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(54) Snap-turn container lid

(57) A container comprising a cup part (1;1') and a repeatedly removable and replaceable cover part (2;2'), and locking means (5,6;5',6') for locking the cup part to the cover part, wherein the cup part and the cover part are provided with non-circular locking edges (3,4;3',4') in which the locking means are arranged. The locking means are formed by locking recessions (5,5') provided in the locking edge (3,3') of the cup part (1;1') and by locking projections (6,6') which are provided in the locking edge (4,4') of the cover part (2;2') and which have a substantially corresponding shape with that of the locking recess of the cup part. The locking projections, and thus the cup part and the cover part, are locked to one another and detached from one another by a relatively short snap-turn movement between these two parts.

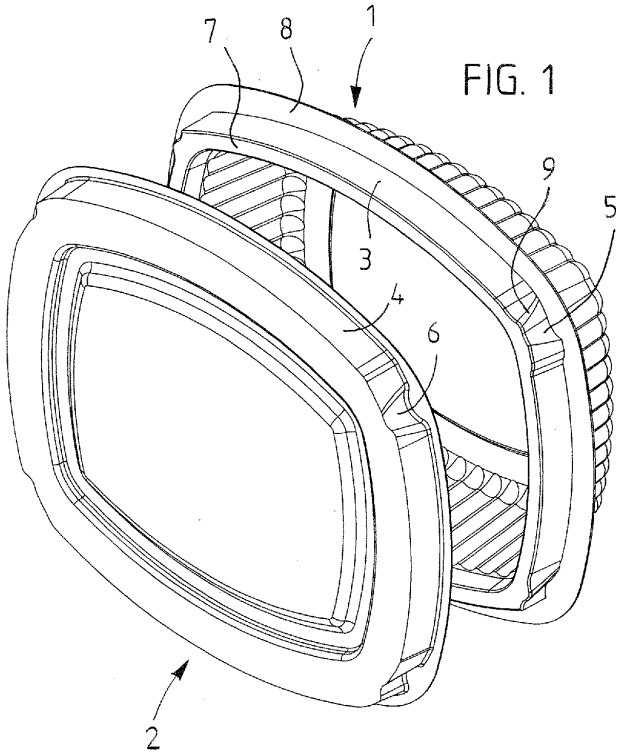

FIG. 1

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Description

BACKGROUND OF THE INVENTION

[0001] The invention relates to a container comprising a cup part for a product to be preserved and a repeatedly removable and replaceable cover part covering an open upper part of the cup part, and locking means for locking the cup part to the cover part, whereby the cup part and the cover part are provided with non-circular locking edges which have substantially corresponding shapes and in which the locking means are arranged.

[0002] Containers of this type are used e.g. for preserving and transporting various foodstuffs. Examples include fruit, vegetables, salads, ready-to-eat food products, etc. Typically, such a container is a bendable and flexible entity made of plastic, wherein a cover part is fastened to locking edges extending from the sides of a cup part by snapping or bending the cover part over these edges into the cup part. Such a procedure for closing the container usually requires accuracy, or otherwise the cover part will not be appropriately closed or some of the contents of the container may leak or burst out. It may often be even more difficult to open the container, particularly if the cover part sits tight. If the container, when being opened, is not supported against a suitable underlying surface, the whole contents may be discharged uncontrollably. In any case, when opening such a container, the person opening the container or the scene of such activity may get dirty.

[0003] WO 2005/035378 A1 discloses a rapid closure of a cover part in connection with circular containers, which is implemented by a bayonet fastening. In such a case, the cup part and the cover part are provided with cooperating locking parts, so that upon closing the container, the cover part is pressed in place into the cup part, perpendicularly and guided by guide parts of the locking parts, and then turned into a locked position by turning the cover part in the cup part.

[0004] US 2003/0085228 A1, EP 1 205 399 B1, US 5 279 355 A, US 2003/0197013 A1, JP 2004307011 A, and JP 10152157 A disclose other bayonet-type locking arrangements between a container and its cover.

SUMMARY OF THE INVENTION

[0005] An object of the invention is now to eliminate similar above-described problems also associated with closure of non-circular containers. This is achieved by a container according to the invention, which is characterized in that the locking means are formed by at least two locking recessions provided in the locking edge of the cup part and by at least two locking projections which are provided in the locking edge of the cover part and which have a shape substantially corresponding with that of the locking recess of the cup part and which are arranged to cooperate therewith, whereby the locking edges of the cup part and the cover part between entities formed by the locking recesses and the locking projections, in the width direction of the container are located at a distance from one another for enabling the locking recessions and the locking projections, and thus the cup part and the cover part, to be locked to one another and to be detached from one another by a relatively short snap-turn movement between these two parts.

[0006] The idea underlying the invention is that a bayonet-type closure known per se can now be implemented also in connection with non-circular containers in accordance with the invention when a sufficient amount of free space is provided between the cup part and the cover part so as to enable a short turning movement between said parts in order to produce a turn-snap locking.

[0007] The locking means according to the invention may consist of locking edge surfaces of a container which, as seen from above, are curved and inclined downwards; they may be e.g. parts of conical envelope surfaces. The locking parts could also be formed by parts of a spherical surface, e.g. by circular studs or similar recesses.

[0008] Preferably, in an angular container the locking means are arranged at each corner of the container. If a container is oval, the locking means are arranged at the apexes of an oval formed by the container and at least at the middle of the side edges thereof.

[0009] The locking according to the invention now enables an easy-to-use reclosure mechanism to be achieved also for angular or oval containers, the mechanism, when locked, simultaneously keeping the cover part reliably and tightly attached to the cup part.

LIST OF DRAWINGS

[0010] The invention is now described in closer detail in connection with some preferred exemplary embodiments and with reference to the accompanying drawings, in which

[0011] Figure 1 is a perspective view of a rectangular container with a cup part and a cover part being separated;

[0012] Figure 2 is a top view of the container according to Figure 1 with its cover part and cup part attached to one another;

[0013] Figure 3 is a side view of the cup part of the container according to Figure 1;

[0014] Figure 4 is a side view of the cover part of the container according to Figure 1;

[0015] Figure 5 is a perspective view of an oval container with a cup part, a cover part and an additional cover part being separated;

[0016] Figure 6 is a top view of the container according to Figure 5 with its additional cover part, cover part and cup part being attached to one another;

[0017] Figure 7 is a side view of the cup part of the container according to Figure 5;

[0018] Figure 8 is a side view of the cover part of the container according to Figure 5; and

[0019] Figure 9 is a side view of the additional cover part of the container according to Figure 5.

DETAILED DESCRIPTION OF THE INVENTION

[0020] Referring to an example set forth in Figures 1 to 4, a rectangular container shown therein comprises a cup part 1 for a product to be preserved and a repeatedly removable and replaceable cover part 2 covering an open upper part of the cup part. The cup part 1 is provided with a locking edge 3 and the cover part 2 is provided with a locking edge 4. The locking edges 3 and 4 have substantially corresponding shapes and they are provided with locking means 5, 6 for locking the cup part 1 and the cover part 2 to one another.

[0021] The cup part 1 herein preferably comprises a horizontal surface 7 laterally extending from an upper edge thereof and a flange folding downwards therefrom such that the flange forms the locking edge 3. The locking edge 3 further comprises a laterally extending circumferential edging 8 which stiffens the locking edge 3 and provides a stopper for the locking edge 4 of the cover part 2.

[0022] The locking means are formed by locking recesses 5 provided at a given time in the flange 3 at every corner of the cup part 1 as well as by locking projections 6 provided in the locking edge of the cover part 2 and having a shape substantially corresponding with that of the locking recesses 5 and arranged to cooperate therewith, whereby the locking edges 3 and 4 of the cup part 1 and the cover part 2, when between entities being formed by the locking recesses 5 and the locking projections 6, in the width direction of the container are located at a distance (distance X) from one another which is long enough for enabling the locking recessions 5 and the locking projections 6, and thus the cup part 1 and the cover part 2, to be locked to one another and to be detached from one another by a relatively short snap-turn movement between these two parts.

[0023] The locking recessions 5 deepen downwards and towards the interior of the cup part 1. A highly functional solution is one in which the locking recessions 5 and the locking projections 6 have a shape substantially corresponding with that of a portion of the envelope surface of a cone whose curvature, inclination, height and circumferential length vary according to the size and the required locking tightness of the container.

[0024] An edge 9 of the locking recess 5 is preferably less curved on the insertion side of the locking projection 6 than on the opposite side thereof, which prevents the cover part 2 from being turned past the locking recession 5. Furthermore, the edge 9 is bevelled so as to facilitate locking and unlocking.

[0025] The container shown in Figures 5 to 9 differs from the container according to Figures 1 to 4 mainly in that it is oval in shape, in other words a cup part 1', a cover part 2', locking edges 3' and 4' thereof, a surface 7' as well as a circumferential edging 8' are also oval. Locking recessions 5' and 6' are primarily similar to those shown in the structure of Figures 1 to 4, and they are herein arranged at the apexes of an oval formed by the container and at the middle of the side edges of the oval. Further, an additional storage space is provided on top of the cover part 2' by means of an additional cover part 10', whereby an additional locking edge 11' is provided on top of the cover part 2' by means of a ridge which extends upwards from the cover part 2' and which comprises locking recessions corresponding with the locking recessions 5' of the cup part 1', and whereby the additional cover part 10' comprises locking projections corresponding with the locking projections of the cover part 2'. At the same time, the additional cover part 10' mainly forms the aforementioned additional storage space. Of course, an angular container may also be provided with such an additional storage space formed in a similar manner.

[0026] The locking recessions 5' provided in the side edges of the oval container are formed by means of side projections 12' provided on both sides thereof so as to enable a sufficiently large distance to be achieved for the locking edges 3' and 4' of the cup part 1' and the cover part 2' between the entities formed by the locking recessions 5' and the locking projections 6' in the width direction of the container in order to make it possible to turn the cover part 2' to an extent required for locking and unlocking, as shown by the example in Figures 1 to 4. At the same time, by using the side projection 12' provided on the insertion side of the locking projections 6', the locking projection 6' is provided with guide recessions 13' to guide the locking projections 6' into place while the cover part 2' is being placed onto the cup part 1'. The back sides of the locking projections 6' provided at the tips of the cover part 2' become engaged with the locking edge 2' at a more obtuse angle than the front sides thereof, which enables a locking contact between the cup part 1' and the cover part 2' to be provided over a larger area at the tips of the container.

[0027] Another feasible locking recession/locking projection entity might be one wherein the locking recessions and the locking projections have a shape substantially corresponding with that of the parts of a spherical surface. The shape of the locking recessions and the locking projections is crucial only in that when the container is in the locked position, it is ensured that the cover part is prevented from moving upwards from the cup part unintendedly. Different shapes of the locking recessions and projections can, however, be used for affecting the degree of ease with which the container is opened and closed.

[0028] The description of the present invention is only intended to illustrate the basic idea of the invention. A person skilled in the art may thus implement the container according to the invention and the details of its locking within the scope of the appending claims. Therefore, the location of the locking recessions and projections, for instance, is not restricted to the above-described examples. Further, if desired, the locking may also be provided inside the cup part.

Claims

1. A container comprising a cup part (1; 1') for a product to be preserved and a repeatedly removable and replaceable cover part (2; 2') covering an open upper part of the cup part, and locking means (5, 6; 5', 6') for locking the cup part to the cover part, whereby the cup part and the cover part are provided with non-circular locking edges (3, 4; 3', 4') which have substantially corresponding shapes and in which the locking means are arranged, **characterized in that** the locking means are formed by at least two locking recessions (5, 5') provided in the locking edge (3, 3') of the cup part (1; 1') and by at least two locking projections (6, 6') which are provided in the locking edge (4, 4') of the cover part (2; 2') and which have a substantially corresponding shape with that of the locking recess of the cup part and which are arranged to cooperate therewith, whereby the locking edges of the cup part and the cover part between entities formed by the locking recesses and the locking projections, in the width direction of the container are located at a distance (X) from one another for enabling the locking recessions and the locking projections, and thus the cup part and the cover part, to be locked to one another and to be detached from one another by a relatively short snap-turn movement between these two parts.

2. A container as claimed in claim 1, **characterized in that** the container is angular, and **in that** the locking means (5, 6) are arranged at each corner of the container.

3. A container as claimed in claim 1, **characterized in that** the container is oval, and **in that** the locking means (5', 6') are arranged at the apexes of an oval formed by the container and at least at the middle of the side edges of the oval.

4. A container as claimed in any one of the preceding claims, **characterized in that** the locking recessions (5; 5') deepen downwards and towards the interior of the cup part (1; 1').

5. A container as claimed in claim 4, **characterized in that** the locking recessions (5; 5') and the locking projections (6; 6') have a shape corresponding to that of a portion of an envelope surface of a cone whose curvature, inclination, height and circumferential length vary according to the size and the required locking tightness of the container.

6. A container as claimed in claim 5, **characterized in that** an edge (9; 9') of the locking recess (5; 5') is less curved on the insertion side of the locking projection (6; 6') than on the opposite side thereof, which prevents the cover (2; 2') from being turned past the locking recession, and **in that** further, the edge (9; 9') of the insertion side of the locking recess is bevelled so as to facilitate locking and unlocking.

7. A container as claimed in any one of claims 1 to 3, **charac-terized** in that the locking recessions and the locking projections have shapes substantially corresponding with those of the parts of a spherical surface.

8. A container as claimed in any one of the preceding claims, **characterized in that** the cup part (1; 1') comprises a horizontal surface (7; 7') laterally extending from an upper edge thereof and a flange (3; 3') folding downwards therefrom such that the flange forms a locking edge, and a circumferential edging (8; 8') laterally extending therefrom.

9. A container as claimed in any one of the preceding claims, **characterized in that** an additional storage space is provided on top of the cover part (2') by means of an additional cover part (10'), whereby on top of the cover part an additional locking edge (11') is provided which comprises locking recessions corresponding with the locking recessions (5') of the cup part (1') and whereby the additional cover part (10') comprises locking projections (6') corresponding with the locking projections of the cover part (2') and simultaneously mainly forms said additional storage space.

10. A container as claimed in any one of the preceding claims, **characterized in that** the container is made of a plastic material.

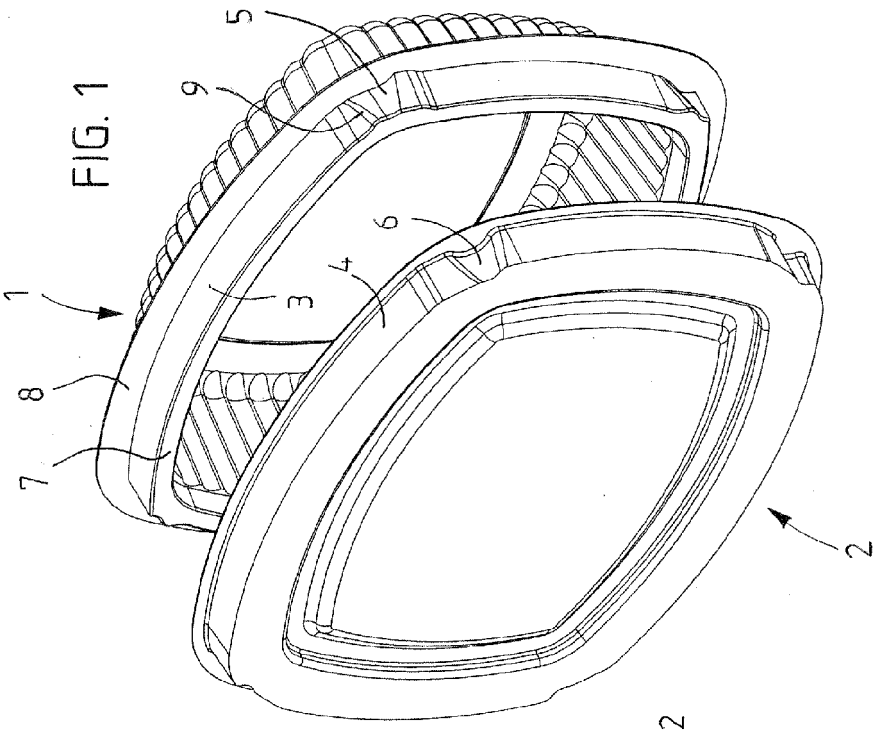

FIG. 1

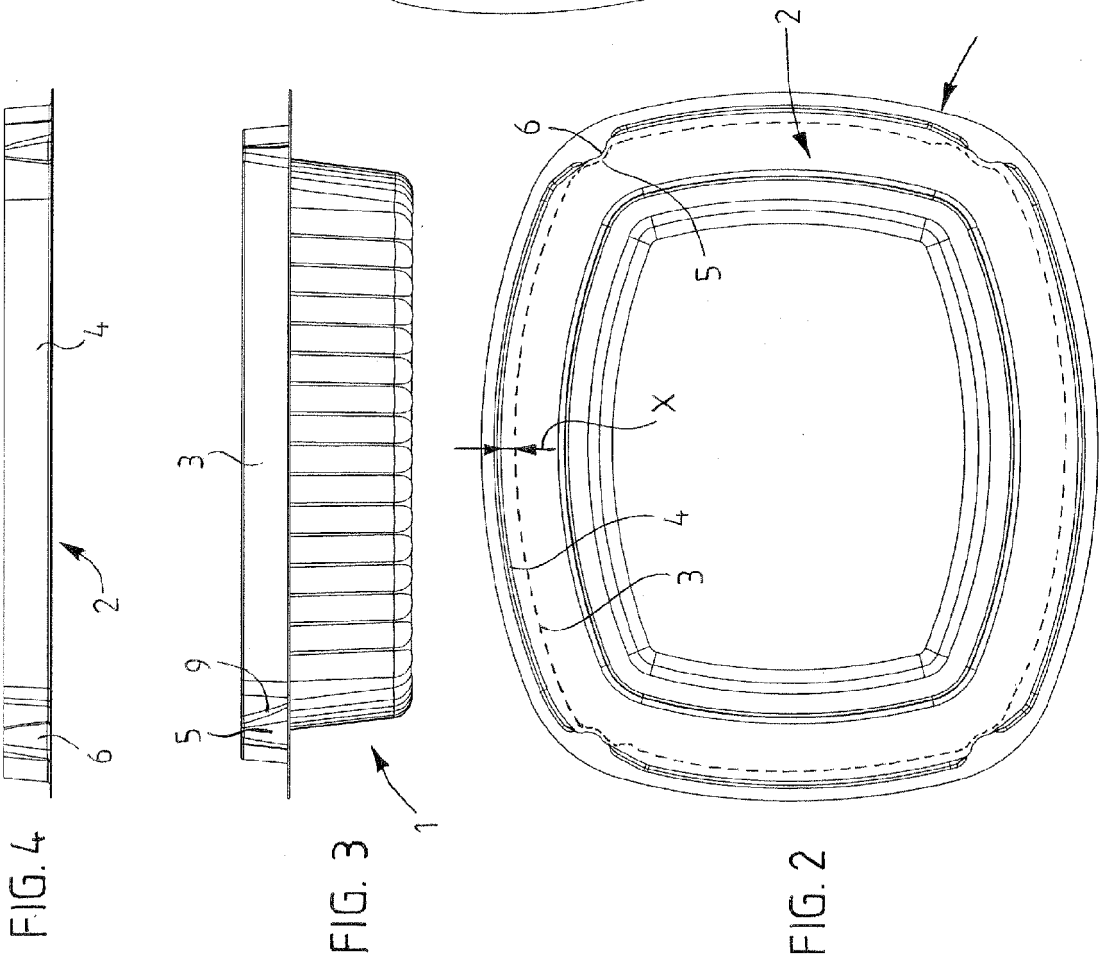

FIG. 4

FIG. 3

FIG. 2

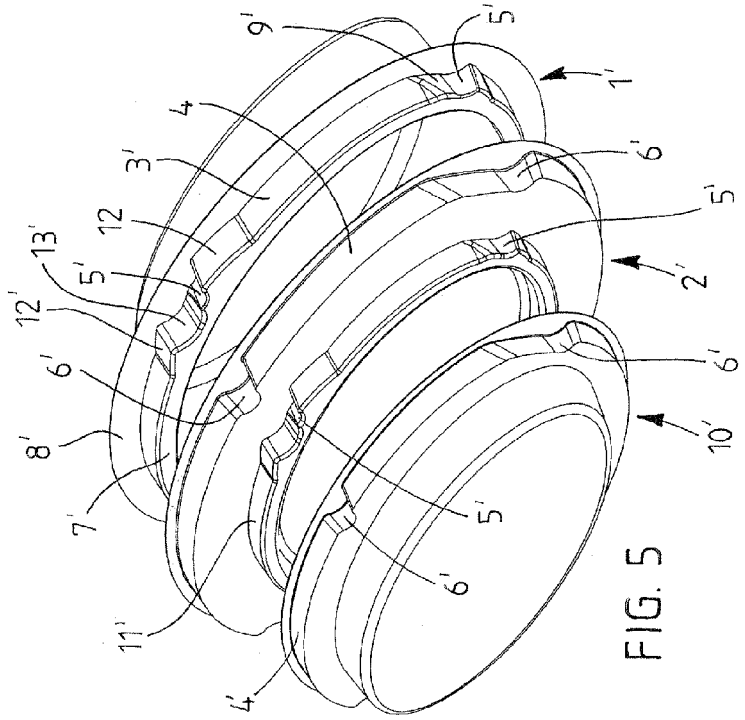

FIG. 5

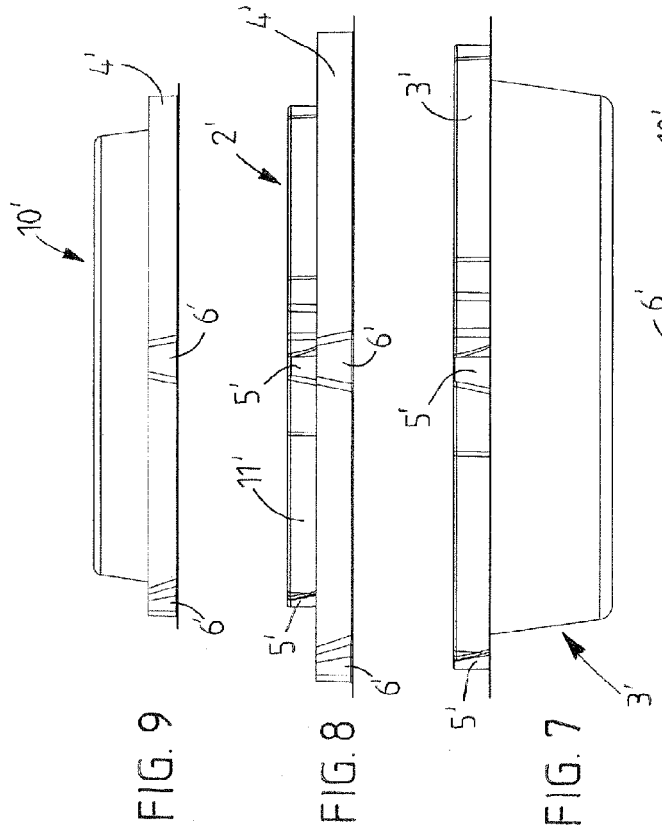

FIG. 9

FIG. 8

FIG. 7

FIG. 6

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EUROPEAN SEARCH REPORT

Application Number
EP 07 10 0148

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			TECHNICAL FIELDS SEARCHED (IPC)
			B65D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	13 April 2007	Sundell, Olli

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