(No Model.)

E. NORTON.

AUTOMATIC SEALING SHEET METAL CAN.

No. 579,241. Patented Mar. 23, 1897.

FIG. 1.

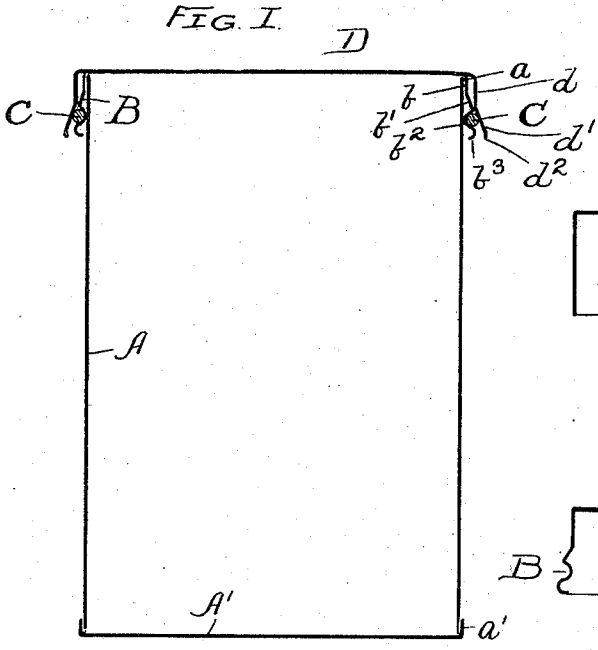


FIG. 4.

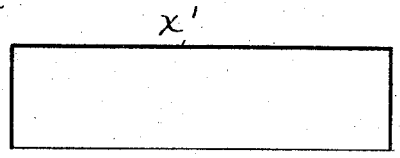


FIG. 5.

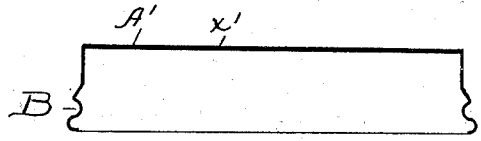


FIG. 2.

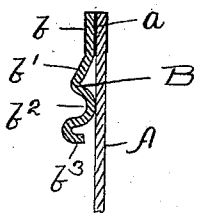


FIG. 6.

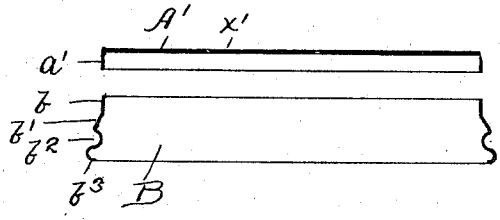
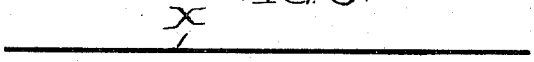


FIG. 3.



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UNITED STATES PATENT OFFICE.

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AUTOMATIC-SEALING SHEET-METAL CAN.

SPECIFICATION forming part of Letters Patent No. 579,241, dated March 23, 1897.

Application filed June 19, 1896. Serial No. 596,193. (No model.)

To all whom it may concern:

Be it known that I, EDWIN NORTON, a citizen of the United States, residing in Maywood, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Automatic-Sealing Sheet-Metal Cans, of which the following is a specification.

My invention relates to improvements in the construction of automatic-sealing sheet-metal cans.

The object of my invention is to provide an automatic-sealing sheet-metal can of a strong, simple, and durable construction, which may be cheaply manufactured and without waste of material.

To this end my invention consists in a sheet-metal can having the usual flanged exteriorly-fitting head at its lower end or bottom and provided with a conical or tapering corrugated sealing-collar at its upper end, adapted to receive a rubber sealing-ring, preferably cylindrical in cross-section, and a conical or tapering sealing-cover adapted to fit the sealing-collar and compress the sealing-ring between itself and said collar, said sealing-collar fitting and being soldered to the body of the can at its upper end and fitting and bearing against the body of the can at its beaded or corrugated portion, which forms the seat for the sealing-ring.

My invention further consists in the method or process of manufacture by which I form the bottom head of the can and the sealing-collar from one and the same sheet-metal blank without waste.

In the accompanying drawings, which form a part of this specification, and in which similar letters of reference indicate like parts throughout the several views, Figure 1 is a central longitudinal section of a sheet-metal can embodying my invention. Fig. 2 is an enlarged detail sectional view illustrating the means for uniting the body of the can to the sealing-collar. Figs. 3, 4, 5, and 6 illustrate the successive steps in the method of forming the sealing-collar.

In the drawings, A represents the body of a sheet-metal can, the same being of any ordinary or customary construction and having the usual or customary flanged exteriorly-fitting head A′ at its bottom. At its top, upper end, or mouth it is provided with what, for convenience, I call a "sealing-collar" B, the same being preferably a seamless ring provided with a cylindrical portion *b* at its upper end or edge, adapted to exteriorly fit and be soldered to the body A of the can, an inclined wedging or conical portion *b′* and a corrugation or bead b^2 forming an annular groove or seat for the rubber sealing-ring C. At this bead or corrugation the sealing-collar B fits snugly against the body A of the can, so that the sealing-collar may at this point have a firm support against the body of the can and thus prevent the compressing action of the sealing-cover D against the sealing-ring C from exerting any prying action or strain on the soldered joint *a*, which unites the cylindrical portion *b* of the sealing-collar to the body of the can. At its extreme lower edge the sealing-collar B terminates in an inwardly-projecting flange b^3, which serves to further strengthen the sealing-collar B. The sealing-cover D has a depending flange comprising, preferably, a cylindrical portion *d* and an inclined wedging or conical portion *d′* to better adapt it to properly compressing the sealing-ring C between itself and the sealing-collar B. The extreme lower edge of the flange of the sealing-cover preferably terminates in a substantially cylindrical portion d^2, about as indicated in the drawings.

As the sealing-collar B has a cylindrical tight externally fitting portion *b* fitting the can-body at its upper end it may be readily and cheaply soldered to the can-body at this part by simply rolling the can-body in an inclined position through a bath of molten solder in the manner now generally employed for soldering tight exteriorly fitting flanged can-heads to can-bodies, so that this soldering operation may be done very cheaply and rapidly, the tight frictional fit between this portion of the sealing-collar and the can-body serving to hold the sealing-collar in place on the can-body during the soldering operation, as well as the surfaces to be soldered in close contact with each other, and in like manner also these sealing-collars, having tight exteriorly fitting cylindrical portions *b*, may be automatically applied or forced upon the can-bodies by the ordinary can-heading ma-

chines now in use by simply adapting the machines to receive these sealing-collars in place of the ordinary form of flanged heads, so that this work may also be done rapidly and cheaply.

To save waste of material, I form the sealing-collar and either the cover or bottom head of the can, preferably the bottom head, from one and the same blank. The method which I employ for doing this is illustrated at Figs. 3 to 6. From the blank X, I first draw in the ordinary manner a cover or head x' with a deep flange, one deep enough to form the ordinary flange a' of the head A′ and the cylindrical portion b of the sealing-collar B and the remainder of said sealing-collar, as illustrated in Fig. 4. I then form the sealing-collar B from the lower portion of the flange of this deep flanged disk, as illustrated in Fig. 5, and I then sever the flanged can-head A′ from the sealing-collar B, as illustrated in Fig. 6.

To seal the can as illustrated in Fig. 1, all that is required to be done is to slip the rubber sealing-ring C over the mouth or top edge of the can and then press the sealing-cover D home, the sealing-ring C thus rolling or seating itself in its bead or seat b in the sealing-collar B, this being done when the contents of the can are heated, (preferably to a boiling temperature.) When the can cools, the partial vacuum formed by the condensation of the steam will hold the sealing-cover firmly and securely in place by atmospheric pressure, so that it practically cannot be removed without puncturing the sealing-cover or some other portion of the can. To open the can, all that is necessary is to form a small puncture in the sealing-cover or some other portion of the can. If it is desired to use the same can over again, all that is required is to solder up the puncture in the sealing-cover, and then the can is ready for use again, the same as before, or new sealing-covers may be made.

As the sealing-collar does not project within or over the upper end of the can-body the mouth of the can-body is left smooth and open and of the full diameter, so that the can may be readily filled with fish or other articles in the manner of an ordinary can and so that when the can is opened the contents may be easily slipped out in a solid form, if desired.

I claim—

1. An automatic-sealing sheet-metal can comprising in combination the following parts: a cylindrical sheet-metal can-body having an open mouth of the full diameter of the can, an exteriorly-fitting sealing-collar depending from the upper edge of the can-body and having a cylindrical portion at its upper edge soldered to the upper end of the can-body, an inclined or conical portion and a corrugation or bead to form a seat for the sealing-ring, a sealing-ring and a sheet-metal sealing-cover adapted to compress said sealing-ring between itself and said sealing-collar, substantially as specified.

2. An automatic-sealing sheet-metal can comprising in combination the following parts: a cylindrical sheet-metal can-body having an open mouth of the full diameter of the can, an exteriorly-fitting sealing-collar depending from the upper edge of the can-body and having a cylindrical portion at its upper edge soldered to the upper end of the can-body, an inclined or conical portion and a corrugation or bead to form a seat for the sealing-ring, a sealing-ring and a sheet-metal sealing-cover adapted to compress said sealing-ring between itself and said sealing-collar, said sealing-collar bearing against the can-body at its bead or corrugation, substantially as specified.

3. An automatic-sealing sheet-metal can comprising in combination the following parts: a sheet-metal can-body, an exteriorly-fitting sealing-collar having a cylindrical portion at its upper edge soldered to the upper end of the can-body, an inclined or conical portion and a corrugation or bead to form a seat for the sealing-ring, a sealing-ring and a sheet-metal sealing-cover adapted to compress said sealing-ring between itself and said sealing-collar, said sealing-collar bearing against the can-body at its bead or corrugation and having an internally-projecting flange at its lower edge, substantially as specified.

4. An automatic-sealing sheet-metal can comprising in combination the following parts: a sheet-metal can-body, an exteriorly-fitting sealing-collar having a cylindrical portion at its upper edge soldered to the upper end of the can-body, an inclined or conical portion and a corrugation or bead to form a seat for the sealing-ring, a sealing-ring and a sheet-metal sealing-cover adapted to compress said sealing-ring between itself and said sealing-collar, said sealing-cover having a flange provided with a cylindrical portion at its upper part, and an inclined or conical portion between said cylindrical part, substantially as specified.

5. The improvement in the art of manufacturing automatically-sealing sheet-metal cans, consisting in forming one of the heads of the can and the sealing-collar from one and the same blank by first drawing the blank with a deep flange, then forming the sealing-collar from the lower part of said flange and dividing the sealing-collar from the flanged blank and thus leaving a flanged head, substantially as specified.

EDWIN NORTON.

Witnesses:
H. M. MUNDAY,
EDMUND ADCOCK.