

(No Model.)

E. BURNETT.

STOPPER FOR LIQUID CONTAINING VESSELS.

No. 281,611.

Patented July 17, 1883.

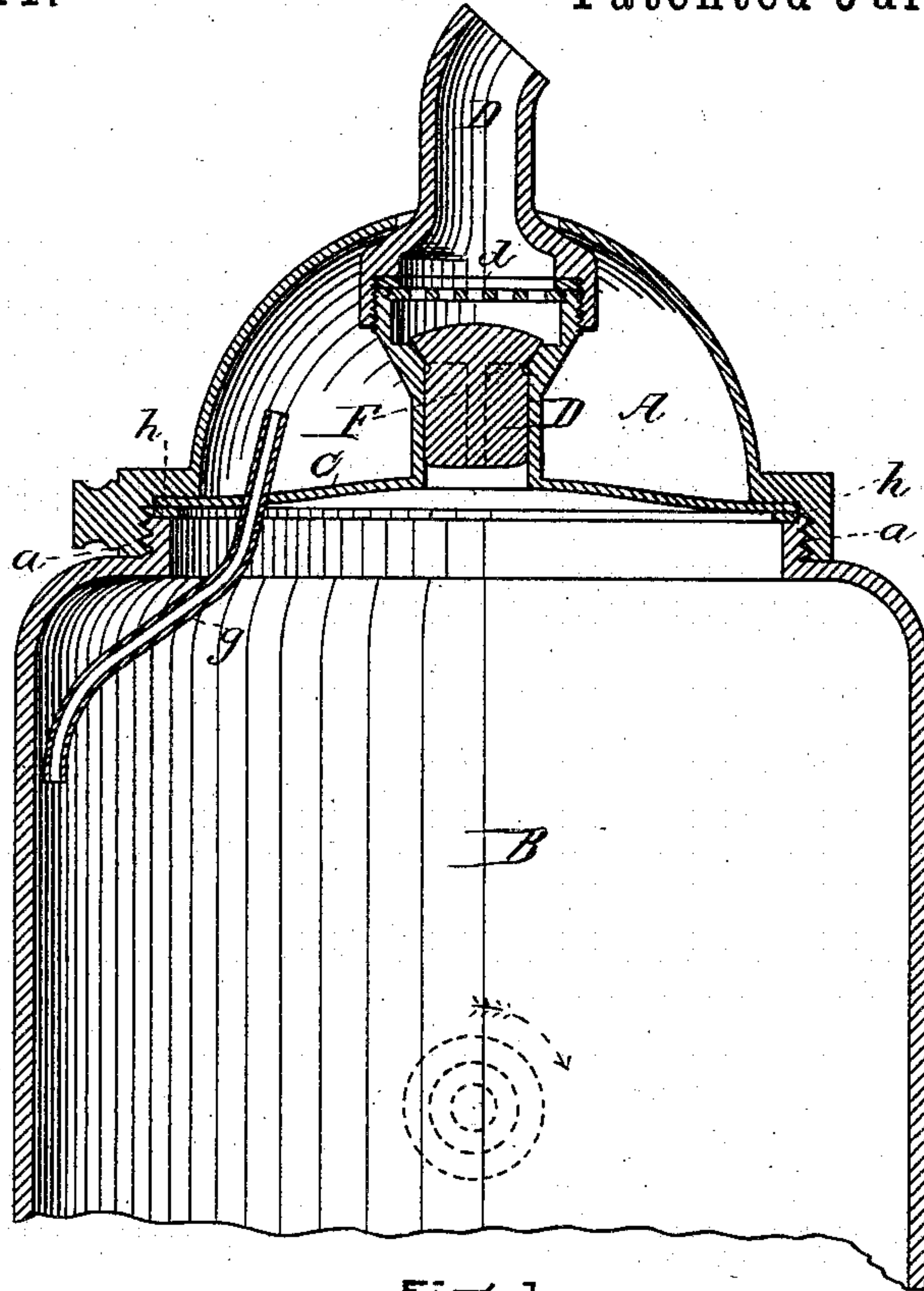


Fig. 1.



Fig. 4.

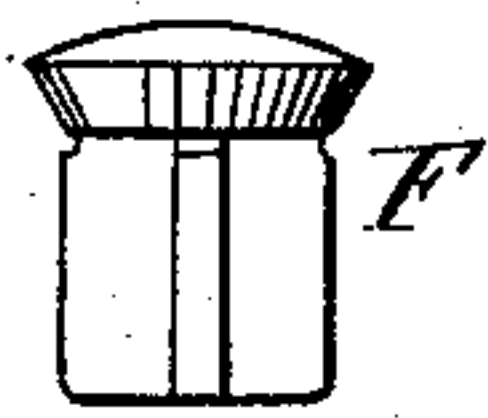


Fig. 3.

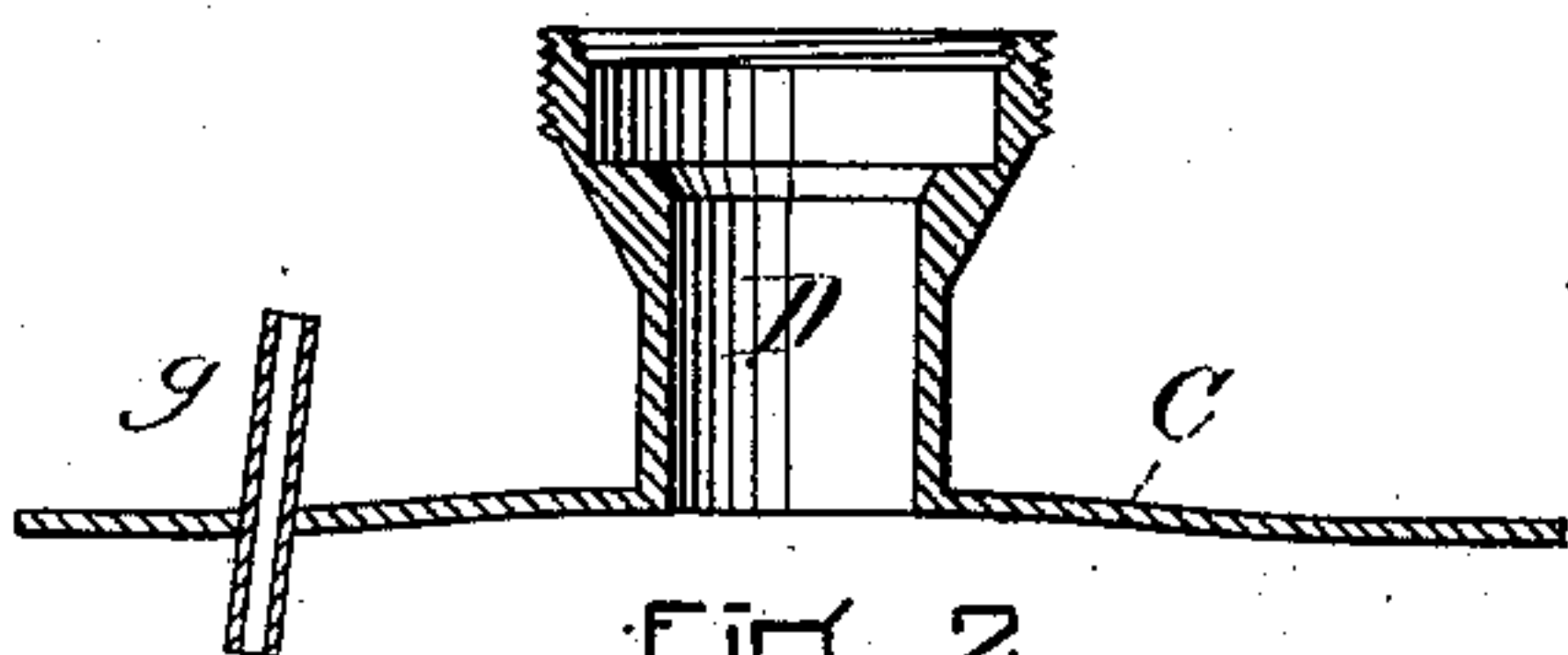


Fig. 2.

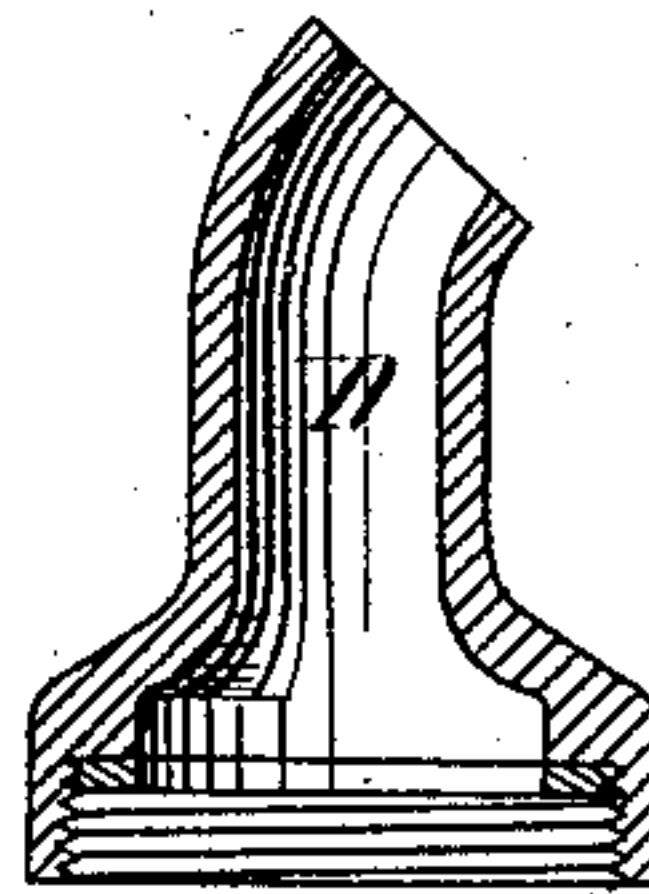


Fig. 5.

WITNESSES

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STOPPER FOR LIQUID-CONTAINING VESSELS.

SPECIFICATION forming part of Letters Patent No. 281,611, dated July 17, 1883.

Application filed February 3, 1883. (No model.)

To all whom it may concern:

Be it known that I, EDWARD BURNETT, of Southborough, in the county of Worcester, State of Massachusetts, a citizen of the United States, have invented certain new and useful Improvements in Stoppers for Liquid-Containing Vessels, of which the following is a specification.

My invention relates generally to the construction of closing devices or stoppers for liquid-containing vessels, but is particularly adapted to that class of vessels commonly used in the transportation and distribution of milk; and it has for its object to provide a means whereby the outflow of the liquid may be permitted, while the surreptitious introduction of liquid, as an adulterant or otherwise, is prevented. This I accomplish substantially by providing the vessel at its place of discharge with a locked stopper or kindred closure of such a character that a passage will automatically open and allow the outflow of the liquid, but will be automatically closed against the introduction of liquid from without, the whole being so constructed and located as to prevent outside interference with the due action of the working parts. Such a construction of the vessel and stopper will commonly require that a special air tube or vent be provided. Its outer opening should be protected either by putting it within the stopper in the manner to be hereinafter described or otherwise preventing the introduction of an adulterant through it to the interior of the can.

The accompanying drawings show an embodiment of my invention in what I believe to be the best form for the purposes for which it is intended, and which I will proceed to describe.

Figure 1 shows a stopper intended primarily for use with large cans or vessels. It is made of metal, of sufficient thickness and durability to withstand ordinary usage in transportation and handling, and consists of a dome-shaped cap or cover, A, having an internally-screw-threaded flange, a, by which it is screwed to the top of the can B. Within this cap a plate of metal is fitted, as shown at C. This plate, as well as the cap, is centrally bored for the insertion of the educt-pipe D, which is soldered

or brazed onto the plate C or made integral with it. The educt-pipe, the construction of which is illustrated in Figs. 2 and 5, has a valve, F, of the pattern known as the "mushroom," (shown at Fig. 4,) the seat and valve-chamber of which are formed by the enlargement of the pipe D, and this pipe, for convenience of insertion of and access to the valve F, Fig. 3, is formed in two parts united by a screw-joint. Within this pipe, also, is a perforated plate, d, Fig. 4, which serves the double purpose of a stop for the outward movement of the valve and also, in connection with the extension of the pipe D, as a screen or shield to prevent tampering or interference with the valve from without. The dome A, being in practice screwed down tightly upon the plate C, holds it and the interposed packing h firmly in place, and also prevents the upper portion of the tube D from being unscrewed when the can is covered. The dome A, after being screwed down in place, as described, is secured by a lock or seal. The plate C also carries an air-vent consisting of a metallic tube, g. This air-tube extends into the interior of the dome and connects with the outer air through minute slits (not shown) in its rim, where the eduction-tube passes through.

The operation of the structure is as follows: The can having been first filled with milk, the cover A is screwed on and locked or sealed in the ordinary manner. When it is desired to pour out from the can, it is inverted, the valve opens, and the milk flows out through the tube. Upon turning the can back to its original position the valve closes by its own weight and remains so, thus cutting off access to the interior of the can and preventing the introduction of water or other adulterant. The valve is so shielded by the dome A, tube D, and screw d that it cannot be opened from without.

Any known kind of valve which will open automatically to permit the outflow of the liquid contained in the can and close automatically to prevent the introduction of fluid into the can may be substituted for the valve automatically acting by gravity which I have here specifically described.

The details of construction and arrangement also may be varied or changed in many ways

without departing from the spirit of the invention.

I claim—

1. A stopper for closing the mouth of a liquid-containing vessel, adapted to be secured in place in the mouth thereof by a lock or seal, said stopper having a perforated external shield, a perforated internal plate, and a tube opening at one extremity to the can and forming a passage-way for the liquid through the perforated plate and shield, said tube containing a valve which automatically permits the outflow and prevents the inflow of liquid through the locked stopper, and also being provided with means for preventing external interference with the normal action of the valve, all substantially as described.

2. A stopper for closing the mouth of a liquid-containing vessel adapted to be secured in its place by a lock or seal having a discharge passage or outlet, provided with a valve which automatically permits the outflow but prevents

the inflow of liquid through the locked stopper, a separate passage or inlet to the vessel for the air-supply, and means, substantially as described, for preventing access to the end of the inlet and external interference with the normal action of the valve, substantially as herein set forth.

3. A stopper for the mouth of a liquid-containing vessel, adapted to be secured in its place by a lock or seal, said stopper having an external perforated shield, an internal perforated plate, a tube or passage-way from the interior of the vessel passing through the shield and plate, provided with an automatically-acting valve, an air-tube, and means, substantially as described, for preventing access to the end of the air-tube and external interference with the normal action of the valve, all substantially as herein set forth.

Witnesses: EDWARD BURNETT.

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