F. H. PALMER.
Sheet-Metal Can.

No. 220,089. Patented Sept. 30, 1879.

*Fig. 1.*

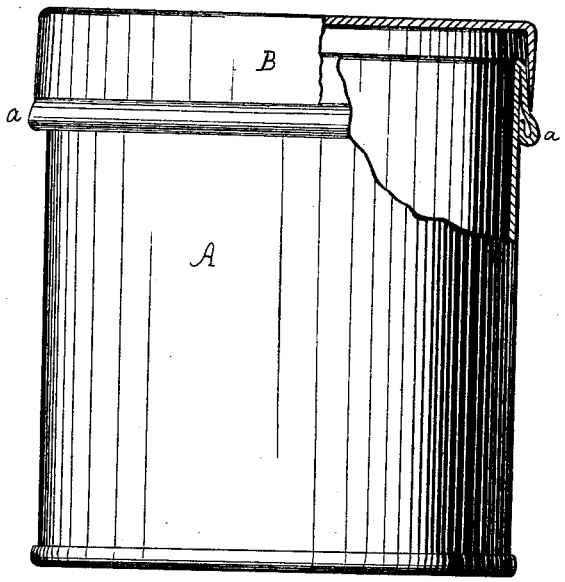



*Fig. 2.*

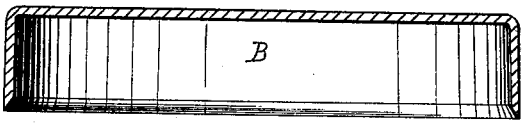
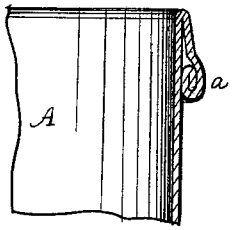



*Fig. 3.*

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## IMPROVEMENT IN SHEET-METAL CANS.

Specification forming part of Letters Patent No. **220,089**, dated September 30, 1879; application filed August 19, 1879.

*To all whom it may concern:*

Be it known that I, FRANK H. PALMER, of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Paint-Cans; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification, in which—

Figure 1 represents a side view of a can constructed according to my improvement, having a part broken away; and Figs. 2 and 3, sectional views of modified forms of the rim and hem.

This invention relates to that class of cans in which the cover is unsoldered by a blow on its top.

It consists, mainly, in so constructing the can and its cover as to cut the solder rather than tear it apart, and to prevent those surfaces of the cover and can that are in lapping contact from adhering together. To accomplish this I make my cover with a rim of reduced thickness at its bottom to form a cutting-edge, and to prevent the soldering of the lapping surface, I leave one of them untinned; but in order that the cover may be united air-tight with the can I have the latter tinned on its outer surface, so that the exposed surfaces may be readily soldered.

In the accompanying drawings, A represents the body of the can, having a perfectly plain inside, and provided with a hem, *a*, of peculiar form. This hem may be made by turning over a double fold, as shown in Fig. 1, or a triple one, as in Fig. 3; or, if preferred, the hem may be made by turning a single fold of the tin over a strip of sheet metal or a wire ring. This hem I prefer to make with its double or triple fold so formed that at the top of the can there will be but two thicknesses of metal—that is to say, only the metal forming the can and one thickness of the fold—and at the bottom of the hem all the thicknesses of the metal will be combined, so as to form a bulge or swell.

For very heavy cans four or five folds, or even more, may be used.

The lower edge of the fold should always be turned under or between the first fold and the body of the can, so that the metal will be continuous from the top of the can to the lower edge of the hem, to avoid leaving any crease that will prevent the edge of the cover passing onto the bulge of the hem, as would be the case were the lower fold of the hem turned outward or away from the body of the can.

By this arrangement of the fold there will be formed a hem having its upper portion either straight or slightly tapering, on which the cover will fit tight, and a bulge or swell, against which the edge of the cover will rest, and to which the lid is soldered. In addition to this the hem makes the can much stronger than it would be without it, and the can has the advantage of being smooth inside, which is not the case when corrugations are formed on the body to strengthen it. With this can I use a cover, B, preferably made in one piece, as in Figs. 1 and 2, but do not limit myself to this form, as it may be made in the old-fashioned way, with the top and rim in two pieces. This cover I usually make of plain untinned iron, drawing down the rim until it has a sharp edge; but sometimes I make the rim of the ordinary thickness of the metal, and then bevel off the lower edge, as shown in Fig. 2; or it may be beveled in the opposite direction, if preferred.

After the cover is formed I usually tin the outside only, although for special purposes I tin both sides, or sometimes I tin the outside and varnish the inside, or coat it with some substance that will not affect the can's contents.

If preferred, the cover may be formed of iron tinned on one side only; or the top may be made of ordinary tin and the rim of sheet-iron tinned only on one side; or the cover may be made of ordinary sheet-tin, and the interior surface of the rim be ground away, which will remove the tin and reduce the edge, bringing it to the form shown in Fig. 1; or the tin coating may be removed from the inside of the rim by acid. This can is to be filled and closed in the ordinary manner, and when properly soldered is perfectly air-tight. It is, however,

more readily unfastened when desired than any other soldered can with which I am acquainted, because when the inside of the rim of the cover is left untinned, as I prefer it should be, the solder does not unite with the untinned portion, and the cover is only fastened to the body of the can by the line of solder at the junction of the cap with the swell of the hem, which is readily severed by holding the can a slight distance from the floor, or from a bench, and allowing it to fall, cover side down, so as to strike the cover square on the floor or bench; or a blow from a mallet or a piece of board will sever the solder equally as well. The concussion caused by such a blow or fall acting on the cover will make the sharp edge of the cap cut the solder, and the can can then be readily opened. The bulge on the hem also assists by serving to force open the rim, and thus enlarge it, so that, without forming slits in the rim, the cover may be readily removed when unsoldered.

From this it will be seen that a can formed as described has the advantages of perfect smoothness inside, so that its contents may be readily removed, extra strength caused by the peculiar formed hem, which will make it well adapted for shipping purposes; that there is no space for paint between the rim and the can; and that although perfectly air-tight when soldered, yet it is readily opened by a slight blow, as the solder is cut instead of being torn, as in the old style of can, and when the inner side of the rim is untinned, as I prefer it to be, there is little or no chance for it to become soldered fast to the can.

I do not limit myself to the use of the forms of hem here shown, as other hems may be used in connection with my cover, or cans with corrugations instead of hems, or plain cans without corrugations or hems. Cans may also be made with strengthening wires or bands soldered near the top of the can in about the same position occupied by the bulge in the hem of my can, and with such cans covers like mine may be readily used, although I prefer the hems shown in my drawings.

I do not wish to be understood as claiming the use of all kinds of strengthening hems, bands, or corrugations, as I am aware that many devices of this kind have already been in use. I am also aware that it has been proposed to make cans with heads of untinned iron and coat them with tin on the outside after the head has been fastened to the body; that a patent has been granted for using a galvanized cover upon a tinned-iron body, and that it has been proposed to tin the edges of untinned iron, that they might be readily soldered together. These plans, however, all differ from mine, and I make no claim to them.

What I claim as new is—

1. The combination, with a can, A, of a cover, B, having the bottom of its rim reduced in thickness to form a cutting-edge, substantially as and for the purpose specified.

2. The combination, with a can, A, of a cover, B, having its rim beveled to form a cutting-edge, substantially as and for the purpose specified.

3. The combination of a can, A, and cover B, having one of their lapping surfaces untinned to prevent said lapping surfaces being soldered, and the exposed surface of the cover tinned, so that the tin coating of the cover may readily unite with the tin on the exposed portion of the body, substantially as and for the purpose specified.

4. A can-body provided with a hem, consisting of a straight or slightly-tapered portion above and a bulge or swell below, formed by turning down a fold of the metal and inclosing between said fold and the body of the can one or more smaller folds, substantially as and for the purpose specified.

In testimony that I claim the foregoing I have hereunto set my hand this 12th day of August, 1879.

FRANK H. PALMER.

Witnesses:
EDWARD SELLECK,
SAMUEL SCHUMACHER.