CONTAINER WITH A FRANGIBLE LID AND A TOOL FOR OPENING SAID CONTAINER

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ABSTRACT
A container with lid, both made of synthetic material, the lid being adapted to grip with a reversed channel-shaped edge the upper rim of the container and being attached with the outer leg of said edge to the outside wall of the container in a manner such that it cannot be readily detached therefrom. The outer leg is provided on the inside thereof above the joint with a peripheral groove on a wall portion having a reduced thickness and/or the outer wall of the container is provided with a circumferential groove facing the outer leg of the lid. For opening the container there is provided a tool consisting of a knife provided at one end with a flat head portion and at the other end with a grip in planes perpendicular or substantially perpendicular to the cutting edge of the knife.

6 Claims, 6 Drawing Figures
The invention relates to a container with lid, both made of synthetic material such as thermoplastic synthetic material, which lid is adapted to grip with a reversed channel-shaped edge the upper rim of the container and is attached with the outer leg of said edge to the outside wall of the container such that it cannot be detached therefrom, or can only be detached therefrom with some difficulty. Containers of this type are described, for instance, in the Dutch patent applications 72.00403, 72.00404 and 72.00406, filed on the same date.

In one of said applications it is proposed to provide the lid with a tear-off strip to open it. With containers having quite a capacity, such a tear-off strip has a great length, and this may have its disadvantages, since a great length of strip has to be torn out while simultaneously holding the container.

It is the object of the present invention to improve upon this matter.

The invention furthermore aims at providing a container with a lid, in which the lid and container are connected with each other by means of adhesive and a solution for opening the container. Such a container, e.g., may be of fibre with a lid of synthetic material glued to it.

This object is achieved according to the invention by the fact that the outer leg of the lid, at the inside above the joint, is provided with a peripheral groove or thin area and/or the outer wall of the container is provided with a groove extending in the peripheral direction and facing the outer leg of the lid. The outer leg of the lid can be provided, at least in one spot, with an opening communicating with the outside. In that instance, it is possible to insert a cutting device at the site of said opening, which can cut through the thin portion of the wall of said outer leg of the lid formed by the groove or the thin area, thus cutting off the lid. If there is provided a plurality of openings, there will be formed a rough dotted line, as it were, indicating in which direction to cut. However, also without an opening it is possible to cut the lid free, provided that the line of cutting has been marked and that behind said line there is a groove or slot between the opposite surfaces of the container and outer leg of the lid. Said groove or slot not only is desirable for receiving the head of a special cutting tool, but also is desirable when using a normal knife, to find out when the outer leg of the lid has been cut through. For guiding the cutting tool the cover can be provided with a ridge or edge upon the outer surface of the outer leg.

The invention also relates to a tool for opening a container of this type, which tool consists of a knife with at one end a flat head portion and at the other end a grip in planes perpendicular to or substantially perpendicular to the cutting edge of said knife. A knife of this type has only very small dimensions in the direction of the cutting edge, viz. dimensions which substantially correspond with the thickness of the leg to be cut off. If this tool is inserted with the head portion in the mouth of the groove, the lid can be cut off by pulling the tool all around the container. In its most simple form the tool can consist of a piece of strip material with an eye at one end and, at the other end, a right-angled part which has a sharpened cutting edge and a deflected flat head portion. It is understood that the opening or openings in the rim of the container have to be sufficiently large for the head portion to be inserted therein.

If one wants to provide the container with a tool from the very beginning then this tool, with the outer end not yet formed into an eye-shape, is inserted through the opening of the outer leg of the lid until the flattened head engages the edge of the opening. Then the lid is mounted and secured by welding. The container then is provided with a built-in tool, enabling opening of the container by hand by anybody.

A completely liquid-tight sealed container in this manner can easily and quickly be changed into a container with a removable cover.

The invention will now be more fully explained with reference to the drawings.

FIG. 1 is a sectional view through a top part of a container. It shows a container wall 1, a lid 2, which has a reversed channel-shaped edge with an outer leg 3 which at 4 is attached to the container wall 1 by welding and which, at 5, is provided with an inside V-shaped groove.

FIG. 2 shows a plan view of the part of the container shown in FIG. 1, and shows that it is possible to arrange openings 6 communicating with the outside in several spots in the groove.

The tool shown in the FIGS. 3 and 4 consists of a length of strip material 7 which, at one end, is bent into an eye 8 and, at the other end, is deflected at right angles, so that there is obtained a short leg 9, which is provided with a flattened head portion 10.

FIG. 4 is a sectional view along the line IV—IV of FIG. 3 which shows that the leg 9 is provided with a cutting edge 11.

If said tool is inserted with the head portion 10 in an opening and if it is pulled along in the direction of the groove, the leg 9 will cut through the area the thickness of which has been reduced by the groove 5, the tool being guided by the broadened head portion 10 and being prevented from escaping.

FIG. 5 shows a tool mounted before opening, which tool has been inserted from the inner side through the opening in the outer leg of the lid and with the reduced portion 12 snapped into the opening, after which the eye 13 is formed. At 14 a guiding rib has been provided cooperating with the rib 15 in the cross section of the outer leg of the lid shown in FIG. 6.

What we claim is:

1. A container with a lid, both made of thermoplastic synthetic material, said lid having an inverted channel-shaped edge portion fitting over the upper edge of the container and attached to the outer surface of the container wall with the inner surface of the outer leg of said channel-shaped edge, said outer leg between the upper edge of the container wall and the attachment of the outer leg of the lid to said container wall being provided with a peripheral wall portion of reduced thickness, and a circumferentially extending clearance located radially inwardly of said leg portion of reduced thickness and between said leg portion and the container wall, said portion of reduced thickness at least at one place being provided with an opening connecting the clearance with the outside of the container and lid.

2. A container according to claim 1 wherein the outer leg of the lid at the outer side and beside the portion of reduced thickness is provided with a ridge.
3. A container according to claim 1 further comprising a plurality of openings connecting the clearance with the outside of the container and lid to form a dotted line.

4. A container according to claim 1 further comprising a knife which, at one end, is provided with a flat head portion and, at the other end, with a grip connected to the knife by another portion extending in a direction in front of the cutting edge which is substantially perpendicular to the cutting edge of said knife.

5. A container according to claim 2 further comprising a tool including a length of strip material having an eye at one end and a part deflected at right angles at the other end, said part having a sharpened cutting edge as well as a set flat head portion.

6. A container according to claim 5 wherein the flat head portion is larger than the opening.