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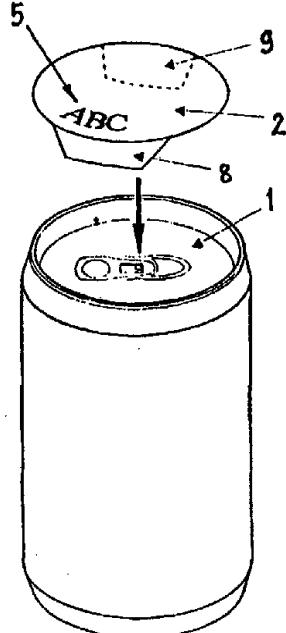
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(57) Abstract

A device for a beverage can, wherein the top (1') of the container (1) has a depressed portion (6), and wherein the top surface (3') of the can has a detachable section (4) connected to a pouring aperture generating pull means (3). The depressed portion interacts with a cover (2; 13; 13'; 20), optionally designed to have or to form a cavity. Said cavity is capable of accommodating an article or a foodstuff. The cover, optionally its effected cavity, may in addition be provided with legible information, e.g., an advertisement.



12 -06- 1997

A DEVICE FOR A BEVERAGE CAN

The present invention relates to a device for a beverage can as disclosed in the preamble of the attached patents claims 1, 2 and 3. Furthermore, the invention relates to 5 utilization of a can of a stackable type as disclosed in claim 10.

The point of departure for the present invention is to provide in connection with beverage cans a best possible covering of the top and/or bottom of the can, so that there is no likelihood of primarily the top part of the can becoming contaminated with dirt, 10 dust or the like around the pouring aperture of the can, whilst ensuring that the can is capable of being stacked, and also that use of the external bottom area of the can is possible.

US Patent 4,927,048 relates to a beverage can having a sanitary cover which is designed 15 to rest over the top portion of the can and the fold around the folded edge between the cylindrical part of the can and its top. The sanitary cover must in its orientation be in alignment with the position of the pouring aperture of the can, so that when the cover is torn off, the pouring aperture and the aperture generating pull means are exposed. In an automation process this will require relatively expensive equipment in order to ensure 20 that the mutual orientation is made possible, whilst the folding operation will cause a reduction in the production rate.

From US Patent 5,131,554 it is known to provide a beverage can with a dust cover which is riveted to the pull means which is to be used to tear open the pouring aperture. 25 The cover is thus designed to lie completely flush with the top of the can and requires a can type which is not conventionally used.

US Patent 5,273,176 relates to a solution where a cover capable of being pivoted upwards can be provided over the top of the can, and where the edges of the cover 30 extend beyond the periphery of the can top. The cover has a through-going hole for a straw and is designed to be positioned such that relative to the pouring aperture of the can, said hole in the cover corresponds to the pouring aperture when this has been opened. The object of the taught solution is also to be able to close the cover after drinking from the can with the aid of the straw.

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AMENDED SHEET

A disadvantage of this known solution is that the stackability of the cans is affected, whilst arrangement in connection with, e.g., a six-pack, is rendered virtually impossible owing to the reduced attachment flange on the can.

- 5 US Patent 5,139,163 relates to a solution reminiscent of that taught in US Patent 5,273,176. In this known solution, clustering, e.g., a six-pack, is rendered completely impossible owing to the fact that the cover rests on the outside of the can top and the top flange of the can is no longer accessible. The cover is provided with a tear-off means to make the pouring aperture of the can and its pull means accessible. Just as in the other
- 10 known solutions, a proportional, mutual orientation between the positioned cover and the pouring aperture of the can is required if the user is to enjoy the benefits the cover is intended to give. However, a solution of this kind is difficult to combine with an automated process.
- 15 US Patent 4,708,257 describes a beverage can with a seal which is adhered or shrunk onto the top of the can to prevent the top of the can from being contaminated. The seal may consist of a circular, thin film or foil which curls up where it is torn open from one side.
- 20 US Patent 4,651,890 makes known a solution wherein on the underside of the can there is provided a tear-open pouch containing a moist wipe means for cleaning the top of the beverage can prior to drinking directly from the can.
- 25 US Patent 1,879,517 relates to a can, jar or the like, where the top or bottom of the can is provided with a further lid or cover in addition to the real lid and cover, and where this additional lid or cover may contain an article of some kind.
- 30 US Patent 3,638,787 relates to a special package for packing several cans together in addition to a fragile unit of some kind which is not a part of the actual cans, but is hidden by the packaging. This solution is particularly well suited in connection with packing fragile articles which cannot be packed mechanically.
- 35 US Patent 3,112,824 relates to a can or bottle wherein the top of the can or bottle is provided with a cover which may contain an article of some kind.

US Patent 2,804,201 relates to a solution whereby a lid can be placed on the top of a can which incorporates a can opener key, and where the lid when turned can be brought into engagement with the handle of the can opener key.

5 US Patent 2,120,403 relates to a solution where some form of advertising matter may be provided on the actual can opener key which is secured in a conventional manner to the top of the can, whereupon the top of the can may be covered with a lid. This lid is shown having various types of design where it is possible to allow the space between the lid and the cavity of the can to contain an article of some kind.

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European Patent Publication 404 734 shows a further illustration of the state of the art, where the edge of a beverage can may be provided with a snap-on drinking lip so that the person drinking from the can does not come into direct contact with the metal of the beverage can, whilst the device also enables a certain covering of the exposed aperture 15 leading into the cavity of the can, which may be practical if there is a desire to temporarily close the can.

An object of the present invention is to provide a solution in connection with a beverage can, whereby the cover which is to be arranged on the top surface of the can is capable 20 of being attached in a simple manner.

The characterising features of the aforementioned devices and the can of a stackable type are set forth in the claims below.

25 However, an object of the present invention is to provide solutions where a covering of the pouring aperture of the can may be combined with other advantages, whilst at the same time other possibilities have been discovered with the present invention for the use of surfaces on a beverage can of this kind.

30 The invention will now be described in more detail with reference to the attached drawings.

Figs. 1 to 5 illustrate a first embodiment of the device according to the invention.

35 Figs. 6 and 7 illustrate a second embodiment of the device according to the invention, with different types of joints between the cover and the beverage can.

Figs. 8 and 9 illustrate a third embodiment of the device according to the invention, with different types of joints between the cover and the beverage can.

Figs. 10, 11, 12 and 13 show alternative methods of securing cans in clusters for the 5 embodiment according to Fig. 8.

Figs. 14 and 15 show a third embodiment of the device according to the invention and represent a modification of the solution in Figs. 9 and 13.

10 Figs. 16 to 18 illustrate a fourth embodiment of the device according to the invention.

Figs. 19 to 21 show a fifth embodiment of the device according to the invention.

In Fig. 1 it is shown how a beverage can 1 may be provided with a cover 2. The can 1 15 has a pull means 3 which actuates a weakening 4 in the top of the can in order to generate a pouring aperture.

The cover 2 may, e.g., be dome-shaped, as indicated in Fig. 5. The cover 2 may be provided with print 5, e.g. a printed advertisement, indicated as a mere example in the 20 form of the letters ABC. However, it will be understood that any form of print is possible. Alternatively the print could be in the form of impressions in the material of the cover, e.g., produced during the forming process of the cover. The cover could be wholly or partly transparent, but it is also conceivable that cover is opaque in that a coating is applied, e.g., in the form of a protecting lacquer. Furthermore, it is also 25 possible to allow the cover 2 to be light-reflecting perhaps in order to draw better attention to the message provided on the cover. As can be seen from Fig. 1, the cover 2 is designed to fit into the depressed portion of the container top, so that the wall 6 of the depressed portion substantially bears against the periphery of the cover, as can better be understood with reference to Fig. 5.

30 The cover 2 will effectively protect the pouring aperture of the can from dust and contaminants before the can is emptied.

The attachment system of the cover which is shown in Figs. 1 to 5 is particularly useful 35 for those cases where the cover is only to be provided with print, e.g., a printed advertisement or is made having print in the form of impressions in the material of the cover. In this case the cover is preferably opaque. As can be seen from Fig. 4 the cover

is made in this case of a sheet part 7 which has two diagonally arranged, backwardly slanting, opposing fixing flaps 8 and 9.. These fixing flaps are designed such that when the cover 2 is pressed down towards the can top 3', the flaps 8 and 9 are bent in the direction of the front face of the cover 2 or the sheet part 7 as indicated by means of the 5 arrows 10, whereby the fixing flaps come into engagement between the top surface 3' of the can and the said pull means 3 in connection with the pouring aperture 4. The flaps preferably have an angle of departure in the range of 40-50°, although this range must not be seen to be limiting for the present invention. As shown in Fig. 5, when the cover 2 is in place, the top part 7 thereof be will slightly curved forwards or upwards, whilst 10 the flaps 8 and 9 remain substantially parallel to the surface 3' of the can top. In this way an effective attachment method of the cover on to the top of a beverage can is obtained. An advantage of the solution shown in Figs. 1 to 5 is that engagement will take place with the pull means 3 irrespective of the mutual orientation of the fixing flaps 21 and 22 relative to the orientation of the pull means 3. This attachment method which 15 can thus be seen from Figs. 1 to 5 is particularly suitable for automated application of the cover 2. The cover 2 will effectively be under tension when it is arranged in the position shown in Fig. 5.

A further development of the invention is also shown in Figs 6 to 9 where the cover is 20 designed as a cavity, the cover in reality being made having an upper portion 11 and a lower portion 12 which in essence correspond to the design of the upper portion 1' and the lower portion 1'' of the beverage can 1. However, it can readily be envisaged that the depressed portions in the upper 11 and lower 12 portions of the cover respectively may be of a depth that is less than that of the depressed portions in the upper 1' and 25 lower 1'' portions of the can. The cover in the present case is indicated by means of the reference numeral 13. The cover has a tear-off portion 4'. The cover, which in terms of appearance resembles a beverage can, has however substantially smaller axial extent L2 than the axial extent L1 of the beverage can. As a, for the invention non-limiting, example, the cover 13 may have an axial length which is equal to about 20 to 50% of 30 the axial extent of the beverage can 1. The cover 13 in the form of a mini-can may be secured to the beverage can, e.g., by adhesion, as shown in Figs. 6 and 8. In the embodiment in Fig. 6, this takes place in that the lower, bevelled portion 12 of the cover 13 is provided with an adhesive, whilst in the embodiment in Fig. 8 the lower bevelled portion 14 on the beverage can is provided with an adhesive. In the embodiments 35 according to Figs. 7 and 9, the cover part 13 is attached to the beverage can by means of tape or shrink wrap plastics 16.

As can be seen in Fig. 10, an assembled unit consisting of a can 1 and a bottom cover 13 could form a part of a multi-pack, e.g., a six-pack. The six assembled can units consisting of three cans 1 and three bottom covers 13 are retained in a known way per se by a plastic film 15 known per se that is provided with holes and where the edges of the 5 holes form secure engagement with the lower edge of the folded flange of the can.

In Fig. 11 an alternative packing form is shown, e.g., of four units 1, 13, wherein a packing plastic film 17 extends around the top of the uppermost unit and around the bottom of the lowermost unit. The plastic film may optionally be of a type such that it 10 has a carrying handle 18. It would optionally be expedient to connect the respective parts 1 and 13 in each unit with an adhesive to facilitate the packing. However, this is not a definite condition for the understanding and performance of the present invention.

In Fig. 12 it is shown that the container 13 may instead form a top cover 13' for the can 15 1. In this case it would be expedient to join the cover 13' and the can 1 with an adhesive, optionally to pack the units together in the same way as shown in connection with Fig. 11. In case the cover 13' is designed to be identical to the cover or mini-can 13 which is shown in connection with Figs. 6 to 9, and where the mini-can 13' is 20 adhered to the beverage can 1, a six-pack, for example, may be held together by means of a supporting plastic film 19 in a manner corresponding to that shown and described in connection with Fig. 10. However, it will be understood that other packing methods will be conceivable within the scope of the invention.

In this connection reference can also be made to Fig. 13 where three units which each 25 consist of a can 1 and a cover 13 are arranged in a column, and where the joining takes place with the aid of tape or shrink wrap plastic 16 in the transition portions between the units.

As an example of the content in a cover or mini-can 13 or 13', mention can be made of 30 articles in solid or liquid form, including typical taste samples such as introductory samples of new products, peanuts, chocolate and other foodstuffs or stimulants. It will immediately be appreciated that the covers represented by the mini-cans 13 and 13' will be capable of having print applied, e.g., a printed advertisement both around the periphery and on the top and bottom surfaces.

35 In Fig. 14 a solution is shown with a cover 20 which has a recess 21 which is adapted to the external periphery or bevelled portion 14 of the can 1, and on its other side has an

axially projecting integrated body 22 with a periphery adapted to the inner wall 6 in the depressed portion on an adjacent beverage can 1. However, it is worth noting that the cover 20 has a cross-section D2 which is no greater than the cross-section D1 of the beverage can. The cover 20 in the illustrated embodiment is intended to constitute a

5 supporting mat for the can, e.g., made of a cork material or other material which does not scratch the underlying surface on which the beverage can 1 is to be placed.

Between the depressed portion 21 and the recess in the bottom of the can there may be placed an article, e.g., selected from a group consisting of lapel badges, mini-art, mini-
10 CDs, lottery tickets, printed matter, mini-toys, souvenirs, bonus coupons, samples, serviettes, wipes, taste samples, advertisements, change. The use of the said space or cavity for change may be particularly relevant in connection with the sale of beverage cans or bottles in vending machines.

15 As an alternative to cork material, the cover 20 may be made of, for example, a soft plastic material or another material which under normal conditions does not cause scratching. Optionally, the cover 20 may conceivably be made of a wood fibre material.

To be able to sell the solution shown in Fig. 14 in an expedient manner, tape or shrink
20 plastic 23 could conceivably be used to attach the cover 20 to the beverage can 1. However, this does not rule out the use of dots of adhesive between the can 1 and the cover 20. The sales unit as shown in Fig. 15 consists of a total of three can/cover units 1, 20. The transitions between these units are made with the aid of tape or shrink wrap plastics. Alternatively, the connection can be made as shown and explained in
25 connection with Fig. 11.

Although the said covers are preferably made of the same material as the beverage can, e.g., aluminium, this does not, of course, prevent other materials from being chosen for use in the covers. Possible alternative materials may conceivably be rigid or soft
30 thermoplastics, or wood fibre materials, materials containing corn starch or other starch products, and optionally appropriate shrink wrap plastic materials. However, it should be noted that the choice of material for the covers should in no way be seen as limiting for the idea and scope of the invention.

35 Although in connection with the said covers, no consideration has been given to a direct covering of the top and outer edge of the can, there is of course nothing to prevent the top portion from being provided with a protecting film, e.g., of aluminium or plastic.

However, when the can assembly is supplied in the form illustrated, e.g. in Figs. 13 and 15 and with the modifications thereof that are obvious to the skilled person, it will immediately be appreciated that a hygienic protection of the drinking edge of the beverage can could also be provided in part by those

- 5 tape or shrink wrap plastic materials which are arranged around the transitions between the can/cover unit and an adjacent unit of this kind. The carrying piece which is located on the top of such a unit could easily be made so as to provide a sufficient covering of the top edge of the upper can 1. In the solution shown in Fig. 11, it will be ensured that the drinking edge is kept
- 10 clean by using shrink plastic between the can 1 and the cover 13' for each unit thereof. If the mini-can 13' in addition has an upper portion which is equipped with a folded flange, it is possible to move the connecting film up to this portion of the can 13'.
- 15 In the embodiment according to Figs. 16 to 18, the cover 24 is intended for a beverage can 25, preferably of the stackable type, wherein the top of the can has a depressed portion 26 with a further recessed rim along the inner wall 28 of the depressed portion. As previously described, the can is in a known way designed to have a detachable section connected to a pouring aperture
- 20 generating pull means 30.

The cover is designed to fit into the depressed portion 26 and has a cavity 24' or a recess in its back for housing an article 40. The wall 28 of the depressed portion surrounds and substantially bears against the periphery of the cover over at least a part of its axial extent.

- 25
- 30 This alternative solution is characterised in that the cover 24 along upper outer rim thereof has a sealing lip 31 designed to bear against said inner wall 28 and along its lower outer rim has a bead 32 designed to fit into said recessed rim 27. When the cover 24 is pressed down into the depressed portion 26 of the can and the rim 27, in the same operation there is also produced a vacuum between the back of the cover 24 and the top surface 26'



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of the can through the vacuum actuation during the pressing action. The bead 32 is to advantage made of a material which, when the cover 24 is pressed down into the depressed portion 26 and vacuum is actuated simultaneously, is subjected to a lateral expansion into the recessed rim 27, 5 thereby obtaining improved adhesion and sealing, so that said vacuum between the cover 24 and the depressed portion 26, 37 of the can is maintained. Furthermore, the recessed rim 27 can be provided with an adhesive 34 in order to further secure said vacuum through increased adhesion between the rim 27 and the bead 32 of the cover.

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The cover is provided with a tear-off flap 33, which causes said vacuum between the cover 24 and the depressed portion 26, 27 of the can to be eliminated when the flap is torn off, whereby the bead 32 is released from the recessed rim 27, allowing the cover 24 and its optional content (not shown) to be removed.

5

Thus, the present invention does not only make possible the covering of the pouring aperture of a beverage can, and the application of advertising or information on a cover which is located on the top or at the bottom of the beverage can 1 or in both places, but also allows the said covers to contain objects or samples in liquid or solid form. When 10 supplying units in, e.g., three-packs, four-packs, six-packs or the like, it will be understood that it will be possible to attach beverage cans 1 and their respective covers 13, 13' to one another in a simple manner and also in this way ensure that the drinking edge is either covered or optionally can be cleaned with a wipe which is found in the cavity or recess of the cover.

15

In the solution shown in Figs. 19-21, the cover 13 is arranged to cover the depressed bottom portion 37 of the can. However, the cover 13 may conceivably instead cover the depressed top portion 6 of the can, as indicated in Fig. 7. The assembly of the can (1) and cover (13) is then surrounded by an upwardly open container 35, preferably made in 20 the form of a drinking glass of plastic or glass. The drinking glass may be made of a transparent, translucent or opaque material. Like the can, the outer surface of the glass may optionally be provided with decoration, ornament, information or advertising material.

25 However, it is important that when storing the can 1, the cover 13, and the glass 35 that dust and dirt do not enter the container in the space between the can/cover assembly and the inner wall of the container 35. Therefore, around a upper portion 35' of the container 35 there is provided a sealing means 36 which is detachable, e.g., by tearing off. The sealing means may, e.g., be a band of heat shrinkable material, a sealing 30 sleeve, a sealing tape, e.g., an adhesive tape. The sealing means 36 rests in sealing contact with a peripheral portion 1''' of the can 1/cover 13 assembly, e.g., a portion 1''' of the can as indicated in Fig. 20.

35 Although it is not shown in Figs. 19-21, it will be understood that a type of cover as shown and described in connection with Figs. 1 to 15 or Figs. 16 to 18 could be provided in the recessed portion 6 of the can 1 or in the recessed portion 38 of the cover

13 depending upon whether it is the can 1 or the cover 13 which is uppermost in the can 1/cover 13 assembly.

The solution shown in Fig. 19 is particularly advantageous in the cases where in a 5 practical manner it is desirable to sell or distribute as a unit a can 1 containing a beverage, cover 13 containing another beverage or a foodstuff in solid form, e.g., peanuts, and a drinking glass 35.

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A beverage can arrangement, preferably for a can of a stackable type, wherein the top of the can has a depressed portion (26) with a further recessed rim (27) along the inner wall (28) of the depressed portion, and also 5 a detachable section (29) connected to a pouring aperture generating pull means (30), wherein in the depressed portion there is provided a cover (24) which forms on a rear side thereof a cavity (24') facing a top surface (26') of the can, and wherein the inner wall (28) of the depressed portion surrounds and substantially bears against the periphery of the cover over at least a part 10 of its axial extent, characterised in that the cover (24) along its upper outer rim has a sealing lip (31) intended for contact with said inner wall (28) and along its lower outer rim has a bead (32) designed to fit into said recessed rim (27), a vacuum being produced between the cover and the top surface of the can, upon pressing the cover (24) down into the depressed portion (26) of the 15 can.
2. A beverage can arrangement as disclosed in claim 1, characterised in that the bead (32) is made of a material which, when the cover is pressed down into the depressed portion (26) and vacuum is 20 actuated simultaneously, is caused to expand laterally into the recessed rim (27).
3. A beverage can arrangement as disclosed in claim 1 or claim 2, characterised in that in the recessed rim (27) there is provided an adhesive 25 (34) for adhesion to the bead (32) of the cover (24).
4. A beverage can arrangement as disclosed in claim 1, characterised in that the cover (24) has a recess or cavity adapted to accommodate an article. 30
5. A beverage can arrangement as claimed in any one of the claims 1-4, characterised in that the bottom portion of the beverage can is



covered by a can-like cover containing a foodstuff, stimulant or article, said can-like cover arranged to cover a depressed portion of the beverage can bottom, said can-like cover having a tear-off portion (4') and having an axial extent (L2) which is substantially less than the axial extent (L1) of the 5 beverage can, the assembly of the beverage can (1) and the can-like cover (13) being surrounded wholly or partly by an upwardly open container (35).

6. A beverage can arrangement as disclosed in claim 5, characterised in that about the upper portion (35') of the container (35) there 10 is provided a detachable sealing means (36), e.g., a band of heat shrinkable material, a sealing sleeve or sealing tape, which is in sealing contact with a peripheral portion (1'') of said assembly, i.e. a portion of the beverage can (1).

15 7. A beverage can arrangement as disclosed in claim 5 or 6, characterised in that the container (35) is made in the form of a drinking glass.

8. A beverage can arrangement substantially as herein described 20 with reference to Figures 16-18 of the accompanying drawings.

9. A beverage can arrangement substantially as herein described with reference to Figures 16-21 of the accompanying drawings.

25 10. A beverage can arrangement including a cover substantially as herein described with reference to Figures 16 and 17 of the accompanying drawings.

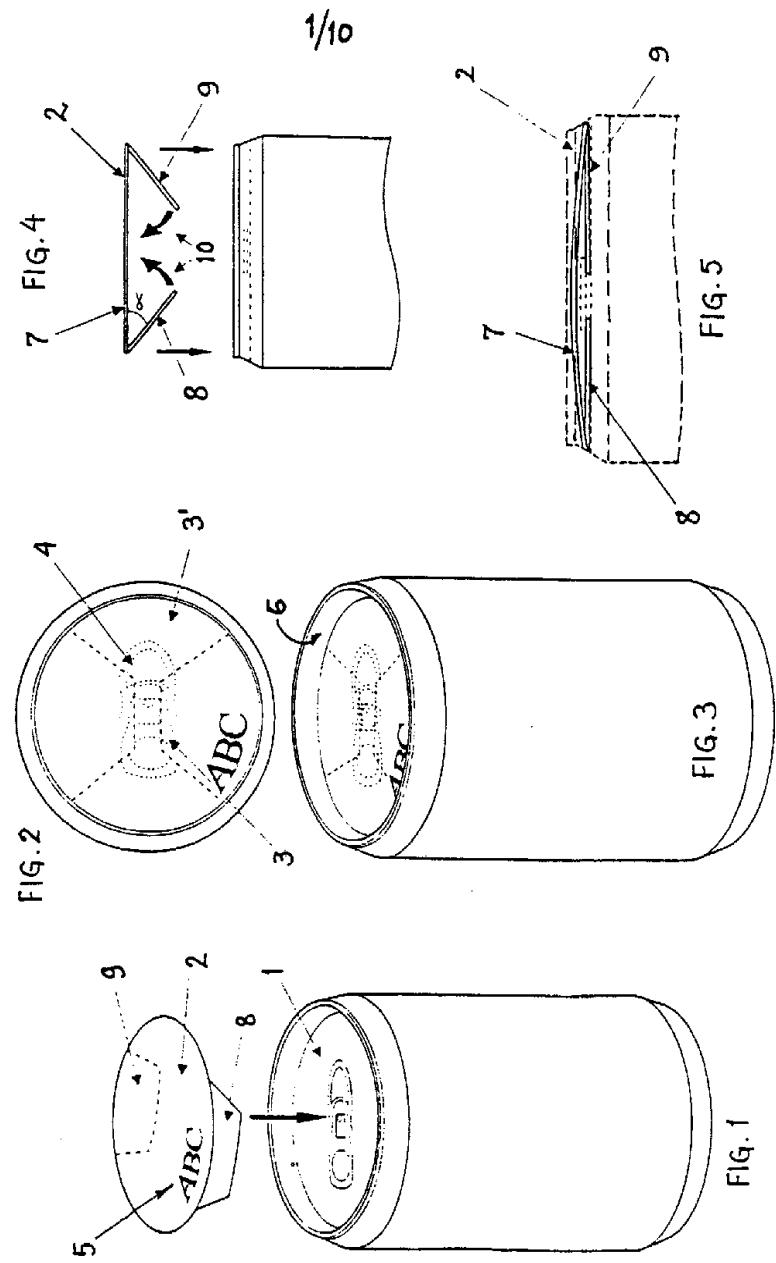
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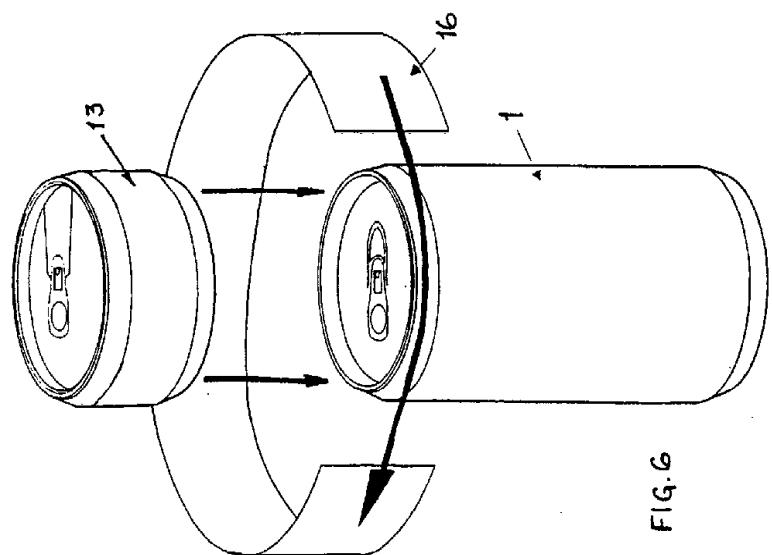
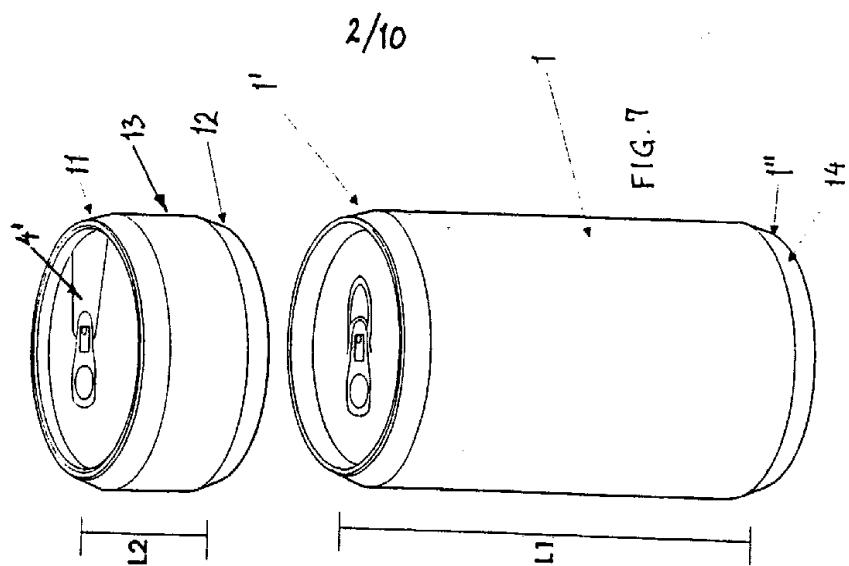
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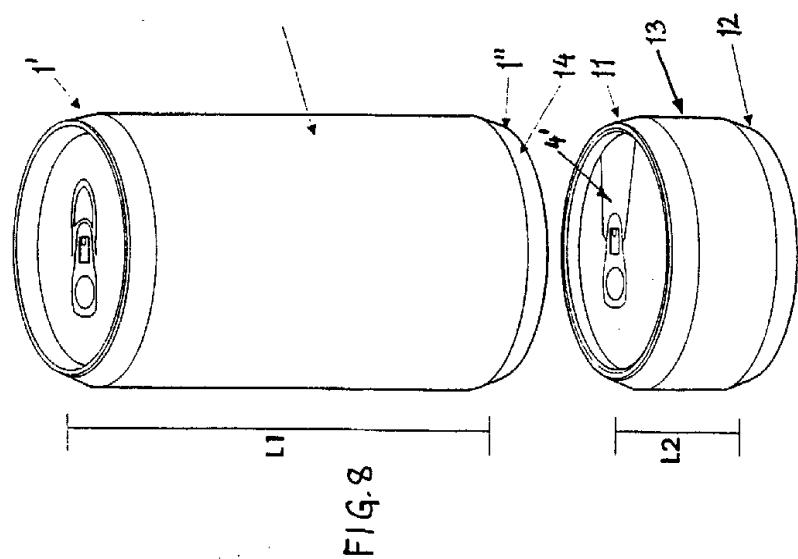
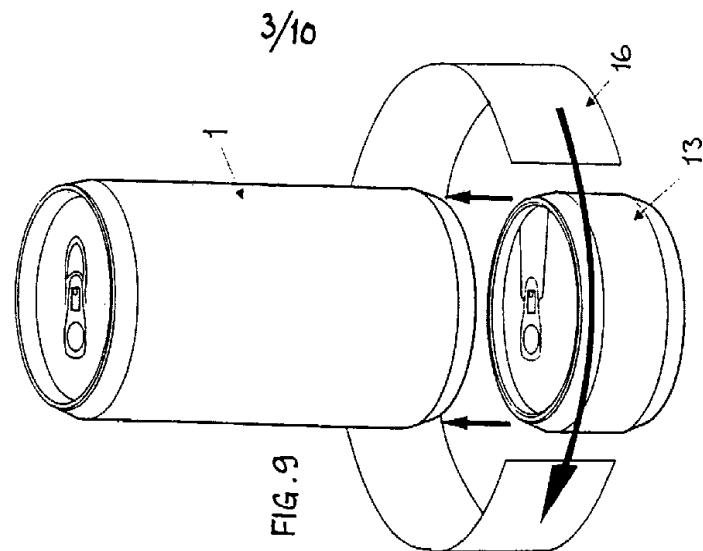
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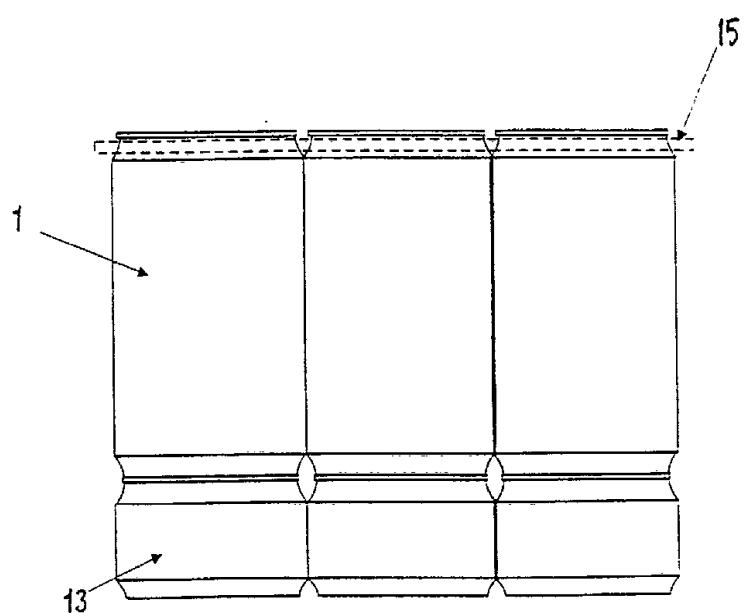


FIG. 10

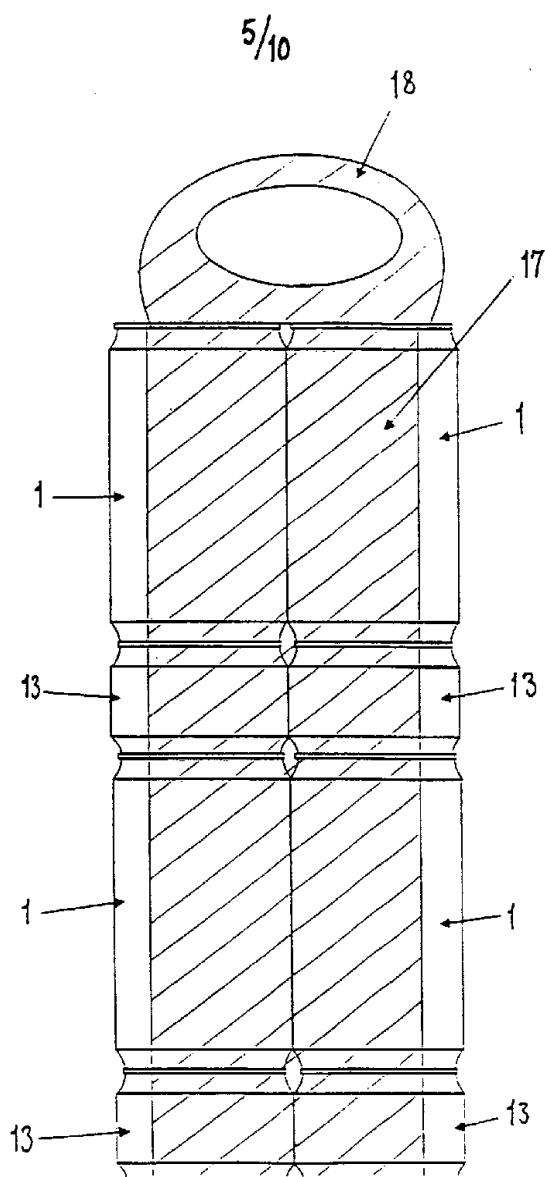
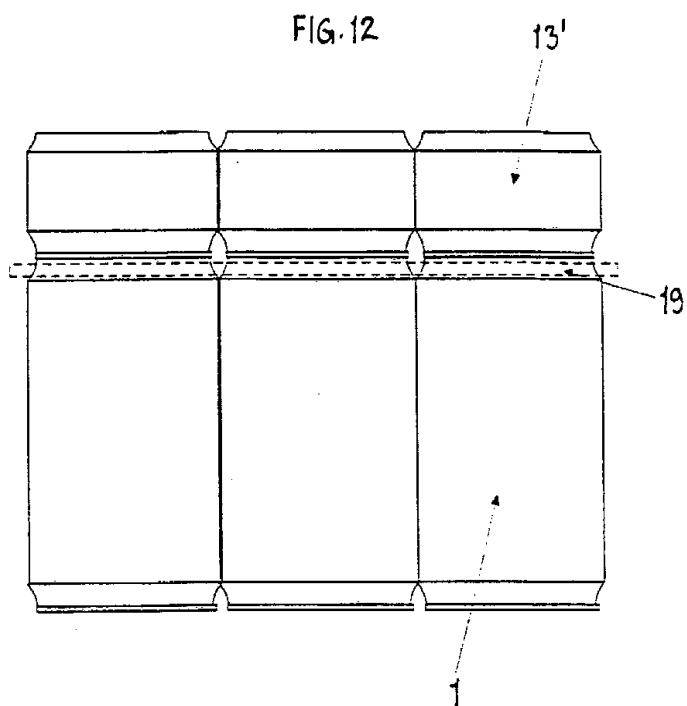


FIG. 11

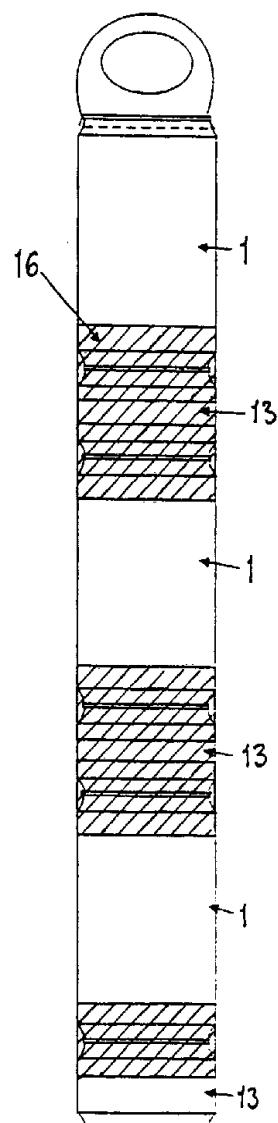
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FIG. 12



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FIG.13



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FIG. 14

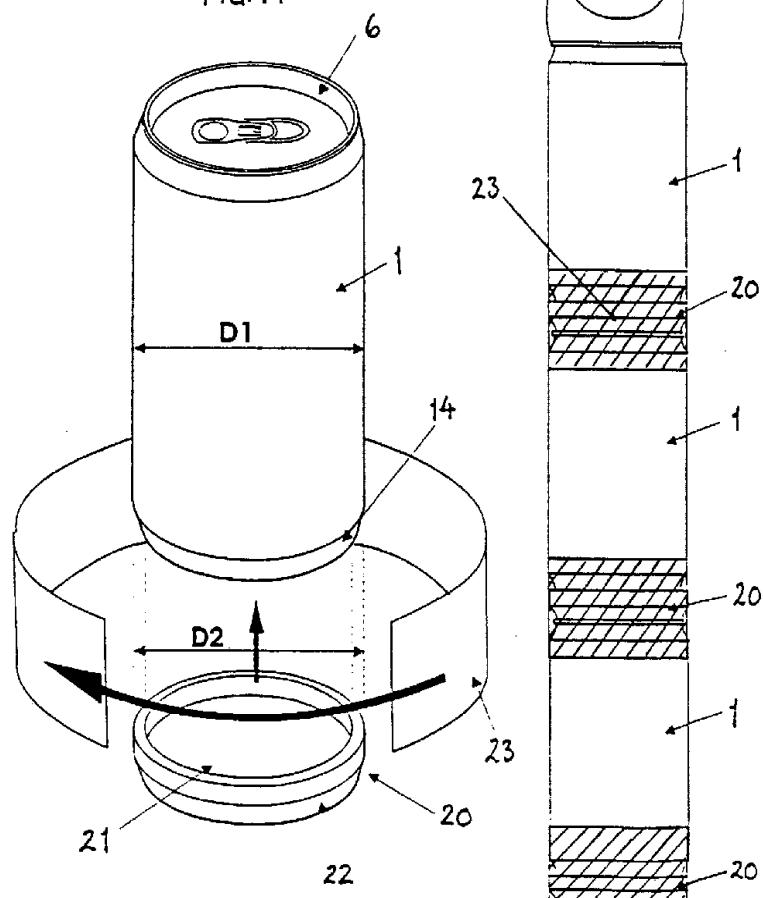
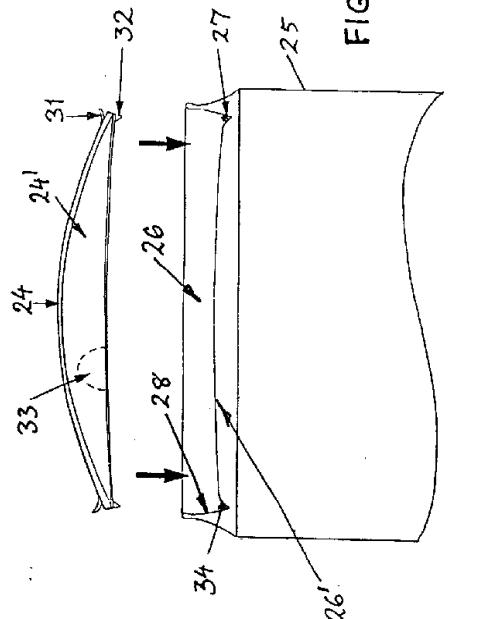
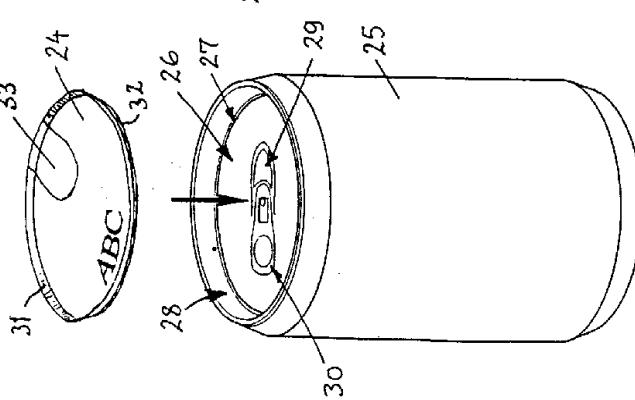


FIG. 15

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FIG.19

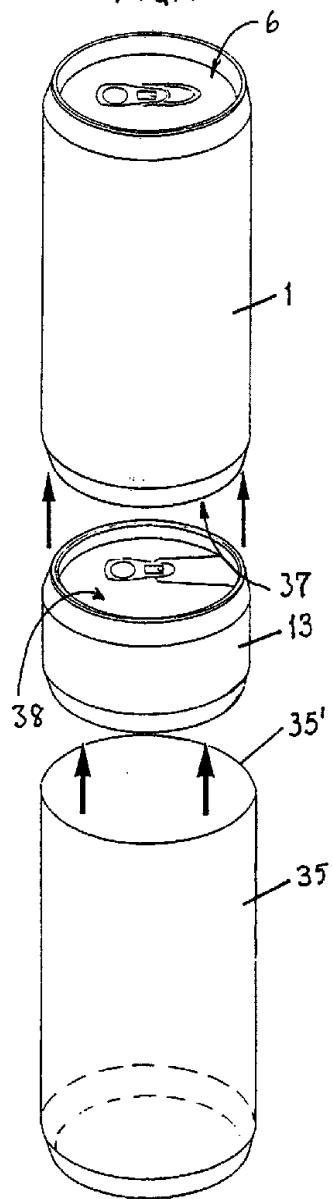


FIG.20

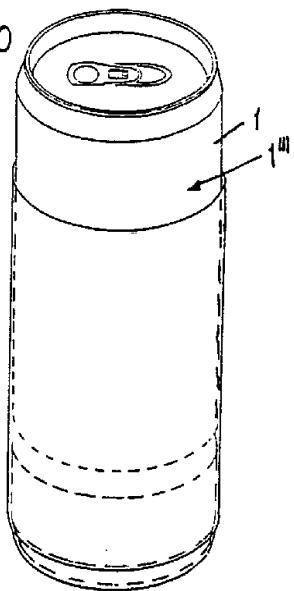


FIG.21

