

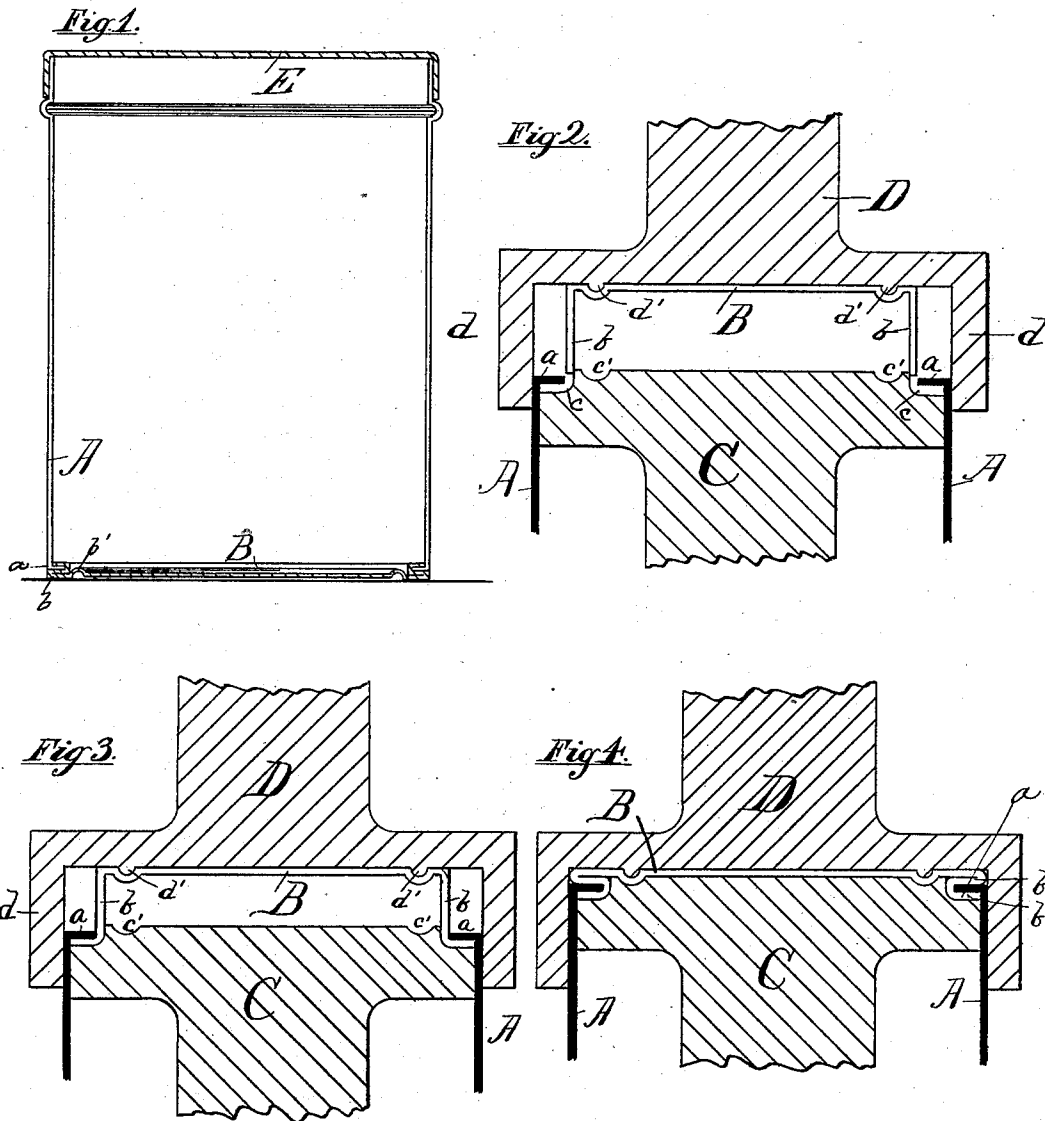
(No Model.)

E. NORTON.

CAN AND PROCESS OF MAKING THE SAME.

No. 277,920.

Patented May 22, 1883.



Witnesses:
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UNITED STATES PATENT OFFICE.

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CAN AND PROCESS OF MAKING THE SAME.

SPECIFICATION forming part of Letters Patent No. 277,920, dated May 22, 1883.

Application filed December 7, 1882. (No model.)

To all whom it may concern:

Be it known that I, EDWIN NORTON, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Cans and Processes of Making the Same, of which the following is a specification.

The object of the present invention is to provide a cheap, simple, and expeditious mode of manufacturing open-mouthed round cans or packages, such as are used for baking-powder and other similar materials.

Heretofore it has been customary to secure the bottom on these cans by a crimped seam; but by this method the parts are not united so firmly but that, at least in the better class of these packages, it is also found necessary or desirable to solder them, which of course adds materially to the labor and expense.

By the present invention I am enabled to produce in a very simple and expeditious method—that is to say, by simply compressing the can bottom and body between two dies or stamps—a very strong and efficient can without the use of solder or the comparatively slow and expensive method of double-seaming; and here it may be remarked that the stock it is desirable, on account of cheapness, to employ in these cans or packages is of the inferior quality and not suitable to be subjected to the action of double-seaming rollers; and my improved can, formed in this way, consists of a can-body having an inturned flange at its end, interlocked between folds in the flange of the can bottom or cover, the lower edge of the flange on the can bottom or cover being forced out against the interior wall of the can-body, so as to brace against it, and the remaining portion of said flange being folded outwardly upon itself and down upon the flange of the can-body.

In manufacturing the cans a suitable die, press, or stamp is inserted inside the can-body, which is provided with the inturned flange, and the can bottom or cover, having the ordinary straight or right-angle flange, is placed on the inside die, inside the flange on the can-body, and pressed down by another suitable plate or die, which forces the flange of the can-cover against the inside die and out against the vertical wall of the can-body, forming the interior fold, and

then the continuance of the pressure forms the exterior folds in the can-cover flange outside the can-body.

My invention will be more fully understood by reference to the accompanying drawings, which form a part of this specification, and in which similar letters of reference indicate like parts.

In the drawings, Figure 1 represents a central longitudinal sectional view of a can embodying my invention. Figs. 2, 3, and 4 are similar views, showing successive stages in the seam as it is formed by simply forcing the two dies or stamps toward each other. In these latter figures especially the thickness of the stock and size of the folds are exaggerated and somewhat out of proportion, to make the same appear more clearly.

In the drawings, A is the can-body, (represented in heavy black lines in Figs. 2, 3, and 4.) It is provided with an inturned flange, *a*, at its end.

B is the can bottom or end. Its flange *b* is folded over the flange *a*, one thickness or fold inside and two outside the same.

C represents the inside die, which fits inside the can-body, and is provided with a curved shoulder or offset, *c*, which guides and turns the edge of the flange *b* outward under the flange *a* when pressure is applied to the can end B, thus forming the first fold, as shown in Fig. 3.

D is the outside die or stamp. It may be provided with a flange or collar, *d*, to fit over the end of the can-body to hold it rigid and prevent its giving when the flange *b* is forced out against it; or other suitable means may be employed for the purpose. Either one or both of the dies C and D may be made movable, so as to press the can end and body between the dies and form the seam uniting the two together.

c' and *d'* are respectively circular depressions and projections in the dies C and D to form a bead, *b'*, in the can end B as the dies are pressed together. In this way, it will be observed, by a simple and single motion of the dies the seam is formed, uniting the can end to the body in a firm and secure manner, so that the cans may not only be produced very rapidly and cheaply, but the seam itself will

be so close and strong that there will be no necessity for soldering it.

The can end B is shown in Fig. 2 in position ready to be applied to the can-body by pressing the dies together. It is slightly smaller in diameter than the can-body. In Fig. 3 its form and position are shown after the dies are partially pressed together so as to force the flange *b* out against the wall of the can-body A under the flange *a*. After the flange *b* strikes the wall of the can-body, as shown in Fig. 3, the motion of the dies, continuing, folds the remaining part of the flange *b* down upon the flange *a* on the outside of the can, as shown in Fig. 4, and as the dies are forced together the folds of the seam are pressed down close upon each other, forming a tight joint. The can formed in this way is rendered very strong by reason of the seam being composed of four thicknesses of the stock pressed and interlocked together.

E is the slip-cover for closing the mouth of the can.

This invention is applicable to round cans—that is to say, to cans circular or oval in cross-section.

It will be observed that in forming the seam in this manner the flange of the can end is first turned and pressed out against the inside wall of the can-body, thus taking up all the slack in the can-body and bracing the flange end or edge firmly against it. The continuance of the pressure then causes the upper part of the can-cover flange to fold down over the inturned flange on the can-body, forming a double-braced interlocked seam between the can cover and body, and uniting the parts together in a very strong and efficient manner. After the edge of the flange *b* strikes against the inside wall of the can-body the continuance of the pressure will cause the remaining

portion of the flange *b* to fold outwardly over the flange *a* instead of inwardly, as the stock will naturally bend or fold in the direction which offers the least resistance; but to insure perfect uniformity and accuracy in the operation I construct the die C so that its upper or plain surface projects slightly above the upper or exterior surface of the flange *a*, as shown in Figs. 2, 3, and 4, so that the shoulder *c* will support the stock on the inside and cause it to fold outwardly over the flange *a*.

I expressly reserve for future application any invention or improvements which I may be entitled to secure by Letters Patent upon the dies herein shown or apparatus employed in making my improved can.

I claim—

1. The herein-described process of securing ends having a downwardly-turned flange in cans having an inturned flange by a single operation, consisting in turning the flange of the can end out under the flange on the can-body until its edge strikes the interior wall of the can-body, and then, by simply continuing the force, folding the remaining portion of the flange outwardly over the flange on the can-body and closing it down upon said flange, interlocking it in the folds, substantially as specified.

2. The can-body provided with an inturned flange, *a*, in combination with a can end having the lower edge of its flange *b* turned under the flange *a* and out against the interior wall of the can-body, so as to brace against it, the remaining portion of said flange *b* being folded outwardly upon itself and down upon the flange *a*, substantially as specified.

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