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(54) A plastic package of the bin type.

(57) A plastic package of the bucket, bin or cup type having a container (2), the edge portion of which is provided with an inner mouth flange (4) and an outer mouth flange (6), between which is provided a ring groove (12), which container is closed by means of a pressure lid (18), which, by means of a downwardly projecting rim flange (20), engages the ring groove in such a manner that an outwardly projecting, rounded locking nose (28) at the outer side of the edge flange (20) is in holding engagement with an annular holding nose (14) projecting inwards from the outer mouth flange (6) of the container, which rim portion is generally shaped with a V or U-shaped cross section and thereby divided in an inner and an outer rim flange portion (22 and 26), of which one is provided with a gripping member for facilitating an upwards drawing of the lid, whereby the gripping member (36) is provided in connection with a local area of the outer rim flange portion (26) in such a manner that at the concerned area this flange portion may be forced inwardly by means of the gripping member for releasing its locking engagement with the outer mouth flange (6) of the container and thereafter be drawn upwards for release of the lid.

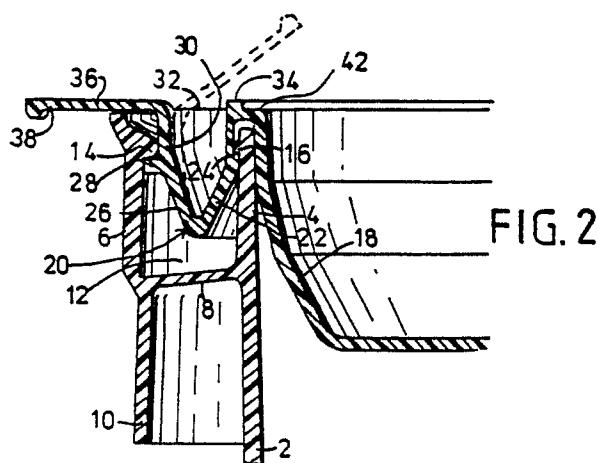


FIG. 2

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A plastic package of the bin type

The present invention relates to a plastic package of the bin or cup type and of the kind which comprises a plastic container, the rim portion of which is provided with an inner mouth flange and an outer mouth flange, between which a ring groove is provided, and which container is closed by means of a lid, which by downwardly projecting edge flange portion engages the ring groove in such a manner that an outer rim portion of the edge flange is in holding engagement with a nose flange on the inside of the outer mouth flange of the container. Packages of this type, which are known e.g. from the Patent Specifications Nos. DE-A-1,936,687 and US-A-4,520,943, have the advantage of being tightly closable in a stable manner and still being reasonably easy to open and re-close.

For opening these packages, it is required to actuate the outer mouth flange for outwards swinging from its holding engagement with the edge flange of the lid, and it is even known that this flange may be swung temporarily or permanently entirely away from the closed position, viz. by being pivoted outwards and downwards about a round-going, thin hinge connection into a self-stabilized downwardly folded position. However, this requires a considerable elasticity of the used plastic material.

Actually it is sufficient for the opening that the outer mouth flange be swung or pressed so far outwards that it is possible by means of e.g. a fingertip to grip the exposed rim of the edge flange of the lid, and thereby pull this upward in the area where the releasing takes place, whereafter the rest of the lifting of the lid may be effected by simply pulling it upwards, whereby the rim flange is progressively forced upwards from the engagement with the mouth flanges during a travelling local, slight outwards pressing of the outer mouth flange.

Thus, what is essential is that somewhere on the circumference of the container mouth the outer mouth flange be pressed outwardly for exposing a short but still sufficiently long periphery portion of the rim flange of the lid for making possible that the lid be openable thereafter by upwards pulling from this area. This implies two essential conditions for the construction, viz. that the outer mouth flange must be shaped in such a manner that it is easy to grip for outwards pressing, and that the used plastic material must be suitably elastic for allowing the necessary outwards pressing of the mouth flange with a reasonably modest force. Here it is relevant that the concerned locking engagement is or should be rather strong against axial forces, and that for the same reason it is necessary that the

initial outwards pressing of the outer mouth flange be effected along a peripheral area of a considerable length for enabling a subsequent release of the lid by a simple upward pulling movement. As the initial outwards pressing of the mouth flange is thus to be effected not only at a single point, but along a certain length, high requirements are made as to the elasticity of the container material.

It is to be mentioned that it has already been suggested, cf. Danish Patent Specification No. 127.827, that the lid may be provided with an upwardly projecting gripping portion which facilitates the upwards pulling of the lid, but this does not change the fact that the container material must be sufficiently resilient for allowing a substantial outwards pressing of the outer mouth flange for an initial release of the lid. Furthermore, this suggested upwardly projecting gripping portion will be in the way when piling the packages.

In practice it is quite essential whether the container is to be produced in a more or less elastic plastic material. For reasons which are not to be further disclosed here, it is highly desirable to be able to use an only slightly elastic material such as polyethylene, and it would thus be desirable that the lid be removable without any relatively extensive outwards pressing of the outer mouth flange.

It is the purpose of the invention to provide a package with which this is possible and according to the invention this is obtained by a gripping member being provided in connection with a local area of the outer rim flange of the lid in such a manner that this rim flange portion at the concerned area may be forced inwards by means of the gripping member for releasing its locking engagement with outer mouth flange of the container and then upwards for pulling up the lid. By this local inwards forcing of the outer lid edge flange portion, the locking engagement will be released even without the outer mouth flange having to be displaced outwards at all, though a very slight outwards pressing may take place by the mutual passage of the cooperating locking nose portions, just as by the progressive pulling up of the lid. However, in connection with the invention it is primarily the outer edge flange portion of the lid which is sought to be yielding in the inwards direction, such that the mouth flange of the container and thereby the entire container may be produced in a rather inelastic material such as polyethylene, which for several reasons is considerably more attractive as a container material than more elastic plastic materials.

In the following the invention is described more detailed with reference to the drawing in which

Fig. 1 is a perspective view of a package according to the invention,

Fig. 2 is a sectional view thereof, and

Fig. 3 is a corresponding view of a modified embodiment of the invention.

The package shown in Fig. 1 is of almost the same type as disclosed in US-A-4,520,943. It consists of a container 2 having an upper, inner mouth flange 4 and an outer mouth flange 6, which is connected to the container wall through a transverse flange 8. For stabilizing the area is provided a downwardly projecting skirt portion 10. Between the mouth flanges 4 and 6 an upwardly open rim groove 12 is formed, which is ended uppermost by an inwardly projecting locking nose 14 on the outer flange 6 and a smaller outwardly projecting locking nose 16 on the inner flange 4.

An associated lid 18 has a downwardly projecting rim flange 20 which is pressed down into the rim groove 12, and which is shaped with a U or V-shaped cross section, viz. consisting of an inner rim flange portion 22 having at its top a slightly inwardly projecting locking nose 22 for cooperating with the nose 16, and an outer rim flange portion 26 which has a somewhat sturdier locking nose 28 projecting outwards below the locking nose 14 of the outer flange, the outer rim flange 26 extending further upwards in a practically cylindrical portion 30, the free upper edge of which is designated 32. Between the inner rim flange portion 22 and the central portion of the lid 18, the lid extends in a loop portion 34 which fits over the upper edge of the inner mouth flange 4 on the container 2.

At a place of the periphery of the lid an outwardly projecting opening flap is provided in intergrated connection with the upper edge of the outer rim flange 26,30 of the lid, the flap being shown in Figs. 1 and 2, designated 36. This flap, the width of which as measured in the peripheral direction may be e.g. 15 mm, extends horizontally outwards above the upper edge of the outer mouth flange 6 of the container 2 and has a small downwardly projecting bend 38 at its outer end.

The opening flap 36 is that far outwardly projecting that it may easily be gripped by means of a fingertip underneath the outer portion 38 and be pulled or pushed or pivoted upwards from its normal position in the direction of the arrow shown in Fig. 2. By this movement the outer lid rim flange 30,26 is affected to be pushed or swung inwards about the bottom area of the rim flange 20, i.e. the locking nose 28 will locally be guided out of engagement with the locking nose 14 and by the same movement be moved upwards relative this, i.e. the said initial opening will take place easily and unhindered only by operating the gripping flap 36, which by the associated lever effect will affect the rim flange portion 26,30 with a rather

strong force.

As the lid 18 is produced in a suitably elastic material which allows for the said squeezing movement of the lid rim flange 20, the gripping flap 36 has to be swung rather far upwards and inwards before the rim flange portion 30,26 is caused to release the locking engagement between the locking noses 14 and 28, and it is indicated in dotted lines that hereby the gripping flap or plate 36 may have to be swung through more than 90°, e.g. through a whole 135° or even towards 180° for the locking engagement to be released. The actuation of the locking flap implies an upwardly directed force onto this, also when the flap is upright, as the opening fingertip will act upwardly on the outer thickened portion 38 also in this position.

Hereby an initial opening of the package takes place quite naturally when the gripping flap 36 is activated, as the activating effect will imply both a release of the locking engagement 14,28, and an upwards drawing of the concerned local portion of the lid, whereafter the further opening may take place by further drawing up of the lid by continued upwards drawing of the gripping flap 36,38.

Thus, the container 2 with its associated outer mouth flange 6 should not necessarily be made of a material which is particularly elastic, and it is to be emphasized that the converging area of the outer mouth flange 6 of the container and the portions 8 and 10 does not have to be shaped as a thin hinge area which allows any substantial outwards pivoting of the outer mouth flange portion 6. In connection with the invention no such outward pivoting will be necessary.

The locking engagement between the inner lock nose members 16 and 24, given that such an engagement occurs at all, will not be difficult to release at the same time, also because the said tipping actuation of the lid flange 20 as a whole will entail that the inner rim flange portion 22 of the lid is swung slightly outwards, which favours a release of this locking engagement.

For sealing the package, an adhesive tape may be placed around its upper edge, which tape will connect the upper edge of the outer mouth flange 6 with the upper side of the annular portion 34 of the lid, and it will be seen that such a tape may be brought to pass without difficulty over the local area in which the gripping flap 36 occurs. A part of such a sealing tape is shown in Fig. 1 and designated 40.

In Fig. 3 is shown a modified embodiment, in which the gripping flap 36' is projecting upwards vertically from the upper edge of the lid flange portion 30, the outer engagement area between the locking noses 14 and 28 being provided in a lowered level relative Fig. 1, such that the upwardly projecting gripping flap 36 does not project up-

wards above the top side of the package, this being of importance for the pilability of the packages. The flap 36' is also shown, in dotted lines, in Fig. 1.

It is to be mentioned that it will be within the scope of the invention to provide the gripping means 36 with any desired width in the peripheral direction, even entirely roundgoing, regardless of the fact that it is sufficient with a relatively small width.

It will be appreciated that the described opening flaps will not in any way obstruct an easy piling of the containers when care is taken that the bottoms of the containers are rested on the underlying lids inside the rim areas thereof, e.g. in the depressions 42 shown in Figs. 1 and 2.

Claims

1. A plastic package of the bucket, bin or cup type having a container (2), the edge portion of which is provided with an inner mouth flange (4) and an outer mouth flange (6), between which is provided a ring groove (12), which container is closed by means of a pressure lid (18), which, by means of a downwardly projecting rim flange (20), engages the ring groove in such a manner that an outwardly projecting, roundgoing locking nose (28) at the outer side of the edge flange (20) is in holding engagement with an annular holding nose (14) projecting inwards from the outer mouth flange (6) of the container, which rim portion is generally shaped with a V or U-shaped cross section and thereby divided in an inner and an outer rim flange portion (22 and 26), of which one is provided with a gripping member for facilitating an upwards drawing of the lid, characterized in that the gripping member (36) is provided in connection with a local area of the outer rim flange portion (26) in such a manner that at the concerned area this flange portion may be forced inwardly by means of the gripping member for releasing its locking engagement with the outer mouth flange (6) of the container and thereafter be drawn upwards for release of the lid.

2. A package according to claim 1, in which the gripping member (36) projects outwardly over the edge of the outer mouth flange.

3. A package according to claim 1 in which the gripping member (36') projects upwardly from the edge of the outer rim flange portion.

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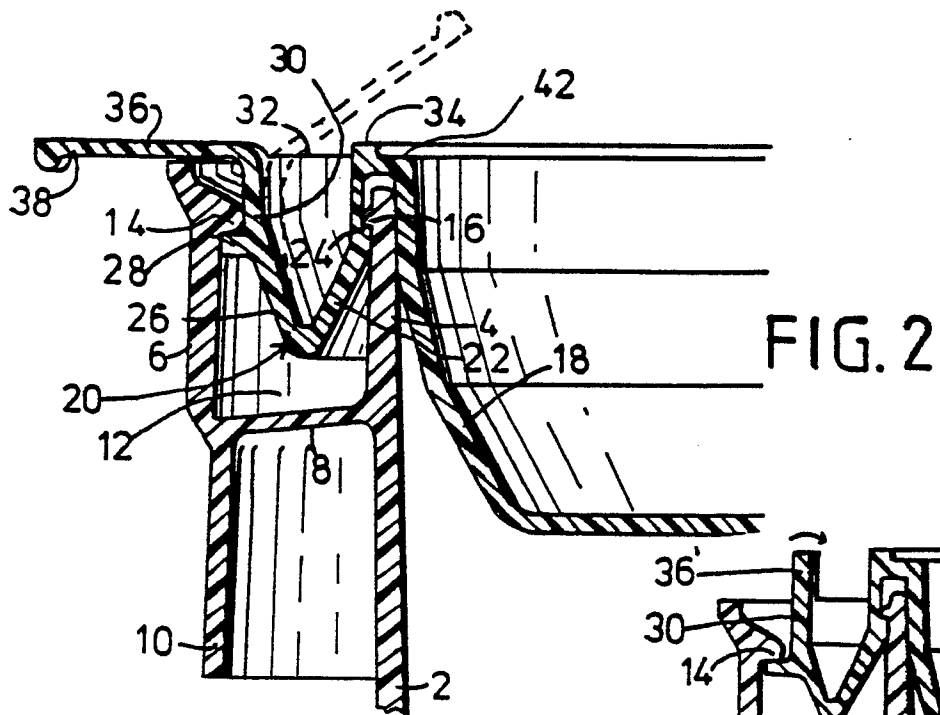
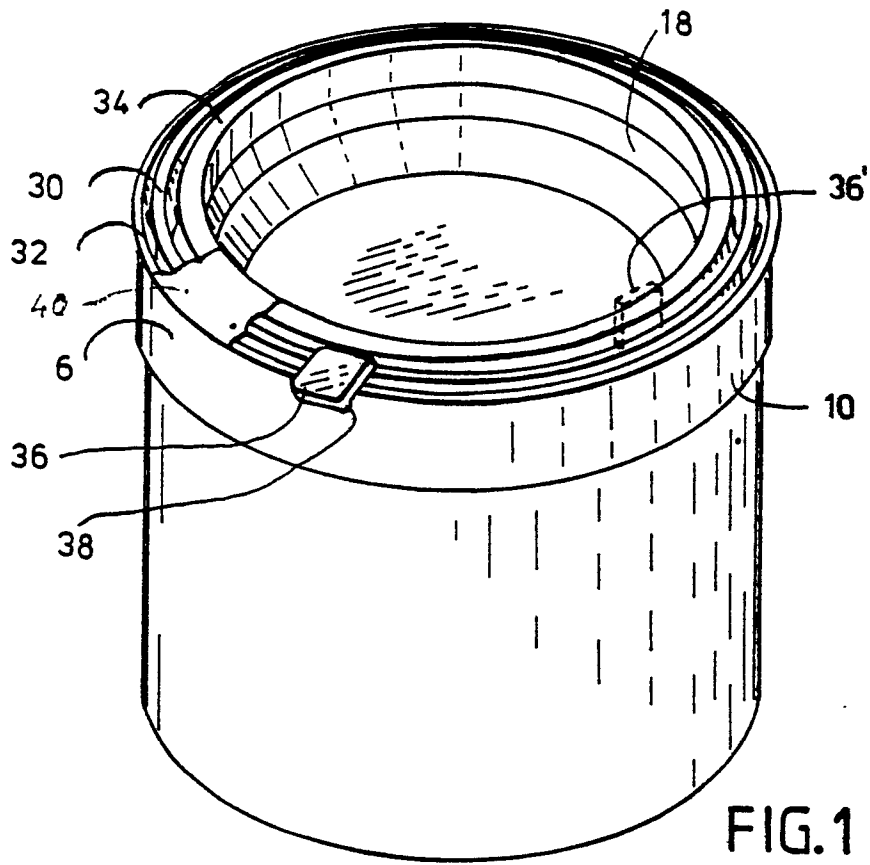


FIG. 3

