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(54) **Container of sheet material, preferably paper, for foodstuff, in particular confectionery products**

Behälter aus Folienmaterial für Lebensmittel, insbesondere für Süsswaren

Emballage en une matière en feuille pour produits alimentaires, notamment pour produits de confiserie

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Description

[0001] The present invention relates to a container of sheet material, preferably paper, for foodstuffs, in particular for products such as pastries, small cakes and the like, of the type consisting of a portion of a flexible sheet material defined by a substantially flat bottom wall and a side wall emerging from said bottom wall, said bottom wall and side wall forming a cavity having an upwardly-facing opening under a situation of normal use of the container, said side wall having a border at the top that defines the contour of said cavity opening.

[0002] It is known that containers of paper material for foodstuffs, in particular confectionery products of reduced sizes such as pastries and the like, known in the art under the name of "bun cases", generally consist of a single portion of paper material, of circular shape for example, obtained by cutting-off, and suitably shaped so as to form a flat bottom wall and a tapering side wall of truncated conical form to promote formation of packages and containers suitable for stacking.

[0003] The bottom wall and side wall form a cavity having an upwardly-facing opening in the position of normal use of the container. In addition, the side wall is usually made up of a pleating consisting of pleats and undulations disposed in a substantially vertical extension direction, i.e. a direction corresponding to the apothem of the frustum of cone and defining an indented upper border.

[0004] Generally bun cases are obtained starting from a flat sheet of paper material of suitable sizes which is drawn by means of male-female moulds capable of producing the flat bottom wall as well as the corresponding pleating on the side wall.

[0005] Following the drawing operation, a slight spring back of the paper defining the side wall makes the container take its final frusto-conical shape.

[0006] In particular, looking at a section taken in a plane perpendicular to the bottom wall, it is possible to see that in these containers of known type there is a side wall defined by a rectilinear strip which is radius-joined to the bottom wall.

[0007] As a matter of fact, the above described containers involving reduced costs and easy accomplishment, are commercially widespread and have been on the market for more than 90 years with a substantially unchanged shape.

[0008] In spite of their commercial success, this typology of bun cases is not free from some drawbacks and/or operating limits.

[0009] A first type of bun cases is known from document FR-A-2767513.

[0010] Such document discloses a container of sheet material adapted to house foodstuffs in which a bottom wall and a side wall form a cavity having an upwardly-facing opening in the position of normal use of the container.

[0011] The side wall is made of a pleating consisting of pleats and undulations disposed in a vertical extension direction. The bun cases according to French document are frusto-conical and obtained starting from a flat sheet of paper material of suitable sizes which is drawn by means of a male-female moulds capable of producing the flat bottom wall as well as the corresponding pleating on the side wall.

[0012] It is also known from document GB-A-128187 a hollow article made from sheets of paper in which all the sheets which are to form the article are cut out alike.

[0013] Each sheet is formed with the central portion intended to form the head and of a plurality of suitably shaped tongue projecting from said central portion to form the sides. These sheets are then superposed, each rotarily displaced with regard to the one below it and they are then strongly compressed to determine a complete adhesion which ensures absolute rigidity of the walls of the article and prevents their distortion. The case may have the shape of a truncated ogival cone presenting therefore a side wall a section along a plane substantially perpendicular to the bottom wall having a curved portion.

[0014] Firstly, the particular frusto-conical shape does not offer a substantial resistance to side deformations. This is mainly due to the fact that the side wall, taking into account how it is manufactured (i.e. starting from a flat sheet), involves use of excess material required for carrying out the side pleating.

[0015] In other words, if pressures are exerted on the side walls of the container from the inside to the outside, the paper forming the container will tend to open and go back to its original flat condition.

[0016] It should be also recognized that should the paper forming the container get damp, due to the presence of the food product put inside it for example, the side wall would tend to further loose its resistance to deformations and take its flat conformation again.

[0017] Practically it often happens that when a food product is kept in a refrigerator (a damp environment) the side wall will go back to its flat shape again, even if only partly, so that replacement of the container before sale is required.

[0018] It is also to be pointed out that the container shape appears to have been substantially unchanged and standardized for many years and therefore a modification of same surely will help in giving a new particular aspect to the container/cake assembly making it different and aesthetically more agreeable as compared with containers of known type.

[0019] Accordingly, the present invention aims at substantially solving the above mentioned drawbacks.

[0020] Within the scope of this technical task it is an important aim of the invention to devise a container of paper material having an increased stiffness as compared with known containers, in particular with reference to occurrence of side deformations.

[0021] It is another aim of the invention to enable the containers to be still stacked up and also to give the

same a particular shape and an aesthetically appreciable look.

[0022] It is a further aim of the invention to limit, and if possible prevent, side-wall deformations due to dampness, the presence of which makes it necessary to replace the container.

[0023] The technical task mentioned and the aims specified are substantially achieved by a container according to claim 1.

[0024] Description of a preferred but not exclusive embodiment of a container of paper material in accordance with the invention is now given by way of non-limiting example with reference to the accompanying drawings, in which:

- Fig. 1 is a perspective view of a container in accordance with the present invention;
- Fig. 2 is a diagrammatic side view of the container in Fig. 1;
- Fig. 3 shows a partial section of the container in Fig. 1 taken in a horizontal plane;
- Fig. 4 is a diagrammatic side view of another variant of the container in accordance with the invention; and
- Fig. 5 is a diagrammatic side view of a container of known type.

[0025] With reference to the drawings, the container of paper material in accordance with the invention has been generally denoted by 1.

[0026] It is made up of a single unitary sheet portion of paper.

[0027] This portion of paper material, cut out in the form of a circle for example if the container must be of a circular shape, defines a flat bottom wall 2 from which a side wall 3 emerges.

[0028] Since in its preferred embodiment the container is made starting from a single flat sheet of paper material, the material designed to define the side wall 3 after the first bending of same appears to be in excess and therefore is unable to define a perfectly smooth wall.

[0029] Under this situation there are substantially two possible alternative solutions.

[0030] In a first typology of container (not shown) flattening of the side wall is carried out by pressing the wall on itself so that it takes a conformation which is smooth to the touch as much as possible.

[0031] It is apparent that since an excess material is present, a given number of uneven pleats or wrinkles the predominant extension of which is transverse to the bottom wall, will be created on the side wall itself.

[0032] Looking at this typology of containers it is possible to notice that in a section of the side wall along a plane substantially parallel to the bottom wall, the profile defined by the side wall will be of a substantially circular type, as much as possible approaching the profile that would be defined by a perfectly smooth surface.

[0033] The excess material however highlights a certain number of regions of material overlapping in said closed profile.

[0034] The other generally preferred typology of container (see Fig. 1) is on the contrary provided with a series of small substantially vertical pleats evenly disposed on the container.

[0035] This typology is that shown in the accompanying figures in which the side wall shows a pleating formed of pleats or undulations 4 extending in a direction substantially transverse to the bottom wall 2.

[0036] In detail, pleats are such structured that they give a tridimensional course to the side wall that in a section of the container taken in a plane parallel to the bottom wall, appears as provided with a closed circular profile 11 of undulated extension giving the idea of a sinusoid (see Fig. 3).

[0037] The crests or hills of this sinusoid define a raised region 5 on the extension surface of the side wall whereas the valleys define hollow regions.

[0038] Given the alternated and even succession of hills and valleys in the section, the raised regions 5 and hollow regions 6 extend in mutual side by side relationship along the whole extension of the side wall.

[0039] It is to be noted that the presence of a side wall of tridimensional extension resulting from the undulations greatly increases resistance of the container to the stresses tending to deform the container itself by flattening.

[0040] The bottom wall 2 and side wall 3 form a cavity 7 adapted to house a foodstuff and having an upwardly-facing opening in the position of normal use of the container.

[0041] This opening defining the container cavity 7 is delimited by the bottom wall 2 and the side wall 3 terminating at the upper part thereof with a border 8 defining the contour of this opening.

[0042] In the preferred embodiment of the present invention the presence of any band turned over outwardly in the extension of the side wall 3 to define an overturned rim is not provided.

[0043] In other words, the side wall 3 emerges from the bottom wall 2 and terminates at border 8 where it defines the opening contour.

[0044] As can be viewed from Fig 1, the upper border of the side wall is free and has a substantially sinusoidal conformation seen from the top.

[0045] If the shape of the container being the object of the invention is examined in detail, with reference in particular to Figs. 2 and 4 showing the container itself in a diagrammatic side view, it is possible to see that in section along a plane substantially perpendicular to the bottom wall 2 the side wall is defined by a stretch of material joining the bottom wall 2 and the opening contour 8.

[0046] This stretch 9 has at least one curved portion 10.

[0047] Preferably the shape of this curved portion is adapted to give the side wall a substantially concave

course the concavity being directed towards the container cavity.

[0048] Generally, due to the fact that the container is made from a single sheet of paper material, the curved portion substantially extends along the whole length of the stretch defined in section by the side wall.

[0049] As shown in Fig. 2, the trace of the side wall in section in a vertical plane may be defined for example by an arc of a circumference; alternatively, it may have a more complicated course (shown in Fig. 3) consisting of a first stretch coming out of the bottom wall which is substantially rectilinear, then of a curved portion 10 and finally of an end portion which is substantially rectilinear too and delimited by border 8.

[0050] At all events, in both solutions shown the container is characterized in that the side wall has a substantially outward-swelling conformation.

[0051] The containers of the invention have been mainly conceived for holding cakes of small sizes (as previously said, they substantially are "bun cases") and therefore the bottom wall will generally be of circular shape, as shown in the drawings, and will have a diameter preferably included between 10 and 110 mm, more preferably in the range of 20 to 90 mm.

[0052] The invention achieves important advantages.

[0053] First of all, after a long period of time a container of a particular shape has become available for the first time which is capable of giving a different aesthetical impact to the confectionery product on display.

[0054] From a more technical point of view, the particular conformation of the side wall is of such a nature that the container ensures an optimal behaviour in terms of side deformations.

[0055] In particular, in case of pressure exerted on the container and directed from the inside to the outside, the wall would tend to close on the product instead of opening.

[0056] Even in the case of a damp environment, due to the conformation of the side wall the paper fibre will tend to close on the product instead of opening and falling down.

[0057] It is not to be forgotten that the possibilities of stacking the products for storage and transport is maintained substantially unchanged so that under this point of view too, disadvantages are not contemplated with respect to the known art.

Claims

1. A container of paper sheet material for foodstuffs, of the type comprising a sheet portion of flexible material defining a substantially flat bottom wall (2) and a side wall (3) emerging from said bottom wall (2), said bottom wall (2) and side wall (3) forming a cavity having an upwardly-facing opening (7) in the normal use position of the container itself, the side wall (3) under use conditions of the container being delimited at the lower part thereof by the bottom wall (2) and at the upper part by a border (8) defining a contour of the opening (7), whereby said side wall (3) in section along a plane substantially perpendicular to the bottom wall (2) is defined by a stretch of material (9) joining said bottom wall to said opening contour, said stretch (9) having at least one curved portion (10), **characterized in that** the side wall (3) has a predetermined number of pleats (4) the predominant extension of which is substantially transverse to the bottom wall, said pleat defining a close profile (11) of ondulated, preferably sinusoidal, course in a section of the side wall (3) along a plane substantially parallel to said bottom wall (2) and **in that** the container is defined by a single unitary sheet portion suitably curved and bent.

2. A container as claimed in anyone of the preceding claims, **characterized in that** the curved portion (10) of the side wall (3) is substantially concave, with a concavity facing the container cavity.

3. A container as claimed in anyone of the preceding claims, **characterized in that** said bottom wall (2) has a substantially circular conformation with a diameter preferably included between 10 and 110 mm.

4. A container as claimed in anyone of the preceding claims, **characterized in that** said curved portion (10) substantially extends along the whole length of the stretch (9) defined in section by the side wall (3).

5. A container as claimed in anyone of the preceding claims, **characterized in that** it does not have any border band turned over on the outside of said cavity (7) in the extension of the side wall (3).

6. A container as claimed in anyone of the preceding claims, **characterized in that** said side wall (3) has an outward-swelling conformation.

Patentansprüche

1. Behälter aus Folienmaterial für Lebensmittel nach der Art umfassend einen Abschnitt einer Folie aus biegsamem Material, der eine im wesentlichen flache Bodenwand (2) und eine von der Bodenwand (2) vorstehende seitliche Wand (3) festlegt, wobei die Bodenwand (2) und die seitliche Wand (3) einen Hohlraum bilden, der eine Öffnung (7) aufweist, die in der Position des normalen Gebrauchs des Behälters selbst nach oben gerichtet ist, wobei die seitliche Wand (3) bei Gebrauch des Behälters unten von der Bodenwand (2) und oben einen Rand (8) begrenzt ist, der eine Kontur der Öffnung (7) festlegt, wodurch die seitliche Wand (3) im Schnitt längs

einer im wesentlichen zur Bodenwand (2) senkrechten Ebene durch einen Materialteil (9) festgelegt ist, der die Bodenwand mit der Kontur der Öffnung verbindet, wobei der Materialteil (9) mindestens einen Kurvenabschnitt (10) aufweist, **dadurch gekennzeichnet, dass** die seitliche Wand (3) eine vorbestimmte Anzahl von Falten (4) mit einer vorrangigen im wesentlichen zur Bodenwand querliegenden Abwicklung aufweist, wobei die Falten ein geschlossenes Profil (11) mit gewellten, vorzugsweise sinusförmigen Verlauf in einem Schnitt der seitlichen Wand (3) längs einer im Wesentlichen zur Bodenwand (2) parallelen Ebene festlegen, und **dadurch**, dass der Behälter durch einen einzigen, einzelnen, zweckmäßiger Weise gekrümmten und gefalteten Foliernabschnitt festgelegt ist.

2. Behälter nach Anspruch 1, **dadurch gekennzeichnet, dass** der gekrümmte Abschnitt (10) der seitlichen Wand (3) im Wesentlichen konkav ist, mit Konkavität, die in Richtung des Hohlraums des Behälters gerichtet ist.

3. Behälter nach einem beliebigen der vorstehenden Ansprüche, **dadurch gekennzeichnet, dass** die Bodenwand (2) eine im Wesentlichen kreisförmige Ausbildung mit einem Durchmesser aufweist, der bevorzugter Weise zwischen 10 und 110 mm liegt.

4. Behälter nach einem beliebigen der vorstehenden Ansprüche, **dadurch gekennzeichnet, dass** der gekrümmte Abschnitt (10) sich im Wesentlichen längs der gesamten Länge des im Schnitt durch die seitliche Wand (3) festgelegten Teils (9) erstreckt.

5. Behälter nach einem beliebigen der vorstehenden Ansprüche, **dadurch gekennzeichnet, dass** er keinen Randstreifen aufweist, der nach außen des Hohlraumes (7) im Anschluss der seitlichen Wand (3) umgeschlagen ist.

6. Behälter nach einem beliebigen der vorstehenden Ansprüche, **dadurch gekennzeichnet, dass** die seitliche Wand (3) eine gebauchte Ausbildung besitzt.

Revendications

1. Emballage en une matière en feuille pour produits alimentaires, du type comprenant une portion de feuille de matière flexible définissant une paroi de fond sensiblement plate (2) et une paroi latérale (3) sortant de ladite paroi de fond (2), lesdites paroi de fond (2) et paroi latérale (3) formant une cavité présentant une ouverture tournée vers le haut (7) dans la normale position d'utilisation de l'emballage luimême, la paroi latérale (3) en conditions d'utilisation de l'emballage étant délimitée à sa partie inférieure par la paroi de fond (2) et à sa partie supérieure par un rebord (8) définissant le contour de l'ouverture (7), de sorte que ladite paroi latérale (3) est définie, en coupe le long d'un plan sensiblement perpendiculaire à la paroi de fond (2), par une étendue de matière (9) joignant ladite paroi de fond audit contour de l'ouverture, ladite étendue (9) ayant au moins une portion courbe (10), **caractérisé en ce que** la paroi latérale (3) a un nombre prédéterminé de plis (4) dont l'extension prédominante est essentiellement transversale à la paroi de fond, lesdits plis définissant un profil fermé (11) ayant un développement ondulé, de préférence sinusoïdal, dans une coupe de la paroi latérale (3) le long d'un plan essentiellement parallèle à ladite paroi de fond (2), et **en ce que** l'emballage est défini par une seule portion unitaire de feuille convenablement pliée et de forme courbe.

2. Emballage selon la revendication 1, **caractérisé en ce que** la portion courbe (10) de la paroi latérale (3) est essentiellement concave, la concavité étant tournée vers la cavité de l'emballage.

3. Emballage selon l'une quelconque des revendications précédentes, **caractérisé en ce que** ladite paroi de fond (2) a une conformation sensiblement circulaire dont le diamètre est de préférence compris entre 10 et 110 mm.

4. Emballage selon l'une quelconque des revendications précédentes, **caractérisé en ce que** ladite portion courbe (10) s'étend essentiellement sur toute la longueur de l'étendue (9) définie en coupe par la paroi latérale (3).

5. Emballage selon l'une quelconque des revendications précédentes, **caractérisé en ce qu'**il ne présente aucune bande formant rebord tournée vers l'extérieur de ladite cavité (7) sur le prolongement de la paroi latérale (3).

6. Emballage selon l'une quelconque des revendications précédentes, **caractérisé en ce que** ladite paroi latérale (3) a une conformation bombée.

FIG 1

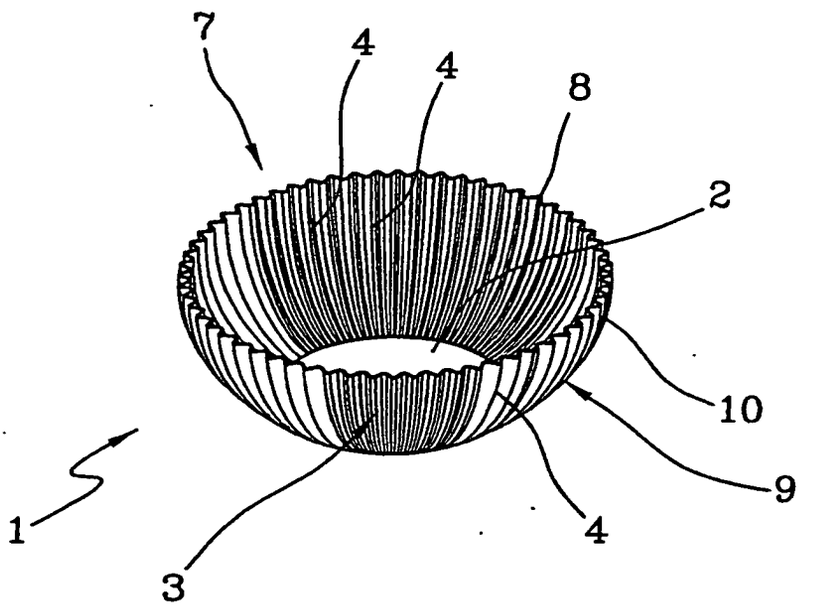
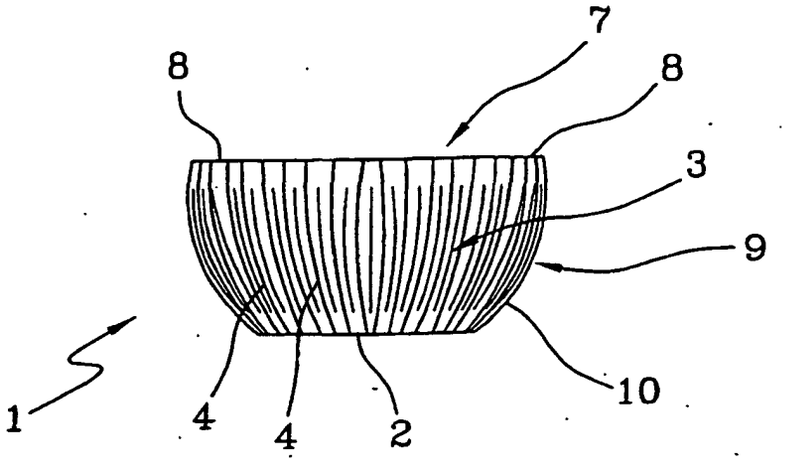


FIG 2



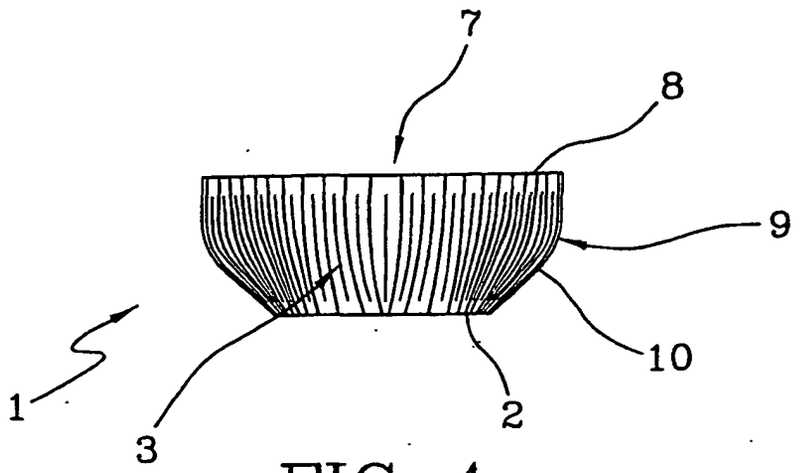


FIG 4

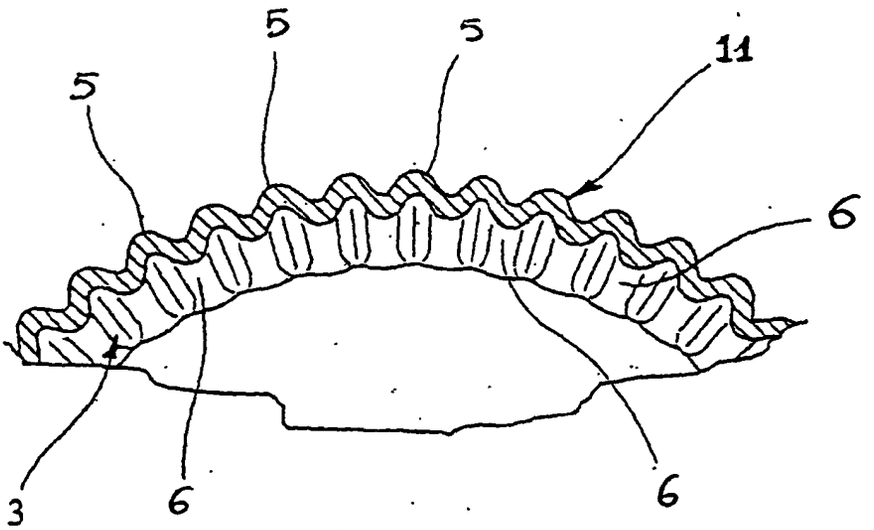


FIG. 3

FIG 5
(Prior Art)