

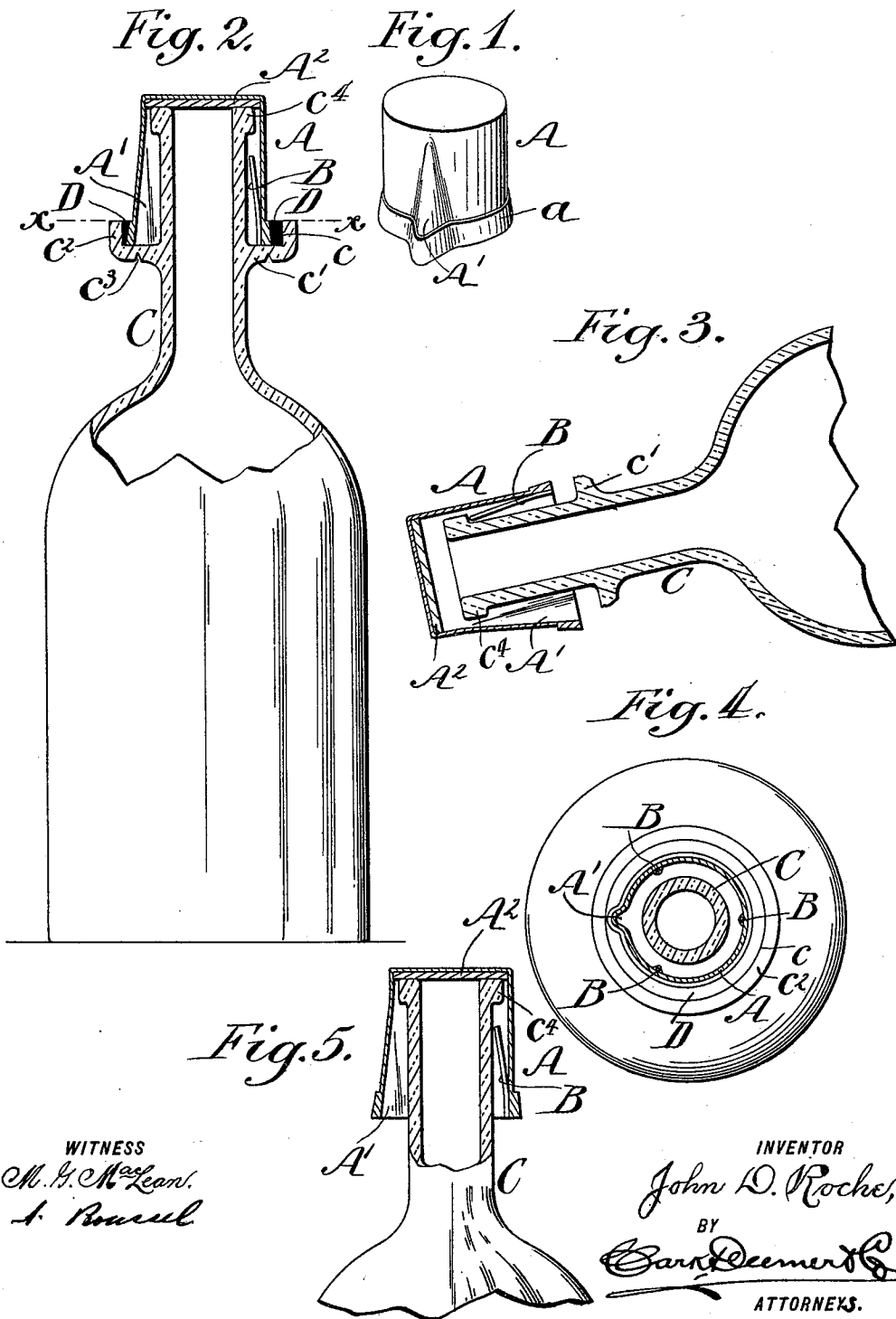
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Patented Aug. 8, 1899.

J. D. ROCHE.
DEVICE FOR CLOSING BOTTLES.

(Application filed Oct. 22, 1898.)

(No Model.)



WITNESS
M. H. McLean.
J. B. Ruel

INVENTOR
John D. Roche,
BY
Carroll Deemer
ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOHN D. ROCHE, OF UNION, HUDSON COUNTY, NEW JERSEY.

DEVICE FOR CLOSING BOTTLES.

SPECIFICATION forming part of Letters Patent No. 630,564, dated August 8, 1899.

Application filed October 22, 1898. Serial No. 694,257. (No model.)

To all whom it may concern:

Be it known that I, JOHN D. ROCHE, a citizen of the United States, and a resident of the town of Union, county of Hudson, and State of New Jersey, have invented certain new and useful Improvements in Devices for Closing Bottles, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof, in which similar letters of reference indicate corresponding parts.

This invention relates to an improved device for closing bottles; and the object thereof is to provide an efficient means for maintaining a bottle in a normally-closed condition, whereby it may be automatically opened for discharge of fluid by the mere act of tilting the bottle, a further object being to provide efficient means for sealing the bottle and for preventing the refilling thereof after its original contents are removed.

The invention will be hereinafter fully described, and specifically set forth in the annexed claims.

In the accompanying drawings, forming a part of this specification, Figure 1 is a perspective view of my improved bottle-closing device. Fig. 2 is a vertical elevation of a bottle shown partly in section and having my improved device connected thereto. Fig. 3 is a similar view showing the bottle tilted in position for discharging fluids therefrom. Fig. 4 is a sectional plan view taken on the line xx of Fig. 2, and Fig. 5 is a vertical sectional elevation illustrating the application of my invention to an ordinary bottle-neck.

In the practice of my invention I employ a cylindrical cap A, composed, preferably, of sheet metal. This said cap is provided with an integrally-formed spout A', adapted for discharging fluid, as will be hereinafter described. Around the lower edge of the cap A is a tapering flange a , and located interiorly of the said cap is a series of springs B. These said springs are normally extended at an angle toward the center of the cap, and they are adapted to contact with the bottle-neck flange to prevent removal of the cap after it is once connected to the bottle-neck. In combination with my said cap I use a bottle having an annular compartment c , formed upon the neck C thereof. This said compartment

comprises an annular ring c' and an upwardly-projected annular flange c^2 , the said parts being formed integrally with each other and with the bottle-neck. An annular groove c^3 is formed in the under surface of the ring c' for the purpose of weakening the structure, whereby the annular flange c^2 can be broken away without injury to the bottle-neck proper. The cap A is preferably supplied upon the inner surface of its top portion with a flexible disk A², composed of cork or other similar material, adapted to coincide with the irregular contour of the bottle-neck outlet.

In applying the device the bottle is first filled through the neck thereof in the ordinary way, after which the cap is forced over the neck thereof into the position illustrated by Fig. 2 of the drawings, thus permitting its springs B to assume their normal shape with their upper ends beneath the flange c^4 of the bottle-neck. Then a filling of cement D is placed between the flange c^2 and the flange a , and after the said cement is hardened it will not be possible to remove the cap without first breaking away the cement, and in order to facilitate the operation of opening the bottle it is simply necessary to break away the flange c^2 , whereby the cap is free to move, as illustrated by Fig. 3 of the drawings.

By the use of this invention it is obvious that the bottle is maintained in a closed condition when it is in an upright position; but the mere act of tilting the same, as illustrated by Fig. 3 of the drawings, causes the cap to move by gravity or by the weight of liquid contained in the bottle into position whereby the said liquid may be discharged through the spout A'. In Fig. 5 of the drawings I have illustrated my improved cap connected to an ordinary bottle-neck, and in this instance it is only used as a means for closing the bottle after the original cork is removed. In this connection it simply affords a means for preventing dust, insects, &c., from entering the bottle-neck.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. As an improvement in bottle-closing devices, a cap slidably mounted upon the neck of a bottle and carrying a series of interiorly-projecting springs, the relative construction

and arrangement being such that the cap is adapted to slide in a longitudinal plane upon the neck portion of the bottle and the limit of projection of the springs is normally at a point some distance below the neck-flange of the bottle, whereby when the bottle is inverted and the cap slides, said springs contact with the under edge of the bottle-neck flange, substantially as and for the purpose set forth.

2. As an improvement in bottle-closing devices, a cap slidably mounted upon the neck of a bottle and provided at its side with a rearwardly-directed spout portion and with a series of interiorly-projecting springs, the relative construction and arrangement being such that the cap is adapted to slide in a longitudinal plane upon the neck of the bottle and said springs contact with the under edge of the bottle-neck flange only when said cap is at the outward limit of its sliding movement, substantially as and for the purpose set forth.

3. A bottle-closing device, consisting of a cap embodying a cylinder closed at its outer end and provided at its side with a rearwardly-directed spout portion, said cap being adapted to be slidably mounted upon the neck portion of a bottle having a neck-flange and being provided with a series of inwardly-projecting contact devices adapted to come into engagement with the neck-flange of the bottle when the cap is at the limit of its outward-sliding movement thereon, substantially as and for the purpose set forth.

4. As an improvement in bottle-closing devices, the combination, with a bottle having an annular recess around its neck portion, of a cap adapted to slidably operate upon the neck of the bottle and having a flange with

an exterior tapering surface at its base, said cap being provided with interiorly-projecting springs adapted to contact with the under surface of the bottle-neck flange only when the cap is at the outward limit of its sliding movement upon the neck, and a cement filling inserted between the tapering surface of the cap-flange and the outer wall of the annular recess and serving to normally retain the cap in secured position, whereby when said cement filling is broken the cap is released for its sliding operation upon the neck, substantially as and for the purpose set forth.

5. As an improvement in bottle-closing devices, the combination, with a bottle having an annular recess around its neck and provided with a groove in the bottom wall of said recessed portion, of a cap adapted to slide in a longitudinal plane upon the neck of the bottle and having a base-flange normally engaging said recess, said cap being provided with interiorly-projecting devices adapted to contact with the under edge of the bottle-neck flange only when the cap is at the outward limit of its sliding movement, and a filling of cement normally securing the cap within the recess, whereby when said recessed portion is broken the cap will be released and permitted to operate in its sliding movement, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 19th day of October, 1898.

JOHN D. ROCHE.

Witnesses:

M. G. MACLEAN,
A. ROUSSEL.