the top of the bottle-mouth, as clearly shown in Fig. 1. After the closure is effected as above described and when the bottle is subsequently subjected to the steam-

ing process the cork under such steaming process is caused to swell. The swelling upwardly is of course resisted by the top 9 of the cap, and consequently such swelling must occur laterally, whereby the space between the inclined top surface 8 and the top of the bottle-mouth is even more completely and tightly filled.

From the above it will be seen that the use of my improved form of cap in connection with an ordinary cork 7 secures a most effective closure, inasmuch as a closure is formed by the cork within the bottle-neck and another closure at the mouth of the bottle by the lateral swelling of the cork. It is therefore evident that even though a subsequent shrinkage of the cork should occur the escape of gases is prevented, as the spreading or swelling of the cork at its outer end, which will fill up the space between the flat portion of the cap and the upper edge of the bottle-mouth, will form an effective closure at that point against the final escape of the gases. In consequence it is not necessary to use a bottle finish in which the interior of the neck of the bottle is of a substantial convex shape, as hereinbefore referred to, and as a result only one style of bottle finish may be kept in stock—viz., a bottle in which the exterior is finished so as to provide an external shoulder and the interior of the neck is unfinished or substantially straight, the said form of bottle being the form used for the so-called "Crown" closure or closures of an analogous character.

In other constructions of caps when the cap is compressed over the cork a straight pressure downwardly is exerted on the cork, and this has a tendency to drive the cork into the bottle-mouth, and hence when shrinkage occurs a loose fit at the outer end of the mouth of the bottle results, which allows the gases to escape. In my construction, however, wherein the cork is spread outwardly in the operation of applying the cap over the cork by pressure, the said outwardly-spread portion of the cork forms a shoulder which rests on the top of the bottle-mouth, and hence acts to resist the tendency of the cork to be forced inwardly. In other forms of construction also when a corkscrew is turned into the cork the said screw has a like tendency—that is to say, to drive the cork into the bottle—and this is also overcome in my construction.

While my improved form of closure or cap is not necessarily limited or restricted to any particular means for holding the same in place over the bottle-mouth, yet I have shown the closure or cap provided with simple means for this purpose and which means may be advantageously employed either in connection with my improved form of closure or cap hereinbefore described or in connection with forms of closures or caps differently constructed. This means consists of

providing the outer edge of the closure or cap with a plurality of depending legs 10. Three of these legs are shown in the accompanying drawings, although, if desired, a continuous depending flange might be employed, or two legs employed, or more than three of the legs used, if deemed advisable. These legs or the flange, as the case may be, are provided with indentations 11, forming inwardly-extending projections. The legs are preferably bent outwardly slightly, and when the cap is adjusted over the bottle-mouth the said legs are forced inwardly by any desirable means. The indentations 11 are so positioned that when the said legs are thus forced inwardly the said indentations will engage beneath the exterior shoulder 6, and thereby securely but releasably hold the closure or cap in position over the bottle-mouth.

In Fig. 3 of the drawings I have shown a modified form of the cap in which the centrally-raised portion 9 is provided with an eccentric opening 12, the eccentricity being such that the opening is located nearer to one of the depending legs than to the others of said depending legs. This opening is provided for the purpose of permitting an ordinary hand-corkscrew or the corkscrew of a cork-pulling mechanism to pass through the cap and engage the cork 7. After the corkscrew is turned into the cork a desired distance the cork and cap can then be removed simultaneously. I am aware that caps or covers adapted to be fitted over a bottle-mouth and over a cork within said bottle-mouth have been provided with openings to permit a corkscrew to pass therethrough and engage the cork. These openings, however, have heretofore been disposed concentrically, with the result that when an upward pull is exerted on the corkscrew for the purpose of pulling the cork the extraction of the cork is retarded by the fact that the depending flange is secured to the exterior of the bottle-neck. Therefore in case of the caps of the character referred to the cork and cap are only removed after considerable difficulty, as the straight upward pull is resisted by the entire fastening means of the cap. In my improved construction, however, wherein the opening is arranged eccentrically and nearer to one of the depending legs the upward pull on the corkscrew is only resisted by the fastening effected by one of the legs, and consequently this leg is very easily unfastened by the upward pull exerted, and with the unfastening of one of the legs the remaining legs are free to be released without difficulty. It will therefore be seen that the particular form of depending legs provided with the indentations adapted to engage under the external shoulder 6 are advantageously employed in connection with my form of cap provided with an eccentrically-located opening.

What I claim as my invention is—

1. A closure for containing vessels, consisting of a device adapted to be releasably secured to the neck of a containing vessel and to cover the mouth of the containing vessel and the outer end of a cork inserted in the neck of said containing vessel, the said device consisting of a cover having an outer flat portion and a centrally-raised portion, the said substantially flat portion adapted to rest on the upper edge of the mouth of the containing vessel and on the outer edge of the top of the cork.

2. A closure for containing vessels, consisting of a device adapted to be releasably secured to the neck of a containing vessel and to cover the mouth of the containing vessel and the outer end of a cork inserted in the neck of said containing vessel, the said device consisting of a cover having an outer substantially flat portion and a centrally-raised portion, the said substantially flat portion inclined inwardly toward the central raised portion, and adapted to rest on the upper edge of the mouth of the containing vessel and on the outer edge of the top of the cork.

3. In a closure for containing vessels, the combination with a containing vessel provided with an external shoulder near the open mouth thereof, of a device adapted to cover the mouth of the containing vessel and the outer end of a cork inserted in the neck of said containing vessel, the said device consisting of a cover having an outer substantially flat portion and a central raised portion, the said outer substantially flat portion adapted to rest on the upper edge of the mouth of the containing vessel and on the outer edge of the top of the cork, and provided at its outer edge with a plurality of depending legs, each leg having an indentation adapted to fit beneath the external shoulder of the containing vessel.

4. In a closure for containing vessels, the combination with a containing vessel, of a cork in the mouth thereof, and a cap fitted over the mouth of the bottle and over the outer end of the cork, the said cap provided with an eccentric opening for the insertion of a corkscrew.

5. A closure for containing vessels, consisting of a device adapted to be releasably secured to the neck of a containing vessel and to cover the mouth of the containing vessel and the outer end of a cork inserted in the neck of said containing vessel, the said device consisting of a cover having an outer substantially flat portion and a central raised portion, the said outer substantially flat portion adapted to rest on the upper edge of the mouth of the containing vessel, and on the outer edge of the top of the cork, and the said central raised portion provided with an eccentrically-disposed opening.

6. In a closure for containing vessels, the combination with a containing vessel provided with an external shoulder near the open mouth thereof, of a device adapted to cover the mouth of the containing vessel and the outer end of a cork inserted in said containing vessel, the said device consisting of a cover having an outer substantially flat portion and a central raised portion, the said outer substantially flat portion adapted to rest on the upper edge of the mouth of the containing vessel, and on the outer edge of the top of the cork, and said substantially flat portion provided at its outer edge with a

plurality of depending legs, each leg provided with means adapted to engage under the external shoulder of the containing vessel, and the central raised portion provided with an eccentric opening so disposed as to be nearer to one of the depending legs than to the others of said legs.

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

CONRAD SCHROEDER.

Witnesses:

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ANNA F. SCHMIDTBAUER.