

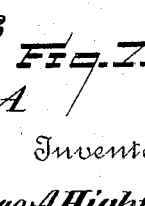
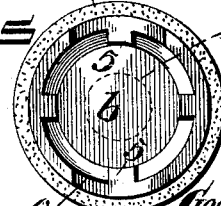
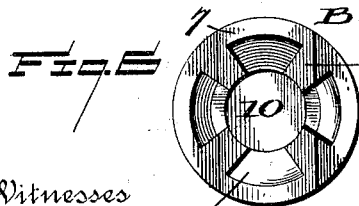
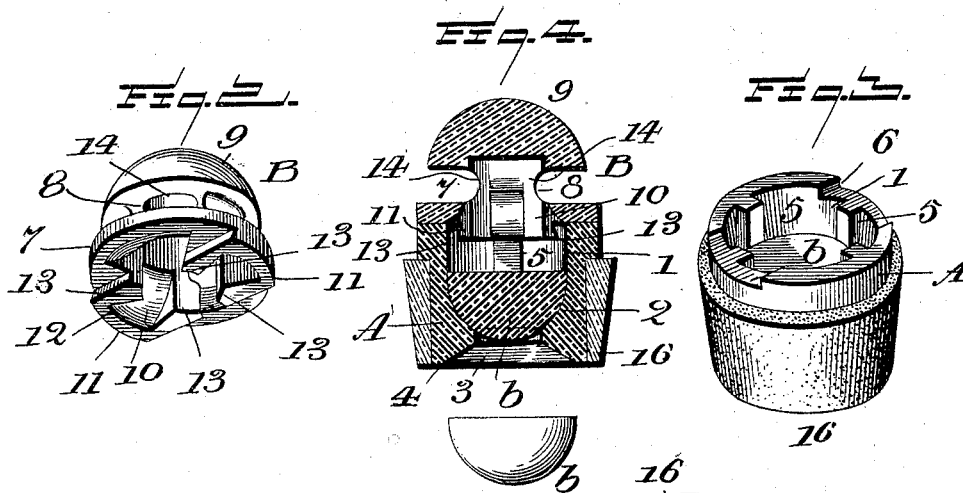
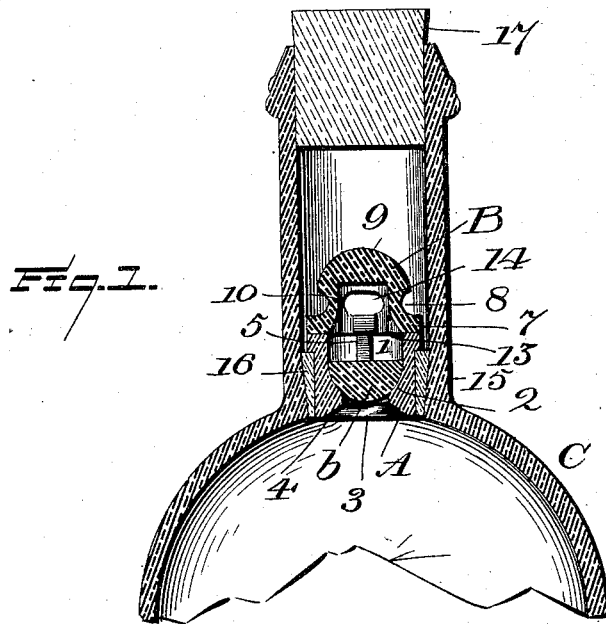
No. 646,988.

Patented Apr. 10, 1900.

G. A. HIGHFIELD.
BOTTLE STOPPER.

(Application filed Aug. 2, 1899.)

(No Model.)



Witnesses
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UNITED STATES PATENT OFFICE.

GEORGE A. HIGHFIELD, OF SCRANTON, PENNSYLVANIA.

BOTTLE-STOPPER.

SPECIFICATION forming part of Letters Patent No. 646,988, dated April 10, 1900.

Application filed August 2, 1899. Serial No. 725,876. (No model.)

To all whom it may concern:

Be it known that I, GEORGE A. HIGHFIELD, a citizen of the United States, residing at Scranton, in the county of Lackawanna and State of Pennsylvania, have invented certain new and useful Improvements in Bottle-Stoppers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improved bottle-stopper designed for use with the ordinary bottle, the stopper being of such construction as to render the bottle when introduced therein non-refillable.

The invention will first be described in connection with the accompanying drawings and then pointed out in the claims.

Figure 1 of the drawings is a broken vertical sectional view of a bottle of ordinary construction provided with my improved stopper. Fig. 2 is an enlarged perspective view of the cap of the stopper viewed from the underside. Fig. 3 is an enlarged perspective view of the valve-cup of the stopper, showing it encircled by a thin band of cork. Fig. 4 is an enlarged vertical sectional view of the stopper complete. Fig. 5 is a view in elevation of the valve for the stopper. Fig. 6 is a bottom plan view of the cap. Fig. 7 is a top plan view of the valve-cup, the valve being in place therein.

Referring to the drawings, my improved stopper comprises two parts or sections—a valve-cup A and a cap B—each preferably constructed of glass or other suitable material.

The valve-cup A is cylindrical in shape and hollow for a portion of its depth, the inner wall 1 of this hollow portion being practically vertical for a portion of its length and then rounded, as at 2, to form a seat for a valve b, which latter comprises a solid semispherical block adapted to snugly fit seat 2, as shown in Fig. 4. Directly beneath the valve-seat the cup is formed with an opening 3, communicating with the hollow portion of the cup and serving to permit the passage of the contents of the bottle, the lower edge of opening 3 being flared, as at 4, Fig. 4, for an obvious

purpose. The wall 1 of the cup is provided with four or more ribs 5, arranged vertically at equidistant points and extending from the valve-seat upward to the upper edge of the cup. These ribs are so positioned and of such size as to just permit the upper edge of valve b to pass between them, thus maintaining the valve upright in operation and insuring its proper return to its seat. The upper edge of the cup is formed with two diametrically-opposite dovetailed recesses 6 for securing the cap to the cup, as hereinafter described.

The cap B comprises a flat base-plate 7 and a hollow neck 8, rising therefrom, the latter being preferably headed or enlarged at the upper end, as at 9. The base, which is formed with a central opening 10, is provided on its under side with dovetailed projections 11, which are adapted to slide laterally into and engage the recesses 6 on the cup A, thus securing the cap and cup together. The projections 11 and also the base-plate on each side of the projections are formed with flaring openings 12, which communicate with the opening 10 in the base-plate and with the interior of the neck 8, serving to permit the contents of the bottle to pass around the valve b when the latter is unseated. The projections 11 are of such size that their inner ends will lie above the body of the valve b when the parts are assembled, thus serving as a limit for the movement of the valve when the latter is unseated in pouring the contents of the bottle. The neck 8 just below head 9 is formed with diametrically-opposite openings 14, serving to permit the contents of the bottle to pass into the bottle-neck when desired to pour from the bottle.

My stopper is designed for use with an ordinary bottle C, into the neck 15 of which the stopper is to be inserted. The cup A is first encircled by a thin band of cork 16 and the parts of the stopper assembled, when the stopper is driven down into the neck of the bottle until its lower edge is on a plane, or practically so, with the junction of the neck and body of the bottle, as shown in Fig. 1. After filling the bottle and inserting my improved stopper, as above described, the upper end of the bottle is closed by the ordinary shipping-cork 17 in the usual manner.

It will be evident from the above description and the drawings that the construction of my improved bottle-stopper will effectually prevent the refilling of the bottle after it has been emptied; also, that the swelling of the cork band 16 will prevent the withdrawal of the stopper for any purpose.

From my improved manner of securing the cap and valve-cup together it will be apparent that when the stopper has been inserted into the bottle-neck the parts cannot be separated even if the cap were accessible to the hand, for in order to separate the cap and valve-cup a lateral movement of the two parts must be used, and this movement is prevented by the inner surface of the bottle-neck. I have thus constructed an easy and convenient means for securing the cap and valve-cup removably together and yet prevent any separation of the parts when the stopper is in the operative position—an advantage not possessed by any of the bottle-stoppers with which I am familiar.

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

1. In a bottle-stopper, a valve-cup with a valve-seat, a valve for the seat loosely placed in the cup, and means formed in the cup for guiding the valve in operation, the upper edge of the cup being formed with dovetail recesses, and a cap for the valve-cup, said cap being formed with dovetail projections adapted to slide laterally into and engage the dovetail recesses in the cup, whereby the cap and

valve-cup when secured together cannot be separated except by lateral movement.

2. In a bottle-stopper, a valve-cup formed with a valve-seat, a valve for the seat loosely placed in the cup, and ribs projecting vertically above the valve-seat for guiding the valve in operation, the upper edge of the cup being formed with dovetail recesses, a cap for the valve-cup, said cap being formed with dovetail projections adapted to slide laterally into and engage the recesses in the cup, and means for limiting the movement of the valve when being unseated.

3. The combination, with a bottle, of a stopper therefor, said stopper being adapted to be inserted into the neck of the bottle at its junction with the body, and comprising a valve-cup adapted to contain a valve and formed with means for guiding the valve in its movement, the upper edge of the cup being formed with dovetail recesses, and a cap for the valve-cup, said cap being formed with dovetail projections adapted to slide laterally into and engage the recesses in the cup, and means serving as a stop for limiting the movement of the valve in one direction, the cap being formed with an opening in communication with the interior of the valve-cup and with the neck of the bottle.

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

GEORGE A. HIGHFIELD.

Witnesses:

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