

R. V. LYON.
BOTTLE SEALING DEVICE.
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928,872.

Patented July 20, 1909.

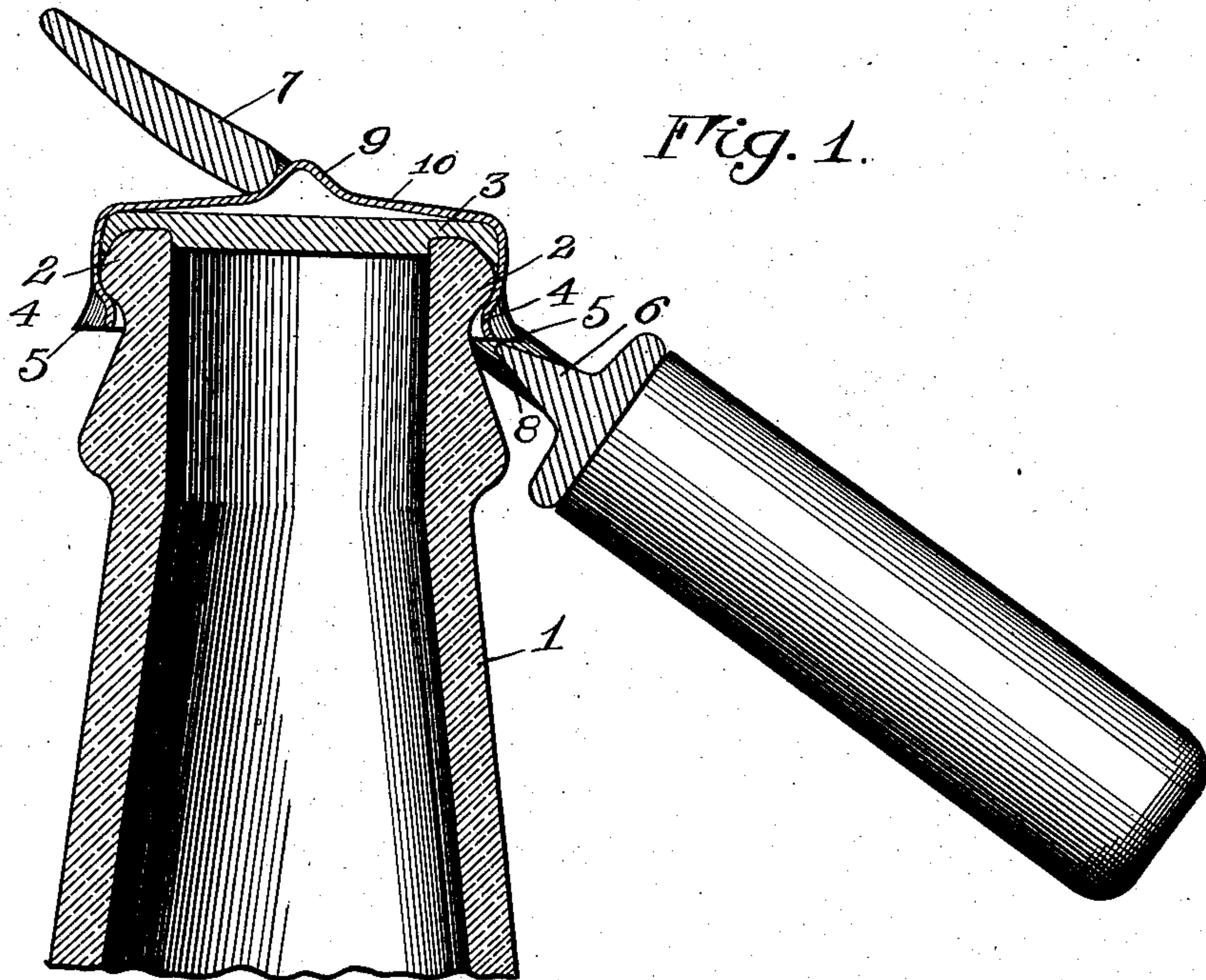


Fig. 1.

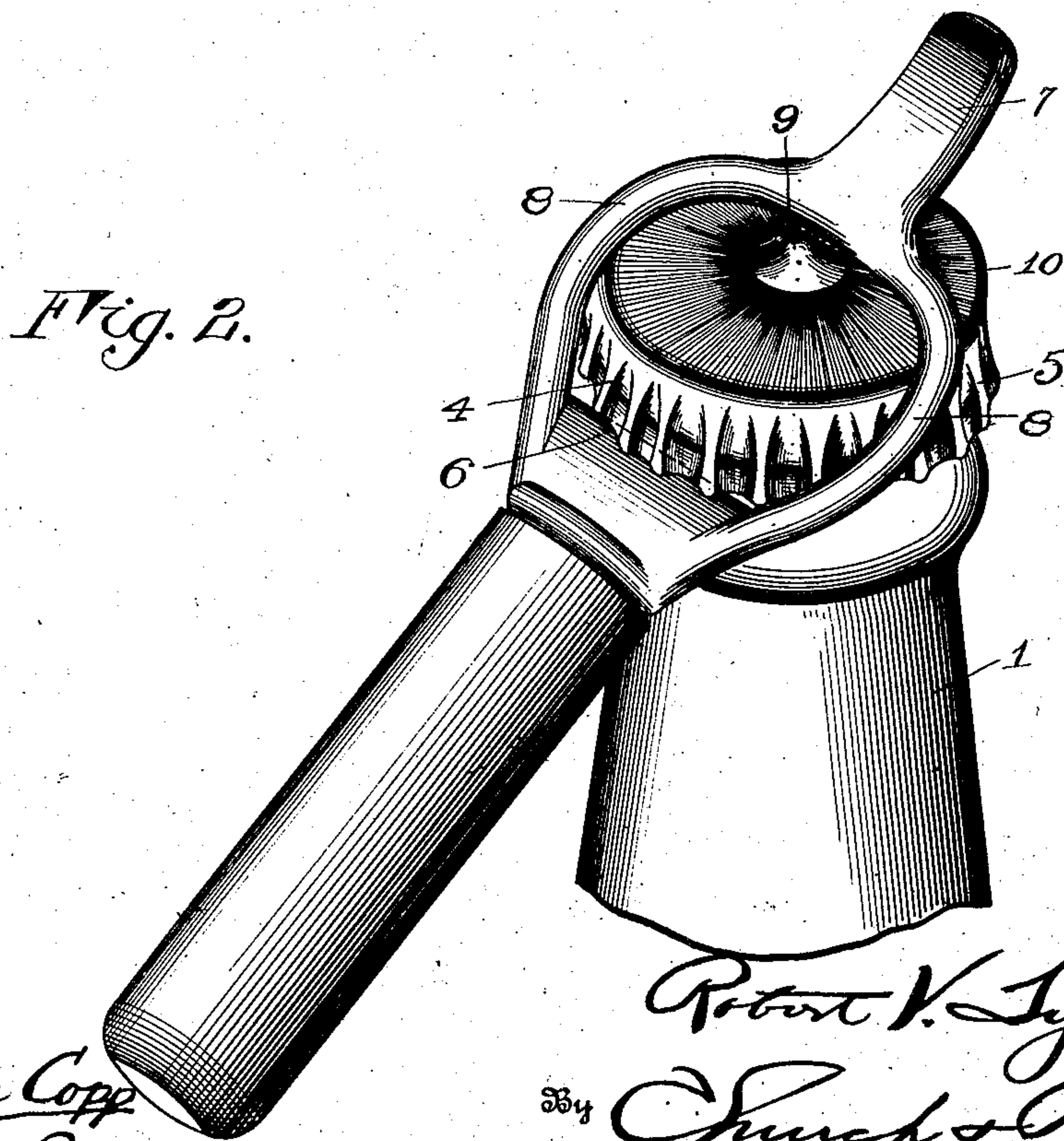


Fig. 2.

Witnesses

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ROBERT V. LYON, OF ROCHESTER, NEW YORK, ASSIGNOR OF ONE-HALF TO JOHN C. BERTRAND, OF ROCHESTER, NEW YORK.

BOTTLE-SEALING DEVICE.

No. 928,872.

Specification of Letters Patent.

Patented July 20, 1909.

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To all whom it may concern:

Be it known that I, ROBERT V. LYON, of Rochester, in the county of Monroe and State of New York, have invented certain
5 new and useful Improvements in Bottle-Sealing Devices; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part
10 of this specification, and to the reference-numerals marked thereon.

The present invention relates to bottle sealing devices of the type in which a cap is employed and is secured to the exterior of the
15 bottle for holding a sealing material in firm contact with the walls of the mouth of the bottle; and an object of this invention is to make provision on the cap whereby a removing tool of the kind cooperating with the cap
20 retaining means and the upper surface of the cap, may be effectively engaged with the latter to prevent accidental slipping of the tool and injury to the hands of the operator.

To this and other ends the invention consists in certain improvements and combinations of parts all as will be hereinafter more
25 fully described, the novel features being pointed out in the claims at the end of the specification.

30 In the drawings: Figure 1 is a vertical section of the upper portion of a bottle with the improved sealing device thereon; a tool being shown in section to illustrate the operation of the invention; and Fig. 2 is a perspective
35 view of the sealing device and the removing tool cooperating therewith.

Referring more particularly to the drawings, 1 indicates a portion of a bottle which has an exterior annular shoulder 2 about its
40 upper end. A sealing device or disk 3 preferably in the form of yielding material such as cork rests upon the upper edge at the mouth of the bottle and is preferably carried within and covered by a cap that may be
45 made from sheet material such as sheet metal.

The cap has projecting downwardly from its periphery a retaining device which preferably consists of an annular flange corrugated at its edge, the depressed portions 4 of
50 the corrugations being engaged with the shoulder 2 on the bottle and the elevated portions 5 being adapted for engagement by a removing tool.

The removing tool which is most generally
55 employed for detaching caps of this type from the bottles is in the form of two substantially straight portions 6 and 7 connected at their ends by arms 8 to form a loop. In removing the cap the portion 6 is engaged
60 beneath the elevated portions of the retaining flange, and the portion 7 is engaged with the top of the cap near or at its center in order to provide a wide bearing surface, and to prevent the tilting of the tool, the top being sub-
65 stantially flat and smooth or continuous in order that the tool may be engaged therewith at any point on its periphery.

While the smooth upper surface of the cap has the advantage mentioned, it also has the
70 disadvantage that the tool is liable to and often does slip and in many instances cause a hand of an operator of the tool to engage the retaining flange in a manner to injure the
75 hand. To overcome this slipping of the tool there is provided in this invention an element arranged centrally of the top and of such a size as to leave the greater portion of the top clear for engagement by the portion
80 7 of the tool. In this instance this element is in the form of a cone shaped projection 9 with smooth external walls extending upwardly from the top of the cap, providing a
85 smooth or continuous wide and substantially flat annular surface or disk portion 10 extending from the base of the projection to the periphery. The diameter of the base of the projection is such that the annular portion extends over and supports the greater
90 portion of the sealing material that is exposed to internal pressure within the bottle. This arrangement not only permits the sealing material to be supported efficiently by the flat portion when the projection is struck
95 up and made hollow as shown, but the bar 7 of the cap removing device may be caused to engage the cap substantially at the center. To secure a projection of sufficient
100 height without destroying or breaking the metal of the cap during the stamping or pressing operation it is desirable that the smooth annular portion about the projection be very slightly inclined from the periphery of the cap to the base of the projection as shown in Fig. 1. Internal pressure
105 will force the sealing material against the flat portion before the sealing material will be ruptured.

In removing the cap the tool is placed on the periphery so that the bar 6 engages beneath the retaining flange and the bar 7 engages on the opposite side of the projection 5
 9. Upon upward pressure on the handle of the tool the bar 7 rides downwardly on the projection to engage the top 10 and to draw the bar 6 farther beneath the retaining flange, thus effectively locking the tool to the cap. A further upward movement of the tool removes the cap.

A sealing device constructed in accordance with this invention costs no more than devices now on the market and at the same time it positively prevents slipping of the removing tool, thus insuring the operator against injury and permitting the cap to be removed more quickly.

I claim as my invention:

20 1. The combination with a bottle having a head provided with an exterior annular shoulder, and a sealing disk resting upon the upper edge of the bottle, of a cap covering the sealing disk and embodying a cone 25
 shaped projection with smooth external walls, a substantially flat wide annular disk portion extending from the base of the projection to the periphery of the cap and supporting the greater portion of the sealing 30
 disk, and a retaining flange extending downwardly from the periphery of the cap into engagement with the exterior annular shoulder of the bottle.

35 2. The combination with a sealing element, of a cap for the same provided with a downwardly extending retaining flange, a centrally arranged cone shaped projection having smooth external walls, and a sub-

stantially flat disk portion extending from the base of the projection to the periphery. 40

3. The combination with a sealing disk, of a cap for covering the same having a retaining flange extending downwardly therefrom, an anti-slipping element arranged centrally of the top of the cap and having a 45
 smooth inclined wall to be engaged by a removing tool to draw the latter beneath the retaining flange, the top surface of the cap between said element and the periphery being annular and substantially flat to provide a firm bearing surface for the tool. 50

4. The combination with a sealing disk, of a cap covering the same and provided with a downwardly extending retaining flange, with a centrally arranged cone shaped 55
 projection having smooth external walls, and with a wide substantially flat surface on its top extending from the projection to the flange, the width of said surface being such that the greater portion of the sealing disk 60
 is supported thereby against internal pressure with a bottle to which the device is secured.

5. The combination with a sealing disk, of a cap covering the same made from sheet 65
 metal and embodying a struck up central cone-shaped portion with smooth external walls, a wide substantially flat disk portion extending from the base to the periphery and a retaining flange extending downwardly at the periphery and provided with corrugations. 70

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Witnesses:

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