Aug. 9, 1927. 1,638,386

A. YANCEY

METHOD FOR MAKING AND SETTING ONE-PIECE CAN LINERS

Original Filed March 6. 1922

Fig. 2.

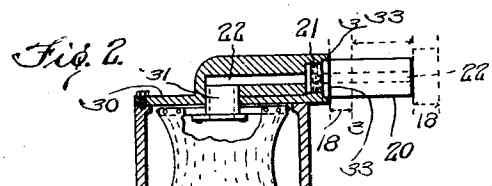


Fig. 4.

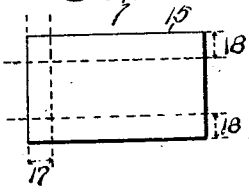


Fig. 3.



Fig. 13.

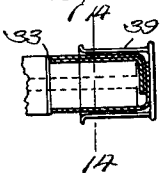
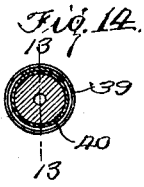


Fig. 14.



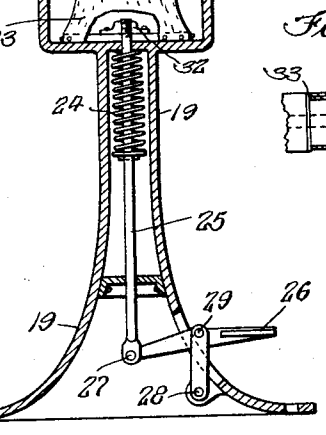


Fig. 5.

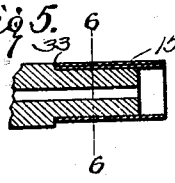


Fig. 6.

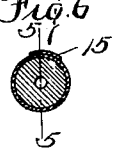


Fig. 1.

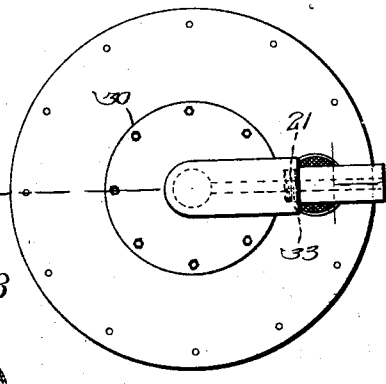


Fig. 11.

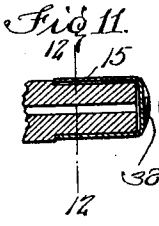


Fig. 12.

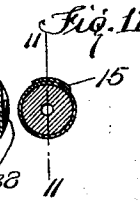


Fig. 7.

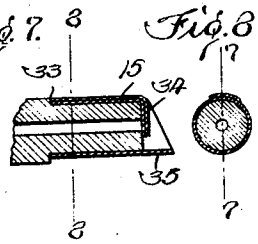


Fig. 8.

Fig. 9.

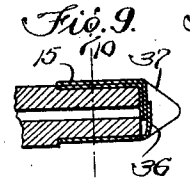
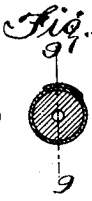


Fig. 10.



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UNITED STATES PATENT OFFICE.

ARTHUR YANCEY, OF NEW ORLEANS, LOUISIANA.

METHOD FOR MAKING AND SETTING ONE-PIECE CAN LINERS.

Original application filed March 6, 1922, Serial No. 541,476. Divided and this application filed October 13, 1922, Serial No. 594,394. Renewed December 6, 1924.

This application is a division of applicant's co-pending case No. 541,476, for apparatus for making and setting one-piece can liners, filed March 6, 1922, which has matured into Patent No. 1,436,748.

The object of the invention is to facilitate lining of metal cans to prevent discoloration and damage of the food contained.

Fig. 1 is a plan view of the machine with some of the obscured interior parts indicated in outline.

Fig. 2 is a view in elevation, partly shown in section along the line 2—2, Fig. 1 and partly in outline. Some of the interior parts are removed to disclose otherwise obscured parts.

Fig. 3 is a section of the liner form on a plane indicated by the line 3—3, Fig. 2.

Fig. 4 is a view of the one-piece liner rolled out flat.

Fig. 5 is a detail view in section on a plane indicated by the line 5—5, Fig. 6, showing the first step in forming the liner.

Fig. 6 is a detail view in cross-section on a plane indicated by the line 6—6, Fig. 5.

Fig. 7 is a view in section on a plane indicated by the line 7—7, Fig. 8, showing the second step in forming the liner; and Fig. 8 is a corresponding cross-section on a plane indicated by the line 8—8, Fig. 7.

Fig. 9 is a sectional detail view on a plane indicated by the line 9—9, Fig. 10; and Fig. 10 is a corresponding section indicated by the line 10—10, Fig. 9. These show the third step in forming the liner.

Fig. 11 is a sectional detail view indicated by the line 11, Fig. 12; and Fig. 12 is a corresponding cross-section indicated by the line 12—12, Fig. 11. These show the fourth step in forming the liner.

Fig. 13 is a view partly in section and partly in outline on a plane indicated by the line 13—13, Fig. 14; and Fig. 14 is a corresponding cross-section indicated by the line 14—14, Fig. 13. These show the fifth and last step in forming the liner.

The liner 15, preferably of parchment paper, is made in one piece and should be as long as the circumference of the can plus the desired lap 17, and as wide as the inside height of the can plus allowance for folding to cover the top and bottom as shown at 18. If desired, the lining may be double if the length of the liner is made twice the circumference of the can.

The casing 19 provides a support for the other elements of the machine.

The liner form 20, which is preferably constructed of polished hardwood, may be conveniently held in place by the screw as shown at 21. Different forms will be required for other shapes of cans. For the purpose of illustration a round can is shown, but the machine will work as well for square or other cans with corresponding forms.

An air duct 22 connects the liner form with the bellows 23. The latter is operated by means of compression spring 24, connecting the rod 25 and foot pedal 26, which is mounted on the pivots 27, 28 and 29.

For access to the bellows, a removable cap 30 is provided.

A ground joint 31 may connect the bellows to the cap and the flange 32 may fasten the connecting rod to the bellows.

Pressure of the operator's foot on the pedal 26 produces an air blast through the liner form 20 and the compression spring 24 causes the bellows and pedal to return to normal position when the foot is removed.

In operation the liner 15 is wound around the liner form 20 with the edge of the liner against the gauge 33, or contiguous to the supported end of the liner form, and with the side lap preferably on top as shown in Figs. 5 and 6.

It will be understood that cans of different sizes will require corresponding sizes of liners and liner forms. In all cases, the length of the liner should be equal to the inside circumference of the can plus the desired lap, and the width of the liner should be about equal to (slightly less than) the height of the can plus the length required to make the top and bottom closures.

For example, I select a standard No. 1 shrimp can, which is about 4 inches tall and $2\frac{7}{16}$ inches in diameter and requires a liner $9\frac{1}{2}$ inches long and 7 inches wide; and a liner form $5\frac{1}{2}$ inches long measured from the gage or supported end thereof to the free end and of $2\frac{7}{16}$ inches diameter.

For the purpose of illustration, a liner may be supposed to be formed in three divisions or parts required to make the top, side and bottom closures. The division for the side closure should be about equal to (slightly less than) the height of the can and the remainder of the liner comprises two equal divisions, the top and the bottom closures as at

18 Fig. 4. In the case of my present example, a No. 1 standard shrimp can, divisions for the top, side and bottom closures require respectively 1½, 4 and 1½ inches width and 9½ inches length.

As aforesaid the edge of the liner is placed contigously to the supported end of the liner form and wound therearound. The liner will extend 1½ inches beyond the free end of the liner form, because the former is 7 inches wide and the latter is 5½ inches long. The extension beyond the free end of the liner form, 1½ inches of the liner, marks or regulates the division for the bottom closure, and the extension of the liner between the free end and the supported end of the liner form, 5½ inches of the liner, marks or regulates the divisions for the side and top closures, 1½ inches plus 4 inches, the length of the liner form.

The bottom division, or the extension of 1½ inches of the liner beyond the free end of the liner form, may now be conveniently folded down to the form as illustrated in three steps, Figs. 7 and 8, Figs. 9 and 10, Figs. 11 and 12; first the part 34, next the underlip 35 and then the flaps 36 and 37.

The completed bottom folds are preferably as shown at 38, Fig. 12.

The can 39 is now impaled on the liner form over the liner and firmly held against the folds, Figs. 13 and 14, and the bottom closure is pressed and moulded to shape or set in the can. It is obvious that the division for the top closure will extend 1½ inches above the top of the can.

Finally, the operator presses the foot pedal 26 and the liner is first expanded from the position shown at 40, Fig. 14, to full contact with the side of the can and then the can with the liner set is expelled from the form ready for filling with the food to be preserved.

Then the can is filled with solid food like shrimp or chipped beef or the like, the divisions for the top closure, 1½ inches of the liner extending above the top of the can, may be folded down over the contents in the same way that the bottom closure was made by folding the bottom division, 1½ inches of the liner extending beyond the liner form, over the liner form.

The metallic cap of the can is now placed in position and the can is passed to the capping machine and hermetically sealed and afterwards processed for indefinite preservation of the food contained.

When the can is opened by cutting the side of the can just below the top seam, the contents may be emptied in a package of one-piece wrapping with uniform and symmetrical closures on the top, side and bottom, and it will ordinarily retain its shape until opened.

A simple form of apparatus has been selected to illustrate the invention, but certain changes may be made without departing from its spirit, and some of the parts may be omitted. The support and liner form with a vent only could be used to advantage.

I claim and desire to protect by Letters Patent combinations in methods for making and setting one-piece can liners which include all of the elements, or their equivalents, set forth in each of the following claims:

1. The method of making and setting one-piece liners in cans, comprising winding the liner around a form with the liner extending from the free end of the liner form towards the supported end thereof as far as the sum of the widths of those divisions of the said liner as required to line the top and cylindrical surface, or side, of a corresponding can, and extending from said free end thereof in opposite direction as far as the width of that division required to line the bottom of the said can, turning down a plurality of folds of the said liner upon the end of the liner form, telescoping the liner covered form with a corresponding can, jamming or crushing between the end of the liner form and the bottom of the can the ears or secondary flaps resulting from the curvilinear folds of the liner, thus molding the flaps and folds to the shape of the can, and then withdrawing the can with the liner set.

2. The method of making and setting one-piece liners in cans, comprising winding the liner around a vented form with the liner extending from the free end of the liner form towards the supported end thereof as far as the sum of the widths of those divisions of the said liner as required to line the top and cylindrical surface, or side, of a corresponding can, and extending from said free end thereof in opposite direction as far as the width of that division required to line the bottom of the said can, turning down a plurality of folds of the said liner upon the end of the liner form, tedescoping the liner covered form with a corresponding can, jamming or crushing between the end of the liner form and the bottom of the can the ears or secondary flaps resulting from the curvilinear folds of the liner, thus molding the flaps and folds to the shape of the can, and then expanding the liner in the can, and expelling the can with the liner set by producing a blast of air through the said liner form.

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