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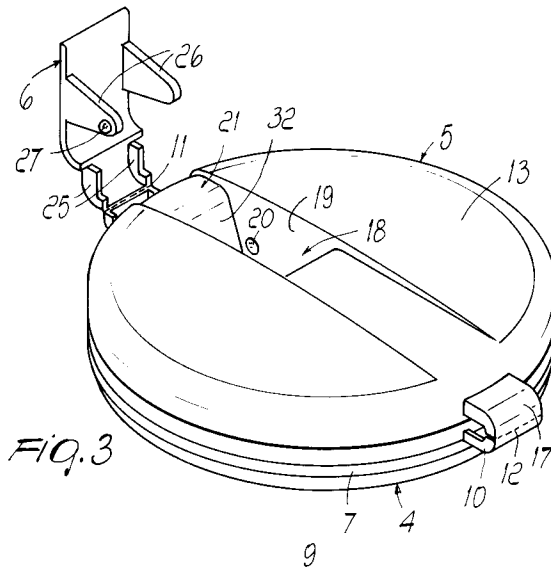
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54 **Jar closure device.**

57 Jar closure device, comprising: a ring (4) that can be coupled, in a snap-together manner, to the rim of the jar (1); a lid (5) articulated to the ring (4) and having, in an opposite position to the articulation point, a recess (18); a tab (6), which is articulated to the ring (4) in a diametrically opposite position to the one where the lid is articulated and which can be turned over onto the lid (5), the tab (6) being provided with means (26,27) for snap-together engagement in the recess (18) and for retaining the lid in the position for closing the jar.



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The present invention relates to a jar closure device.

It is known that current jar closure devices comprise a lid articulated to the rim of the jar by a metal wire ring forming a hinge for the jar on one side and having, on the side diametrically opposite to the hinge, a coupling for a toggle lever that by acting on the lid locks it to the rim of the jar.

Conventional closure devices, however, have been found to be complicated to produce and troublesome to apply.

Jars are also known (German Utility Model no. 7631199) wherein the lid and the corresponding support are made monolithically of plastic material and the articulation of the lid to the support is constituted by a flexible hinge.

A principal aim of the present invention is therefore to provide a jar closure device that does not have the above mentioned drawbacks of currently commercially available ones.

This aim is achieved with a jar closure device, characterized in that it comprises: a ring that can be coupled, in a snap-together manner, to the rim of the jar; a lid articulated to said ring and having, in an opposite position to the articulation point, a recess; a tab, which is articulated to said ring in a diametrically opposite position to the one where said lid is articulated, can be turned over onto said lid, and is provided with means for snap-together engagement in said recess and for retaining said lid in the jar closing position.

Further characteristics and advantages of the invention will become apparent from the following detailed description of a preferred embodiment thereof illustrated only by way of non-limitative example in the accompanying drawings, wherein:

figure 1 is a partially sectional view of a jar with the closure device according to the present invention;

figure 2 is a sectional view of the closure device, with the lid in open condition; and

figure 3 is a perspective view of the closure device.

With reference to the above figures, the reference numeral 1 designates a conventional cylindrical jar made of seamed metal plate according to conventional methods, having a rim 2 folded inwards which forms its mouth.

The closure, shown separately in figures 2 and 3 and generally designated by the reference numeral 3, is meant to be associated with the jar 1. Said closure is composed of a ring 4, a lid 5, and a tab 6, and is formed monolithically by molding plastics. The ring 4 comprises a conical annular portion 6a outside which a groove 7 and an annular portion 8 are arranged.

The conical portion 6a has such a diameter that it can be inserted, by forcing, in the mouth of

the jar 1 and provide a snap-together coupling with said jar as a consequence of the engagement of the rim 2 in the groove 7.

Two protrusions 9 and 10 extend in diametrically opposite directions from the ring 4; the tab 6 and the lid 5 are articulated to said protrusions by means of flexible hinges 11 and 12 made of the same plastic material that composes the closure 3.

The lid 5 comprises a slightly cambered disk 13 that is surrounded, along its peripheral region, by an annular expansion 14 where a groove 15 is provided having the same diameter as the annular portion 8. A sealing gasket 16, made of a rubber-like material, is accommodated in the groove 15.

The lid 5 is connected to the hinge 12 by a protrusion 17 extending from the expansion 14 by such a length that, when the lid is turned over onto the ring 4, the portion 8 can engage the groove 15.

A recess 18 is formed in the disk 13, in a diametrically opposite position to the protrusion 17, and has two parallel walls 19 wherein respective opposite hollows 20 are formed. Said hollows 20 are blind, that is to say, they do not pass through the walls 19.

A depressed region 21 is furthermore formed in the peripheral portion of the disk 5 at the recess 18, and its height and width are substantially equal to those of the tab 6; said depressed region forms an abutment 22 outside the expansion 14.

The tab 6 is connected to the protrusion 9 by an extension 23 forming a step 24 with one end of the tab.

All the protrusions 9, 10, and 17 and the extension 23 are provided with stiffening ribs designated by the reference numeral 25 only as regards those provided on the extension 23.

The tab 6 is completed by two parallel wings 26 extending from the inner face and having, at their ends, respective pins 27 directed outwardly and having appropriately rounded ends.

The method of operating with the closure according to the invention can be easily deduced from the above description.

When one wishes to close the jar 1, the lid 5 is turned over onto the ring 4, so that the annular portion 8 engages in the groove 15. Then the tab is turned over onto the lid, inserting the wings 26 in the recess 18. The abutment of the pins 27 against the walls 19 initially causes the wings 26 to move elastically closer to each other; when the pins 27 are at the hollows 20, this mutual approach determines the snap-together engagement of the pins in the hollows and accordingly the retention of the lid in closed position. In this position, the tab 6 is recessed in the depressed region 21 and is flush with the cambered surface of the disk 13.

It should be noted that during the last part of the stroke for inserting the wings 26 in the recess

18, the step 24 acts on the abutment 22 so as to force the lowering of the lid 5 onto the portion 8, accordingly increasing tightness between said lid and the gasket 16.

As shown more clearly by figure 1, when the lid is in closed position the tab 6 does not close the recess 18 completely but leaves open an opening 28 which allows the user to insert a finger therein to raise the tab and release the lid.

A substantial feature of the described closure is the fact that said closure can be formed monolithically by molding plastic material. This leads to considerable savings in terms of construction and assembly.

Numerous modifications and variations are possible in the practical embodiment of the invention, and all are within the scope of the inventive concept.

In particular, the hinges 11 and 12 can optionally be provided by conventional pivots driven through bushes formed in the protrusions 9, 10, 17, and 24.

Another embodiment provides, in addition to the wings 26 and the pins 27, or as a replacement thereof, a single wing 29 (see figure 2) rigidly coupled to the tab 6, which lies on a plane that is parallel to the axis of the hinge 11, and has a sort of hook 30 that is adapted to engage a corresponding saw-tooth portion 31 of the wall 32 of the recess 18 that joins the walls 19.

Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly such reference signs do not have any limiting effect on the interpretation of each element identified by way of example by such reference signs.

Claims

1. Jar closure device, characterized in that it comprises: a ring (4) that can be coupled, in a snap-together manner, to the rim (2) of the jar (1); a lid (5) that is articulated to said ring (4) and has, in an opposite position to the articulation point, a recess (18); a tab (6), articulated to said ring (4) in a diametrically opposite position to the one where said lid (5) is articulated, can be turned over onto said lid, said tab (6) being provided with means (26, 27) for snap-together engagement in said recess (18) and for retaining said lid (5) in the position for closing said jar (1).
2. Jar closure device, characterized in that it comprises: a ring (4) that can be coupled, in a snap-together manner, to the rim (2) of the jar

(1); a lid (5) that is articulated to said ring (4) and has, in an opposite position to the articulation point, a recess (18); a tab (6), articulated to said ring (4) in a diametrically opposite position to the one where said lid (5) is articulated, can be turned over onto said lid, said tab (6) being provided with means (26, 27) for snap-together engagement in said recess (18) and for retaining said lid (5) in the position for closing said jar (1); said ring (4), said closure device (5), and said tab (6) being formed monolithically by molding plastic material so as to form flexible hinges (11, 12) for the articulation of said tab (6) and of said lid (5) to said ring (4).

3. Closure device according to claim 1, characterized in that said ring (4) comprises a conical annular portion (6a) on the outside of which there is a groove (7), said portion (6a) being adapted to be forced onto the jar so as to produce the engagement of the rim (2) of the jar in the groove (7).
4. Closure device according to claim 3, characterized in that said tab (6) has at least one wing (29) that is provided with engagement means (30) adapted to engage corresponding saw-tooth portions (31) formed in said recess (18) in the closure position of the lid (5).
5. Closure device according to claim 3, characterized in that said tab (6) has two wings (26) provided with oppositely arranged pins (27) adapted to engage corresponding hollows (20) of the recess (18) in the closure position of the lid (5).
6. Closure device according to one of the preceding claims, characterized in that said lid has a peripheral expansion (14) in which there is a slot (15) for accommodating a sealing gasket (16), and in that said ring (4) has an annular portion (8) that is adapted to engage said slot (15).
7. Closure device according to one of the preceding claims, characterized in that said tab (6) has a step (24) adapted to act on an abutment (22) of the lid (5) to force said lid onto the ring (4).
8. Closure device according to one of claims 1 to 6, characterized in that in the closure position of the lid (5), said tab (6) forms, together with said recess (18), an opening (28) adapted to allow the insertion of a finger to raise the tab (6) and release the lid (5).

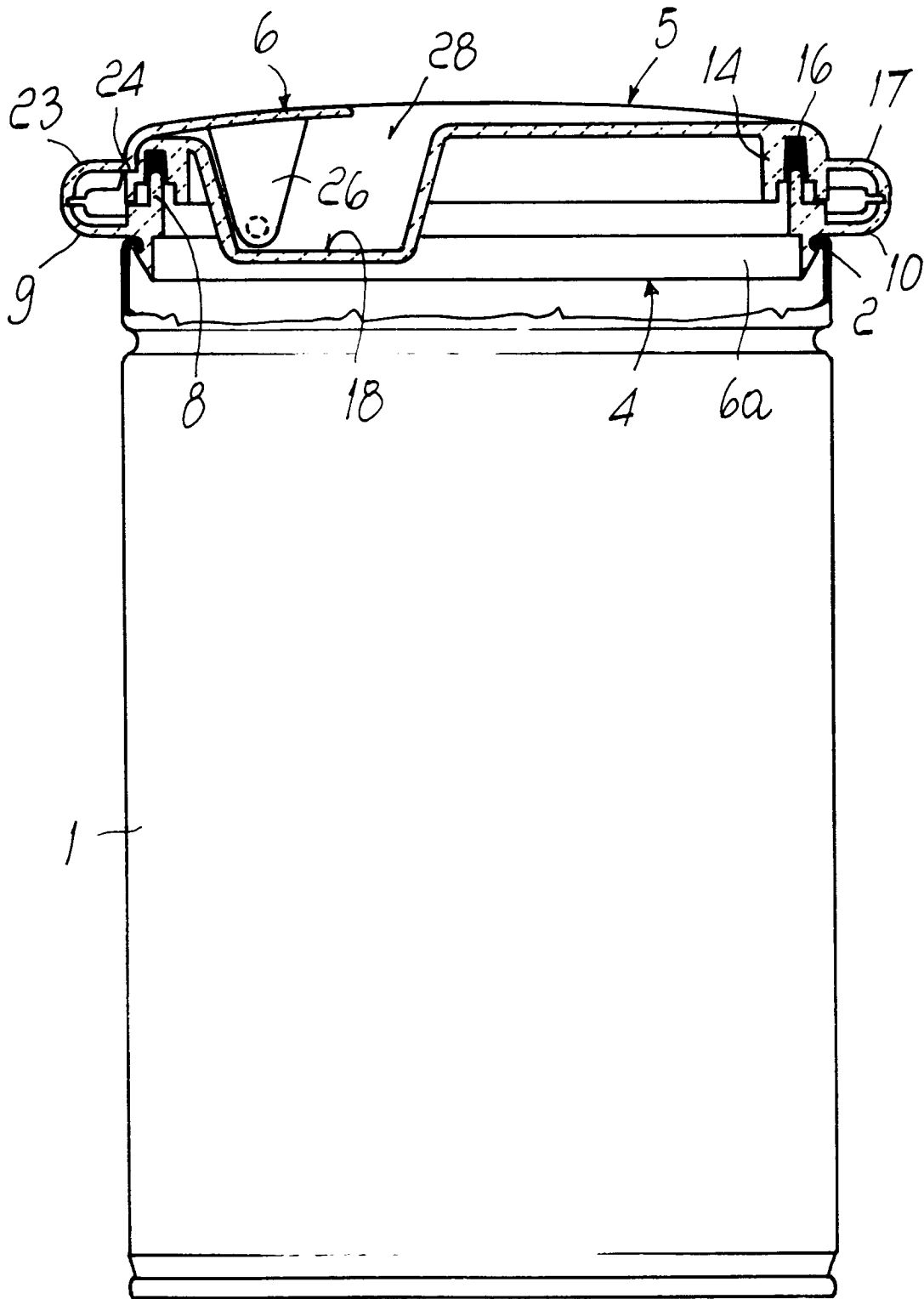


Fig. 1

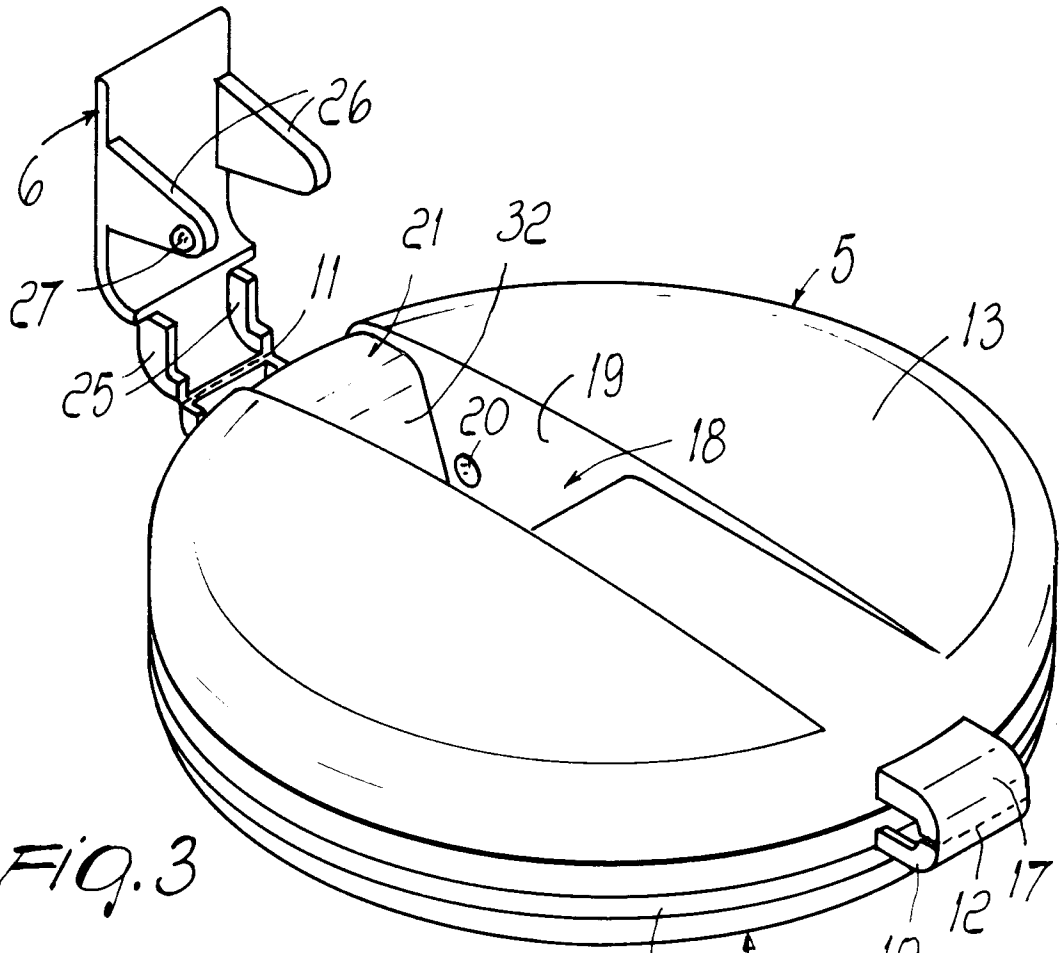


FIG. 3

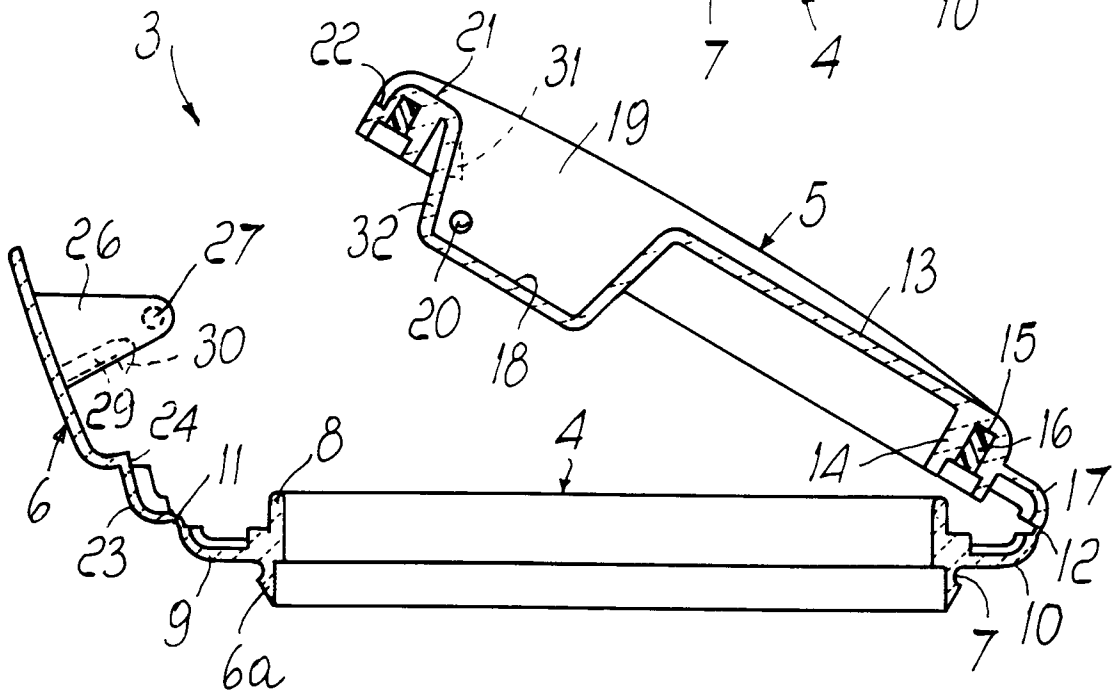


FIG. 2



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.6)
X	US-A-5 147 054 (PEHR) * column 3, line 55 - column 4, line 45; figures 1-5 * ---	1,2	B65D43/16
P,X	US-A-5 332 131 (PEHR) * column 10, line 32 - line 59; figures 16,17 * ---	1,2	
A	US-A-3 767 110 (CONGLETON) * the whole document * ---	1,2	
A	GB-A-1 305 739 (LIN PAC PLASTICS LTD) * the whole document * ---	1,2	
A	US-A-3 016 168 (LARSON) ---		
D,A	DE-U-76 31 199 (WISCHERATH) -----		
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			B65D
Place of search	Date of completion of the search	Examiner	
THE HAGUE	20 July 1995	Martens, L	
CATEGORY OF CITED DOCUMENTS		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	
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			