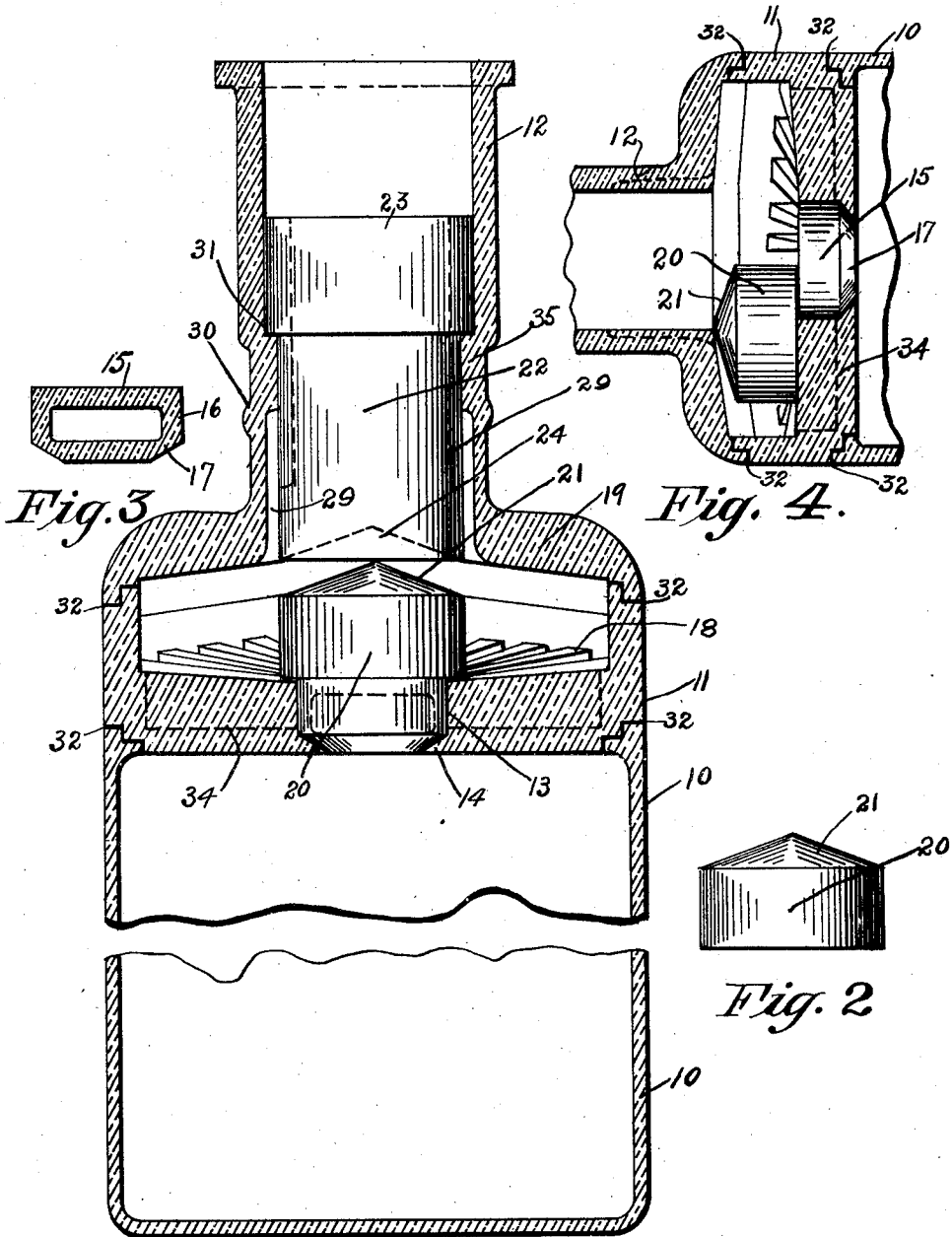


C. NADOLNEY.
 NON-REFILLABLE BOTTLE.
 APPLICATION FILED MAY 12, 1911.

1,058,324.

Patented Apr. 8, 1913.
 3 SHEETS—SHEET 1.



WITNESSES
John Bailey.
Thomas Bailey

Fig. 1.

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3 SHEETS—SHEET 2.

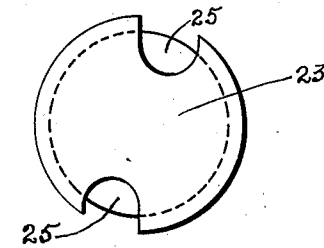


Fig. 7.

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3 SHEETS—SHEET 3.

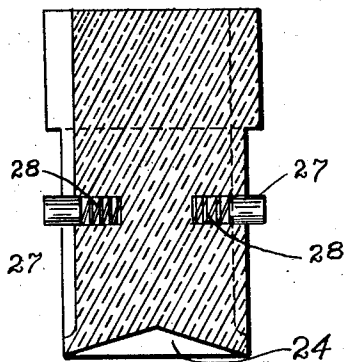


Fig. 8.

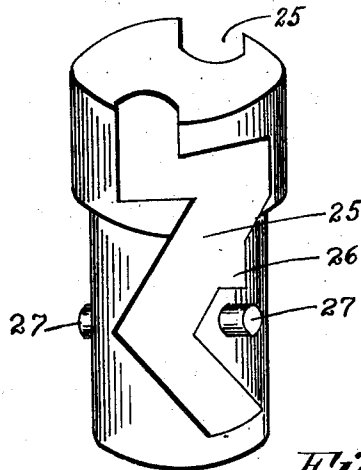


Fig. 9.



Fig. 10



Fig. 11

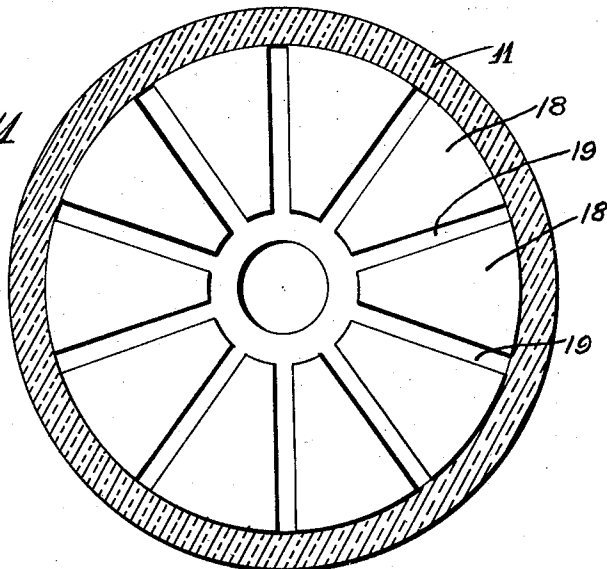


Fig. 12

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UNITED STATES PATENT OFFICE.

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NON-REFILLABLE BOTTLE.

1,058,324.

Specification of Letters Patent.

Patented Apr. 8, 1913.

Application filed May 12, 1911. Serial No. 626,808.

To all whom it may concern:

Be it known that I, CHARLES NADOLNEY, a citizen of the United States, residing at Nanticoke, in the county of Luzerne and State of Pennsylvania, have invented a new and useful Improvement in Non-Refillable Bottles, of which the following is a specification.

My invention relates to an improved sealing device for bottles, which, while permitting liquid to flow freely from the bottle will prevent the insertion of any liquid therein.

It has for an object the securing of these results by the use of a few parts, simply arranged, certain in their operation, and which may be manufactured and assembled at a minimum of cost.

The invention consists in certain novel features of construction and combinations of parts the essential elements of which are set forth in the appended claim and in the preferred form of embodiment disclosed in the accompanying drawings and description.

Referring to the drawings, Figure 1 represents a sectional elevation, partly broken, of my improved bottle, Fig. 2 is a detail in perspective of the valve-closing weight, Fig. 3 is a sectional elevation of the valve, Fig. 4 is a broken sectional view showing the position of parts when the bottle is in a horizontal position, Fig. 5 is a sectional view showing the bottle inverted, Fig. 6 is a sectional view of the valve seat, Fig. 7 is a plan of the neck stopper, Fig. 8 is a sectional elevation of the same, Fig. 9 is a view in perspective of the neck stopper, Figs. 10 and 11 are views of details of the stopper, and Fig. 12 is a plan of the valve seat and the communicating channels.

The bottle or vessel itself is built preferably of three sections of molded or blown glass, as shown in Fig. 1, the liquid-containing part being shown at 10, the neck of the bottle at 12, and the intermediate portion carrying the valve seat at 11. These parts in the process of manufacture are joined together at the seams indicated at 32, 32 in the same figure, although I do not restrict myself to the particular contour, or the particular location, of the joints as therein shown.

Near the upper part of the body of the vessel is located a solid glass partition pierced at its center to form an aperture and valve seat consisting of a straight cir-

cular wall 13 and a conoidal section as shown at 14. A series of radial ribs 18 are formed in and above the partition and between these ribs are channels 19 which communicate with the central aperture described. Within this aperture and forming a sliding fit therein is a hollow valve 15, as shown in section in Fig. 3. This valve has cylindrical and conoidal surfaces corresponding with the valve seat previously described.

Positioned above the glass partition and the valve 15 is a loosely movable, detached valve-closing weight 20, shown in detail in Fig. 2. This weight is cylindrical in form with a flat base and a top surface having the form of a cone. As shown in Fig. 1 its normal position is above the valve 15 and it normally rests upon that valve as shown.

Within the neck 12 of the bottle is a stopper 22, cylindrical in form and with an enlarged head 23. The bottom of the stopper as best shown in Fig. 8 has a conoidal recess corresponding in dimensions and angle to the top of the valve-weight described. The neck of the bottle is provided with a shoulder 31 upon which the head 23 of the stopper abuts, thus limiting the inward movement of the latter.

The stopper at a point intermediate its length is fitted with diametrically opposite pins or bolts 27, forced out normally from suitable recesses in the stopper by the springs 28. The neck of the bottle is provided internally with opposite recesses, 29, 29 into which the pins 27 are adapted to protrude and lock the stopper in place. It will be seen that when the stopper is inserted into the neck of the bottle, and the pins have passed the contracted portion 35 of the neck, the springs 28 will force the pins into the slots or recesses 29, after which the stopper cannot be withdrawn from the bottle.

As shown in Fig. 9, the stopper is provided with channels 25 to permit the flow of liquid therethrough. These channels are of peculiar form as shown in the figure, and are so designed to prevent the insertion of a wire or other instrument to tamper with the sealing mechanism. In addition to the zigzag form, a pocket 26 is located in the channel to catch any tool that might be inserted.

The device operates as follows: The normal position of the valve is shown in Fig. 1. When the bottle is moved from a ver-

tical to the horizontal position shown in Fig. 4, the valve-weight 20 drops downward as shown in the figure. The conoidal top of the weight in contact with the stopper 5 acts as a cam to maintain the weight in contact with the valve 15 and to prevent the latter from leaving its seat. In this position no liquid will flow out of the bottle, nor can any be forced in. In Fig. 5 the bottle is shown inverted. In this instance the valve-weight drops into the cavity at the bottom of the stopper and the valve 15 for the first time is allowed to open. Should any attempt be made to force liquid into the bottle, the valve 15 which is hollowed for the purpose will float upon the surface of the liquid and automatically seal the bottle when it is in this position.

I have shown two forms of ribs in connection with the partition, the form shown in Fig. 1 having the ribs inclined at an angle, while that shown in Fig. 6 shows the ribs radially disposed within the confines of the partition. The latter is my preferred method of construction.

With the exception of the two springs 28, all parts of the structure are made preferably of glass, although other well known equivalents may be used when desired. In assembling, the body 10 is preferably joined to the intermediate portion 11, the valve and valve-weight are then fitted into place, and the neck then welded upon the part 11. The stopper 22 is then inserted into its place. The bottle may be filled with liquid at any

stage of its assembly; but the filling is preferably done just prior to the attaching of the neck section.

I claim:

In a non-refillable bottle, a neck, a body portion, a partition having a centrally located valve seat and aperture, radial channels communicating therewith, a valve, an auxiliary weight formed with a conical head, a stopper having a camming recess adapted to coact with the conical head, the said valve being adapted to maintain a closed position owing to its buoyancy when the bottle is inverted, to maintain the same position owing to the gravitational force of the said weight when the bottle is upright, and to maintain the same position owing to the camming action between the said weight and the said stopper when the bottle is horizontal, the said stopper having spring actuated bolts, the neck having an intermediate restricted portion forming an inner collar, channels for the bolts located in the neck below said collar, whereby the stopper may be locked permanently in position in the neck, the said stopper also being provided with zigzag channels and offset recesses, and the said partition having annular beads adapted to engage respectively with matched beading upon the neck and body portions of the bottle.

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Witnesses:

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