

(No Model.)

C. N. BRISCO.
BOTTLE STOPPER.

No. 525,883.

Patented Sept. 11, 1894.

FIG. 1.

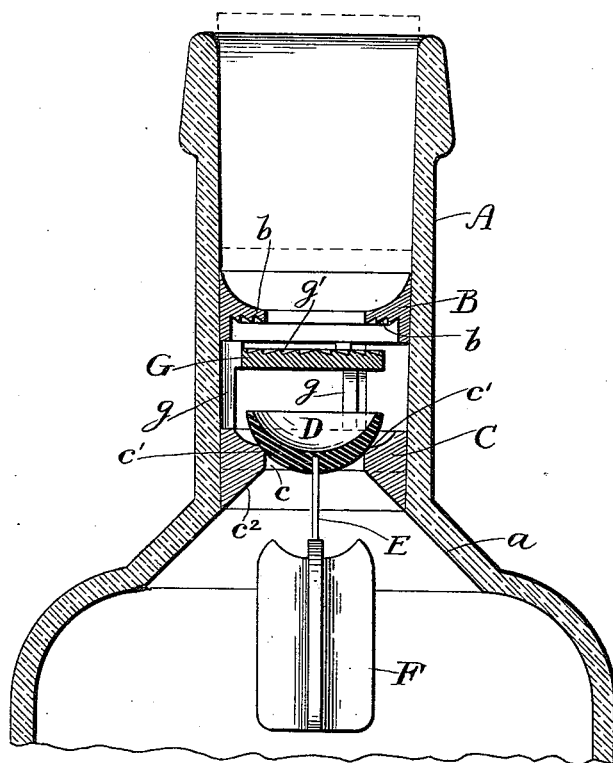


FIG. 2.

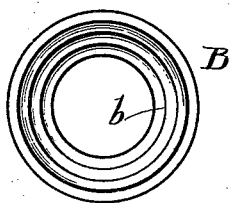


FIG. 3.

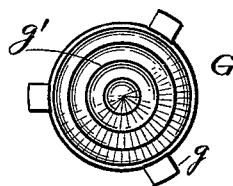


FIG. 4.



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CHARLES N. BRISCO, OF CHICAGO, ILLINOIS.

BOTTLE-STOPPER.

SPECIFICATION forming part of Letters Patent No. 525,883, dated September 11, 1894.

Application filed May 18, 1894. Serial No. 511,646. (No model.)

To all whom it may concern:

Be it known that I, CHARLES N. BRISCO, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Bottle-Stoppers, of which the following is a specification.

The present invention relates to that class of automatically operating stoppers for bottles which will permit the contents of the bottle to be discharged and yet effectually prevent the refilling of the bottle.

One feature of the invention relates particularly to that species of stopper of the class named in which the valve is held seated by a weight connected to it by a flexible device, and adapted when the bottle is tipped to come in contact with a portion which flares inward from the valve-seat. In this species of stopper as heretofore constructed, the inward flaring portion has been formed directly upon the inner side of a ring which is secured in the neck of the bottle, and upon which the valve-seat is formed. It is found in practice that in some instances this ring does not provide a flaring portion of ample extent, and the object of this feature of the invention is to make provision for a flaring portion of any necessary extent.

Another object of the invention is to provide a stopper of the class named with means for preventing the insertion of a wire for the purpose of holding the valve unseated and thus enabling the refilling of the bottle.

To these ends the invention consists in the features of novelty that are particularly pointed out in the claims hereinafter, and in order that it may be fully understood I will describe it with reference to the accompanying drawings, which are made a part hereof, and in which—

Figure 1 is a vertical central section of a bottle and stopper embodying the invention. Figs. 2, 3 and 4 are detail views of the parts thereof.

In the drawings A represents the neck of a bottle which preferably flares outward to a slight extent, and B and C represent two rings fitting within the neck of the bottle, the former above the latter, each being tapered on its exterior to correspond with the taper of the neck of the bottle, and of sufficient di-

ameter to exactly fill the neck at the particular point where it is located. These rings are preferably formed of glass, and are secured in place by a suitable cement. The object of the ring C is to contract the neck so as to leave a contracted passage *c*, surrounding which is a seat *c'* for a valve D which is located above the ring C and has attached to it, by means of a flexible connection E, a weight F. The under side of the ring C flares inward, as shown at *c*², and the bottle itself is provided with a correspondingly flaring portion *a*, the surface of which forms a continuation of the surface of the flaring portion *c*² of the ring. When the bottle is tipped to a sufficient extent, the weight comes in contact with this inward flaring portion and holds the valve upon its seat until the bottle has been tipped to such an extent that the lowermost side of said flaring portion has passed a horizontal position, and reached such an inclination in the opposite direction that the weight will slide by gravity toward the valve-seat, whereupon the valve will fall away from its seat and permit the escape of the contents of the bottle. In another stopper of this class with which I am familiar, the inward flaring portion with which the weight has contact is formed entirely upon the ring C, but where it is desired to give a free egress to the contents of the bottle it is necessary to provide a greater movement of the weight and valve than can be provided for where this flaring portion is formed entirely upon the ring. It is for this reason that I form it upon the interior of the bottle, and when so formed it can be made of any desired extent. In the drawings I have shown it as formed partly upon the ring and partly upon the bottle, but an inspection will show that as a matter of fact it is only that part which is formed upon the bottle that is instrumental in holding the valve seated, and I therefore desire to have it understood that so much of it as is formed upon the ring may be dispensed with entirely, and the ring made flat on its under side, as indicated by the dotted line, or of any other desired shape. In the other stopper to which reference has been made, the weight is curved from end to end so that when the bottle is tipped to the necessary extent the weight rolls toward the valve-seat. Accord-

ing to the present invention the sides of the weight are straight from end to end, and this is preferable, as it confines the weight to a sliding movement.

5 The ring B is provided upon its under side with a number of annular ribs or corrugations *b*, whose inner sides are substantially perpendicular to the plane of the ring. Located opposite the opening of this ring, and between
10 it and the ring C, is a disk G of less diameter than the interior of the neck of the bottle, which is sustained by means of three posts *g*, preferably of such length that they extend from one ring to the other, and form guides
15 for properly locating the rings relatively to each other. The top side of this disk is provided with a number of annular ribs or corrugations *g'*, whose inner edges are substantially perpendicular to the plane of the disk,
20 and the disk is so located with relation to the ring B that sufficient space is left between them for the passage of the fluid. The object of the ring B and disk G is to prevent the insertion of a wire or other device by which the valve D
25 may be held from its seat for enabling the refilling of the bottle. The disk being of greater diameter than the opening of the ring, it will leave only a tortuous passage through which it will be impossible to reach the valve with
30 any instrument that is not flexible, and if it be attempted to use a flexible instrument its end will come against one of the corrugations and its insertion will thereby be prevented. If its ends should be disengaged from the
35 straight edge of a corrugation of the disk G, it will be deflected upward by said corrugation and will come in contact with a corrugation of the ring B. By the use of corrugations appropriately arranged, it is possible to
40 absolutely prevent any instrument inserted in the neck of the bottle from reaching the valve, and since I am the first to use corrugations for this purpose, I desire to have it understood that my invention is not limited
45 to the particular arrangement of them shown in the drawings.

I do not claim, as my invention, a stopper having a connected valve and weight, and an inward flaring portion, so located that when
50 the bottle is tipped the weight comes in contact with it, whereby the movement of the

weight is controlled, but desire to have it understood that my said invention is limited to the forming of the said inward flaring portion, either partly or wholly on the bottle 55 itself.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a bottle having in its neck a contracted passage, and having a 60 portion flaring inward from said contracted passage and formed directly on the interior of the bottle, of a valve and weight located upon opposite sides of said contracted passage, and a connection between the valve and 65 weight of such length that when the bottle is tipped the weight will come in contact with said flaring portion of the bottle, substantially as set forth.

2. The combination, with a bottle having in 70 its neck a contracted passage, a valve-seat surrounding said passage, and a portion flaring inward from said seat, of a valve and weight located upon opposite sides of said seat, and a connection between the valve and 75 weight of such length that when the bottle is tipped the weight will come in contact with said flaring portion, said weight being formed with straight sides, substantially as set forth.

3. The combination, with a bottle having an 80 automatically operating valve located in its neck, of a ring secured in the neck above the valve, and a disk located between the ring and valve, said disk having upon its top side ribs or corrugations, substantially as set forth. 85

4. The combination, with a bottle having in its neck an automatically operating valve, of a ring secured in the neck above the valve, and a disk located between the ring and valve, the underside of the ring being provided with 90 corrugations, substantially as set forth.

5. The combination, with a bottle having an automatically operating valve in its neck, of a ring secured in the neck above the valve, and a disk located between the ring and valve, 95 said disk having upon its top side corrugations, and said ring having upon its under side corrugations, substantially as set forth.

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