(No Model.)

W. J. BRYAN.

DEVICE FOR PREVENTING REFILLING OF BOTTLES.

No. 593,194. Patented Nov. 9, 1897.

Fig. 1

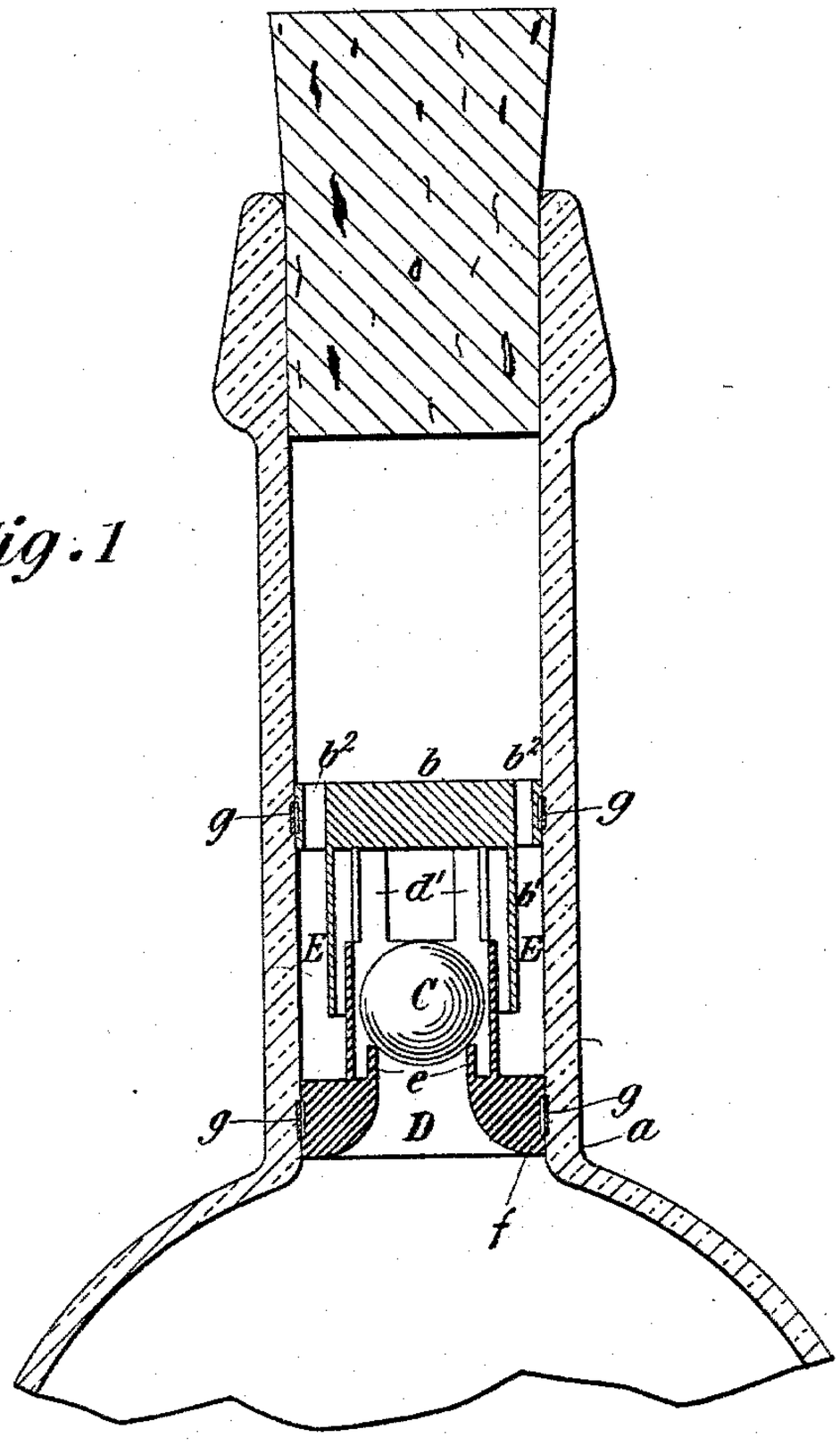


Fig. 3

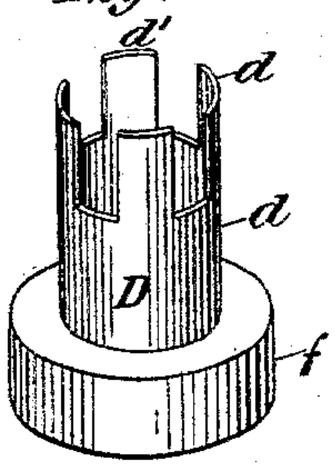
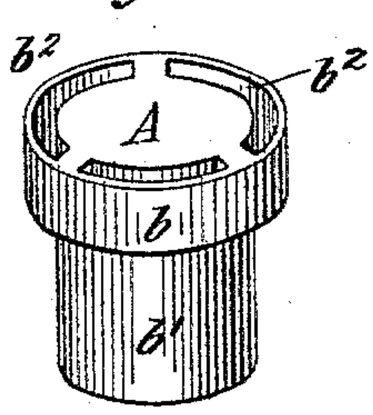


Fig. 2



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UNITED STATES PATENT OFFICE.

WILLIAM J. BRYAN, OF CHICAGO, ILLINOIS.

DEVICE FOR PREVENTING REFILLING OF BOTTLES.

SPECIFICATION forming part of Letters Patent No. 593,194, dated November 9, 1897.

Application filed January 29, 1897. Serial No. 621,139. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. BRYAN, of Chicago, Cook county, Illinois, have invented certain new and useful Improvements in Devices for Preventing the Refilling of Bottles, of which I declare the following to be a full, clear, and exact description, reference being had to the accompanying drawings, which are a part of this specification.

My invention is designed to be used in bottles which, by their configuration or by the imposed stamp or label, become known as receptacles for a manufacture of particular type, properties, or excellence, it being frequently the case that bottles of such characteristics are refilled with a spurious or inferior liquid and placed upon the market to the great injury of their owners or manufacturers.

My invention, as will appear from the description following and from the accompanying drawings, in which like letters of reference indicate corresponding parts, will absolutely prevent a drop of liquid from entering the bottle in connection with which it is used, although it will offer little resistance to the removal of the contents.

Figure 1 of the drawings is a section of a bottle, partly cut away, showing my invention in place therein. Fig. 2 is a perspective of the upper portion of my device, and Fig. 3 is a perspective of the lower portion thereof.

The bottle-neck A is formed or bored preferably with a slight decrease in diameter at or near its inner end, as at *a* in Fig. 1. After the bottle has been filled there is inserted a stopper or plug composed of three parts B C D. Each of the upper and lower portions B and D is provided with an annular flange or ring, as at *b* and *f*, which is designed to engage with the interior of the bottle-neck to prevent the displacement of the device after it is in position. In order to make this displacement impossible, I may use a spring or springs *g*, set in annular recesses in either or both of the said parts B and D, and when the device is in proper position engaging with corresponding recesses in the interior of the bottle-neck A. The same end may be attained or furthered by the use of any suitable cement which is odorless and tasteless.

The upper portion A is, as shown in Figs. 1 and 2, composed of the upper head or flange *b* and the lower cylinder or cup *b'*, which is closed at its upper or flange end. Through the head or flange *b* are circumferential slots or grooves b^2, through which air or liquid may flow from the space E around the periphery of the cylinder or cup *b'*, as is shown in Fig. 1. The lower portion D of the device consists also of a head or flange *f*, which, as I have stated, engages with the inner surface of the bottle-neck, and a cylinder *d*, which is of a diameter considerably less than that of the cylinder *b'* of the upper portion B of my device, and into which it projects when the two parts are in proper position. The cylinder *d* is open at both ends. Inside of its lower end, as is shown in Fig. 1, is a ring or annular shelf *e*, upon which is seated the ball or valve C, which is free to move within the cylinder *d*, and which completely closes the lower end thereof when the bottle-neck is in the position shown in Fig. 1. The periphery of the upper end of the cylinder *d* is serrated, as at *d' d'* in Fig. 3.

When a bottle having a neck whose interior diameter is slightly diminished at its lower end, as shown in Fig. 1, has been filled, the device, consisting of parts substantially like A B C, preferably treated, as at *b* and *f*, with a suitable odorless and tasteless cement, as above described, is pushed down into the lower end of the neck. The farther downward movement of the device is prevented by the narrowness of the neck at its lower end, and its withdrawal is prevented, as I have indicated, by springs *g g*, by cement, or by any other suitable means. If the bottle be inverted, it is evident that the ball or valve C will fall from its seat *e e* to the closed end *b* of the upper portion of the device, thus permitting the contained liquid to flow through the hollow cylinder *d*, out at *d' d'*, into the larger cylinder *b'*, thence through its open lower end into the space E and out through the slots b^2 to the mouth of the bottle. If, however, an attempt is made to pour or force any liquid back into the bottle, the valve C will fall or be forced back upon its seat *e e*, and thus prevent it. This valve C cannot be displaced or removed, as

it is surrounded by the cylinder *d*, which is closed at its upper end by the head *b* of the upper part of my device. It will be seen that this valve C does not depend for its action upon any attached weight, this being an objectionable feature of devices heretofore designed.

All parts of my device, with the exception of the springs *g g*, when used are preferably made of glass. It is evident that other materials, such as porcelain, &c., may be substituted; but it is designed that no metal, rubber, or celluloid enter into its construction or any other substance which might taint the liquid contained in the bottle. The springs *g g*, if used, are so placed, as is shown in Fig. 1, that the liquids cannot come in contact with them.

It is evident that the parts B, C, and D may be of any desirable shape, the forms assigned to them, respectively, herein being typical only and used for convenience of reference and description.

What I claim as my invention is—

In a bottle-neck, the combination of two cylinders of different diameters, the smaller one surrounded for a portion of its length by the larger, a ball normally seated upon an annular seat inside of said smaller cylinder, lateral outlets near the upper end of said smaller cylinder, an outlet at the lower end of said larger cylinder, a head closing the upper end of said larger cylinder and provided with slots opening into the space outside of the periphery of the said larger cylinder, together with means for preventing the displacement of the said cylinders; substantially as and for the purposes described.

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