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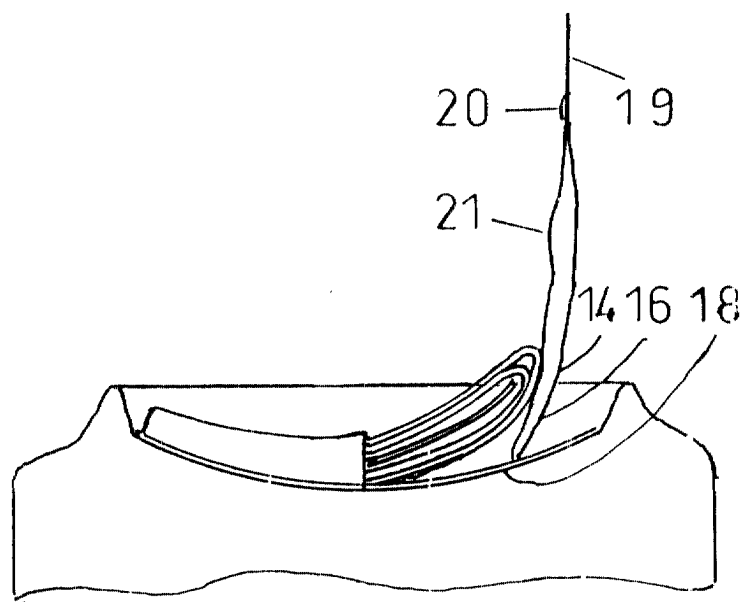
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(54) **Package for a straw, which package is intended for application to a drink container**

(57) The purpose of the present invention is to furnish a drink container, and particularly a soft drink or beer can of existing types, with a straw housed inside a package that does not hinder the handling or packaging of the container and which, when opened, does not produce a piece of unwanted scrap.

This is chiefly achieved through the manufacture of a package having a flat base (1, 22) to which is attached a principal capsule (4, 24). In this capsule is placed a

straw, which may be flattened and folded, and a secondary capsule (11, 28) is then attached to the base so as to cover the rest of the straw. The secondary capsule comprises a tab (19, 32) and overlaps the principal capsule. The secondary capsule may be pulled away from the base such as to allow the straw to be removed but rendering further pulling impossible or very difficult and thus enabling the secondary capsule to remain attached to the package.



FIGUR 9

Description

[0001] For many years beer and carbonated soft drinks have been sold in cylindrical aluminium cans. The can top comprises an opening device, or pop-top. Previously, the pop-top was so constructed as to separate from the can top after opening, forming an unwanted piece of metal scrap. Later, this device was designed so as to remain attached to the top after the can was opened. This, since a separate piece of metal scrap was no longer produced, was a major advantage from an environmental point of view, considering the great number of cans of drink consumed out of doors, it was an extremely valuable improvement.

[0002] After a can of beer or soft drink has been opened, the drink is usually poured into a glass. However, soft drinks in particular are often drunk through a straw inserted into the opening made in the top of the can. Indeed, many cans of soft drink are sold for immediate consumption, and although it is possible to drink direct from the can, a glass or straw is often provided for the purpose. Clearly however, this is difficult if the cans are to be sold to the public in special vending machines.

[0003] The purpose of this invention is to furnish a soft drinks can of the type that has now been available on the market for many years with an easily detachable straw shielded against the dirt by a protective device that cannot in itself become an unwanted piece of scrap. This is achieved in that a specially designed package containing a flattened, folded straw is secured to the bottom of the can, which, as viewed from the outside, affords a concavity suitable for the purpose. A variant of the invention may be applied to drink packages or cartons having a large flat surface. The characteristics of the invention are set forth in the claims.

[0004] In the following paragraphs, the invention will be described in greater detail with reference to a set of drawings illustrating embodiments of the invention.

Figure 1 illustrates the principles of a package intended for a soft drinks can viewed from the side.
 Figure 2 illustrates a folded straw viewed from the side.
 Figure 3 illustrates a package for a soft drinks can viewed from the side.
 Figure 4 illustrates a package containing a straw intended for a soft drinks can viewed in section from the side.
 Figure 5 illustrates the package of Figure 3 viewed across the section A-A.
 Figure 6 illustrates three packages attached to a single backing sheet.
 Figure 7 illustrates a package, viewed from the side, attached to the bottom of a can, the can itself being viewed in section.
 Figure 8 illustrates the package of Figure 7 viewed

from above.

Figure 9 illustrates the package of Figure 7 opened.
 Figure 10 illustrates the package of Figure 8 opened.
 Figure 11 illustrates a package for a soft drinks carton with a flat surface viewed from the side.
 Figure 12 illustrates two of the packages of Figure 11 viewed from above.
 Figure 13 illustrates the packages of Figure 12 viewed across the section B-B.
 Figure 14 illustrates an opened package viewed from the side attached to a soft drinks carton.
 Figure 15 illustrates the package of Figure 14 viewed from above.

[0005] Figure 1, which illustrates the principles of the package, shows the various parts and layers of the package as if they were separated from each other, and for the sake of clarity, their thickness has been exaggerated. The package is intended to contain a flattened, folded straw and is intended for attachment to the bottom of a standard can, which, viewed from the outside, affords a concavity suitable for that purpose.

[0006] In Figures 1-10, the numeral 1 is used to designate a base of plastic foil, the underside of which is covered in its entirety by pressure-sensitive adhesive 2. The adhesive is covered with a removable protective sheet 3 treated with silicone. A principal capsule of plastic foil, here generally designated 4, is pressed into shape from flat foil so as to form a cavity 5. The inner end 6 of the principal capsule is open, whereas its outer end 7 is closed. The principal capsule is here welded to the base 1 across a narrow zone 8, the principal capsule being so formed as to have projecting flanges 9 along each side of the cavity 5. These flanges are securely welded to the base 1, their perimeter 10 corresponding to that of the base. This latter, however, is not strictly necessary.

[0007] A secondary capsule of plastic foil is here generally designated by the numeral 11. This capsule, too, has been pressed into shape from flat foil so as to form a cavity 12. The inner end 13 of the secondary capsule is open, whereas its outer end 14 is closed. The plastic foil has here been folded at its outer edge 15 so as to furnish the secondary capsule with a floor 16, the free edge 17 of which, before the secondary capsule was folded at its outer edge 15, was welded to the base 1 across a narrow zone 18. The secondary capsule overlaps the principal capsule and, above the latter, comprises a tab 19 by which the secondary capsule can be pulled away from the base 1. The underside of the tab is dotted with a small patch of pressure-sensitive adhesive 20. The secondary capsule, along each side of the cavity 12, is so formed as to have projecting flanges 21 lying against the base 1. The underside of these flanges is so

weakly welded to the base 1 that it breaks or gives way when the package is opened. The perimeter of the flanges corresponds to that of the base, although this is not strictly necessary. Welding may be carried out in two narrow zones, one on each side of the cavity 12, or else the flap surfaces may be welded in their entirety. The flaps of the folded-in floor 16 must not be welded to the base 1; only the free edge zone 18 may be so welded.

[0008] Figure 2 shows a straw having an outer diameter of millimetres and a material thickness of 0.13 millimetres, which is a size commonly encountered in this context. The straw has been flattened and folded into a bundle having a width of 8 millimetres and a length of 39 millimetres. The height of the bundle, stowed in the protective package, if the latter is flat, might be 3 millimetres, although capsules 4 and 11 may be so designed as to enable the bundle to be highest in the middle and lower at either end.

[0009] Figure 3 illustrates a package containing a straw.

[0010] Figure 4 illustrates the package of Figure 3 seen in section from the side.

[0011] Figure 5 illustrates the package of Figure 3 seen across the section A-A.

[0012] Figure 6 illustrates three packages attached to a single backing sheet 3. Here, superfluous material between and outside the packages has been removed.

[0013] Figure 7 illustrates a package, viewed from the side, attached to the bottom of a can, the can itself being viewed in section. Owing to its flexibility, as it is placed in position the plastic foil base 1 shapes itself so as to lie snugly against the concave surface of the can bottom.

[0014] Figure 8 illustrates the package of Figure 7 viewed from above. The base 1, as are the lateral flanges 9 and 21, is wider towards the centre of the package. On attaching the package to the can, the lateral flanges may be firmly pressed against the can itself. Less pressure may be applied to the zone above the folded straw.

[0015] Figure 9 illustrates the package of Figure 7 opened. The package is opened by pulling the tab 19. On opening, the tab first breaks away from the primary capsule 4 as the weak attachment ensured by the pressure-sensitive adhesive 20 is ruptured. As pulling continues, the welding between the flanges 21 of the secondary capsule and the base 1 breaks as the flanges and base are split apart. When the secondary capsule has been pulled up as far as illustrated in the figure, it can be pulled no further since the floor 16 is securely welded to the base at 18. As the base 1 is glued to the can over a considerable area outside the welded zone 18, the base cannot be split apart from the can, regardless of whether the tab is pulled straight up, from the front or from behind. Now that about half of the folded straw has been freed, it is easy to take it out of the principal capsule 4. The opened secondary capsule 11 may then be folded back into position and attached to the primary capsule by means of the pressure-sensitive adhesive 20 on the underside of the tab. Once removed,

the inherent tension of the straw causes it to unfold and spring more or less into shape. The straw is then lightly rolled between index finger and thumb to remove the folds and restore the straw to its original roundness.

[0016] In Figures 11-15, a base provided with pressure-sensitive adhesive is designated by the numeral 22. This base is covered with a protective sheet 23 treated with silicone. To the base 22 is attached a principal capsule 24 firmly welded to the base 22 at the zones 25 outside its internal cavity 26. On top of the capsule there is a small spot of pressure-sensitive adhesive 27. A secondary capsule 28 has projecting flanges 30 on each side of its internal cavity 29 and a large surface 31 outside its closed end. The secondary capsule has a tab 32 and overlaps the primary capsule. The flanges 30 are weakly welded to the base 22, whereas zone 31 is strongly welded to the base. The zones 26 and 29 house a straw 33 that has been flattened and folded. The straw is pointed at one end.

[0017] Figure 11 illustrates a package viewed from the side.

[0018] Figure 12 illustrates two packages attached to a backing sheet.

[0019] Figure 13 illustrates the packages of Figure 12 viewed across the section B-B.

[0020] Figure 14 illustrates an opened package containing a folded, flattened straw, the package being attached to a soft drink carton viewed from the side.

[0021] Figure 15 illustrates the package of Figure 14 viewed from above.

[0022] The package is opened by pulling the tab 32 such that the welding between the secondary capsule and the base 22 gives way. Once this has happened, further pulling is impossible, or at least very difficult. As already mentioned, the secondary capsule is firmly welded to the base at zone 31, and the separation of the base 22 from the drink carton is rendered more difficult in that a large zone 31 of the secondary capsule is outside the internal cavity 29 and the base 22 is firmly glued to the drink carton.

[0023] Once the secondary capsule has been opened as illustrated in the figure, it is simple to grasp the folded straw and remove it from the primary capsule. The straw is restored to its original roundness by grasping it between the thumb and index finger and the fold disappears. Instead of welding the capsules to the base, they may be glued. An arrangement may also be envisaged whereby the secondary capsule is provided with two lines of perforations that will break when the package is opened, rather than having the package break at the places where the flanges 30 of the capsule are welded to the base 22.

[0024] The straw is here illustrated flattened, and the fold may of course be of some other type, e.g. it may be of a smaller diameter and be round, and it may be provided with the familiar bellows-like fold. After the straw has been removed, the tab 32 may be re-attached to the principal capsule by means of the pressure-sensitive

adhesive 27.

[0025] The capsules of which the package is comprised, like the base, may instead of plastic foil be made of plastic-coated paper. If the capsules are made of foil, the foil may be completely transparent, lightly coloured or opaque.

[0026] If, in particular, the secondary capsule is of very thin plastic, it may be useful to stiffen the tab by folding it double or by some other means.

[0027] The underside of the package need not be attached with pressure-sensitive adhesive. Instead, hot-melt adhesive, for example, may be applied when the package is attached to the carton, either on the straw package or directly on the drink carton.

[0028] The package intended for soft drink cans may be applied in connection with the manufacture of the cans; or, it may be applied in the filling premises, either before or after the cans have been filled. If the package is to be applied after filling, a suitable approach would be to turn the cans bottom up using known technology, to attach the straw packets, and thereafter to turn the cans the right way up. All this may be achieved while the cans are moved at speed through the filling room.

[0029] In the case of cans, it is important to ensure that the straw is so placed as not to hinder the passage of the can through the filling room or the packing of cans into six-packs. The present package does not represent such a hindrance. It is also important that it be possible to leave the package untouched if the straw is not to be used. It is thus not possible to position the package on the can top.

[0030] There are several methods of manufacturing a straw package suitable for cans. A suitable approach might first be to weld a principal capsule (4) stamped out of foil to a plastic web (1) to which is applied pressure-sensitive adhesive (2) and a backing sheet (3), then to introduce the straw, flattened and folded into a bundle, its free end first. Alternatively, the straw may be folded in a zigzag shape. The floor (16) of the secondary capsule, at its free edge (17), is then securely welded to the plastic web (1), the secondary capsule is folded back (15) and its flanges (21) are weakly welded to the plastic web (1). At this stage, any superfluous material may be removed from the backing sheet (3). The packages held on the backing web (3) may be wound up into a roll of large diameter from which the packages can be fed out and rapidly attached to the drink packages.

[0031] To succeed in commercial terms, it is essential that the packages can be applied to existing can types, which are manufactured in enormous quantities.

Claims

1. An elongated package housing a straw, which package is intended for application to a drink container, **characterised**

in that it has a flat base (1, 22) intended to lie snugly against the drink container and above which is the straw;

in that at one end of the package is a principal capsule (4, 24), the closed outer end (7) of which is attached to the base (1, 22) and whose two longer sides (9, 25) are attached to the top of the base in zones outside the internal cavity (5, 20) of the principal capsule;

in that at the other end of the package is a secondary capsule (11, 28), the outer closed end (14) of which is attached to the base (1, 22) and whose two longer sides (21, 30) are attached to the top of the base in zones outside the internal cavity (12, 29) of the secondary capsule;

in that the secondary capsule (11, 28) overlaps the principal capsule (4, 24);

in that the secondary capsule, above the principal capsule, comprises a tab (19, 32) by means of which the secondary capsule may be pulled upwards along two previously determined rupture zones situated on either side of the straw so as to expose the straw but such that further upward pulling is rendered impossible or very difficult and such that the secondary capsule (11, 28) remains attached to the base (1, 22) of the package and no scrap is produced; and

in that the straw, after the secondary capsule has been opened, remains inside the primary capsule.

2. A package as specified in claim 1, **characterised** in that the base (1, 22) is provided with pressure-sensitive (2) adhesive by means of which the package is attached to the drink container.
3. A package as specified in claim 2, **characterised** in that the packages, before they are attached to the drink containers, are temporarily attached beside each other on a backing web (3, 23) by means of the pressure-sensitive adhesive (2) on the underside of the base.
4. A package as specified in any of the above claims, **characterised** in that the secondary capsule (11, 28), when pulled, separates from the base (1, 22) along the zones in which the capsule is attached to the base.

5. A package as specified in any of the above claims, **characterised** in that the secondary capsule (11) has a folded section (16) whose free end (17) is attached (18) to the base at some distance from the outside edge of the base. 5
6. A package as specified in any of the above claims, **characterised** in that the base (1) is sufficiently flexible to enable it to adapt its shape to the concave bottom of a can. 10
7. A package as specified in any of the above claims, **characterised** in that pressure-sensitive adhesive (20, 27) is applied to the section where the capsules overlap such that the free end of the secondary capsule (11, 28), after opening, may be attached to the principal capsule (4, 24). 15
8. A package as specified in any of the above claims, **characterised** in that the straw is flattened and folded several times so as to form a small bundle. 20
9. A package as specified in any of the above claims, **characterised** in that the package is intended for attachment to the outside concavity at the bottom of a can. 25

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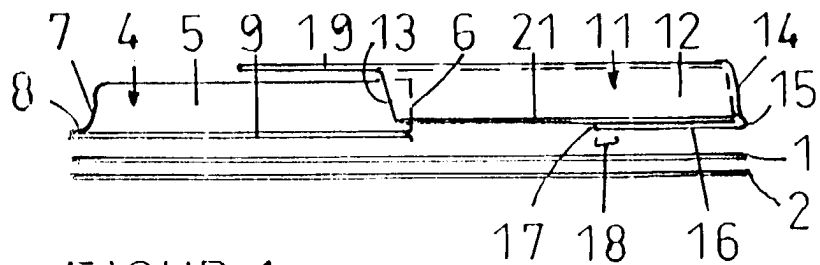


FIGURE 1

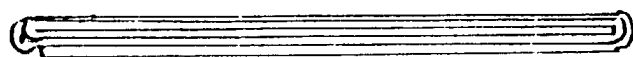


FIGURE 2

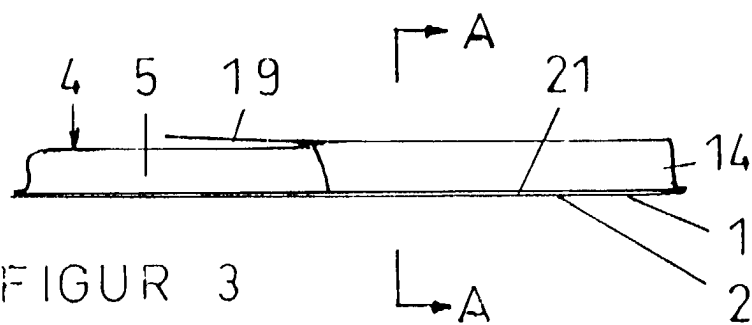


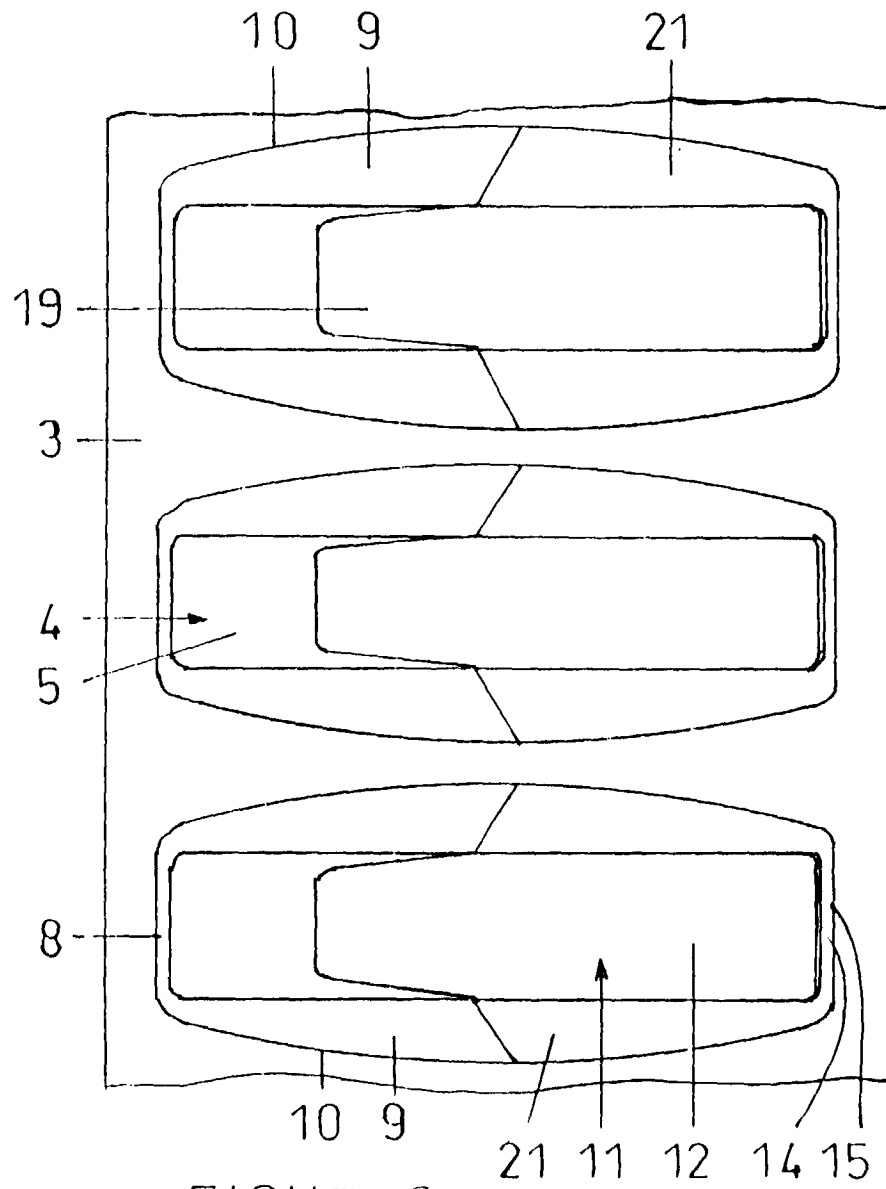
FIGURE 3



FIGURE 4



FIGURE 5



FIGUR 6

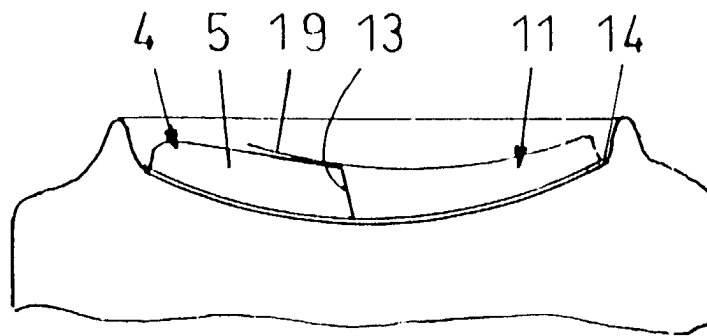


FIGURE 7

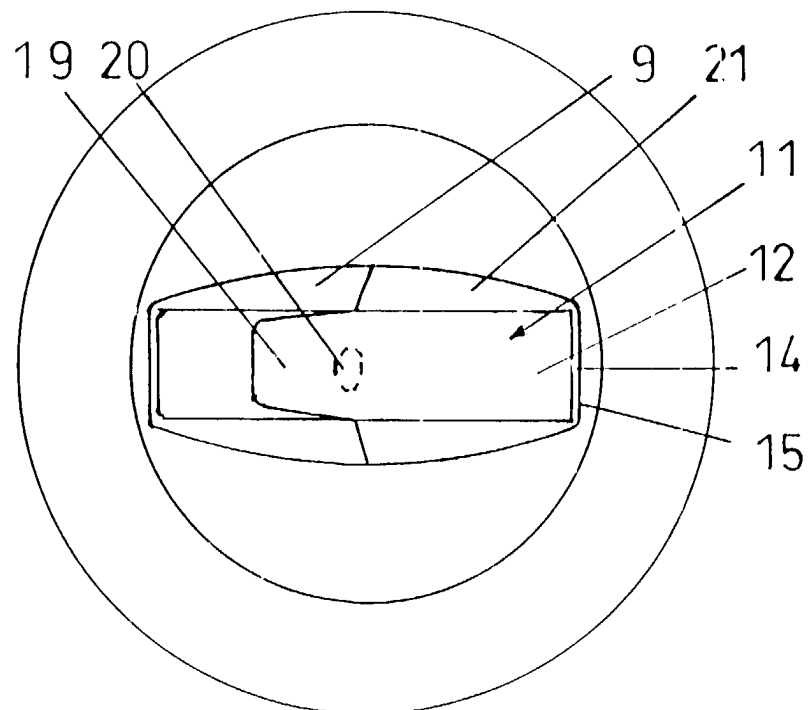


FIGURE 8

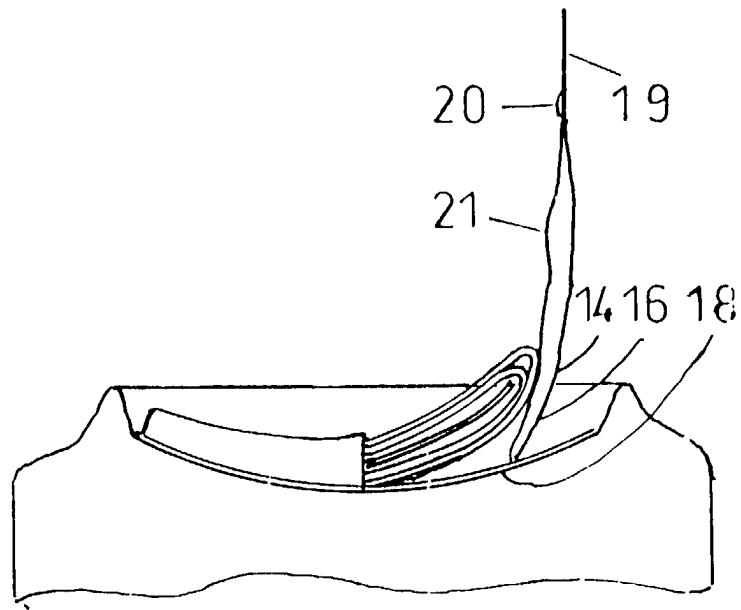


FIGURE 9

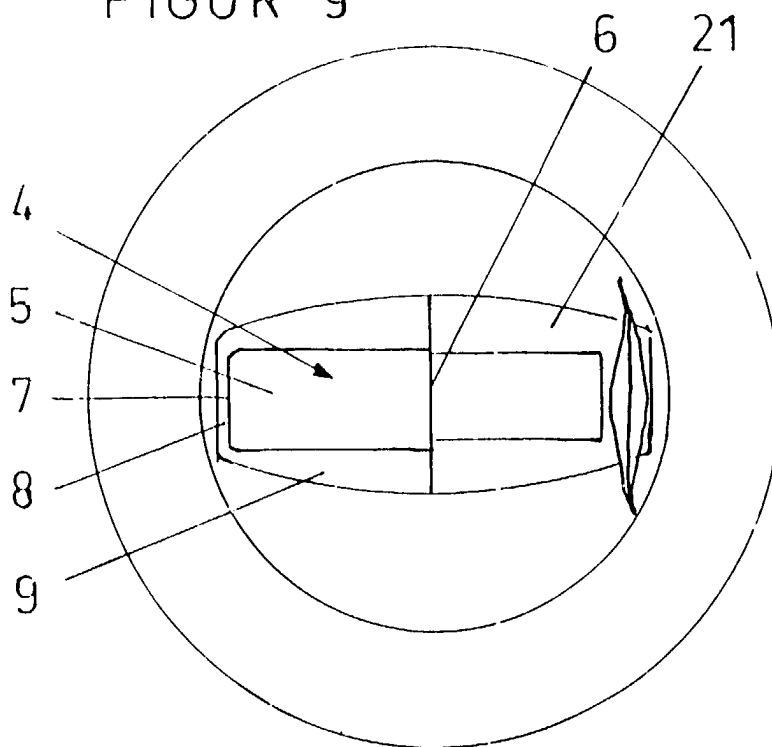


FIGURE 10

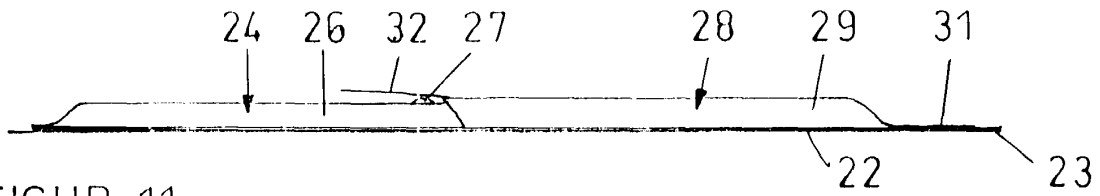


FIGURE 11

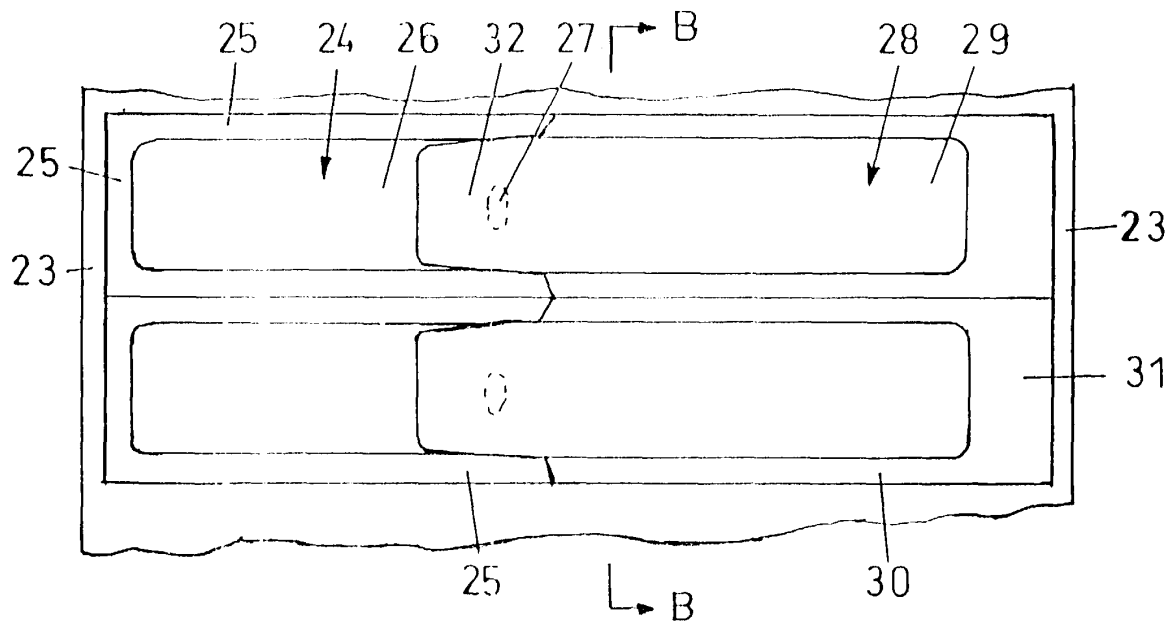


FIGURE 12

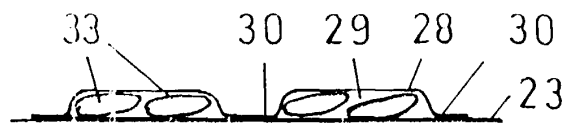


FIGURE 13

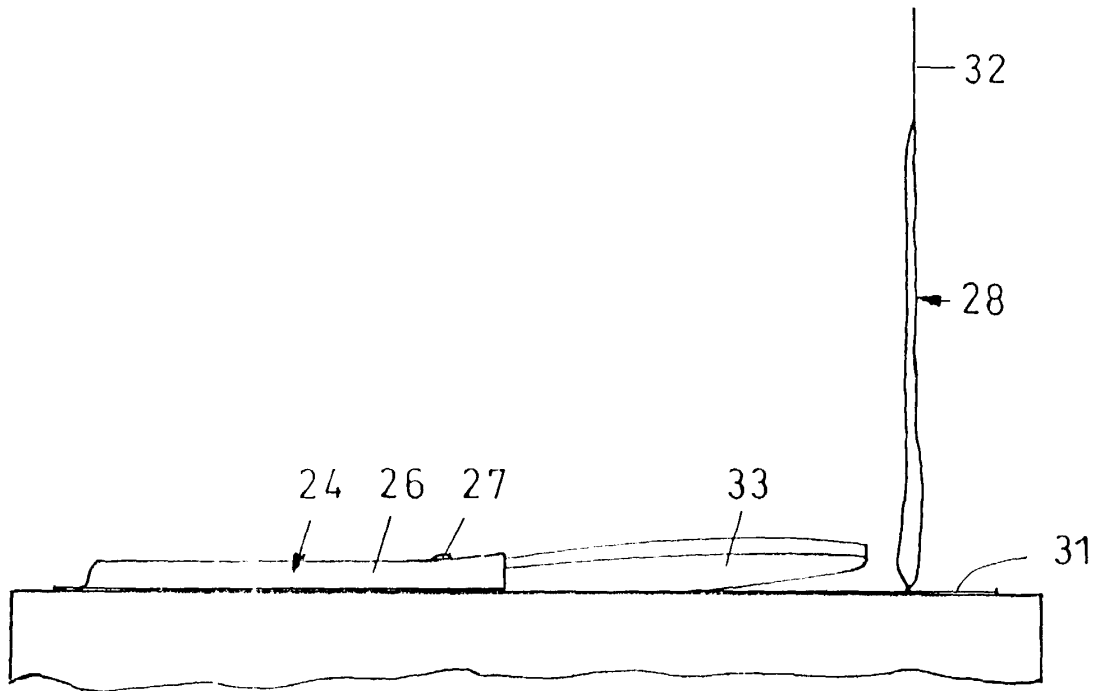


FIGURE 14

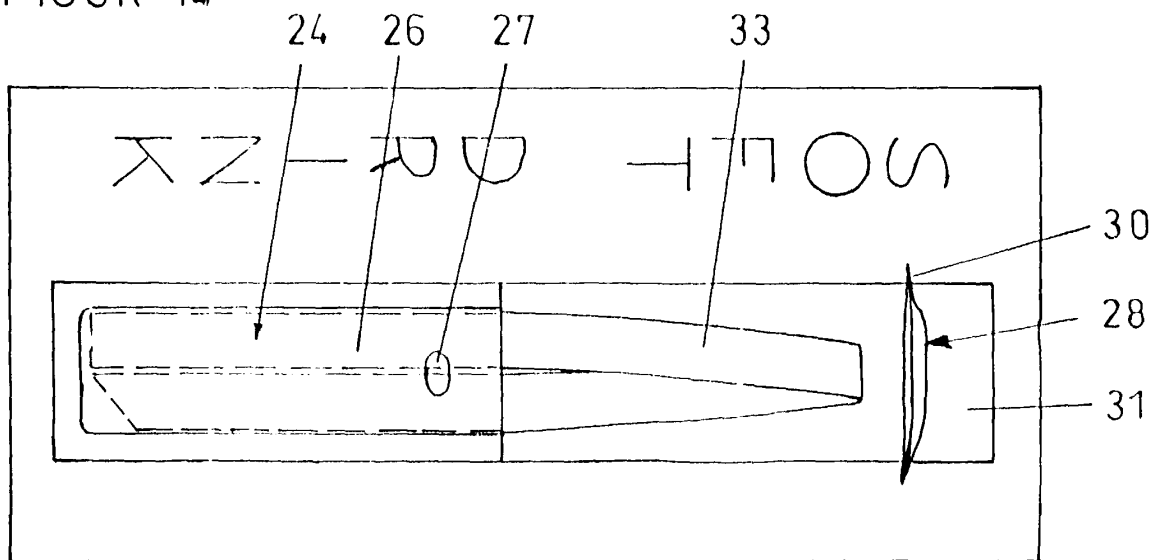


FIGURE 15



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EUROPEAN SEARCH REPORT

Application Number
EP 99 85 0198

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	WO 98 57867 A (WINBERG RAGNAR) 23 December 1998 (1998-12-23) * the whole document * -----	1-9	B65D77/28
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			B65D
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 12 May 2000	Examiner Fournier, J
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EP 99 85 0198

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12-05-2000

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