Office de la Propriété Intellectuelle du Canada
Un organisme d'Industrie Canada

Canadian Intellectual Property Office
An agency of Industry Canada

CA 2233299 C 2007/09/11

(11)(21) 2 233 299

(12) BREVET CANADIEN
CANADIAN PATENT

(13) C

(86) Date de dépôt PCT/PCT Filing Date: 1996/09/27
(87) Date publication PCT/PCT Publication Date: 1997/04/03
(45) Date de délivrance/Issue Date: 2007/09/11
(85) Entrée phase nationale/National Entry: 1998/03/27
(86) N° demande PCT/PCT Application No.: DE 1996/001852
(87) N° publication PCT/PCT Publication No.: 1997/011889
(30) Priorités/Priorities: 1995/09/29 (DE295 15 590.6);
1995/09/29 (DE195 36 543.7)

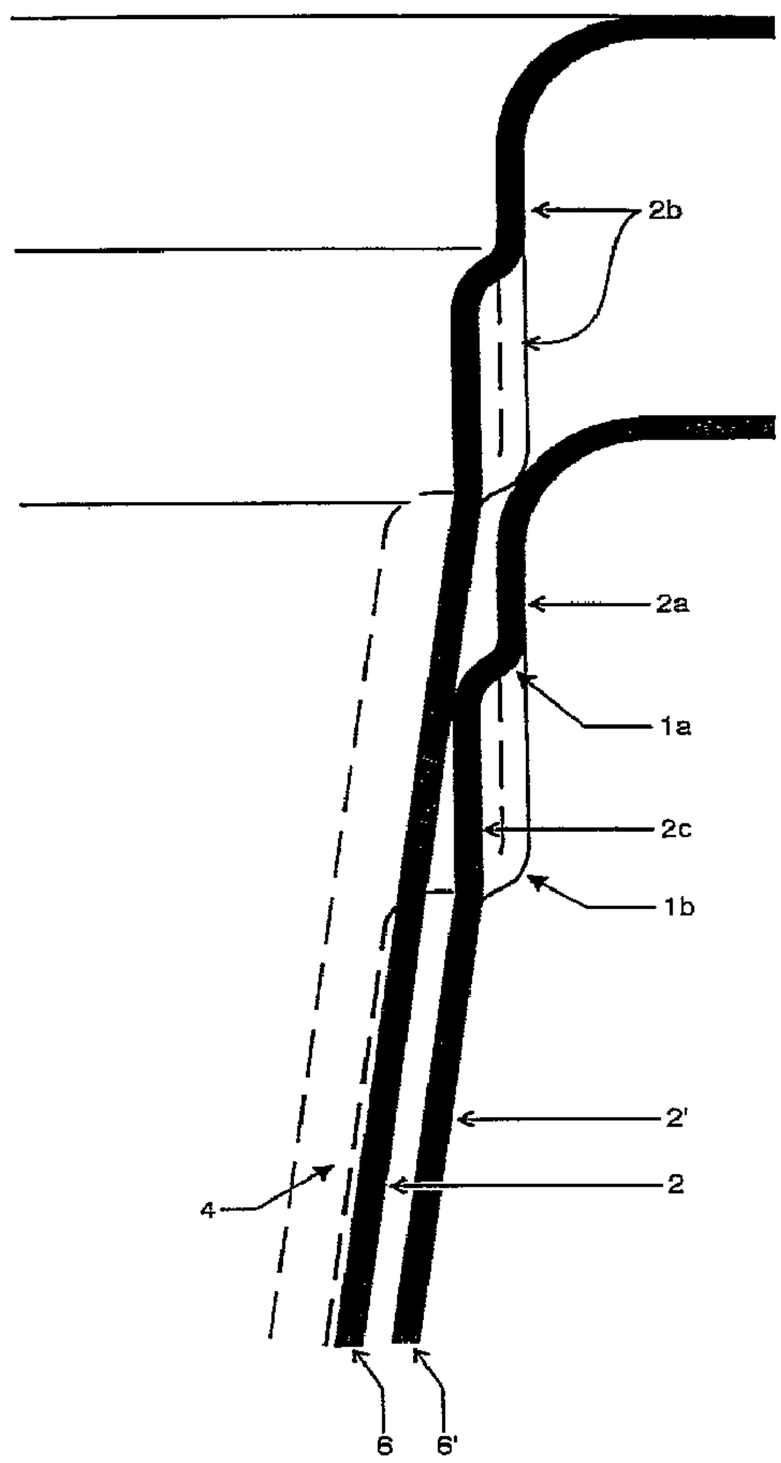
(51) Cl.Int./Int.Cl. *B65D 21/02* (2006.01),
B65D 1/34 (2006.01), *B65D 1/42* (2006.01)

(72) Inventeurs/Inventors:
PETER, WOLFGANG, DE;
HARTUNG, HANS, DE

(73) Propriétaire/Owner:
IMPRESS METAL PACKAGING GMBH & CO. OHG, DE

(74) Agent: MARKS & CLERK

(54) Titre : CORPS DE CONTENANT A DEUX EPAULEMENTS
(54) Title: CONTAINER UNIT WITH TWO SHOULDERS



(57) Abrégé/Abstract:
The present invention concerns a metal container body for a non-round container having a lid beaded onto the upper edge (3), the side wall (2) of which is provided with a shoulder (1a, 1b), whereby a first shoulder (1a) in at least one part of those areas which,

CA 2233299 C 2007/09/11

(11)(21) 2 233 299

(13) C

(57) Abrégé(suite)/Abstract(continued):
seen in a top view, are elongated or less sharply bent in comparison to the other parts, is arranged closer to the upper edge (3) of the container than a second shoulder (1b) in the remaining areas, whereby the shoulders (1a) and (1b) are formed thereby that the side wall, seen in cross-section and from the bottom to the top, first extends outward in an arc-like manner and then inward in an arc-like manner.

ABSTRACT OF THE DISCLOSURE

The present invention concerns a metal container body for a non-round container having a lid beaded onto the upper edge (3), the side wall (2) of which is provided with a shoulder (1a, 1b), whereby a first shoulder (1a) in at least one part of those areas which, seen in a top view, are elongated or less sharply bent in comparison to the other parts, is arranged closer to the upper edge (3) of the container than a second shoulder (1b) in the remaining areas, whereby the shoulders (1a) and (1b) are formed thereby that the side wall, seen in cross-section and from the bottom to the top, first extends outward in an arc-like manner and then inward in an arc-like manner.

Container Unit With Two Shoulders

The present invention concerns a container body for a non-round container having a lid beaded onto the upper edge, the side wall of which is provided with a shoulder.

Unstackable container bodies have been known for a long time. Thus, a cellulose container is disclosed in US 3,233,812 which can be stacked and whose side wall has a supporting shoulder in the corner areas.

US 4,366,696 shows a conical can body with a peripheral profile having three bends whereby, seen from the bottom to the top, the first bend with a first radius of the side wall (seen in cross-section) gives a convex shape and the second bend with a second radius gives it a concave shape. A third bend leads the side wall outward again in a convex manner, whereby the radius of this last bend is substantially greater than that of the other two. As a result, according to the patent, a profile is produced which shows a smooth surface and which can be easily unstacked, whereby the stacked cans have a selected distance from one another.

US 4,366,696 mentions that two-piece cans with an integral bottom and side wall represent a preferred construction since they solve problems relating to leakages of the beaded edge. However, the can shown there has the disadvantage that, when the shoulder formed by the noted bends is just below the upper end of the side edge, the stack becomes too compact, so that there are problems during unstacking (such as jamming and the like) while, when the shoulder is lower, the stability is not sufficient during beading, so that defective beaded edges can result.

It is the object of the present invention to create a container body for a non-round container which is easily stackable and unstackable on the one side, yet also has a shape on the other side which makes it especially suitable for beading on a lid because the beaded cover is good.

Surprisingly, it could be found that such container bodies exhibit both an easy unstackability and also a good stability when the lid is beaded on, the side wall of which is provided with a shoulder consisting of a first shoulder and a second shoulder, whereby the first shoulder is bent less sharply in at least a part of those areas which are, viewed from the top, elongated or less bent when compared to other parts, is arranged closer to the upper edge of the container than the second shoulder in the remaining areas, whereby the first shoulder and the second shoulder are formed thereby that the side wall, seen in cross-section and from bottom to top, first extend outward in an arc-like manner and then inward in an arc-like manner. The aforementioned arrangement and shape of the shoulder ensure that the rigidity is also sufficiently high in the container areas which, viewed from the top, are straight or less bent, so that the force of the beading tools transmitted to the wall during beading does not lead to its deformation.

The running of the first shoulder into the second shoulder may be designed as desired. Thus, for example, the first shoulder can be led in a curved manner to the second shoulder.

In another aspect, the invention provides a metallic container body for a non-circular container, with a flanged lid on the upper edge, whose side wall is provided with first and second shoulders, whereby the first shoulder in at least a part of first side wall areas, which seen in plan view are long extended or in comparison to other segments are less strongly curved, is arranged closer to the upper edge of the container than the second shoulder in second side wall areas, and whereby the first and second shoulders and merge into each other and are so formed that the side wall, seen in section and detailed from below upwards, is taken first in a circular crescent shape outwards and then, without a straight section lying therebetween, inwards first in a circular crescent shape, at which the second shoulder is arranged.

The invention shall be described in greater detail in the following with reference to exemplary drawings.

Figure 1 shows side edges 2, 2′ of two container bodies 6,

6′ stacked in one another. A side edge of each of the two container bodies 6, 6′ is shown, each having a first shoulder 1a and one having a second shoulder 1b placed above one another. In this case, the side edge having the shoulder 1a appears as a solid black stroke, while shoulder 1b is shown as an unfilled stroke. It can clearly be seen that both the shoulder 1a and also the shoulder 1b are formed thereby that the side wall, seen from bottom to top, first extends outward in an arc-like manner and then inward in an arc-like manner. Furthermore, the geometry of a side riffle 4 can also be seen which ends below the shoulder 1b.

Figure 2 shows a part of a container body according to Figure 1 in a side view. The bottom surface 5 goes over in one piece into a slightly outwardly slanted side wall 2. The first shoulder 1a is situated in the left part of the Figure which shows, seen in the top view, a straight or only slightly bent part of the container, while the second shoulder 1b can be seen in the right part (more sharply bent, viewed from the top), said second shoulder extending less closely to the upper edge 3 of the container than the first shoulder. The side wall has, above the level of the second shoulder 1b, sections 2a, 2b, 2c, whereby the upper sections 2a, 2b above the shoulders 1a, 1b are slanted less sharply outward than the remaining part of the side wall 2. Not quite up to the end of the area with shoulder 1a, an area with lateral riffles extends which ends below the second shoulder 1b. The transition 8 between the two shoulders 1a, 1b

extends in a small curve.

Figure 3 represents an enlarged section from Figure 2 which shows a lateral riffle 4. 7 designates the edge which is formed by an obtuse angle deviating only slightly from 180° in the side wall 2.

Figures 4 to 6 show an embodiment which, except for the shape and height of the run of the riffles 4, is identical.

Figures 7 and 9 show a further embodiment in which the lateral riffles 4 extend up to just below the level of the shoulder 1a.

Figure 8 shows an embodiment in which the riffles 4 end at the level of shoulder 1a.

The invention is suitable for all container bodies which have at least one bend, viewed from the top, provided that there is no exact circular shape. In particular, these include oval or rounded container bodies elongated in another shape, such as those for fish cans, but also those which have more or less sharply rounded corners.

The container bodies may be made of any material desired, provided that it is suitable for being beaded together with a lid. These include, for example, all types of sheet metal or coated metals, but also plastics or materials made of natural substances, perhaps appropriately modified, or materials which have been treated or coated on the surface.

The bottom of the container body according to the invention can be designed as desired, depending on the requirement, e.g. it can be flat or also be curved inward or outward. The bottom passes over into the side wall, whereby the two aforementioned parts may be in one piece or joined by beaded or welded seams or otherwise from several parts. The side wall can extend upward at right angles or be more or less sharply slanted outward.

Due to the shape of the container body, it has areas, seen in a top view, which are more sharply bent, as well as areas which are less sharply bent or elongated. An oval, conventional fish is, for example, more sharply bent at the tear-open area and at the opposite side than in the areas lying in between which, for the most part, are straight in parts. A four-sided can with rounded corners has four sharply bent areas while the areas in between are straight. The container body according to the invention has a first shoulder, in at least one part of the noted straight or less sharply bent areas, said first shoulder being relatively close to the upper edge of the container. A second shoulder, which can be used as a supporting shoulder for stacking and unstacking, extends in the more sharply bent areas. The first shoulder can, for example, be spaced from the upper edge of the container which is between 30% and 50% of the distance of the second shoulder from the upper edge. Of course, other dimensions are also possible, depending on the requirement.

Preferably, the side wall also has a riffle, at least in parts of the areas in which the first shoulder is present. In the side view, this riffling extends essentially at right angles and follows the slope of the wall. The lateral riffles can, viewed from the top, have any shape desired. For example,

they can have a bent, round, oval, triangular, trapezoidal or polygonal contour. The lateral riffles can end at the level of the second shoulder, preferably, however, they end about halfway up between the two shoulder levels or at the level of the upper first shoulder. By raising the lateral riffles above the level of the second shoulder, an improved wall stability results, so that it is ensured, during the interaction with the first shoulder and its shape, arranged just below the upper edge in the elongated or less sharply bent areas, that, when beading the lid on, the cover of the two parts is better and more secure than with previously known container bodies.

As already mentioned above, the two shoulders is formed in such a way that the side wall, seen in cross-section and from top to bottom, first extends outward in an arc-like manner and then inward in an arc-like manner. The two radii used thereby can be identical or different. In a special embodiment, the first arc-like segment with which the side wall is led outward describes a smaller arc-like section than the second segment. As a result, the side wall above the shoulder has a slighter slope outward than the side wall below the shoulder. If the lower part of the side wall is slanted outward only very slightly, the aforementioned part of the side wall which is above the shoulders may then also be made e.g. at right angles to the bottom surface.

In an especially preferred embodiment, the side wall, seen from the top, in the elongated or less sharply bent areas compared to other parts, is at the level of the second shoulder and is bent inward obtusely with an angle which is only a little less than 180°. It is especially preferred that the selection of the radii and the length of the arc-like

sections of the second shoulder and the selection of the obtuse angle present at the level of this shoulder are coordinated to one another in the areas in which the second shoulder is not present, in such a way that the side wall has, at the level between the first and the second shoulder, a constant angle to the lower area of the side wall or to the bottom surface, irrespective thereof whether the can, in a top view, is bent sharply, less sharply or not at all.

The preceding embodiments are, of course, made without inclusion of any lateral riffles which might be present. It is clear that, when these riffles are present, the geometry changes at those points at which the side wall rebounds inward due to the presence of a riffle.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A metallic container body for a non-circular container, with a flanged lid on the upper edge, whose side wall is provided with first and second shoulders, whereby the first shoulder in at least a part of first side wall areas, which seen in plan view are long extended or in comparison to other segments are less strongly curved, is arranged closer to the upper edge of the container than the second shoulder in second side wall areas, and whereby the first and second shoulders and merge into each other and are so formed that the side wall, seen in section and detailed from below upwards, is taken first in a circular crescent shape outwards and then, without a straight section lying therebetween, inwards first in a circular crescent shape, at which the second shoulder is arranged.

2. A container body according to claim 1, wherein the side wall, at least where the first shoulder is present, has side flutes running substantially vertically in a side view.

3. A container body according to claim 2, wherein the side flutes have, in plan view, a curved, round, oval, triangular, trapezium shaped or many cornered profile.

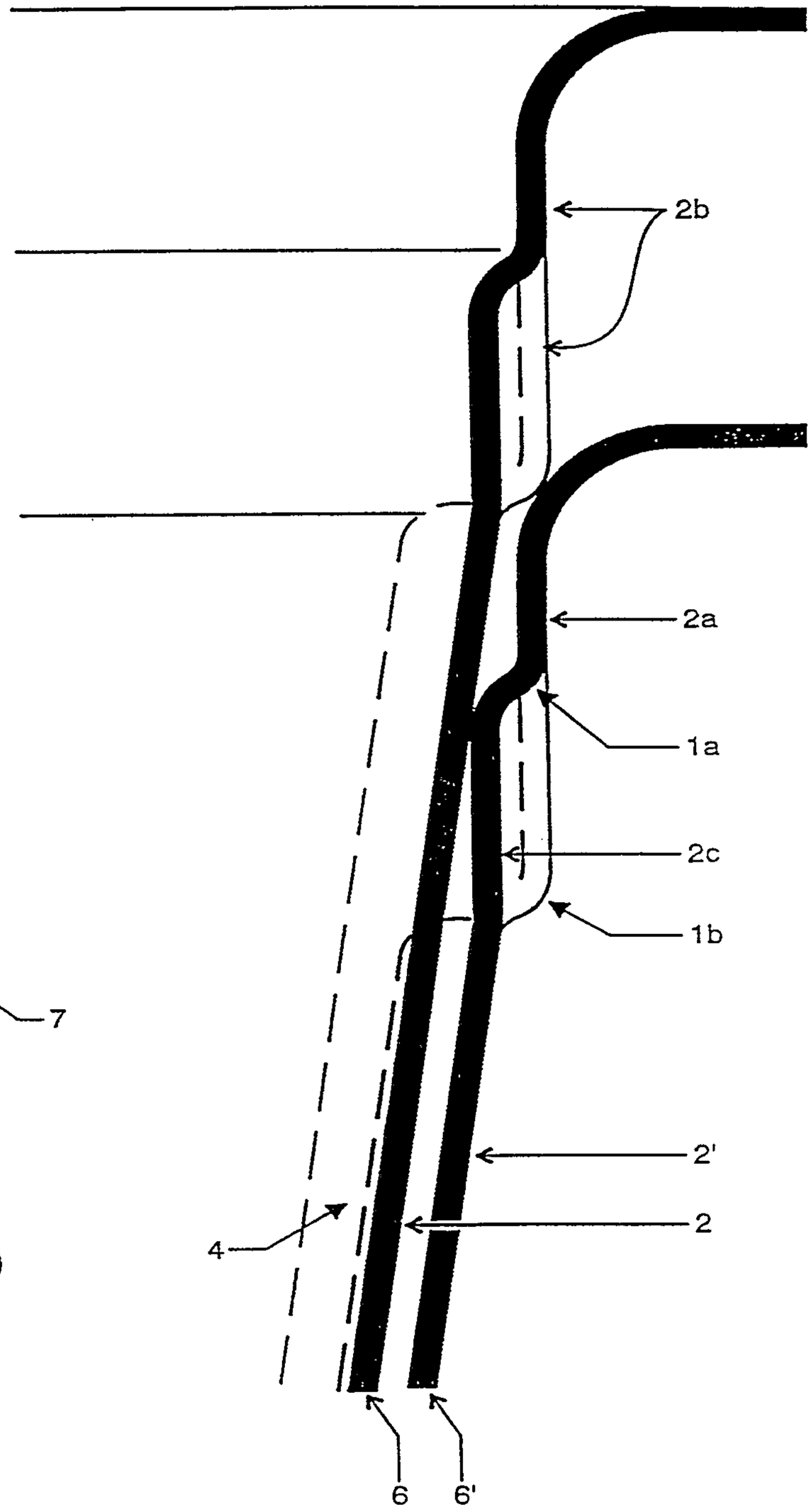
4. A container body according to claim 2 or 3, wherein the side flutes extend to the height of the first shoulder.

5. A container body according to claim 2 or 3, wherein the side flutes extend to between the height of the first shoulder and the second shoulder.

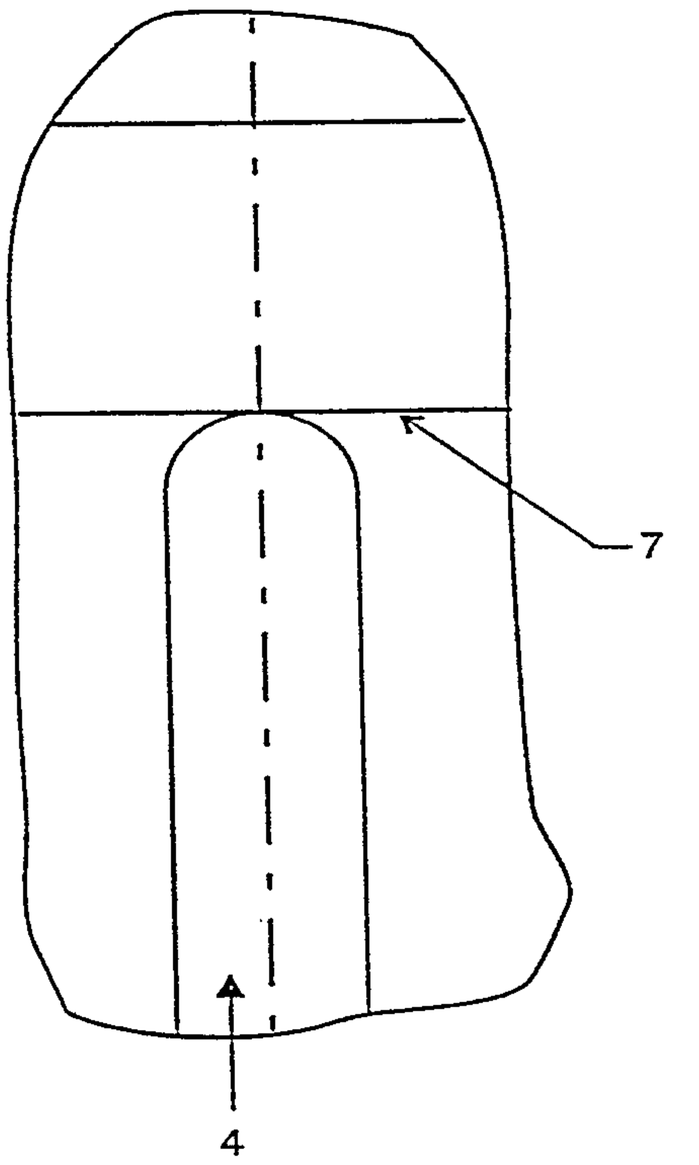
6. A container body according to claim 2 or 3, wherein the side flutes extend to the height of the second shoulder.

7. A container body according to any one of claims 1 to 6, wherein the side wall, where the second shoulder is present, is slanted outward less sharply in an upper section than in the lower part of the side wall or is at right angles to the bottom surface of the container body.

Figur 1

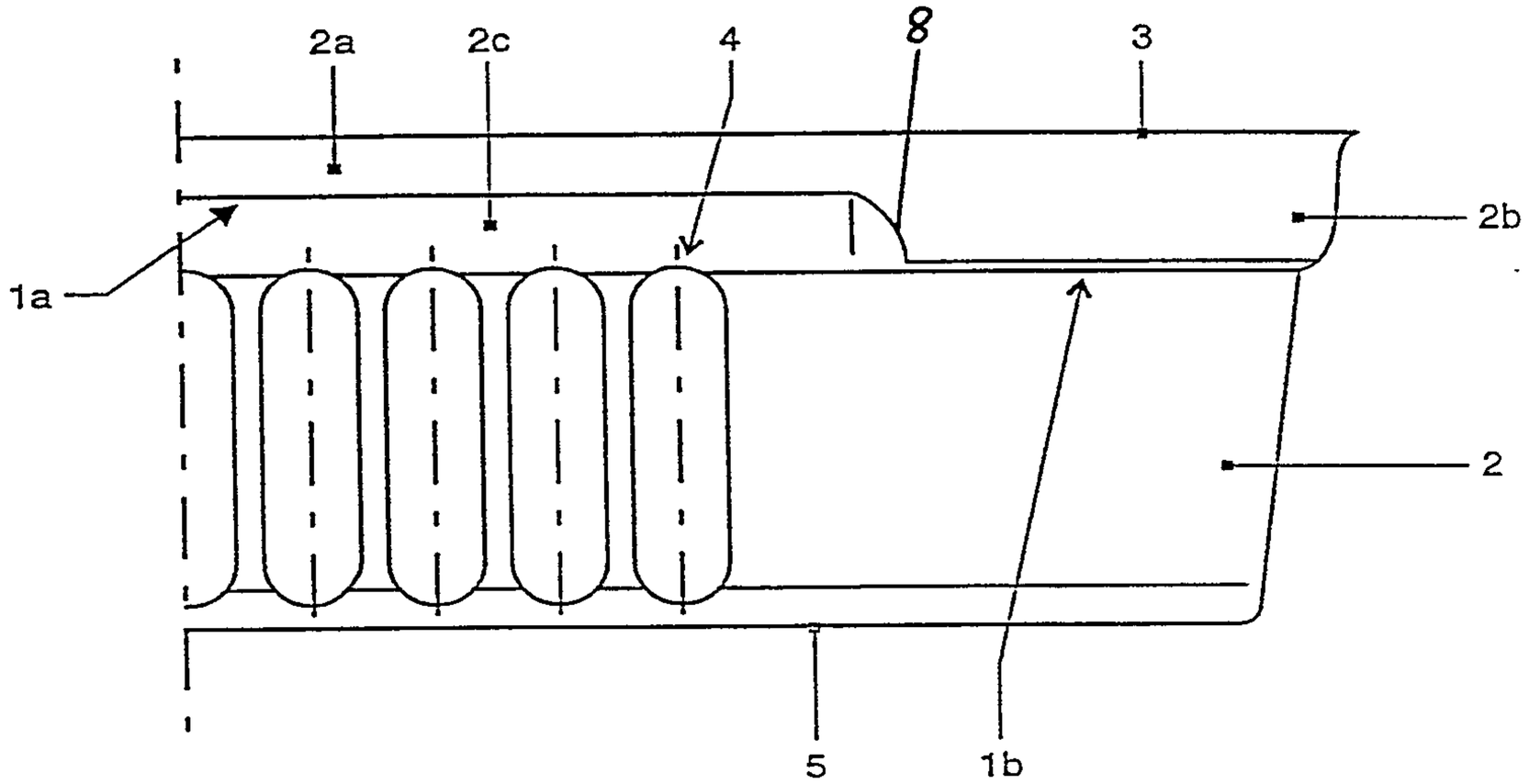


Figur 3



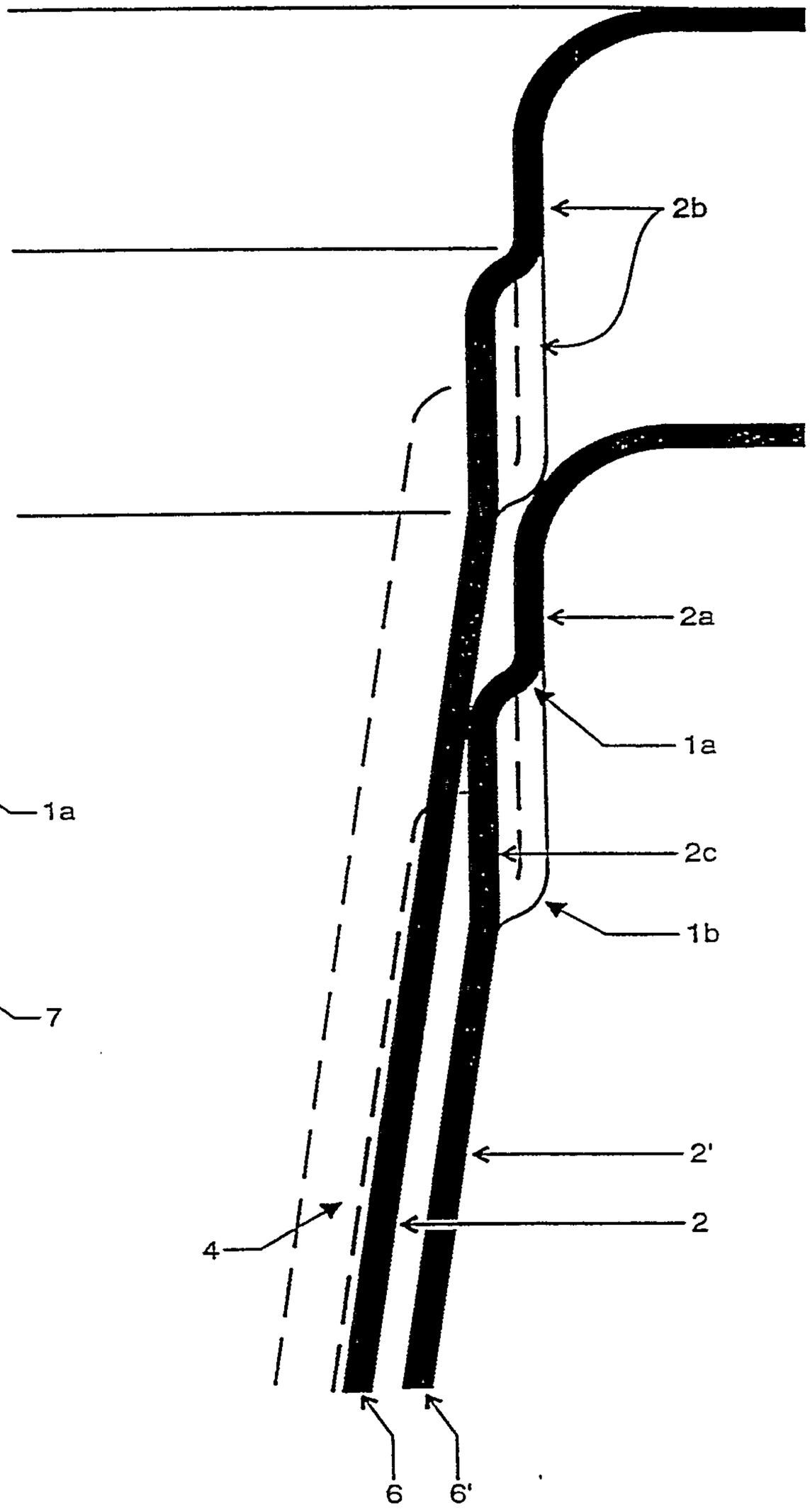
Marks & Clerk

Figur 2

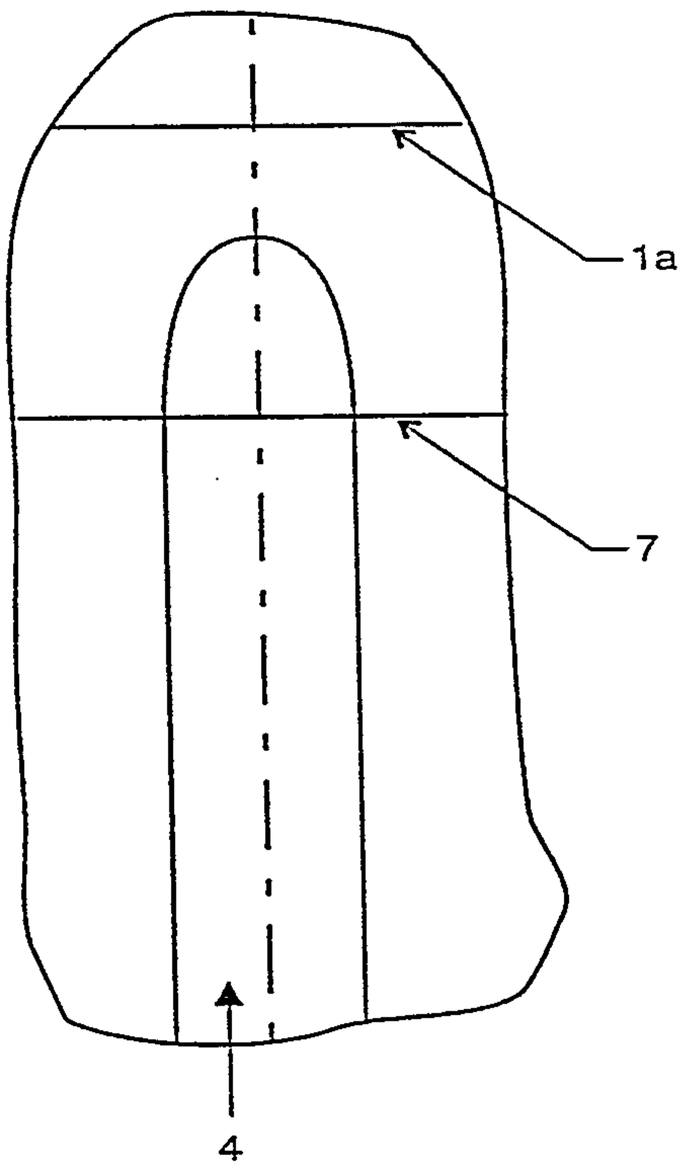


Marks & Clerk

Figur 4

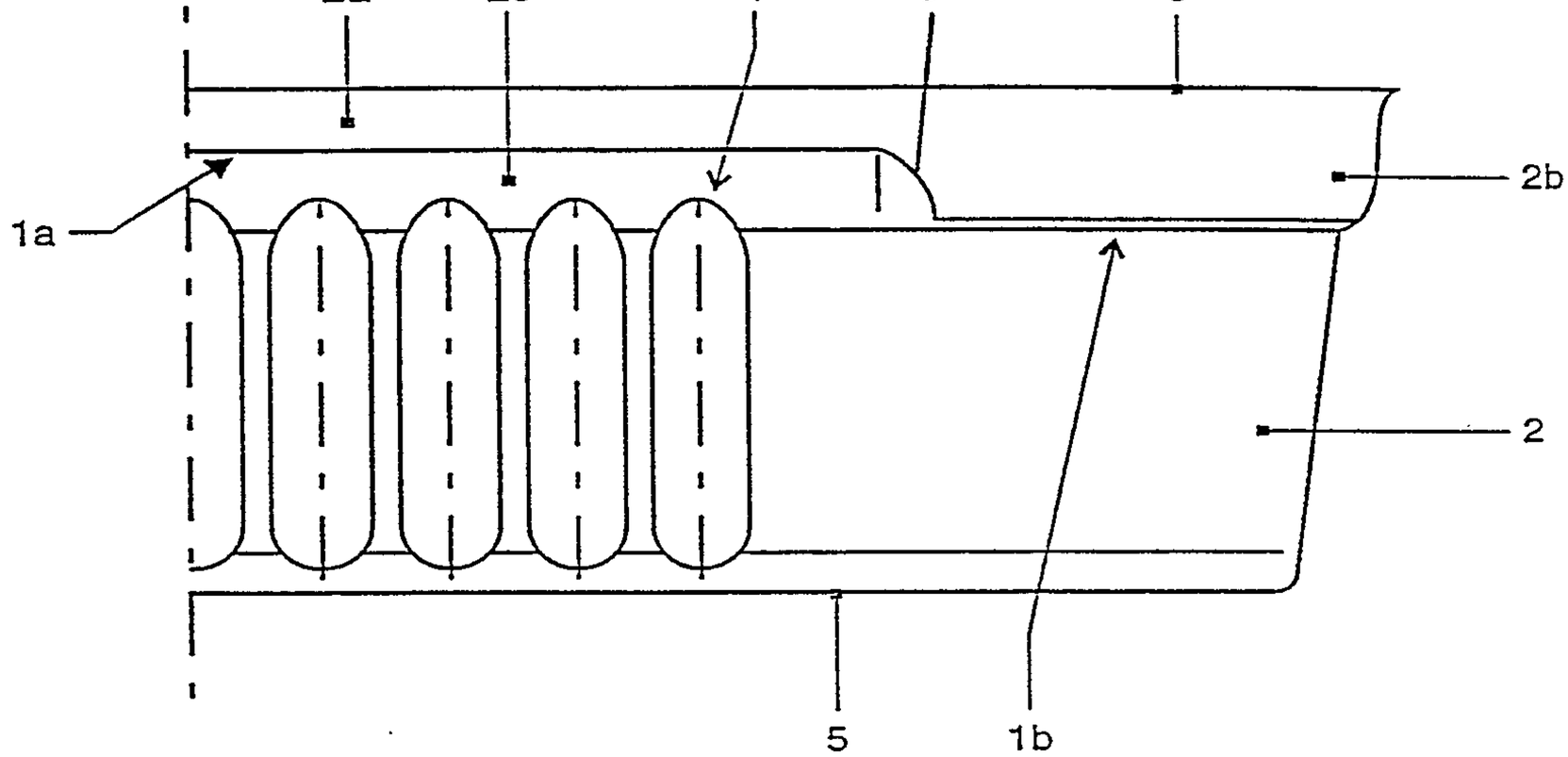


Figur 6



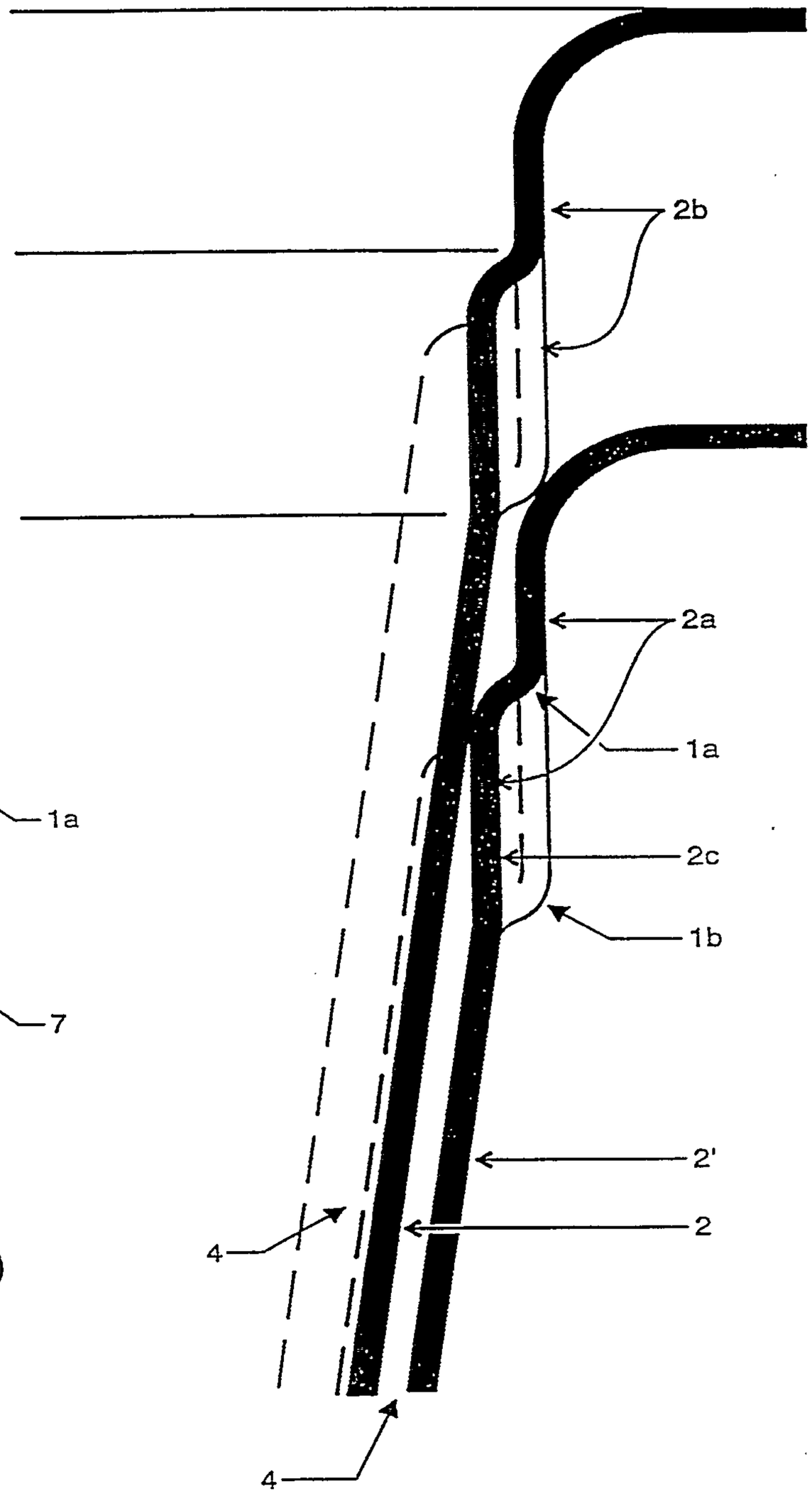
Marks & Clerk

Figur 5

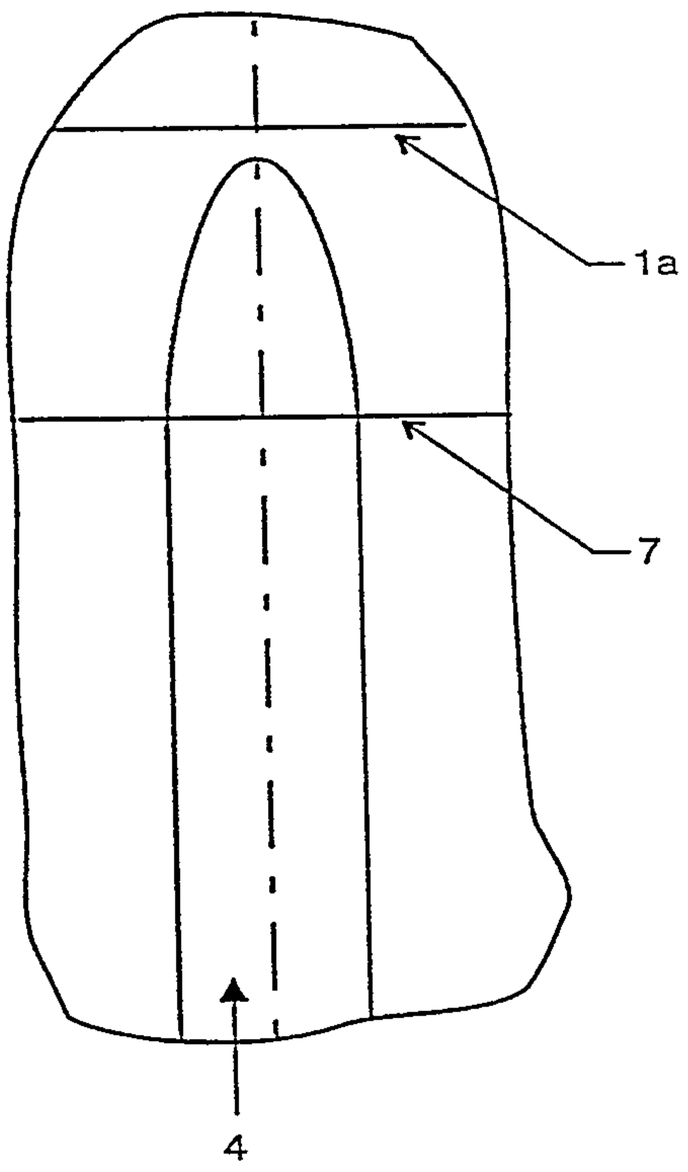


Marks & Clerk

Figur 7

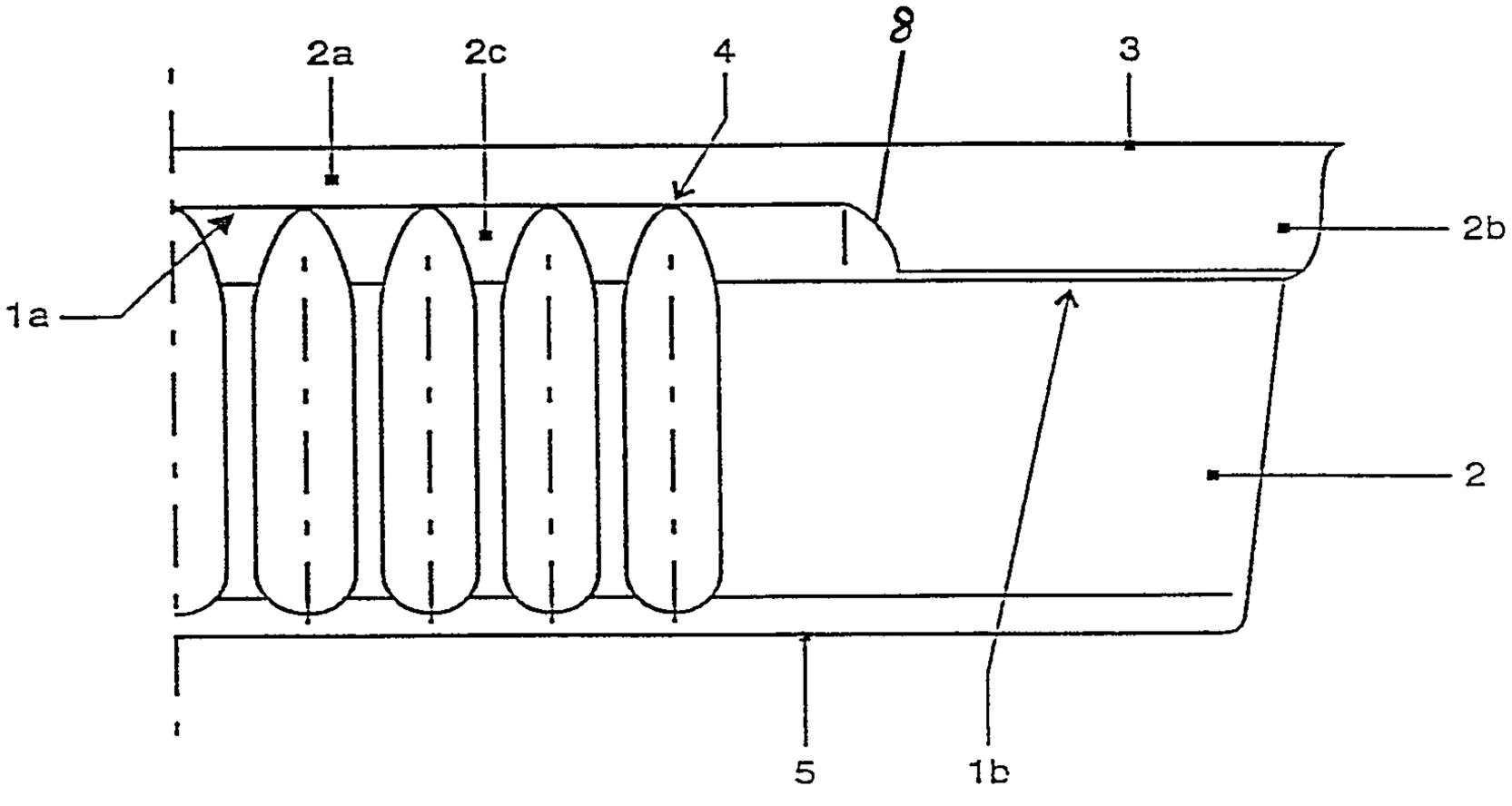


Figur 9

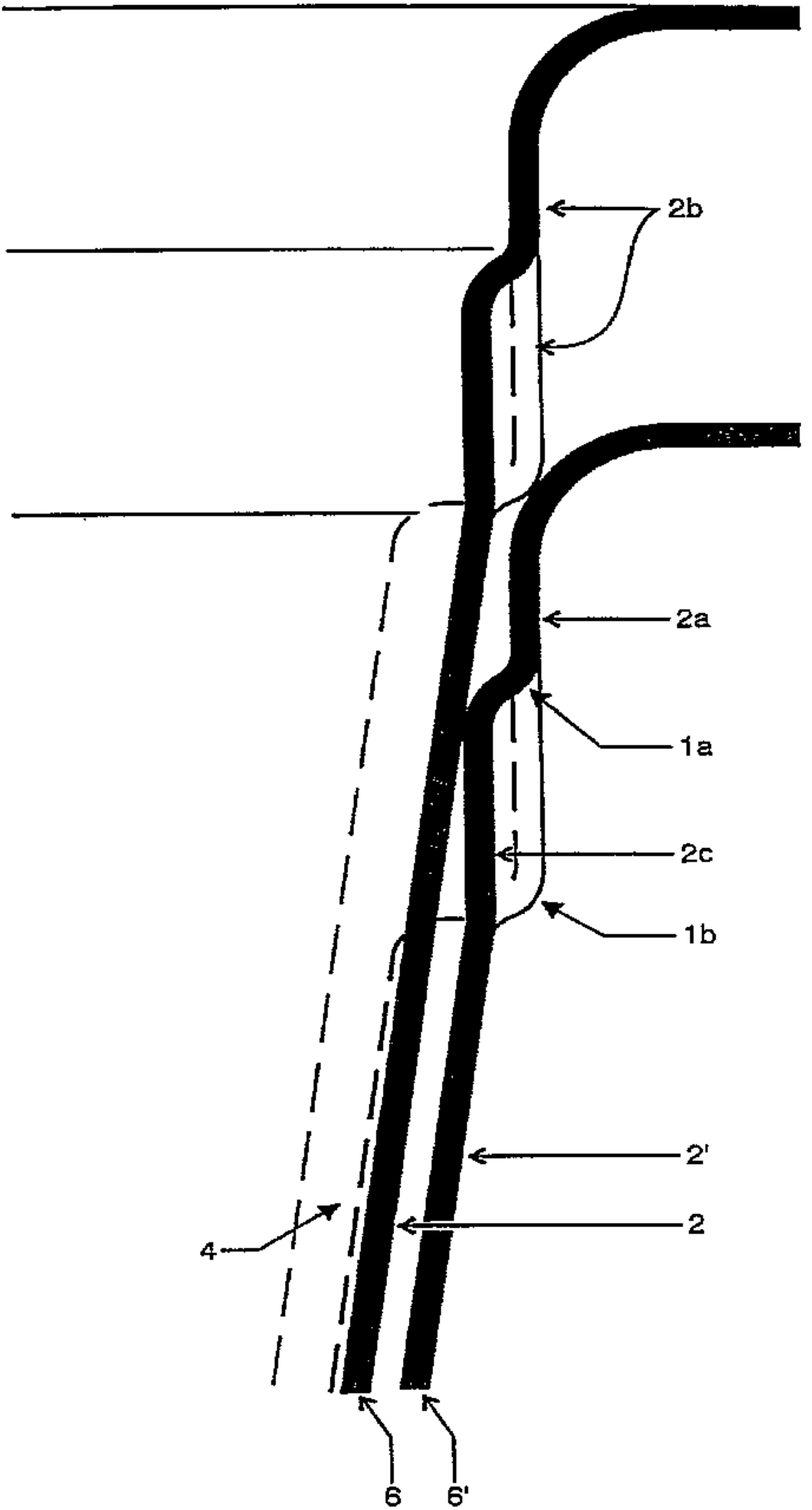


Marks & Clerk

Figur 8



Marks & Clerk


2b
2a
1a
2c
1b
2'
2
4
6
6'