(No Model.) 2 Sheets—Sheet 1.

F. J. DEVERALL.

CAN.

No. 301,575. Patented July 8, 1884.

Fig. 1.

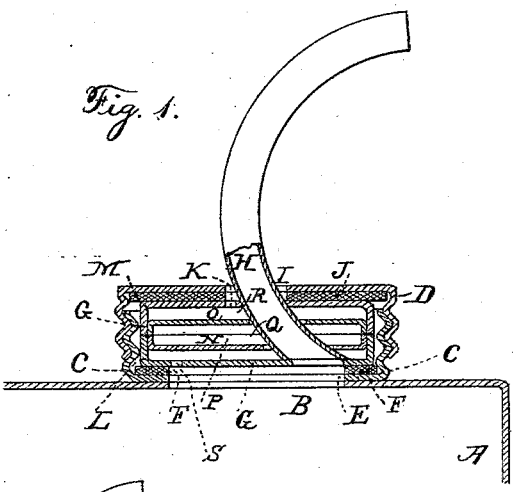


Fig. 2.

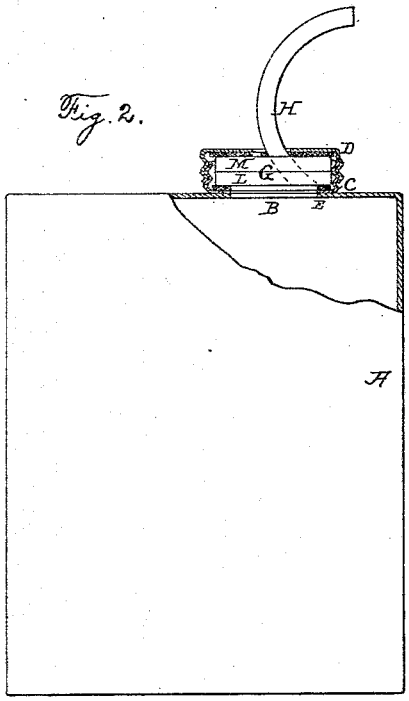
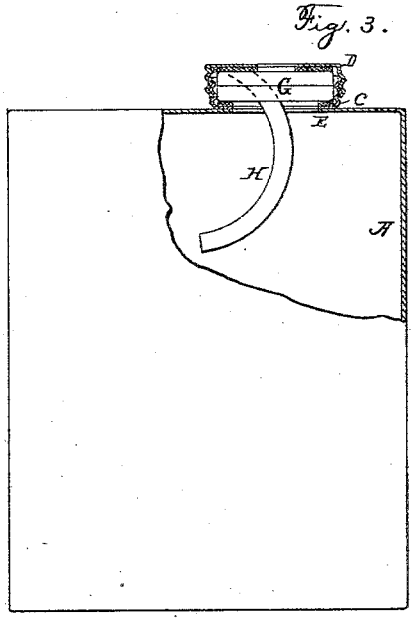


Fig. 3.



WITNESSES:
Hermon Gustow
William B. Ellison

INVENTOR
Frederick J. Deverall
BY
Chas. C. Gill
ATTORNEY

(No Model.) 2 Sheets—Sheet 2.

F. J. DEVERALL.

CAN.

No. 301,575. Patented July 8, 1884.

Fig. 4.

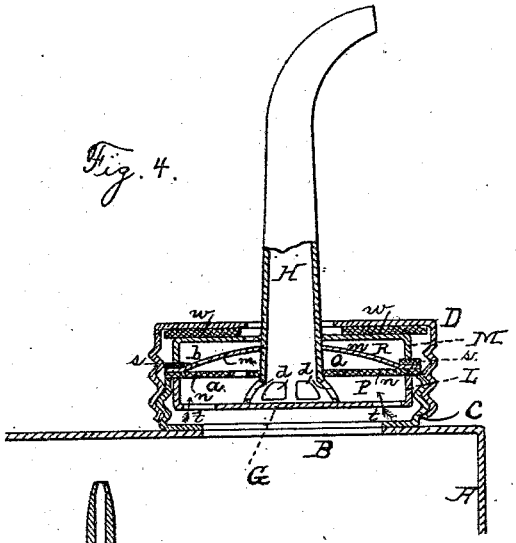


Fig. 5.

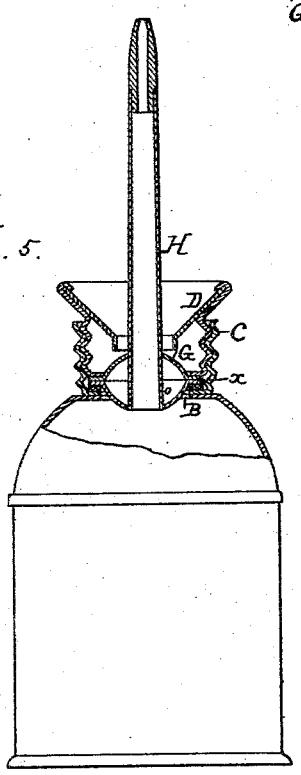
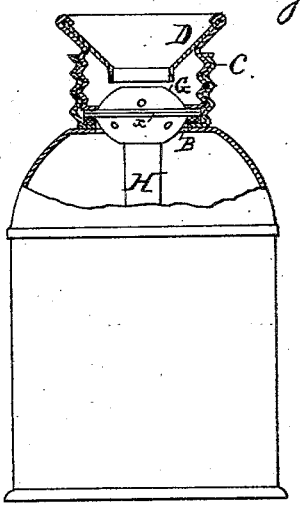


Fig. 6.



WITNESSES:

Herman Gustow

William B. Ellison

INVENTOR

Frederick J. Deverall,

BY

Chas. C. Gill

ATTORNEY

UNITED STATES PATENT OFFICE.

FREDERICK J. DEVERALL, OF NEW YORK, N. Y.

CAN.

SPECIFICATION forming part of Letters Patent No. 301,575, dated July 8, 1884.

Application filed March 22, 1884. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK J. DEVERALL, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Cans, of which the following is a specification.

The invention relates to an improvement in cans for fluids of all kinds.

The precise nature of the invention will appear from the detailed description hereinafter presented, reference being had to the accompanying drawings, in which—

Figure 1 is a sectional view of a portion of a can embodying the invention. Fig. 2 is a view, partly in section, of same. Fig. 3 is a similar view illustrating the pouring-spout turned into the can. Figs. 4, 5, and 6 are sectional views of modifications of the invention, and are hereinafter referred to.

In the drawings, A denotes the can, which may be of any desirable construction, having at its upper portion a mouth, B, encircled by the threaded flange C, adapted to receive the threaded cap D.

At the base of the flange C is provided an inwardly-projecting flange, E, of sufficient width to receive and support the gasket F and air-box G, through which projects the spout H, and which is subdivided into one or more air-chambers, as hereinafter described. The cap D is provided with an aperture, I, through which the spout H projects, and within the upper portion of the cap is provided a gasket, J, for the purpose of forming an air-tight joint between the upper surface of the box G and the said cap. The aperture I will be somewhat larger than the circumference of the spout H, in order not to interfere with the operation of the vent K, formed in the upper part of the box G.

The number of the air-chambers in the box G will depend somewhat upon the size of the can and other considerations; but it will be found that when the box is divided into three air-chambers, as will be hereinafter described, it will answer for cans of almost any description.

The box G illustrated in Figs. 1 to 3 consists, externally, of the base L and top M, the vertical flanges of which meet when the box is put together and inclose the diaphragms N O, each of which is provided with an aperture, whereby it may be passed over the spout H. The diaphragm N is first placed within the base L of the box, being properly separated from the bottom thereof, to form an air-chamber, P. The vertical flange of the diaphragm O serves to separate it from the diaphragm N, and to form an air-chamber, Q. When the top M is introduced in place it will construct an air-chamber, R, between itself and the diaphragm O, as shown. The parts of the box G are held together by solder applied to the joint formed by the meeting edges of the bottom and top, (lettered L M, respectively.) It is not essential that the diaphragms N O be soldered, unless they fit within the box very loosely; but when the top and bottom of the box are secured as above specified a portion of the solder will pass within the box and operate to attach the diaphragms N O to each other and to the parts L M. The apertures in the diaphragms N O will operate in combination with the vent K in the top of the box and the vent S in the bottom thereof, to permit the passage of air through the air-chambers into the can. The vents in the box G will preferably be arranged as far as possible above the line of flow of the liquid, in order that when the can is tilted in the act of pouring oil therefrom the vents may be less likely to be interfered with by the entrance of the oil into the air-chambers. The box G has a smooth exterior, and is of suitable dimensions to be received within the flange C and cap D. The spout H enters the box G about the center of its upper surface, and the spout being curved, its lower portion terminates at a point to one side of the center of the base of the box. When the device is in use, the box G will be arranged within the flange C, so that the lower end of the spout H will be adjacent to the nearest side of the can, in which position it will be retained by placing the cap D over the box and screwing it down upon the flange C. When the can employing the invention is to be packed for shipment, or to prevent the evaporation and slopping of the fluid, the position of the box G will be reversed, the spout H being inserted into the can, after which the cap D will be applied, when the can will be ready for shipment. Upon the reversal of the position of

the box G the oil will be prevented from escaping by reason of the fact that the gasket J will securely cover the base of the spout H and the vent S. The box G may have its position transposed at will, according to whether it is desired to pour oil from the can or to pack the same for shipment. When the can is in use, the box G will be inserted with the spout H protruding upward therefrom, in the manner shown in Fig. 1, when the oil may be allowed to flow therefrom without further manipulation. The passage of the air into the various air-chambers effectually prevents any escape of the oil or other fluid through the vents. It is possible that a very small quantity of the oil may find its way into the lower air-chamber, and when used in connection with large oil-cans a drop of oil may pass into the second air-chamber; but my experience has demonstrated that no further escape of oil through the vents will occur.

The invention is one of great simplicity and is entirely effectual in its operation. When the can is packed for shipment, the spout is protected, and there is no projection upon the can which would be likely to be injured.

By means of the device which is the subject of this application I am enabled to entirely dispense with the use of vents which are opened or closed by means of screws or other devices, and to produce a can which will be readily understood and cannot be easily injured by ordinary use.

The formation of the box G whereby the air-chambers are produced may be modified in some respects without departing from the spirit of the invention, and in Fig. 4 I illustrate a modified form of valve, which consists of the top M and bottom L, inclosing diaphragms *m n*, which serve to form air-chambers, and differ from the like devices illustrated in Fig. 1 only in details of construction. In this modified form of box G, however, the lower portion of the spout H is not curved, but is expanded at its lower edge, and secured to the bottom of the box at about its center, the expanded portion of the spout being provided with apertures *d*. The oil entering the spout to be discharged into the lamp or other receptacle first passes through apertures *t*, formed in the bottom L, and thence through the apertures *d* into the spout H, through which it is permitted to escape. The employment of air-chambers in this embodiment of the invention is the same in every respect as that in the box G illustrated in Figs. 1 and 2, except that the air-box does not rest on the flange E, but on the top of flange C. The diaphragm *n* is of leather in this embodiment of the invention, and a leather gasket, *s*, is arranged between the outer edge of the tin diaphragm *m* and the lower edge of the top M, for the purpose of making a tight joint. The diaphragms *m n* are secured at their outer edges between the parts M L of the box G, and the part L is secured to the lower end of the spout H, while that lettered M is soldered around the aperture in its top to the spout. When the box G shown in Fig. 4 is reversed in the manner indicated in Fig. 3, the gasket *w* prevents any escape of the oil through the apertures *t*.

In Figs. 5 and 6 I illustrate a formation of the air-box G which may be successfully employed in cans in which the mouth is closed by a cap, D, which enters within the threaded receiving-flange C. In this embodiment of the invention the air-box is oval and surrounded by a flange, *x*, which may rest upon the edges of the mouth B and be thereon held by the lower edge of the cap D. The spout extends through the air-box G, as shown, and is greatly strengthened thereby—a point of great importance in cans of the kind to which the air-box is applied. The air-box G shown in this connection has a single air-chamber provided with vents, as it is intended for heavy lubricating-oils.

Whether the air-box G is made oval in vertical section, as shown in Figs. 5 and 6, or rectangular, as in Figs. 1, 2, and 3, a single air-chamber therein may be made use of, since it is not essential in all cases that diaphragms subdividing the box be used.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In combination with a can having a mouth, B, flange C, and cap D, open at its center, the spout H, carrying upon its base the air-box G, provided with vents, substantially as and for the purpose set forth.

2. In combination with a can having an opening, B, flange C, and cap D, open at its center, the reversible spout H and air-box G, which latter is provided with air-vents, and is subdivided into two or more chambers, substantially as and for the purposes set forth.

3. The reversible spout H and air-box G, which latter is provided with air-vents, and is subdivided by diaphragms N O, in combination with the can having at its mouth the receiving-flange C and cap D, open at its center, substantially as and for the purpose set forth.

4. The reversible spout H and air-box G, carried thereby, in combination with the can having a flanged mouth, and cap D, open at its center, the spout entering the air-box at its upper central portion and terminating at one side of its base, substantially as and for the purpose set forth.

Signed at New York, in the county of New York and State of New York, this 21st day of March, A. D. 1884.

FREDERICK J. DEVERALL.

Witnesses:
CHAS. C. GILL,
HERMAN GUSTOW.