No. 873,155. PATENTED DEC. 10, 1907.

H. MINDERMANN.

NON-REFILLABLE BOTTLE.

APPLICATION FILED SEPT. 16, 1907.

FIG. 1.

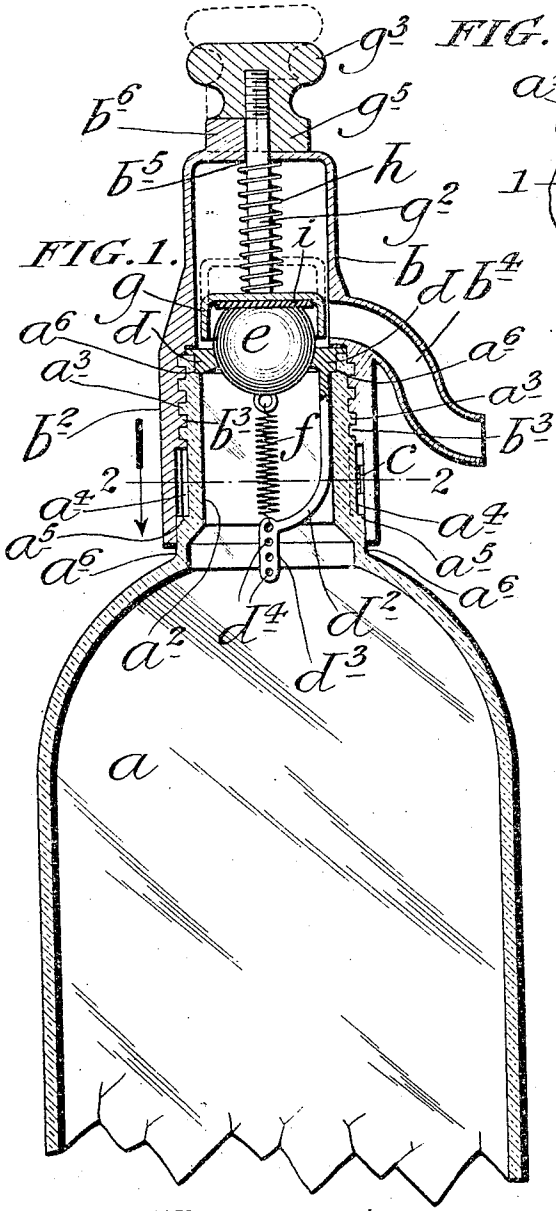


FIG. 2.

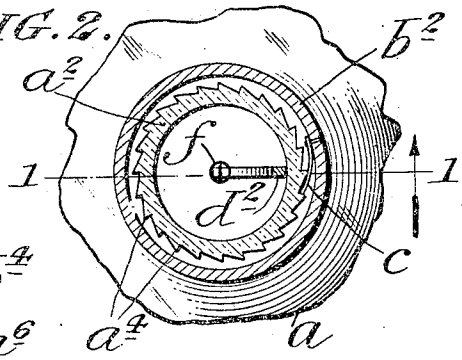


FIG. 3.

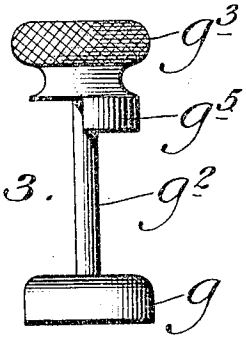
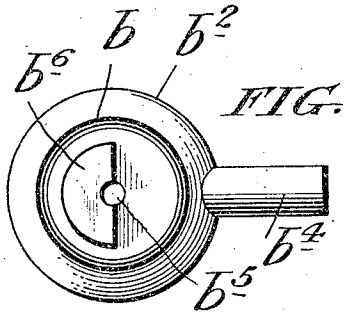


FIG. 4.



WITNESSES

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NON-REFILLABLE BOTTLE.

No. 873,155. Specification of Letters Patent. Patented Dec. 10, 1907.

Application filed September 16, 1907. Serial No. 392,960.

To all whom it may concern:

Be it known that I, HENRY MINDERMANN, a citizen of the United States, and residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Non-Refillable Bottles, of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to bottles, jars, jugs and similar vessels, and the object thereof is to provide a vessel of this class having a neck, and a neck attachment, the construction of which is such that when the vessel has been filled and the neck attachment applied, the vessel may be emptied of its contents without breaking the neck or neck attachment, but cannot be re-filled or re-used.

The invention is fully disclosed in the following specification, of which the accompanying drawing forms a part, in which the separate parts of my improvement are designated by suitable reference characters in each of the views, and in which;—

Figure 1 is a central vertical section of the top part of a bottle provided with my improvement, taken on line 1, 1, of Fig. 2. Fig. 2 a transverse section on the line 2, 2, of Fig. 1. Fig. 3 a side view of a part of the neck attachment detached, and shown also in section in Fig. 1, and Fig. 4 a plan view of the neck attachment with the part shown in Fig. 3 removed.

In the practice of my invention as shown in the drawing I provide a bottle a, having a neck a^2 the top portion of which is provided with a thread a^3 below which are vertically and annularly arranged ratchet teeth a^4, at the bottom of which is an annular shoulder a^5, and the top portion of the neck a^2 is also preferably provided with an interior annular groove a^6. I also provide a tubular cap b, the bottom portion b^2 of which is larger than the top portion and adapted to closely fit with the bottom part a^6 of the neck a^2, and the top portion of the enlarged bottom part b^2 of the cap b is provided with a thread b^3 which corresponds with the thread a^3 in the neck a^2, and the interior of the bottom portion of the enlarged bottom part b^2 of the cap b is enlarged so that the inner diameter thereof is slightly greater than the diameter of that part of the neck a^2 on which the ratchet teeth a^4 are formed, and secured in the said bottom portion of the cap b is a spring c which operates in connection with the ratchet teeth a^4 and permits the cap b to be screwed fully down upon the neck a^2 of the bottle but prevents the unscrewing of said cap. In the construction shown, the threads a^3 and b^3 are left threads, and the cap b must be turned to the left in order to screw it on to the neck a^2, but said threads may be made right threads if desired.

The cap b is provided at one side and about centrally thereof with a discharge spout b^4, and the top of said cap is closed and provided with a central aperture b^5, and on the top of said cap at one side of the aperture b^5 is a transverse shoulder b^6. Within the top portion of the neck a^2 of the bottle is placed an annular detachable valve seat d in connection with which is employed a spherical or ball valve e, and the annular valve seat d is provided with a depending arm d^2, the bottom end of which is curved inwardly and provided with a depending member d^3 having apertures d^4, and a fine spiral spring f is connected with the valve e and with the depending member d^3 of the arm d^2, and said spring may be connected with the said depending member d^3 of the arm b^2, by means of the apertures d^4, at different points, so as to regulate the tension of said spring.

It will be understood, of course, that the annular valve seat d, in assembling the parts of the neck attachment, is placed in position before the cap b is screwed on to the neck of the bottle, and I also provide a spring depressed cage or device g which is adapted to rest on the valve e, and which is provided with a stem or rod g^2 which passes up through the apertures b^5 in the top of the cap b and is provided at its upper end with a handle knob g^3, the bottom of which is provided at one side with a transverse recess g^4 which corresponds with the shoulder b^6, and on the other side with a shoulder g^5 which also corresponds with the shoulder b^6, and within the top portion of the cap b is placed a spiral spring h, through which the rod g^2 passes and which bears on the cage or case g and normally holds it in a depressed position as shown in Fig. 1.

The operation will be readily understood from the foregoing description when taken in connection with the accompanying drawing and the following statement thereof. When the bottle has been filled with the desired contents, it is sealed in the following manner. The valve seat d with the valve e in position

thereon is placed on or in the top of the neck a^2 of the bottle, and the cap b is screwed into position on said neck as hereinbefore described, and the spring h, the knob handle g^3 being in the position shown, depresses the cage or device g on to the valve. The bottle now is securely sealed and the cap cannot be unscrewed and cannot be taken off, and when it is desired to discharge the contents of the bottle or a part thereof, the knob handle g^3 is raised and turned partly around until the shoulder g^5 rests on the shoulder b^6, and the cage g is raised into the position shown in dotted lines in Fig. 1. The bottle may now be tilted and the contents thereof will press on the valve e, and said valve will be moved from its seat, and the contents of the bottle will flow out through the spout d^4, and this operation may be continued or repeated until the bottle is entirely empty. After the bottle has been emptied the spring f will seat the valve e no matter in what position the bottle may be held, and no liquids can be poured or forced into the bottle. It will be observed that the spout b^4 communicates with the cap b, above the valve seat d and that the larger portion of the valve e is below this point of communication and by reason of this construction and the fact that the spout b^4 is curved downwardly as shown in Fig. 1, it would be practically impossible to introduce a wire or other instrument through the spout b^4 and interfere with the operation of the valve e as herein described, or raise said valve from its seat so that liquids could be introduced by pressure or otherwise into the bottle, and by raising the point of communication between the spout b^4 and the cap b still higher, or by seating the valve e still lower than is shown in the drawing in Fig. 1, any interference with, or the raising of the valve e, in an attempt to re-fill the bottle would be still more impossible.

It will be seen that the top portion of the valve e is made flat in the form of construction shown, but this is not absolutely necessary, and this form may or may not be employed, and, I also preferably place between the cage g and the valve e a washer i preferably composed of soft rubber, or fibrous material treated to render it impervious to liquids and gases, and said washer is preferably connected with said cage. It will also be apparent that my improvement may be applied to any vessel of the class described and having a neck, and after the bottle or other vessel, has been emptied the neck may be broken off and removed, or detached from the cap b and the latter may be re-used.

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

1. A bottle or similar vessel provided with a neck, the top portion of which is provided with an exterior thread and the bottom portion of which is provided with annularly and vertically arranged ratchet teeth, an annular valve seat placed in the top portion of said neck and provided with a depending arm, a ball valve seated on said annular valve seat and connected with said arm by a spiral spring, a cap adapted to be screwed on to said neck and provided in the bottom portion thereto with a spring which operates in connection with said ratchet teeth to prevent the unscrewing of the cap, said cap being provided at one side thereof and above the neck with a discharge spout, and a spring depressed device adapted to rest on the valve within said cap, said device being provided with a rod which passes out through the neck of said cap, and means for raising said rod and cage and holding them in a raised position.

2. A bottle or similar vessel provided with a neck, a cap adapted to inclose said neck and to be permanently secured thereto, said cap being provided above said neck with a discharge spout, and a detachable annular valve seat at the top of said neck, and held in position by said cap, a tensional device connected with said valve seat, and said valve for holding said valve seated, and a spring depressed device resting on said valve, and provided with a rod which passes out through the top of said cap, said rod and said cap being provided with means for lifting said device and holding it in a raised position.

In testimony that I claim the foregoing as my invention I have signed my name in presence of the subscribing witnesses this 14th day of September 1907.

HENRY MINDERMANN.

Witnesses:
C. E. MULREANY,
M. E. DOODY.