J. F. ROSS.

SELF SEALING CAN.

APPLICATION FILED AUG. 4, 1908.

941,729. Patented Nov. 30, 1909.

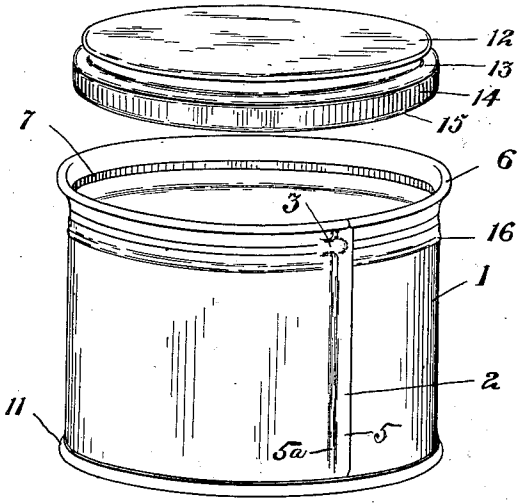

Fig. 1.

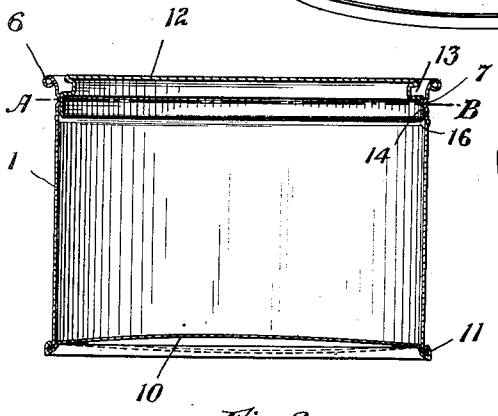

Fig. 2.

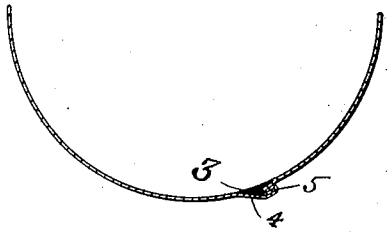

Fig. 3.

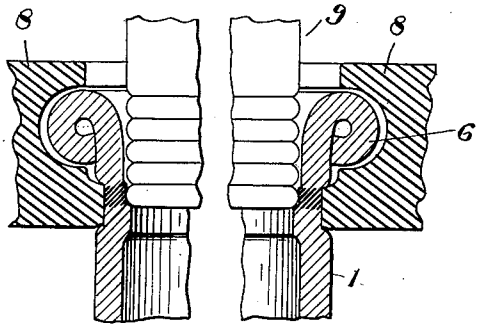

Fig. 4.

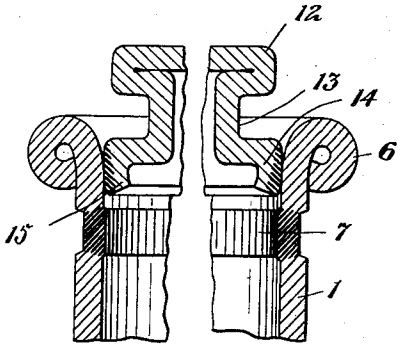

Fig. 5.

Witnesses.

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UNITED STATES PATENT OFFICE.

JOHN FORSTER ROSS, OF TORONTO, ONTARIO, CANADA, ASSIGNOR OF ONE-THIRD TO WILLIAM EDWIN ROSS, ONE-THIRD TO PERCY FORSTER ROSS, AND ONE-THIRD TO CHARLES FRED VAN HORNE, ALL OF TORONTO, CANADA.

SELF-SEALING CAN.

941,729. Specification of Letters Patent. Patented Nov. 30, 1909.

Application filed August 4, 1908. Serial No. 446,954.

To all whom it may concern:

Be it known that I, JOHN FORSTER ROSS, a subject of the King of Great Britain, and resident of the city of Toronto, in the county of York, in the Province of Ontario, in the Dominion of Canada, have invented certain new and useful Improvements in Self-Sealing Cans, of which the following is a specification.

The invention relates to improvements in self sealing cans, as described in the following specification and illustrated in the accompanying drawings that form part of the same.

The invention consists essentially in forming a burnished belt around the inner wall of the can adjacent to the top, and a similar belt around the outer wall of the flange of the cover, thus freeing the metal of all irregularities where burnished, and fitting said cover to the can body with their respective burnished belts registering and forming an effective joint.

The object of the invention is to devise a can which when sealed is perfectly air and oil tight, and from which the cover may be easily and quickly removed and replaced, always maintaining a perfect fit.

In the drawings, Figure 1 is a perspective view of my improved can showing the cover apart and ready to be placed therein. Fig. 2 is a vertical sectional view of the can, showing the cover in place. Fig. 3 is a horizontal sectional view of the can body through the line A—B Fig. 2, showing the reinforced portion of the lock seam exaggerated. Fig. 4 is an enlarged sectional view of a portion of the can body considerably exaggerated showing the method of forming the burnished belt. Fig. 5 is an enlarged sectional view of a portion of the can body and cover showing the thickness of the metal considerably exaggerated and the cover in its relative position and about to be inserted in the can.

Like numerals of reference indicate corresponding parts in each figure.

Referring to the drawings, 1 is the can body formed to the desired shape and size and having the ends of the side wall portion secured together in a lock seam 2.

3 is a recess formed in the inner wall of the can adjacent to the top and extending across the joint in the inside of the can formed by the lock seam 2. In forming the recess 3 the metal is pressed outwardly forming a bridge 4 extending from the outer face 5 of the said lock seam and merging into the general contour of the can, said bridge spanning the depression 5^a formed in the metal in the lock seaming operation.

The bridge 4 is preferably formed coincidently with the forming of the seam by a projection formed on the horn on which the can is held during the operation of forming the lock seam, which presses the metal outwardly into a suitable recess cut in the seam forming die, but it must be understood that the said bridge may be formed in a separate operation by pressing the metal outwardly after the seam is formed, if it is so desired.

The can body is flared outwardly from a point above the bridge 4 forming a bell shaped mouth and a bead 6 is formed on the outer edge.

The lock seam 2 is soldered securely and the recess 3 is completely filled in, the soldering material filling said recess being raised above the inner surface of the can.

7 is an annular ring or belt projecting inwardly slightly beyond the inner surface of the can in circumferential alinement with the bridge 4.

The surface of the ring 7 is burnished so that all irregularities are completely effaced, and the surplus solder, filling in the recess 3 is cleaned away so that the said solder forms a continuation of the burnished belt across the seam of the can.

In the joint operation of burnishing the belt 7 and clearing away the surplus solder from the recess 3 the can is held on the outside by rigid gripping jaws 8 (shown in Fig. 4) which grip the can adjacent to the top in alinement with the bridge 4 and contract the metal slightly raising the belt 7 on the inside surface of the can. The jaws 8 are of course cut away to avoid contact with the lock seam and bridge 3, but extend completely around the remaining portion of the can.

The punch 9 is inserted in the can, and as it moves inwardly past the gripping jaws 8, the metal forming the belt 7 is compressed between the said punch and the said jaws, and the inner surface thereof burnished per-

fectly smooth. The circle of the burnished belt is completed by the solder in the recess 3 the surplus solder being removed by said punch in its inward travel.

The bridge 4 extending from the back of the lock across the depression 5^a and gradually merging inwardly to the contour of the can, offers the same resistance to the expanding pressure of the inwardly moving die as does the remaining portion of the can and obviates any possibility of the outward pressure of the said die cracking the solder filling the recess 3. The recess being cupped presents a tapering inner surface to which the solder adheres securely.

The burnishing punch is slightly smaller than the internal diameter of the can, consequently the belt 7 forms a raised burnished surface from which all inequalities are effaced, said surface projecting inwardly slightly beyond the inner surface of the can.

The preferable method of forming the burnished belt on the inner wall of the can is herein shown and described but other ways of forming a surface finished annular belt extending completely around the inner wall of the can may be devised without departing from the spirit of the invention.

10 is a flexible bottom secured to the side wall portions of the can body in a double lock seam 11.

12 is the cover formed of sheet metal and having an annular groove 13 formed in the side thereof and the downwardly extending flange 14 compressed and burnished on its outer surface and turned inwardly at the bottom edge 15.

The flange 14 of the cover is formed with parallel sides and of a diameter slightly larger than the internal diameter of the burnished belt portion of the can body. The difference in diameter between the said burnished belt portion and the burnished outer periphery of the said cover flange is sufficient to insure a perfect contact between the two burnished surfaces and to cause sufficient pressure on the cover, when forced into place, to hold it securely against accidental removal.

The inturned lower edge 15 of the cover insures its ready insertion in the can and also obviates any possibility of the burnished belt being marred or cut by the flange of said cover when being pressed into place.

The style of cover shown and described is the preferable form, as it can easily and quickly be removed without injury, by inserting a coin or any suitable instrument into the annular groove 13 and prying upwardly against the top edge of the can. As the cover is not injured in removal, it may be removed and replaced as often as desired always making an effective joint.

One style of cover is shown, but it must be understood that other styles may be used so long as a burnished belt, free from surface irregularities, is formed thereon to register with the burnished belt in the can body.

16 is a circumferential groove formed in the can body below the burnished belt, forming a load line to indicate the height to which the can should be filled.

In the use of this can, the spring bottom is pressed upwardly into the position, shown in Fig. 2 and the material placed therein, filling the can to the load line. The cover is then placed in position and forced downwardly until the burnished parallel sides thereof register with the burnished belt in the can, thus forming a perfect air and oil tight joint. The contents of the can will thus keep in perfect condition and cannot either leak out or become affected by outside conditions.

The load line 16 is arranged below the burnished belt, consequently there will be a considerable air space between the contents of the package and the top of the cover, but if there is any undue pressure inside the can when the cover is driven home, the spring bottom springs outwardly as shown in the dotted line in Fig. 2 thus relieving any pressure against the lid.

Another and very important feature of this can is that the contents can be easily removed as there are no inwardly projecting flanges or ledges. Further, there are no sharp or ragged edges to injure the fingers.

A can of this description may be used for a great many purposes, not only to retain liquids in such a manner that the contents are preserved from evaporation and leakage but foods, tobaccos and other stuffs, which require to be kept perfectly air tight and free from moisture.

The peculiar formation of the cover which allows its removal without injury greatly enhances the value of the can, as it can be used to great advantage for packaging goods such as tea and coffee and other goods which require to be kept air tight and yet be easily accessible.

What I claim as my invention is:—

1. In a self sealing can, a body having a portion thereof adjacent to the top compressed and surface-finished so that all irregularities are smoothed out, said surface-finished portion forming a continuous, unbroken and regular surface on said inner wall, and a cover having its flange portion compressed and surface-finished with all irregularities smoothed out and forming a continuous, unbroken and regular surface adapted to register with the surface finished portion of said body and form an air and liquid tight joint therewith.

2. In a self sealing can, a body portion having an annular belt bulging slightly inwardly, and arranged adjacent to the top said belt having its inner surface free from

irregularities, and forming a continuous unbroken surface around the inner wall of said body portion and a cover having the outer surface of its flange portion free from irregularities and forming a continuous unbroken surface adapted to contact with the unbroken surface of said belt in the body portion.

3. In a self sealing can, a body portion formed with an external lock seam and having an annular belt adjacent to the top bulging slightly inwardly and a narrow bridge extending from the outer surface of said lock seam and merging into the contour of the can and forming a recess in the inner wall of the can in circumferential alinement with said annular belt, a filling of solder in said recess raised above the inner surface of said body and completing said annular belt, and a cover having the outer wall of its flange burnished and forming an unbroken surface adapted to contact with the surface of said annular belt in the body portion.

4. In a self sealing can, a body portion formed with an external lock seam reinforced at a point adjacent to the top and having an annular belt bulging slightly inwardly and in alinement with said reinforcement, a filling of solder closing said seam at the reinforced point and raised above the inner surface of the can and completing the said annular belt, said annular belt having its inner surface burnished and all irregularities removed therefrom and a cover having a flange with a burnished outer surface contacting with the continuous burnished belt in the body portion.

5. In a self sealing can, a body portion having a flexible bottom and an inwardly bulging annular belt forming a continuous smooth and regular surface around the said body portion arranged adjacent to the top thereof, and a cover having a flange with a smooth regular outer surface adapted to contact with the said smooth regular inwardly bulging surface in the body portion.

6. In a self sealing can, a body portion having an annular belt bulging inwardly from the inner surface thereof adjacent to the top and forming a continuous smooth and regular raised surface, and a cover having the flange portion formed with parallel sides and a smooth and regular outer surface said flange being turned slightly inward at the bottom edge thereof and fitting into said body portion.

7. In a self sealing can, a body portion having an annular belt bulging inwardly from the inner surface thereof adjacent to the top and forming a continuous smooth and regular raised surface, and a cover having a downwardly depending flange and an annular groove formed in said flange, the portion of said flange below said groove being formed with a smooth and regular outer surface adapted to register with the smooth and regular surface of the belt in said body portion and the bottom edge turned inwardly.

Signed at the city of Toronto, in the county of York, in the Province of Ontario, in the Dominion of Canada this 1st day of August 1908.

JOHN FORSTER ROSS.

Witnesses:
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E. HERON.