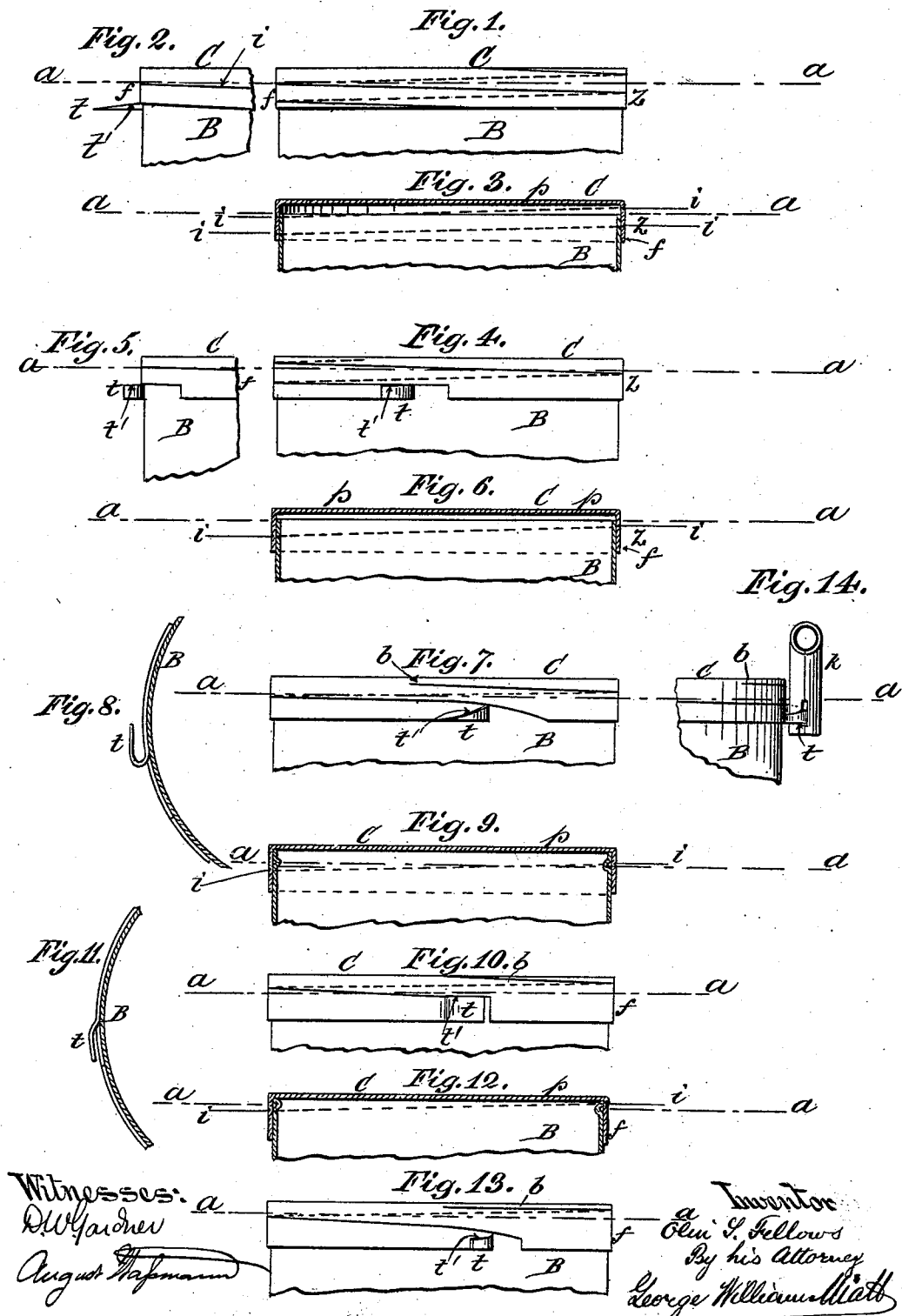


2 Sheets—Sheet 1.

No. 568,477.

Patented Sept. 29, 1896.



O. S. FELLOWS.
SHEET METAL PACKAGE.

No. 568,477.

Patented Sept. 29, 1896.

Fig. 15.

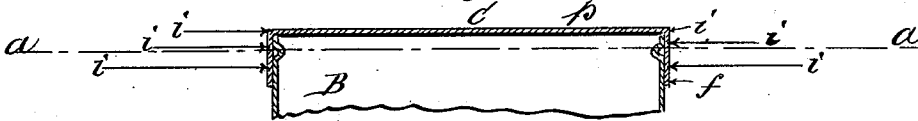


Fig. 16.

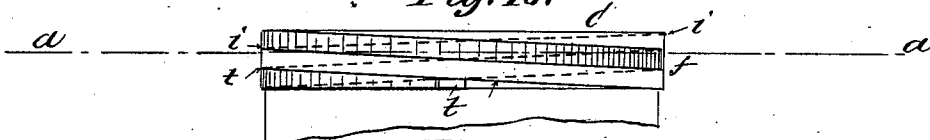


Fig. 17.

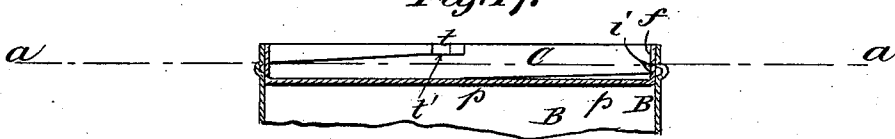


Fig. 18.

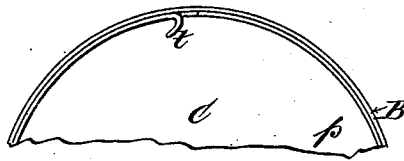


Fig. 19.

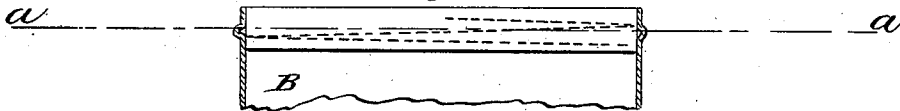


Fig. 20.



Fig. 21.

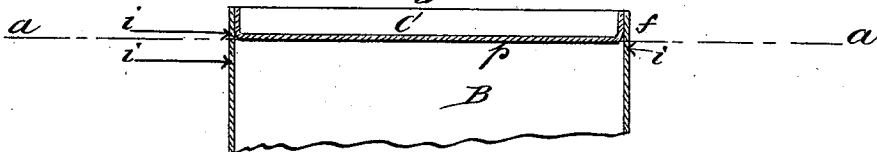
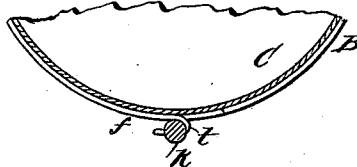


Fig. 22.



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UNITED STATES PATENT OFFICE.

OLIN S. FELLOWS, OF MIDDLETOWN, NEW YORK.

SHEET-METAL PACKAGE.

SPECIFICATION forming part of Letters Patent No. 568,477, dated September 29, 1896.

Application filed March 21, 1895. Serial No. 542,616. (No model.)

To all whom it may concern:

Be it known that I, OLIN S. FELLOWS, a citizen of the United States, residing at Middletown, in the county of Orange and State of New York, have invented certain new and useful Improvements in Sheet-Metal Packages, of which the following is a specification sufficient to enable others skilled in the art to which the invention appertains to make and use the same.

My invention relates to a metal can designed to be opened by loosening an end plate from the can-body by the severance of a stripping-section by means of a strip-winding key or otherwise. Heretofore the circuitous incision or weakening-line formed to facilitate the stripping operation has merged into itself at some point in the circumference of the can, thereby insuring the complete detachment of the end plate at the completion of the stripping operation.

A distinguishing feature of my present invention consists in the fact that my circuitous incision or reduced line of thickness does not merge into itself at any point, but overlaps itself at the ends, so that the portion of the strip between the overlapping line acts as a ligature or hinge by which the end plate remains attached to the can-body after the opening of the can, the extension of the incision or reduction in thickness completely around the circumference of the can enabling the end plate to be readily swung back clear of the end of the can-body to give access to the interior of the can. Thus, while ample provision is made for opening and gaining access to the can-body, the end plate is retained and can be readily replaced over the end of the can-body to protect the contents thereof temporarily, the ligament or unsevered portion of the strip readily yielding to pressure in either direction, while affording sufficient resistance to hold the end plate in either position when undisturbed.

I am aware that a diagonal incision has been used in connection with an annular circumscribing incision made in a plane at right angles to the axis of the can, but that construction is not the equivalent of my invention, since in that case two distinct incisions are made, the diagonal incision intersecting the annular incision at an angle and the end

plate being severed completely from the can-body by the stripping operation, whereas in my invention the circuitous incision or reduction is a single continuous line, made at one operation, diverging continuously from a given plane and coiling obliquely around a zone coinciding with the soldered joint by which the parts are held together, so that the stripping operation loosens but does not detach the end plate, but retains it for use as a temporary cover.

In the accompanying drawings, Figures 1 to 16, inclusive, illustrate the application of my invention to the exterior flange of the end plate of a can; Figs. 17, 18, and 19, the same in connection with an end plate having an inside flange, and Figs. 20, 21, and 22 the application of the invention to the edge of the can-body. Figs. 1, 2, 4, 5, 7, 10, 13, 14, 16, and 20 are elevations of portions of cans embodying my improvements. Figs. 3, 6, 9, 12, 15, 17, and 21 are axial sections of the same; Figs. 8, 11, and 22, transverse sections, and Fig. 18 a view of a portion of the end of a can having an inside flange on the end plate.

Thus it will be seen that substantially the same results may be attained by loosening a strip from either the flange of the end plate or the adjoining edge of the can-body when the end cap has an interior flange.

The line *a a* in all the figures represents a plane at right angles to the axis of the can, above or beyond the zone *z*, coinciding with the soldered joint by which the can-body B and the end cap C are united.

i represents the incision or reduction in thickness, and *t* the tongue at the end of the incision *i*, forming an integral part of the strip to be loosened to facilitate the operation of stripping, however performed, as by engagement with a rotatable strip-winding key *k*, as indicated in Fig. 14, or otherwise. This tongue *t* is preferably, though not necessarily, formed by stamping out and bending the metal at the edge of the flange or can-body, as the case may be, the circumferential incision *i* being so made as to form a continuation of the cut or edge *t*, created by the formation of the tongue *t*.

In Figs. 1, 2, and 3 the incision or circumscribing reduction in thickness is carried

nearly twice around the flange *f* of the cap C, and the end plate *p* is loosened from the can-body B before the end of the incision is reached in stripping. In Figs. 4, 5, and 6 a similar result is obtained by a shorter incision, owing to the width of the tongue *t* shown therein.

The result of the stripping operation is to leave the end plate *p* slightly attached to the edge of the can-body at *b*. Figs. 15 and 16 show the use of a double spiral incision, in which case the end plate would remain attached to the portion *b* left by the strip.

Figs. 17, 18, and 19 show my circuitous incision or reduction in thickness as applied to an inner flange *f* of the end plate *p*, and the remaining figures the same as applied to the edge or perimeter of the can-body adjoining such inner flange. It will be seen that the same result is attained in all of the several forms and modifications shown, the circuitous incision or reduction in thickness coiling obliquely around the zone *z* and ending above or beyond the soldered joint by which the cap C and body B are secured together.

I thus by an incision made by a suitable tool at a single operation provide for the opening of the can in a safe and effective manner, since the strain necessary to effect the stripping is less than heretofore, owing to the gradual crossing of the soldered joint and the comparatively small portion of the width thereof severed at any one point in the zone *z*. It will also be seen that in all cases the portion or strip between the line of incision, no matter what its length or how much more it may extend around the can-body beyond one circumferential turn, constitutes a con-

necting-link between the can-body and end plate that is not entirely severed by the stripping operation, which only loosens the end plate from the can-body without disconnecting it therefrom.

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

1. A sheet-metal can formed with a continuous spiral incision or reduction in thickness extending obliquely over the soldered joint by which the end cap is secured to the can-body, said line of severance being of a length greater than the circumference of the can, the ends of the said line of severance overlapping each other but not merging into said line of severance at any point in the circumference of the can, substantially in the manner and for the purpose described.

2. A sheet-metal can formed with a continuous circuitous incision or reduction in thickness extending obliquely over the soldered joint by which the end cap is secured to the can-body, said line of severance being of a length greater than the circumference of the can, the ends of said line of severance overlapping each other but not merging into the line of severance at any point in the circumference of the can, thereby leaving the strip between the line of severance attached to both can-body and end plate at the end of the stripping operation, so that the end plate is loosened from the can-body without being entirely detached therefrom, substantially in the manner and for the purpose described.

OLIN S. FELLOWS.

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