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(54) **CONTAINER**

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Description

[0001] The present invention relates to a container, according to the preamble of claim 1, comprising a number of side walls meeting at corners, a bottom, a top opening and a detachable lid covering the top opening, the top opening being provided with a peripherally extending outward directed ridge, the lid being provided with a peripherally extending downward bent engagement portion having an inward directed ridge adapted to grip under the outward directed ridge of the top opening, the lid further being provided with a skirt extending below the engagement portion from the inward directed ridge thereof, the outward directed ridge of the top opening and the corresponding inward directed ridge of the lid having curved corner sections at the corners at which the side walls of the container meet, said curved corner sections connecting side sections of the respective ridges, where at least one of the curved corner sections of the inward directed ridge of the lid is provided with a bendable skirt section being adapted to be bent to an outward directed position in such a way that a central part of the at least one curved corner section of the inward directed ridge of the lid is levered away from the outward directed ridge of the top opening and that engagement between the corresponding ridges thereby is weakened in an area at said central part.

[0002] EP 1 681 242 B1 (Superfos) discloses a container of this type, having four walls meeting at rounded corners. In order to open the container, a recess is formed in the skirt of the container wall near a corner, so that a pair of fingers may be inserted into the recess and thereby press upward on the skirt of the lid. However, due to the relatively small radius of the rounded corner, a considerable force may be necessary to disengage the inward directed ridge of the lid from the outward directed ridge of the top opening. Pressing on the lower edge of the thin wall of the skirt may be inconvenient for the user.

[0003] DE 201 12 433 U1 and EP 0 110 859 A1 each accord with the preamble of claim 1 and disclose a container comprising a number of side walls meeting at corners, a bottom, a top opening and a detachable lid covering the top opening, the top opening being provided with a peripherally extending outwardly directed ridge, the lid being provided with a peripherally extending downwardly bent engagement portion having an inwardly directed ridge adapted to grip under the outward directed ridge of the top opening, the lid further being provided with a skirt extending below the engagement portion from the inward directed ridge thereof, the outward directed ridge of the top opening and the corresponding inward directed ridge of the lid having curved corner sections at the corners at which the side walls of the container meet, said curved corner sections connecting side sections of the respective ridges, where at least one of the curved corner sections of the inward directed ridge of the lid is provided with a bendable skirt section being adapted to be bent to an outward directed position in such a way

that a central part of the at least one curved corner section of the inward directed ridge of the lid is levered away from the outward directed ridge of the top opening and that engagement between the corresponding ridges thereby is weakened in an area at said central part.

[0004] In order to overcome the force necessary to open the container, it is known to form the inward directed ridge of the lid and/or the outward directed ridge of the top opening with a smaller cross-section or a smaller protrusion in the radial direction in the area of the corner to be opened than along the rest of the peripheral extension of the lid and top opening. However, as a proper sealing effect of the lid has to be maintained, the cross-section or the protrusion in the radial direction of the ridges cannot be too small, and consequently the lid may still be somewhat difficult to open. There are also known containers having a lid with a relatively thicker skirt in the corner to be opened in order not to hurt the fingers.

[0005] The object of the present invention is to facilitate the opening of the container without compromising the sealing effect between the lid and the top opening.

[0006] In view of this object, in that the bendable skirt section is separated from the remaining part of the skirt by means of at least two grooves formed in the outside surface of the skirt and extending downward from an area at the bending line to the lower edge of the skirt, said grooves reducing the wall thickness of the skirt so that the skirt may break along the grooves in order to bend the bendable skirt section to its outward directed position.

[0007] Thereby, in order to open the container, a pair of fingers may press on the lower side of bendable skirt section, thereby bending it outward and consequently weakening the engagement between the corresponding ridges, so that the necessary opening force is reduced and opening thereby facilitated. Before opening, the engagement between the corresponding ridges is not weakened, and therefore the sealing effect is not compromised.

[0008] The cross-section and/or the radial protrusion of the corresponding ridges may additionally be reduced in the corner to be opened in order to further facilitate opening of the container. It is also possible to form the corresponding ridges of another material than the rest of the lid or of the container; for instance, one or both of the ridges or even a larger part of the corner of the lid and/or of the top opening of the container may be formed of a softer and/or more elastic material incorporated by co-injection.

[0009] Alternatively, the ridges may be formed with un-reduced cross-section and/or radial protrusion along the entire periphery of the container in order to improve the sealing effect before opening the container. Due to the levering effect according to the invention, opening of the lid may still be possible and/or facilitated without changing the ridge form at the corner or corners to be opened.

[0010] In an embodiment, the bendable skirt section is prepared for bending about a bending line along which the material of the lid is weakened or about which the

material of the lid is pre-bent. Thereby, the bending line may be predetermined at the design stage of the container, and it may be ensured that the bendable skirt section is bent along a line providing optimized levering effect in order to effectively lift the inward directed ridge of the lid away from the outward directed ridge of the top opening. Furthermore, bending of the bendable skirt section may be facilitated.

[0011] In an embodiment, a bending line is formed in a bending section connecting the peripherally extending downward bent engagement portion and the skirt, and the bending section has an outside extending obliquely downward and outward, the outside thereby forming an angle with both the peripherally extending downward bent engagement portion and the skirt. Thereby, bending of the bendable skirt section may start along the angled connection between the engagement portion and the bending section and further continue by bending over the entire bending section. In this way, the position of bending may be well controlled.

[0012] In an embodiment, the bending line extends below mutually contacting faces of the outward directed ridge of the top opening and the corresponding inward directed ridge of the lid, respectively. Thereby, it may be ensured that the inward directed ridge of the lid will not break during bending, and consequently the sealing effect after re-closing of the lid may be good.

In an embodiment, a protrusion is formed next to a bending line and on the outside of the engagement portion or on the outside of the bendable skirt section, and in that said protrusion is adapted to be pinched between the bendable skirt section and the engagement portion when bending the bendable skirt section to its outward directed position. Thereby, the protrusion may enhance the levering effect in order to even more effectively lever a central part of the at least one curved corner section of the inward directed ridge of the lid away from the outward directed ridge of the top opening.

[0013] Though not forming a part of the invention, at least a part of the bendable skirt section may be separated from the remaining part of the skirt by means of two spaced elastic elements, such as parts of the skirt having a wall thickness thinner than the remaining part of the skirt or parts of the skirt having a bellows-type configuration. Thereby, the sealing effect of the lid after re-closing of the container may be improved in that the bendable skirt section may flex elastically back at least approximately to its initial position, thereby ensuring good engagement between the inward directed ridge of the lid and the outward directed ridge of the top opening after closing.

[0014] Though not forming a part of the invention, spaced elastic or expandable elements may split at least part of the inward directed ridge of the lid at either side of the bendable skirt section. Thereby, disengagement between the inward directed ridge of the lid and the outward directed ridge of the top opening may be facilitated during opening of the container, thereby facilitating open-

ing. This may be possible without compromising the sealing effect of the lid, because the spaced elastic or expandable elements may seal the split area of the inward directed ridge of the lid against fluid leakage.

[0015] In an embodiment, the bendable skirt section is separated from the remaining part of the skirt by means of two cuts or pre-cuts extending downward from an area below the inward directed ridge of the lid. This may be an embodiment easy to manufacture. In the case of pre-cuts, a tamper evident container may be provided.

[0016] In an embodiment, the bendable skirt section is separated from the remaining part of the skirt by means of at least two grooves formed in the outside surface of the skirt and extending downward from an area at the bending line to the lower edge of the skirt, said grooves reducing the wall thickness of the skirt so that the skirt may break along the grooves in order to bend the bendable skirt section to its outward directed position. This may be an embodiment easy to manufacture. In the case of pre-cuts, a tamper evident container may be provided.

[0017] In an embodiment, the bendable skirt section is reinforced against bending along a line extending in its longitudinal direction, preferably by means of ribs extending at right angles to its longitudinal direction. Thereby, the levering effect of the bendable skirt section may be improved in order to even more effectively lever the inward directed ridge of the lid away from the outward directed ridge of the top opening.

[0018] In an embodiment, the bendable skirt section is reinforced against bending along a line extending in its longitudinal direction by means of mutually spaced ribs extending at right angles to its longitudinal direction, said ribs having upper ends adapted to abut the outside of the engagement portion when bending the bendable skirt section to its outward directed position. Thereby, the abutment of the protrusions in the form of the upper ends of the ribs may enhance the levering effect in order to even more effectively lever a central part of the at least one curved corner section of the inward directed ridge of the lid away from the outward directed ridge of the top opening.

[0019] The invention will now be explained in more detail below by means of examples of embodiments with reference to the very schematic drawing, in which

Fig. 1 is a cross-section through a corner of the container according to the invention along the line indicated in Fig. 3;

Fig. 2 is a top view of the container;

Fig. 3 is a detail of the container as indicated in Fig. 2;

Fig. 4 is a cross-sectional view corresponding to that of Fig. 1 of another embodiment of the container according to the invention;

Fig. 5 is a perspective view of the outside of the cor-

ner of the lid of the container illustrated in Fig. 4;

Fig. 6 is a cross-sectional view corresponding to that of Fig. 1 of yet another embodiment of the container according to the invention;

Fig. 7 and 8 are different perspective views of the embodiment of the container shown in Fig. 6, whereby a bendable skirt section of the lid is in its original position and in its bent out position, respectively;

Fig. 9 and 10 are perspective views of the lid of the embodiment of the container shown in Fig. 6, whereby a bendable skirt section of the lid is in its original position and in its bent out position, respectively; and

Fig. 11 and 12 are different perspective views of a detail showing a bendable skirt section of the lid shown in Figs. 9 and 10, whereby the bendable skirt section is in its original position and in its bent out position, respectively.

Fig. 2 shows a top view of a container 1 according to the invention. The container 1 has four side walls 2 meeting at corners 3, a not shown bottom, a top opening 4 and a detachable lid 5 covering the top opening, see also Fig. 1. The container 1 and the lid 5 comprised by the container are preferably produced in plastic material by injection moulding. The top opening 4 is provided with a peripherally extending outward directed ridge 6, and the lid 5 is provided with a peripherally extending downward bent engagement portion 7 having an inward directed ridge 8 adapted to grip under the outward directed ridge 6 of the top opening 4. In the embodiment shown, a membrane 20 of the lid is lowered in relation to the downward bent engagement portion 7 by means of a wall 19. The lid 5 is further provided with a skirt 9 extending below the engagement portion 7 from the inward directed ridge 8 thereof. The outward directed ridge 6 of the top opening 4 and the corresponding inward directed ridge 8 of the lid 5 have curved corner sections 10, 11 at the corners 3 at which the sides of the container 1 meet, said curved corner sections 10, 11 connecting side sections of the respective ridges 6, 8. The curved corner section 10 of the outward directed ridge 6 and the curved corner section 11 of the inward directed ridge 8 are visible in cross-section in Fig. 1.

[0020] At the lower, right corner 3 of the container 1 as shown in Fig. 2, the curved corner section 11 of the inward directed ridge 8 of the lid 5 is provided with a bendable skirt section 12 being adapted to be bent to an outward directed position as it is seen in the figure and, for instance, approximately directed as indicated by the line 12' in Fig. 1. As it may be seen in Fig. 1, the container 1 is further provided with a skirt section 24 extending down-

wards at the outside of the upper edge of the side walls 2. A grip opening not shown in Fig. 1 may be provided in the skirt section 24 below the bendable skirt section 12, so that a finger may be inserted into the grip opening in order to grip below the edge of the bendable skirt section 12 to bend it to its outward directed position. Alternatively, a grip opening may be provided in the bendable skirt section 12 itself or any other suitable gripping means, such as a protrusion, may be provided on the bendable skirt section 12 in order to facilitate gripping.

[0021] One or more of the curved corner sections 11 of the inward directed ridge 8 of the lid 5 may be provided with such a bendable skirt section 12. Especially, two diagonally opposed corner sections 11 may be provided with a bendable skirt section 12, such as at the lower, right corner 3 and at the upper, left corner 3 of the container 1 as shown in Fig. 2. This may be advantageous, for instance, in an embodiment as shown in Figs. 7 and 8, wherein the container is substantially rectangular and is provided with diagonally opposed grip openings 23 in a skirt section 24 extending at the outside of the upper edge of the side walls 2. Due to this configuration, the lid 5 may be mounted on the opening 4 of the container in any of two possible positions, thereby facilitating the assembly. In any of these positions, a bendable skirt section 12 will be placed above a corresponding grip opening 23 in the skirt section 24.

[0022] Although the line 12' in Fig. 1 is shown as an approximately horizontal line, the bendable skirt section 12 may just as well be adapted to be bent to an outward directed position that is angled relative to the horizontal, for instance so that the outer free end of the bendable skirt section 12 is directed obliquely upwards. Alternatively, the outer free end of the bendable skirt section 12 may, in the bent out position of the bendable skirt section 12, be directed obliquely downwards. The arrow 13 indicates the bending direction in which the bendable skirt section 12 is bent in such a way that a central part of the curved corner section 11 of the inward directed ridge 8 of the lid 5 is levered away from the outward directed ridge 6 of the top opening 4 and that engagement between the corresponding ridges 6, 8 thereby is weakened in an area at said central part. The curved corner section 11 of the inward directed ridge 8 of the lid 5 is shown in cross-section in Fig. 1 and is not visible in Fig. 3; however, it is noted that the curved corner section 11 of the inward directed ridge 8 extends between the marks 14 and 15 in Fig. 3 and follows the rounded lines that are seen on the top side of the lid and that extend between these marks 14, 15. The above-mentioned central part of the curved corner section 11 of the inward directed ridge 8 of the lid 5 may, for instance, extend about 1/3 or about 1/2 of the length of the curved corner section 11.

[0023] In the context of this invention, the expression inward, when relating to the ridges 6, 8 or anything else along the periphery of the container 1 means directed against a central vertical axis through the container when the container is placed with its bottom on a horizontal

surface. Outward relates to the opposite direction, which is away from said vertical axis. In fact, all directions mentioned in this application relate to the container 1 when it is placed with its bottom on a horizontal surface.

[0024] Advantageously, the bendable skirt section is prepared for bending about a bending line along which the material of the lid is weakened or about which the material of the lid is pre-bent or along which the material of the lid in any other suitable way is prepared or adapted to facilitate bending.

[0025] However, in the embodiment shown in Fig. 1, a bending line 16 is formed in a bending section 17 connecting the peripherally extending downward bent engagement portion 7 and the skirt 9. The bending section 17 has an outside extending obliquely downward and outward, the outside thereby forming an angle with both the peripherally extending downward bent engagement portion 7 and the skirt 9. In Fig. 1, the bending line 16 is indicated in the area of the angle formed between the outside of the bending section 17 and the downward bent engagement portion 7; however, depending on the exact configuration of the form of the lid 5, the bending line 16 may also be located further downwards of the bending section 17. In fact, in order to optimize the levering effect of the bendable skirt section 12, the bending line 16 may follow a path of different heights along the length of the curved corner section 11 of the inward directed ridge 8. For instance, the bending line 16 may be positioned slightly higher at the central part of the curved corner sections 11 than at end parts of the curved corner section 11. For instance, in another embodiment, the bending line 16 may be positioned slightly lower at the central part of the curved corner section 11 than at end parts of the curved corner section 11.

[0026] It may be preferred that the bending line 16 extends below mutually contacting faces of the outward directed ridge 6 of the top opening 4 and the corresponding inward directed ridge 8 of the lid 5, respectively. Thereby, it may be ensured that the inward directed ridge 8 is not broken during the bending operation.

[0027] In the embodiment shown in Fig. 1, it is seen that the bending line 16 is formed in a bending section 17 located well below the inward directed ridge 8 of the lid 5. In the embodiment shown in Fig. 4, it is seen that the bending line 16 is formed in a bending section 17 located at the upper part of the inward directed ridge 8 of the lid 5.

[0028] In the embodiment shown in Fig. 3, it is seen that the bendable skirt section 12 is separated from the remaining part of the skirt 9 by means of two cuts 18 or pre-cuts extending downward from an area below the inward directed ridge 8 of the lid 5. In further embodiments, one or more further cuts separating the bendable skirt section 12 into two or more parts may be provided.

[0029] Though not forming a part of the invention, the cuts 18 may extend further upward and split at least part of the inward directed ridge 8 of the lid 5 at either side of the bendable skirt section 12. However, in that case it

may be preferred to cover the cut at least through the inward directed ridge 8 by means of elastic or expandable elements in order to ensure the sealing effect of the lid before and preferably also after opening and re-closing. It is noted that in such an example, the bending line 16 may in part or entirely extend above the angle between the engagement portion 7 and the bending section 17; in fact, it may in part or entirely extend at a level with or even above the inward directed ridge 8.

[0030] Though not forming a part of the invention, at least a part of the bendable skirt section 12 may be separated from the remaining part of the skirt 9 by means of two, not shown spaced elastic elements, such as parts of the skirt 9 having a wall thickness thinner than the remaining part of the skirt or parts of the skirt having a bellows-type configuration. Thereby, the bendable skirt section 12 may return automatically to its initial position after opening of the lid.

[0031] Such spaced elastic or expandable elements would split at least part of the inward directed ridge 8 of the lid at either side of the bendable skirt section 12.

[0032] In an embodiment, the bendable skirt section 12 is reinforced against bending along a line extending in its longitudinal direction, for instance, by means of reinforcing ribs or other suitable protrusions or the like. Thereby, the above-mentioned levering effect of the bendable skirt section 12 may be enhanced. In the embodiments shown in Figs. 4 to 12, this is done by means of ribs (21) extending at right angles to the longitudinal direction of the bendable skirt section 12. Thereby, it may be ensured that the bendable skirt section 12 does not bend itself; on the contrary, it is rather bent in relation to the engagement portion 7 about a bending line 16.

[0033] In the embodiment shown in Figs. 4 and 5, the bendable skirt section 12 is separated from the remaining part of the skirt 9 by means of two grooves 22 formed in the outside surface of the skirt 9 and extending downward from an area at the bending line 16 to the lower edge of the skirt 9. The grooves 22 reduce the wall thickness of the skirt 9 from a normal thickness T to a reduced thickness t , so that the skirt may break along the grooves 22 in order to bend the bendable skirt section 12 to its outward directed position 12'. In the embodiment shown, the grooves 22 are seen to have a substantially triangular cross-sectional form. Furthermore, in the embodiment shown, the bendable skirt section 12 is separated into two separate bendable skirt sections 12a, 12b by means of a groove 22' similar to the grooves 22 separating the bendable skirt section 12 from the remaining part of the skirt 9. The provision of this additional groove 22' may further facilitate the bending up of the bendable skirt section 12 in that the separation of the bendable skirt section 12 into two separate bendable skirt sections 12a, 12b may reduce tensions in the bendable skirt section 12 during bending, especially in the longitudinal direction of, and near the lower edge of, the bendable skirt section 12. In other embodiments, the bendable skirt section 12 may further be separated into more separate bendable

skirt sections by means of more supplementary grooves 22'.

[0034] It is noted that, in the embodiment shown in Figs. 4 and 5, the grooves 22, 22' extend up to the obliquely, downward extending outside of the bending section 17 connecting the peripherally extending downward bent engagement portion 7 and the skirt 9. As the bending section 17 in this embodiment is located at the upper part of the inward directed ridge 8 of the lid 5, the grooves 22, 22' providing the reduced wall thickness t also extend up to the upper part of the inward directed ridge 8; however, because of the thickness of the inward directed ridge 8, the inward directed ridge 8 may not break when the skirt is broken along the grooves 22 in order to bend the bendable skirt section 12 to its outward directed position 12'. Therefore, when the bendable skirt section 12 is bent to its outward directed position 12', the part of the inward directed ridge 8 located above the grooves 22 may twist about its longitudinal axis in order to enable a central part of the curved corner section 11 of the inward directed ridge 8 of the lid 5 to be levered away from the outward directed ridge 6 of the top opening 4, whereby engagement between the corresponding ridges 6, 8 is weakened in an area at said central part. Furthermore, in the embodiment shown in Figs. 4 and 5, it is noted, as explained above, that the bendable skirt section 12 is reinforced against bending along a line extending in its longitudinal direction by means of mutually spaced ribs 21 extending at right angles to its longitudinal direction, whereby the levering effect may be enhanced. The ribs 21 have upper ends 25 adapted to abut the outside of the engagement portion 7 when bending the bendable skirt section 12 to its outward directed position 12'. It is noted that, in this embodiment, the upper ends 25 of the ribs 21, in the not bent position of the bendable skirt section 12, are positioned above the bending section 17 and extend obliquely upwards in radial outward direction. During the bending operation, at a point in time, the upper ends 25 of the ribs 21 will abut the outside of the engagement portion 7, whereby the levering effect may be further enhanced.

[0035] In the embodiment shown in Figs. 6 to 12, the configuration of the top opening 4, the peripherally extending outward directed ridge 6, the lid 5, the peripherally extending downward bent engagement portion 7, the inward directed ridge 8 and the skirt 9 corresponds to a large extent to that of the embodiment shown in Fig. 1. However, the bendable skirt section 12 is reinforced against bending by means of mutually spaced ribs 21 extending at right angles to its longitudinal direction in a similar way to the embodiment shown in Figs. 4 and 5. However, as it may be seen in Fig. 6, in this embodiment, the upper ends 25 of the ribs 21, in the not bent position of the bendable skirt section 12, are positioned above the bending section 17 and extend obliquely downwards in radial outward direction. Further, it is noted that the bending line 16, due to the ribs 21, is formed somewhat above the bending section 17 that is located well below the inward directed ridge 8 of the lid 5. The bending line

16 is, though, formed below the inward directed ridge 8. During the bending operation, at a point in time, the upper ends 25 of the ribs 21 will abut the outside of the engagement portion 7, whereby the levering effect may be further enhanced. Due to the, in radial outward direction, obliquely downwards extent of the upper ends 25 of the ribs 21, the bendable skirt section 12 may be bent to a position even further than the position 12' indicated in Fig. 6, in which position the bendable skirt section 12 may extend obliquely upwards in radially outwards direction, before the upper ends 25 of the ribs 21 abut the outside of the engagement portion 7. This may be advantageous in this embodiment, wherein the bending section 17, as mentioned above, is located well below the inward directed ridge 8 of the lid 5, and wherein the bending line 16 is located below the inward directed ridge 8.

[0036] It is noted that in the embodiment shown in Figs. 4 and 5 as well as in the embodiment shown in Figs. 6 to 12, the grooves 22, 22' are formed in the outside surface of the skirt 9; however, they may just as well be formed in the inside surface of the skirt 9. In the latter case, the grooves 22, 22' may preferably extend no further up than to the lower area of the inward directed ridge 8 of the lid 5 in order not to break through the ridge.

[0037] In Fig. 2 it is seen that, in the shown embodiment, the substantially straight side walls 2 bend slightly in outward direction. They may, for instance, curve with a radius of 2 metres, but just as well with a radius of 30 centimetres or even less, whereas the curved corner section 10 of the outward directed ridge 6 and the curved corner section 11 of the inward directed ridge 8 may curve with a radius of about 3 centimetres. However, the radii of the curved corner sections 10, 11 may be even smaller, such as about 1 to 2 centimetres. These radii may however just as well be larger than 3 centimetres. The container may have any suitable number of side walls 2.

Claims

1. A container (1) comprising a number of side walls (2) meeting at corners (3), a bottom, a top opening (4) and a detachable lid (5) covering the top opening, the top opening being provided with a peripherally extending outwardly directed ridge (6), the lid (5) being provided with a peripherally extending downwardly bent engagement portion (7) having an inwardly directed ridge (8) adapted to grip under the outward directed ridge (6) of the top opening, the lid (5) further being provided with a skirt (9) extending below the engagement portion (7) from the inward directed ridge (8) thereof, the outward directed ridge (6) of the top opening (4) and the corresponding inward directed ridge (8) of the lid (5) having curved corner sections (10, 11) at the corners (3) at which the side walls (2) of the container meet, said curved corner sections (10, 11) connecting side sections of the respective ridges (6, 8), where at least one of the

- curved corner sections (11) of the inward directed ridge (8) of the lid (5) is provided with a bendable skirt section (12) being adapted to be bent to an outward directed position (12') in such a way that a central part of the at least one curved corner section (11) of the inward directed ridge (8) of the lid is levered away from the outward directed ridge (6) of the top opening (4) and that engagement between the corresponding ridges (6, 8) thereby is weakened in an area at said central part, **characterized in that** the bendable skirt section (12) is separated from the remaining part of the skirt (9) by means of two cuts (18) or pre-cuts extending downward from an area below the inward directed ridge (8) of the lid or by means of at least two grooves (22) formed in the outside surface of the skirt (9) and extending downward from an area at the bending line (16) to the lower edge of the skirt (9), said grooves (22) reducing the wall thickness of the skirt (9) so that the skirt is breakable along the grooves (22) in order to bend the bendable skirt section (12) to its outward directed position (12'), the bending line (16) extending below mutually contacting faces of the outward directed ridge (6) of the top opening (4) and the corresponding inward directed ridge (8) of the lid (5), respectively.
2. A container according to claim 1, **characterized in that** the bendable skirt section (12) is prepared for bending about a bending line (16) along which the material of the lid (5) is weakened or about which the material of the lid is pre-bent.
 3. A container according to claim 1 or 2, **characterized in that** a bending line (16) is formed in a bending section (17) connecting the peripherally extending downward bent engagement portion (7) and the skirt (9), and **in that** the bending section (17) has an outside extending obliquely downward and outward, the outside thereby forming an angle with both the peripherally extending downward bent engagement portion and the skirt.
 4. A container according to any one of the preceding claims, **characterized in that** a protrusion is formed next to the bending line (16) and on the outside of the engagement portion (7) or on the outside of the bendable skirt section (12), and **in that** said protrusion is adapted to be pinched between the bendable skirt section (12) and the engagement portion (7) when bending the bendable skirt section (12) to its outward directed position (12').
 5. A container according to any one of the preceding claims, **characterized in that** the bendable skirt section (12) is reinforced against bending along a line extending in its longitudinal direction, preferably by means of ribs (21) extending at right angles to its longitudinal direction.
 6. A container according to any one of the preceding claims, **characterized in that** the bendable skirt section (12) is reinforced against bending along a line extending in its longitudinal direction by means of mutually spaced ribs (21) extending at right angles to its longitudinal direction, said ribs (21) having upper ends (25) adapted to abut the outside of the engagement portion (7) when bending the bendable skirt section (12) to its outward directed position (12').

Patentansprüche

1. Behälter (1), umfassend eine Anzahl von Seitenwänden (2), die an Ecken (3) aufeinandertreffen, einen Boden, eine obere Öffnung (4) und einen abnehmbaren Deckel (5), der die obere Öffnung bedeckt, wobei die obere Öffnung mit einem sich peripher erstreckenden, nach außen gerichteten Steg (6) versehen ist, wobei der Deckel (5) mit einem sich peripher erstreckenden, nach unten gebogenen Eingriffsteil (7) mit einem nach innen gerichteten Steg (8) versehen ist, der dazu ausgebildet ist, unter den nach außen gerichteten Steg (6) der oberen Öffnung zu greifen, wobei der Deckel (5) ferner mit einer Schürze (9) versehen ist, die sich unter dem Eingriffsteil (7) von dessen nach innen gerichteten Steg (8) aus erstreckt, wobei der nach außen gerichtete Steg (6) der oberen Öffnung (4) und der entsprechende nach innen gerichtete Steg (8) des Deckels (5) an den Ecken (3) gekrümmte Eckabschnitte (10, 11) aufweisen, an welchen die Seitenwände (2) des Behälters aufeinander treffen, wobei die gekrümmten Eckabschnitte (10, 11) die Seitenabschnitte der entsprechenden Stege (6, 8) verbinden, wo mindestens einer der gekrümmten Eckabschnitte (11) des nach innen gerichteten Stegs (8) des Deckels (5) mit einem biegbaren Schürzenabschnitt (12) versehen ist, der dazu ausgebildet ist, in eine nach außen gerichtete Position (12') gebogen zu werden, so dass ein mittlerer Teil des mindestens einen gekrümmten Eckabschnitts (11) des nach innen gerichteten Stegs (8) des Deckels von dem nach außen gerichteten Steg (6) der oberen Öffnung (4) weg gehiebt wird, und dass der Eingriff zwischen den entsprechenden Stegen (6, 8) dadurch in einer Fläche am mittleren Teil geschwächt ist, **dadurch gekennzeichnet, dass** der biegbare Schürzenabschnitt (12) von dem restlichen Teil der Schürze (9) durch zwei Stanzungen (18) oder Vorstanzungen, die sich von einer Fläche unter dem nach innen gerichteten Steg (8) des Deckels nach unten erstrecken, oder durch mindestens zwei Rillen (22), die in der Außenfläche der Schürze (9) gebildet sind und sich von einer Fläche an der Biegelinie (16) zur unteren Kante der Schürze (9) erstrecken, getrennt ist, wobei die Rillen (22) die Wanddicke der Schürze (9) verringern, so dass die

Schürze entlang der Rillen (22) brechen kann, um den biegbaren Schürzenabschnitt (12) in seine nach außen gerichtete Position (12') zu biegen, wobei sich die Biegelinie (16) unter wechselseitig in Kontakt stehenden Flächen des nach außen gerichteten Stegs (6) der oberen Öffnung (4) beziehungsweise des nach innen gerichteten Stegs (8) des Deckels (5) erstreckt.

2. Behälter nach Anspruch 1, **dadurch gekennzeichnet, dass** der biegbare Schürzenabschnitt (12) zum Biegen um eine Biegelinie (16) bereit ist, entlang der das Material des Deckels (5) geschwächt ist oder um die das Material des Deckels vorgebogen ist.
3. Behälter nach Anspruch 1 oder 2, **dadurch gekennzeichnet, dass** eine Biegelinie (16) in einem Biegeabschnitt (17) gebildet ist, der den sich peripher erstreckenden, nach unten gebogenen Eingriffsteil (7) mit der Schürze (9) verbindet, und dass der Biegeabschnitt (17) eine Außenseite aufweist, die sich schräg nach unten und nach außen erstreckt, wodurch die Außenseite sowohl mit dem sich peripher erstreckenden, nach unten gebogenen Eingriffsteil wie auch der Schürze einen Winkel bildet.
4. Behälter nach einem der vorangehenden Ansprüche, **dadurch gekennzeichnet, dass** ein Fortsatz nahe der Biegelinie (16) und an der Außenseite des Eingriffsteils (7) oder an der Außenseite des biegbaren Schürzenabschnitts (12) gebildet ist und dass der Fortsatz dazu ausgebildet ist, zwischen dem biegbaren Schürzenabschnitt (12) und dem Eingriffsteil (7) eingeklemmt zu werden, wenn der biegbare Schürzenabschnitt (12) in seine nach außen gerichtete Position (12') gebogen wird.
5. Behälter nach einem der vorangehenden Ansprüche, **dadurch gekennzeichnet, dass** der biegbare Schürzenabschnitt (12) gegen ein Biegen entlang einer Linie, die sich in seiner Längsrichtung erstreckt, vorzugsweise durch Rippen (21) verstärkt ist, die sich in rechten Winkeln zu seiner Längsrichtung erstrecken.
6. Behälter nach einem der vorangehenden Ansprüche, **dadurch gekennzeichnet, dass** der biegbare Schürzenabschnitt (12) gegen ein Biegen entlang einer Linie, die sich in seiner Längsrichtung erstreckt, durch wechselseitig beabstandete Rippen (21) verstärkt ist, die sich in rechten Winkeln zu seiner Längsrichtung erstrecken, wobei die Rippen (21) obere Enden (25) aufweisen, die dazu ausgebildet sind, gegen die Außenseite des Eingriffsteils (7) zu liegen, wenn der biegbare Schürzenabschnitt (12) in seine nach außen gerichtete Position (12') gebogen wird.

Revendications

1. Récipient (1) comprenant un certain nombre de parois latérales (2) se rencontrant dans des coins (3), un fond, une ouverture supérieure (4) et un couvercle détachable (5) recouvrant l'ouverture supérieure, l'ouverture supérieure étant pourvue d'une arête (6) dirigée vers l'extérieur et s'étendant sur la périphérie, le couvercle (5) étant muni d'une portion d'engagement (7) repliée vers le bas et s'étendant sur la périphérie, laquelle portion présente une arête (8) dirigée vers l'intérieur qui est à même de s'accrocher en dessous de l'arête (6), dirigée vers l'extérieur, de l'ouverture supérieure, le couvercle (5) étant en outre pourvue d'une jupe (9) s'étendant en dessous de la portion d'engagement (7) depuis son arête (8) dirigée vers l'intérieur, l'arête (6), dirigée vers l'extérieur, de l'ouverture supérieure (4) et l'arête correspondante (8), dirigée vers l'intérieur, du couvercle (5) ayant des sections cornières incurvées (10, 11) dans les coins (3) où les parois latérales (2) du récipient se rencontrent, lesdites sections cornières incurvées (10, 11) raccordant des sections latérales des arêtes respectives (6, 8), où au moins l'une des sections cornières incurvées (11) de l'arête (8), dirigée vers l'intérieur, du couvercle (5) est pourvue d'une section de jupe repliable (12) qui est à même de se replier dans une position (12') dirigée vers l'extérieur de sorte qu'une partie centrale de la au moins une section cornière incurvée (11) de l'arête (8), dirigée vers l'intérieur, du couvercle soit écartée par effet de levier de l'arête (6), dirigée vers l'extérieur, de l'ouverture supérieure (4) et que l'engagement entre les arêtes correspondantes (6, 8) soit ainsi affaibli dans une zone sur ladite partie centrale, **caractérisé en ce que** la section de jupe repliable (12) est séparée de la partie restante de la jupe (9) au moyen de deux découpes (18) ou prédécoupes s'étendant vers le bas d'une zone située en dessous de l'arête (8), dirigée vers l'intérieur, du couvercle ou au moyen d'au moins deux rainures (22) formées dans la surface externe de la jupe (9) et s'étendant vers le bas d'une zone sur la ligne de pliage (16) au bord inférieur de la jupe (9), lesdites rainures (22) réduisant l'épaisseur de paroi de la jupe (9) de sorte que la jupe puisse être rompue le long des rainures (22) afin de replier la section de jupe pliable (12) dans sa position (12') dirigée vers l'extérieur, la ligne de pliage (16) s'étendant en dessous de faces mutuellement en contact de l'arête (6), dirigée vers l'extérieur, de l'ouverture supérieure (4) et de l'arête correspondante (8), dirigée vers l'intérieur, du couvercle (5), respectivement.
2. Récipient selon la revendication 1, **caractérisé en ce que** la section de jupe repliable (12) est préparée pour se replier autour d'une ligne de pliage (16) le long de laquelle le matériau du couvercle (5) est af-

faibli ou autour de laquelle le matériau du couvercle est pré-plié.

3. Récipient selon la revendication 1 ou la revendication 2, **caractérisé en ce qu'**une ligne de pliage (16) est formée dans une section de pliage (17) raccordant la portion d'engagement (7) repliée vers le bas et s'étendant sur la périphérie et la jupe (9) et **en ce que** la section de pliage (17) a un extérieur s'étendant en oblique vers le bas et vers l'extérieur, l'extérieur formant ainsi un angle avec à la fois la portion d'engagement repliée vers le bas et s'étendant sur la périphérie et la jupe.

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4. Récipient selon l'une quelconque des revendications précédentes, **caractérisé en ce qu'**une saillie est formée à côté de la ligne de pliage (16) et à l'extérieur de la portion d'engagement (7) ou à l'extérieur de la section de jupe repliable (12), et **en ce que** ladite saillie est à même d'être pincée entre la section de jupe repliable (12) et la portion d'engagement (7) lors du pliage de la section de jupe repliable (12) vers sa position (12') dirigée vers l'extérieur.

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5. Récipient selon l'une quelconque des revendications précédentes, **caractérisé en ce que** la section de jupe repliable (12) est renforcée à l'encontre du pliage le long d'une ligne s'étendant dans sa direction longitudinale, de préférence au moyen de nervures (21) s'étendant à angle droit avec sa direction longitudinale.

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6. Récipient selon l'une quelconque des revendications précédentes, **caractérisé en ce que** la section de jupe repliable (12) est renforcée à l'encontre du pliage le long d'une ligne s'étendant dans sa direction longitudinale, de préférence au moyen de nervures (21) mutuellement espacées s'étendant à angle droit avec sa direction longitudinale, lesdites nervures (21) ayant des extrémités supérieures (25) qui sont à même de s'appuyer sur l'extérieur de la portion d'engagement (7) lors du pliage de la section de jupe repliable (12) vers sa position (12') dirigée vers l'extérieur.

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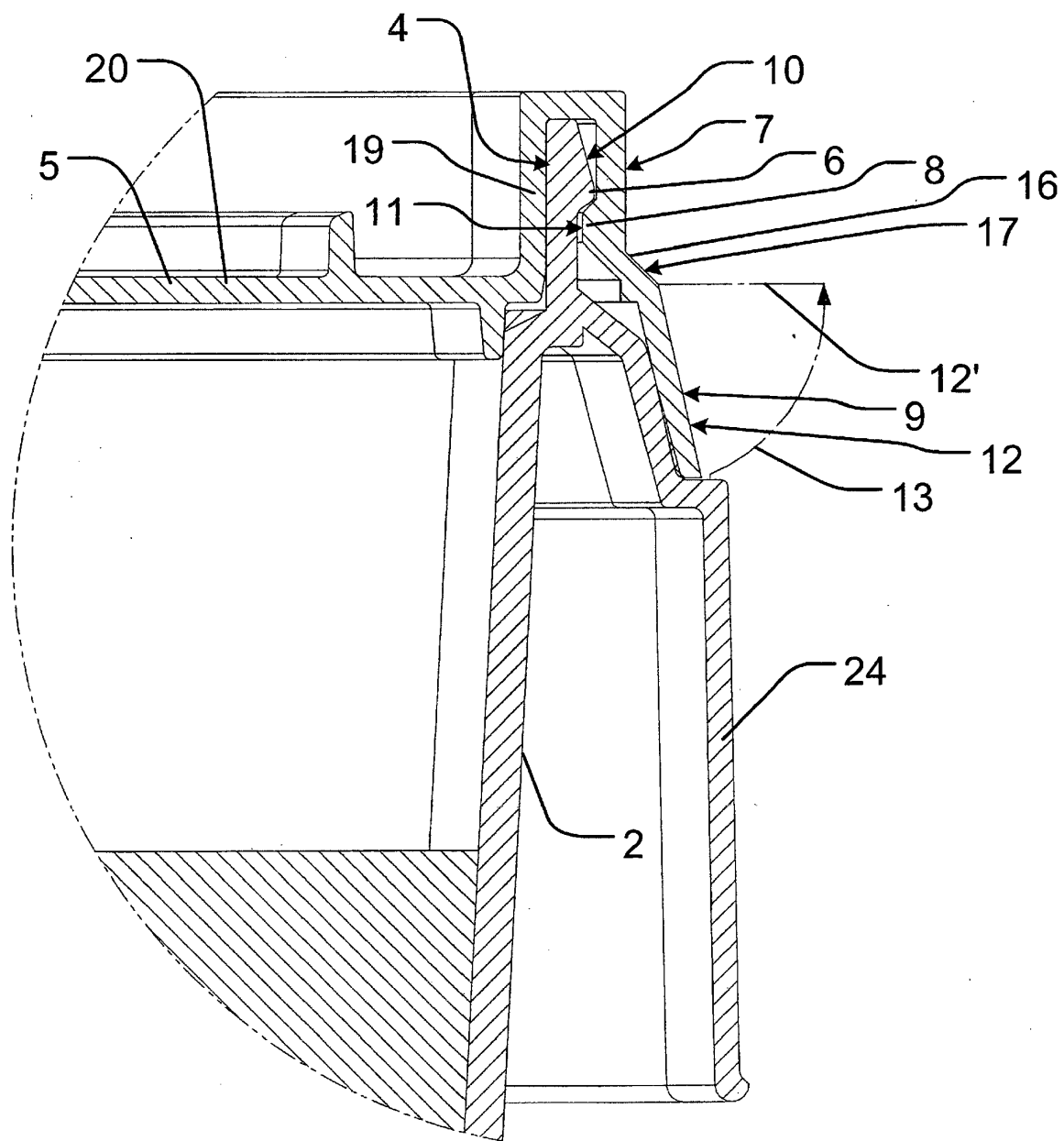


Fig. 1

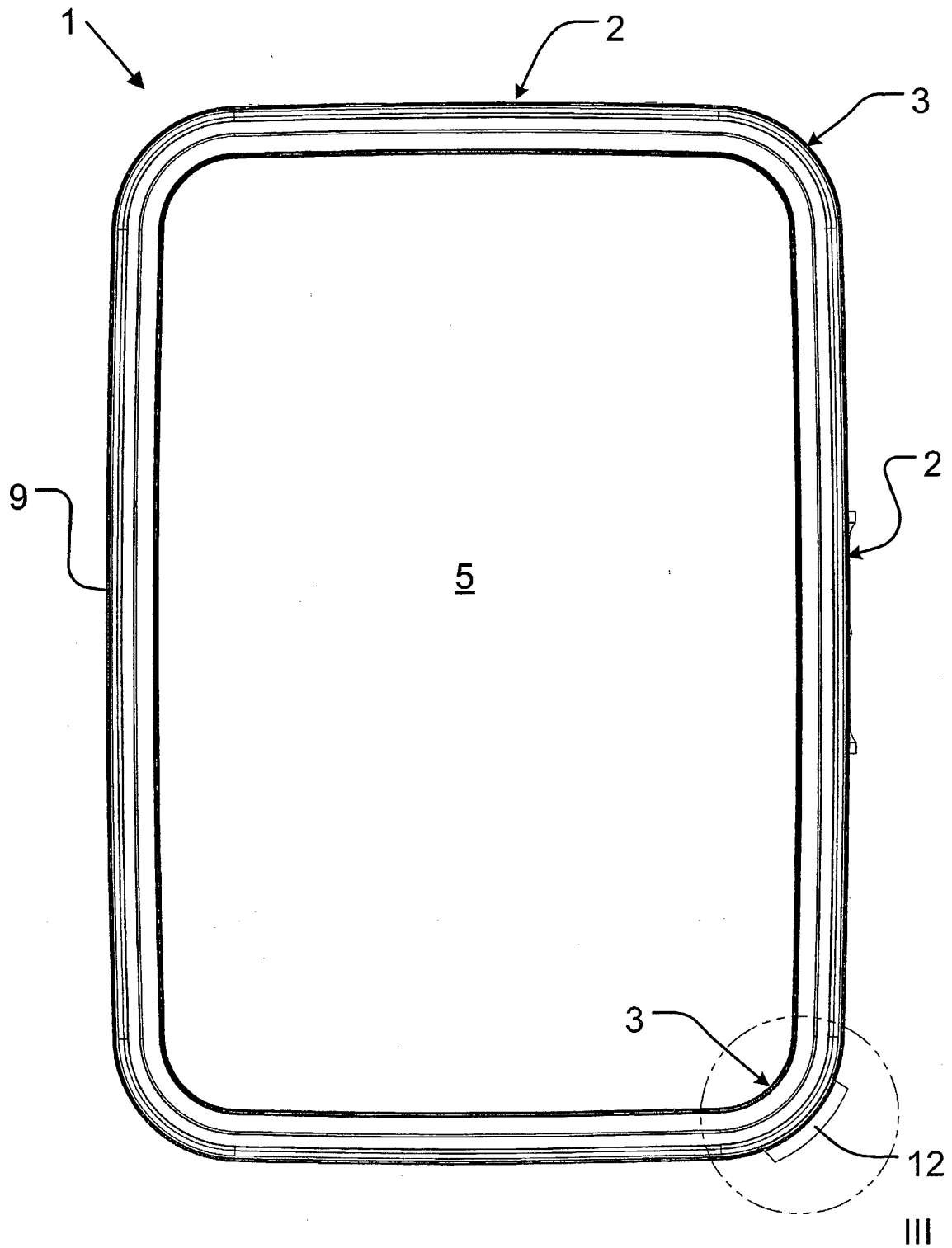


Fig. 2

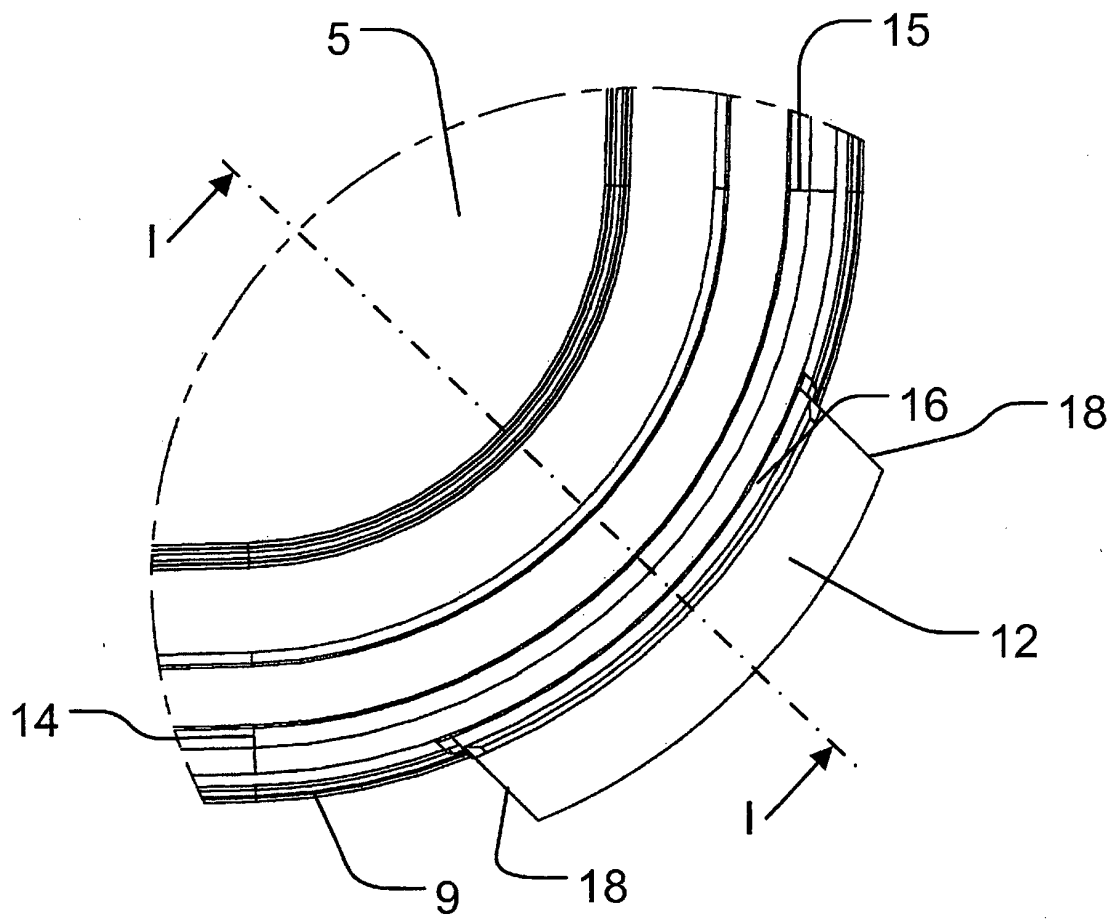


Fig. 3

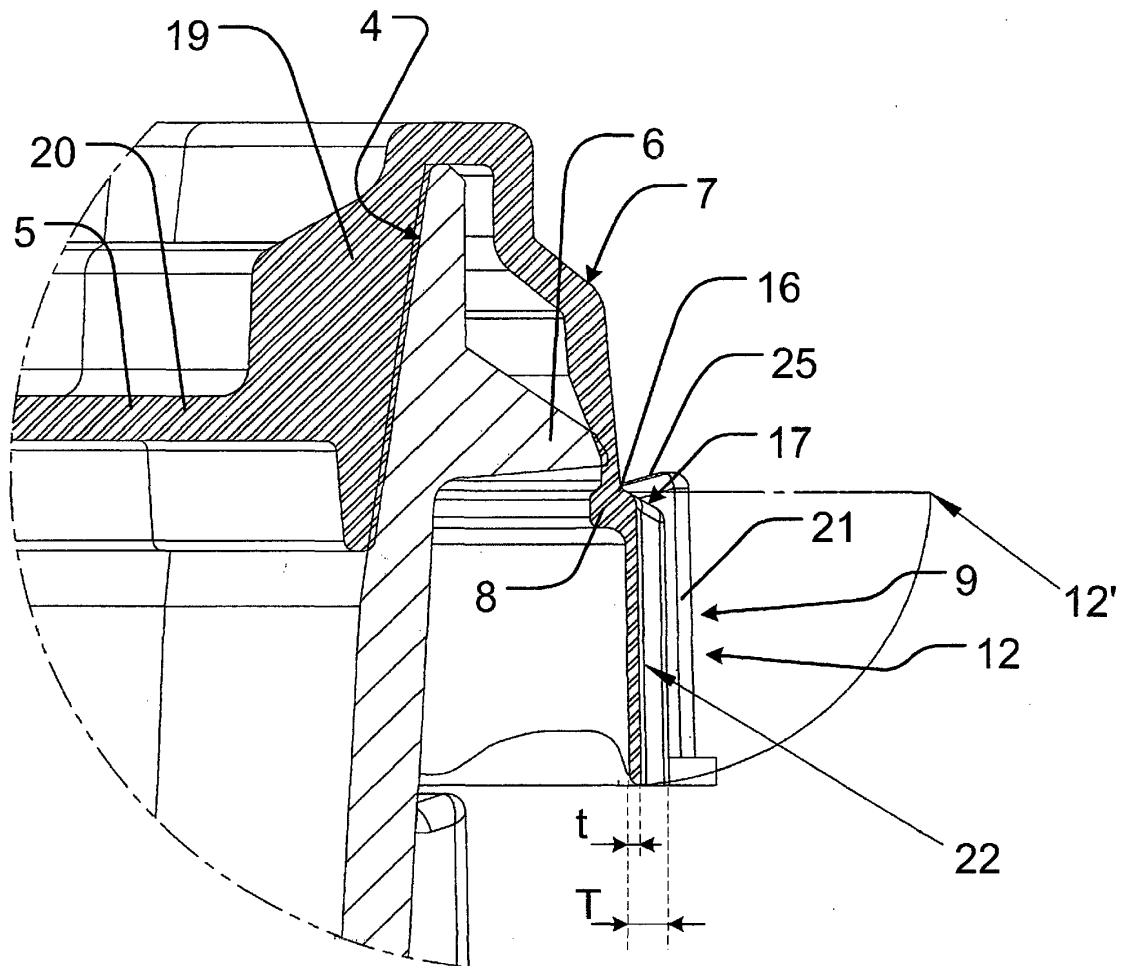


Fig. 4

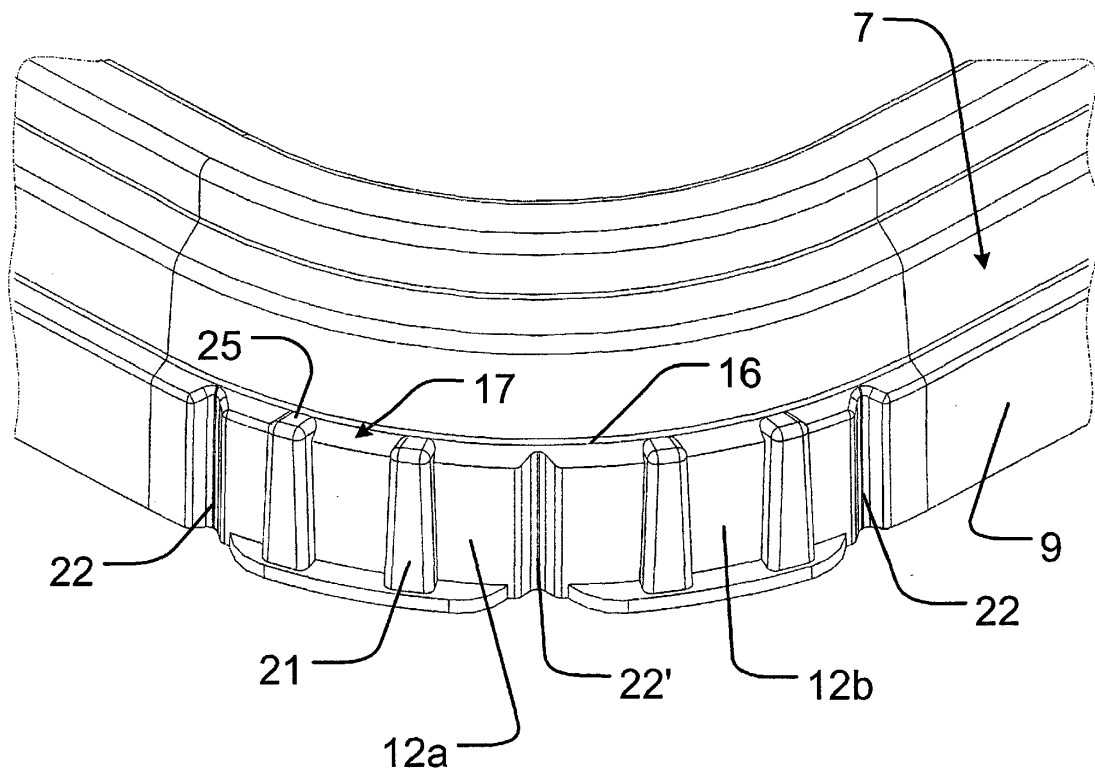


Fig. 5

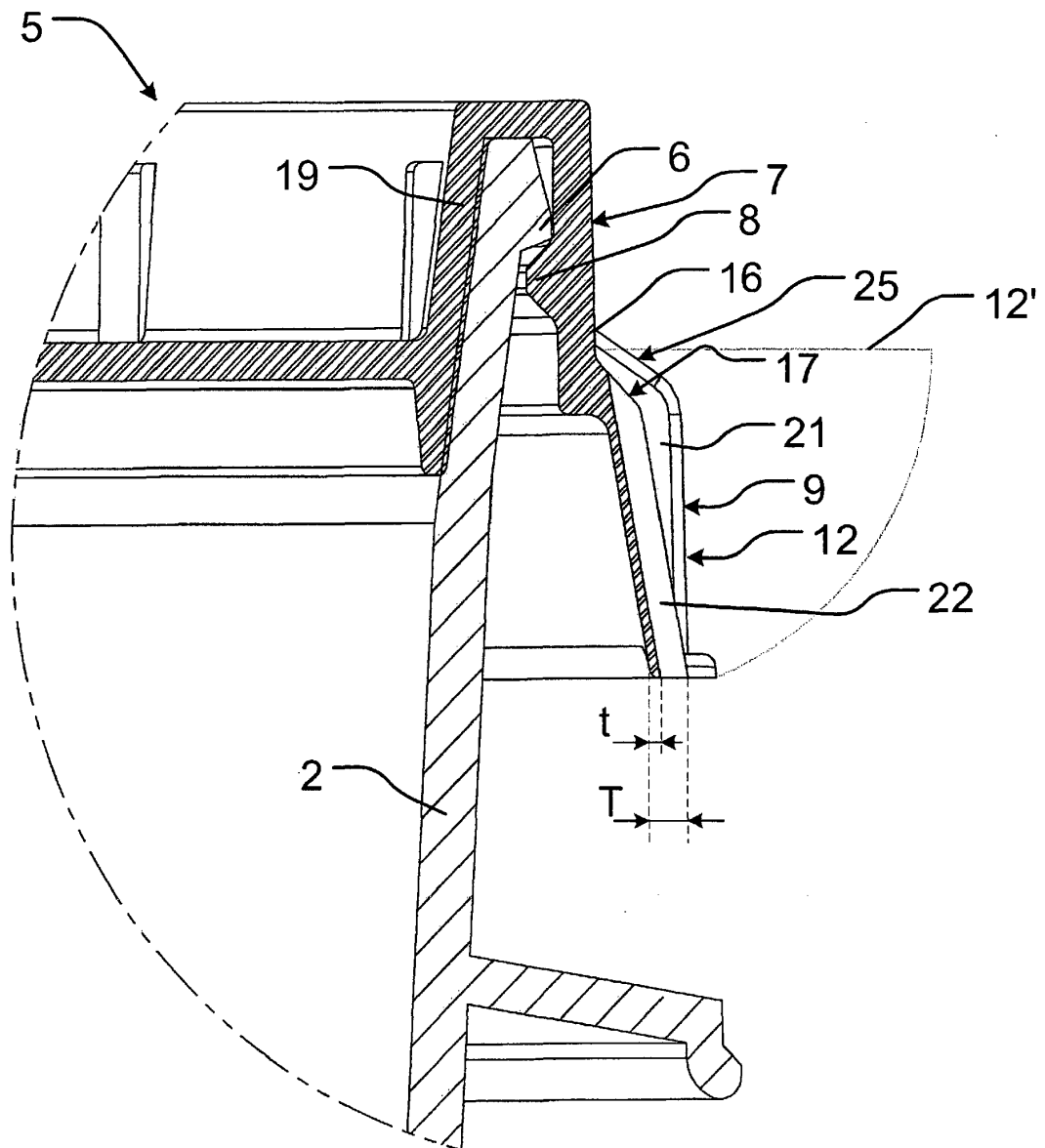


Fig. 6

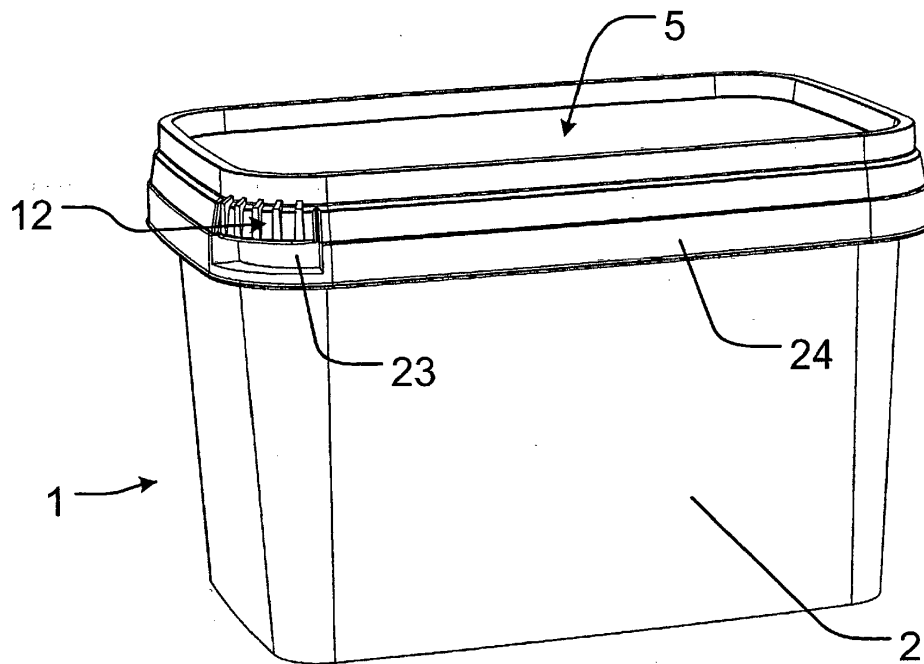


Fig. 7

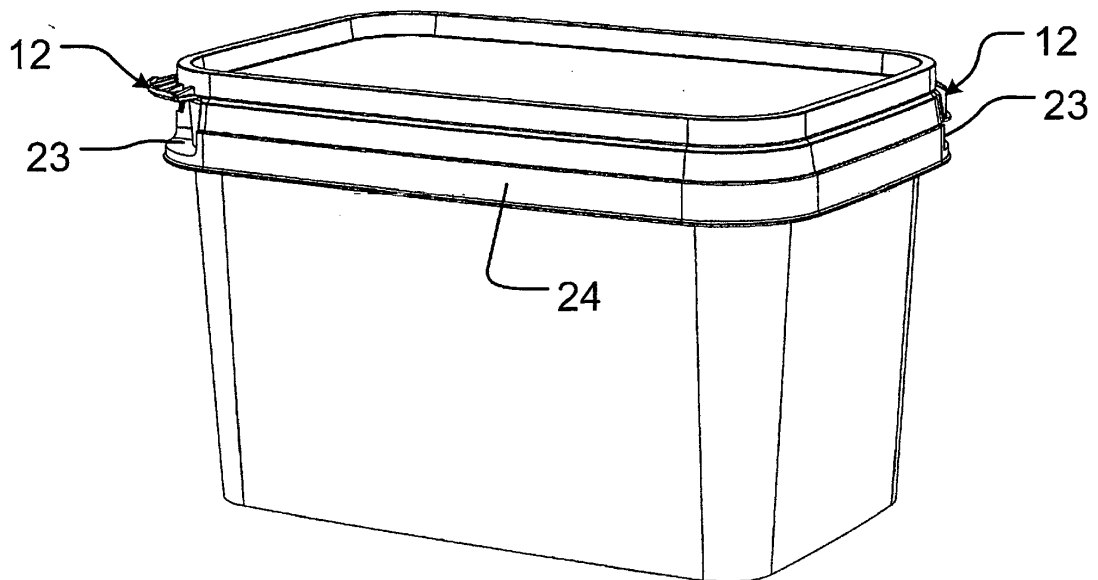
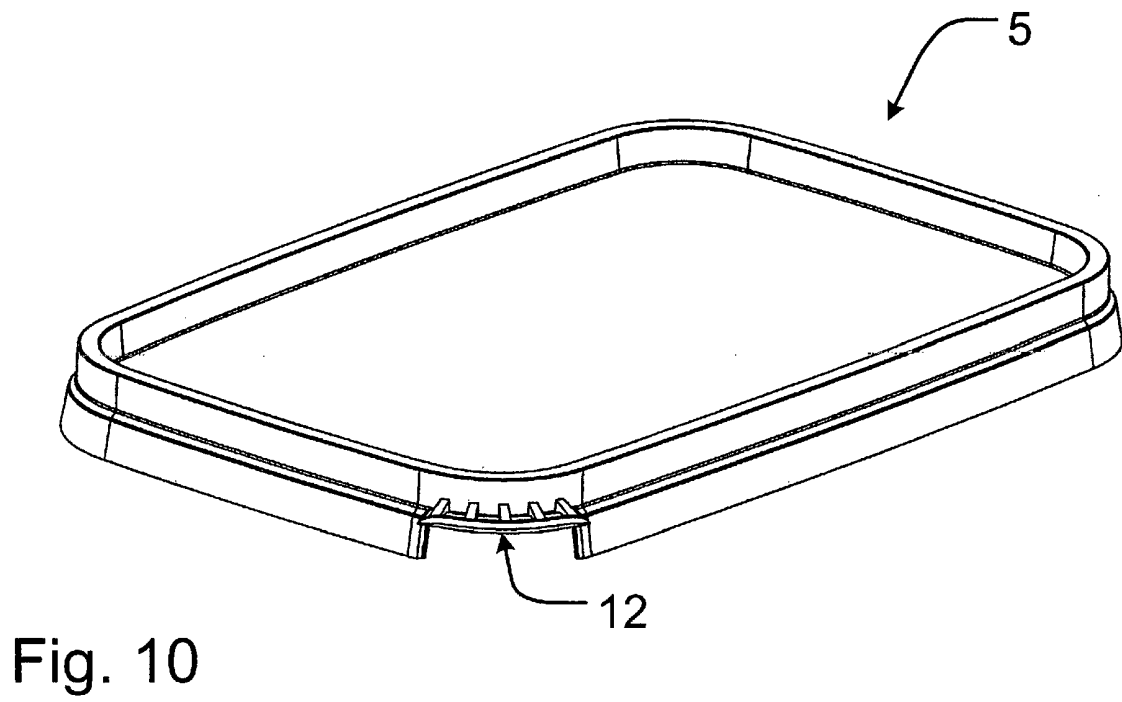
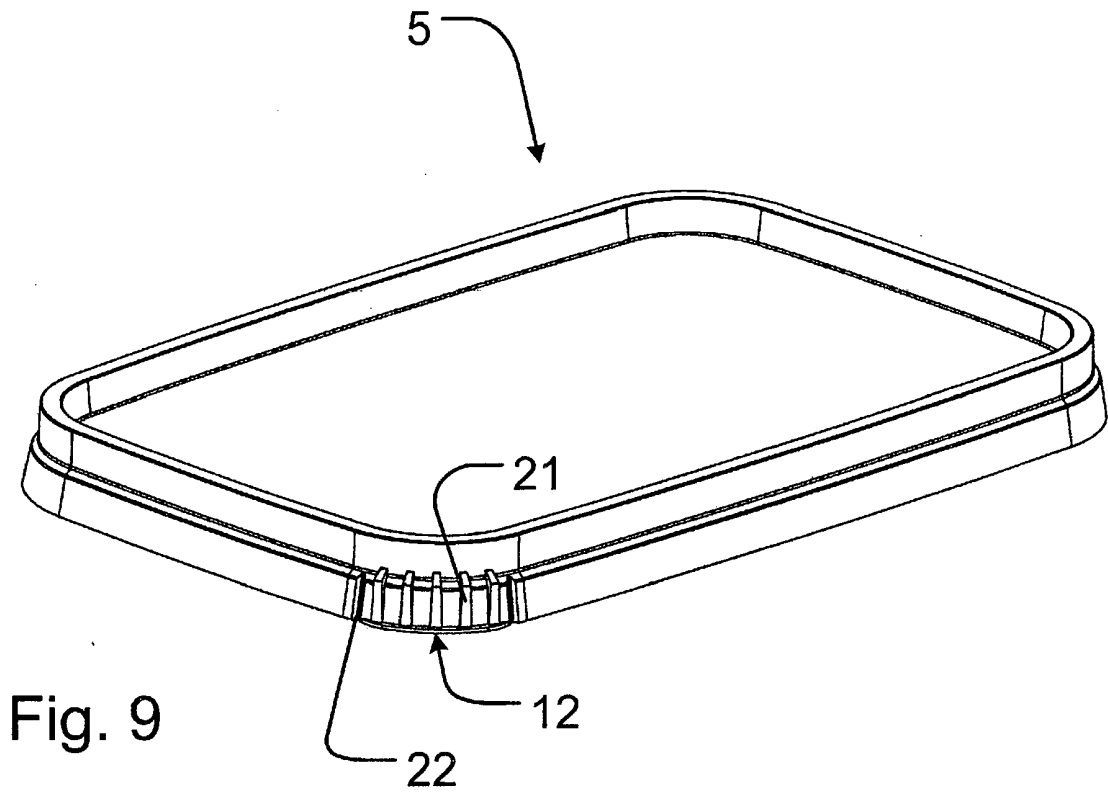


Fig. 8



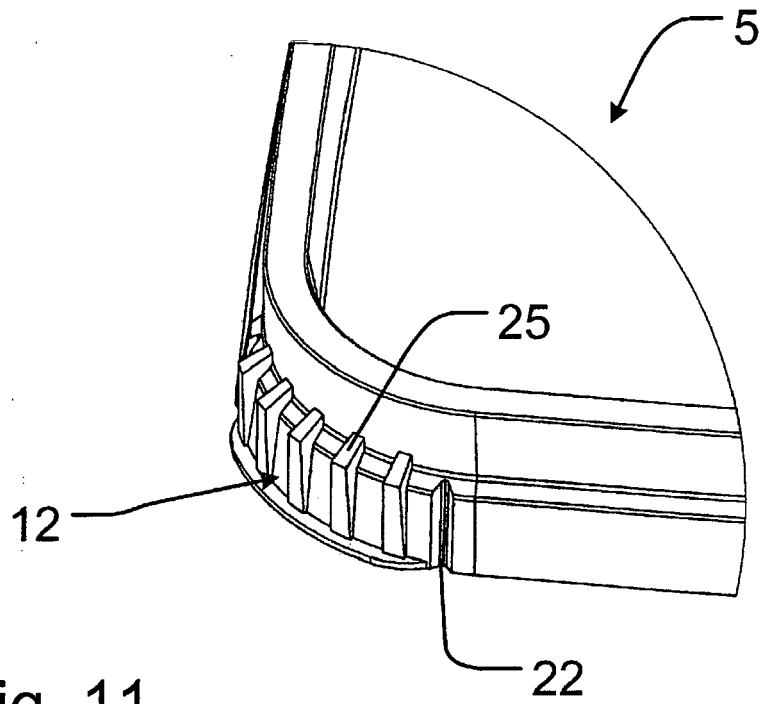


Fig. 11

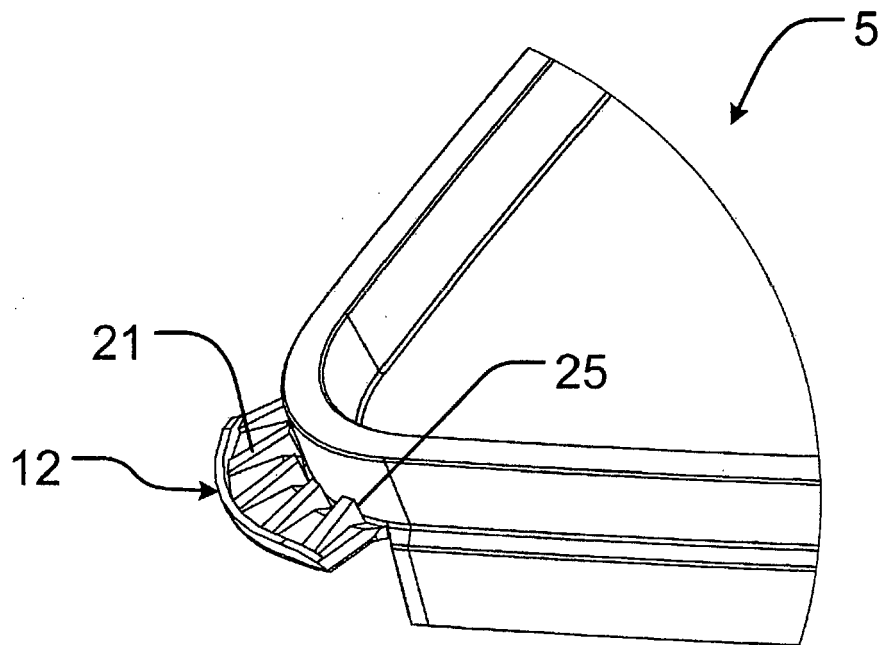


Fig. 12

REFERENCES CITED IN THE DESCRIPTION

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