



# UNITED STATES PATENT OFFICE.

GEORGE H. CHINNOCK, OF BROOKLYN, NEW YORK, ASSIGNOR OF ONE-HALF HIS RIGHT TO LEONARD RICHARDSON, OF SAME PLACE.

## IMPROVEMENT IN CANS FOR OIL, &c.

Specification forming part of Letters Patent No. 142,613, dated September 9, 1873; application filed July 21, 1873.

*To all whom it may concern:*

Be it known that I, GEORGE H. CHINNOCK, of Brooklyn, in the county of Kings and State of New York, have invented certain Improvements in Tops for Closed Metal Cans, of which the following is a specification:

This invention is designed for sheet metal and other cans, which, like those employed for holding kerosene oils, &c., are wholly closed when in use, except during the operation of filling and emptying; and it relates to that class of fixtures technically termed "tops," the function of which is to provide for the easy temporary opening of the can to permit the outflow of its contents, when required. The invention consists in certain novel means whereby the cost of manufacturing the top, as compared with that of other devices for similar purposes, is very materially reduced; whereby the usual necessity of separate devices for filling and emptying the can is done away with; whereby the can may be filled and closed without the exercise of any considerable degree of skill, and without the use of solder; whereby the steady and uniform flow of the liquid from the can in emptying the latter is insured; and whereby the overflow of the liquid upon the top of the can, during such emptying, is effectually provided against.

Figures 1, 2, and 3 are vertical sectional views of a top for cans made according to my invention, showing the position of the parts as arranged, respectively, for tightly closing the can to which the top may be applied, for permitting the outflow of the contents of the said can, and for allowing the filling of the can. Fig. 4 is a plan view of the parts shown in Fig. 3. Figs. 5, 6, and 7 are vertical sectional views representing certain modifications of my invention.

A indicates a portion of the can, which is preferably of sheet metal, and used for holding kerosene and similar products, and of any requisite or preferred form, the said can being closed at the upper end, which is indicated at *a*. In this part is provided a circular opening, around which, upon the outer surface of *a*, is soldered fast the cylindrical shell B. The aforesaid opening should be of such size, as

compared with the diameter of the shell, that a narrow annular ledge, *a'*, may be afforded, upon which is placed a circular casting, C. This casting comprises an annular or circumferential shoulder, *b*, immediately adjacent to the inner surface of the shell, and a cross-bar, *c*, shown more fully in Fig. 4, in which, coincident with the axis of the shell, is provided an internal screw or nut, *a''*, through which passes the threaded stem or screw *d*, and upon the opposite sides of which are orifices *e'*, which establish communication between the interior of the can and the shell B. Upon the upper end of the screw *d* is a disk, *f*, below which, and with its circumference fitting the sides of the shell, is a circular packing, *n*, of leather or other suitable material. This packing is clamped against the disk, and held firmly in place on the screw by a small nut, *f'*. Upon the upper side of the disk *f* is a thumb-and-finger piece, *g'*, whereby the disk and packing—constituting together a plunger, *f n*—may be turned, and consequently raised or lowered, as the case may be, through the working of the screw in its nut, hereinbefore described. The thumb-and-finger piece is made of such proportions, and so arranged with reference to the shell, that when the plunger is screwed down to its limit, the aforesaid piece *g'* will be brought below the upper edge of the shell, as shown in Fig. 1, and be protected by the latter from possible injury or fracture. In that side of the shell B nearest the adjacent edge or corner of the can is formed an outlet-opening, *m*, preferably provided with a spout, *m'*, and in the opposite side of the shell, at or about the same level as the other, is a small air-inlet opening, *n'*.

When the plunger is screwed downward to its limit, it is held firmly against the shoulder *b*, and thereby closes the passage to the shell from the can, the packing *n* insuring a tight joint upon the shoulder, and of course sealing or closing the can. The can being filled, for example, with kerosene oil and then closed in the manner just set forth, is fitted, with its contents, for storage or transportation.

The packing *n* is designed to be more or less elastic at its circumference, so as to secure a tight joint between the latter and the shell.

When the plunger is depressed to close the can, the periphery of the packing is brought over or upon the outlet-opening *m* and the air-inlet *n'*, and closing both of these prevents any exit of liquid therefrom, even when, as may, by carelessness or accident, sometimes occur, the plunger is not forced down with sufficient force upon the shoulder *b* to secure the perfect closing of the joint upon the latter.

When the plunger is screwed upward until brought above the outlet and air inlet openings, as shown in Fig. 2, the outlet-opening is brought in communication with the interior of the can. By simply tilting the can in the usual manner, the contents of the same may then be readily poured from the outlet, the air-inlet, meanwhile, permitting the inflow of air to fill the space vacated within the can by the outpoured contents, and, consequently, insuring an uninterrupted or regular flow during the said outpouring. At the same time, the plunger, closing the upper end of the shell, and constituting a stop or valve, prevents the overflow of the liquid from the shell upon the top of the can. It will also be seen that, when the plunger is in this position, the shell effectually braces or supports the same against lateral displacement. When it is desired to fill or refill the can, the plunger is turned until the screw is brought wholly from the nut, to permit the removal, bodily, of the plunger and the parts formed in one therewith. This leaves the shell open at top and bottom, and allows the facile pouring of the liquid through the same into the can. In order to reclose the can, it is, of course, only necessary to return the plunger to its original position, as hereinbefore fully set forth. The ease with which the can may be repeatedly refilled, by means of the same devices used in emptying, is a matter of material and practical importance, it being ordinarily necessary to fit the can with a second or separate fixture for filling, which separate fixture, being closed by soldering, has rendered it necessary for the user to return the can to the manufacturer to be refilled, thus entailing upon the latter the cost and trouble of removing and resoldering the soldered part. All this, as well as the first cost of the aforesaid second fixture, is avoided by the use of my invention, which enables any one of ordinary intelligence to refill and close the can without difficulty. Oil may, therefore, by the adoption of this improvement, be transported from wholesale to retail dealers in barrels, and the cans, once emptied, be refilled by retail purchasers of the oil.

When the top is made according to the modification shown in Fig. 5, the packing of the plunger is not made, necessarily, in snug contact at its periphery with the adjacent surface of the shell; but the latter is covered by a removable cap, *G*, through a packed opening, *a'''*, in the center of which projects a stem, *r*, squared at its upper end and formed

upon the plunger. This last is operated by the use of a small wrench or equivalent device applied to the squared projecting extremity of the stem.

In the modification shown in Fig. 6, the shell *B*, the shoulder *b*, cross-bar *e*, &c., are formed in one casting, and soldered upon the can in suitable relation with the opening *c*.

I do not confine myself to the precise construction of the plunger herein set forth, as this may, in some degree, be varied without affecting the principle of its operation. Furthermore, instead of providing the screw upon the plunger and the nut in the cross-bar *e*, the position of the screw and nut may be reversed without materially changing the *modus operandi* of manipulating the plunger. Furthermore, in the modification shown in Fig. 7, the plunger is made of cork, and carried quite to the upper edge of the shell, even when depressed to close the outlet *m*; and is, moreover, furnished with a milled head, *g''*, or like device, to enable it to be easily turned within the shell.

What I claim as my invention is—

1. The combination of the plunger, working snugly in the shell *B*, with the outlet *m* and the air-inlet *n'*, substantially as and for the purpose specified.

2. The combination, with the plunger movable in the shell *B*, and arranged, as set forth, with reference to the outlet *m*, of the annular shoulder *b* and screw *d*, operating to hold the plunger lightly against the said shoulder, substantially as herein set forth.

3. The shell *B* extended above the outlet *m*, in combination with the plunger, whereby, when the plunger is brought to the upper part of the shell, it is sustained against lateral displacement and caused to act as a stop or valve to prevent the outflow of liquid from the top of the shell, when the can is tilted in pouring from the outlet *m*, substantially as set forth.

4. The shell *B*, opened or capable of being opened at the top, in combination with the plunger having a vertical movement in the said shell by means of a screw, *d*, whereby, when required, the removal of the plunger is made to provide an opening for the subsequent filling or refilling of the can, substantially as herein set forth.

5. The combination, with the plunger and the shell *B*, of the thumb-and-finger piece *g'*, provided upon the upper surface of the plunger and arranged to come below the upper edge of, and be protected by, the shell *B* when the plunger is forced down to close the passage to and through the shell, substantially as herein set forth.

GEO. H. CHINNOCK.

Attest:

JAMES A. WHITNEY,  
CHARLES E. QUETIL.