

UNITED STATES PATENT OFFICE.

ABBOT AUGUSTUS LOW, OF NEW YORK, N. Y.

CAP FOR CLOSING VESSELS.

SPECIFICATION forming part of Letters Patent No. 652,793, dated July 3, 1900.

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To all whom it may concern:

Be it known that I, ABBOT AUGUSTUS LOW, a citizen of the United States of America, and a resident of New York, (Brooklyn,) county of Kings, and State of New York, have invented and made certain new and useful Improvements in Caps for Closing Vessels; and I do hereby declare that the following is a full, clear, and exact description and specification of the same, reference being had to the drawings herewith, making part thereof.

The object of my invention is to provide a means for hermetically sealing packages containing substances which deteriorate by exposure to the air and to prevent leakage in transportation by means of a closing-cap the bottom of which is adapted to be screwed upon the neck and mouth of a bottle or case and unscrewed therefrom for filling the same and provided with a smaller discharge-opening and cap at its top for regular use, of such a character that when the bottle contains semi-fluids, such as thick oils or syrups and the like, the fluids may flow out uninterruptedly by permitting or causing air to be held in an intermediate air chamber or dome to act as an air-chamber in the cap itself and cause an easy flow; and to this end my invention consists in a certain construction of cap and sealing devices fully specified and claimed herein.

In order that persons skilled in the art to which my invention appertains may understand, construct, and use my invention, I will proceed to describe it, referring to the drawings herewith, in which—

Figure 1 is an outside vertical view of my invention. Fig. 2 is a vertical central section thereof.

- A is the bottle or case.
- B is the neck.
- C is the mouth of bottle or case.
- D is the screw-thread upon the neck B.
- E is the threaded barrel of the screw-cap to fit thread D.
- G is the annular flange turned inward on and above the barrel E to about the width of the thickness of the bottle-neck.
- H is the protective packing, which rests upon the top of the bottle-neck and entirely closes the mouth of the bottle when flange K is screwed down upon it.
- I is a dome-shaped chamber sprung up-

ward above the barrel E and of a diameter at the base equal to or larger than the bottle-mouth.

J is a screw-threaded discharge-tube at the crown of the dome I and of a small diameter and height.

L is a screw-cap which closes the opening J.

P is a packing-piece upon which flange Q bears to seal it.

Q is a flange turned outward upon the bottom of screw-cap L. K is the same on bottom of barrel E.

To fill the bottle A, barrel E is unscrewed and removed. To seal it hermetically, the screw-threaded barrel E is replaced and firmly screwed down upon packing-piece H, and the screw-cap L is screwed firmly down upon the packing-piece P, which secures the joints tightly against access of air into the bottle or case.

To discharge the contents of the bottle or case, the cap L is unscrewed and removed and the bottle turned upon its side, so that the contents will flow out through the discharge-opening J. As the fluids flow out, even if they fully fill the discharge-opening J, a space will be left above the line X Y in Fig. 2, in which air will remain, and as a tendency occurs to form a difference of pressure between the outside and inside of the bottle or case and to retard the outward flow the air in chamber I acts as a supply to the inside of the bottle and restores the equality of pressure outside and inside of the bottle. Air again collects in chamber I from outside very readily, because the distance it has to travel to reach said chamber I is so short that it is practically nil. The same may be said as to its passage from chamber I to the inside of the bottle A. With a long narrow tube the distance is too great, and the obstruction from friction, &c., prevents any such action theoretically, and practically no air will pass backward through the small tube against the flow of the fluids to equalize the inside and outside pressures, and these devices have all failed to be of any practical use, while my invention is of great use and practical success.

I do not confine myself to any specific method of packing, although the drawings show the kind I prefer, nor do I necessarily

use any inside packing over the mouth of the bottle-neck, as shown in the drawings.

Having now fully described my invention and the manner in which I have embodied it, what I claim as my invention, and desire to secure by Letters Patent, is—

1. A sealing-cap for vessels consisting of a tubular portion as E, provided with means as D, for securing it tightly over the discharge-opening of the vessel and for removing it; dome as I, adapted to trap air to aid the discharge of the contents and located above said tubular portion E; said dome being provided at its top with a discharge-opening as J, and means for opening and tightly closing it all constructed, arranged and combined to operate substantially as and for the purposes specified.

2. In a closing-cap for vessels, the combination consisting of the barrel E, provided with screw-thread D, and flange K at its bottom, annular flange G, above said barrel; dome I adapted to trap air to aid the discharge of the contents and located above said barrel E and annular flange G, discharge-tube J, at top of dome or chamber I, provided with screw-thread; and screw-cap L, all constructed and combined to operate, when applied to the neck of a vessel to hermetically seal it, and when in use for discharging the contents of the vessel to permit an even flow, substantially as hereinbefore specified.

ABBOT AUGUSTUS LOW.

Witnesses:

F. A. PALT,
JAMES W. EATON.