A. YANCEY.

APPARATUS FOR MAKING AND SETTING ONE-PIECE CAN LINERS.

APPLICATION FILED MAR. 6, 1922.

1,436,748. Patented Nov. 28, 1922.

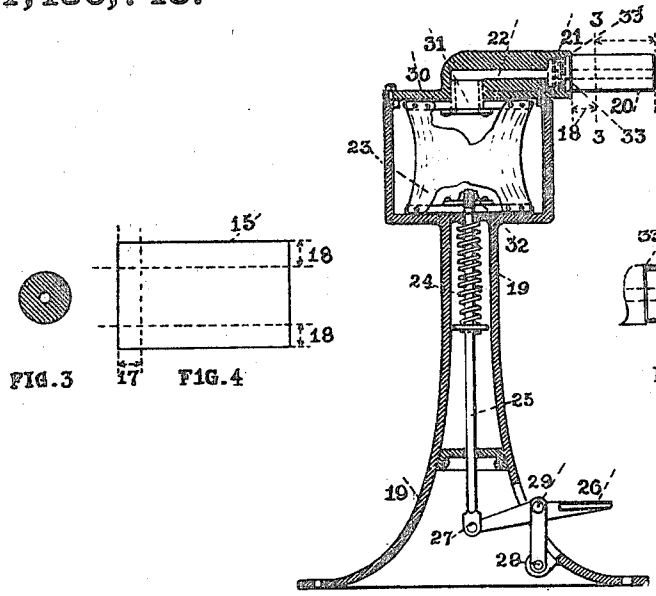


FIG. 2

FIG. 3 FIG. 4

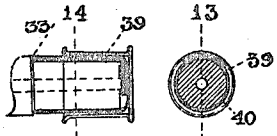


FIG. 13

FIG. 14

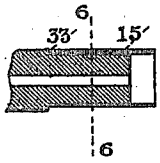


FIG. 5

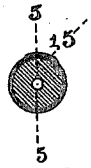


FIG. 6

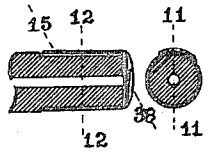


FIG. 11 FIG. 12

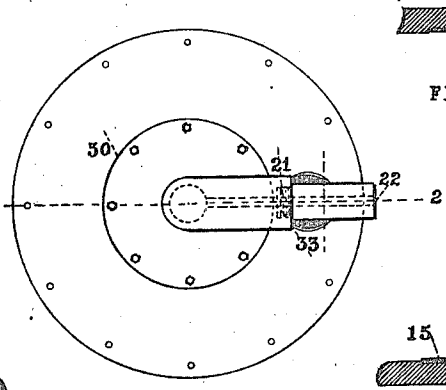


FIG. 1

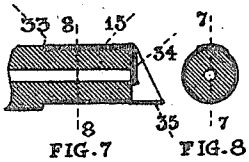


FIG. 7 FIG. 8

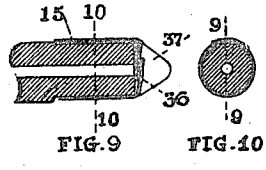


FIG. 9 FIG. 10

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UNITED STATES PATENT OFFICE.

ARTHUR YANCEY, OF NEW ORLEANS, LOUISIANA.

APPARATUS FOR MAKING AND SETTING ONE-PIECE CAN LINERS.

Application filed March 6, 1922. Serial No. 541,476.

To all whom it may concern:

Be it known that I, ARTHUR YANCEY, a citizen of the United States, residing at New Orleans, in the parish of Orleans and State of Louisiana, have invented new and useful Apparatus for Making and Setting One-Piece Can Liners.

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—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 bellows 23. The latter is operated by means of compression spring 24, connecting rod 25 and foot pedal 28, 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 gage 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 twice the length required to make the top or bottom closures.

For example, I select a standard No. 1 shrimp can, which is about 4 inches tall and $2\frac{9}{16}$ 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 comprising two equal divisions, the top and 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 contiguously 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 line-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 cover over the liner and firmly held against the folds, Figs. 13 and 14, and the bottom closure is pressed and molded 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.

When the can is filled with solid food like shrimp or chipped beef or the like, the division 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 for folding the bottom division, 1½ inches of the liner extending beyond the liner-form, over the line-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. For instance, a fan or pump may be used instead of the bellows to produce the air blast or a plunger may operate in the hollow of the form to expel the can and liner. 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 apparatus 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. In apparatus for making and setting one-piece can liners, a vented liner-form of circular cross section provided with a gage disposed contiguously to the supported end of said liner-form, and as far from the free end thereof as the sum of the widths of those divisions of a corresponding liner required to line the top and cylindrical surface, or side, of a corresponding can.

2. In apparatus for making and setting one-piece can liners, a liner form of circular cross-section and of length equal to the sum of the widths of those divisions of a corresponding liner required to line the top and cylindrical surface, or side, of a corresponding can.

3. In a machine for making and setting one-piece can liners, a support, a vented liner form of circular cross-section and of length equal to the sum of the widths of those divisions of a corresponding liner required to line the top and cylindrical surface, or side, of a corresponding can.

4. In apparatus for making and setting one-piece can liners, a vented liner-form provided with a gage disposed contiguously to the supported end and separated as far from the free end of said liner-form as the sum of widths of those divisions of a corresponding liner required to line the top and cylindrical surface, or side, of a corresponding can, a bellows, an air duct to said vented liner form, and a pedal operably connected.

ARTHUR YANCEY.