

(No Model.)

G. P. HERNDON.
PRESERVING CAN.

No. 499,734.

Patented June 20, 1893.

Fig. 1.

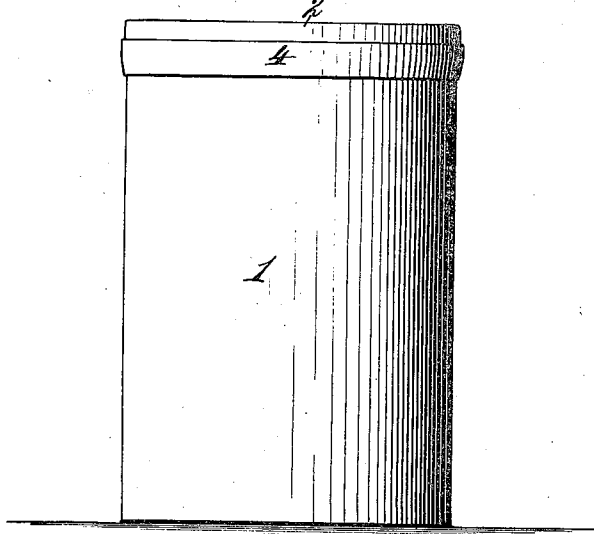


Fig. 2.

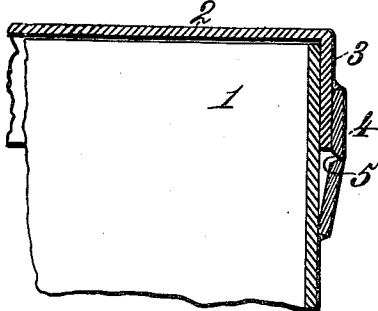


Fig. 3.

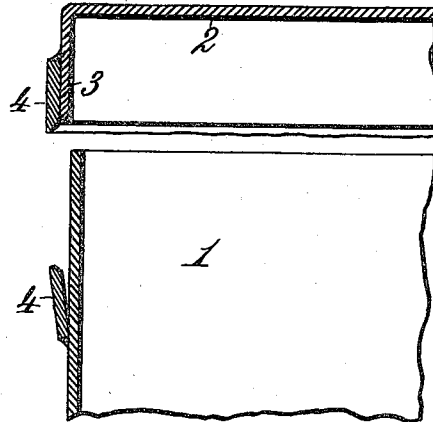


Fig. 4.

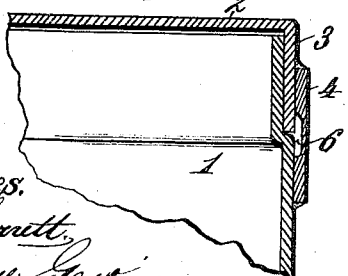
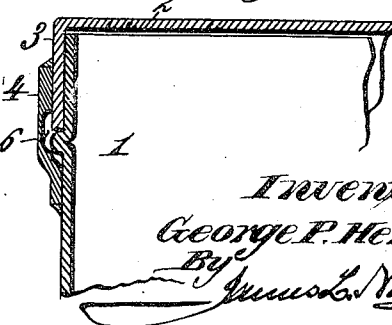


Fig. 5.



Witnesses.

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UNITED STATES PATENT OFFICE.

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PRESERVING-CAN.

SPECIFICATION forming part of Letters Patent No. 499,734, dated June 20, 1893.

Application filed October 22, 1892. Serial No. 449,665. (No model.)

To all whom it may concern:

Be it known that I, GEORGE P. IERNDON, a citizen of the United States, residing at Birmingham, in the county of Jefferson and State of Alabama, have invented new and useful Improvements in Preserving-Cans, of which the following is a specification.

Heretofore, and prior to my invention, sheet-metal cans have been sealed hermetically by applying thereto a cover, or top, having a rim, or flange, which is slipped upon the body of the can in the usual manner, said rim or flange being cut, or grooved, upon a circumferential line in such manner as to reduce the thickness of the metal along said line and consequently weaken the strength of this portion of the cover, or top, in a degree proportioned to the reduction of the thickness of the metal along said circumferential line. After it is placed upon the can, the lower edge of the rim, or flange, is soldered to the body thereof, whereby the can is hermetically sealed and the cover held rigidly in place. In another construction the cover is formed and applied in substantially the same manner as in the type of construction referred to above, and is sealed and fastened by soldering along the lower edge of the rim, or flange, of said cover.

In the form first above referred to, the can is opened by stripping, or tearing off the lower portion of the rim, or flange, of the cover, the line of rupture being supposed to follow the cut, or groove, or the thinned and weakened line of said flange, the lower marginal portion of which is also stripped off along the soldered joint uniting it to the can-body. In the second form referred to above, the cover is removed by severing its rim upon a circumferential line above the solder-joint, the metal being made thinner along this line, and a severing-wire being laid between the body of the can and said rim, and following the said circumferential line. One end of this wire is made fast and the other end is allowed to project through a small opening in the rim or flange of the cover. By grasping this end and exerting sufficient force, the wire may be caused to tear, or rupture the said rim, along the circumferential line of minimum thickness, thereby severing the

lower marginal portion of the said rim from the upper portion. In a third construction, the rim of the cover extends below a circumferential, inwardly projected corrugation, or channel, and is scored, or weakened, along a line coinciding with said channel. Its lower edge is soldered to the can-body below said channel and the can is opened by fracturing the rim along the scored line, the breaking or rupturing force being applied along this line. Finally, a sheet-metal can has been sealed by a strip of thin tin, soldered to the rim, or flange, of the cover and to the body of the can, for which purpose the latter is provided with a circumferential, outwardly-projected head, or rib. To open the can, the strip of tin is torn off, the solder-joints upon the rim of the cover and the body of the can being both, necessarily, ruptured.

In the constructions first referred to above the opening of the can requires the exertion of a force sufficient to rip the solder-joint apart upon the lower edge of the rim of the cover, and to simultaneously break loose the lower margin of the said rim from the upper part thereof, the line of separation following the thinned, or grooved, circumferential line. Experience has shown that when the solder is, from any cause, too thick, or too heavily applied at any one point, the marginal strip of the rim is extremely liable to break at such a point, thereby rendering it necessary to resort to the use of a knife, or some suitable tool, to complete the separation and open the can. Moreover, in those cans formed of heavy tin, such as tomato, oyster and other cans, the circumferential groove, or thinned and weakened line, can not easily be made deep enough, or so formed as to give the necessary reduction in thickness, without producing small air-holes at different points along the line, which are too minute to attract notice, but which entirely destroy the hermetical seal. On the other hand, if the tin is thin, a very slight inequality in the strength of the solder-joint might easily lead to a rupture of the body of the can upon, or near, the line of said joint. In the second type of construction referred to in the opening portion of this description, a wire, or its equivalent, interposed between the body of

the can and the rim of the cover, is an essential feature. In both the first and second types, the opening of the can involves the entire removal of part of the rim of the cover. The latter is thus unfitted for further use, save as a loose and temporary top. Both constructions also involve the presence of a special feature of construction in the cover, whereby its rim is weakened upon a circumferential line. The third form of construction referred to, also presents this same feature, together with the additional requirement of a specific formation of the can-body, especially directed to the peculiar manner of severing the rim of the cover, along the grooved, or weakened line. Finally, the fourth type referred to involves the rupture, simultaneously, of two solder-joints, one on the can-body and the other on the rim of the cover, and necessitates, also, a special feature of construction of the can-body. The opening of the can endangers and commonly destroys, the symmetry of the rim of the cover and is extremely liable to rupture it, this result being almost certain to follow as the result of an unequal application of the solder. In all said types, an item of expense is involved in the special construction given to the can-body, or in the introduction of a rupturing wire, as well as by the practical destruction of the cover, due to the severing from its rim of so much of its width as to preclude its use a second time for effecting a complete sealing of the can.

It is the purpose of my invention to avoid all the objections specified; to provide a can in which the cover is of ordinary construction and in which no portion of the said cover is diminished in strength, or changed in form, or proportions, by the method of sealing, or the manner of opening the can, and to make provision for the removal of the said cover without rupturing the solder-joint, or joints, without imposing strain upon the rim, or upon the body of the can, and without requiring the employment of any special instrument, the cover being preserved in perfectly normal shape and condition and being, in all cases, adapted for further and similar uses, upon the same, or a similar can, in any number of instances.

The invention consists, to the ends specified, in the novel features of construction, and in the parts, material, and combination of parts hereinafter fully explained and then definitely pointed out in the claims concluding this specification.

To enable others skilled in the art to understand and to make, construct, and use my said invention, I will now describe the same in detail, reference being had to the accompanying drawings in which—

Figure 1 is a side elevation of a can embodying my invention. Fig. 2 is a vertical section of a part of the can-body and cover, to show the construction of the parts and the manner of sealing; said figure being upon a somewhat larger scale than Fig. 1. Fig. 3 is

a sectional view showing the parts seen in Figs. 1 and 2, after the can has been opened. Fig. 4 is a sectional view showing a modified, but equivalent, construction. Fig. 5 is a sectional view, in detail, of the sealing band, showing two slightly different forms of construction.

In the said drawings, the reference-numeral 1 indicates the body of a sheet-metal can of any ordinary construction, and the numeral 2 denotes the cover, which is of the usual, well-known form, its rim, or flange 3, being of suitable width to fit closely upon the upper and outer margin of the body 1. Overlying the lower edge of the rim, or flange 3, and extending somewhat above and below the said edge, is a band, or annulus, 4, formed preferably of cast-iron, or other metal of such character that it may be fractured, or cracked and broken, in contradistinction to that class of fibrous metal which can only be ruptured by tearing it apart by the exertion of a considerable force, or by cutting it with an instrument specially adapted to that purpose. This frangible band, or annulus, is so formed that there is a line, or strip, between and parallel with its edges, of diminished crystalline strength, produced in any suitable manner; as, for example, by means of a channel, or groove, 5, formed in either surface of said band, or by a similar, but somewhat broader channel 6, or other formation, whereby a line or strip of thinner metal is extended entirely around the band, on one of its faces, and at a suitable point between its edges. This band, or annulus, is adapted, as already mentioned, to overlie the edge of the rim 3 and to overlap a portion of said rim and a strip of the body 1 below said rim. A solder-joint is then formed at a suitable point, and by any suitable means, between said band and the can-body, and between the band and the rim 3 of the cover 2, thereby hermetically sealing the can, and to enable the solder to adhere easily the band will preferably be tinned, either along the lines where the solder-joints are to be formed, or over its entire surface.

In order to open the can, the band, or annulus, is fractured, cracked, or broken, by striking it with a knife, hammer, or other suitable implement, the line of fracture following the channel, or groove 5, or otherwise-formed line of thinner metal. The force required to produce this fracture is comparatively insignificant and the operation of opening the can is momentary, as the fracture of a metal of crystalline structure will ordinarily extend from the point where the blow is given, in both directions, thus effecting a practically instantaneous rupture of the band. Neither the can-body, nor the cover, is in the least injured thereby, or in any degree distorted in form, and both may be used repeatedly, and in like manner, the fractured parts of the band being removed by passing a hot soldering-iron over the same, or by the application of heat in any other manner. Both

the fractured parts of the band, as well as the most of the solder, may easily be saved, should economy of manufacture dictate such a course.

5 What I claim is—

The combination with a sheet-metal can-body, and a flanged cover of ordinary form, of a cast metal band or annulus formed independent of the cover and adapted to be
10 soldered thereto and to the can-body, said cast metal band being formed integral with a

groove or channel so that the band will be fractured by a blow, substantially as and for the purposes described.

In testimony whereof I have hereunto set 15 my hand and affixed my seal in presence of two subscribing witnesses.

GEORGE P. HERNDON. [L. S.]

Witnesses:

THOMAS H. HERNDON,
P. L. HERNDON.