

(No Model.)

S. M. BIXBY.

BOTTLE.

No. 273,444.

Patented Mar. 6, 1883.

Fig. 1.

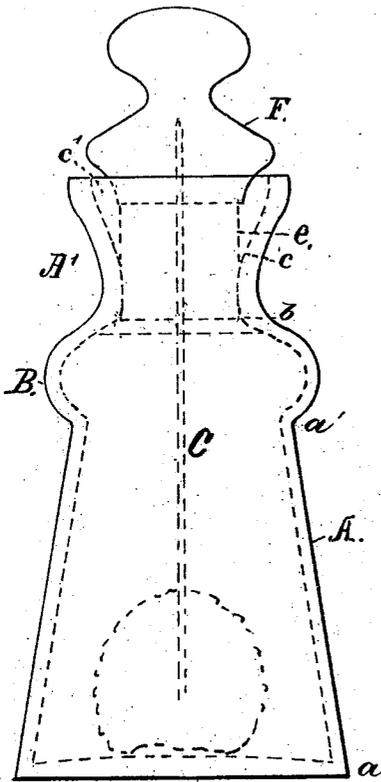


Fig. 2.

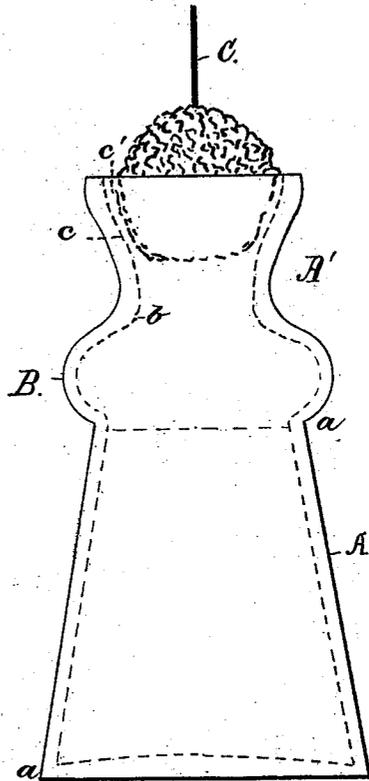
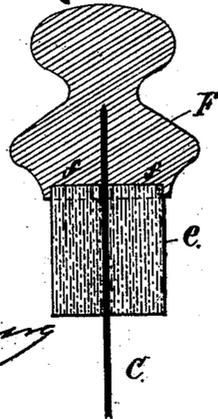


Fig. 3.



Witnesses:

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Inventor.
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UNITED STATES PATENT OFFICE.

SAMUEL M. BIXBY, OF NEW YORK, N. Y.

BOTTLE.

SPECIFICATION forming part of Letters Patent No. 273,444, dated March 6, 1883.

Application filed April 14, 1880. (No model.) Patented in England November 14, 1882, No. 5,430.

To all whom it may concern :

Be it known that I, SAMUEL M. BIXBY, of the city, county, and State of New York, have invented certain new and useful Improvements in Bottles for Containing Liquid Blacking, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to that class of bottles which are especially designed for holding liquid blacking, in the use of which a porous compressible vehicle is employed, whose diameter is greater than that of the neck of the bottle, so as to express therefrom any excess of blacking when said vehicle is drawn through such neck.

Bottles for holding liquid blacking are generally made of an elongated form, provided with a neck of considerable length and of uniform interior diameter. In conjunction with such bottles, a sponge is used of greater diameter than that of the neck, for the purpose of expressing therefrom any excess of blacking when said sponge is drawn through the neck, for which purpose it is attached to a wire and the latter to the cork that closes the bottle, and serves at the same time as a handle for the sponge-carrier, and to avoid the soiling of the fingers by contact with the cork a handle has been attached thereto.

The described form of bottle for holding liquid blacking, and the combination therewith of a sponge of greater diameter than the neck of such bottle, for the purpose stated, embody disadvantages that are the cause of great annoyance and inconvenience to those using the blacking, which consist principally in the certainty of the overflow of the liquid blacking contained in such bottles, either on withdrawing the sponge or to a still greater extent on returning it to the bottle, thereby soiling the hand that holds the bottle and the object upon which said bottle may stand or over which it is held, it being absolutely necessary to hold the bottle both on withdrawing and returning the sponge, as a certain amount of power is required to withdraw the same and return it to the bottle when said sponge is of a greater diameter than the neck of such bottle. This overflow in the two operations of withdrawing

and returning the sponge is due to the construction of the bottle, wherein the nature of the liquid (which is slightly effervescent) as well as that of the vehicle for using the same (which is a porous and compressible substance) seems to have been overlooked. Thus on withdrawing the sponge, the moment it is compressed a portion of the liquid expressed therefrom rises above the sponge. As contact with the atmosphere causes it to foam and overflow, that portion of the liquid not so affected is carried out of the neck by the compressed sponge, which here acts as a piston. On returning the sponge to the bottle, the moment it is forced into the neck it is compressed and a portion of the liquid held thereby expressed and caused to flow down the outside of the bottle, while the sponge, as soon as it is entirely in the neck, expels the air from the bottle, which air, under pressure, causes the remaining liquid, or a great portion thereof, to violently foam and rise up and flow over the mouth of the bottle. This foaming is so violent that it is some time before it subsides to an extent sufficient to insert the cork without forcing the foam contained in the neck over the bottle.

The object of my invention is to remedy these disadvantages; and the further object is to provide a handle for the cork that is so constructed as to be firmly seated on the mouth of the bottle and form a tight or practically-tight closure at that point, and in combining therewith a cylindrical cork and the usual sponge or other analogous vehicle by means of which the blacking is conveyed from the bottle for use; and to that end my invention consists in the construction and combination of devices constituting the holder, substantially as hereinafter described, and specifically set forth in the claims.

In the accompanying drawings, Figure 1 is an elevation of my invention, showing the stopper in the bottle. Fig. 2 is a similar view, showing the bottle as the sponge is being inserted. Fig. 3 is a sectional view of the stopper, &c., detached from the bottle.

In remedying the disadvantages described I found that to avoid the overflow of the liquid

blackening on withdrawing the sponge it was absolutely necessary that means should be provided whereby the sponge may be enabled to expand sufficiently, previous to reaching the mouth of the bottle, to take up any liquid that may have been forced above the sponge by the compression of the latter on entering the neck of the bottle. This I have accomplished by giving the neck A' the shape of an inverted truncated cone, having its narrowest point at *b* and gradually widening upward. It will be seen that by this construction the greatest pressure is only upon a very limited area of the sponge, which is girdled by the narrowest part of the neck at *b*. Below the point *b* the sponge can expand as fully as it is possible to expand under the circumstances, and above said point it (the sponge) can slightly expand, which expansion gradually increases as said sponge is drawn upward in the neck. It is evident, therefore, that any blackening forced by the compression above the point *b* or above the neck is immediately taken up by the expanding sponge, causing but little effervescence in the liquid, and no overflow is possible.

In the usual form of liquid-blackening bottles the excess of the blackening above the sponge in the neck is wasted by overflow. With my construction of bottle it is again taken up by the sponge, and as this may, under some conditions, increase the quantity of blackening held by the sponge beyond that actually needed at the time, I provide means for stripping it from the sponge without soiling the outside of the bottle. To this end I form the tapering neck from about the point *c* flaring outward to present a wide mouth, *c'*, the diameter of which exceeds that of the sponge, so that when any surplus liquid is to be removed from the latter all that is necessary to do is to place the sponge in the cup *c'* and rotate it therein, applying any required or desired degree of pressure to express the excess of liquid. The violent foaming and overflow of the liquid on returning the sponge to the bottle are avoided by making the mouth of the neck of greater diameter than the vehicle, and such result is assisted by forming below said neck a considerable bulge or air-chamber, B, in the bottle, as shown. As the mouth *c'* of the bottle is of greater diameter than the sponge, no compression of the latter takes place at that point when it is returned to the bottle, and when said sponge reaches the narrowest part of the neck and is compressed the blackening expressed therefrom flows into the bottle.

To avoid the liability of a bottle of this character upsetting, I give its body A the form of a truncated cone, having a base, *a*, of great diameter as compared with its height, and when provided with the flaring mouth *c'* and tapering neck A' the sponge may be returned to the bottle without holding such bottle, or without liability to upset the same.

It has been found that it is almost impossi-

ble to handle the usual cork to which the sponge is attached without soiling the hands when using the blackening, and to avoid this handles of wood or other suitable material are connected with the cork.

To avoid the increased expense of using corks of the same shape as the neck and mouth of the bottle above described, and to enable me to employ a cylindrical cork in combination with the handle F, I form the base of the latter, below the annular projection, flaring inwardly, as shown, to conform to the outwardly-flaring mouth of the bottle, to adapt said handle to be seated thereon.

To avoid the liability of the cork and handle becoming detached from the tapering neck of the bottle, which presents but a limited seat or bearing to a cylindrical cork when inserted, I form the line of junction *b* of the air-chamber with the neck A' of the bottle of a gradual curve, and employ a straight or cylindrical cork of such a length that when the handle F is seated upon the mouth of the bottle the end of the cork will project slightly beyond the narrowest part or line *b* of the neck, and when saturated with the blackening expands against the downwardly-widening wall of the air-chamber and is firmly held in position. The cork *e* and the wire C, that holds the sponge, are connected with the handle in any suitable manner.

Of course it will be understood that any other suitable porous and compressible vehicle, and means to handle said vehicle to convey the blackening from the bottle for use, may be employed. I however prefer that described—namely, the usual sponge.

I do not desire to claim broadly a bottle having a tapering body or flaring neck, or a bottle having such a body and neck and an intermediate swell; but

What I do claim is—

1. A liquid-blackening holder consisting of a bottle having a conical neck, in combination with a compressible vehicle for the blackening, of greater diameter than the least diameter of the neck and of less diameter than the greatest diameter of said neck, and a carrier for said vehicle, arranged for operation substantially as described, for the purposes specified.

2. A liquid-blackening holder consisting of a bottle having a conical body, a conical neck, and an enlargement or air-chamber connecting the same at their extremities of least diameter, in combination with a compressible vehicle for the blackening, of greater diameter than the least diameter of the neck and of less diameter than the greatest diameter of said neck, and a carrier for said vehicle, arranged for operation substantially as described, for the purposes specified.

3. A liquid-blackening holder consisting of a bottle having a conical body, a conical neck provided with a seat at its mouth, and an enlargement or air-chamber connecting the neck

and body at their extremities of least diameter, in combination with a compressible vehicle of greater diameter than the least diameter of the neck and of a less diameter than the greatest diameter of said neck, a carrier for
5 said vehicle, a straight cork for sealing the neck at its extremity of least diameter, and a handle for said cork, provided with a seat and

adapted to be seated upon the mouth of the neck, the parts being arranged for co-operation substantially as described, for the purposes specified.

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Witnesses:

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