Jan. 28, 1930. O. J. BOWMAN 1,744,947

BOTTLE

Filed Oct. 17, 1928

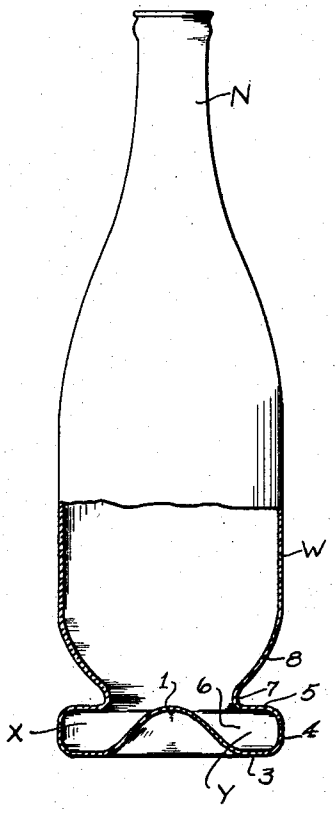


FIG.-1

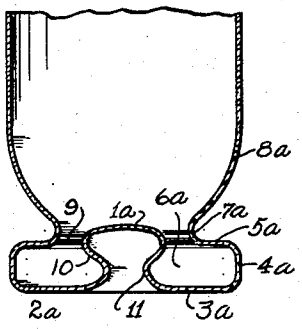


FIG.-2

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UNITED STATES PATENT OFFICE

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BOTTLE

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This invention relates to an improvement in bottles and more particularly to bottles adapted to contain a beverage in which sediment may be present.

In the usual type of bottle the sediment will be deposited in a layer of substantially uniform thickness on the bottom of the bottle and when the bottle is tilted to pour the liquid, a stream of sediment may be carried along the surface of the liquid. This is particularly true in the case of carbonated beverages, wherein the liquid is agitated by escaping gas to the end that sediment is carried to the surface by the bubbles and then poured out with the stream of liquid. Also the heavier sediment flows along the lower side of the bottle and into the stream of liquid as the bottle is emptied.

An object of my invention is to provide a bottle in which these difficulties are overcome, and which will discharge only clear liquid when it is emptied. A further object is to retain all of the sediment in the bottle when and as the liquid is poured therefrom. A further object is to form particularly the base of the bottle of such configuration that sediment will be retained in the base as liquid is poured from the body of the bottle. Another object is to mould the bottle of such form that a number of bottles may be easily packed and handled; that the moulding may be readily performed; that the configuration be symmetrical so that pouring may be equally facilitated from any side or in any position.

Other objects will appear from the following description of the preferred forms of my invention, reference being had to the accompanying drawings. The essential characteristics are summarized in the claims.

In the drawings, Fig. 1 shows a partially broken vertical section on any axial plane of a preferred form of my invention, and Fig. 2 is a similar section of the base of the bottle showing a modified form embodying a mushroom shaped raised portion in the bottom of the bottle.

Referring particularly to Fig. 1, I have illustrated a bottle having a neck N and side walls W. Below the body of the bottle a novel form of sediment trap is provided, see also Fig. 2. This trap is of very simple construction, can be formed very economically and will not interfere in any way with packing or shipping the bottle.

In Fig. 1, which shows the preferred form of my invention, the base of the bottle has a raised cone shaped central portion 1 which slopes down to an annular flat portion of the base shown at 3. Extending upwardly from the circumference of the base there is a cylindrical portion 4 which may preferably be the same diameter as the diameter of the wall W. An annular flat portion 5 extends inwardly from the cylindrical wall 4 and is substantially parallel to the annular base portion 3. These portions 3, 4 and 5 cooperate to form an annular sediment trap 6. The parts 3, 4 and 5 may be regarded as an annular inwardly facing channel whereof the wall 4 constitutes the base or web and whereof the parts 3 and 5 constitute the side flanges. Rising from the inner edge of the wall 5 is a restricted neck portion 7. From this restricted portion the wall curves outwardly with an upwardly facing concave surface 8 and merges with the wall W.

Any sediment which may be present or formed in the liquid will be deflected while settling by the concave curved portion 8 and by the raised central portion 1 into the annular trap 6, where it will lie in a ring on the flat portion of the base of the bottle above the lower flange 3 of the channel. When the contents of the bottle is poured, as by tilting the top part of the bottle to the right, as shown in Fig. 1, the sediment originally collected at X will be deflected by the upper flange 5 of the trap to the part Y, and the sediment originally collected in part Y, which would ordinarily slip along the side wall of the bottle, will also be trapped as the part Y becomes the bottom of the channel formed by the right hand part of the channel 3, 4 and 5 as viewed in Fig. 1. As the bottle is gradually emptied and necessarily tilted to a greater degree, the flow of sediment on the surface of the liquid will be interrupted by intermediate portions of the trap, and the sediment resting on the flat base

portion will move around the raised central portion 1 and into the part Y of the trap. Finally practically all of the sediment and a possibly small amount of liquid will be retained in the trap.

In the modification shown in Fig. 2, the construction of the trap is similar to that shown in Fig. 1 but the raised portion 1^a is formed as a knob, rather than a cone, with an overhanging portion 10, and a restricted neck 11 thus forming a restricted channel 9 between the shoulders 10 and the walls 7^a. As the bottle is tipped in pouring sediment may more freely flow from one side of the trap to the other around or past the neck 11 of the knob like part.

It will be seen from the foregoing description of my invention that I have provided a bottle which can be economically manufactured, can be packed and shipped in the same manner as the conventional beverage bottle, and which is provided with a simple and efficient sediment trap which will permit function in all positions of the bottle. Experiments have shown that the trap operates with a high degree of efficiency and that it retains a large percentage of the sediment present in the liquid. While I have illustrated and described a preferred form of my invention, I do not care to be limited thereby or in any manner other than by the claims appended hereto.

I claim:

1. A bottle formed of a single integral piece of glass or like material having a constricted neck portion, a body portion, an annular indentation adjacent the base forming an annular channel and an upwardly extending projection formed in the base of the bottle for causing sediment to flow outwardly into said channel, the external diameter of the channel being substantially equal to the external diameter of the body portion.

2. A bottle formed of a single integral piece of glass or like material having a body portion, an annular indentation adjacent the base forming an annular channel at the bottom of the bottle, and an upwardly extending projection formed in the base of the bottle with the top of said projection substantially level with said annular indentation.

3. A bottle having a constricted neck portion, a body portion, an annular indentation in the body portion adjacent the base forming an annular sediment trap, and a raised portion in the bottom of the bottle adapted to deflect sediment into said annular trap.

4. A bottle having a constricted neck portion, a body portion with inwardly sloping side walls terminating in an annular indentation in the body portion adjacent the base and forming an annular sediment trap, and a raised portion in the bottom of the bottle adapted to deflect sediment into said annular trap.

5. A bottle having cylindrical side walls converging inwardly toward the base thereof and a central dome like part raised in the base having outwardly sloping walls, the walls of the base lying substantially normal to the said converging side walls whereby sediment is deflected inwardly to said dome like part and thence outwardly onto the base of the bottle.

6. A bottle according to claim 5 having a sediment trap below said converging side walls and surrounding said central dome like part.

7. A receptacle having an annular inwardly extending part spaced from the bottom, forming an annular channel with the bottom thereof for trapping sediment, and a projection formed on the bottom of the receptacle and extending into the said annular inwardly extending part of the receptacle.

In testimony whereof, I hereunto affix my signature.

OWEN J. BOWMAN.