

(No Model.)

A. W. LIVINGSTON.
CAN.

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Fig. 1.

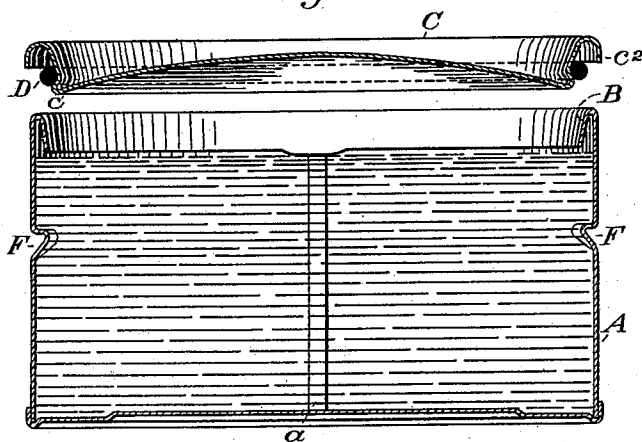
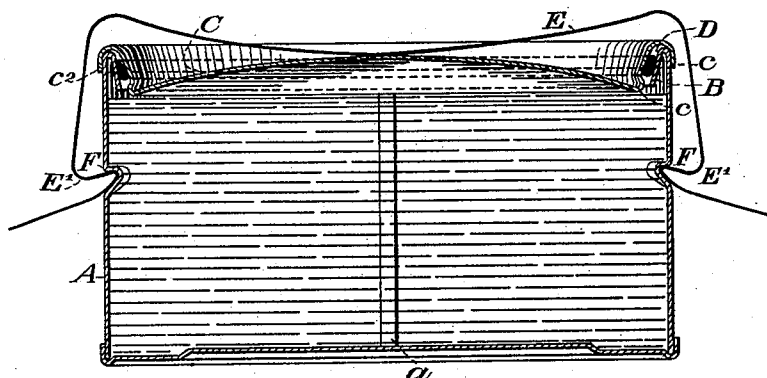


Fig. 2.



Witnesses,

E. A. Brandau,
J. H. Harnse

Inventor,

Andrew W. Livingston
By Dewey & Co. atty

UNITED STATES PATENT OFFICE.

ANDREW WILLIAM LIVINGSTON, OF SAN JOSÉ, CALIFORNIA.

CAN.

SPECIFICATION forming part of Letters Patent No. 588,800, dated August 24, 1897.

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To all whom it may concern:

Be it known that I, ANDREW WILLIAM LIVINGSTON, a citizen of the United States, residing at San José, county of Santa Clara, State of California, have invented an Improvement in Cans; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to certain improvements in the construction of hermetically-sealing containing vessels.

It consists of certain details of construction whereby I am enabled to employ a sheet-metal can having a side seam and to so close said seam as to make a practically continuous and smooth surface against which a flexible elastic gasket may be compressed when the cover is applied to form a hermetically-closed joint without danger of leakage at said seam, and to provide a cover fitting said containing vessel and so constructed that it serves for a removable closing-cover after the seal is broken and the vessel opened.

It also consists in details of construction which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 is a sectional view showing the cover removed. Fig. 2 is a similar view with the cover and spring-band in place.

In the construction of hermetically-closing containing vessels in which a flexible or elastic gasket is employed to form the joint various devices have been employed, but it has hitherto not been possible to employ metal cans having the usual side seam because this seam has always presented a channel or depression between the meeting edges of the tin which was sufficient for the passage of air and which would prevent the maintenance of a perfect hermetical joint at this point. It has therefore been necessary to make such containing vessels with a smooth unjointed surface, such as glass.

My invention consists in such a formation of a metal can that the side seam of said can can be so closed as to form a continuous smooth surface for the support of the flexible or elastic gasket and the combination thereof with of a suitably-constructed closing-cover.

A is the body of the can, which may be made

of any diameter and length, and is here shown in its preferable form of a cylinder.

In order to provide the proper bevel surface for the support of a flexible gasket and to form a joint, I employ a suitably-formed die by which the top of the can is bent over into an inwardly-turned curve having a beveled or inclined surface, as shown at B.

The seam of the can may be either formed in what is known as "double" or "single" seam, but in either case the line upon which the edges of the tin meet has ordinarily a shallow longitudinal groove or channel, as shown at a.

By my process of turning the flange B the two or four thicknesses of metal at the seam are practically drawn or swaged by this process of turning the flange inwardly, so that the groove a is closed to form a practically continuous surface with the remainder of the inwardly-turned flange, the edge of the beveled part B being drawn or swaged out sufficiently to contain the amount of metal which is in the folds of the seam. It will be possible also to fill this seam with solder or other soft metal, if desired; but I have found my method to be sufficient for the purpose.

The cover C is preferably formed with an upwardly-convex outer surface, a flange c, which is adapted to slip inside of the beveled turned-over edge B of the can, and an exterior downwardly-projecting cylindrical flange c², which when the cover rests upon the can without an intervening gasket will extend a little ways down the outside. The inner and outer flanges c and c² thus clasp the top edge of the can and form a suitable cover to prevent anything from falling into the can after it has once been opened and also to keep the cover in place thereon.

When the can is to be sealed, I employ an elastic or flexible gasket D, which may be made of any suitable or desired material, such as rubber or specially-treated paper or other material which will serve for this purpose. In the present case I have shown this gasket as being essentially cylindrical in cross-section, and it is preferably maintained in place upon the inner flange c of the cover by means of a shallow concave groove made around this flange near the bottom. The can having

been filled, the cover is placed upon it so that the gasket lying in its groove rests with its outer face upon the inwardly-inclined surface B of the can.

5 In order to retain the cover in place while the contents are being heated or cooked and the air expelled, I have shown an elastic clamp E, which extends over the top of the can, its central portion being concaved so that it presses
10 upon the convex top of the can-cover. At the sides it is bent downward, and inwardly-curved lugs are formed, as shown at E', and these engage with depressions F, which are formed in the opposite sides of the can. This
15 clamp serves to hold the cover in place, but with so light a pressure that the steam and air can be easily expelled by the heat which is applied to the can. As soon as the can is removed and allowed to cool the atmospheric pressure
20 upon the outside of the cover forces it down, the inclined turned-over surface B of the can-top causing the elastic gasket to roll up along the flange c and to be compressed between these two adjacent surfaces, so as to form a
25 hermetically-sealed joint, which is maintained by the atmospheric pressure upon the can-cover. If the continued pressure upon the can-cover gradually forces it down and compresses the gasket still more, there is sufficient space between the top of the can and
30 the upward curve of the cover, which lies between the flanges c c', to prevent any metallic contact which would possibly in time allow air to pass into the can. As it is, the construction as shown will prevent this metallic
35 contact and will make a tighter joint with the gasket by increased pressure.

Whenever the can is to be opened, it is only necessary to perforate the top sufficiently to
40 allow air to enter, when the cover can be easily removed. The gasket may then be taken off, and the cover is in condition to be used for ordinarily closing the can to preserve its contents.

45 Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A containing can or vessel having an upper edge turned over inwardly to form an inclined or beveled surface around the top integral with the body portion, and a cover having a corresponding flange facing the first-named one, said cover having a flanged upper portion adapted to overhang and extend down on the outside of the folded edge of the can or vessel whereby the cover is supported on said folded edge and the entrance to the space between the inclined or beveled flanges is closed, and having an outwardly-projecting flange around its inner portion adapted to maintain a gasket in place between the upper and lower flanged portions.

2. A containing-can having the upper integral edge swaged or turned over inwardly to form a continuous beveled inner surface around the top, in combination with a cover having a corresponding flange facing said surface and upper and lower peripheral flanges and a gasket movably fitting between the two surfaces and maintained in place between said upper and lower flanges and adapted to form a hermetically-sealed joint.

3. A containing-can having depressions made in opposite sides, a surface formed upon its upper edge, a cover having a corresponding opposing surface, upper and lower peripheral flanges, a gasket adapted to be compressed between said surfaces to form an air-tight joint and to be maintained in place between the said upper and lower flanges, an elastic clamp adapted to press upon the cover to retain the surfaces in contact, said clamp having a concaved central portion to press upon the cover and having the opposite ends extending down upon opposite sides of the can and provided with inwardly-projecting lugs for engaging the side depressions.

In witness whereof I have hereunto set my hand.

ANDREW WILLIAM LIVINGSTON.

Witnesses:

K. H. PLATE,
E. T. STERLING.