(No Model.)

J. H. BULLARD.

REGISTERING DEVICE FOR BOTTLES.

No. 572,329. Patented Dec. 1, 1896.

Fig. 1.

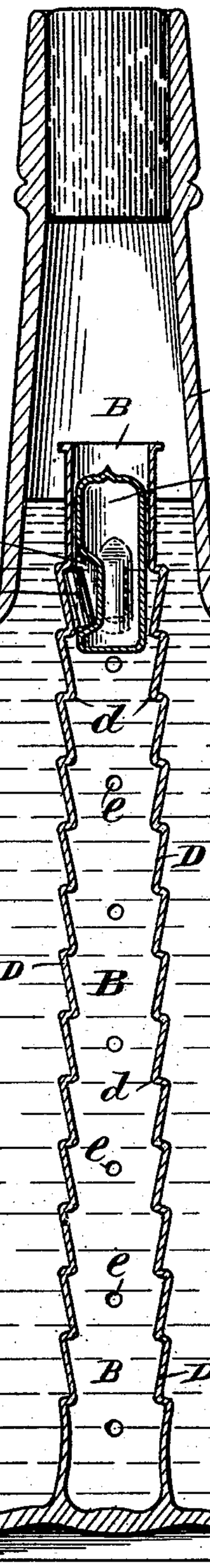


Fig. 2.

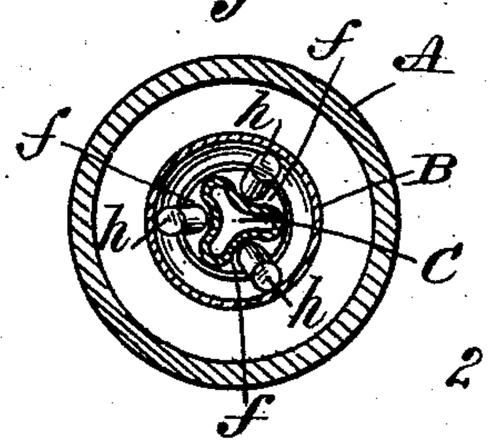


Fig. 3.

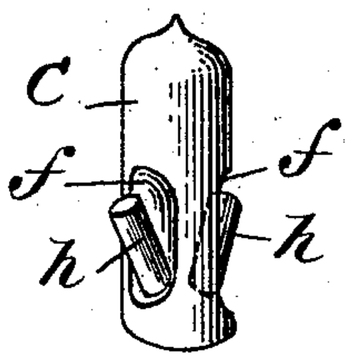


Fig. 4.

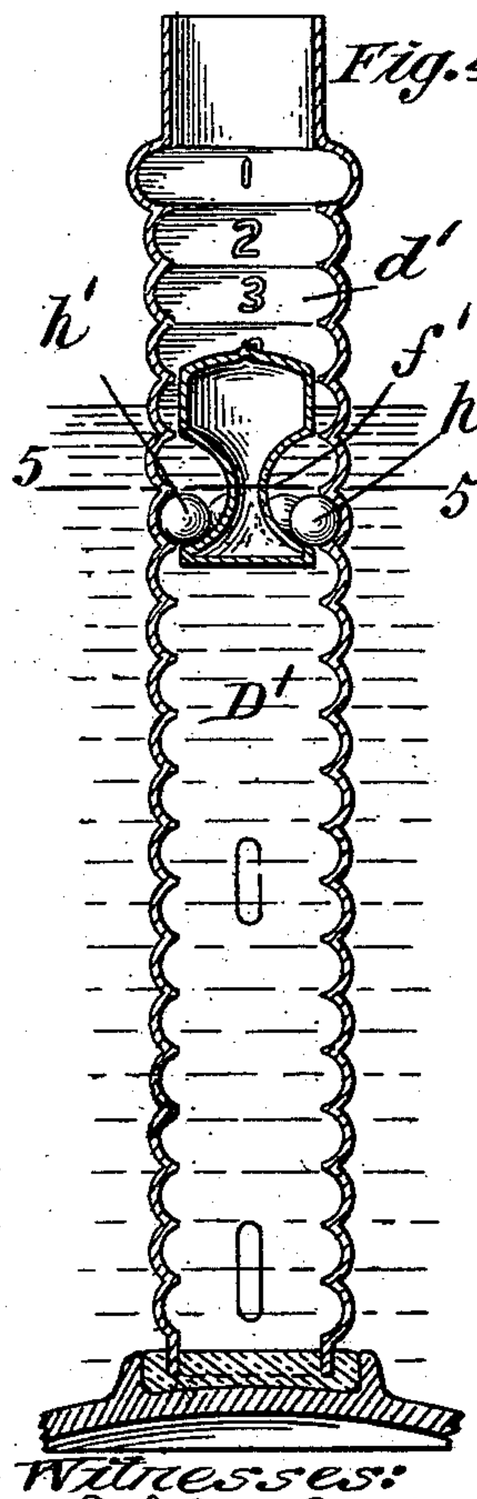
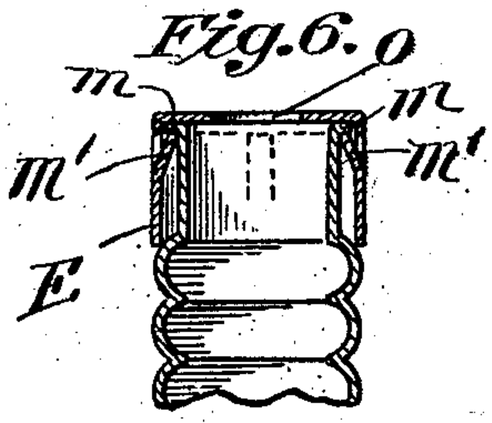


Fig. 5.

Fig. 6.



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UNITED STATES PATENT OFFICE.

JAMES H. BULLARD, OF SPRINGFIELD, MASSACHUSETTS.

REGISTERING DEVICE FOR BOTTLES.

SPECIFICATION forming part of Letters Patent No. 572,329, dated December 1, 1896.

Application filed December 14, 1895. Serial No. 572,197. (No model.)

To all whom it may concern

Be it known that I, JAMES H. BULLARD, a citizen of the United States of America, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Registering Devices for Bottles, of which the following is a specification.

This invention relates to bottles or other similar vessels, and particularly to that class thereof which is provided with "telltale" devices which indicate whether any liquid contained therein has been withdrawn either in whole or in part and whether other liquid has been added after the original contents have been so partially or wholly withdrawn, the object being to provide against adulteration of the original contents by the withdrawal of a part thereof and then filling up the bottle with other liquid, or the withdrawal of the entire contents and refilling the bottle with liquid purporting to be of the quality of the original contents, because of its being contained in a bottle known to be used by the manufacturers of the original contents thereof.

This invention serves also to indicate the surreptitious removal of any part of the contents of a bottle, and therefore is particularly adapted for sideboard use and the use thereof on public bars.

In the drawings forming part of this specification, Figure 1 is a view of a bottle in vertical section, showing therein, also in section, the level-indicating float and perforated and corrugated tube within which said float operates. Fig. 2 is a cross-section through Fig. 1 on line 2 2. Fig. 3 is a perspective view of the level-indicating float shown in section in Fig. 1. Fig. 4 shows a modified form of construction of the corrugated tube within the bottle and modified means for the interlocking of the float and tube within which it acts. Fig. 5 is a cross-section taken on line 5 5, Fig. 4. Fig. 6 is a view of a means for preventing the withdrawal of the float from the tube.

In the drawings, A is the bottle, having attached to the bottom on the inside thereof and preferably integral with said bottom a glass tube B. Said tube is of such diameter as to permit of its introduction within the bottle through the neck thereof in the process of making the said bottle and extends to a point well up in the neck thereof, as shown in Fig. 1. The upper end of the said tube B is made with perpendicular sides for a short distance from its upper end to more easily permit of the introduction of the float C within the tube when the bottle is filled. Beginning from a point near the top, as shown, said tube is provided with a series of corrugations D, giving the tube the appearance of being made up of a series of inwardly and downwardly tapering sections, whereby a series of inwardly-projecting annular ribs or shoulders *d* is provided at substantially equal distances one from another, said shoulders being formed in the glass wall of the tube substantially at right angles to the tapered sides thereof.

Several openings *e* are made through the side wall of the tube B to allow free access to the interior thereof by the liquid in the bottle.

Within the tube B is a float C, made preferably of glass, (though a suitable non-oxidizable metal may be used instead.) Said float, as shown in the drawings, has recesses *f* in the sides thereof of such shape as to accommodate therein in a vertical position the glass locking-cylinders *h*. The lower end of the said recesses, against which the lower end of the locking-cylinders abut, is made substantially at right angles to the tapered sections of the tube B, to the end that the upper ends of said locking parts *h* may always have a tendency to fall outwardly from said indentations, and thus said upper ends will be always in position to become engaged under the shoulders or ribs *d* in the tube B as the float C, by which they are carried, descends in the tube as the liquid in which it is supported is withdrawn. The locking parts *h* are referred to as "cylinders" only because the most convenient mode of making them is to cut such lengths as may be desired from a glass rod. It is not essential that such locking-pieces be of any particular shape in cross-section, and their lengths may vary more or less, provided they are of such a length as will permit of their being contained in the recesses *f* in the float C. This float is made of such a size as to permit it to rise and fall in the tube with any change in the level of the supporting liquid therein and to barely support the glass locking parts *h*, to the end that should any at-

tempt be made to attach anything to the top of said float for the purpose of sustaining it in the position shown in Fig. 1 while the contents were being withdrawn the surplus of buoyancy of said float would be too small to permit it, as it would sink upon the application of any additional weight thereto.

Both the form of the corrugations and the shape of the locking devices may be changed, as shown by the modified construction illustrated in Fig. 4, wherein the corrugations are composed of a series of annular grooves *d'* and the locking parts *h'* are balls fitting said grooves and sustained in an annular groove *f'*, formed around the body of the float.

If desired, the corrugations of the tube D may be numbered, as shown in Fig. 4, in order that the amount of liquid taken from said bottle at any time may be known.

As an added security against the possible removal of the float from the tube, said tube is provided with an outwardly-turned flange *m*, (shown in Fig. 6,) over which is sprung a metal cup E, having one closed end with a small opening *o* therethrough, and having spring portions *m'* cut out of its side walls and bent inwardly in such manner that said spring parts *m'* will become engaged under the flange *m* when said cup is pressed down over the said flanged end of the tube. The addition of the said cup E over the end of the tube D would render the removal of the float from the tube impossible and render exceedingly difficult the introduction of any instrument through opening *o* for attachment to the float C for the purpose of sustaining it in position in the upper end of the tube D.

The modified construction shown in Fig. 4 also shows another method of attaching the tube to the bottom of the bottle, which consists in forming thereon an annular recess, (shown in section in Fig. 4,) and before the bottle is filled cementing the bottom end of said tube firmly therein with any plastic not affected by moisture.

The operation of this invention is as follows: The bottle is filled with whatever liquid it is to contain, and in order to introduce the float therein a short length of tube of the same interior diameter as the tube D is introduced into the bottle-neck and the end thereof placed over the end of the tube D in such position that their interior diameters coincide with the end of the said short tube, projecting only a short distance beyond the open end of the bottle. A float is then introduced into the end of said short tube, said float containing in the recesses *f* the locking parts *h*. The float and parts *h* are then pushed down through the short tube and into the tube D until it is far enough down to be supported by the liquid in the bottle, and after withdrawing the short tube the bottle is corked.

Should it be desired to add the cup E, (shown in Fig. 6,) said cup is sprung down over the flange *m* on the end of the tube after the float has been introduced therein.

With the float in the position shown in Fig. 1 any liquid withdrawn from the bottle will be indicated by the position of the float in the tube, and as soon as such amount permits the float to drop far enough to allow the locking parts to engage under the inwardly-projecting shoulder it is impossible for said float to be returned to its higher position in the tube, thus rendering impossible all attempts to add to the contents of a bottle before it is entirely emptied without detection, for in such case the float would remain engaged within the tube at a point below the level of liquid therein which it had reached before said addition was made, thus indicating the amount added. The same would be true should the bottle be refilled after all the contents had been withdrawn. The float in that case would be found engaged within the tube at the extreme bottom thereof.

By the construction of the float and inclined sections of the tube D said float will not rise to the top of the tube if the bottle is turned upside down, so there is no danger of said float becoming displaced within the tube in transportation.

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

1. In a bottle, a tube therein attached to the bottom of said bottle and extending up into the neck thereof having perforations through its side and a series of internal annular ribs, combined with a float in said tube, and rib-interlocking members supported by said float whereby any upward movement of said float is prevented, substantially as set forth.

2. In a bottle, a tube therein attached to the bottom of said bottle and extending up into the neck thereof having perforations through its side and a series of internal annular ribs, combined with a float in said tube, rib-interlocking members supported by said float whereby any upward movement of said float is prevented, and a cap attached to the upper extremity of said tube having a central perforation therein, substantially as set forth.

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