



(12)

**EUROPEAN PATENT APPLICATION**

(21) Application number : **92310321.2**

(51) Int. Cl.<sup>5</sup> : **B65D 55/08**

(22) Date of filing : **12.11.92**

(30) Priority : **12.11.91 AU 9421/91**  
**21.05.92 AU 2538/92**

(43) Date of publication of application :  
**09.06.93 Bulletin 93/23**

(84) Designated Contracting States :  
**AT BE CH DE DK ES FR GB GR IE IT LI LU MC**  
**NL PT SE**

(71) Applicant : **CARTER HOLT HARVEY PLASTIC**  
**PRODUCTS GROUP LIMITED**  
**Te Rapa Road**  
**Hamilton (NZ)**

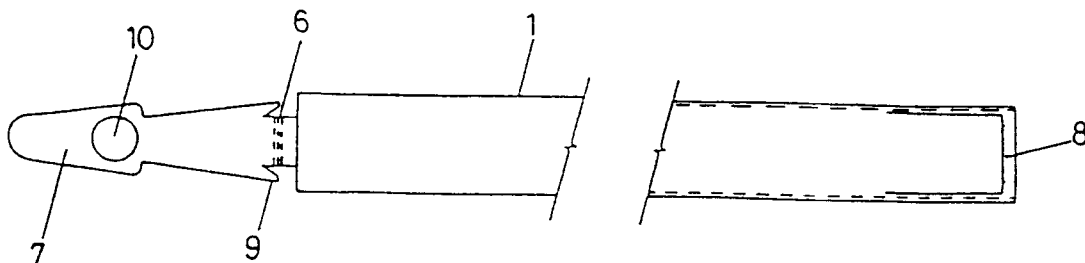
(71) Applicant : **CONCORD BANNER PTY. LTD.**  
**293 Bay Street**  
**Brighton, Victoria 3186 (AU)**

(72) Inventor : **Granat, Rodney John**  
**22 Blake Street**  
**Caulfield, Victoria 3162 (AU)**  
Inventor : **Pryor, Raymond John**  
**C/- Te Rapa Road**  
**Hamilton (NZ)**

(74) Representative : **Barlow, Roy James**  
**J.A. KEMP & CO. 14, South Square, Gray's Inn**  
**London WC1R 5LX (GB)**

(54) **Tamper indicating elements.**

(57) A method of enhancing the security of a screw fitted closure (2) of a container (3) which comprises, by whatever sequence of fitment, ensuring a plastics tamper indicating element (1) at least skeletally sheathes the surfaces of said closure (2) usually engaged for the manual removal thereof from the container (3), said element (1) being free to rotate about said closure (2) about said surfaces and having at least one frangible zone likely to evidence tampering should pressure be manually applied thereto to move the closure (2) synchronously with the element. The invention also consists in the tamper indicating element (1) and combinations thereof with a container (3) and/or closure (2).



**FIG 1**

## TECHNICAL FIELD

This invention relates to a tamper indicating element. It relates particularly to a tamper indicating element for use in conjunction with a closure which is removable from a container by twisting the closure.

## BACKGROUND ART

In recent years, it has become increasingly common for manufacturers to use tamper evident packaging systems. Such systems generally enable a consumer to tell, by means of a broken seal or some other indicator, whether a product has been opened or tampered with since leaving the manufacturer. Consumers therefore have greater confidence in products packaged in tamper indicating packaging.

Although there are numerous different types of packaging to which the principles of the present invention might be adapted, the present invention has particular applicability to containers which have closures which are removed by a twisting action. There are many different types of containers in this category, and they include such containers as toothpaste tubes, drink bottles and jars for preserves.

One of the most prevalent methods of providing tamper indication is to provide a tear-off strip integral with a closure, such that, when the closure is twisted, the tear-off strip breaks away from the closure and it is readily apparent that the container has been opened. Tamper indicators such as these are widely used on such containers as lemonade bottles and plastic milk containers, but they require the use of special moulding techniques in the moulding of the closure with the integral tear-off strip, and they require special application techniques to apply the closure to the bottle. Furthermore, they are suitable only for containers which have sufficiently long necks to accommodate the tear-off strip in addition to the closure.

One type of packaging system for which the integral closure and tear-off strip system is unsuitable is the multi-lug "twist off" closure system, such as is commonly used with jars of preserve. There are currently three different ways of providing tamper indication for such systems. These are:

1. A "pop" panel in a metal closure. When the closure is applied by the manufacturer, a vacuum is created within the container, causing a small portion in the centre of the closure to be depressed. When the container is opened for the first time, the vacuum seal is broken and the depressed portion of the closure pops up, so that it is evident that the container has been opened.

2. A paper tape may be applied over the closure in such a way that it is apparent that the container has been opened if the paper tape is broken or removed.

3. A shrink band may be applied in such a way that it encloses the closure and the top of the container. If the band is removed or broken, that is evidence that the container has been opened.

Although each of these methods provides some degree of tamper security, none of them provides complete security as it is sometimes possible to open a closure without triggering the tamper indicator or to replace the tamper indicator after the container has been reclosed.

## DISCLOSURE OF THE INVENTION

In a first aspect, the present invention consists in a tamper indicating element for use in conjunction with a closure which is removable from a container by twisting the closure relative to the container, the tamper indicating element comprising a sheath which is applicable around the periphery of the closure so that the closure cannot be grasped and twisted without removing the sheath, and when the sheath is grasped and twisted, it moves relative to the closure so that the closure cannot be removed from the container without a likelihood of evidence of tampering.

Preferably said sheath includes a frangible zone likely to show evidence of tampering should the sheath be squeezed so hard as to enable a twist opening of the closure relative to the container.

Preferably said sheath includes a top region (skeletal or otherwise) from which it depends substantially as a skirt.

Preferably said top region (skeletal or otherwise) defines a tear tab, ring pull or equivalent component able to be uplifted.

Preferably said uplifting is a frangible uplifting whereby frangible bridges or nibs are broken.

Preferably said sheath has a frangible zone capable of allowing the opening of said sheath, said frangible zone being capable of being opened under a pulling action of said tear tab, ring pull or equivalent component.

Preferably said sheath includes a plurality of resilient lugs that extend inwardly at an angle relative to the axis of said sheath, said resilient lugs being such as to allow the application of said sheath over a closure of appropriate dimensions by the plying outwardly of all of said lugs and thereafter their reassumption of a condition by said lugs which, by means of an abutment, will prevent the removal of said sheath from said closure.

Preferably said sheath is substantially circular.

Preferably said sheath has been a band that has been fabricated about the closure to form said sheath.

Preferably said sheath has an inward extension thereof in the form of an inwardly directed lip from the bottom of the sheath and the top of said sheath extends inwardly such that said lip can be positioned to

ply outwardly as the sheath is pressed onto the closure under the action of the closure to thereafter assume a condition co-acting with the closure that prevents easy removal of the sheath relative to the closure, the inward extensions at the top of the sheath preventing any lowering of the sheath below the closure.

Preferably said sheath includes a frangible zone which allows the breaking thereof in a tamper indicating mode to facilitate removal thereof from about the closure.

In a further aspect the invention consists in a container having a closure which is removable from the container by twisting the closure relative to the container wherein a tamper indicating element comprising a sheath has been applied around the periphery of the closure so that the closure cannot be grasped and twisted without removing the sheath and such that when the sheath is grasped and twisted it moves relative to the closure so that the closure cannot readily be removed from the container without a likelihood of evidence of tampering.

Preferably said sheath includes a frangible zone likely to show evidence of tampering should the sheath be squeezed so hard as to enable a twist opening of the closure relative to the container.

Preferably said sheath includes a top region (skeletal or otherwise) from which it depends substantially as a skirt.

Preferably said top region (skeletal or otherwise) defines a tear tab, ring pull or equivalent component able to be uplifted.

Preferably said uplifting is a frangible uplifting whereby frangible bridges or nibs are broken.

Preferably said sheath has a frangible zone capable of allowing the opening of said sheath, said frangible zone being capable of being opened under a pulling action of said tear tab, ring pull or equivalent component.

Preferably said sheath includes a plurality of resilient lugs that extend inwardly at an angle relative to the axis of said sheath, said resilient lugs being such as to allow the application of said sheath over a closure of appropriate dimensions by the plying outwardly of all of said lugs and thereafter their reassumption of a condition by said lugs which, by means of an abutment, will prevent the removal of said sheath from said closure without a likelihood of evidence of tampering.

Preferably said sheath is substantially circular.

Preferably said sheath has been a band that has been fabricated about the closure to form said sheath.

Preferably said sheath has an inward extension thereof in the form of an inwardly directed lip from the bottom of the sleeve and the top of said sleeve extends inwardly such that said lip was positioned to ply outwardly as the sheath was pressed onto the clo-

sure under the action of the closure to thereafter assume a condition co-acting with the closure that prevents easy removal of the sheath relative to the closure, the inward extensions at the top of the sheath preventing any lowering of the sheath below the closure.

Preferably said sleeve includes a frangible zone which allows the breaking thereof in a tamper indicating mode to facilitate removal thereof from about the closure.

In yet a further aspect, the present invention consists in a tamper indicating element for fitment over a closure, said element comprising:

a sheath region and a top region from which said sheath region depends as a skirt;

said sheath region having a frangible zone capable of allowing the opening of said sheath region and a plurality of resilient lugs that extend inwardly and upwardly from adjacent the bottom of the sheath region; and

said top region having a tear tab, ring pull or equivalent component frangibly able to be uplifted from the remainder (if any) of said top region and connecting to said sheath region adjacent and/or into said frangible zone;

the construction and arrangement being such that, in use, said tamper indicating element can be placed over a closure of a container as a result of the resilience of said lugs which assume a removal preventing interaction with said closure, said tamper indicating element making it difficult by the grasping of the sheath region to twist the closure of the container for the removal thereof owing to the prospect of rotation of the tamper indicating element relative to the closure without the prospect of damage to said frangible zone, the tamper indicating element being removable by an uplifting of said tear tab, ring pull or equivalent component frangibly and the use thereof to break the frangible zone of said sheath region to thereby open the sheath to effect removal notwithstanding the inward disposition of said lugs.

Preferably said frangible zone is provided with a plurality of frangible bridges across what is otherwise a discontinuity down said sheath region.

Preferably said tear tab, ring pull or equivalent component pulls into one side of said discontinuity.

Preferably said ring pull is located by frangible bridges or nibs which can be broken to achieve said uplifting.

Preferably said sheath region is substantially circular in cross-section of its axis.

In yet a further aspect, the present invention consists in a container having a closure which is removable from the container by twisting the closure relative to the container wherein a tamper indicating element, as previously defined, has been applied about said closure so that the closure cannot be grasped and twisted without removing the sheath such that

when the sheath is grasped and twisted it moves relative to the closure so that the closure cannot readily be removed from the container without a likelihood of evidence of tampering.

In yet a further aspect, the invention consists in a method of enhancing the security of a screw fitted closure of a container which comprises, by whatever sequence of fitment, ensuring a plastics tamper indicating element at least skeletally sheathes the surfaces of said closure usually engaged for the manual removal thereof from the container, said element being free to rotate about said closure about said surfaces and having at least one frangible zone likely to evidence tampering should pressure be manually applied thereto to move the closure synchronously with the element.

Preferably said element includes a pull tab feature that, until engaged, lies substantially over said closure of the container.

It is an object of this invention to overcome at least some of the disadvantages of the prior art and/or to at least provide the public with a useful choice.

According to the present invention there is provided a tamper indicating element for use in conjunction with a closure which is removable from a container by twisting the closure relative to the container, the tamper indicating element comprising a sheath which is applicable around the periphery of the closure so that the closure cannot be grasped and twisted without removing the sheath, and when the sheath is grasped and twisted it moves relative to the closure so that the closure cannot be removed from the container. Thus, if the tamper indicating element is present and intact, a prospective purchaser can be assured that the container has not been opened.

The shape of the tamper indicating element will depend upon the shape of the closure with which it is intended to cooperate. When the closure is generally cylindrical in shape with a closed top face and an open bottom face, it is preferred although not essential that the tamper indicating element also be generally cylindrical with its internal dimensions such that it fits loosely around the closure so as to prevent a person from grasping and twisting the closure without removing the tamper indicating element. it will be appreciated that the external shape of the tamper indicating element may in fact be any shape provided that the internal dimensions allow the element to perform this function.

The construction of the tamper indicating element is such as to prevent rotation of the closure when the tamper indicating element is rotated. This construction may be achieved in a suitable manner. One suitable manner of construction comprises the use of substantially rigid materials in the construction of the tamper indicating element, so that a person cannot firmly grasp the closure by squeezing the tam-

per indicating element Another method is by using a substantially frictionless surface as the internal surface of the tamper indicating element so that the internal surface of the tamper indicating element will not afford a grip on the closure when the tamper indicating element is squeezed.

It is preferred that the tamper indicating element be provided with locating means for holding it in position relative to the closure. In an embodiment where the closure is substantially cylindrical with a closed top and an open bottom it is preferred that the locating means comprise an annular lip extending from the inner surface of the tamper indicating element over the edges of the top of the closure and further similar annular lip extending over some or all of the bottom edge of the closure. A series of tabs may be used as an alternative to a top lip or bottom lip, and it is possible to construct a satisfactory element having only a bottom lip or tabs and no top lip.

The tamper indicating element may be made from any suitable material. Numerous types of plastics, metal or combinations of these form suitable materials.

It is preferred that the tamper indicating element further comprise a tab attached to the element such that a person may pull the tab to break and remove the tamper indicating element and then open the container. The tab may be formed integrally with the tamper indicating element or it may be attached subsequently. It is preferred that a line of weakness in the tamper indicating element be located adjacent the tab to assist in breaking the tamper indicating element.

The tamper indicating element may be applied to the closure in any suitable manner. One suitable method is by heating and shrinking the element. The preferred method, however, is to construct the tamper indicating element as a strip or band with an arrowhead at one end and a co-operating slit or hole at the other end. The element is then installed by wrapping the band around the periphery of the closure and inserting the arrowhead through the slit. It is preferred that the edges of the arrowhead be flexible such that they permit the arrowhead to be inserted through the slit but prevent the arrowhead from passing back through the slit after it has been inserted. In a preferred embodiment, the arrowhead may also serve as a tab, and a line of weakness in the tamper indicating element may be located near the arrowhead. It is preferred that the tamper indicating element be moulded in a curved shape so that the retaining flanges do not distort in use.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention will now be further described with reference to the drawings. It is to be understood that the drawings represent only embodiments of the present invention, and they are not to be construed

5

10

15

20

25

30

35

40

45

50

55

as limiting the scope of the foregoing disclosure.

Figure 1 is a side elevation of a tamper indicating element according to a first embodiment of the present invention, prior to installation on a closure;

Figure 2 is a perspective view of a container with a closure to which the tamper indicating element of Figure 1 has been applied;

Figure 3 is a partial cross-sectional view of the container, closure and tamper indicating element of Figure 2, taken along the line III-III;

Figure 4 is a plan view of a tamper indicating element in accordance with a second embodiment of the invention;

Figure 5 is a cross-sectional view of said tamper indicating element of Figure 4;

Figure 6 is a side elevation of a jar having a closure thereon about which is provided a third embodiment of tamper indicating element in accordance with the present invention;

Figure 7 is a plan view of the tamper indicating element of Figure 6;

Figure 8 is a cross-section through one of the in-turned lugs of the tamper indicating element of Figures 6 and 7;

Figure 9 is a cross-section of one of the frangible bridges for locating the ring pull feature;

Figure 10 is a side elevational view showing, in greater detail and without the closure of the jar of Figure 6, the side openings thereof and the inwardly projecting lug of that opening; and

Figure 11 is a plan view showing, in greater detail, an opening as shown in side elevation in Figure 10.

## DETAILED DESCRIPTION OF THE INVENTION

With reference to Figures 1 to 3, a first embodiment is disclosed. Tamper indicating element 1 is suitable for use in conjunction with closure 2 and container 3. Closure 2 is removable from container 3 by twisting. Tamper indicating element 1, when installed as indicated in Figure 2, forms a sheath around the periphery of closure 2 so that closure 2 cannot be grasped and twisted without removing tamper indicating element 1. Furthermore, when tamper indicating element 1 is grasped and twisted, it moves relative to closure 2, so that closure 2 cannot be removed from the container until tamper indicating element 1 has been broken and removed.

Tamper indicating element 1 includes locating means comprising top lip 4 projecting from the inner surface of the tamper indicating element and extending over the edge portions of closure 2, and bottom lip 5, projecting from the inner surface of tamper indicating means 1 and extending over a portion of the bottom edge of closure 2. The locating means thus ensure that tamper indicating element 1 cannot be

slipped over the top or the bottom of closure 2.

Tamper indicating element 1 has line of weakness 6 located at one end near arrowhead tab 7, so that tamper indicating element 1 can be easily broken and removed.

To install tamper indicating element 1 on closure 2, tab arrowhead 7 is first inserted loosely through slot 8 so that the tamper indicating element takes on a substantially cylindrical or annular shape. Tamper indicating element 1 is then placed over the top of closure 2. Because tab arrowhead 7 has only been inserted loosely through slot 8, bottom lip 5 does not prevent tamper indicating element 1 from fitting over closure 2. Because top lip 4 extends inwardly further than does bottom lip 5, it retains tamper indicating element 1 in the correct position. Tamper indicating element 1 is then tightened into position by pulling tab arrowhead 7 with the assistance of hole 10 right through slot 8 until resilient edges 9 lock tab arrowhead 7 into position, preventing tab arrowhead 7 from returning back through slot 8. After this tightening has occurred, bottom lip 5 prevents tamper indicating element 1 from being slipped over the top of closure 2 so that tamper indicating element 1 may be removed only by pulling tab arrowhead 7 and breaking tamper indicating element 1 at weakened line 6.

The internal surface of tamper indicating element 1 is smooth, so that a person cannot obtain a grip on closure 2 by squeezing tamper indicating element 1.

It will be seen that the apparatus of the preferred embodiment may be adapted for use with closures which do not require a twisting action for removal from their containers, if the bottom lip of the tamper indicating means can be installed beneath an outwardly projecting ridge on the neck of the container, with the top lip installed above the edges of the top face of the closure, so that the tamper indicating element serves the dual functions of indicating whether the container has been opened and retaining the closure on the container.

Referring now to a second embodiment (Figures 4 and 5), the tamper indicating element includes a ring pull feature 11 to facilitate removal of the tamper indicating element and a plurality of frangible bridges or nibs 12 locating the ring pull 11. An inward retaining lip 13 retains the tamper indicating element upon the container closure 4 such as to allow free rotation of the said tamper indicating element in relation to the said container closure. Frangible bridges or nibs 15 (preferably 3) allows the ring pull when uplifted to break the tamper indicating element at the line A-A (16) to achieve a tamper evident removal.

The tamper indicating element is suitably injection moulded from high density polyethylene, or from polypropylene, preferably in a configuration with the retaining lip 13 formed pointing downwardly to allow ease of moulding. The retaining lip 13 may then be inverted to its operational configuration as shown in

Figure 2 with a standard inversion machine of the type well known in the art.

The tamper indicating element may readily be applied to the container closure, at standard line speeds, with standard capping equipment of a type well known in the art.

The most preferred form of tamper indicating element is that shown in Figures 6 through 11 which has been adapted to provide evidence of tampering on a glass jar sealed by a closure in the form of a screw threaded lid. The tamper indicating element is preferably formed from polypropylene as a unitary item.

As best can be seen in Figure 6, the jar 17 has a lid 18 of a screw threaded type which is not able to be unscrewed while the tamper indicating element 19 is in place as shown in Figure 6. Indeed, access is denied to the lid 18 for the purpose of opening the jar 17 until such time as the polypropylene sheath is broken by breaking nibs 20 (Figures 6 and 7) to allow the opening of the sheath along the line of the elongate opening 21 between the two nibs or bridges 20.

The sheath, itself, has a number of openings which can be seen in Figures 6 and 7 but which are shown in a similar way, individually and in more detail, in Figures 10 and 11. These openings 22 have extending up from the sheath portion extending below each opening 22 a lug or projection 23 which is shown in section with more clarity in Figure 8. These projections 23 are positioned to prevent the removal of the tamper indicating element from the assembly as shown in Figure 6 unless one and preferably both of the frangible bridges or nibs 20 are broken.

Referring to the plan view of Figure 7, the ring 24 is connected by a portion 25 which will first break the uppermost nib or bridge 20 when used as a pull tab before breaking the lowermost nib 20 to thus allow removal of the tamper indicating element

The ring 24 of the pull tab or ring pull is located in the position prior to being used by frangible bridges or nibs 26 which preferably have a cross-section as shown in Figure 9 with the preferred frangible regions being adjacent to the pull tab and having the reduced size indicated by the broken lines in Figure 9. Preferably, the frangible bridges or nibs 20 have a similar size as that shown in broken lines for the weakened regions of the nibs or bridges 26.

In use, a lidded container can have the tamper indicating element pushed over the lid and retained thereby by the lugs 23 which, during fitment of the tamper indicating element, easily pass over the lid by virtue of their flex but which prevent the easy removal thereof without showing evidence of tampering, whether by distorting part of the element or breaking at least one or more of the frangible bridges.

In a further form of the invention, a tamper indicating element, in accordance with the previous embodiments, may, as an additional feature, include bearing means or projections to catch on lugs or sim-

ilar projections projecting from the container itself. These lugs or projections on the container and corresponding catches on the tamper indicating element may allow the tamper indicating element to be broken through a frangible portion upon rotation about the container. This would act as a further indicator of any tampering with the enclosure as well as providing for a quick removal of the tamper indicating element. In such an embodiment, spaced apart lugs or projections on the container would, upon twisting of the tamper indicating element, catch at least one bearing member or projection on the tamper indicating element which would force the tamper indicating element to distort and, therefore, break a frangible portion associated with the tamper indicating element. It is preferred that embodiments incorporating this feature use the feature in conjunction with one of the previously described features for tamper indication.

The foregoing provides preferred embodiments of the invention

## Claims

1. A tamper indicating element for use in conjunction with a closure which is removable from a container by twisting the closure relative to the container, the tamper indicating element comprising a sheath which is applicable around the periphery of the closure so that the closure cannot be grasped and twisted without removing the sheath, and when the sheath is grasped and twisted, it moves relative to the closure so that the closure cannot be removed from the container without a likelihood of evidence of tampering.
2. A tamper indicating element as claimed in Claim 1 wherein said sheath includes a frangible zone likely to show evidence of tampering should the sheath be squeezed so hard as to enable a twist opening of the closure relative to the container.
3. A tamper indicating element as claimed in Claims 1 or 2 wherein said sheath includes a top region (skeletal or otherwise) from which it depends substantially as a skirt.
4. A tamper indicating element as claimed in Claim 3 wherein said top region (skeletal or otherwise) defines a tear tab, ring pull or equivalent component able to be uplifted.
5. A tamper indicating element as claimed in Claim 4 wherein said uplifting is a frangible uplifting whereby frangible bridges or nibs are broken.
6. A tamper indicating element as claimed in Claims 4 or 5 wherein said sheath has a frangible zone

capable of allowing the opening of said sheath, said frangible zone being capable of being opened under a pulling action of said tear tab, ring pull or equivalent component.

7. A tamper indicating element as claimed in Claim 1 wherein said sheath includes a plurality of resilient lugs that extend inwardly at an angle relative to the axis of said sheath, said resilient lugs being such as to allow the application of said sheath over a closure of appropriate dimensions by the plying outwardly of all of said lugs and thereafter their reassumption of a condition by said lugs which, by means of an abutment, will prevent the removal of said sheath from said closure.
8. A tamper indicating element as claimed in Claim 1 wherein said sheath is substantially circular.
9. A tamper indicating element as claimed in Claim 1 wherein said sheath has been a band that has been fabricated about the closure to form said sheath.
10. A tamper indicating element as claimed in Claim 1 wherein said sheath has an inward extension thereof in the form of an inwardly directed lip from the bottom of the sheath and the top of said sheath extends inwardly such that said lip can be positioned to ply outwardly as the sheath is pressed onto the closure under the action of the closure to thereafter assume a condition co-acting with the closure that prevents easy removal of the sheath relative to the closure, the inward extensions at the top of the sheath preventing any lowering of the sheath below the closure.
11. A tamper indicating element as claimed in Claim 10 wherein said sheath includes a frangible zone which allows the breaking thereof in a tamper indicating mode to facilitate removal thereof from about the closure.
12. A container having a closure which is removable from the container by twisting the closure relative to the container wherein a tamper indicating element comprising a sheath has been applied around the periphery of the closure so that the closure cannot be grasped and twisted without removing the sheath and such that when the sheath is grasped and twisted it moves relative to the closure so that the closure cannot readily be removed from the container without a likelihood of evidence of tampering.
13. A container as claimed in Claim 12 wherein said sheath includes a frangible zone likely to show

evidence of tampering should the sheath be squeezed so hard as to enable a twist opening of the closure relative to the container.

- 5 14. A container as claimed in Claims 12 or 13 wherein said sheath includes a top region (skeletal or otherwise) from which it depends substantially as a skirt.
- 10 15. A container as claimed in Claim 14 wherein said top region (skeletal or otherwise) defines a tear tab, ring pull or equivalent component able to be uplifted.
- 15 16. A container as claimed in Claim 15 wherein said uplifting is a frangible uplifting whereby frangible bridges or nibs are broken.
- 20 17. A container as claimed in Claims 15 or 16 wherein said sheath has a frangible zone capable of allowing the opening of said sheath, said frangible zone being capable of being opened under a pulling action of said tear tab, ring pull or equivalent component.
- 25 18. A container as claimed in Claim 12 wherein said sheath includes a plurality of resilient lugs that extend inwardly at an angle relative to the axis of said sheath, said resilient lugs being such as to allow the application of said sheath over a closure of appropriate dimensions by the plying outwardly of all of said lugs and thereafter their reassumption of a condition by said lugs which, by means of an abutment, will prevent the removal of said sheath from said closure without a likelihood of evidence of tampering.
- 30 19. A container as claimed in Claim 12 wherein said sheath is substantially circular.
- 35 20. A container as claimed in Claim 12 wherein said sheath has been a band that has been fabricated about the closure to form said sheath.
- 40 21. A container as claimed in Claim 1 wherein said sheath has an inward extension thereof in the form of an inwardly directed lip from the bottom of the sleeve and the top of said sleeve extends inwardly such that said lip was positioned to ply outwardly as the sheath was pressed onto the closure under the action of the closure to thereafter assume a condition co-acting with the closure that prevents easy removal of the sheath relative to the closure, the inward extensions at the top of the sheath preventing any lowering of the sheath below the closure.
- 45 22. A container as claimed in Claim 21 wherein said
- 50
- 55

sleeve includes a frangible zone which allows the breaking thereof in a tamper indicating mode to facilitate removal thereof from about the closure.

- 23.** A tamper indicating element for fitment over a closure, said element comprising: 5  
 a sheath region and a top region from which said sheath region depends as a skirt;  
 said sheath region having a frangible zone capable of allowing the opening of said sheath region and a plurality of resilient lugs that extend inwardly and upwardly from adjacent the bottom of the sheath region; and 10  
 said top region having a tear tab, ring pull or equivalent component frangibly able to be uplifted from the remainder (if any) of said top region and connecting to said sheath region adjacent and/or into said frangible zone; 15  
 the construction and arrangement being such that, in use, said tamper indicating element can be placed over a closure of a container as a result of the resilience of said lugs which assume a removal preventing interaction with said closure, said tamper indicating element making it difficult by the grasping of the sheath region to twist the closure of the container for the removal thereof owing to the prospect of rotation of the tamper indicating element relative to the closure without the prospect of damage to said frangible zone, the tamper indicating element being removable by an uplifting of said tear tab, ring pull or equivalent component frangibly and the use thereof to break the frangible zone of said sheath region to thereby open the sheath to effect removal notwithstanding the inward disposition of said lugs. 20 25 30 35
- 24.** A tamper indicating element as claimed in Claim 23 wherein said frangible zone is provided with a plurality of frangible bridges across what is otherwise a discontinuity down said sheath region. 40
- 25.** A tamper indicating element as claimed in Claim 24 wherein said tear tab, ring pull or equivalent component pulls into one side of said discontinuity. 45
- 26.** A tamper indicating element as claimed in any one of Claims 23 to 25 wherein said ring pull is located by frangible bridges or nibs which can be broken to achieve said uplifting. 50
- 27.** A tamper indicating element as claimed in any one of Claims 23 to 26 wherein said sheath region is substantially circular in cross-section of its axis. 55
- 28.** A container having a closure which is removable

from the container by twisting the closure relative to the container wherein a tamper indicating element, as claimed in any one of Claims 23 to 26, has been applied about said closure so that the closure cannot be grasped and twisted without removing the sheath such that when the sheath is grasped and twisted it moves relative to the closure so that the closure cannot readily be removed from the container without a likelihood of evidence of tampering.

- 29.** A method of enhancing the security of a screw fitted closure of a container which comprises, by whatever sequence of fitment, ensuring a plastics tamper indicating element at least skeletally sheathes the surfaces of said closure usually engaged for the manual removal thereof from the container, said element being free to rotate about said closure about said surfaces and having at least one frangible zone likely to evidence tampering should pressure be manually applied thereto to move the closure synchronously with the element.
- 30.** A method as claimed in Claim 31 wherein said element includes a pull tab feature that, until engaged, lies substantially over said closure of the container.

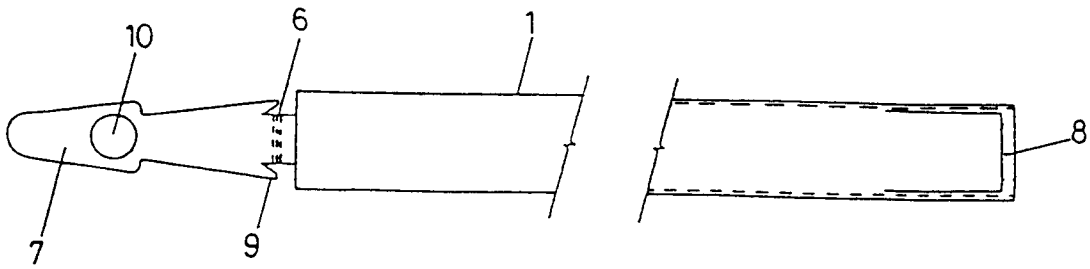


FIG 1

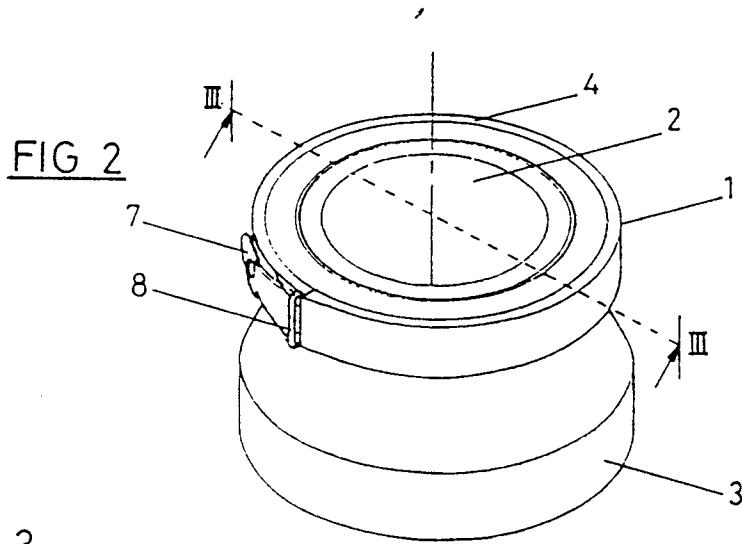
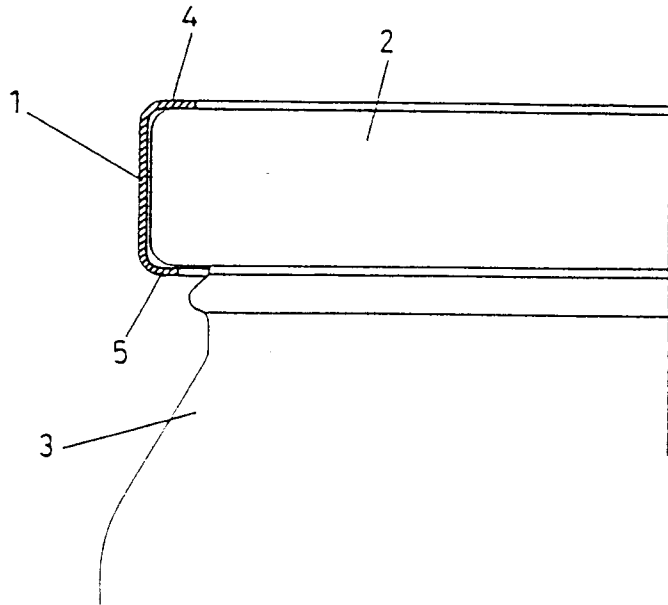
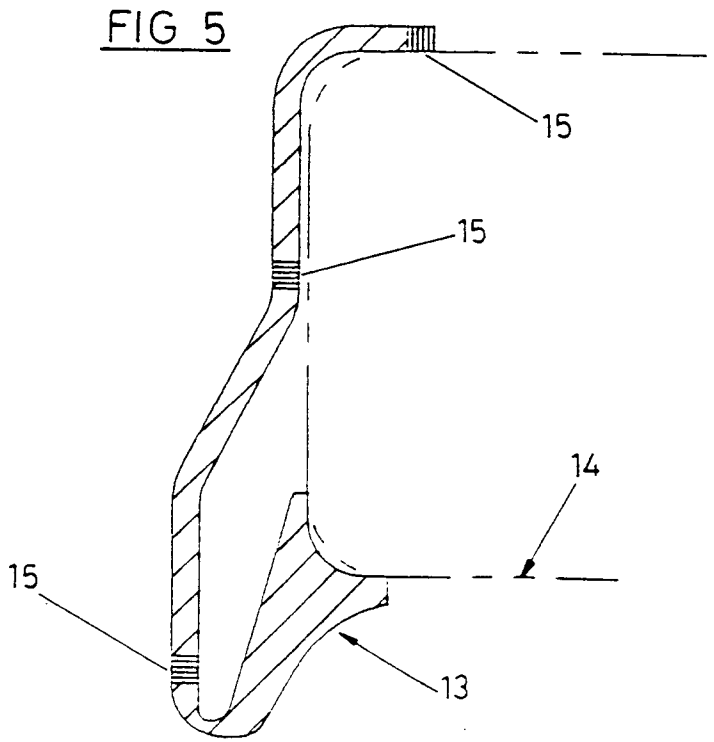
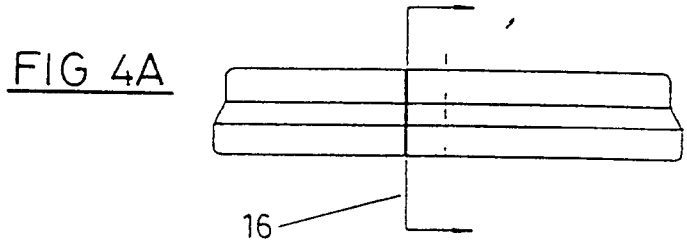
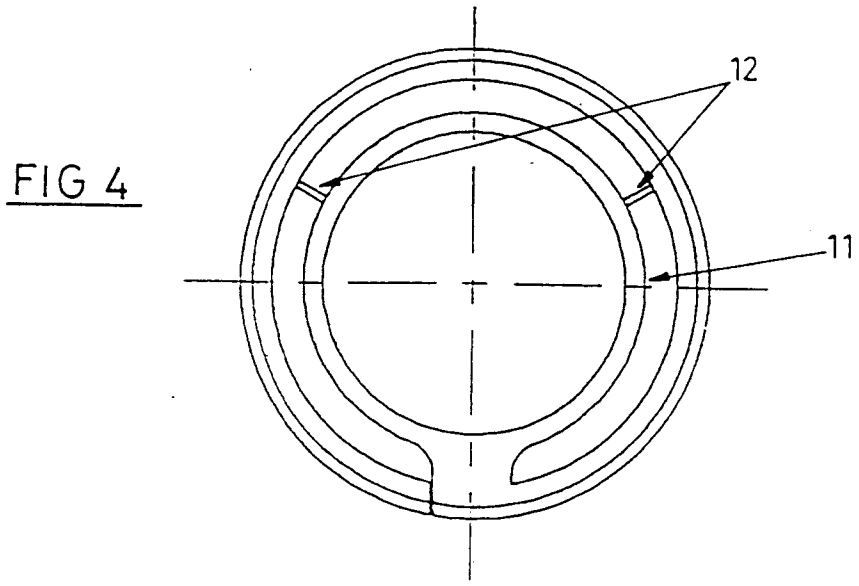


FIG 2

FIG 3





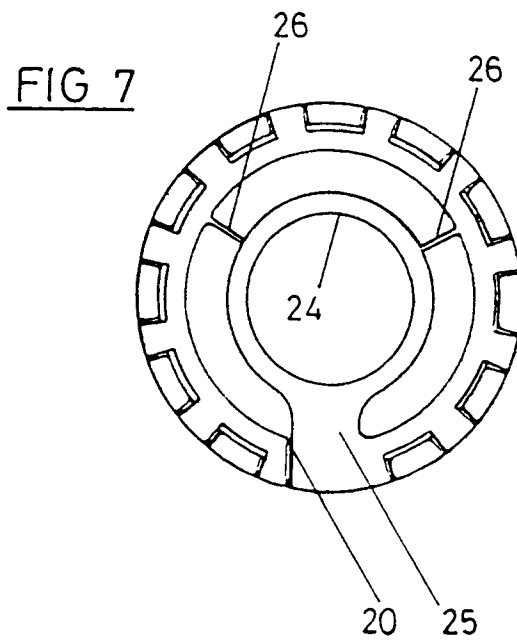
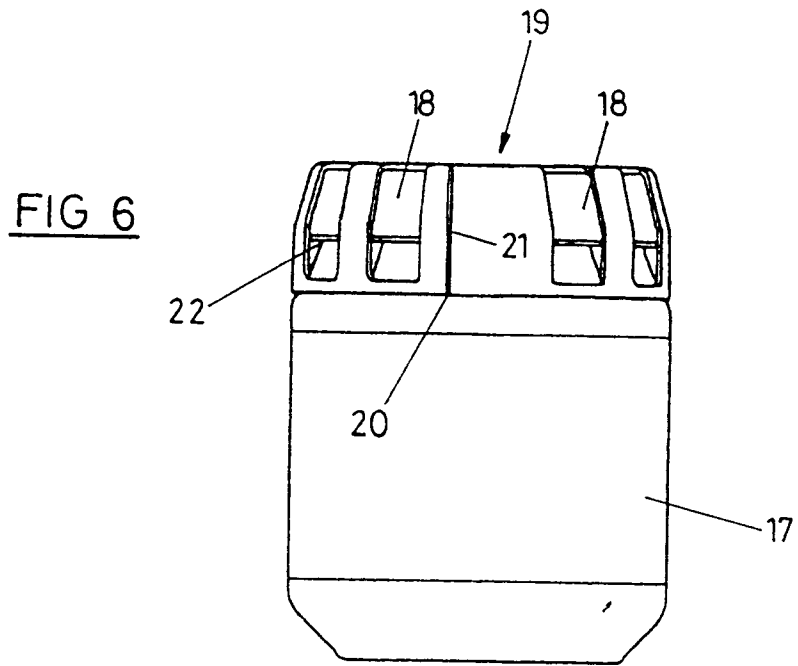


FIG 9



FIG 8

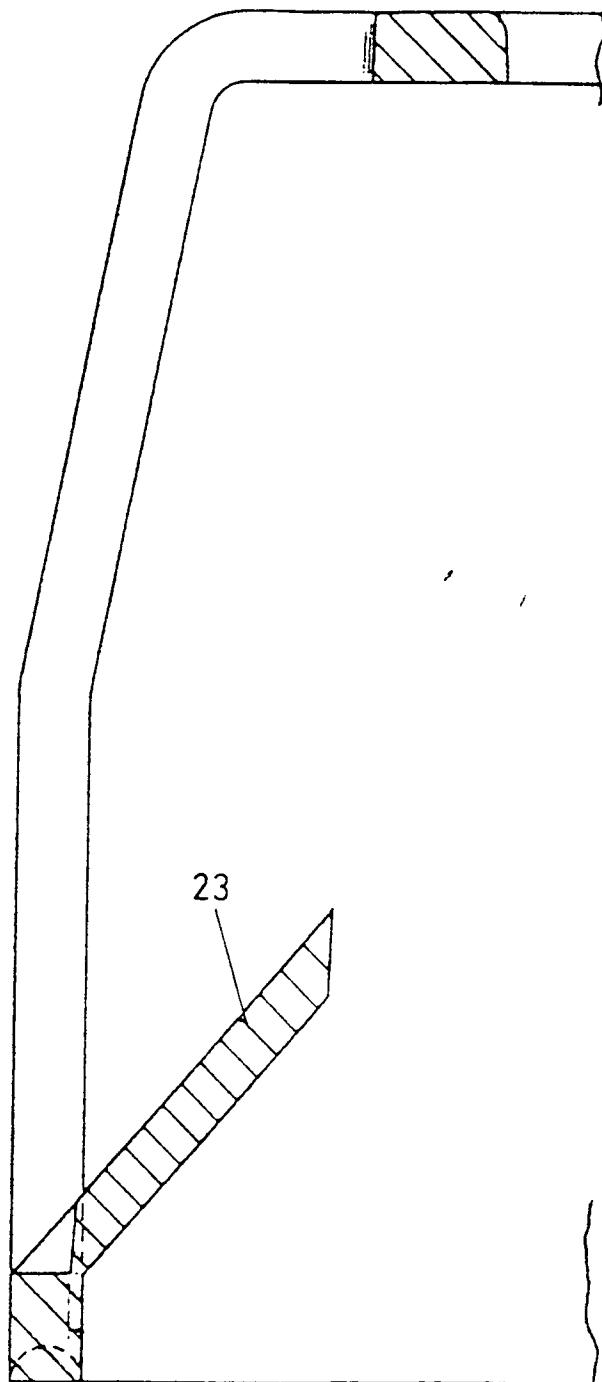


FIG 10

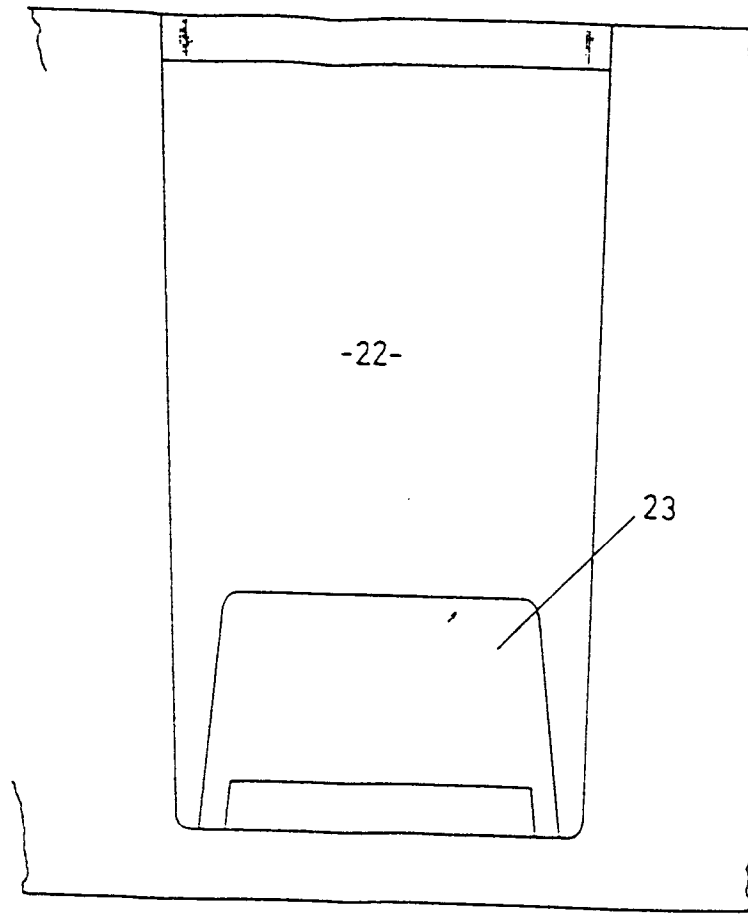
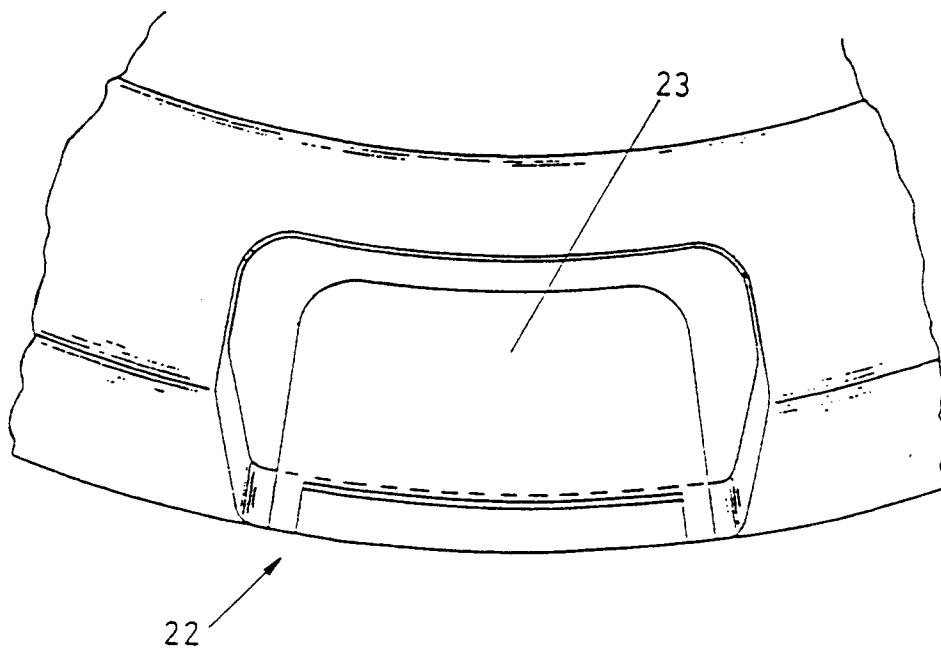


FIG 11





European Patent Office

EUROPEAN SEARCH REPORT

Application Number

EP 92 31 0321

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.5)
X	GB-A-268 206 (THE JACKSON MANUFACTURING COMPANY)  * the whole document * ---	1-4, 6, 8-15, 17, 19-22	B65D55/08
X	DE-A-2 334 730 (CONTINENTAL CAN CO., INC.)  * page 4, line 12 - page 5, line 7; figures 1-3 * A	1, 4, 5, 12, 14-16, 23-30	
	---	2-4, 6, 8, 17, 19	
X	FR-A-2 396 696 (SOCIÉTÉ ROVIP S.A.)  * the whole document * ---	1, 7, 12, 18	
A	US-A-4 784 279 (OSTING ET AL.) * the whole document * -----	1-30	
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			B65D
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 22 FEBRUARY 1993	Examiner ELMEROS C.
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		I : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ..... & : member of the same patent family, corresponding document	

EPO FORM 1503 01.92 (P0401)