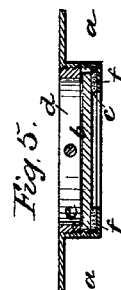
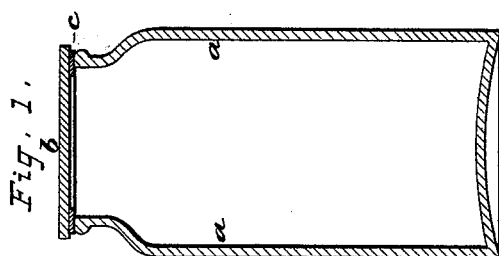
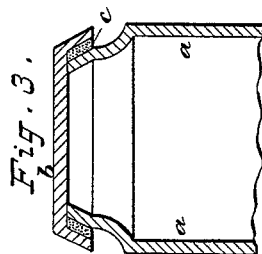
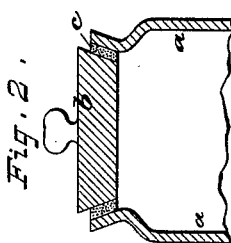
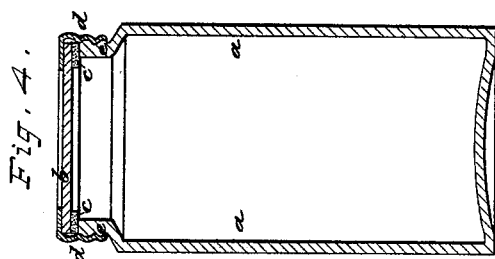


T. G. F. DOLBY.
Hermetic Closing of Receptacle.

No. 221,451.

Patented Nov. 11, 1879.



ATTEST.

Walter H. Scott.
Arthur C. Fraser.

INVENTOR.
T. G. F. Dolby
By his Attys.
Burke, Fraser & Corbett

UNITED STATES PATENT OFFICE.

THOMAS G. F. DOLBY, OF LONDON, ASSIGNOR OF ONE-HALF HIS RIGHT TO
JOHN GOLDIE CHAPMAN, OF BIRKENHEAD, ENGLAND.

IMPROVEMENT IN HERMETIC CLOSING OF RECEPTACLES.

Specification forming part of Letters Patent No. **221,451**, dated November 11, 1879; application filed
December 3, 1878; patented in England, August 8, 1878.

To all whom it may concern:

Be it known that I, THOMAS G. F. DOLBY, of London, England, have invented or discovered certain new and useful Improvements in Effecting the Hermetic Closing of Cans, Jars, and other Receptacles, of which the following is a specification.

My invention relates to a method of effecting the hermetic closing of the opening in cans, jars, and other receptacles whereat the contents are inserted, being especially applicable to cans for packing and transporting substances that would be injured by heating—as butter, &c.

Heretofore, in the canning of fruit, vegetables, &c., the air has been rarefied in the same by means of heat, or by setting the receptacles in hot water, and to seal or otherwise secure the covers to the same while the air is thus rarefied. There are some articles, however, which it is not desirable to heat, and which are seriously injured thereby; and, moreover, this process does not produce a sufficiently-perfect vacuum in all cases. And I may say that where the air in the jar is rarefied by heat, and the pressure of the atmosphere is relied upon to keep the covers on, the covers must be weighted or held down until the jars are cool, or the gradual cooling of the contents will cause the air to slowly enter, and thus defeat the object sought; also, vessels or receptacles provided with covers having small central apertures have been filled, and then the covers sealed or soldered on, and bits of oiled silk placed over the small apertures, after which the vessels have been placed in chambers and the air exhausted therefrom by a condensing sphere. On again admitting the air the oiled silk clings to the cover, and closes the small aperture. The valve is afterward protected for transportation in commerce.

The vacuum cannot be so quickly and thoroughly made through the diminutive vent-hole, and in opening the cans they must be cut, as the contents cannot be removed from the diminutive air-hole in the cover.

I am aware that patents for hermetically sealing cans and other receptacles have already been granted for the following processes: A hole or mouth is made in the top of the can,

over which is placed a cover with a suitable gasket or yielding packing, cemented to the cover. An air-pump is then placed on the top of the can, inclosing the mouth of the can. The air is then exhausted out of the can, and the cover is held in place by atmospheric pressure, after which the said cover is soldered or sealed. Another invention consists in the employment of india-rubber placed upon the top of a metal cover, over which is placed a cross-bar provided with elastic cushions. A small vent-hole is made in the metal cover to act as a valve. The air in the vessel is exhausted by means of an air-pump, the valve rising upward to allow of the escape of the air, and the valve is held in position when closed by a cross-bar.

By my process I secure a much more rapid and thorough exhaustion of the air. I also avoid the complexity of construction in the vessel to be sealed, and I also diminish the steps of the process of sealing.

In carrying out my invention, I provide a can or jar of the proper size, with a large mouth for the passage of the contents, and a plain cover without apertures or valves of any kind. I provide also an elastic or yielding plate or washer, to interpose between the cover and the rim around the mouth of the vessel.

I fill the jars or cans, lay the packing-rings in place, and the covers on the rings. The filled receptacles are now placed in a chamber from which the air may be readily removed, and I exhaust the air therefrom. As the covers and packing rest loosely on the receptacles, the air is exhausted from them and passes out under the edges of the covers. I now allow the air to suddenly enter the chamber, when the pressure of the atmosphere acting upon the covers holds them firmly in place upon their seats, the interposed yielding material insuring a hermetic joint.

The vessel is opened by simply inserting a pointed instrument between the cover and the receptacle, so as to admit the air, thus avoiding the necessity of cutting and injuring the vessel or its covers. In an application for a patent of even date herewith I have described a machine for the execution of this process.

In the annexed drawings, Figure 1 is a vertical mid-section of a jar adapted to be sealed

by my described process, *a* representing the jar, *b*, the plain cover, and *c* the packing-ring. Figs. 2 and 3 show modified forms of Fig. 1, the former showing a conical cover or stopper and the latter a flanged overhanging cover.

To protect the cover after it is on, and to permit of the vessel being conveniently re-closed after having been once opened for the removal of a portion of its contents, I provide, when required, a screw-cap, *d*, as shown in Fig. 4. This cap is screw-threaded, and its screw engages another, at *e*, on the jar or receptacle. The cap *d* being detached from the cover *b* the latter will not turn with the former when it is screwed down, and the packing is thus prevented from rucking.

In Fig. 5 I have shown the top of the can recessed, to receive the cover. In this case the cover *b* and packing *C* rest upon an in-turned flange, *f*, on the can, and the walls of the recess may be screw-threaded to receive a cap, *d*, provided with a male screw. By thus recessing the can the cover is the better protected against displacement, and the cans pack better.

The cans or receptacles herein described form no part of the present invention, but are

simply shown to better illustrate my process of hermetically sealing herein set forth.

I reserve to myself the right of making another and later application for a patent upon whatever is new in the shape or construction of the vessels to be used.

I claim—

The herein-described method of fixing the cover of a jar or can, which consists in placing in the vessel the substance to be hermetically inclosed, placing loosely on the mouth of the vessel its cover and an interposed yielding packing, placing the vessel so covered in a chamber or so covering the vessel while in the chamber, exhausting the air from the chamber and the vessel, and then suddenly admitting air to the chamber, whereby the cover is caused to maintain its position and form a perfect hermetic joint, solely by atmospheric pressure, substantially as set forth.

In witness whereof I, the said THOMAS GEORGE FONNEREAU DOLBY, have hereunto set my hand this 23d day of September, 1878.

T. G. F. DOLBY.

Witnesses:

I. C. NEWBURN,

H. P. HOUGHTON.