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(54) DECORATIVE NECKBAND LABEL FOR A BOTTLE

(71) We, OWENS-ILLINOIS INC., a Company organised under the laws of the State of Ohio, of Toledo, Ohio, United States of America, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:-

This invention relates to label sleeves for containers, and especially to modifications in the label sleeves described in our U.K. Patent No: 1,528,003.

In our Patent No: 1,528,003 we have described and claimed a label sleeve for a container, the label sleeve being of an oriented, heat-shrinkable polymeric material and including one or more axially extending pleats.

We have described how an oriented ribbon or label stock is repeatedly pleated or fluted in the transverse direction by compressing a line in the plastics to cause a pleat or flute, much like in a pleated fabric.

According to one aspect of the present invention, we form the pleat or pleats by reducing the thickness of the polymeric material along the line of the or each intended pleat. This may be effected by passing the label stock into the nip of a pair of cooperating rollers, one of which is an embossing roller and the other of which has a substantially unyielding surface.

In our earlier Specification we described the label sleeve as being formed of pre-stretched and oriented cellular, organic thermoplastic in which one or a plurality of vertical pleats were disposed annularly in the label so as to absorb wrinkles of the material which would otherwise occur upon

shrinking the sleeve about the bottle.

We have now discovered that a pattern of these pleats may be made in the material running angularly with respect to the direction or orientation in the material, i.e. not axially of the sleeve, with the result that after shrinking an embossed pattern is achieved appearing on the outer surface of the label as an attractive embossed decoration. This may be combined with decorative color printing of the material while in flat or sheet form, thereby accenting or enhancing a novel decorative effect of the label on the bottle.

According to a further aspect of the invention, therefore, we provide a modification of the label sleeve claimed in Specification No: 1,528,003, wherein the pleats extend other than axially.

Thus, for example, the pleats may extend in the form of one or more spirals, or of intersecting spirals, or of embossed circles optionally joined by straight-line pleats.

Preferably the label sleeve is formed from a prestretched and oriented ribbon or web of cellular, organic thermoplastics material. The orientation of the plastics is a major amount along the longitudinal direction of the web. The web or ribbon is formed from a larger web of the material which may be, as desired, previously printed with a decoration of color, lettering and the like, in flat form. The printed stock is sized to a width that represents the height of the label on the bottle. Suitable materials are formed cellular polymer materials that are highly oriented in a web or sheet form and which may be preprinted in flat form with a label decoration or image. Preferably, the polymer material, such as foamed sheet polys-

tyrene, polyethylene or polypropylene, should be on the order of 0.005 to 0.020 inches in thickness and of a bulk density of about 6-40lb. per cubic foot.

5 The oriented ribbon of label stock is then fed through a mechanism for repeatedly pleating the sheet material. In heat shrinking the encircling label on the bottle, the pleating of the label shrinks differently and concentrates air underneath the pattern of the pleats during shrinking. The result is an embossed or raised pattern on the surface of the label.

15 As disclosed in our earlier Specification (and also in Specification No: 1,528,010) the label stock may also be scored along a line that will appear as an annular score in the label for determination of pilfering of the package. In this case, the label is shrunk over the closure skirt and the bottle neck surface. The pilferproofing or pilfer detecting feature is provided as follows.

20 The ribbon is partially slit lengthwise at the proper transverse location thereon. By partially slit is meant that a knife edge cuts into the plastic to weaken it at a "score line" but without severing it. One example would be to cut into the ribbon of, say 10 thousandths of an inch thickness, to a depth of 5 thousandths of an inch. This slit is made on the back side of the label stock, i.e. the side opposite the decorated surface thereof. After the label is applied and shrunk over the neck of the bottle and skirt of an applied closure cap, the encircling slit in the material will align approximately with the lower edge of the cap skirt. In opening the bottle, unscrewing the cap will annularly sever the label along the slit line into two parts, an upper part on the cap skirt and a lower part on the neck of the bottle. This severing of the material in the label provides an indication that the bottle cap has been loosened or the bottle opened. The package is thereby provided with a pilfer-proof feature; that is, an indication to the consumer or user of the bottled product when a package has been pilfered or prematurely opened.

50 In the method of applying the labels of the present invention, the ribbon or web of the oriented, preprinted stock having a longitudinal continuous slit therein and the embossed pattern of pleats formed therein is fed onto a drum where the proper lengths of the material (blanks) are cut in succession and placed onto mandrels. The blanks are individually wound on the mandrels and seamed by overlapping the trailing marginal end of the blank over its leading marginal end and united in the overlap by fusion, adhesion or such known means as may be convenient to form a sleeve of the material comprising the annular label. The preferred seam is one formed by fusion or a so-called "heat seal" of the two overlapping layers of

plastic. The sleeve label is then shifted from the mandrel over the cap and neck of the bottle, and finally located at the proper elevation position thereon. In this position the annular slit providing the pilfer-proofing feature is placed adjacent the lower annular edge of the cap skirt. Otherwise, the label is located at the desired position on the bottle for next shrinking it in place.

70 For shrinking the label, the bottle, closure and label sleeve are placed adjacent a heater device, such as an infrared heat source, supplying sufficient heat locally to shrink the material of the sleeve into a snug fit about the bottle and cap skirt. Having formed the pleats in the plastic material, during the heat shrinkage operation these line impressions (compressions of the cellular material) react differently from the balance of the label material adjacent thereto. The line impressions form indentations in the material on the back face of the cellular plastic ribbon and the indentations provide a small channelled air space next to the bottle surface. As the main body of the label sleeve material shrinks during heat, it engages tightly onto the glass surface and seals off these embossed channel areas. At about the same time, the heat increases the pressure of the air entrapped in the little channels retaining or accentuating the embossed pattern provided by the line impressions made in the material while it was cold. The material of the embossed pattern more or less takes a set, and the decorative effect is achieved in the labelled container, which is above and beyond the decoration, if any, printed onto the sheet material before it was subjected to the pleating. Skillful design may provide a combination of the embossing of patterns in the surface of the label with pre-printing of colors or images.

110 It should be mentioned that, if the pilfer-proofing feature is incorporated into the label, it may be preferred to adhere the lower label section to the neck of the bottle so that as the cap skirt is twisted to unscrew the cap, the lower section of the label is held stationary and the severing of the label into lower and upper sections on the neck and cap skirt, respectively, along the line of weakening is readily assured. This is most conveniently accomplished by pretreating the glass surface of the neck of the bottle with adhesive prior to assembly of the sleeve label thereon. After the label shrinks snugly on the neck, the adhesive will bond the lower section of the label onto the glass for the severance function to provide the package with the pilfer-proofing feature.

125 Particular embodiments of the invention will now be described with reference to the accompanying drawings, in which *Figure 1* is a perspective view of a bottle 130

with a label applied and shrunken snugly over the skirt of the closure and the neck of the bottle, the label being in accordance with our Patent No: 1,528,003;

5 *Figure 2* is a plan view of a label blank according to our earlier Patent, before it is wrapped and seamed to a sleeve, showing the pleats and slit line thereof;

10 *Figure 3* is a sectional view taken along line 3-3 on *Figure 2*;

*Figure 4* is a partial, sectional view of the pleated stock formed by the device of *Figure 7*, and in accordance with our Patent No: 1,528,003;

15 *Figure 5* is a sectional plan view of a device forming a partial depth slit in the label stock material running longitudinally of a web of the material;

20 *Figure 6* is a fragmentary sectional view taken along line 6-6 on *Figure 5*.

*Figure 7* is a sectional plan view of a pleating device forming spaced apart transverse pleats, in pairs, in the label stock material in web form, for forming the label shown in *Figure 1*;

25 *Figure 8* is a perspective view of an embossing roll used in forming the labels of the first aspect of the present invention;

30 *Figure 9* is a sectional elevational view of the embossing roll of *Figure 8* and a back up roll in an operating position for embossing a web of oriented cellular thermoplastic;

35 *Figure 9A* is a partial, longitudinal sectional view of the thermoplastic web showing the crushed, embossed line pattern in section that is impressed by the apparatus of *Figure 9*;

40 *Figure 10* is a plan view of a rectangular blank of the oriented, cellular thermoplastic processed through the apparatus of *Figure 9*;

45 *Figure 11* is a perspective view of a glass bottle having a sleeve form of embossed label made from the blank of *Figure 10* shrunken onto the neck and closure of the bottle;

50 *Figure 12* is a perspective view of a different form of embossing roll from that shown in *Figure 8*, for producing label sleeves in accordance with the further aspect of the present invention;

55 *Figure 13* is a top plan view of the rectangular blank of oriented, cellular thermoplastic after being processed through the embossing roll of *Figure 12*;

60 *Figure 14* is a perspective view of a glass bottle having the sleeve form of embossed label made from the blank of *Figure 13* shrunken onto the neck and closure of the bottle;

65 *Figure 15* is a perspective view of a further form of embossing roll;

*Figure 16* is a top plan view of the rectangular blank of oriented, cellular thermoplastic after being processed through the

embossing roll of *Figure 15*;

*Figure 17* is a perspective view of a glass bottle having the sleeve form of embossed label made from the blank of *Figure 16* shrunken onto the neck and closure of the bottle;

*Figure 18* is a perspective view of still another form of embossing roll;

75 *Figure 19* is a top plan view of the rectangular blank of oriented, cellular thermoplastic after being processed through the roll of *Figure 18*; and

*Figure 20* is a perspective view of a glass bottle having the sleeve form of embossed label made from the blank of *Figure 19* shrunken onto the neck and closure of the bottle.

85 Figures 1 to 7 herein are identical to Figures 1 to 7 of Specification 1,528,003, but are included in order to show how the pleat formation of the first aspect of the present invention differs from that of the earlier invention; and also because the manner of forming the pilferproof slit and also of applying the sleeve to a container are similar in both cases.

90 Referring to the drawings, *Figure 1* shows a glass bottle 10 including a neck 11 closed by a primary closure, such as a screw cap 12. Cap 12 includes a top 13 and an integral skirt portion 14 that terminates in a lower annular edge 15 along the neck 11.

95 A shrunk-on secondary closure 16, in the form of a pilfer-proof neck and closure label, made of a shrinkable cellular polymeric material encircles bottle neck 11 and skirt 14 of cap 12, bridging the juncture between the neck of the bottle and the skirt edge of the cap. The shrinkable polymeric material is highly oriented in the direction that extends circumferentially of the bottle of *Figure 1*.

100 The label 16 is formed from a rectangular blank 16a of the material illustrated in *Figure 2*. The inside surface of the label is shown in *Figure 2*, i.e. the surface that will be next to the neck surface of bottle 10. Label blank 16a is formed from a parent web 16p of the material that is sized in width to correspond with the desired height dimension of the label, this dimension being along the side 16c of the blank. Label blank 16a is sized in a length dimension along the longitudinal direction of the web 16p that is in excess of the circumference of the bottle neck or closure, whichever is larger, of the bottle 10, closure 12 combination.

105 Label blank 16a is wrapped into a sleeve form by overlapping the marginal leading and trailing ends 16c and 16d thereof, and the overlapped ends are connected together along an axially extending seam 18. The label formed in accordance with the invention may possess the decorative embossed feature of the invention either alone or in

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combination with the pilfer-proof feature. If the pilfer-proof feature is to be utilized, the label 16 is provided with the lengthwise partial depth slit 19 in the web 16p which appears in the label blank in Figure 2. This slit is in the direction of the major orientation in the plastic web and should be of sufficient depth to provide a line of weakening in the material extending around the circumference of label 16 and be located adjacent the lower edge 15 of the cap skirt. Slit 19 is shown in Figure 3 in cross-section and is in depth approximately one-half of the web 16p thickness, e.g. one-half the thickness of the label blank 16a.

Label blank 16a also contains a series of the spaced apart pleats, such as 16f and 16g, shown in Figure 4. Pleats 16f and 16g are placed in spaced apart relationship around the circumference of the bottle neck and closure. The pleats, such as 16f and 16g, provide a vertical embossed pattern in the label and also absorb wrinkles in the label that tend to form during the shrinking of the label onto the bottle neck and closure. By localizing the wrinkles in the pleats, a better appearance is obtained in the label along with the overall decorative appearance of the package provided by the selected embossed pattern, several examples of which are given hereinafter.

#### *The slit producing apparatus*

Referring now to Figures 5-7, the web of foamed thermoplastic material 16p is fed from a supply (not shown) of the predecorated label stock moving over a roll 20 which is supported on a vertical shaft 21. The partial depth slit 19 (described earlier herein) is made in the label stock on the back side surface thereof by a blade 22 carried in the stationary holder assembly 23. Blade 22 is fastened in a longitudinal groove of a guide member 24 that is retained between the sides 25 and 26 of holder 23 and normally urged outwardly by springs 27 and 28 in the back plate 29. Blade 22 is adjusted longitudinally on the guide member 24 by the opposed adjusting screws 30 and 31, respectively, threaded in the sides 25 and 26 and each held in place by a lock nut 32. This adjustment compensates for wear in blade 22.

Blade 22 is supported opposite an annular recess 33 in roll 20 (Figure 6), and as the web 16p is driven over roll 20, the slit 19 is made continuously lengthwise of the label stock web at the proper height thereof so as to correspond to the elevation in the label, as applied, opposite or adjacent the lower edge 15 of the primary closure skirt.

#### *The web embossing apparatus*

After processing over roll 20, the label stock web 16p passes between the rollers 34

and 35 also rotatable on vertical shafts. The embossing roller 34 is provided with the embossing tool 36 which extends axially of the roll over the width of the web. Embossing tool 36 relates to the embodiment of Figures 2 and 4 and is provided with a pair of relatively closely spaced pleat forming tips 37 and 38 extending parallel to the axis of roller 34; and the tool 36 is held in roller 34's recess by screws 39. The surface portion 40 of roll 35 is of a relatively yieldable material, such as rubber or the like, preventing fracture of the more or less crushed web along the apex lines of tips 37 and 38. There is a slight deflection of the plastic along the plane of the material at the opposite surface from the contact by the tips 37, 38 when the rubber faced back up roll 35 is used. This is illustrated by Figure 4. There is nevertheless some crushing and compressing of the cellular material.

The embossing roll 34 may take several forms, such as illustrated by Figures 8, 12, 15 and 18 and, as will be apparent to those skilled in the art, different combinations of embossing rolls, such as 34, 35, or 34a, 35a, etc. may be run in tandem and synchronized to form the pleats in the web 16p in succession as desired to achieve a more complex embossing effect of the decoration.

Referring to Figure 8, embossing roll 34a represents the tool for forming a spaced apart series of pleats in the web 16p for making the sleeve blank 160 (Figure 10). The roll 34a, as may be the case with the other forms of embossing roll shown in Figures 12, 15 and 18, is run in combination with a roll 35a, which is constructed of relatively hard material, such as steel or aluminium. In this form of the apparatus (cf. apparatus of Figure 7), there is no deflection of the material at the surface of the plastic on roll 35a. The line pattern is impressed by crushing the material in the configuration provided by the roll 34a. The two rolls 34a and 35a are rotated about their shafts in the direction of movement of the web 16p. The pleat forming tips 37a, which extend along roll 34a parallel to the axis, emboss in the web 16p a spaced apart series of flutes or pleats 160a (Figure 20), which are normal to the running machine direction of web 16p, the highly oriented dimension of the cellular, polymeric, thermoplastic sheet material.

From the web of this form of the invention, the blanks 160 are cut in a manner hereinafter described and the blanks are wound on a cylindrical mandrel and the ends of blank 160 overlapped and seamed. The sleeve made from blank 160, when shrunken onto a bottle neck and closure, provides a neck label shown on Figure 11, having annularly spaced apart, vertical flutes or pleats 160a in the embossed de-

corative pattern.

Similar embossing tools are shown in Figure 12 wherein the tool 34b is provided with a series of spaced apart helical or spiral pleat forming tips 37b. This embossing tool combined with a roll 35 or 35a, similar to the illustration in Figure 9, will provide a pattern of pleats 161a as shown on the sleeve blank 161 made from the web stock processed through roll 34b (Figure 13). The sleeve made from blank 161, when shrunk onto the neck and closure of a container 10, provides an embossed pattern of spiral pleats 161a thereon.

Referring to Figure 15, yet another form of embossing tool is shown by the roll 34c having a series of spaced apart helical or spiral pleat forming tips 37c in a right hand pattern and a second series of spaced apart similar helical or spiral pleat forming tips 37a running in a left hand pattern crossing the tips 37c. This embossing roll combined with a back up roll 35 or 35a, as before, will provide a criss-cross pattern of pleats 162a in the formed plastic material, as shown on the sleeve blank 162 made therefrom (Figure 16). The sleeve made from blank 162 is shrunk onto the neck and closure of a bottle, as shown in Figure 17, in which the label provides an embossed decoration or design of the criss-crossed spiral-like pleats 162a raised on the label surface.

Yet another form of embossing roll 34d is shown in Figure 18. Roll 34d includes a pattern of embossing tips comprised of an arrangement of spaced apart circle tips 37e interconnected by straight line tips 37f radiating from the centers of the circles. This embossing roll 34d, when operated with a rubber back up roll 35 or steel roll 35a, as earlier described, will impress the material of the sleeve blank 163 (Figure 19) with the circular pleats 163a joined at their perimeters by the line pleats 163b which are angled with respect to the machine longitudinal dimension of the blank 163. The sleeve made from blank 163 is shrunk onto the neck and closure of a bottle, as shown in Figure 20 in which the label provides an attractive embossed decoration of the circles 163a and lines 163b in a raised pattern of the pleats on the label surface.

Numerous other designs may be devised in accordance with the invention, wherein the pattern of the pleats in the embossed design run at an angle with respect to the dimension of the material corresponding to the circumference of the sleeve, i.e. the dimension of the high degree of orientation in the material, i.e. the machine direction of the web of foamed thermoplastic. The more pronounced embossing effect is attained by placing the surface at which the crushed line impressions are made next to the container's exterior surface, i.e. on the inside surface of

the sleeve.

The severance of individual sleeve blanks from embossed label stock, the making of sleeves therefrom and the application of sleeves to capped bottles may be performed in accordance with our Specification No: 1,528,003, with particular reference to Figures 8, 9 11 and 12 thereof.

It is during the heat-shrinking phase of the process that the present invention of the pre-pleated material in the label sleeve affords the means for providing a satisfactory neck and closure label on the bottle. The heat being applied externally onto the shrinkable material, i.e. heat from one side only of the material, results in a differential in the shrinking rate of the material across its thickness. Since the material is cellular, it also serves as a heat insulator and retards transmission of heat toward the inner surface. In any event, under these conditions, wrinkles tend invariably to appear in the shrunk label. The present invention thus provides not only a novel embossed decorative label, but also provides an economical and practical way to apply heat shrunk labels of the cellular plastic material onto a cold bottle free of wrinkles and unwanted surface deformations of this kind.

*Decorative pilfer-proof label*

The decorative aspects of the label may be combined with the pilfer-proof or pilfer detection feature of our earlier specifications. Thus, upon turning the closure 12, label 16 will sever annularly along slit line 19 and separate the label into two parts, i.e. an upper part on the skirt of closure 12 and a lower part adhesively secured to the bottle neck region. The closure may be reapplied and the overall label decoration, etc. is maintained; however, the line of severance will indicate premature opening or pilfering. If the product is free of pilfering at the retailer's shelf, the label 16 will be continuous and unbroken (not severed).

In connection with the further aspect of the present invention, the terms "pleats" or "flutes" are intended to encompass tool impressed lines in the material wherein the back up surface of the sheet may or may not be deflected from the plane of that surface in the sheet. In either case, however, the embossing tool will crush the cells of the cellular material changing its thickness and density in this region.

The weakest structure in the cellular material is along the crushed regions where embossed. Accordingly, when the sheet material is confined at its ends, such as in an endless band, sleeve or cylinder herein illustrated, the weak lines are accented during the heat shrinking treatment of the material, and the crush lines raise outwardly on the surface as the embossed pattern. The

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unequal cell size and density of the material along the crushed pleat or flute pattern produces the embossing effect in the shrunken label.

5 Having shown and described preferred embodiments of the invention, further changes, modifications and substitutions may be made by those ordinarily skilled in the art without departing from the scope of the invention as defined in the appended claims.

#### WHAT WE CLAIM IS:-

1. A label sleeve as claimed in claim 1 of Patent 1,528,003 wherein the or each pleat is produced by reducing the thickness of the polymeric material along the line of the or each intended pleat.

2. A label sleeve as claimed in claim 1 wherein the pleat or pleats are formed by passing a sheet of the polymeric material between an embossing roller and a roller having a substantially unyielding surface.

3. A label sleeve as claimed in claim 1 substantially as described with reference to Figures 8, 9, 9A and 10 of the accompanying drawings.

4. A bottle and closure therefor, with a label sleeve as claimed in any of claims 1 to 3 shrunk into snug fitting engagement therewith.

5. A modification of the label sleeve claimed in claim 1 of Patent 1,528,003, wherein the pleats extend other than axially.

6. A label sleeve as claimed in claim 5 wherein the pleats have the form of a series of spaced or spiral flutes.

7. A label sleeve as claimed in claim 5 wherein the pleats have the form of a series of interesting spaced apart spiral flutes extending in opposite directions to provide a crossed pattern of embossed flutes.

8. A label sleeve as claimed in claim 5 wherein the pleats have the form of circular flutes.

9. A label sleeve as claimed in claim 5 wherein the pleats have the form of circular flutes combined in a pattern with substantially straight line flutes interconnecting them.

10. A labelled container comprising a bottle having a neck portion and a mouth opening at the outer axial end of the neck, a closure applied over the mouth opening for closing the container, said closure having an annular skirt portion, a seamed sleeve-type label composed of a heat-shrinkable cellular polymeric material of at least 0.005 inch thickness that is oriented in the direction of the circumference of the sleeve label, the latter encircling said neck portion and the skirt of said closure, said cellular material having a bulk density of from 6-40lbs. per cubic foot, and having a pattern of flutes therein which extend non-axially of the sleeve, the label having an axially extending

seam formed by the overlapping ends of the sheet united together, said label being shrunken into snug fitting engagement with said neck and skirt, respectively, the flutes being disposed as an embossed outstanding pattern of ridges of the labelled bottle in annularly arranged array about the exterior surface of said label.

11. The method of decoratively labelling a bottle comprising making line impressions in the surface of a sheet of cellular, organic polymeric material that is oriented in one direction, by compressing the material along said line and normal to the plane of the sheet, the line impressions providing patterns in the sheet in which said line impressions extend otherwise than perpendicularly with respect to the direction of orientation.

forming a sleeve from the sheet by overlapping the opposite ends thereof which are spaced apart in the direction of orientation the compressed line pattern therein being disposed in the interior surface of the sleeve,

fastening said overlapped ends together to secure said sleeve,

placing the sleeve over a bottle, and heating the sleeve on the bottle sufficient to shrink it into annular snug fitting and surface conforming relationship about the surface of the bottle, the pattern portion of the said material upon shrinking said sleeve about the outer bottle surface providing a raised, embossed pattern in the sleeve label's exterior surface.

12. The method of claim 11, wherein the sleeve is telescopically placed over the neck and closure skirt of a capped bottle and shrunken into snug, conforming relationship overlying said neck and closure skirt.

13. The method of claim 12, including the step of cutting a partial depth score of weakening annularly along a line on one surface of the sleeve and prior to forming the sleeve from said sheet of oriented, cellular polymeric material, the sleeve being located over the bottle neck such that said partial depth score is adjacent the lower edge of the closure skirt.

14. The method of claim 13, including the step of adhesively securing the shrunken sleeve onto the surface of the bottle neck, thereby securing the lower portion of the shrunken sleeve against turning rotation with respect to the bottle neck.

15. The method of claim 11, wherein the pattern in the sheet comprises line impressions corresponding to spaced spiral flutes extending axially on the label sleeve.

16. The method of claim 11, wherein pattern in the sheet comprises line impressions corresponding to diagonally extending, criss-crossed flutes extending in the axial direction on the label sleeve.

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17. The method of claim 11, wherein the pattern in the sheet comprises line impressions corresponding to one or more circular flutes on the label sleeve.

5 18. The method of claim 17, wherein said pattern comprises plural, spaced apart circular flutes and includes substantially straight line flutes extending between the circles.

10 19. The method of claim 11, wherein the sheet of cellular, organic polymeric material is opaque and printed in the sheet form with a decoration that will appear on the exterior surface of the sleeve, said printing being performed prior to the step of making said line impressions in the surface of said sheet, said impressions being made onto the surface of said sheet opposite the printed surface.

20 20. A label device for application to a bottle according to claim 1 or 5, substantially as hereinbefore described with reference to the drawings.

25 21. A labelled container, substantially as hereinbefore described with reference to any of Figures 11, 14, 17 and 20 of the accompanying drawings.

30 22. A method of decoratively labelling a bottle according to claim 11, substantially as hereinbefore described with reference to the drawings.

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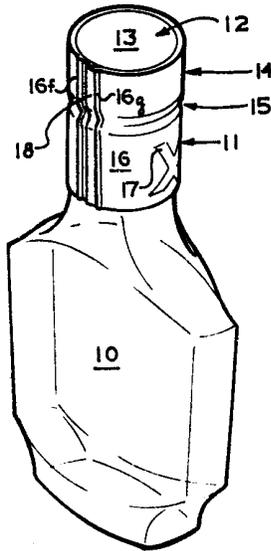


FIG. 1

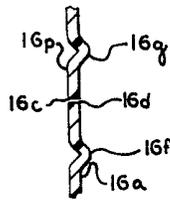


FIG. 4

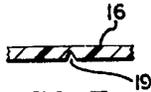


FIG. 3

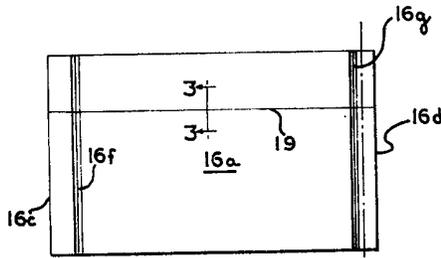


FIG. 2

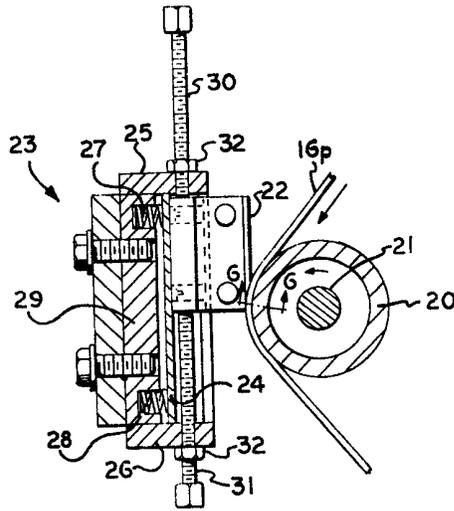


FIG. 5

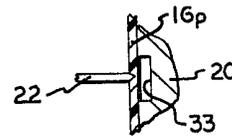


FIG. 6

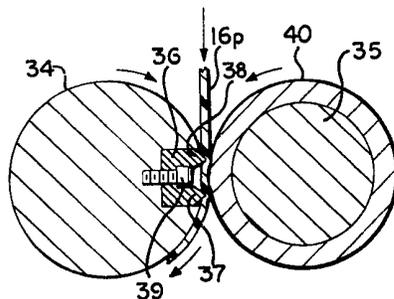


FIG. 7

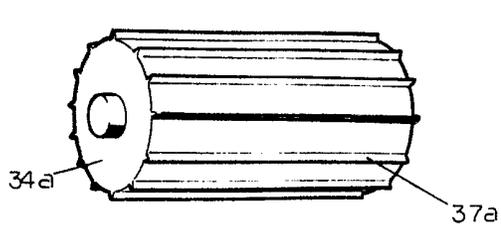


FIG. 8

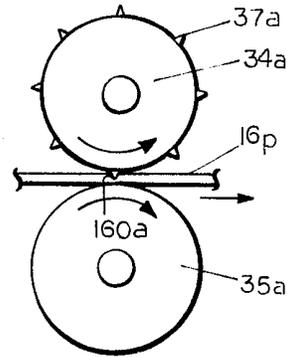


FIG. 9

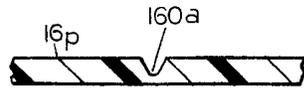


FIG. 9A

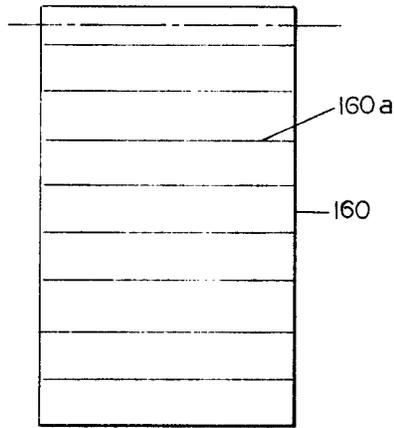


FIG. 10

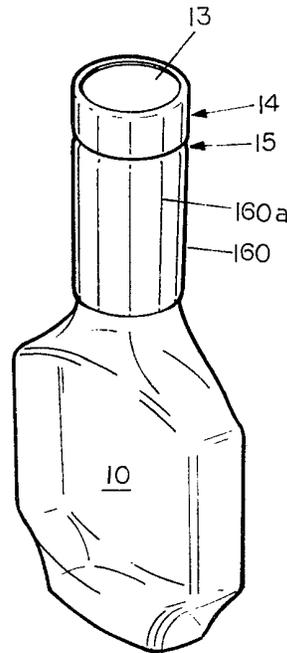


FIG. 11

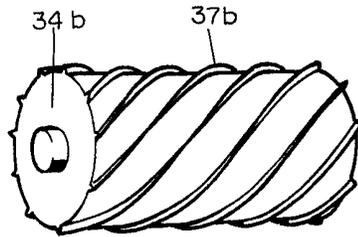


FIG. 12

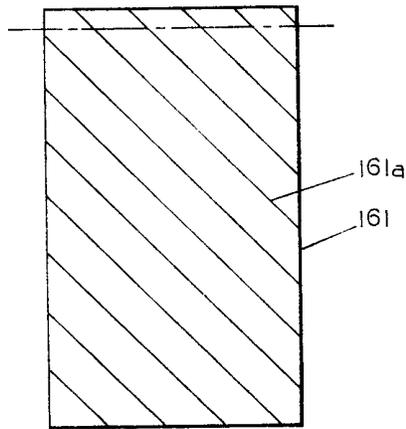


FIG. 13

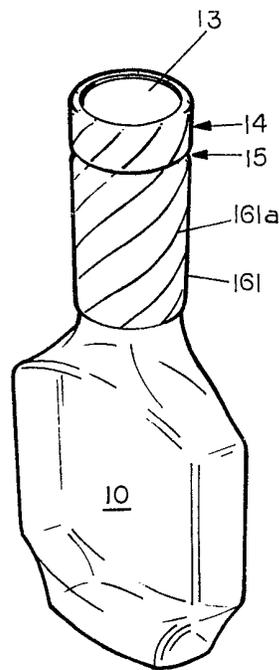


FIG. 14

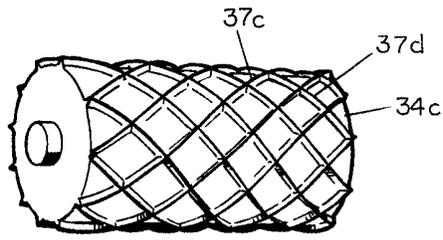


FIG. 15

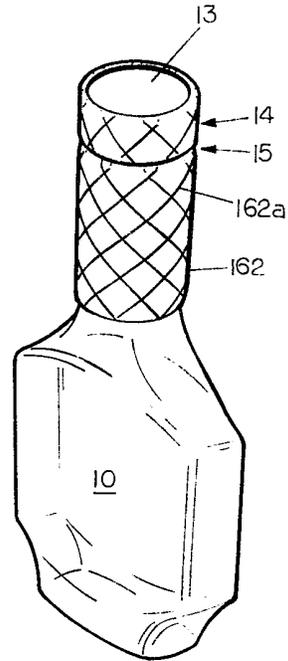


FIG. 17

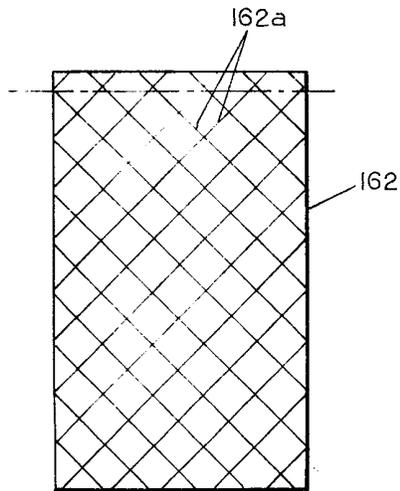


FIG. 16

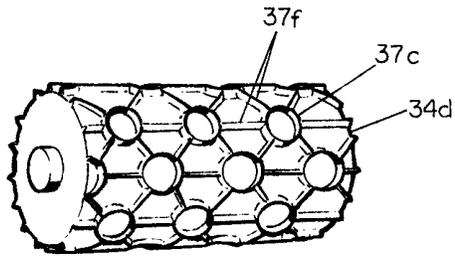


FIG. 18

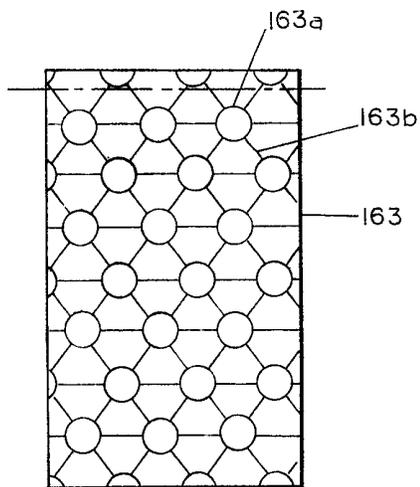


FIG. 19

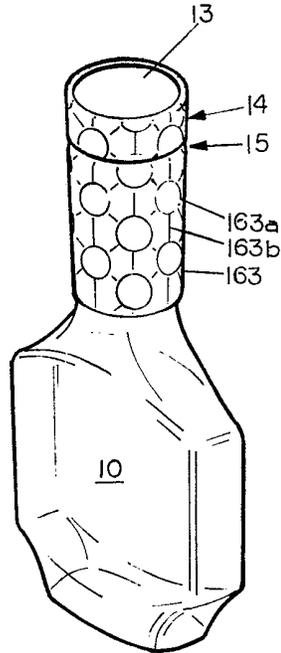


FIG. 20