Aug. 28, 1956 J. HENCHERT 2,760,691

PLASTIC NOZZLE MOUNTING AND METHOD OF ASSEMBLING SAME

Filed April 22, 1955

FIG. 1

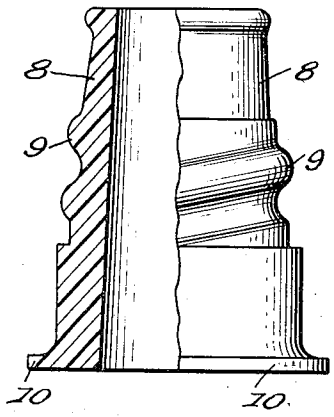


FIG. 2

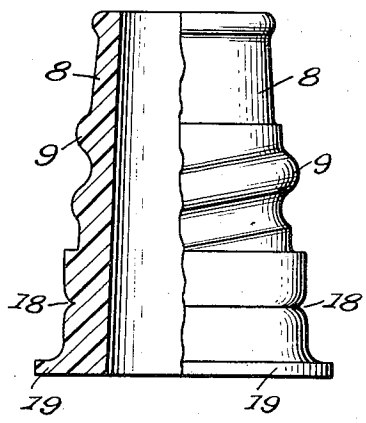


FIG. 3

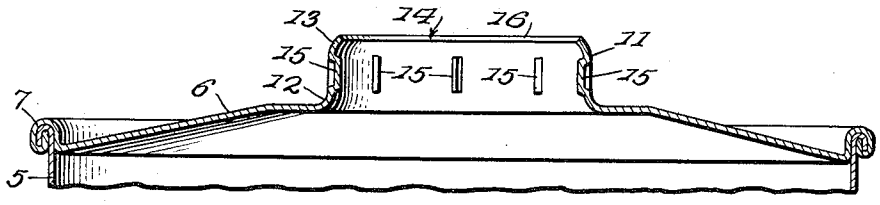


FIG. 4

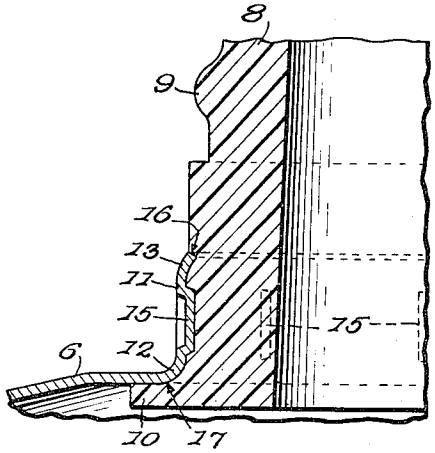
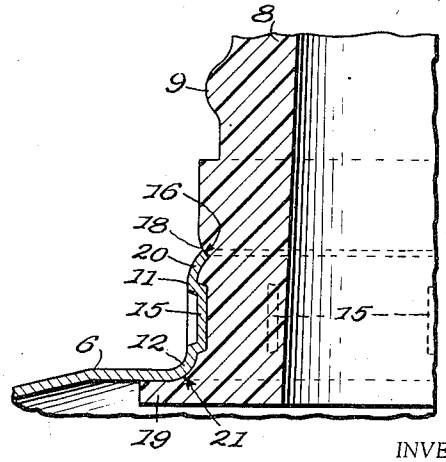


FIG. 5



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United States Patent Office 2,760,691 Patented Aug. 28, 1956

2,760,691

PLASTIC NOZZLE MOUNTING AND METHOD OF ASSEMBLING SAME

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Application April 22, 1955, Serial No. 503,281

6 Claims. (Cl. 222—566)

The invention relates generally to metallic receptacles and primarily seeks to provide a sturdy plastic nozzle mounting which is neat in appearance, liquidtight, secure against turning of the nozzle when screw closure caps are applied thereon, and devoid of presentation of raw metal body or edge portions either internally or externally of the container.

An object of the invention is to provide a nozzle mounting of the character stated wherein the container breast has an upstanding neck in which the tubular plastic nozzle is inserted and through which it projects, said neck being connected with the breast through a well rounded curve firmly abutted and covered by a flange projection at the lower end of the nozzle, the upper end extremity of the neck having an inwardly turned edge embedded in the outer surface of the nozzle body, and said neck also having a plurality of elongated ribs extending therealong in parallel relation to each other and the axis of the neck and spaced about the circumference of the neck and indented into the nozzle body to prevent turning thereof in the neck when screw cap closures are applied thereon.

Another object of the invention is to provide a plastic nozzle mounting of the character stated wherein the neck edge is indented in a preformed groove provided in the external surface of the nozzle in proper spaced relation to the nozzle flange to insure a firm holding of the flange against the container neck and wall juncture when the neck edge is indented in said groove.

A further object of the invention is to provide a novel method of forming a plastic nozzle mounting of the character stated wherein the nozzle is forced endwise into the neck and by this means causes the elongated ribs of the neck to be embedded in the nozzle, the flange to be firmly seated against the juncture of the neck with the breast wall and the neck edge to become embedded in the nozzle exterior, thereby to cover the neck edge against external exposure and the neck and breast wall juncture against internal exposure, and also to secure the nozzle against movement about its axis relative to the neck.

A still further object of the invention is to provide a method of the character stated wherein the inturned neck end snaps into a preformed groove in the nozzle as the nozzle is fully seated in the neck, the groove being so spaced with relation to the flange on the nozzle as to be effective to securely hold the flange pressed against the juncture of the neck and the breast wall.

With the above and other objects in view that will hereinafter appear, the nature of the invention will be more clearly understood by reference to the following detailed description, the appended claims and the several views illustrated in the accompanying drawing.

In the drawing:

Figure 1 is a detail view illustrating one form of plastic nozzle per se, the same being illustrated partly in vertical cross section and partly in side elevation.

Figure 2 is a view similar to Figure 1 and illustrating a modified form of nozzle including a preformed, neck edge receiving groove therein.

Figure 3 is a fragmentary sectional view illustrating the nozzle receiving neck projecting from a can top or breast portion.

Figure 4 is an enlarged fragmentary sectional view illustrating a complete mounting formed by inserting the nozzle of Figure 1 into the breast neck of Figure 3.

Figure 5 is an enlarged fragmentary sectional view illustrating a complete mounting formed by inserting the nozzle of Figure 2 in the breast neck of Figure 3.

In the example of embodiment of the invention herein disclosed, the improved nozzle mounting is shown incorporated in a container structure including a body **5** having a top or breast **6** secured thereon by a conventional double seam **7**.

The nozzle to be mounted preferably is molded from a deformable plastic, such as polyethylene, to include a tubular body **8** externally threaded at **9** and having an outwardly projecting abutment and protecting flange **10**.

The container breast is equipped with an upstanding neck **11** having a juncture with the breast **6** through a smooth curve at **12**. The neck terminates at its upper end in an inturned edge **13** defining a nozzle receiving opening **14**, and said neck also is equipped with a plurality of inwardly indented, longitudinally extending ribs **15**. The ribs are circumferentially spaced about the neck in parallel relation to each other and to the axis of the neck, as best illustrated in Figure 3.

In forming a mounting composed of the plastic nozzle of Figure 1 and the breast neck of Figure 3 the nozzle is inserted upwardly through the neck to bring about an indenting of the longitudinal ribs **15** in the external surface of the nozzle, a firm seating of the flange **10** against the juncture of the neck and the breast, and an indenting of the neck edge in the external surface of the nozzle. The identing of the neck edge at **16** brings about a covering of said edge from external exposure, and the juncture **12** of the neck **11** with the breast **6** is protected against exposure internally of the container by reason of the firm seating of the flange at **17** held by the indenting of the neck edge at **16**.

In the modified nozzle mounting illustrated in Figure 5 the nozzle of Figure 2 is provided with a preformed groove **18** which is so spaced from the flange **19** that the inturned neck edge **20** in this modified arrangement will snap into the groove **18** just as the nozzle is forced fully into the neck to seat the flange **19** firmly against the neck and breast wall juncture at **21**, thereby serving to securely hold the assembly illustrated in Figure 5.

It will be apparent that the preformed groove provides an abutment shoulder against which the edge of the neck at the upper end extremity thereof will firmly seat in a manner for assuring against forcing of the nozzle body **8** back into the container should the same be dropped or otherwise handled so as to apply a force against the nozzle tending to displace it inwardly through the neck **11**.

In the illustrated forms of the invention the indented longitudinal ribs **15** serve to securely hold the nozzles against movement about their axes relative to the breast necks in which they are mounted, and all such mountings are sturdy, neat in appearance, and liquidtight.

While example structures and method steps are disclosed in detail herein, it is to be understood that the structural features and method steps may be modified without departing from the spirit and scope of the invention as defined in the appended claims.

I claim:

1. In a container structure, a plastic nozzle comprising a tubular body and an outwardly extending abutment

flange at its lower end extremity, a metal container wall having a neck upstanding therefrom and embracing the nozzle body with the abutment flange placed firmly over the juncture of the neck with said wall, said neck having an upper terminal edge indented in the nozzle body, and a plurality of elongated ribs extending therealong in parallel relation to each other and the axis of the neck and spaced about the circumference of the neck and indented into the nozzle body to prevent turning thereof in the neck when screw cap closures are applied thereon.

2. A container structure as defined in claim 1 wherein the neck edge is indented in a preformed groove provided in the external surface of the nozzle in proper spaced relation to the nozzle flange to insure a firm holding of the flange against the container neck and wall juncture when the neck edge is indented in said groove.

3. The herein described method of forming a mounting for a deformable plastic nozzle having a tubular body and an outwardly extending abutment flange at its lower end extremity; said method comprising, providing a metal container wall with a neck in which to receive the nozzle and having an inwardly turned upper edge extremity and preformed inwardly indented ribs spaced about the circumference of the neck and extending therealong in parallel relation to each other and to the axis of the neck, forcing the nozzle outwardly through said neck to position the nozzle as a liner in the neck and place its abutment flange in protective contact over the juncture of the neck with the container wall in which it is provided and also cause the ribs to be embedded in the nozzle to prevent turning of the nozzle in the neck and the neck edge to be embedded in the nozzle body.

4. The herein described method of forming a mounting for a deformable plastic nozzle having a tubular body and an outwardly extending abutment flange at its lower end and a preformed annular groove in its outer surface spaced above and in parallel relation to said flange; said method comprising, providing a metal container wall with a neck in which to receive the nozzle and having an inwardly turned upper edge extremity and preformed inwardly indented ribs spaced about the circumference

of the neck and extending therealong in parallel relation to each other and to the axis of the neck, forcing the nozzle outwardly through said neck to position the nozzle as a liner in the neck and place its abutment flange in protective contact over the juncture of the neck with the container wall in which it is provided and also cause the neck edge to spring into and be embedded in the nozzle groove with the nozzle flange firmly held in said juncture protecting position and the ribs to be embedded in the nozzle between the flange and groove.

5. In a container structure, a plastic nozzle comprising a tubular body and an outwardly extending abutment flange at its lower end extremity, a metal container wall having a neck upstanding therefrom and embracing the nozzle body with the abutment flange placed firmly over the juncture of the neck with said wall, said neck having a plurality of elongated ribs extending therealong in parallel relation to each other and the axis of the neck and spaced about the circumference of the neck and indented into the nozzle body to prevent turning thereof in the neck when screw cap closures are applied thereon, said nozzle body having an abutment shoulder, and said neck also having an upper terminal edge engaging said abutment shoulder in a manner for preventing displacement of the nozzle body inwardly through said neck.

6. A container structure as defined in claim 5 wherein the abutment shoulder is provided in the form of a groove preformed in the external surface of the nozzle body and into which the terminal edge of the neck is indented to shield the edge from external exposure.

References Cited in the file of this patent

UNITED STATES PATENTS

2,535,837	Coyle	Dec. 26, 1950
2,591,354	Harris	Apr. 1, 1952
2,723,060	Rieke	Nov. 8, 1955

FOREIGN PATENTS

1,016,506	France	Aug. 27, 1952