

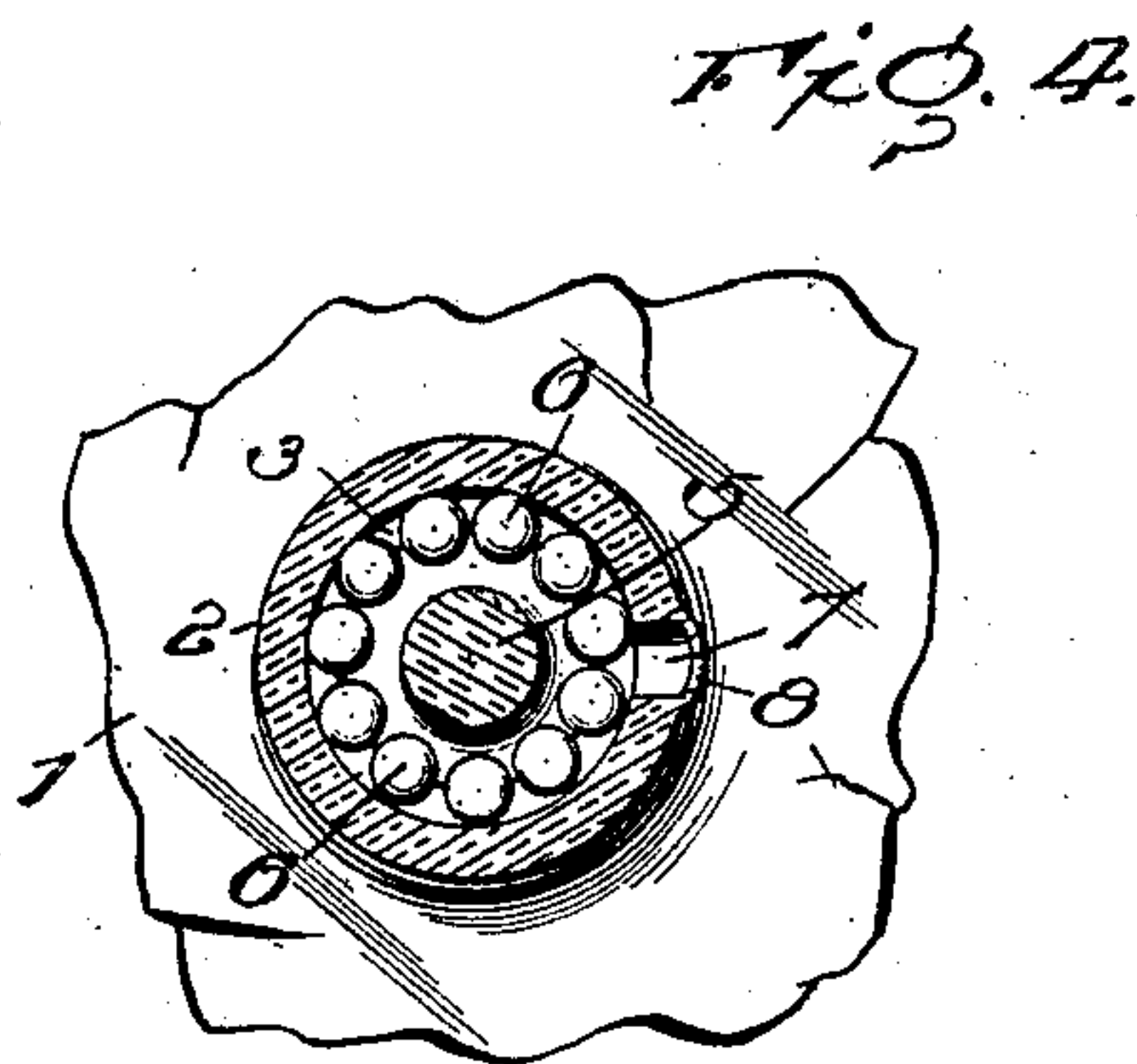
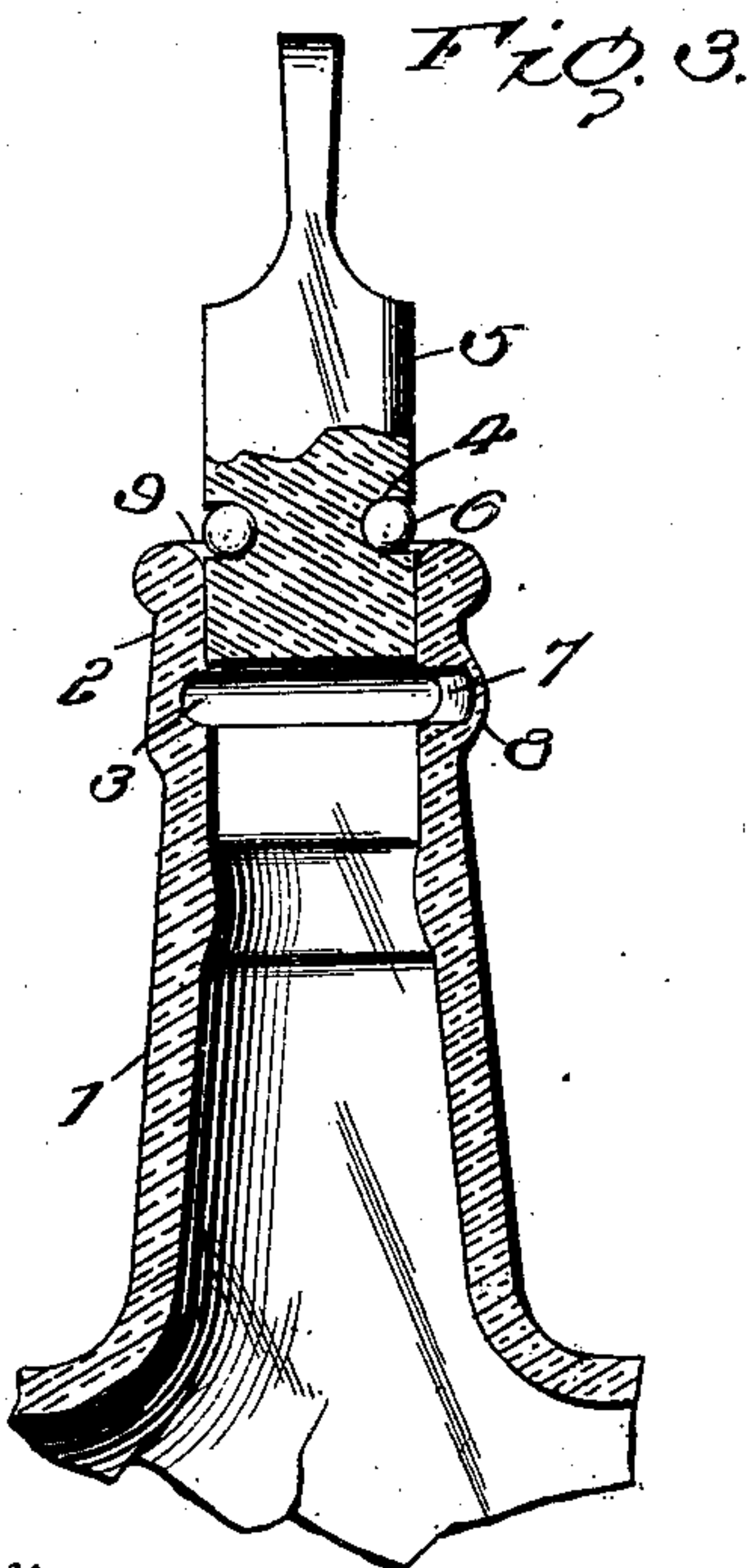
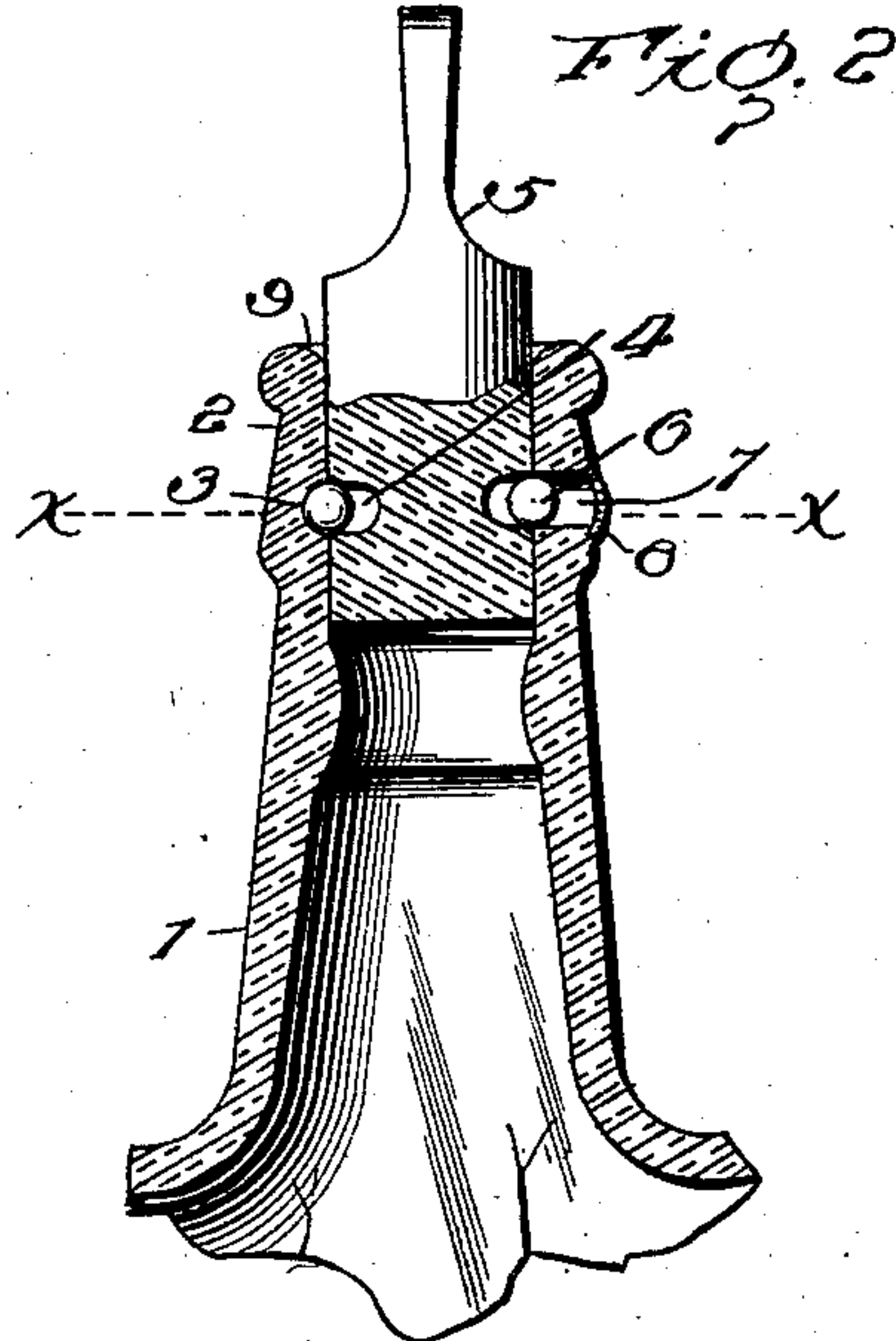
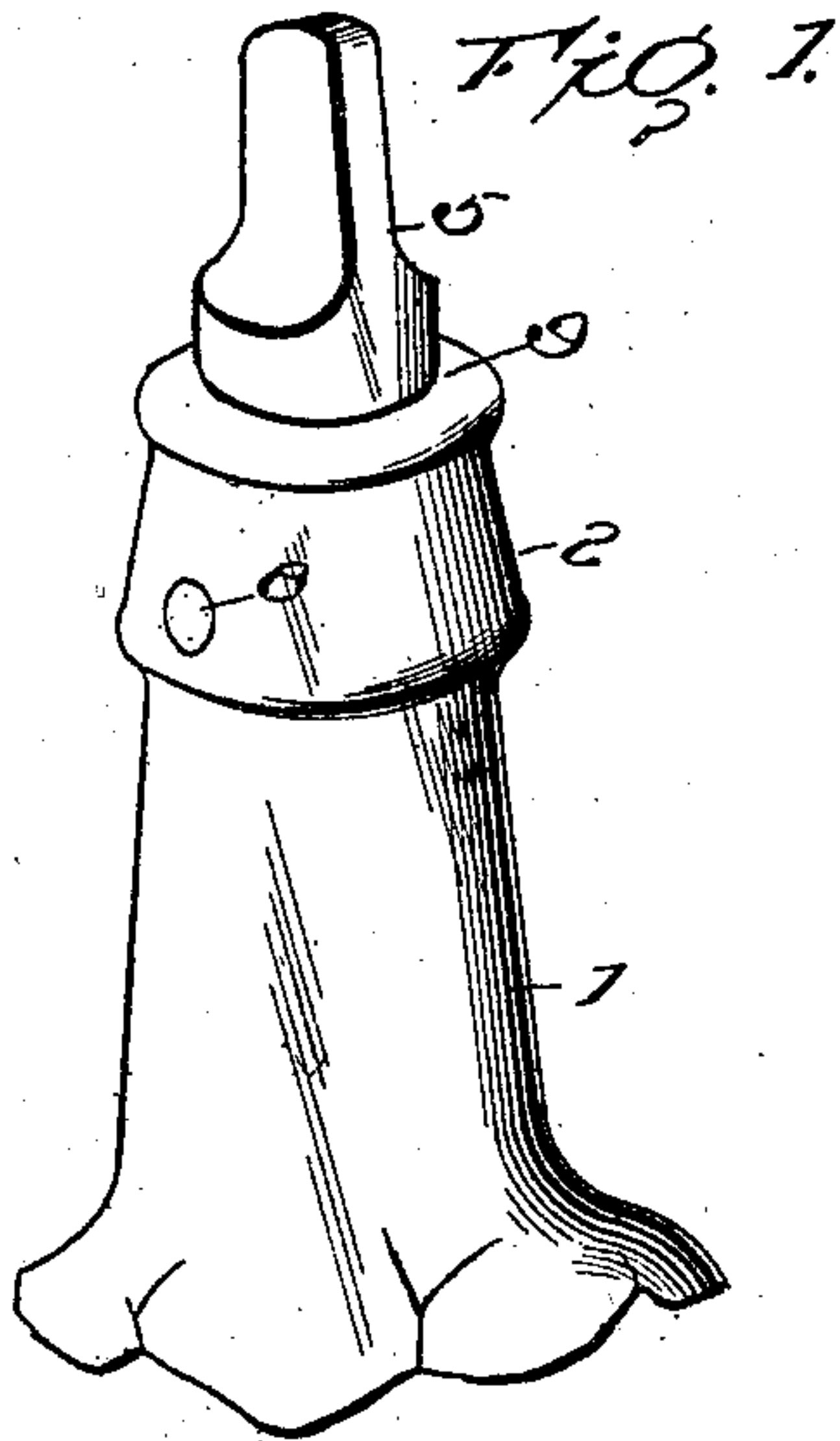
No. 734,323.

PATENTED JULY 21, 1903.

W. HARRISON.
BOTTLE CLOSURE.

APPLICATION FILED APR. 25, 1903.

NO MODEL.



Witnesses

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UNITED STATES PATENT OFFICE.

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BOTTLE-CLOSURE.

SPECIFICATION forming part of Letters Patent No. 734,323, dated July 21, 1903.

Application filed April 25, 1903. Serial No. 154,345. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM HARRISON, a citizen of the United States, residing at Redhouse, in the county of Putnam and State of West Virginia, have invented certain new and useful Improvements in Bottle-Closures, of which the following is a specification.

This invention provides novel locking means for bottle-closures to prevent opening of the bottle or like package without rendering detection possible by the average person exercising ordinary diligence and care.

In accordance with this invention the neck of the bottle or like receptacle is provided with an inner groove. The stopper or closure has a mating groove and balls to enter the space formed by the grooves when in register and project across the joint formed between the closure and bottle-neck to prevent removal of the said closure. A portion of the bottle-neck is weakened, so as to be readily broken to provide a passage leading from the annular space for the escape of the balls, said opening indicating that the seal has been broken and the bottle tampered with.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and drawings hereto attached.

While the essential and characteristic features of the invention are susceptible of modification, still the preferred embodiment of the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of the upper portion of a bottle having its stopper or closure locked against removal by means involving the invention. Fig. 2 is a vertical central section of the parts shown in Fig. 1. Fig. 3 is a view similar to Fig. 2, showing the stopper or closure after the balls have been fitted in the groove thereof and just prior to pressing it into the neck of the bottle. Fig. 4 is a section on the line X X of Fig. 2.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The numeral 1 represents the body of the bottle or other receptacle provided with a clo-

sure embodying the invention. The neck 2 of the bottle is provided upon its inner side with groove 3, adapted to match with corresponding groove 4, formed in the outer side of stopper or closure 5. The matching grooves 3 and 4 provide an annular space in which a series of balls 6 are located, same constituting the locking means whereby the stopper or closure is held in place when properly fitted within the neck of the bottle or receptacle. The groove 3 is deepened at a point in its circumferential length to form a recess 7 to constitute a passage for the escape of the balls 6. The outer end of depression 7 is exceedingly thin and is outwardly bulged to form a protuberance, as shown at 8, which when broken off provides an unobstructed passage for the escape of the balls or lock elements 6.

Stopper or closure 5 is constructed of some such material as glass, porcelain, earthenware, metal, or plastic composition molded into shape. Groove 4 in the outer side of stopper or closure 5 is deeper than groove 3, and its walls flare slightly in an outward direction to compel balls 6 to enter and remain in groove 3 under all conditions, so as to provide certain and positive locking means between the stopper and bottle-neck. Groove 3 is of a depth approximating one-half the diameter of the lock-balls 6, so as to hold the latter projected across the joint formed between parts 2 and 5, whereby movement of the stopper either inward or outward is prevented. Groove 4 is of a depth corresponding to the diameter of lock-ball 6 to admit of the latter entering the groove and occupying a position within the circumference of stopper or closure 5 when passing the latter into the neck 2 of the bottle.

The bottle or receptacle is filled in the usual manner and is sealed by inserting stopper 5 in neck 2 to a point to bring groove 4 about in the plane of the upper end of neck 2, as shown most clearly in Fig. 3. The inner wall of neck 2 flares slightly at its upper end, as shown at 9, to provide, with the lower wall of groove 4, a channel for reception of lock-balls 6, and after the latter have been placed in position, as shown in Fig. 3, the stopper or closure is pressed into the bottle, and when groove 4 registers with groove 3 the balls

move outward and enter the latter groove and lock the stopper or closure against casual displacement. To open the bottle, protuberant portion 8 is broken off and the bottle tilted to
 5 cause the balls to escape through opening 7, after which stopper or closure 5 may be withdrawn, as will be readily comprehended.

Having thus described the invention, what is claimed as new is—

10 1. In combination, a bottle or like receptacle having an annular groove formed in the inner wall of its neck and having said inner wall outwardly flared at the upper end of the neck, a closure having a corresponding
 15 annular groove of greater depth than the groove of the bottle-neck, and balls fitted into the annular space formed by the matching annular grooves to form locking means for the closure, said balls being retained in place
 20 when inserted into the annular groove of the closure by the flared end of the bottle-neck when placing said balls in position prior to pressing the closure into the neck of the bottle, substantially as specified.

25 2. In combination, a bottle or like receptacle having an annular groove in its inner wall and a depression in communication with said groove to form a weak point to be broken

through to form an outlet, a closure having an annular groove to register with the groove 30 of the bottle-neck, and balls fitted into the matching grooves and constituting locking means between the closure and bottle-neck, said balls being adapted to be discharged through the opening formed by the aforementioned depression in the neck of the bottle, substantially as set forth. 35

3. In combination, a bottle or receptacle having an annular groove formed in the inner wall of its neck and having a depression 40 in communication with said groove and terminating in a protuberance upon the outer side of the bottle-neck to be broken off to form an outlet, a closure having a corresponding annular groove, and balls fitted in the annular space formed by the matching grooves 45 of said closure and bottle-neck and adapted to be discharged through said outlet to effect a release of the closure, substantially as set forth. 50

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

WILLIAM HARRISON. [L. S.]

Witnesses:

LUCY HARRISON,

W. G. HARRISON.