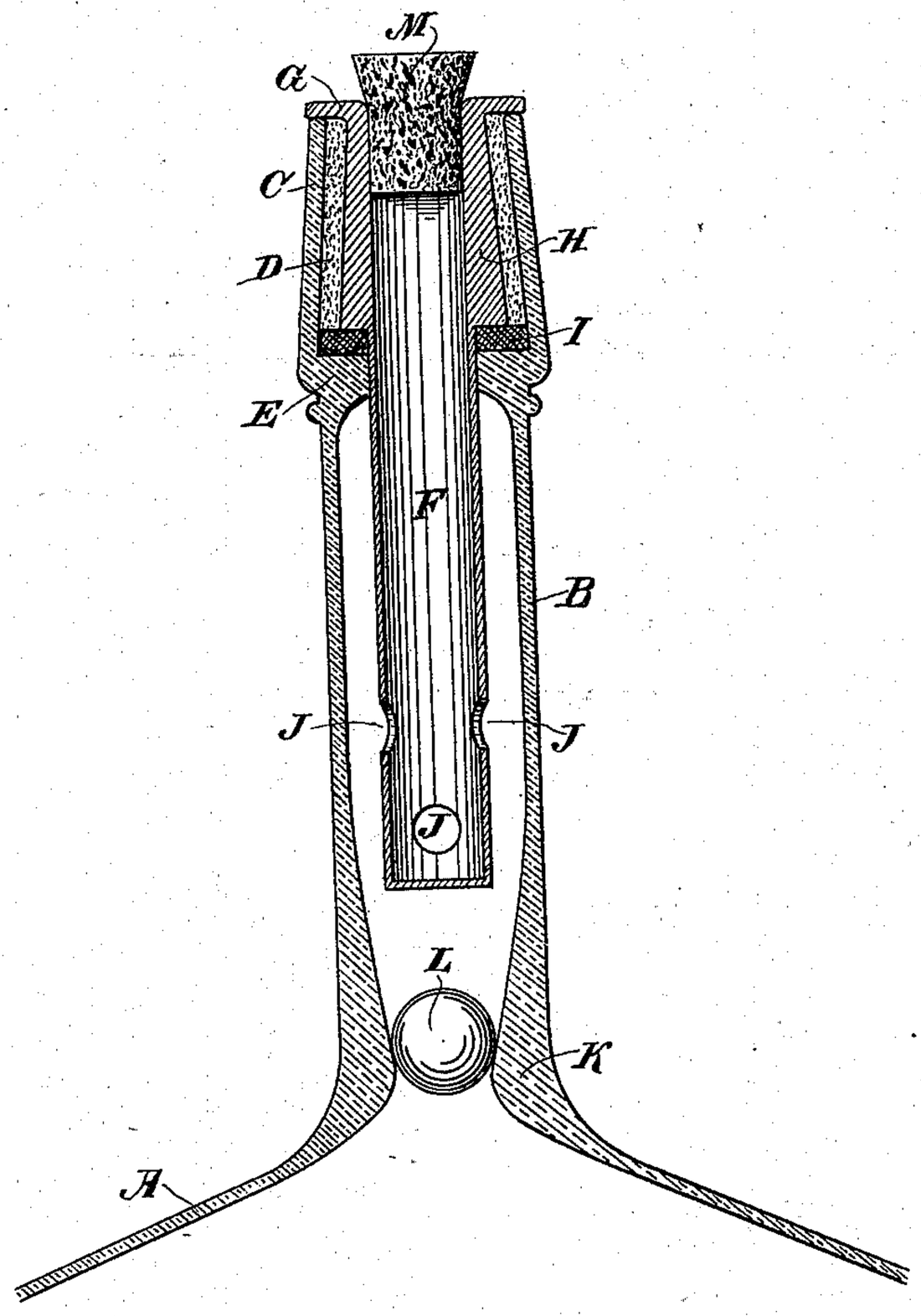
(No Model.)

W. D. EITEL.

BOTTLE SEAL.

No. 559,520. Patented May 5, 1896.



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UNITED STATES PATENT OFFICE.

WILLIS D. EITEL, OF SAN JOSÉ, CALIFORNIA.

BOTTLE-SEAL.

SPECIFICATION forming part of Letters Patent No. 559,520, dated May 5, 1896.

Application filed November 12, 1895. Serial No. 568,683. (No model.)

To all whom it may concern:

Be it known that I, WILLIS D. EITEL, a citizen of the United States, residing at San José, county of Santa Clara, State of California, have invented an Improvement in Bottle-Seals; and I hereby declare the following to be a full, clear, and exact description of the same.

The object of my invention is to provide a seal or safety device for bottles and packages whereby it will be impossible to refill such packages after they have once been emptied.

It consists in certain details of construction which will be more fully explained by reference to the accompanying drawing, in which the figure is a vertical section taken through the neck of the bottle, showing my invention.

A is a bottle or package of any desired form. In the present case I have shown an ordinary bottle having a neck B and a top C, the inside of which is chambered out, as shown at D. This chamber is made narrowest at the top and expands so as to be of considerably greater diameter at the bottom, terminating in a seat E, which is formed when the bottle is made, with a central opening of sufficient size to receive a tube F. This tube may also be made of glass or other suitable material and of sufficient length so that the cylindrical lower portion extends down into the neck B of the bottle, fitting approximately the hole in the seat E. The upper portion of this tube is formed into a flat annular disk or flange G, which is adapted to fit down upon the top of the head C when the bottle has been closed. From this part G the sides are made divergent and thickened gradually toward the bottom, as shown at H. This portion is made approximately of the same shape as the interior of the head C—that is, diverging from the top downwardly—and the lower part of H is of sufficient diameter to allow it to pass in through the top of the head C, and when the tube has been pushed in until the flange G rests upon the top of the head C the base of the enlargement H will rest upon the washer I, which is fitted upon the seat E, and has a central hole which allows the tube F to be pushed down through it.

The lower end of the tube F is closed and at points on its sides are made holes J, sufficient in number and diameter for the escape of the contents of the bottle when it is tilted.

At the point where the neck B joins the body A of the bottle, or below the bottom of the tube F, the interior of the neck is contracted, as shown at K, and this contracted portion is adapted to receive a ball L and prevent its falling into the bottle.

The space between the ball L and the bottom of the tube F is sufficient so that when the bottle is tilted the ball will roll up against the bottom of the tube and the liquid in the bottle and pass around the ball and escaping through the holes J will pass out through the interior of the tube F.

The manner of sealing the bottle is as follows: The bottle is first filled with whatever its contents consist of, and the ball L is then dropped down into the contracted portion K, the opening in the seat E being of sufficient diameter for this purpose. The tube F is then pushed down through the contracted seat and the washer I, and before the flange G reaches its seat upon the top of the head C plaster-of-paris or other cement which will permanently set or harden is poured into the annular conical space between the interior of the head C and the exterior of the corresponding conical portion H of the tube. The tube is then pushed down to its seat, forcing out any surplus of the cement until the flange G rests upon the top of the head C. The cement will then set or harden, and it will be impossible to again remove the tube F without breaking the bottle. The opening in the top of the tube F is stopped in the usual manner by a cork M, which is removed whenever the contents are to be poured from the bottle.

It will be seen from this construction that it is impossible to remove the tube on account of the conically-shaped body of cement which surrounds its conical upper end and locks it within the conical chamber in the head.

It is impossible to introduce any wire or other tool through the tube F, because the openings J are at right angles and the bottom of the tube is closed.

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

1. A bottle having a neck the upper end of which is provided with a conical chamber diverging from the top downwardly, and terminating in a seat provided with a central opening, a tube to be seated in said neck, having a thickened upper end with divergent sides to enter the chamber and leave a circumscribing space, said thickened portion forming a shoulder adapted to rest upon the seat at the base of the chamber, with a downward perforated extension of reduced diameter to fit the central opening of said seat, a filling of cement in the space between the thickened end of the tube and the walls of the chamber, an annular flange or disk at the top of the tube to extend over the filling and rest upon the top edge of the neck, and a ball or valve in a chamber in the neck of the bottle.

2. A bottle having a neck, a head at the upper end of the neck with an interiorly-enlarged chamber and a centrally-perforated seat at the lower end of said chamber, a hollow tube closed at the lower end having perforations in the sides adapted to pass through said seat so that the openings lie within the bottle-neck, a thickened diverging section at the upper end of the tube corresponding in shape with the interior of the chamber in the head, an outwardly-projecting flange upon the upper end of the tube adapted to fit upon the top of the head when the base of the thickened portion fits upon the seat within, a filling of permanently-hardening cement between the interior of the head and the exterior of the thickened portion of the tube, and a seat formed in the bottle-neck below the lower closed end of the tube with a ball fitting said seat so as to form a closure when the bottle is upright, and movable away from the seat to allow the contents of the bottle to flow around it and into the openings in the sides of the tube when the bottle is tilted.

In witness whereof I have hereunto set my hand.

WILLIS D. EITEL.

Witnesses:
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