(No Model.)

T. F. HAMMER & J. F. NETTLETON.

METALLIC CAN.

No. 305,305. Patented Sept. 16, 1884.

Fig. 1.

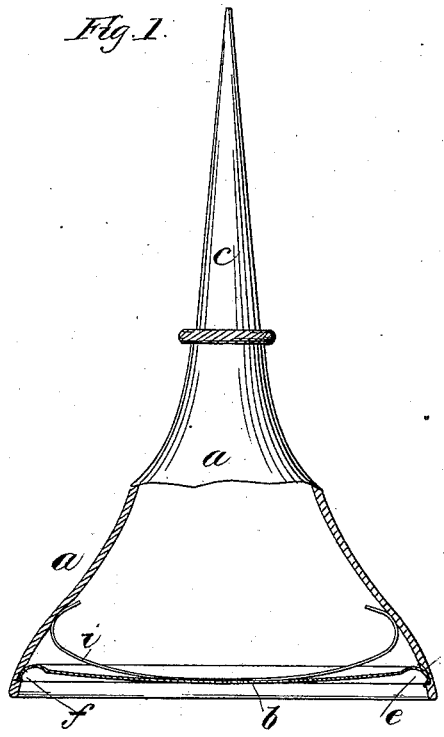


Fig. 3.

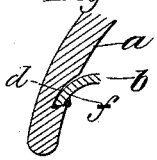


Fig. 4.

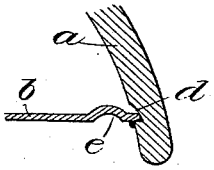
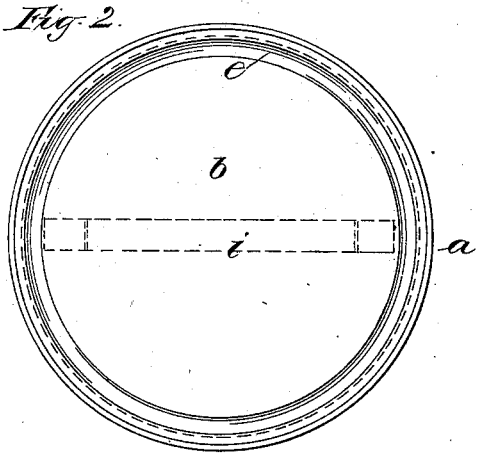


Fig. 2.



Witnesses:
Henry F. Parker
Geo. E. Gavin

Inventors:
Thorvald F. Hammer
Joseph F. Nettleton
by Chas. M. Higgins
attorney

UNITED STATES PATENT OFFICE.

THORVALD F. HAMMER AND JOSEPH F. NETTLETON, OF BRANFORD, CONN.; SAID NETTLETON ASSIGNOR TO EMIL C. HAMMER, OF BOSTON, MASS.

METALLIC CAN.

SPECIFICATION forming part of Letters Patent No. 305,305, dated September 16, 1884.

Application filed March 18, 1884. (No model.)

To all whom it may concern:

Be it known that we, THORVALD F. HAMMER and JOSEPH F. NETTLETON, both of Branford, New Haven county, Connecticut, have invented certain new and useful Improvements in Metallic Cans, of which the following is a specification.

This invention relates more particularly to cans for lubricating-oil, and to that class of which the body is made of malleable or cast metal in which the flexible or spring bottom of sheet metal is soldered.

The object of our improvement is to so affix the spring-bottom in the base of the body as to firmly engage the edge of the spring-bottom with the metal of the sides of the body without relying solely on the adhesion of the solder, as heretofore, and in which the joint of the bottom with the sides, when soldered, shall be protected from contacts or collisions which tend to crack or injure the soldering in seating or placing the can on its base.

To these ends my invention may be briefly stated to consist in forming a circumferential groove in the base or end of the body adjacent to the seating edge thereof, and forming the spring-bottom with an elastic down-turned or flanged edge, which is forced into the grooved body and the flange sprung into the said groove and there soldered, whereby the joint is not only made very secure and durable, but the manufacture is rendered very cheap and perfect, as hereinafter fully set forth.

In the drawings, Figure 1 presents a sectional elevation of our improved can, and Fig. 2 an inverted plan thereof. Fig. 3 is an enlarged fragmentary section illustrating more fully the form of the joint between the body and bottom, and Fig. 4 is a similar view showing a modification.

Referring to Fig. 1, *a* indicates the body of the oil-can; *b*, the spring-bottom thereof, and *c* the nozzle which screws into the body as usual. The nozzle and the body are preferably made of malleable cast-iron, as usual in cans of this class; but this is not essential to our improvement, as the body of the can may also be made of thick sheet metal, if desired. In the base of the body and near the lower or seating edge thereof is formed an internal circumferential groove, *d*, in which the edge of the spring-bottom *b* is socketed, as shown, so that the edge of the bottom seats firmly on the shoulder formed by the outer side of the groove in the metal of the body, as fully illustrated in Fig. 1, and also by dotted lines in Fig. 2, the joint of the two being subsequently soldered to render the same oil-tight, as will be understood. The spring-bottom *b* is preferably so stamped as to have a groove or channel, *e*, around its circumference surrounding the bulge of the bottom, leaving the edge of the bottom cupped or rimmed with a downwardly-projecting rim or flange, *f*, which fits into the groove *d*, as shown, with the edge of the flange seating on the lower side or shoulder of the groove, as fully shown in Fig. 1. The profile of the socket-groove *d*, as shown in Fig. 1, is preferably made to correspond to the section or profile of the rimmed edge of the bottom, as shown, the upper side of the groove being preferably rounding and gradually vanishing into the side of the body, while the lower side of the groove is at an abrupt angle to the side of the can, either a right angle or preferably an acute angle, so as to give the bottom of the groove a dovetailed or "undercut" form, as best shown in Fig. 3, so that when the edge of the spring-bottom is engaged therewith it will be held more securely and the possibility of its springing out prevented. If desired, however, the groove may be formed, as seen in Fig. 4, with a flat shoulder, and the margin of the bottom may be arranged to seat flatwise thereon, as illustrated. The form shown in Figs. 1, 2 and 3, has, however, great advantages, as the rimmed or lipped edge seating edgewise instead of flatwise in the groove renders the engagement with the groove much more stiff and secure, and also greatly stiffens the rim of the bottom, so that the flexions of the bottom in being bulged in or out to eject the oil do not extend to the joint of the rim in the groove *d*, but these flexions cease at the channel *e*, so that hence the flexions will have little or no tendency to spring the lipped rim *f* out of the groove or crack the soldering of the joint, as will be readily comprehended.

In manufacturing the improved cans the cast bodies *a* after being annealed or rendered malleable are first trued by dies or other suitable means, and are then fastened in a lathe

and the groove *d* turned therein, after which the bottom *b* is forced or sprung into the same by suitable dies or tools in the position already described and illustrated, and the joint is then finally soldered, which completes the construction. It will now be seen that not only is this method of construction very simple and economical, but the joint of the body and bottom is unusually neat and secure, and will not only require less solder and may be soldered more easily, but will also be much stronger than is the case with former constructions. It will be further seen that not only is the joint better able to resist the flexions of the bottom, as before described, but the joint and the solder are entirely protected from contacts and collisions in seating the can on its base, for in this case when the can is laid down it seats on the solid metal edge of the body, which is left of full thickness, and no contact is made with the joint of bottom and body at all, which, as will be seen in Fig. 1, is above the seating edge within the walls of the body itself, and hence almost impregnable to the contacts and collisions which act to crack the soldering and loosen the joint in the old construction where the can seats on the soldered joint itself, which is located directly on the seating-edge of the can where the metal of the sides is made of reduced thickness to admit the bottom. It is hence evident from the advantages stated that the present construction, while very simple, is a great improvement over the former construction in all respects, and the merit of the invention will be therefore obvious without further statement.

We do not of course limit ourselves to the formation of the groove *d* by turning, as it may be formed in any other suitable way.

We would also state that we do not of course limit our improvement to squirt-cans with spring-bottoms, and it will be obvious that in some cases the head as well as the bottom of a can may be inserted in the sides in the manner set forth.

In Figs. 1 and 2, *i* indicates a bow-spring of steel placed diametrically within the can with its ends bearing on the conical sides of the body, while its center bears upon the middle of the bottom, so as to impart a positive outspringing tendency to the bottom and make up for any loss of elasticity in the sheet metal during constant use, which feature is, however, common in cans of this class, and is not of course here claimed.

We disclaim the constructions shown in the Patents Nos. 154,910 and 267,471, which are distinct from our improvements.

What we claim is—

1. A can having a metallic body with a circumferential groove formed in the interior thereof adjacent to its seating-edge, in combination with a bottom of sheet metal formed with a flanged edge of a normal diameter greater than the inside diameter of the can-body below the groove, the said flanged bottom being forced inside of the can-body with its flange sprung into and seated in said groove and there soldered, substantially as herein shown and described.

2. A can having an internal circumferential groove near the base or edge of its body, said groove having a dovetailed or undercut form with an inserted head or bottom having an out-turned flanged edge socketed in said dovetailed groove, substantially as set forth.

THORVALD F. HAMMER.
JOSEPH F. NETTLETON.

Witnesses:
LESTER J. NICHOLS,
JOSEPH C. SHARKEY.