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ARTICLE DISPENSER PACKAGE WITH SEPARATE SUSPENSION MEANS

Filed Oct. 24, 1965

2 Sheets-Sheet 1

FIG. 1

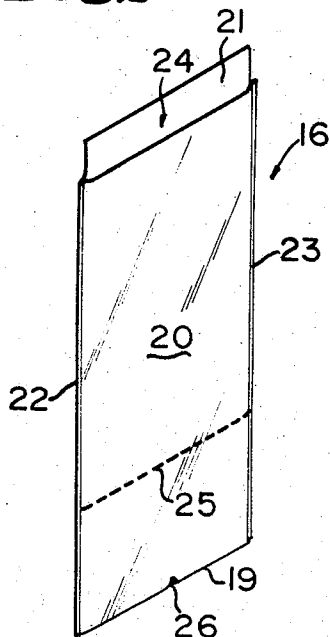


FIG. 3

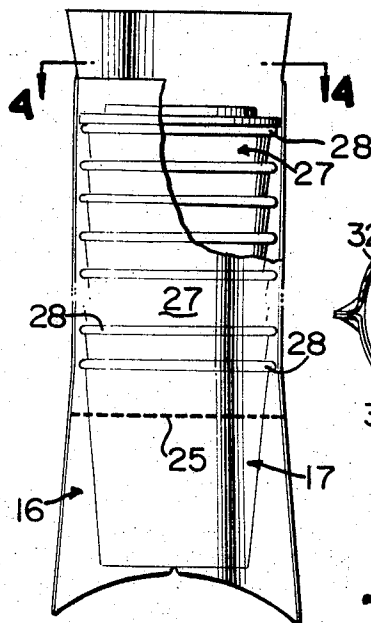


FIG. 4

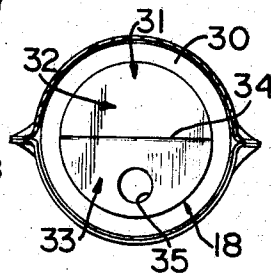


FIG. 2

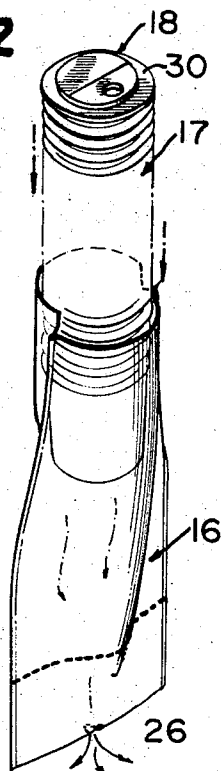


FIG. 5

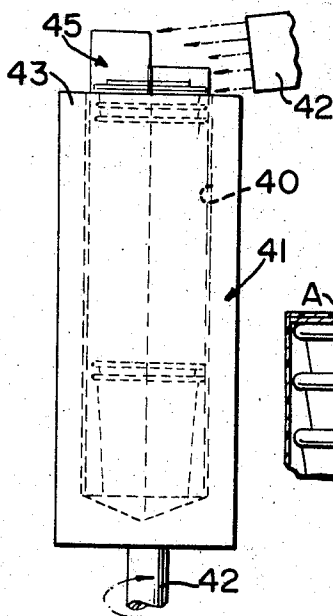


FIG. 6

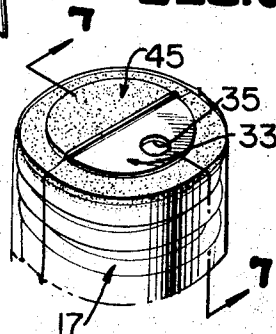
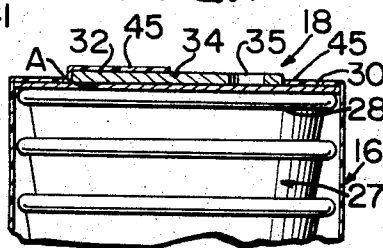


FIG. 7



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FIG. 8

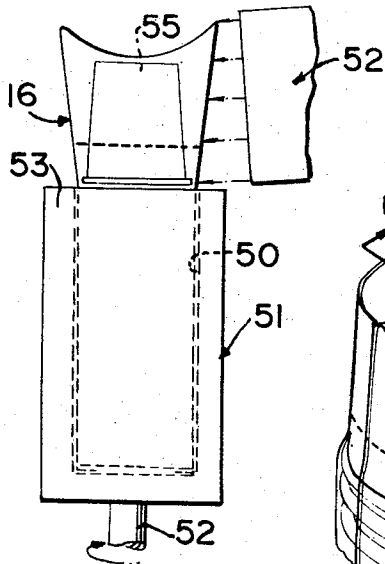


FIG. 9

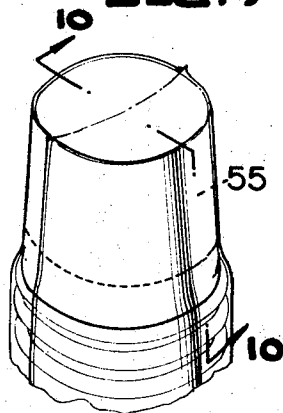


FIG. 10

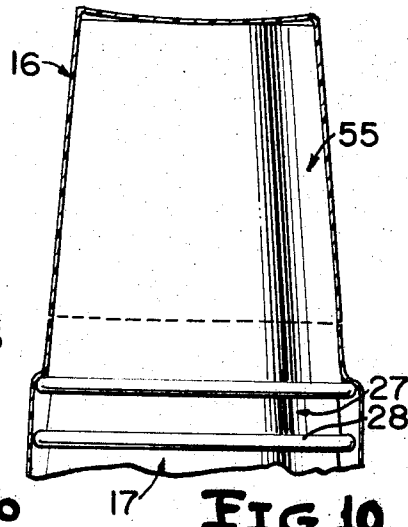


FIG. 11

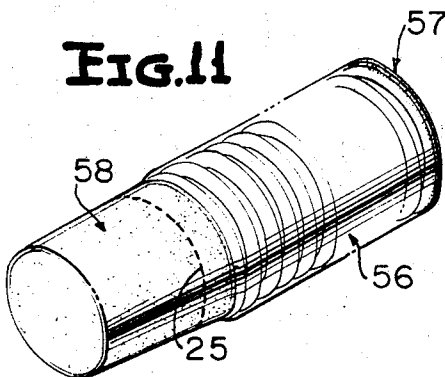


FIG. 12

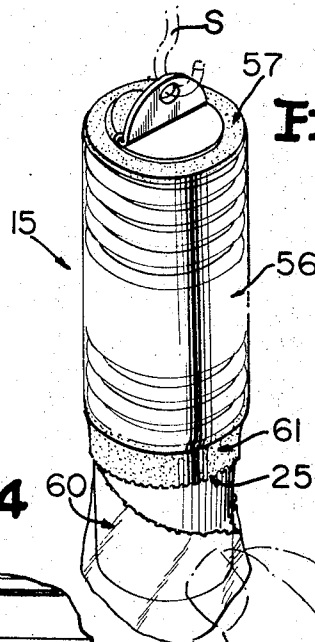


FIG. 13

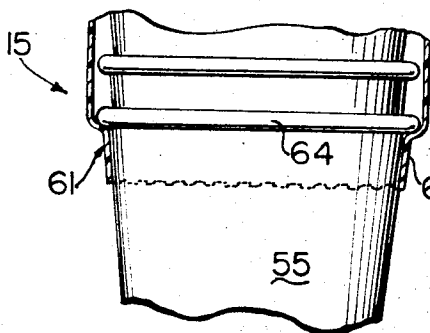
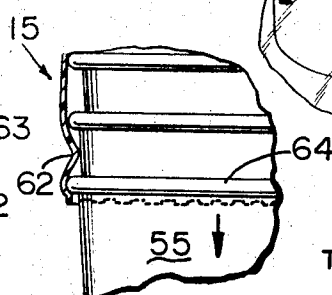


FIG. 14



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ARTICLE DISPENSER PACKAGE WITH SEPARATE SUSPENSION MEANS

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4 Claims. (Cl. 221-302)

This invention relates to a novel dispenser package and to a method of manufacturing the same, and is particularly directed to forming a dispenser package from heat shrinkable material which is shrunk at selected portions thereof to provide means for closing the package at one end portion thereof and means at an axially opposite end portion for effecting the individual dispensing of articles from the package.

An object of this invention is to provide a dispensing package having a body constructed from heat shrinkable material, a plurality of articles packaged in the body, one end portion of the body being heat shrunk into conforming relationship to an article at said one end portion, and means for facilitating the removal of a portion of the shrunk portion whereby articles are individually removed from the dispenser body through an opening defined by a remaining portion of the shrunk portion.

A further object of this invention is to provide a novel dispensing package of the type immediately above-described in which the remaining shrunk portion defines means for yieldably clampingly engaging a lowermost one of the articles for preventing the lowermost and remaining articles from inadvertent or accidental removal through the opening.

A further object of this invention is to provide a novel method of forming a dispensing package by providing a container of heat shrinkable material having an open mouth, an opposite closed bottom, and a peripheral weakening line between the mouth and the bottom, inserting a plurality of articles into the container through the mouth, closing the mouth, and heat shrinking a portion of the container adjacent the closed bottom into conforming relationship to an article at said portion.

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 drawings:

In the drawings:

FIGURE 1 is a perspective view of a flattened tubular container formed from heat shrinkable material, and illustrates a weakening line adjacent a bottom end of the container.

FIGURE 2 is a perspective view of the container of FIGURE 1, and illustrates a plurality of internested articles and a cover being inserted into the container through a mouth thereof.

FIGURE 3 is a side elevational view of the articles and container of FIGURE 2 with parts broken away for clarity, and illustrates the articles fully inserted within the container.

FIGURE 4 is a sectional view taken generally along line 4-4 of FIGURE 3, and more clearly illustrates the cover positioned within the container adjacent the container mouth.

FIGURE 5 is a highly schematic elevational view of a rotatable mandrel and a source of hot air, and illustrates the packed container of FIGURE 3 positioned within the mandrel and hot air directed toward the mouth of the container for heat shrinking the material of the container into clamping engagement with the cover.

FIGURE 6 is a fragmentary top perspective view of the packed container, and illustrates a shrunken portion

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of the container retaining the cover in assembled relationship.

FIGURE 7 is an enlarged fragmentary sectional view taken generally along line 7-7 of FIGURE 6, and more clearly illustrates the heat shrunk portion of the container retaining the cover in assembled relationship.

FIGURE 8 is a highly schematic elevational view of another mandrel and source of hot air, and illustrates the application of hot air toward an end portion of the package container opposite the cover.

FIGURE 9 is a fragmentary perspective view of a lower inverted end portion of the now completely formed dispenser package, and illustrates the lower end portion of the container heat shrunk into conforming relationship to a lowermost one of the articles.

FIGURE 10 is an enlarged fragmentary sectional view taken generally along line 10-10 of FIGURE 9, and more clearly illustrates the conforming relationship of the lower end portion of the container and a lowermost one of the articles.

FIGURE 11 is a perspective view of the dispenser package, and illustrates the heat shrunk portions of the package by stippling.

FIGURE 12 is a perspective view of the dispensing package, and illustrates the package being supported in a vertical plane by a portion of the cover, and the removal of a portion of the container along the weakening line prior to a dispensing operation.

FIGURE 13 is a fragmentary sectional view of a lower end portion of the dispenser package, and illustrates a dispensing opening, a lowermost of the articles partially projecting through the dispensing opening, and a remaining portion of the shrunken portion above the weakening line retaining the articles in the dispenser package.

FIGURE 14 is a fragmentary sectional view corresponding to FIGURE 13, and illustrates the removal of the lowermost article during a dispensing operation.

A novel dispenser package constructed in accordance with this invention is illustrated in FIGURES 11 and 12 of the drawings, and is generally referred to by the reference numeral 15. The dispenser package 15 comprises a container or bag 16 (FIGURES 1, 2 and 3), a plurality of articles 17 (FIGURES 2 and 3), and a cover or closure 18 (FIGURES 2, 4 and 7).

The container or bag 16 is constructed from a sheet of heat shrinkable material, such as polyethylene, polypropylene or similar plastic material, folded along a fold line 19 into walls or panels 20, 21. The walls 20, 21 are heat sealed or otherwise secured to each other along longitudinal edge portions 22, 23. An upper portion (unnumbered) of the wall 21 projects beyond an upper portion (unnumbered) of the wall 20 and defines a mouth or opening 24 therewith. A line of weakening 25 in the form of an interrupted score line or a line of perforations is formed in the walls 20, 21 adjacent the fold line 19. An aperture or notch 26 places the interior of the container 16 in communication with the exterior thereof through the bottom for a purpose which will be apparent hereafter.

The articles 17 are a plurality of internested containers, such as paper or plastic drinking cups. Each container is identical and includes a container body 27 having an upper conventional peripheral curl 28 and a closed bottom wall (unnumbered).

The cap or closure 18 includes a generally circular member 30 having a diameter slightly greater than the diameter of the article curls 28, as is best illustrated in FIGURE 7 of the drawings. The member 30 is formed of paperstock or plastic material and directly overlies and rests upon the curl of an uppermost one of the containers 27 (FIGURES 3 and 7). A smaller circular member 31 having semi-circular portions 32, 33 overlies the larger

circular member 30. The semi-circular portion 32 is secured by adhesive A (FIGURE 7) or other conventional securing means to the larger circular member 30. A score or fold line 34 (FIGURES 4 and 7) separates the semi-circular portions 32, 33 and permits the semi-circular portion 33 to be folded from the position illustrated in FIGURE 7 of the drawings to the position shown in FIGURE 12. An opening or aperture 35 in the semi-circular portion 33 is employed to suspend the dispenser package 15 from a conventional support S (FIGURE 12), such as a hook or similar supporting member.

The plurality of interestested articles 17 and the closure 18 are inserted into the container 16 through the open mouth 24 thereof, as is illustrated in FIGURE 2 of the drawings. As the interestested articles 17 move toward the bottom of the container 16 air within the container 16 is forced outwardly therefrom through the aperture 26, as indicated by the unnumbered headed arrows adjacent the opening 26 in FIGURE 2 of the drawings.

After the interestested articles 17 and the closure 18 have been inserted into the container 16 (FIGURES 3 and 4), the container 16 is positioned in a chamber 40 (FIGURE 5) of a mandrel 41 having a shaft 42 which is rotated by conventional means (not shown). A source 42 of hot air or a similar heating media is conventionally supported adjacent an upper end portion 43 of the mandrel 41. The source 42 may be, for example, a nozzle provided with a plurality of openings for directing hot air toward and against an upper end portion 45 of the container 16. As the hot air impinges against the upper portion 45 of the container 16, the portion 45 shrinks into clamping contact with the closure 18, as is best illustrated in FIGURES 6 and 7 of the drawings.

The shrunken end portion 45 overlies the semi-circular portion 32 of the member 31 while the semi-circular portion 33 is exposed and free to fold about the line 34 between the positions illustrated in FIGURES 7 and 12 of the drawings.

After the end portion 45 of the container 16 has been shrunk in the manner illustrated in FIGURES 6 and 7, the same is removed from the mandrel 41, inverted and inserted into a chamber 50 (FIGURE 8) of a mandrel 51 which includes a shaft 52 rotated by conventional means (not shown). A source 52 of hot air or a similar heating medium is positioned adjacent an upper end portion 53 of the mandrel 51. The source 52 of hot air can take the form of one or a plurality of nozzles for directing hot air toward the end portion of the container 16 projecting outwardly of the mandrel 51. As the hot air or similar heated medium impinges against the projecting end portion of the container 16, as indicated by the unnumbered headed arrows in FIGURE 8, the material shrinks into conforming relationship to the inverted lowermost article, generally referred to by the reference numeral 55 (FIGURE 10). The dispensing package 15 is thereby provided with a major central portion 56 (FIGURES 11 and 12) which is unshrunk, an upper end portion 57 which is shrunk (the shrunk portions being indicated by stippling in FIGURES 11 and 12) and a lower heat shrunk end portion 58.

The dispensing package 15 is hung from the support S by folding the semi-circular portion 33 of the closure member 31 from the position shown in FIGURES 4 and 6 to the position illustrated in FIGURE 12. Thereafter a portion 60 of the heat shrunk portion 58 is removed along the weakening line 25 by simply manually grasping and tearing the portion 60 in the manner illustrated in FIGURE 12 of the drawings. Upon the removal of the portion 60 a remaining portion 61 (FIGURE 13) releasably clampingly grips the lowermost article 55. As is best illustrated in FIGURE 13 of the drawings, the remaining heat shrunk portion 61 includes a peripheral portion 62 conforming to the body (unnumbered) of the article 55 and a radially outwardly and upwardly directed heat shrunk portion 63 conforming to a curl or rim 64 of the

article 55. The portion 63 defines means for retaining the lowermost article 55 and the remaining interestested articles within the dispensing package until such time as it is desired to remove one or more of the articles. The articles are removed by merely grasping the portion of a lowermost article exposed through a dispensing opening (unnumbered) defined by the peripheral portion 62 of the remaining heat shrunk portion 61. The article is drawn downwardly in the direction of the unnumbered headed arrow in FIGURE 14 whereupon the heat shrunk portions 62, 63 yield to permit the lowermost article to be withdrawn and progressively rebound to prevent a next succeeding article from being accidentally or inadvertently removed from the dispensing package 15, as is best illustrated in FIGURE 14 of the drawings. In this manner, articles are withdrawn singularly from the dispensing package 15, noting that the interestested articles 17 are free to continually drop downwardly due to the unshrunk major central portion 56 of the dispensing package 15.

From the foregoing, it will be seen that novel and advantageous provisions have been made for carrying out the desired end. However, attention is again directed to the fact that additional variations may be made in this invention without departing from the spirit and scope thereof as defined in the appended claims.

I claim:

1. A dispensing package comprising a dispenser body having axially opposite upper and lower end portions and a central portion therebetween, said body being constructed from heat shrinkable material, a plurality of interestested articles packaged in said body, each article having a body and a peripheral radially outwardly directed rim axially opposite a bottom wall thereof, the lower end portion of said dispenser body being heat shrunk into conforming relationship to an article body and its rim at said lower end portion, a separate disc disposed in said body at the upper end portion thereof, said separate disc having means for suspending said dispensing package from a support, said upper end portion being heat shrunk into at least partially overlying relationship to said separate disc thereby retaining said disc in said dispenser body, said disc including a body and an overlying flap, said flap and disc body being normally disposed in generally parallel planes, a fold line hingedly connecting said flap for movement to a plane generally normal to the plane of said disc body, said fold line being adjacent said body portion and means on the dispenser body between the rim and bottom wall of said last-mentioned article body for facilitating the removal of a portion of said lower shrunk portion whereby said articles are readily removed from said dispenser body through an opening defined by a remaining portion of said shrunk portion.

2. The dispensing package as defined in claim 1 wherein said last-mentioned means is a weakening line between opposite ends of said lower heat shrunk portion.

3. This dispensing package as defined in claim 1 including an opening in said lower heat shrunk portion through which air is adapted to be exhausted upon the insertion of said articles into said dispenser body.

4. The dispensing package as defined in claim 3 wherein said last-mentioned means is a weakening line between opposite ends of said lower heat shrunk portion.

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75 WALTER SOBIN, *Primary Examiner*.