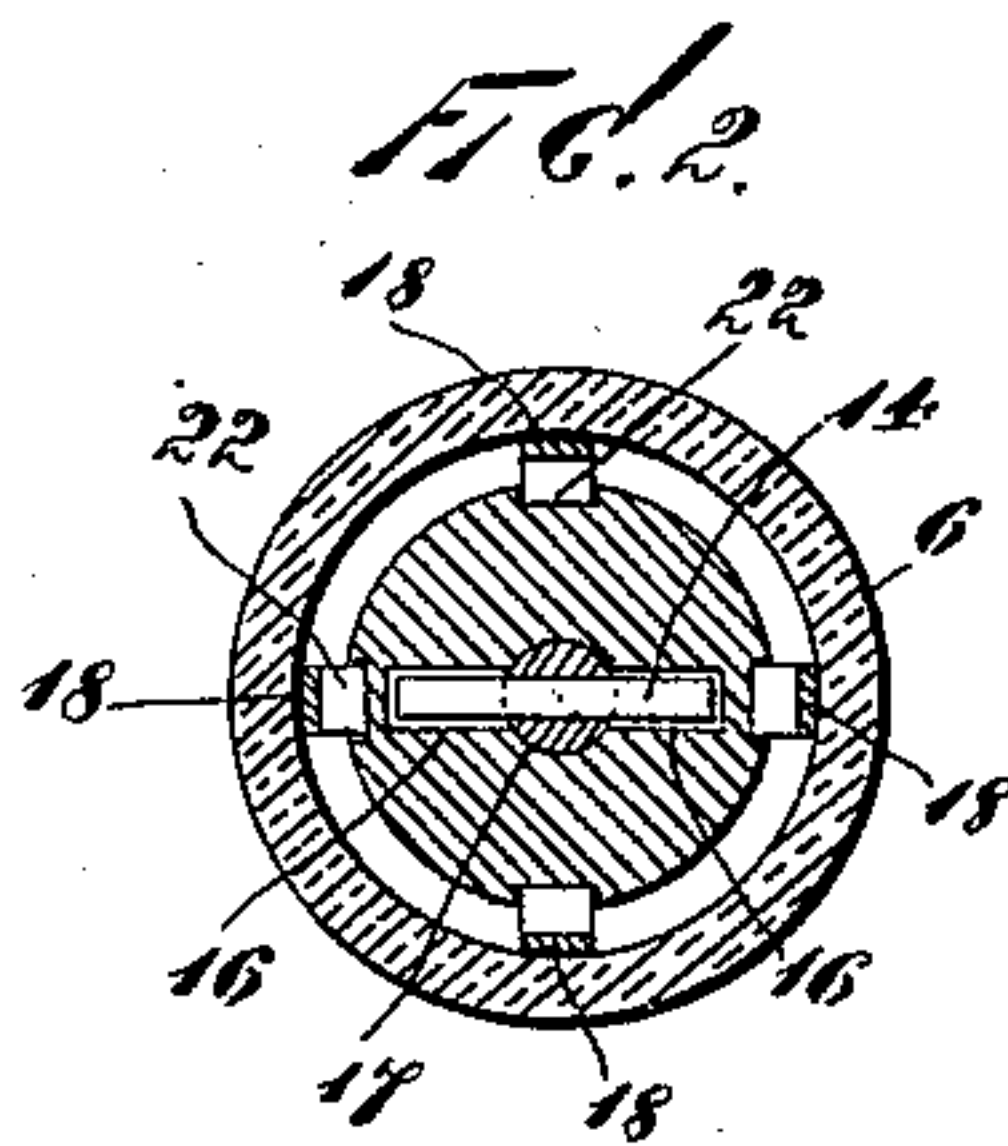
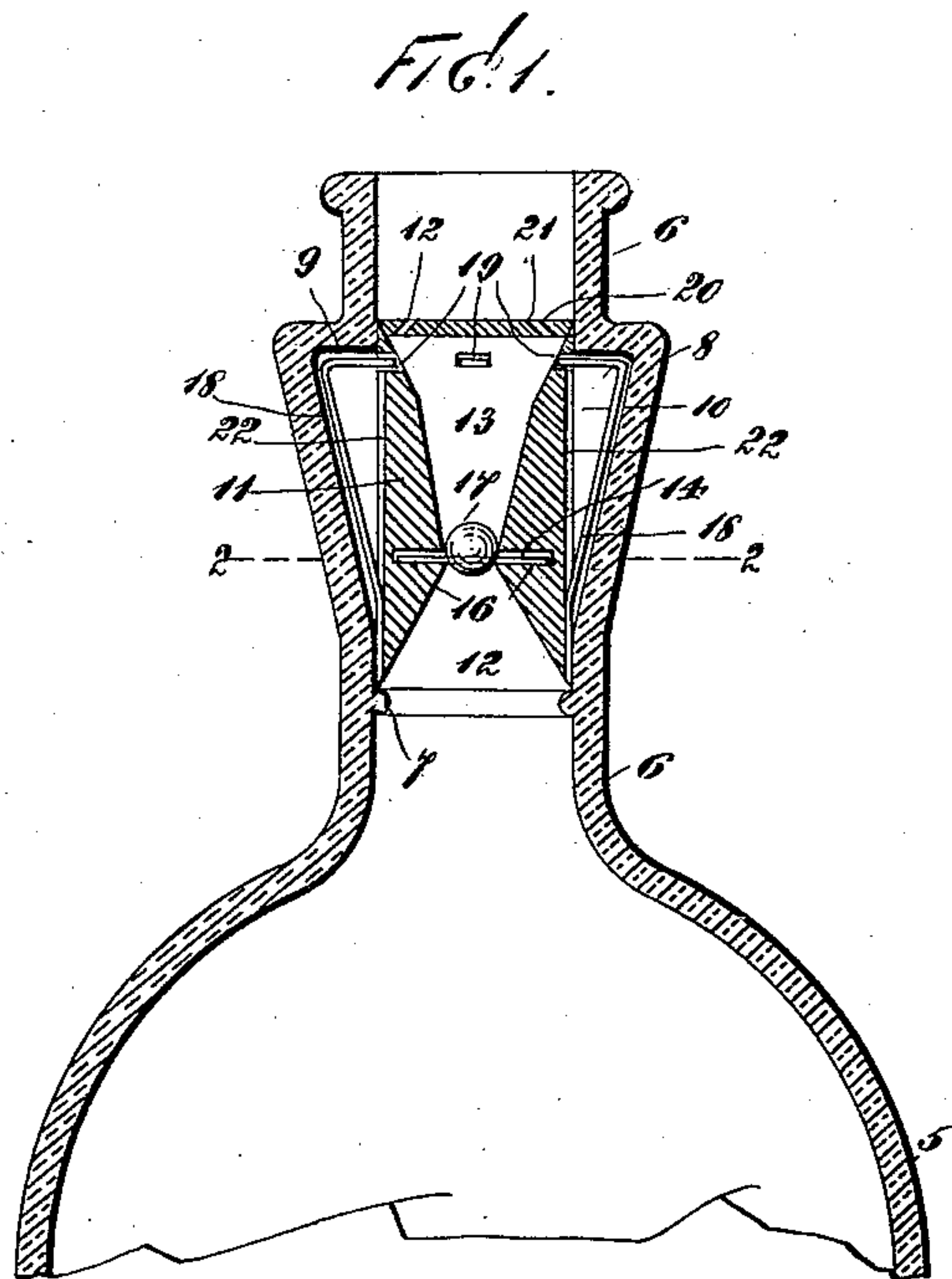


(No Model.)

D. J. SWEENEY.
BOTTLE.

No. 589,044.

Patented Aug. 31, 1897.



WITNESSES

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INVENTOR

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DENNIS JOSEPH SWEENEY, OF BROOKLYN, NEW YORK.

BOTTLE.

SPECIFICATION forming part of Letters Patent No. 589,044, dated August 31, 1897.

Application filed October 28, 1896. Serial No. 610,386. (No model.)

To all whom it may concern:

Be it known that I, DENNIS JOSEPH SWEENEY, a citizen of the United States, and a resident of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Bottles, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof, in which similar numerals of reference indicate corresponding parts wherever found throughout the several views.

This invention relates to bottles, jugs, jars, and similar vessels; and the object thereof is to provide a vessel of this class which, having been once filled and sealed, may be emptied of its contents, but cannot be refilled or reused.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which I have shown my improvement applied to a bottle, and in which—

Figure 1 is a central vertical section of the upper part of a bottle and the neck thereof provided with my improvement, and Fig. 2 a cross-section on the line 2 2 of Fig. 1.

In the practice of my invention, as shown in the drawings, I provide a bottle 5, having a neck 6, in the inner wall of which, near the lower end thereof, is an annular bead or shoulder 7, and above said bead or shoulder the walls of the neck are carried outwardly up to a predetermined point, as 8, where they are abruptly inwardly contracted, this part of the neck being of the form of a cone the base of which is directed upwardly and at the upper end of which is an annular inwardly-directed shoulder 9, above which the neck 6 of the bottle is of the same size as the lower part thereof.

The enlargement of the neck above the annular bead or shoulder 7, as above described, forms in the inner walls thereof an annular chamber 10, which is triangular in form in vertical section and the base of which is directed upwardly, and I also provide a plug 11, which is cylindrical in form throughout and adapted to closely fit the inner walls of the neck 6 and to rest upon the annular bead or shoulder 7.

The lower end of the plug 11 is provided with a conical chamber 12, the base of which is directed downwardly, and the upper end thereof with a conical chamber 13, the base

of which is directed upwardly, and the walls of the conical chamber 13 are much more abrupt or much more nearly vertical than those of the chamber 9, and said chambers communicate at their apices, so as to form a small circular passage, and mounted transversely of this circular passage or port through the central portion of the plug 11 is a movable spring 14, the ends of which rest in corresponding transverse holes or openings 16, formed in the opposite side walls of the central port or passage, said holes or openings being larger than said spring, so as to permit of a slight vertical movement thereof. I also provide a ball-valve 17, which is adapted to close the central port or passage in the plug 11, which is formed at the communication of the chambers 12 and 13, and the spring 14 passes through this valve at one side of the center thereof or between the lower side and the center when the valve is in position, as shown in Figs. 1 and 2, and the valve 17 is so located that the line of its transverse diameter is above the smallest portion of the valve-seat or above the transverse diameter of the port or passage formed where the chambers 12 and 13 communicate.

The arrangement of the valve 17, the port or passage which it is adapted to close, and the spring 14, which passes through the lower side of said valve, is such that when the bottle is in a vertical position, as shown in Fig. 1, the valve will securely close the port or passage and no liquids can enter the bottle, and when the bottle is inverted the valve 17 will leave its seat, so as to provide sufficient space for the liquids to flow around the valve, but the instant that the bottle is turned to one side or into a vertical position said valve will be at once reseated, this operation being made possible by means of the slight vertical movement of the spring 14. I also connect with the diametrically opposite sides of the plug 11 and at the lower end thereof springs 18, which project outwardly and upwardly, and the upper ends of which are turned inwardly at right angles, or nearly so, and passed through corresponding openings 19, formed in the upper end of said plug 11, and said plug is of such length that when the lower end thereof rests on the annular bead or shoulder 7 the upper end will project slightly above the annular

shoulder or projection 9 at the upper end of the conical portion of the neck. I also provide a partition-plate 20, which is adapted to be placed in the upper part of the neck above the plug 11 and to be secured in position in any desired manner, and said partition-plate may be secured to the plug 11, if desired, and is provided with perforations or openings 21, which are formed at an inclination to the vertical axis of the neck.

The operation will be readily understood from the foregoing description when taken in connection with the accompanying drawings and the following statement thereof.

The plug 11 is preferably provided with vertical side grooves 22, one of which is provided for each of the springs 18, and when the bottle has been filled with the desired contents the plug 11 is forced thereinto until the lower end thereof rests upon the annular bead or shoulder 7, and in this operation the springs 18 are forced inwardly by the walls of the upper portion of the neck and into the vertical grooves 20 in the sides of the plug, and when the lower end of the plug reaches the annular bead or shoulder 7 the upper ends of the springs 18 will be forced outwardly by the spring action thereof beneath the annular shoulder 9, as clearly shown in Fig. 1, and the plug cannot be removed from the neck of the bottle without breaking off the same.

If the partition-plate 20 has not been secured to the plug before the plug is inserted into the neck, as above described, it may be placed in position afterward and secured in position in any desired manner, and the object of this plate is to prevent interference with the valve 17 or any attempt to interfere with the operation thereof.

The upper portion of the neck of the bottle may be closed by a cork or stopper in the usual manner, and whenever it is desired to empty said bottle or discharge a portion of its contents said cork or stopper is removed and the bottle inverted, when the pressure of the liquid within the bottle upon the valve 17 will cause said valve to leave its seat sufficiently to allow the liquid to pass out around the same, and this operation may be continued or repeated until the bottle is entirely empty. If an attempt be made to refill the bottle by pouring liquids thereinto, the valve 17 will at once be reseated and no liquid can enter the bottle, and this operation of the valve will be the same even if an attempt be made to force liquid into the bottle.

The movement of the valve as hereinbefore

described is very slight, being always held near its seat by the spring 14, and it is not necessary that a spring be employed for this purpose, a simple wire or thin plate or bar being sufficient, and, if desired, the valve 17 may be so made as to serve as a float-valve or of material which will float, and in this event the operation thereof, if an attempt be made to force liquids into the bottle, would be more positive and sure than if said valve were composed of heavy material.

It will be apparent that another device or devices may be substituted for the partition-plate 20, the only object in this connection being to provide suitable means or devices to prevent the insertion of a tool or instrument in an attempt to interfere with the operation of the valve, and it will also be apparent that other changes in and modifications of the construction herein described may be made without departing from the spirit of my invention or sacrificing its advantages.

Having fully described my invention, I claim as new and desire to secure by Letters Patent—

A bottle, jug or jar having a neck, an annular bead on the inner wall thereof, the walls of said neck extending upwardly and outwardly to a predetermined point above said bead, an annular inwardly-directed shoulder at the upper end of said outwardly-directed wall, a cylindrical plug adapted to enter the said neck and rest upon the said bead, said plug having formed in the lower part thereof a conical chamber with an upwardly-directed apex, the upper part of said plug being also provided with a conical chamber having a downwardly-directed apex, said chambers communicating at their apices, a movable spring secured therein, a ball-valve mounted in said passage, springs secured to the outer side of said plug and engaging said shoulder, said springs projecting outwardly and upwardly, the upper ends being turned inwardly at right angles, or nearly so, and adapted to pass through the openings 19, formed in the upper end of said plug while the plug is being inserted in the bottle.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 22d day of October, 1896.

DENNIS JOSEPH SWEENEY.

Witnesses:

EDWARD GREGGEROY DUNN,
SAMUEL GAIL LOCKWOOD.