



Europäisches Patentamt
European Patent Office
Office européen des brevets



(11) **EP 1 063 173 A1**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
27.12.2000 Bulletin 2000/52

(51) Int. Cl.⁷: **B65D 43/02**

(21) Application number: **00202135.0**

(22) Date of filing: **19.06.2000**

(84) Designated Contracting States:
**AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE**
Designated Extension States:
AL LT LV MK RO SI

(30) Priority: **22.06.1999 IT MI990411 U**

(71) Applicant:
MPG MANIFATTURA PLASTICA S.R.L.
21013 Gallarate-Varese (IT)

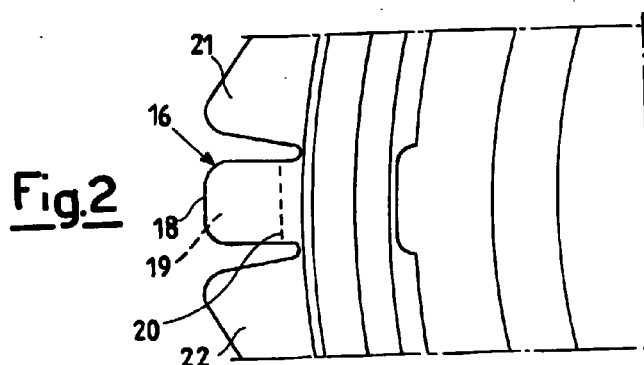
(72) Inventors:
• **Perego, Mario**
21013 Gallarate-Varese (IT)
• **Perego, Giampiero**
21013 Gallarate - Varese (IT)

(74) Representative:
Parisi, Luigi et al
Ing. Barzanò & Zanardo Milano S.p.A.
Via Borgonuovo 10
20121 Milano (IT)

(54) **Container with tamper-proof closure**

(57) A container with tamper-proof closure (11) of the type comprising a containment portion (12) and a cover (13) applicable onto it, shaped edges (15) of the cover (13) being engageable on complementary shaped edges (14) obtained in an upper portion of edge of the containment portion (12) and engagement elements (19) being provided between the cover and the containment portion, wherein the engagement elements are breakable (in 20) and are made up of

tongues (17, 18) radially protruding outwards both from the upper edge portion (14) of the containment portion (12) and from the shaped edges (15) of the cover (13), whereby said tongues, once the product has been introduced, are engaged through welding (19), said tongues being provided with pre-cut lines (20) for the disjunction from the container (11).



EP 1 063 173 A1

Description

[0001] The present invention relates to a container with tamper-proof closure.

[0002] In the packaging field, there are several box-shaped containers that show whether there has been an attempt to unduly open them.

[0003] In most cases, there are provided parts of the container that, once the container itself has been opened, or its cover removed, show the occurrence of a first opening, indicating that the product contained in it may have been replaced or tampered with, most of all if the product is foodstuff.

[0004] Some of these already known containers are provided with complex or sophisticated mechanisms that must be arranged in place after the product has been packaged, with significant costs due to the complexity of the parts that are fixedly adjoined without breaking.

[0005] Moreover, it must be considered that said containers provided with elements proving the occurrence of a first opening are not easy to store due to the presence of these safe-closure elements.

[0006] In some cases, the elements of firm closure are arranged in areas that can accidentally come into contact with other objects or containers, thus breaking, although unintentionally, perhaps during storage.

[0007] It must also be considered that the realisation of elements that prove the breaking attempt is not very easy when the container has a circular or similar shape. This is because the portions that must be provided with said elements must usually be numerous. During the necessary opening by the actual consumer, this can imply some problems in the opening step itself.

[0008] Object of the present invention is that of providing a container with tamper-proof closure, which should be particularly easy to realise and open.

[0009] Another object is that of providing a container with tamper-proof closure wherein the closing elements should be protected from accidental opening, thus resulting safe.

[0010] Another object is that of providing a container with tamper-proof closure, which could be also applied to circular-shaped containers, with easy opening at the moment of the effective consumption.

[0011] These objects according to the present invention are attained by realising a container with tamper-proof closure, of the type comprising a containment portion and a cover applicable onto it, shaped edges of said cover being engageable on complementary shaped edges obtained in an upper edge portion of said containment portion, and breakable engagement elements being provided between said cover and said containment portion, characterised in that said breakable engagement elements are made up of tongues radially protruding outwards both from said upper edge portion of said containment portion, and from said shaped edges of said cover, whereby said tongues,

once introduced the product, are engaged through welding, said tongues being provided with pre-cut lines for the disjunction from said container.

[0012] Preferably, said tongues are arranged inside, and they are sided by pairs of portions, also protruding radially outwards, which extend straight ahead from at least one among said shaped edges of said cover and said upper edge portion of said containment portion.

[0013] Advantageously, said pre-cut lines are arranged according to the same pattern as the peripheral portion of said container.

[0014] Further features and advantages of a container with tamper-proof closure according to the present invention will appear more clearly from the following description, made as an example and not limitative, with reference to the attached schematic drawings. In such drawings:

- Figure 1 shows a top plan view of a container according to the present invention;
- Figure 2 shows an enlarged top plan view of a portion of the container, in which a breakable engagement element is provided;
- Figure 3 shows a schematic section of a half of the container of figure 1 in sealed position; and
- Figure 4 shows a schematic section of a half of the container of figure 1 in open position.

[0015] With reference to the figures, there is shown a container with tamper-proof closure according to the present invention, which is as a whole indicated with reference numeral 11.

[0016] The container 11, which in the example has a circular shape, but which could also have another shape, such as square, rectangular, etc., is of the type comprising a lower containment portion 12, and an upper cover 13, applicable onto it. The parts of the container are generally realised through moulding of plastic materials for alimentary use.

[0017] As shown in the figures, the lower containment portion 12 presents edges 14 shaped as upside-down U obtained in an upper edge portion, and that cover 13 also presents edges 15 shaped as upside-down U.

[0018] These shaped edges 14 and 15 are complementary with one another and are engageable to realise a perimetricaly sealed closure of the container, once the food product, such as for example a cake or an ice-cream not shown, has been inserted.

[0019] In a localised portion of container 11, both on cover 13 and on the lower containment portion 12, on said shaped edges 14 and 15 there are provided breakable engagement elements, indicated as a whole with reference numeral 16.

[0020] In figures 1 and 2 it can be noted that the breakable engagement elements 16 are determined by localised tongues 17 and 18 that protrude and extend radially outwards from cover 13 and from the contain-

ment portion 12.

[0021] Tongues 17 and 18 are engaged with one another through welding in a welded portion indicated with reference numeral 19, where they are firmly set once the product has been introduced in the container thus mounted and closed, although at the beginning.

[0022] In addition, it must be noted that the tongues 17 and 18, in one portion thereof arranged between the welded portion 19 and the portion which is the link to the cover 13 and to the containment portion 12, are provided with pre-cut lines 20. These pre-cut lines 20, when stressed by the buyer of the container, cause the breaking and the disjunction of the welded portion 19.

[0023] The occurrence of the breaking of the pre-cut lines 20 allows a separation between cover 13 and the containment portion 12, thus opening of the container 11 and providing direct accessibility to the food product contained into it.

[0024] It must be noted that tongues 17 and 18 are arranged in a container in at least two positions reciprocally opposed onto the container, so as to guarantee its closure. In the example shown, there are as many as four of these pairs of tongues 17 and 18 which, in a circular container such as a baking-tin, give in any case an optimum guarantee.

[0025] In a preferred example of embodiment of the container of the present invention, such as that illustrated, tongues 17 and 18, engaged with one another, are arranged within a pair of protruding portions 21 and 22, also radially facing outwards.

[0026] In the example of embodiment shown, these two protruding portions 21 and 22 are realised in the shape of ramps that, starting from the external edge or from cover 13, or even from the external edge of the containment portion 12, extend outwards up to reaching a height similar to that of tongues 17 and 18. Preferably, these two protruding portions 21 and 22 could have a radial outward extension greater than that of tongues 17 and 18, so as to prevent that the same accidentally come into contact with, or hit, other objects both during handling at the factory and during transport, and even during commercial handling (for example, when displayed on the shop shelves).

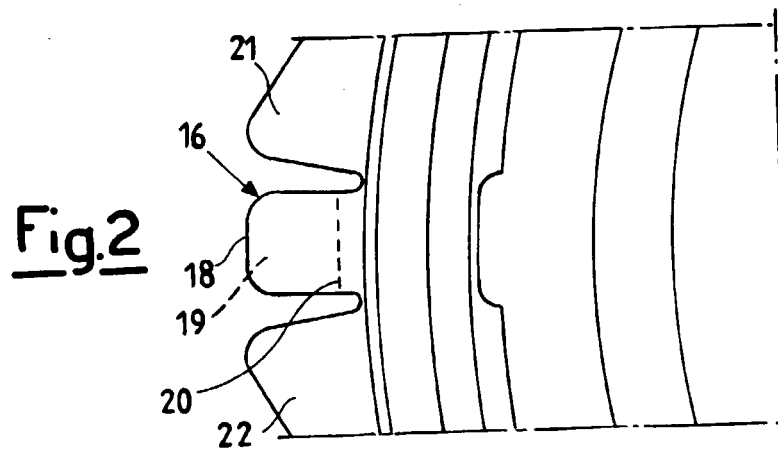
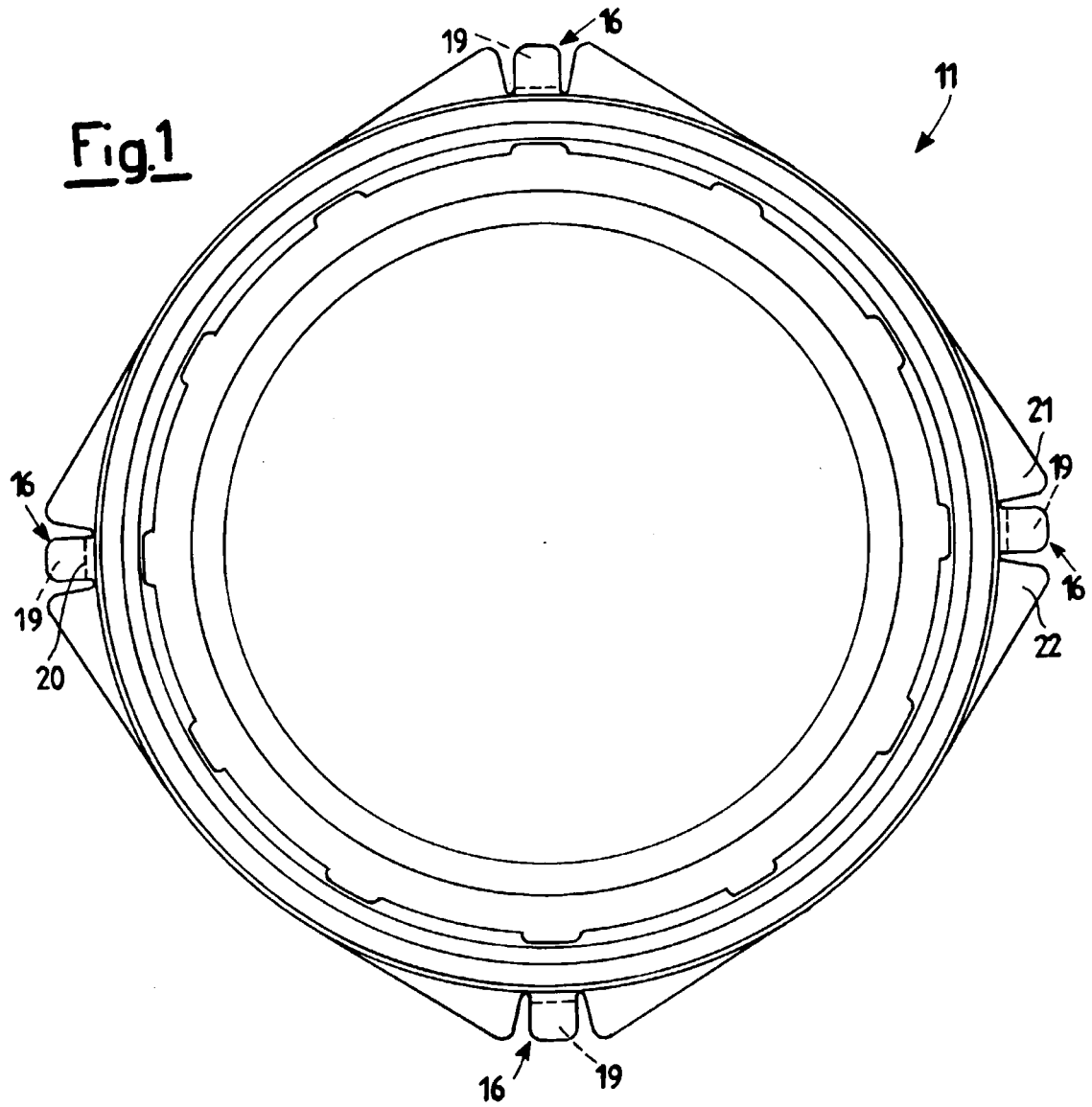
[0027] In this way, there is the guarantee that the tongues are broken only due to tampering, and not accidentally, thus avoiding to reject products that actually have not been tampered with and/or have not been object of a tampering attempt.

[0028] It must also be underlined that in the example of embodiment shown, the pre-cut lines 20 are arranged with the same pattern as the peripheral profile of the container.

[0029] In this way, once opened, the remaining part of tongues 17 and 18 does not disturb the user and is not dangerous for the same.

Claims

1. Container with tamper-proof closure (11) of the type comprising a containment portion (12) and a cover (13) applicable onto it, shaped edges (15) of said cover (13) being engageable on complementary shaped edges (14) obtained in an upper portion of edge of said containment portion (12) and engagement elements (19) being provided between said cover and said containment portion, characterised in that said engagement elements are breakable (in 20) and are made up of tongues (17, 18) radially protruding outwards from both said upper edge portion (14) of said containment portion (12) and from said shaped edges (15) of said cover (13), whereby said tongues, (19), once the product has been introduced, are engaged through welding, said tongues (17, 18) being provided with pre-cut-lines (20) for the disjunction from said container (11).
2. Container according to claim 1, characterised in that said tongues (17, 18) are arranged inside, and are sided by pairs of portions (21, 22), also radially protruding outwards, which directly extend from at least one between said shaped edges (14, 15) of said cover (13) and/or said upper edge portion of said containment portion (12).
3. Container according to claim 2, characterised in that said protruding portions (21, 22) are realised in the shape of ramps that start from one of said edges (14, 15) and extend outwards up to reaching a height similar to that of said tongues (17, 18).
4. Container according to claim 2, characterised in that the height of said protruding portions (21, 22) is greater than that of said tongues (17, 18).
5. Container according to claim 1, characterised in that said pre-cut lines (20) are arranged with the same pattern as the peripheral profile of said container (11).
6. Container according to any one of the previous claims, characterised in that there are provided four pairs of tongues (17, 18) arranged at opposed sides with respect to the peripheral profile of the container.
7. Container according to any one of the previous claims, characterised in that said container has a circular shape.



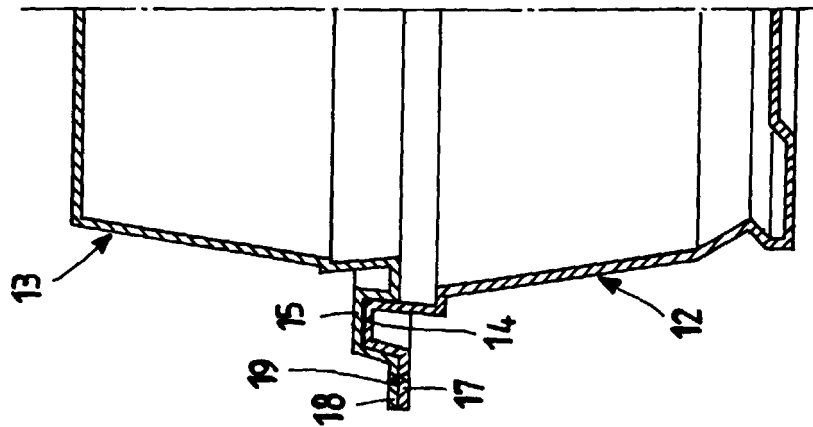


Fig.3

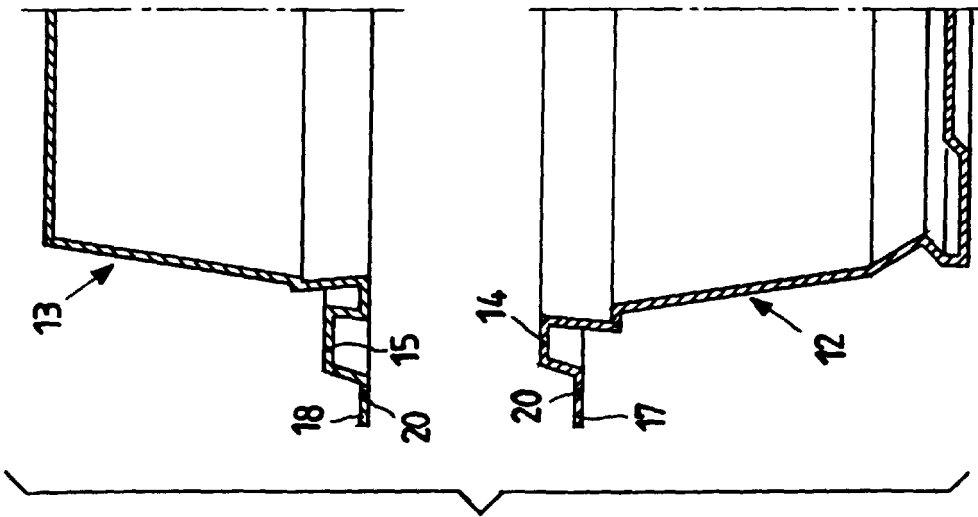


Fig.4



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 00 20 2135

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	GB 2 260 969 A (DRG PLASTICS LTD) 5 May 1993 (1993-05-05) * page 4, paragraph 2 - page 7, paragraph 1; figure 1 * * page 2, paragraph 1 * -----	1-3,5-7	B65D43/02
X	GB 2 040 267 A (DRG UK LTD) 28 August 1980 (1980-08-28) * page 1, line 130 - page 2, line 13; figures 2,7 * -----	1,6	
			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 26 September 2000	Examiner Bridault, A
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 T : 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 03.92 (P04001)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 00 20 2135

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

26-09-2000

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
GB 2260969	A	05-05-1993	NONE		
GB 2040267	A	28-08-1980	AU	5471980 A	07-08-1980
			ZA	8000206 A	31-12-1980