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(54) CONTAINER HAVING AN INTERLOCKING COVER ARRANGEMENT

BEHÄLTER MIT EINER VERRIEGELBAREN DECKELANORDNUNG

RECIPIENT A COUVERCLE A EMBOITEMENT

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EP 0 730 552 B1

Description

FIELD OF THE INVENTION

This invention relates to a container, especially a food container, having an interlocking cover arrangement, the container having a tray member including a plane bottom wall and four tray member side walls upstanding from the latter to form a box-like structure open at the top, the tray member side walls each including an outer flange element, the container also has a cover member including a plane top wall and four cover member side walls depending from said top wall to form a box-like structure open at the bottom, each of the opposite side walls of said cover member side walls having at least one locking tongue which is situated on the inside of its respective side wall and which is inwardly biased, each locking tongue presenting an upwardly facing abutment for engagement with a corresponding downwardly facing abutment on said tray member.

BACKGROUND ART

Such containers including interlocking covers are known from US-B-4,114,798. The known container does, however, not provide a sufficiently strong locking function between the tray and the cover members.

SUMMARY OF THE INVENTION

The object of the present invention is, therefore, to provide a container of the aforementioned kind, which provides a stronger and safer interlocking between the tray and cover members. This object will be achieved by a container according to the invention and having the characteristics set forth in Claim 1.

According to the invention the outer flange elements consist of brims projecting outwardly from the periphery of the tray member in a direction substantially parallel to the plane of the bottom wall of the tray member, said brims each having a bottom surface forming said downwardly facing abutment, and said brims each having a top surface forming an abutment surface for engagement with said top wall of the cover member, an opposed pair of the brims having apertures for mating engagement with each of said locking tongues by snap-action.

It has proved that the interlocking between the tray and cover members becomes so strong that it is possible to safely lift a container also when it is filled with food by lifting the container in its cover member.

Further developments of the invention are set forth in the subclaims.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention will be described in more detail by ref-

erence to the accompanying drawings, which illustrate a preferred embodiment of the invention.

Fig. 1 is a perspective view of a tray member according to the invention.

Figs. 2 - 5 illustrate four sequential stages for the manufacture of a tray member according to the invention.

Figs. 6 - 7 illustrate in sequence two operational stages in interlocking a tray member and a cover member according to the invention.

PREFERRED EMBODIMENT

Fig. 1 shows a rectangular tray member 1 of a plane, stiff material, for instance a paperboard material. The tray member has a plane bottom wall 1a and four side walls 1b-e up-standing from the bottom wall 1a to form a box-like structure open at the top. Each tray member side wall 1b-e has an outer flange in the form of a brim 2, 3, 4, and 5, respectively, projecting outwardly from the periphery of the tray member in a direction substantially parallel to the plane of the bottom wall 1a of the tray member. The tray member may be either right-angled or conical in order to enable a piling of several tray members into one another. The tray member may also be foldable, for instance of the type described in Swedish patent specification Number 8405157-2.

Each of the two opposed brim portions 2 and 4, see Fig. 1, has two through, oblique apertures 6, 7 and 8, 9, respectively, which improve the interlocking function, as will be explained below.

Fig. 2 shows a cut out plane blank of a plastic treated paperboard or the like, which, after folding and glueing, will form the cover member illustrated in Figs. 3 - 5.

The cover member has, see Fig. 2, a plane top wall 10 and four rectangular cover member side walls 11 - 14 foldable downwards at approximately right angles via fold lines 15 - 18 such that the four side walls 11 - 14 will depend from the top wall 10 to form a box-like structure open at the bottom. In the embodiment shown, the side walls 11 - 14 have been cut out in a manner such that the box-like structure will converge conically downwardly. The two longer side walls 12 and 14 have, at their ends, an extension portion 12a, 12b and 14a, 14b, respectively, which can, via fold lines 19 - 22, be folded inwardly at approximately right angles to the longer side walls 12 and 14, respectively, and be fastened, for instance by adhesive 23 - 26, to an adjacent short side wall 11 and 13, respectively, see Fig. 3.

Each end of the short side walls 11 and 13 has a fold line 27 - 30, respectively, extending in about 45 degrees from a respective one of the corners of the top wall 10. These fold lines 27 - 30 enable an infolding of the short side walls 11 and 13 towards the top wall 10, see Fig. 4, to permit the cover member to be collapsed into a flattened condition, see Fig. 5, which condition the cover member will have during transport prior to packing

of the tray member.

The adhesive 23 - 26 has been applied only to a triangular area, see Fig. 2, at the end of each short side wall 11 and 13, which area is located outside the respective fold line 27 - 30, thus causing only a corresponding triangular area of the extension portions 12a-b, 14a-b, to be glued to an associated one of short side walls 11 and 13. Thus, the outermost area of the extension portions 12a-b and 14a-b, respectively, will remain free from the adhesive and will not be glued to its associated short side wall 11 and 13, respectively. This will accomplish the special effect that the non-glued areas of the extension portions 12a-b and 14a-b, respectively, will move relative to its associated short side wall, when this is being infolded towards the top wall 10, as is seen in Fig. 4.

When raising the cover member from its flattened condition, shown in Fig. 5, to an erected condition, the inherent springiness of the paperboard material will endeavour to counteract any raising of the cover member. i.e. it will endeavour to maintain the short side walls 11 and 13 infolded towards the top wall 10. Thus, the cover member will endeavour, in its erected condition, to take the condition shown in Fig. 4, where the non-glued areas of the extension portions 12a-b and 14a-b, respectively, will point obliquely inwards towards the cover member. The nonglued areas of the extension portions 12a-b and 14a-b, respectively, can, thereby, be used as a kind of locking tongues, which can be said to be indirectly biased by said inherent springiness of the paperboard material of the short side walls of the tray member. The function of these locking tongues will be apparent from the description below by reference to Figs. 6 and 7.

Fig. 6 is a perspective view, as seen obliquely from beneath, of a cover member according to the invention, whereas Fig. 7 is a perspective view, as seen obliquely from beneath, of a tray member 1 with a cover member telescoped over the tray member.

When the cover member is to be locked against the tray member 1, its short side walls 11 and 13 are first pulled outwardly (in the directions shown by arrows 31 and 32 in Fig. 6) against the action of the inherent springiness of the paperboard material. The cover member can now be telescoped down over the tray member 1 until the top wall 10 will abut against the top surface of the brims 2 - 5 of the tray member. In this condition, the non-glued areas of the extension portions 12a-b and 14a-b, respectively, will move in under the brims 2 - 5 and engage the bottom surface of the brims by snap-action, see Fig. 7, and will thus interlock the cover member to the tray member. If the non-glued areas of the extension portions 12a-b and 14a-b, respectively, are each provided with a hook or heel 33 - 36, see Figs. 2 and 4, these hooks or heels can snap into a respective one of the oblique apertures 6 - 9 provided in the brims 2 - 5, and will thus improve the interlocking between the tray and cover members.

The effective locking depth provided by the apertures 6 - 9 is in fact greater than the thickness of the brims 2 - 5. Namely, in practice, the brims 2 - 5 will not be oriented exactly in parallel with the top wall 10 of the cover member, but will incline a few degrees, such that the locking tongues, when moving through the apertures, will move a certain distance past the apertures, which will cause a still stronger interlocking between the tray and cover members.

The length of the extension portions 12a-b and 14a-b and the configuration, location and angle of the apertures 6 - 9 is dimensioned such that the non-glued areas of the extension portions (i.e. the "locking tongues") or their heels or hooks 33 - 36, if such are present, will obtain the same direction and location as the apertures in order to ensure that the locking tongues will get an optimal engagement with its associated aperture.

Claims

1. A container, especially a food container, having an interlocking cover arrangement, the container having a tray member (1) including a plane bottom wall (1a) and four tray member side walls (1b-e) upstanding therefrom to form a box-like structure open at the top, the tray member side walls (1b-e) each including an outer flange element (2 - 5), the container also having a cover member including a plane top wall (10) and four cover member side walls (11 - 14) depending therefrom to form a box-like structure open at the bottom, each of two opposite side walls (11, 13) of said cover member side walls having at least one locking tongue (12a-b, 14a-b) which is situated on the inside of its respective side wall and which is inwardly biased, each locking tongue (12a-b, 14a-b) presenting an upwardly facing abutment for engagement with a corresponding downwardly facing abutment on the tray member, **characterized** in that the outer flange elements consist of brims (2 - 5) projecting outwardly from the periphery of the tray member (1) in a direction substantially parallel to the plane of the bottom wall (1a) of the tray member, said brims (2 - 5) each having a bottom surface forming said downwardly facing abutment, and said brims (2 - 5) each having a top surface forming an abutment surface for engagement with said top wall (10) of the cover member, an opposed pair (2, 4) of the brims having apertures (6 - 9) for mating engagement with each of said locking tongues (12a-b, 14a-b) by snap-action.
2. A container according to Claim 1, **characterized** in that the cover member is made of a paperboard material and that each said opposed side walls (11, 13) of the cover member has two fold lines (27, 28

and 29, 30, respectively) enabling a folding of said opposed side walls (11, 13) inwardly towards the top wall (10) of the cover member to permit the cover member to collapse to a flattened condition, the inherent springiness of the paperboard material endeavouring, in an erected condition of the cover member, to infold said opposed side walls (11, 13) towards said top wall (10) of the cover member, thus creating said biasing of said locking tongues (12a-b, 14a-b).

3. A container according to Claim 2, **characterized** in that each of said opposed side walls (11, 13) has two locking tongues (12a-b, 14a-b) of the kind mentioned, each having a first tongue portion fixed, for instance by an adhesive (23 - 26), to the portion of associated cover member side wall that is located between a said fold line (27 - 30) and adjacent corner of the cover member, and a second tongue portion located on opposite side of said fold line, but not fixed to said cover member side wall, such that the second tongue portion will move relative to said cover member side wall when this is raised from or infolded towards the top wall (10) of the cover member.
4. A container according to Claim 3, **characterized** in that each of the cover member side walls (12, 14) which are located between said opposed cover member side walls (11, 13) has an extension portion (12a-b, 14a-b), which is foldable inwards towards said opposed side walls (11, 13) and forming said locking tongues.
5. A container according to Claim 1, **characterized** in that each of the locking tongues (12a-b, 14a-b) has a hook (33 - 36) adapted to matingly engage a respective one of said apertures (6 - 9).

Patentansprüche

1. Ein Behälter, insbesondere ein Lebensmittelbehälter, der eine Ineinanderverriegelungs-Deckelanordnung besitzt, wobei der Behälter ein Kastenelement (1) aufweist, das eine ebene Bodenwand (1a) und vier Kastenelement-Seitenwände (1b-e) umfaßt, die von ihr aus aufrecht stehen, um eine kastenartige Struktur zu bilden, die oben offen ist, wobei die Kastenelement-Seitenwände (1b-e) jeweils ein äußeres Flanschelement (2-5) umfassen, und wobei der Behälter weiter ein Deckeelement aufweist, das eine ebene obere Wand (10) und vier Deckeelement-Seitenwände (11-14) umfaßt, die von derselben abwärts gerichtet sind, um eine kastenartige Struktur zu bilden, die unten offen ist, wobei zwei einander gegenüberliegende Seitenwände (11, 13) der genannten Deckeelement-Seitenwände mindestens eine Verriegelungszunge

(12a-b, 14a-b) besitzen, welche auf der Innenseite ihrer jeweiligen Seitenwand plaziert ist und nach innen hin schräggestellt ist, wobei jede Verriegelungszunge (12a-b, 14a-b) einen nach oben hin weisenden Anschlag für den Anschluß mit einem entsprechenden, nach unten weisenden Anschlag auf dem Kastenelement besitzt,

dadurch gekennzeichnet, daß

das äußere Flanschelement aus Krempe (2-5) besteht, die von der Peripherie des Kastenelementes (1) aus in eine Richtung vorstehen, die im wesentlichen parallel zu der Ebene der Bodenwand (1a) des Kastenelementes verläuft, wobei die genannten Krempe (2-5) jeweils eine untere Oberfläche aufweisen, die den genannten, nach unten weisenden Anschlag bildet, und wobei die genannten Krempe (2-5) jeweils eine obere Oberfläche aufweisen, die eine Anschlagoberfläche für den Anschluß mit der genannten oberen Wand (10) des Deckeelementes bilden, wobei ein einander gegenüberliegendes Paar (2, 4) der Krempe Öffnungen (6-9) zum ineinandergreifenden Verbinden mit jeder der genannten Verriegelungszungen (12a-b, 14a-b) durch Schnappbewegung aufweist.

2. Ein Behälter nach Anspruch 1, dadurch gekennzeichnet, daß das Deckeelement aus einem Papierkartonmaterial gebildet ist und daß jede der genannten, einander gegenüberliegenden Seitenwände (11, 13) des Deckeelementes zwei Faltlinien (jeweils 27, 28 und 29, 30) aufweisen, die ein Falten der genannten, einander gegenüberliegenden Seitenwände (11, 13) nach innen zur oberen Wand (10) des Deckeelementes hin ermöglichen, um in einen abgeflachten Zustand zu kollabieren, wobei die inhärente Federungsfähigkeit des Papierkartonmaterials danach strebt, im aufgerichteten Zustand des Deckeelementes die genannten, einander gegenüberliegenden Seitenwände (11, 13) in Richtung auf die genannte obere Wand (10) des Deckeelementes hin einzufalten und um somit die genannte Schrägstellung der genannten Verriegelungszungen (12a-b, 14a-b) zu erzeugen.
3. Ein Behälter nach Anspruch 2, dadurch gekennzeichnet, daß jede der genannten, einander entgegengesetzten Seitenwände (11, 13) zwei Verriegelungszungen (12a-b, 14a-b) der erwähnten Art besitzt, von denen jede einen ersten Zungenabschnitt und einen zweiten Zungenabschnitt aufweist, der an der entgegengesetzten Seite der genannten Faltlinie (27-30) plaziert ist, aber nicht an der genannten Deckeelement-Seitenwand befestigt ist, derart, daß der zweite Zungenabschnitt sich relativ zu der genannten Deckeelement-Seitenwand bewegt, wenn diese von der oberen Wand (10) des Deckeelementes aus nach oben bewegt oder zu ihr hin nach innen gefaltet

wird.

4. Ein Behälter nach Anspruch 3, dadurch gekennzeichnet, daß jede der Deckelelement-Seitenwände (12, 14), welche zwischen den genannten, einander gegenüberliegenden Deckelelement-Seitenwänden (11, 13) plaziert sind, einen Erweiterungsabschnitt (12a-b, 14a-b) aufweist, der nach innen hin zu den genannten, einander gegenüberliegenden Wänden (11, 13) faltbar ist und die die genannten Verriegelungszungen bildet. 5 10
5. Ein Behälter nach Anspruch 1, dadurch gekennzeichnet, daß jede der Verriegelungszungen (12a-b, 14a-b) einen Haken (33-36) besitzt, der angepaßt ist, um ineinandergreifend die Anschlußverbindung mit einer entsprechenden Öffnung der genannten Öffnungen (6-9) zu bewirken. 15

Revendications 20

1. Récipient, en particulier pour aliments, muni d'un dispositif de couvercle à emboîtement, le récipient comportant un élément de casier (1) muni d'une paroi de fond plane (1a) et de quatre parois latérales d'élément de casier (1b-1e) dressées vers le haut sur la paroi de fond pour former une structure en forme de boîte ouverte vers le haut, les parois latérales d'élément de casier (1b-1e) comprenant chacune un élément de rebord extérieur (2-5), le récipient comportant également un élément de couvercle muni d'une paroi supérieure plane (10) et de quatre parois latérales d'élément de couvercle (11-14) partant de la paroi supérieure pour former une structure en forme de boîte ouverte vers le bas, chacune de deux parois latérales opposées (11, 13) des parois latérales d'élément de couvercle comportant au moins une patte de verrouillage (12a-12b ; 14a-14b) située sur l'intérieur de sa paroi latérale respective et poussée vers l'intérieur, chaque patte de verrouillage (12a-12b, 14a-14b) présentant une butée tournée vers le haut pour s'engager contre une butée correspondante, tournée vers le bas, de l'élément de casier, caractérisé en ce que l'élément de rebord extérieur est constitué de bords (2, 5) faisant saillie vers l'extérieur en partant de la périphérie de l'élément de casier (1), dans une direction essentiellement parallèle au plan de la paroi de fond (1a) de l'élément de casier, les bords (2-5) comportant chacun une surface inférieure formant la butée tournée vers le bas, et ces bords (2-5) comportant chacun une surface supérieure formant une surface de butée destinée à s'engager contre la paroi supérieure (10) de l'élément de couvercle, une paire opposée (2, 4) des bords comportant des ouvertures (6-9) pour recevoir, par un emboîtement à enclenchement, chacune des pat-

tes de verrouillage (12a-12b, 14a-14b).

2. Récipient selon la revendication 1, caractérisé en ce que
 - l'élément de couvercle est réalisé dans un matériau de carton, et
 - chacune des parois latérales opposées (11, 13) de l'élément de couvercle comporte deux lignes de pliage (respectivement 27, 28 et 29, 30) permettant de plier les parois latérales opposées (11, 13) vers l'intérieur, en direction de la paroi supérieure (10) de l'élément de couvercle, pour permettre à l'élément de couvercle de se relier dans une position aplatie, l'élasticité propre du matériau de carton s'efforçant, dans une position érigée de l'élément de couvercle, de plier vers l'intérieur les parois latérales opposées (11, 13) en direction de la paroi supérieure (10) de l'élément de couvercle, en créant ainsi la force de poussée des pattes de verrouillage (12a-12b, 14a-14b).
3. Récipient selon la revendication 2, caractérisé en ce que
 - chacune des parois latérales opposées (11, 13) comporte deux pattes de verrouillage (12a-12b, 14a-14b) du type indiqué ci-dessus, chaque patte comportant une première partie de patte fixée par exemple par un point de colle (23-26) à la partie de la paroi latérale d'élément de couvercle associée qui est située entre une ligne de pliage (27-30) et un coin adjacent de l'élément de couvercle, et une seconde partie de patte située du côté opposé de la ligne de pliage, mais non fixée à la paroi latérale de l'élément de couvercle, de façon que la seconde partie de patte puisse se déplacer par rapport à la paroi latérale de l'élément de couvercle lorsque cette dernière est soulevée ou pliée vers l'intérieur en direction de la paroi supérieure (10) de l'élément de couvercle.
4. Récipient selon la revendication 3, caractérisé en ce que
 - chacune des parois latérales (12, 14) de l'élément de couvercle, qui sont situées entre les parois latérales d'élément de couvercle opposées (11, 13), comporte une partie de prolongement (12a-12b, 14a-14b) qui peut être pliée vers l'intérieur en direction des parois latérales opposées (11, 13), pour former les pattes de verrouillage.
5. Récipient selon la revendication 1, caractérisé en ce que
 - chacune des pattes de verrouillage (12a-12b, 14a-14b) comporte un crochet (33-36) destiné à s'engager en accouplement avec l'une respective, des ouvertures (6-9).





