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(54) **Tin lid**

Dosendeckel

Couvercle pour une boîte

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Description

[0001] The invention relates to a lid for a sheet metal container, which lid comprises:

- a sheet metal body;
- a score line substantially arranged along the periphery of the sheet metal body and defining a tear-out part;
- a tab attached to the tear-out part of the sheet metal body.

[0002] Such lids are widely used for containers for foodstuff. Such containers are filled with the foodstuff and a lid according to the preamble is attached to the container, for example by seaming. Afterwards the containers are sterilized. With this sterilizing the containers are subjected to a heat treatment and afterwards cooled off. During the heat treatment the gasses inside of the container expand subjecting the container to an over pressure. When this pressure gets too high a so called peaking effect arises, which may breakes the score line resulting in a leaking container. The peaking effect is that a part of the lid is permanently deformed. Due to this deformation the container cannot be sold anymore, but also this peaking jeopardizes the airtightness of the score line.

[0003] In order to avoid peaking the lid should have a minimum thickness. This thickness depends on the material used.

[0004] As these containers are manufactured in large numbers a small reduction in material costs could save a substantial amount of money.

[0005] Therefore it is an object of the invention to provide a lid, which can better resist peaking.

[0006] This object is achieved with a lid according to the invention as defined in claim 1.

[0007] US 4,511,299 discloses a lid according to the preamble of claim 1.

[0008] The furrows provide an increased stiffness of the lid near the score line, such that the peaking effect is suppressed.

[0009] The extra stiffness of the furrows has a further advantage when opening the lid by pulling up the tab, such that part of the score line is broken. Due to the increased stiffness around the score line a consumer can generate with a tab a larger tear in the score line, which reduces the energy necessary to pull out the complete tear-out part of the lid.

[0010] The lid comprises two additional furrows arranged adjacent to the tab. This furthermore increases the strength of the lid and provides better opening properties.

[0011] In another preferred embodiment of the lid according to the invention the furrow in the tear-out part is parallel to the score line. This provides for a constant stiffness along the score line.

[0012] In yet another preferred embodiment of the lid

according to the invention the distance of the centerline of the furrow to in the team-out part the score line is in range of 0.75-2 times preferably 1 time, the width of the furrow.

[0013] If the furrow is too close to the score line, the score line can be damaged when providing a furrow into the lid after the score line has been manufactured. If the furrow is too distanced from the score line the contribution of the furrow to the stiffness is low.

[0014] In yet another embodiment of the lid according to the invention the sheet metal body comprises a curled edge for seaming to a container.

[0015] Preferably the tear-out part of the lid according to the invention comprises at least one recessed part. If more recessed parts are provided it is preferred to have the recessed parts terraced. These recessed parts provide additional stiffness to the lid, which is mostly of importance to the appearance of containers having such a lid. If the inside atmosphere of the container is under pressure, the lid would have the tendency to become convex. For a consumer this is not attractive.

[0016] The invention furthermore relates to a container comprising:

- a bottom part;
- an upstanding wall arranged along the periphery of the bottom part; and
- a lid according to any of the preceding claims arranged to the upper edge of the upstanding wall.

[0017] Preferably the lid is seamed to the upstanding wall.

[0018] These and other advantages of the invention will be elucidated in conjunction of the accompanying drawings.

Figure 1 shows a perspective view of an embodiment of a lid according to the invention.

Figure 2A shows a cross-sectional view along the line II of figure 1.

Figure 2B shows a detail of the cross-sectional view of figure 2A.

Figure 3 shows a cross-sectional view along the line III of figure 1.

Figure 1 shows a lid 1 according to the invention.

This lid is made of sheet metal. The lid 1 has an edge part 2 and a center part 3. The center part 3 comprises a number of recesses, which are terraced. The center part 3 can be teared out by pulling the tab 4. The center part 3 is defined by the score line 5. Parallel to this score line 5 a furrow 6 is arranged, which provides additional stiffness in the tear part adjacent to the score line.

[0019] In this embodiment the furrow is arranged along the complete length of the score line, for example in the region of the tab.

[0020] The center part 3 has on either side of the tab an additional furrow 9. These two furrows 9 extend sub-

stantially perpendicular to the longitudinal direction of the tab 4. The furrows 9 are located between the rivet 7 and the score line 5 and provide additional stiffness to the part which is pushed open with the tab 4.

[0021] Figure 2A shows a cross-sectional view along the line II of figure 1. Figure 2B shows a detail of figure 2A. The tab 4 is attached to the lid 1 by a rivet 7 formed out of the sheet metal body of the lid 1. The tab 4 ends just before the score line 5. So when the tab 4 is lifted the end of the tab 4 will press just besides score line 5 in order to brake this score line. The furrow 6 provides for additional stiffness such that the tearing open of the score line is made easier. The edge 2 of the lid 1 is curved such that it could be seamed to a conventional container.

[0022] Figure 3 shows a cross-sectional view along the line III of figure 1. The furrow 6 is also present in this cross-sectional view and has the same depth in this embodiment as the part shown in figure 2A. This furrow 6 extends along the complete periphery of the lid 1. In figure 3 a first recessed part 8 is further shown.

[0023] The depth of the furrow 6 can also be varied along its length in order to adjust the tear-out-properties of the center part 3.

Claims

1. A lid (1) for a sheet metal container, which lid (1) comprises:

- a sheet metal body;
- an edge part (2) for seaming to a container;
- a score line (5) substantially arranged along the periphery of the sheet metal body and defining a tear-out part (3);
- a tab (4) attached to the tear-out part (3) of the sheet metal body;
- a furrow (6) arranged in the tear-out part (3) of the sheet metal body adjacent and parallel along the score line (5); and
- a furrow arranged in a lid part between the score line (5) and the edge part (2), and adjacent and parallel along the score line (5),

characterized in that at least two additional furrows (9) are arranged on sides of the tab (4).

2. A lid (1) according to claim 1, wherein the distance of the centerline of the furrow (6) to the score line (5) is in the range of 0.75 - 2 times, preferably 1 time, the width of the furrow (6).
3. A lid (1) according to any of the preceding claims, wherein the sheet metal body comprises a curled edge for seaming to a container.
4. A lid (1) according to any of the preceding claims, wherein the tear-out part (3) comprises at least one

recessed part (8).

5. A lid (1) according to claim 4, wherein recessed parts are terraced.

6. A lid (1) according to claim 4 or 5, wherein at least one recessed part is non-circular.

7. Container comprising:

- a bottom part;
- an upstanding wall arranged along the periphery of the bottom part; and
- a lid (1) according to any of the preceding claims arranged to the upper edge of the upstanding wall.

8. Container according to claim 8, wherein the lid (1) is seamed to the upstanding wall.

Patentansprüche

1. Deckel (1) für einen Metallblechbehälter, welcher Deckel (1) umfasst:

- einen Metallblechkörper,
- einen Randteil (2) zum Falzen an einem Behälter,
- eine Kerblinie (5), die im Wesentlichen längs des Umfangs des Metallblechkörpers angeordnet ist und die einen Ausreißteil (3) festlegt,
- eine Lasche (4), die an dem Ausreißteil (3) des Metallblechkörpers angebracht ist,
- eine Rille (6), die in dem Ausreißteil (3) des Metallblechkörpers neben und parallel längs der Kerblinie (5) angeordnet ist,
- und eine Rille, die in dem Deckelteil zwischen der Kerblinie (5) und dem Randteil (2) und neben und parallel längs der Kerblinie (5) angeordnet ist,

dadurch gekennzeichnet,

dass zumindest zwei zusätzliche Rillen (9) an Seiten der Lasche (4) angeordnet sind.

2. Deckel (1) nach Anspruch 1, wobei der Abstand der Mittellinie der Rille (6) zu der Kerblinie (5) im Bereich des 0,75- bis 2-Fachen, vorzugsweise des 1-Fachen der Breite der Rille (6) liegt.

3. Deckel (1) nach einem der vorhergehenden Ansprüche, wobei der Metallblechkörper einen eingerollten bzw. gebördelten Rand zum Falzen an einem Behälter umfasst.

4. Deckel (1) nach einem der vorhergehenden Ansprüche, wobei der Ausreißteil (3) zumindest einen ver-

tieften Teil (8) enthält.

5. Deckel (1) nach Anspruch 4, wobei die vertieften Teile treppenförmig sind.

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6. Deckel (1) nach Anspruch 4 oder 5, wobei zumindest ein vertiefter Teil nicht-kreisförmig ist.

7. Behälter, umfassend:

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- einen Bodenteil,
- eine hoch stehende Wand, die längs des Umfangs des Bodenteiles angeordnet ist,
- und einen Deckel (1) nach einem der vorhergehenden Ansprüche, der am oberen Rand der hoch stehenden Wand angeordnet ist.

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8. Behälter nach Anspruch 7, wobei der Deckel (1) an die hoch stehende Wand gefalzt ist.

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(3) comprend au moins une partie évidée (8).

5. Couvercle (1) selon la revendication 4, dans lequel les parties évidées sont en terrasse.

6. Couvercle (1) selon la revendication 4 ou 5, dans lequel au moins une partie évidée est non circulaire.

7. Récipient comprenant :

- une partie de fond ;
- une paroi droite agencée le long de la périphérie de la partie de fond ; et
- un couvercle (1) selon l'une quelconque des revendications précédentes, agencé sur le bord supérieur de la paroi droite.

8. Récipient selon la revendication 8, dans lequel le couvercle (1) fait un joint sur la paroi droite.

Revendications

1. Couvercle (1) pour un récipient en fer-blanc, lequel couvercle (1) comprend :

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- un corps en fer-blanc ;
- une partie de bord (2) pour faire un joint sur un récipient ;
- une ligne de repère (5) sensiblement agencée le long de la périphérie du corps en fer-blanc et définissant une partie détachée (3) ;
- une languette (4) fixée sur la partie détachée (3) du corps en fer-blanc ;
- un sillon (6) agencé dans la partie détachée (3) du corps en fer-blanc, adjacent et parallèle le long de la ligne de repère (5) ; et
- un sillon agencé dans une partie de couvercle entre la ligne de repère (5) et la partie de bord (2), et adjacent et parallèle le long de la ligne de repère (5),

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caractérisé en ce qu'au moins deux sillons supplémentaires (9) sont agencés sur les côtés de la languette (4).

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2. Couvercle (1) selon la revendication 1, dans lequel la distance allant de la ligne médiane du sillon (6) jusqu'à la ligne de repère (5) est de l'ordre de 0,75 à 2 fois, de préférence 1 fois la largeur du sillon (6).

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3. Couvercle (1) selon l'une quelconque des revendications précédentes, dans lequel le corps en fer-blanc comprend un bord moleté pour faire un joint sur un récipient.

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4. Couvercle (1) selon l'une quelconque des revendications précédentes, dans lequel la partie détachée

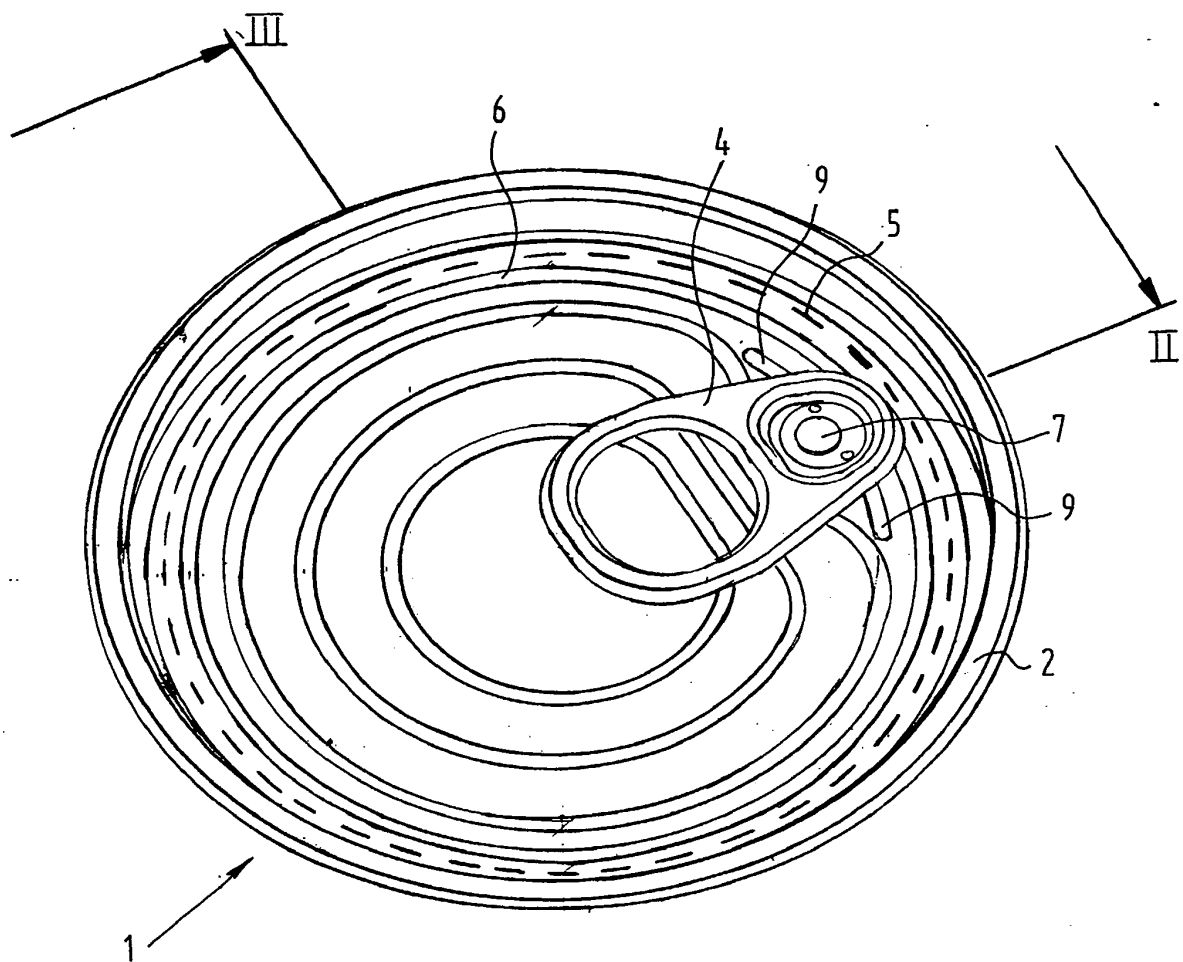


FIG. 1

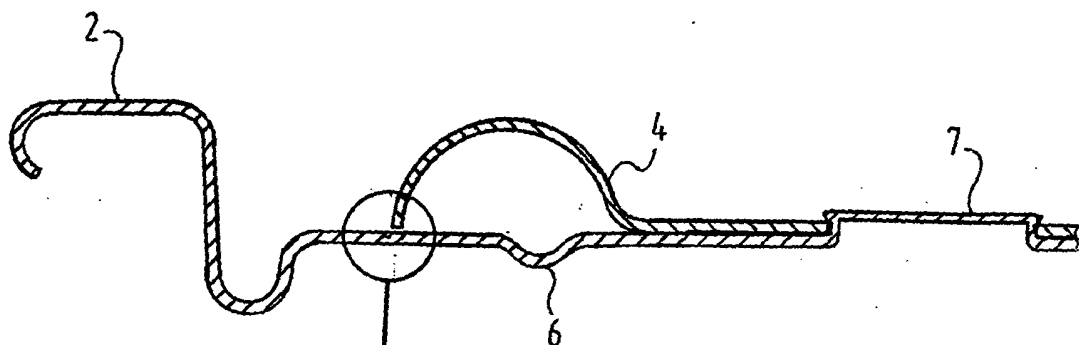


FIG. 2A

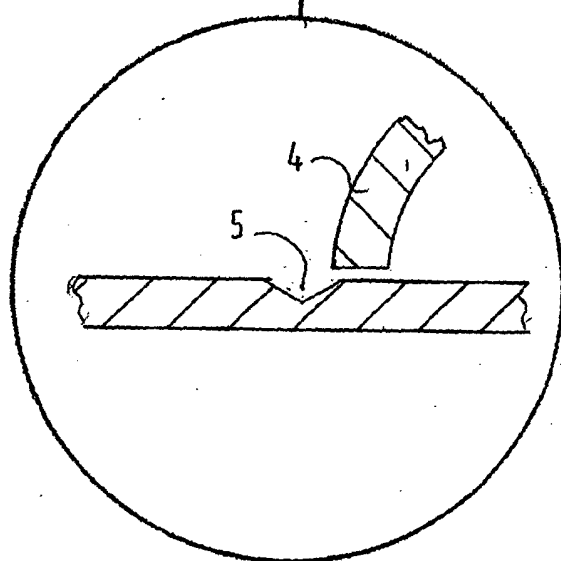


FIG. 2B

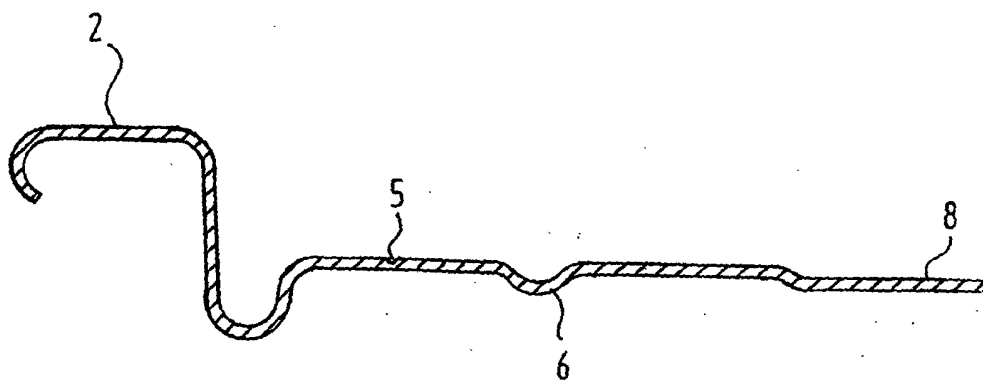


FIG. 3

REFERENCES CITED IN THE DESCRIPTION

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