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J. MARTIN.

NON-REFILLABLE BOTTLE.

APPLICATION FILED MAR. 15, 1905.

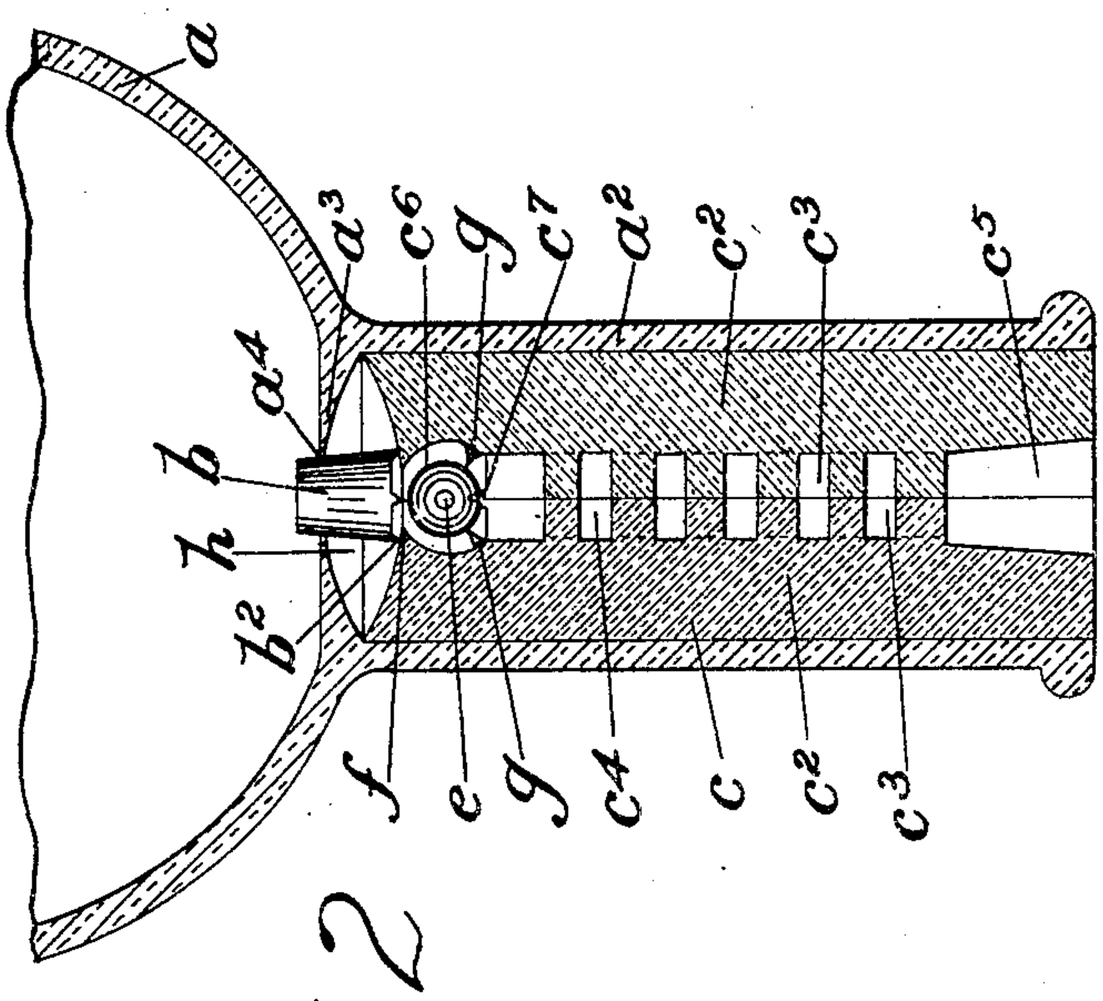

Fig. 2.

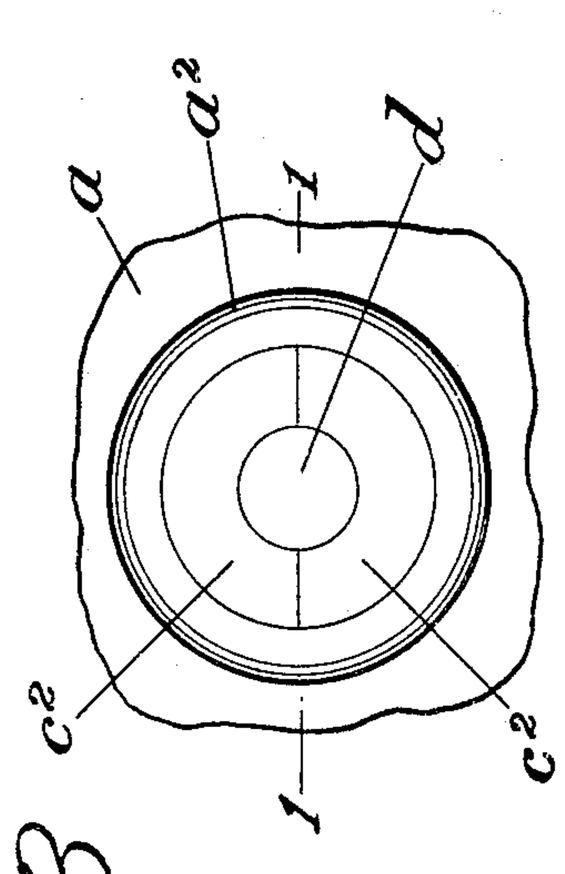

Fig. 3.

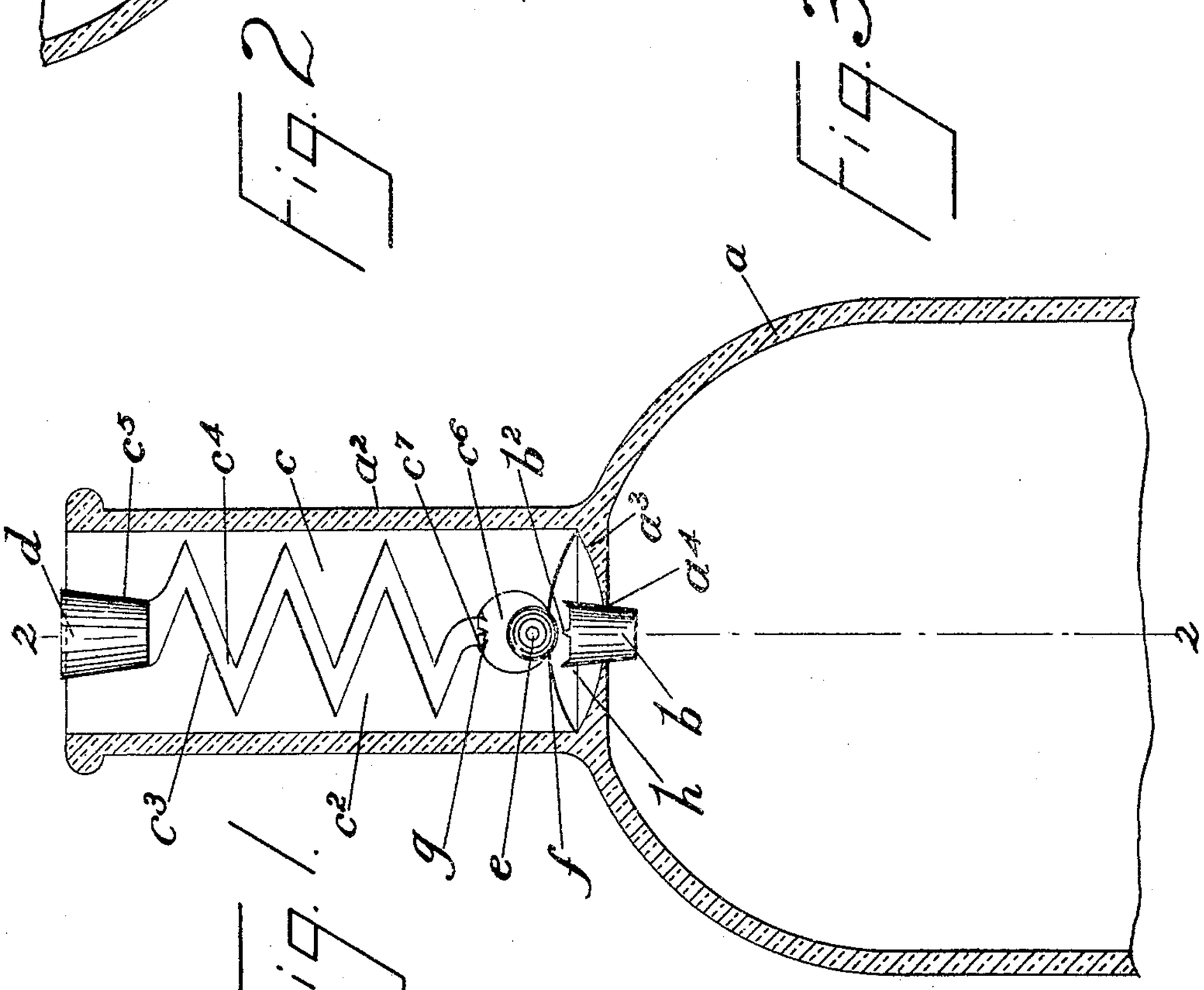

Fig. 1.

WITNESSES

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NON-REFILLABLE BOTTLE.

No. 805,571. Specification of Letters Patent. Patented Nov. 28, 1905.

Application filed March 15, 1905. Serial No. 250,134.

To all whom it may concern:

Be it known that I, JACOB MARTIN, a citizen of the United States, residing at New York, in the county of New York 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 jugs, jars, and other similar vessels; and the object thereof is to provide a device 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 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 upper part of a bottle made according to my invention, a section being on the line 1 1 of Fig. 3; Fig. 2, a section at right angles to that shown in Fig. 1 and showing the bottle in an inverted position; and Fig. 3, a plan view of the bottle as shown in Fig. 1.

In the drawings forming part of this specification I have shown at a a bottle provided with a neck a^2, at the bottom of which is an inwardly-directed annular valve-seat a^3, forming a port or passage a^4, adapted to be closed by a plug-valve b. The plug-valve b is preferably made of glass, but may be composed of any suitable material, and in the form of construction shown said valve is provided at its upper end with upwardly-directed teeth or projections b^2 at the perimeter thereof.

The neck of the bottle is also provided with a cylindrical plug c, which is adapted to be secured therein after the bottle has been filled, and said plug is divided longitudinally into two separate parts c^2, and the parts c^2 of the plug c are provided in their adjacent faces with zigzag grooves c^3, which when the separate parts of the plug are connected form a continuous zigzag passage c^4, which extends from the upper to the lower end of the plug c. In the upper end of the plug c is a socket c^5, adapted to receive an ordinary cork or similar stopper d, and said socket is formed partially in the separate members c^2 of the plug c, and in the lower end of the plug c is a chamber c^6, in which is placed a ball-valve e.

The chamber c^6 in the form of construction shown is circular in cross-section and opens downwardly through the bottom of the plug c to form a port or passage f, which is normally closed by the ball-valve e, and the chamber c^6 is also partially formed in the separate members c^2 of the plug c, and when said parts or members of the plug c are connected the socket c^5 in the upper end thereof, the chamber c^6 in the lower end thereof, and the zigzag passage c^4 are made complete, and the said zigzag passage c^4 forms a communication between the socket c^5 and the chamber c^6, and around the opening c^7, by which the zigzag passage c^4 communicates with the chamber c^6, are teeth or projections g, which prevent the ball-valve e from closing said opening when the bottle is inverted, as shown in Fig. 2.

It will be observed that the bottom end of the plug c is slightly concave in cross-section, and the said plug rests on the perimeter of the valve-seat a^3, and between said valve-seat and said plug is a chamber h, which is elliptical in cross-section, and the vertical depth of this chamber is such that the plug-valve b has but slight movement through the port or passage a^4, and the said valve is always in said port or passage or projects therethrough no matter in what position the bottle be held.

In practice the bottle is first filled with the desired contents, after which the plug-valve b is dropped into position, and the plug c is then inserted into the bottle and secured therein in any desired manner, after which the stopper d is forced into the socket c^5.

When it is desired to empty the bottle or discharge a portion of the contents, the stopper d is withdrawn in the usual manner and the bottle is tilted or inverted, as shown in Fig. 2, and the contents of said bottle will flow out around the plug-valve b, through the chamber c^6 and through the zigzag passage c^4. In this operation the teeth or projections b^2 on the valve b prevent said valve from closing the port or passage f, and the teeth or projections g prevent the valve e from closing the entrance c^7 to the zigzag portion c^4, and this operation may be continued or repeated until the bottle is entirely emptied.

If an attempt be made to refill the bottle by pouring liquids therein, the valves b and e will at once be seated, as shown in Fig. 1, and no liquids can enter the bottle, and this operation of said valves will be the same in any position in which the bottle can be held in an attempt to pour liquids thereinto. The valve e is in practice made so as to serve as a float, and it will be apparent that with this con-

struction if an attempt be made to force liquids into the bottle when the bottle is held in an inverted position, and said valve will at once rise to its seat and cut off the flow of liquids into the bottle.

The dimensions of the chamber c^6 are also such as to facilitate the operation of the valve *e*, and in practice I prefer to make the diameter of the valve *e* about two-thirds that of said chamber.

The zigzag port or passage c^4 is also made of a considerable dimension in cross-section, so as to permit of the free flow of liquids therethrough and also to permit of the passage of air therethrough at the same time, and it will be apparent that any preferred dimensions of said passage may be employed.

The angles at the opposite end of the zigzag members of the zigzag passage c^4 are sharp angles, and in view of this fact it will be impossible to pass a wire or other instrument through said passage so as to interfere with the action of the valve *e*.

My improvement is simple in construction and operation and comparatively inexpensive and is perfectly adapted to accomplish the result for which it is intended, and the same may be applied to any vessel of the class specified provided with a neck.

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

1. A vessel provided with a neck in the bottom of which is an annular valve-seat forming a port or passage, a plug-valve mounted in and adapted to close said port or passage and movable therein so as to open said port or passage, a plug adapted to be secured in said neck and provided in its upper end with a socket and in its lower end with a chamber which opens downwardly so as to form a port or passage at the lower end of said plug, said plug being also provided with a zigzag passage forming a communication between said socket and said chamber, and a valve mounted in said chamber and adapted to close the port or passage in the bottom of said plug, substantially as shown and described.

2. A vessel provided with a neck in the bottom of which is an annular valve-seat forming a port or passage, a plug-valve mounted in and adapted to close said port or passage and movable therein so as to open said port or passage, a plug adapted to be secured in said neck and provided in its upper end with a socket and in its lower end with a chamber which opens downwardly so as to form a port or passage at the lower end of said plug, said plug being also provided with a zigzag passage forming a communication between said socket and said chamber, and a valve mounted in said chamber and adapted to close the port or passage in the bottom of said plug, the relative positions of the plug and said valve-seat being such as to limit the movement of the plug-valve, substantially as shown and described.

3. A vessel provided with a neck in the bottom of which is an annular valve-seat forming a port or passage, a cylindrical plug secured in said neck and provided with a zigzag passage extending from the bottom to the top portion thereof and terminating slightly above said annular valve-seat, a valve adapted to close the port or passage formed by said annular valve-seat, said plug being also provided in the lower end thereof with a valve-chamber with which said zigzag passage communicates and opening through the bottom of said plug so as to form a port or passage, and a valve placed in said valve-chamber, substantially as shown and described.

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 January, 1905.

JACOB MARTIN.

Witnesses:
F. A. STEWART,
C. J. KLEIN.