

12

EUROPEAN PATENT APPLICATION

21 Application number: 84101217.2

51 Int. Cl.³: B 65 D 71/00

22 Date of filing: 07.02.84

30 Priority: 16.02.83 GB 8304267

43 Date of publication of application:
 29.08.84 Bulletin 84/35

84 Designated Contracting States:
 AT BE CH DE FR GB IT LI LU NL SE

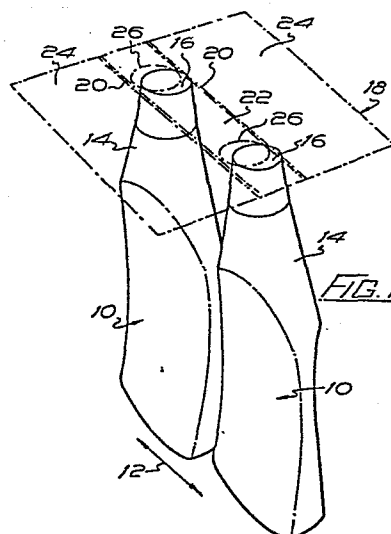
71 Applicant: WADDINGTONS LIMITED
 Wakefield Road
 Leeds, LS10 3TP(GB)

72 Inventor: Shilcock, John
 Wakefield Road
 Leeds, LS10 3TP(GB)

74 Representative: Denmark, James
 c/o Bailey Walsh & Co. 5 York Place
 Leeds LS1 2SD Yorkshire(GB)

54 Container coupling device.

57 The present invention provides that a multi-pack of containers such as plastic containers is formed by using a cut and creased coupling device having apertures therein through which the tops of the containers pass, and the device also having wing portions which can be folded downwardly and onto the surfaces of the container bodies and thermally adhered thereto suitably by adhesive or heat sealing or welding.



Container Coupling Device.

05 This invention relates to a device for coupling
individual containers to form a group of containers
which can be handled as a unit. Such coupling devices
are suitable for the coupling of containers of a type
which are used domestically, such as bottles containing
detergent, fabric softener, or beer bottles, or other
10 containers such as boxes, which again are typically for
domestic use. These multiple container units are known
as multi-packs.

15 Coupling devices of a type to which the invention
relates are known in various forms, and include sleeves
which grip individual containers such as bottles in the
regions of their necks, sleeves which wrap around the
containers, or a third form comprises a web of plastics
material having apertures therein through which the
tops of containers project, and which plastics material
20 resiliently grips the container tops to couple same
together to form a multi-pack.

The present invention concerns an extremely simple and
effective device for the coupling of containers for
25 forming multi-packs, and in accordance with the
invention the concept is to connect the containers by
means of a device in the form of a blank of cut and
creased material, which is directly secured to the
container bodies by fixing means, such as adhesive or
30 welding.

The invention has effective application to the coupling
together of containers which are in the nature of
bottles arranged in a single row, the device comprising
35 a blank having apertures therein along a central
portion which apertures respectively receive the tops
of the containers, and edge regions of the device are

folded relative to said central portion so as to lie in face to face contact with the container body surfaces, there being adhesive between the folded edge portions and the container bodies, in order to anchor the edge portions to the bodies, and therefore to form a multi-pack of coupled containers.

In the alternative, the edge portions will be anchored to the container bodies by means of welding or heat sealing, or the like, and in such case the container bodies and material of the coupling device will have to be suitable for the appropriate welding or heat sealing treatment. In the latter case, the container bodies may have projections to which the edge portions of the coupling device are welded.

As an alternate to the direct coupling of the edge portions of the device to the container bodies, the said edge portions may be provided with apertures, and the container bodies provided with hook formations which pass through the apertures.

With these specific arrangement described, i.e. when the containers are arranged in single file, the said edge portions of the device, after the device has been placed so that the container tops project through the said apertures, can be ploughed or folded downwardly into firm engagement with the sides of the containers to effect the securement between the containers and edge portions. If adhesive is used for connecting the device to the containers, the adhesive may be spread onto the device edge portions or the containers, as appropriate.

The invention is particularly adaptable to a type of bottle which is now currently used for example for washing or cleaning up liquid, fabric softener or the

like, such bottle being of narrow width in one direction, and wide in another direction, so as to assume a somewhat flat appearance, the top being closed by means of a screw cap, and the body being of plastics material. The invention can be applied even when the bottles are for example of this type, but are of different sizes, but it is to be stressed that the invention is not to be considered as being limited to the bottle shape.

10

The device may be adapted to couple together two or more containers, as appropriate.

In practice it is envisaged that all the devices preferably will be provided with the said holes for the location therein with the tops of the containers, again this is not an essential feature, and the device can be directly stuck to the containers.

Also according to the invention there is provided a method of forming a package of two or more containers comprising arranging the containers in predetermined arrangement, applying a coupling device in the form of cut and creased sheet material thereto by passing the tops of the containers through holes in the device, and then folding sections of the device downwardly on to the sides of the containers, and connecting said folded portions to the sides, whereby the device couples the containers.

30

Also, the invention provides a package of two or more containers connected by the method as aforesaid.

35

The invention will be more clearly understood by consideration of the accompanying drawings showing several examples of the invention, and in the said drawings:-

Fig. 1 is a perspective view of two plastic bottles about to be coupled by a device according to the invention to form a multi-pack;

05

Fig. 2 shows the two bottles of Fig. 1 with the device of the invention partly in position thereon;

10

Fig. 3 shows the bottles of Figs. 1 and 2 with the device of the invention fully in position, and coupling the two bottles to make a multi-pack;

Fig. 4 shows the unit of Fig. 3 in end elevation;

15

Figs. 5 and 6 respectively show in views similar to Fig. 4 two other embodiments of the invention; and

20

Fig. 7 shows a side elevation how the device according to the invention can be used for the coupling together of bottles of different sizes.

25

Referring to the drawings, and firstly to Fig. 1 two similar bottles 10 to be coupled into a multi-pack are shown, these bottles being of the flat body type described and arranged in alignment in the direction 12, with the narrower edges face to face. At the top ends the bottles have generally frustoconical shoulder portions 14, leading to screw bottle caps 16, which form a smooth continuation of the shoulders 14.

30

35

The device according to the invention is shown in chain dotted lines and comprises simply a sheet material blank 18 which may be of cardboard or plastics sheet material. The blank is provided with two parallel creases 20 defining a central region 22 to each side of which are edge regions or wings 24. In the centre region 22 are apertures 26 pitched by a distance equal

to the pitching required between the bottles 10 in the multi-pack.

05 Simply, the blank 18 is positioned over the bottle tops 16 so that they project through the blank 18 as shown in Fig. 2, the holes 26 being such a size that the blank 18 seats at the bottom of the cap 16.

10 At this stage, applied to the shoulders 14 is adhesive 28, such adhesive being applied on the shoulders 14 on those portions of the shoulders 14 which will be contacted by the inner surface of the wings 24, when they are folded to the Fig. 3 position, such folding being indicated by the arrows 30 in Fig. 2. The wings 15 24 are pressed to the adhesive regions 28 so that they will anchor thereto, as illustrated in Fig. 3. The resulting unit as shown in Fig. 3 can be readily manually handled, enabling shoppers to carry multiple containers simultaneously.

20 Fig. 4 shows how the wings 24 contact the shoulders 14 in the regions 28 to which glue has been applied. The said glue can be applied after the initial application of the blank 18, and immediately prior to the folding of same to the Fig. 3 position. 25

Instead of using adhesive, such as hot melt adhesive when the blank 18 is of cardboard material, it may be possible to make the blank and bottles such materials 30 that the wings 24 can be welded or heat sealed to the bottles. Fig. 6 shows that the bottle shoulder 14 may be provided with projections 14A to which the blank wings 24 may be heat sealed or welded, such projections being provided in order to prevent the 35 damaging of the container as might occur if it is for example heated or welded.

In the arrangement shown in Fig. 5, the bottle is provided with hooking projections 14B which pass through appropriately provided apertures in the wings 24, this being another method of connecting the blank and bottle.

Fig. 7 indicates that it is possible to use the blank device 18 for the connecting of bottles 32 and 34 of different sizes.

When the blank is in the form illustrated in the drawings, it can be folded as indicated in arrows 30 by conventional ploughing devices and machines as used in the folding of cut and creased box blanks.

An advantage of the device as described is that it covers only a small portion of the containers, leaving the body of the containers free to view. It is to be appreciated that the invention is not restricted to the form of coupling device 18 as shown in the drawings. Other devices are possible. For example the device may wrap round the blank containers in a horizontal direction instead of in the vertical direction. Also, it is not necessary that the device should be provided with the location apertures 22. Also, the concept of the invention can be applied to the coupling together of containers arranged in two or more rows, instead of in the single file arrangement as illustrated in the drawings.

The coupling device may be constructed of a blank of any suitable material, such as cardboard or plastics material, or coated sheet material, depending upon the manner in which the blank is to be coupled to the container.

The invention also provides a container and coupling

device combination where the container is suitably modified for the coupling of the container and coupling device, typical of such container modifications being illustrated in Figs. 5 and 6.

05

10

15

20

25

30

35

CLAIMS

- 05 1. A coupling device for forming multi-packs of containers, said coupling device comprising a blank of cut and creased sheet material, which is directly secured to the container bodies by fixing means, such as adhesive or welding.
- 10 2. A device according to Claim 1, wherein the blank has apertures therein along a central portion, which apertures respectively receive tops of the containers, and edge regions of the device are folded relative to the central portion so as to lie in fact to face contact with the container body surfaces, so that
- 15 attachment means can connect the folded portions to the said body surfaces to form a multi-pack of coupled containers.
- 20 3. A device according to Claim 2, wherein the device comprises a central portion in which the said apertures are formed, and edge regions for folding on to the container bodies, the device having a axis of symmetry being a line extending through the centres of the apertures.
- 25 4. A multi-pack package comprising two or more containers coupled by a device according to Claim 2 or 3, the container tops projecting through the said apertures, and the folded portions being secured
- 30 directly to the container bodies.
5. A package according to Claim 4, wherein the said folded portions are adhesively secured to the container bodies.
- 35 6. A package according to Claim 4, wherein the said folded portions are heat sealed or welded to the

container bodies.

05 7. A package according to Claim 4, wherein the folded over portions are connected to the container bodies by hook portions formed on the container bodies which fit through apertures in the coupling device.

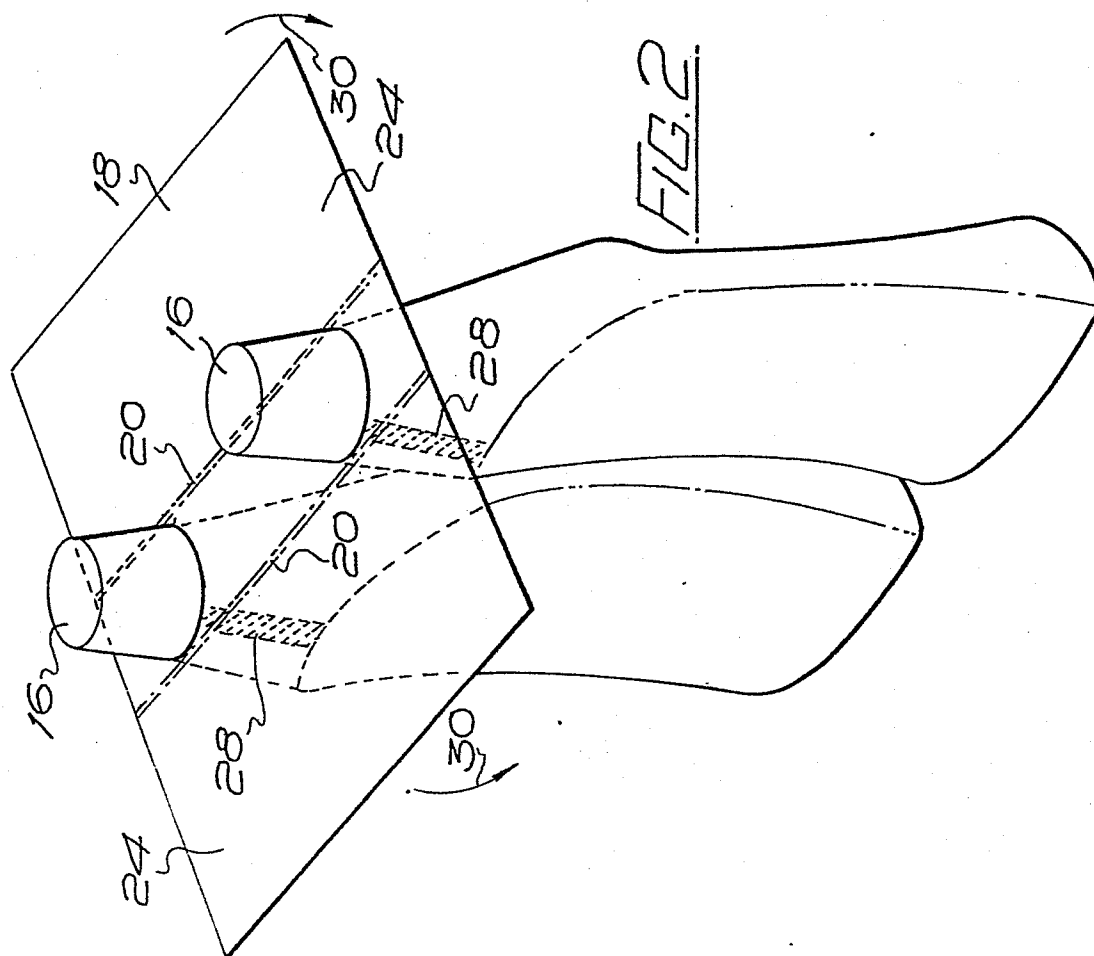
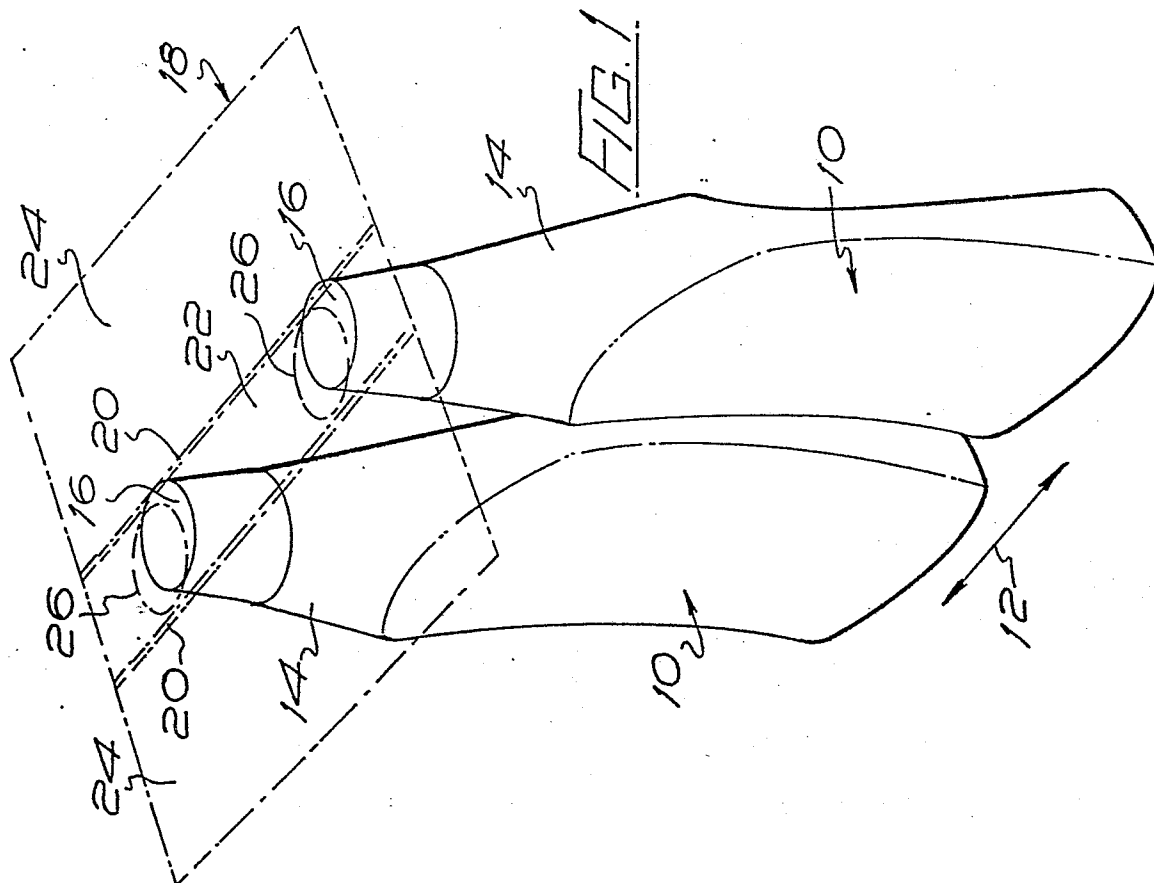
10 8. A package according to any of Claims 4 to 7, wherein the package comprises two containers of different size.

15 9. A method of forming a multi-pack package comprising two or more containers and a device according to Claim 2 or 3, wherein the device is applied so that the container tops pass through the apertures, and then the foldable portions of the device are folded downwardly and secured to the container bodies to form the package.

20 10. A method according to Claim 9, wherein the folded portions of the device are secured to the container bodies by adhesive for heat sealing or welding.

25 11. A method according to Claim 9 or 10, wherein the containers with the device applied thereto are moved relative to plough means which hold the foldable portions downwards on to the container bodies.

30 12. A method according to Claim 11, wherein adhesive is applied to the device and/or container bodies prior to the folding of the foldable portions onto the container bodies.



2/2

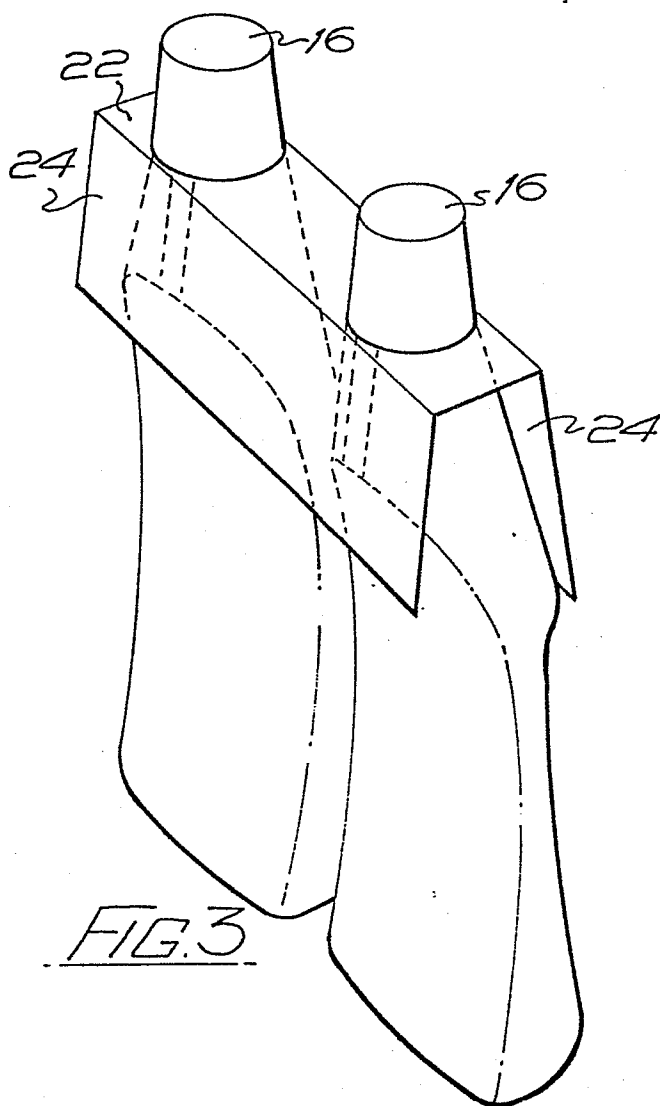


FIG. 3

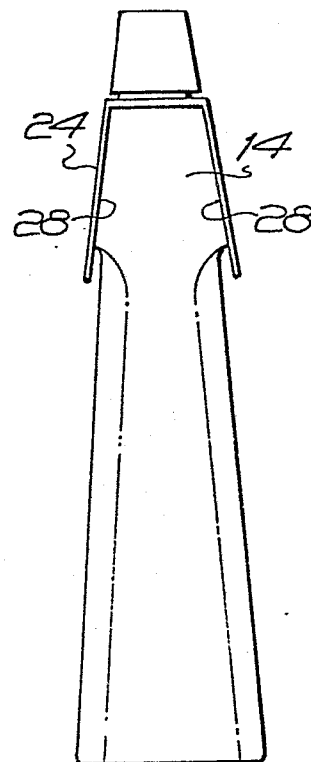


FIG. 4

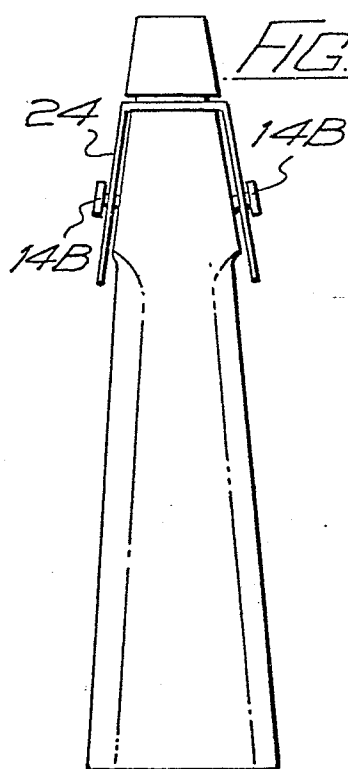


FIG. 5

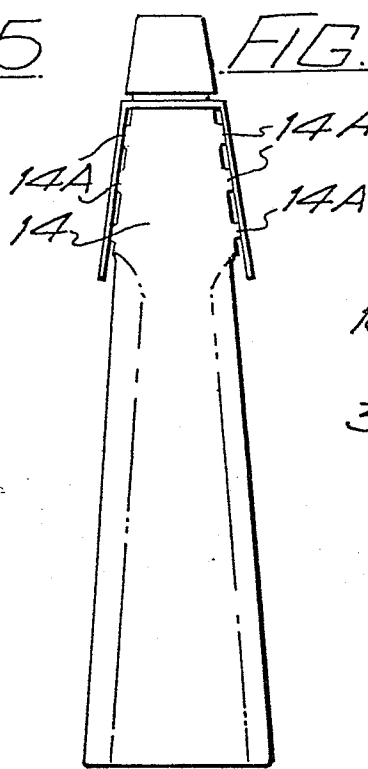


FIG. 6

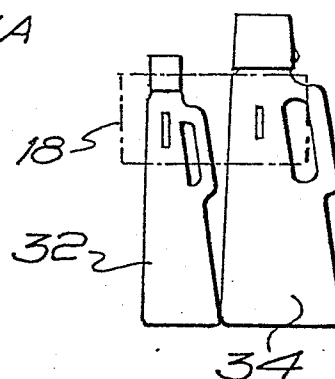


FIG. 7