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COLLAPSIBLE CONTAINER ASSEMBLING METHOD AND JIG

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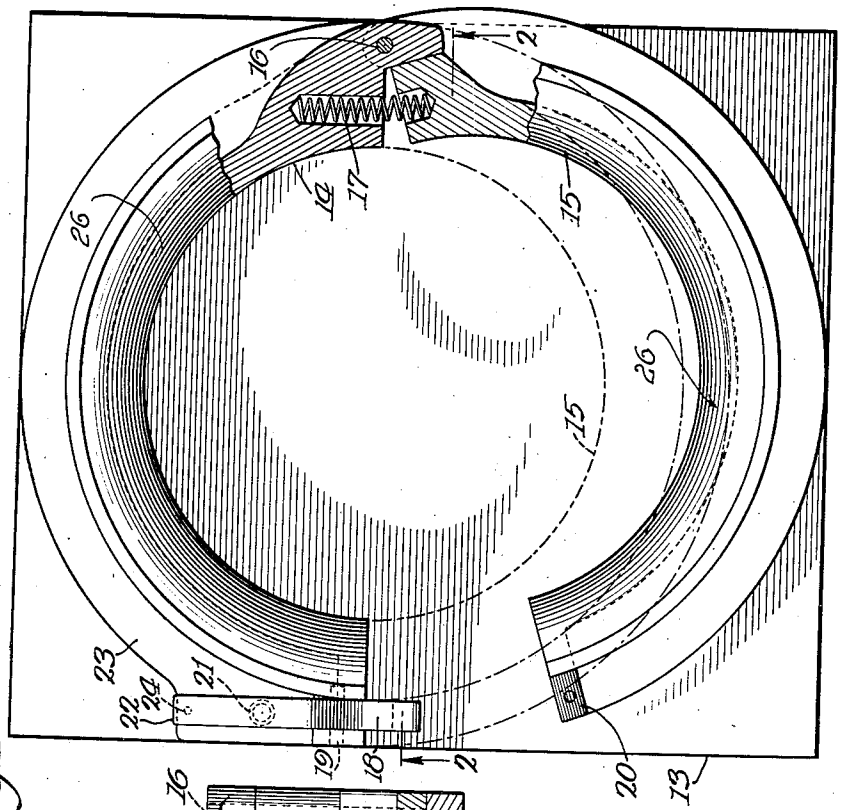


Fig. 1

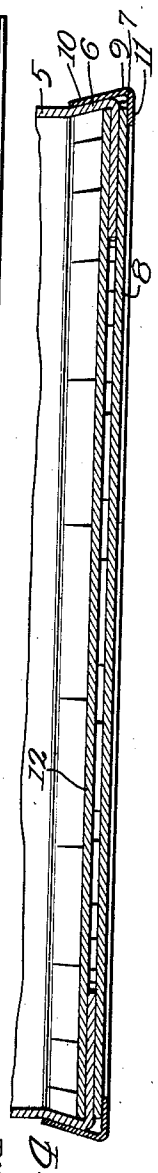


Fig. 4

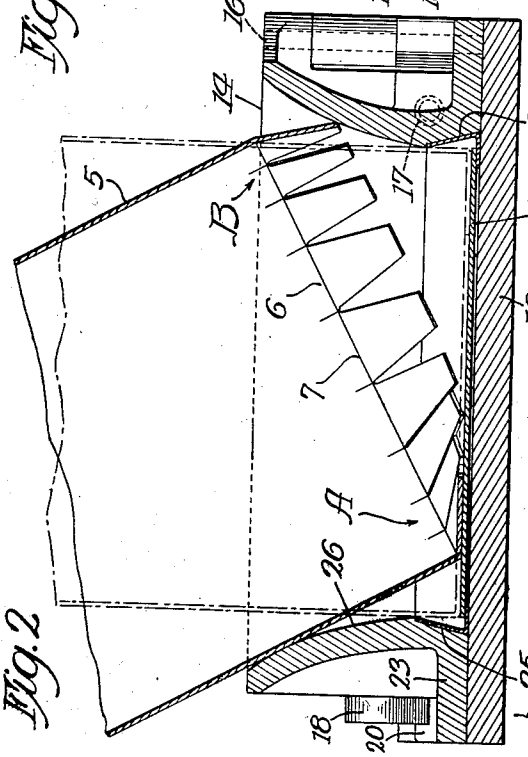


Fig. 2

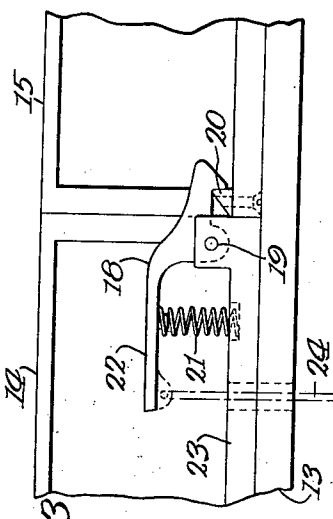


Fig. 3

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COLLAPSIBLE CONTAINER ASSEMBLING METHOD AND JIG

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13 Claims. (Cl. 93—55)

This invention relates to a method and a jig for assembling containers comprising a collapsible tubular body of paper board, the body being provided with tongues at one end, and a flanged end closure or bottom into which the tongued end of the body is inserted and locked. This application is a continuation in part of our copending application, Serial No. 503,018, filed December 17, 1930.

The main object of this invention is to provide a method and a device for facilitating the insertion of the tongued end portion of the tubular container body of the above mentioned kind of can structure into the end enclosure of such structure.

Other objects and advantages of the invention will be understood by reference to the following specification and accompanying drawing in which there is illustrated an assembling jig embodying a selected form of the invention.

In the drawing:—

Fig. 1 is a plan.

Fig. 2 is a section on the line 2—2 of Fig. 1.

Fig. 3 is a fragmentary side elevation illustrating a locking device.

Fig. 4 is a vertical section through the bottom portion of an assembled can of the kind referred to.

The container structure desired to be assembled by the jig herein disclosed is illustrated in Fig. 4 and comprises a tubular paper board body 5 having tongues 6 at its lower end, said tongues being preferably tapered towards their free or lower ends as indicated in Fig. 1. The tongues 6 are adapted to be bent transversely intermediate their lengths along a line such as indicated at 7 in Fig. 1, and these tongues are positioned against a bottom disk 8. The bottom disk 8 may be a paper board disk or it may be an integral end piece formed with the collar 9 which has an upwardly and inwardly tapered or conical flange 10. In this instance, the bottom closure 8 is illustrated as being in the form of a paper disk seated on an end flange or lip 11 of the collar 9. An inner closure member 12 which may also be of paper board is inserted from the open end of the can body into the position illustrated wherein it expands the tongues 6 to securely lock them inside of the conical flange 10. The disk 12 which is somewhat larger in diameter than the integral diameter of the main body 5 may be inserted into the described position by reason of its flexibility which permits temporary distortion thereof.

The jig for facilitating the assembling of the described can structure includes a base member 13 on which a pair of jaws 14 and 15 are mounted. One of the jaws, 14 in this instance, is fixedly mounted on the base 13 by any suitable means and the other jaw member 15 is mounted for lateral movement relative to the member 14, and in this instance it is pivoted to the member 14 by a hinge arrangement indicated at 16. A coil compression spring 17 disposed in suitable recesses in the jaw members 14 and 15 adjacent the hinge connection serves to normally urge the jaw member 15 to swing to open position as indicated in full lines in Fig. 1. A latch member 18 pivoted as indicated at 19 on the fixed member 14 is adapted to engage a tooth 20 formed on or secured to the movable member 15 to lock the latter member in closed position as indicated in dotted lines in Fig. 1. A spring 21 acting between a handle portion 22 of the latch and a flange portion 23 of the jaw 14 serves to urge the latch into locking position. The latch may be disengaged by manually pressing down on the handle end 22 of the latch, or a connection such as indicated at 24 to a treadle may be provided. As best shown in Fig. 2, the jaw members are provided with a lower conical recess 25 and an upper, inverted conical flaring flange 26. The conical recess 25 is under-cut with respect to the flaring portion 26 and it is adapted to receive the bottom closure elements 8 and 9 as clearly shown. The bottom closure elements 8 and 9 may be inserted as a unit into place in the jaw member 14, while the jaw member 15 is in open position, and the jaw member 15 may thereupon be closed so that the closure structure is confined in operative relation to the upper flaring wall portions 26 of the jaws. As shown, the flaring wall portions 26 of the jaws are of a width which is preferably greater than the length of the tongues 6, and they are flared outwardly to such an extent that when a can body 5 is inserted in an angular position as illustrated in full lines in Fig. 2, the tongues as indicated at A at one side of the can body may be bent inwardly by engagement with the end closure member 8 while the opposite tongues indicated at B remain nearly straight but engage at their ends the adjacent flaring wall portions.

The initial operation in assembling a can body with an end closure will thus be understood to include the insertion of the end closure into the jig and insertion of the can body into the jig in inclined position as illustrated in full lines in Fig. 2. To complete the insertion of the can body into the end closure, the can body is moved to

perpendicular position relative to the end closure and preferably slightly rotated at the same time whereby the tongues will all be caused to fold inwardly and the can body adjusted to the position indicated in dotted lines in Fig. 2. This done, the bottom insert or locking member 12 may then be inserted. It is preferable, however, that the assembling jig be opened before the locking member 12 is inserted so as to permit freedom of flexing of the can body incident to the forcing of the locking member 12 into place.

The described assembling jig structure is preferably made of light weight construction so that it may be easily handled and moved from place to place as desired. Aluminum may conveniently be used in producing the parts since it is of light weight and ample strength.

Changes may be made in the above described structure without departing from the spirit of the invention, the scope of which should be determined by reference to the following claims, the same being construed as broadly as possible.

We claim as our invention:—

1. The method of applying an end closure having a flange adapted to embrace a marginal end portion of a tubular container body to a tubular paper board body having tongues at its lower end, which consists in holding the end closure in a fixed position, inserting the tongued end of the body into the closure in an axially inclined position so as to cause certain of the tongues to initially engage the closure and be thereby folded inwardly of the body and then moving the body to perpendicular position relative to the plane of the closure and guiding the other tongues into engagement with such closure and folded relation to the body.

2. The method of applying an end closure having a flange adapted to embrace a marginal end portion of a tubular container body to a tubular paper board body having tongues at its lower end, which consists in holding the end closure in a fixed position, inserting the tongued end of the body into the closure in an axially inclined position so as to cause certain of the tongues to initially engage the closure and be thereby folded inwardly of the body and then turning the body slightly while moving the same to perpendicular position relative to the plane of the closure and guiding the other tongues into engagement with such closure and folded relation to the body.

3. A device for facilitating assembly of a cylindrical tubular container body having flexible tongues at one end and a closure having a flange adapted to snugly fit the container body adjacent said tongues, comprising a base member adapted to support the closure, complementary, relatively movable jaw members forming between them a downwardly contracting, circular throat and a recess below said throat for receiving the flange of the closure supported on the base, said recess serving to hold the closure on the base in co-axial relationship with said throat, the throat being of contour, height and form such as to permit rotation therein of the tubular body member while the latter is in an inclined position relative to the base and such as to engage and fold the tongues of the body member inwardly when the latter is rotated and adjusted to effect full seating of the container end portion on the closure, a latch for locking the jaw members in operative relationship, and means for urging the jaw members to move to inoperative relationship when said latch is released.

4. The method of erecting a container of the type having a collapsible tubular fibrous body portion provided with a plurality of inwardly flexible tongue members extending longitudinally from an end thereof, which comprises distending said collapsible body portion, pressing said body portion toward and the tongue members at one side obliquely against a resisting surface whereby to deflect said tongue members inwardly, and rotating said body portion and moving the same toward perpendicular position with respect to said surface to deflect the tongue members on all sides of said body portion inwardly.

5. A device for assembling fibrous containers of the type having a tubular body portion with inwardly flexible tongues extending from one end thereof, comprising a base member and a downwardly contracting annular tongue deflecting member of such contour, height and size as to permit rotation therein of the tubular body member while the latter is in inclined position relative to said base member, whereby to deflect the tongues on said body member inwardly thereof.

6. A device for assembling fibrous containers of the type having a tubular body portion and inwardly flexible tongues of substantial length extending from one end thereof, comprising a base member and a throat member mounted adjacent said base member, said throat member having an annular portion of substantially the same diameter as said body portion for maintaining the latter in distended shape when positioned therein and an outwardly flared throat portion above said annular portion adapted to receive said body portion in an inclined position, the combined heights of said annular portion and said throat being greater than the length of the tongues on a container to be erected on said device.

7. A device for assembling fibrous containers of the type having a tubular body portion with inwardly flexible tongue members extending from one end thereof, comprising combined base and body portion receiving members of such height and form as to deflect the tongues of such body portion inwardly when said body portion is inserted therein in one position and to maintain the tongues in inwardly bent positions and the body portion in substantially circular shape when said container is moved to another position therein.

8. A device for assembling fibrous containers of the type having a body portion and tongue members hinged adjacent one end thereof, comprising combined base and body portion receiving members of such height and form as to deflect the tongues of a container inwardly when the container is inserted therein in one position and to maintain the tongues in inwardly bent condition and the body portion of the container in substantially circular shape when said container is moved to another position, and means for receiving a bottom member securing element for attachment to said container when the latter is in said last named position.

9. A device for assembling an end closure and a flexible tubular body member having inwardly flexible fingers of substantial length extending from an end thereof, comprising a throat member affording a round flaring throat which at its narrowest point is of approximately the same diameter as the body member, said throat being of a height and flare such as to contact outer faces of all of the body member tongues when the body

member is inserted into it in an oblique relationship.

10. A device for assembling an end closure and a tubular container body having longitudinally extending inwardly flexible tongues at the end thereof, comprising an annular throat member affording a round contracting throat having its smallest diameter approximately the same as the diameter of the container body, said throat member having portions for retaining the end closure in a position approximately concentric with and perpendicular to the axis of the throat and having its inner surface flaring at an angle such as to admit insertion and rotation of the container body therein in a position wherein the outer faces of tongues on one side of the container contact such end closure and the outer faces of its other tongues contact said inner surface.

11. A device for assembling an end closure and a tubular container body having longitudinally extending inwardly flexible tongues at the end thereof, comprising an annular throat member affording a round contracting throat having its smallest diameter approximately the same as the diameter of the container body, said throat member having portions for retaining the end closure in a position approximately concentric with and perpendicular to the axis of the throat and having its inner surface flaring at an angle such as to admit insertion of the container body in a position oblique to the axis of the throat and permit its rotation therein with outer faces of some of its tongues in contact with the end closure and others in contact with said flaring inner surface.

12. A device for assembling fibrous containers of the type having a tubular body portion with inwardly flexible tongues extending from one end thereof and an end closure adapted to form an interlock with said tongues when the latter are in inwardly flexed position, comprising a base member and a body portion receiving member having an inwardly contracting portion for initiating the inward flexing of said fingers and another portion of substantially the same cross-sectional size as the normal cross-sectional size of said body portion.

13. A device for assembling fibrous containers of the type having a tubular body portion with inwardly flexible tongues extending from one end thereof and an end closure adapted to form an interlock with said tongues when the latter are in inwardly flexed position, comprising a base member and a body portion receiving member having an inwardly sloping portion of such contour, height and size as to permit rotation therein of the tubular body portion while the latter is in inclined position relative to said base member, whereby to deflect the tongues on said body portion inwardly, and another portion of substantially the same cross-sectional size as the cross-sectional size of said body portion.

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