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(71) Applicant: **Avantira SRL Societa' Unipersonale 25060 Collebeato (BS) (IT)**

(72) Inventor: **Rodella, Luca Luigi 25060 COLLEBEATO (BS) (IT)**

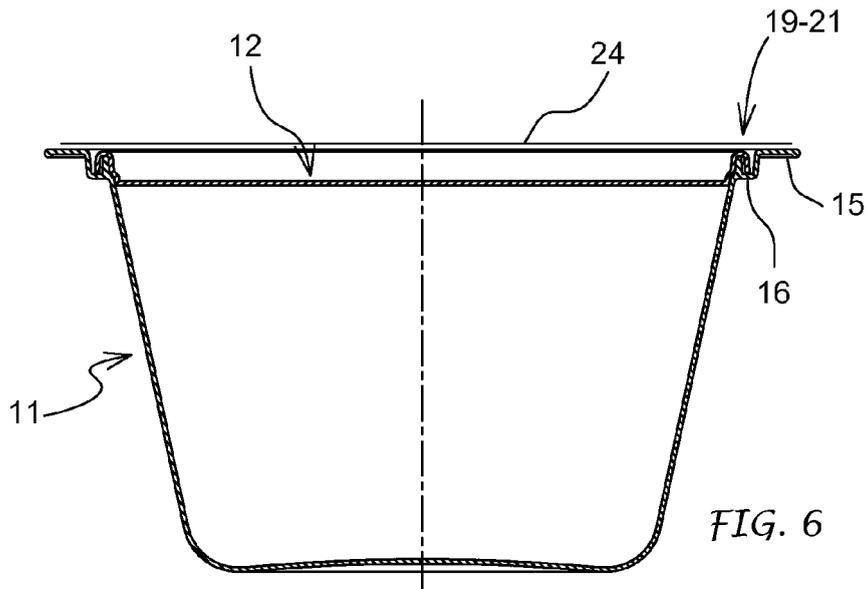
(74) Representative: **Sangiaco, Ines c/o Biesse S.r.l. Via Corfù, 71 25124 Brescia (IT)**

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(54) **Tub for packaging food products**

(57) It is described a tub for food products, comprising a body of the tub (11) and a lid (12) for closing said body of the tub (11), where the body of the tub has a peripheral wall (13) rising from a bottom wall (14) and terminating with a top peripheral flat band (15) outwardly protruding and extended parallel to the bottom wall (14), wherein the body of the tub (11) comprises a resting step (16) extended between the peripheral wall (13) and the flat peripheral band (15) running inside and at a lower

level with respect to the flat peripheral band (15), substantially parallel to the latter, and a coupling rib (19) rising from the resting step (16) up to a slightly lower level with respect to said flat peripheral band (15), and wherein the lid (12) is provided with a peripheral rim (20) defining a throat (21) intended to receive the coupling rib (19) so that the lid (12) when closing the body of the tub (11) is rested and retained on the resting step (16), circumscribed by, and at a level substantially equal or slightly lower than the flat peripheral band (15).



**FIG. 6**

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## Description

### Field of the Invention

**[0001]** The present invention relates in general to plastic tubs for the use in the food field, and in particular refers to a tub for the packaging of food products provided with lid and stackable.

### State of the Art

**[0002]** Some food products, especially in the delicatessen but also in the large retailers and in other environments such as ice cream parlours and the like, are placed in tubs for sales and delivery. These tubs are usually in thermoplastic material, can have various shapes and sizes and a body obtained by thermoforming or molding. They can be without or with a lid.

**[0003]** When they are without lid, once the desired product has been placed therein, such tubs are each closed by a protecting or sealing film, brought and attached onto the rim of its body and intended to be removed for accessing to and using the packaged product.

**[0004]** When the tubs are provided with a lid, they are still closed with a protecting or sealing film after the product to be packed has been placed therein, and the lid is then applied over the closing film and such that it results constrained to the tub, generally through a pressure coupling with its peripheral rim.

**[0005]** In such a case, to open the tub and access to the product for consuming it, first the lid has to be taken out and then the protecting film has to be removed, in case the lid being used afterwards for closing again the tub and protecting the product until it is fully consumed.

**[0006]** Then the protecting film stays between the base body and the lid with the drawback that the latter is uncovered during all the steps of delivery, exposition and handling of the package and therefore exposed to the agents of outer environment and however prone to get dirty.

**[0007]** Indeed it has also been proposed a type of tub provided with a lid and wherein the protecting or sealing film can be brought over the lid. In such a case the lid settles within the rim of the tub but it has to be provided with a small handle or hand piece to be taken and removed for accessing to the product within the tub. On the other hand, the small handle or hand piece, where present, rises from the lid therefore occupying a space in height and in order that the film can extend over the lid, then the latter has to be built-in more deeply within the tub so that the small handle or hand piece does not cantilever over its rim.

**[0008]** When the lid is built-in, this embodiment has the drawback of reducing the effective capacity of the tub to some extent, all sizes being equal.

## Object and summary of the invention

**[0009]** The object of the present invention is to obviate the above mentioned drawbacks of the known art causing the lid, when applied thereto, becomes substantially flush, or within the limits of a lower level, with the rim of the tub and the brought protecting or sealing film can be laid on, or over, the lid and the rim of the tub itself.

**[0010]** A further object of the invention is to put forward a tub with lid complementarily designed to allow an easy removal of the lid without the need of providing it with grips increasing its bulk.

**[0011]** The afore said objects are achieved according to the invention by means of a tub for packaging food products, comprising a body of the tub and a lid for closing the body of the tub, advantageously made of plastic material, wherein the body of the tub has a peripheral wall rising from a bottom wall and terminating with a top peripheral flat band outwardly protruding and extended parallel to the bottom wall, wherein the body of the tub comprises a resting step extended between the afore said peripheral wall and the afore said flat peripheral band running inside and at a lower level with respect to the flat peripheral band, substantially parallel to the latter, and a coupling rib rising from the afore said resting step up to a slightly lower level with respect to the afore said flat peripheral band, and wherein the afore said lid is provided with a peripheral rim defining a throat intended to receive the afore said coupling rib so that the afore said lid, when closing the body of the tub, is rested and retained on the afore said resting step, circumscribed by, and at a level substantially equal or slightly lower than the afore said flat peripheral band.

**[0012]** Preferably in the present tub the afore said peripheral rim is risen with respect to a substantially flat main body of the afore said lid, so that when the lid closes the body of the tub, the peripheral rim is at a substantially equal or slightly lower level with respect to the afore said flat peripheral band, and the substantially flat main body of the lid is at a level again slightly lower with respect to the flat peripheral band.

**[0013]** Preferably, in the present tub, the afore said body of the tub has, in at least one corner area thereof, a corner plane substantially flush with the afore said resting step, arranged between the afore said coupling rib and the afore said flat peripheral band.

**[0014]** Still preferably, in the afore said tub, the afore said lid has, in at least one corner area thereof, a catching tab arranged outwardly of the afore said peripheral rim, facing to and at least partially superjacent the afore said corner plane of the tub body.

**[0015]** Preferably the or each corner plane of the body of the tub has a concave surface.

**[0016]** Preferably the or each catching tab of the lid has a curved, concave shape.

**[0017]** Preferably, the or each corner plane is at the rounded off or beveled portion of the body of the tub and at the top thereof.

**[0018]** Advantageously the afore said coupling rib can be continuous or discontinuous.

**[0019]** Advantageously the present tub can be sealed with a protecting film, constrained to the afore said flat peripheral band, for example by thermo- or ultrasonic welding, or by an adhesive, over the afore said lid.

**[0020]** Substantially, in the tub according to the invention, the body of the tub and the lid are combined such that the lid, when it is mounted or fitted onto the tub body, becomes in some way constrained without inadvertently or accidentally being detachable from the body of the tub, in practice without being undermined, since it is essentially contained within the tub body, that is within the tub body.

**[0021]** The possible sealing by means of the protecting and sealing film constrained to the flat peripheral band and placed over the lid, will assure the tub integrity, that is of the whole package, thus as well of the product contained therein, and will protect as well the lid until the first breaking, that is until the first opening of the tub.

**[0022]** Considering that the lid is reused for closing the tub body after the first opening, contaminations of the lid are therefore advantageously avoided, for example during the storage, delivery or sales of the tub.

**[0023]** Further, possible damages of the tub, specifically defects or alterations of its closure, are immediately visible or otherwise ascertainable by a damage at least of the plastic film. Again, by providing the lid substantially contained within the tub body, the tub size is reduced to the smallest and in particular it is bounded by the flat peripheral band, allowing to a plurality of tubs according to the invention of being advantageously stacked or put side by side still without the risk of accidental removal of the lid and increasing the production, storage and closure advantages by means of the plastic film.

### Brief description of the drawings

**[0024]** Further details of the invention will be evident anyway from the following description course made with reference, by way of example only and without limitation, to the attached drawings, in which;

Figure 1 shows a perspective view of a tub body of a tub according to the present invention;

Figure 2 shows a top plan view of the tub body of Figure 1;

Figure 3 shows a perspective view of a lid of the tub body of Figure 1 in accordance with the invention;

Figure 4 shows a top plan view of the lid in Figure 3;

Figure 5 shows a perspective view of a tub according to the present invention comprising the tub body of figure 1 closed by the lid of Figure 3;

Figure 6 shows a cross section of the tub according to the present invention shown in Figure 5;

Figure 7 shows a portion of the corner of the tub of Figure 5 in plane; and

Figure 8 shows a corner section of the tub of Figure

5, according to the arrows A-A of Figure 7.

### Detailed description of the invention

**[0025]** In said drawings a body of the tub is denoted with numeral 11 and a related lid for closing a tub according to the present invention is denoted with numeral 12.

**[0026]** The body of the tub 11 and the lid 12 can be both in plastic material, for example polypropylene, realized by thermoforming or moulding.

**[0027]** Specifically, the body of the tub 11, which in the examples of the figures has a substantially trapezoidal cross section, that is to say flared, can have any one geometrical shape and nevertheless it has a peripheral wall 13 rising from a bottom part 14 and which terminates with a top flat peripheral band 15, outwardly folded, extended parallel to the bottom wall 14.

**[0028]** Between the peripheral wall 13 and the top flat peripheral band 15, the body of the tub 11 has a resting step 16 running substantially parallel to the flat peripheral band 15, at a lower level with respect to the latter. In at least one corner area thereof (in two diagonally opposite areas in the drawings) the body of the tub 11 has a rounded off or beveled portion 17 defining in its upper part, substantially flush with the resting step 16, a corner plane 18 resulting inwardly with respect to the flat peripheral band 15 and which is preferably concave, as shown in Fig. 8.

**[0029]** From the resting step 16 a coupling rib 19 rises which runs parallel to the flat peripheral band 15. This coupling rib 19, which can be continuous or discontinuous, passes anyway from the inner side of the or of each corner plane 18 such that the latter is comprised and exposed between the coupling rib 19 and the top flat peripheral band 15 of the body of the tub 11, as shown in the examples of figures 1 and 2.

**[0030]** Specifically, the coupling rib 19 extends from the resting step 16 up to a level slightly lower than the flat peripheral band 15, as visible in the examples of figures 6 and 8, wherein the coupling rib 19 can be observed to run inside and at an upper level of the resting step 16, and at a lower level with respect to the flat peripheral band, substantially parallel to the resting step.

**[0031]** The lid 12 can be substantially flat and it is peripherally provided with a rim 20 having the same pattern of the coupling rib 19 provided on the resting step 16 of the body of the tub 11.

**[0032]** Specifically, the peripheral rim 20, which can be risen with respect to the surface of the lid 12, that is to say with respect to a substantially flat main body of the lid, defines a throat 21 opened downwardly and sized for receiving and joining to the coupling rib 19 which rises from the resting step 16 when the lid 12 closes the tub body 11.

**[0033]** In at least one corner area thereof (or in two diagonally opposite areas as well as for the tub body) the lid 12 has a corner catching tab 22, laterally protruding from the peripheral rim 20, that is outwardly, and over-

lapping at least partly onto the corner plane 18 of the body of the tub 11 when the latter and the lid are coupled, as shown in the examples of Figures 5 and 8.

**[0034]** The catching tab 22 has preferably a concave arched shape in order to facilitate its grip, due to the concavity of the corner plane 18 too, at the time of pulling up and releasing the lid 12 from the body of the tub 11 when it is opened.

**[0035]** Advantageously, the present tub can be used both with and without the lid. In the first case, after the product to be packaged has been placed therein, it can be closed by a stretched film, for example a plastic film, retained by welding or adhesive, on the flat peripheral band 15. In the second case the body of the tub 11 is closed by applying the lid 12 thereon which will then become coupled, and held in position, with the coupling rib 19 on the resting step 16 of the tub body (Figures 6 and 8).

**[0036]** The lid will then become substantially flush with the flat peripheral band of the tub body, or better contained within the tub body, the peripheral rim 20 being at a substantial equal or slightly lower level with respect to the flat peripheral band, and the remaining portion, that is to say the substantially flat main body, at a level again slightly lower with respect to the flat peripheral band, whereby it will then be possible to apply, in this case too, a protecting or sealing film 24 (fig. 6), covering at the same time both the lid 12 and the top flat peripheral band 15 of the body of the tub 11.

**[0037]** On the other hand, after the removal of the protecting film, where present, the lid 12 could be easily pulled up and removed by acting with a nail or a finger tip under the catching tab 22 flush with a concave corner plane 18 of the tub body, and then put back for closing the tub body according to the need.

**[0038]** Finally note that the tub, therefore the tub body, has a design such that it can be stacked in plurality with other similar tubs and that modifications in detail or shape can be made concerning the corner plane/s of the tub body and respectively of the corner catching tab/s of the lid without however departing from the scope of protection defined by the following claims.

## Claims

1. Tub for packaging food products, comprising a body of the tub (11) and a lid (12) for closing said body of the tub (11), made of plastic material, wherein the body of the tub has a peripheral wall (13) rising from a bottom wall (14) and terminating with a top peripheral flat band (15) outwardly protruding and extended parallel to said bottom wall (14), **characterized in that** said body of the tub (11) comprises a resting step (16) extended between said peripheral wall (13) and said flat peripheral band (15) running inside and at a lower level with respect to said flat peripheral band (15), substantially parallel to the latter, and a coupling rib (19) rising from said resting step (16) up

to a slightly lower level with respect to said flat peripheral band (15), and **in that** said lid (12) is provided with a peripheral rim (20) defining a throat (21) intended to receive said coupling rib (19) so that said lid (12) when closing said body of the tub (11) is rested and retained on said resting step (16), circumscribed by, and at a level substantially equal or slightly lower than said flat peripheral band (15).

2. Tub according to claim 1, wherein said peripheral rim (20) is risen with respect to a substantially flat main body of said lid (12), so that when said lid (12) closes said body of the tub (11), said peripheral rim (20) is at a substantially equal or slightly lower level with respect to said flat peripheral band (15), and said substantially flat main body of said lid (12) is at a level again slightly lower with respect to said flat peripheral band (15).

3. Tub according to claim 1 or 2, wherein said body of the tub (11) has, in at least one corner area thereof, a corner plane (18) substantially flush with said resting step (16), said corner plane (18) being arranged between a part of the coupling rib (19) and the flat peripheral band (15).

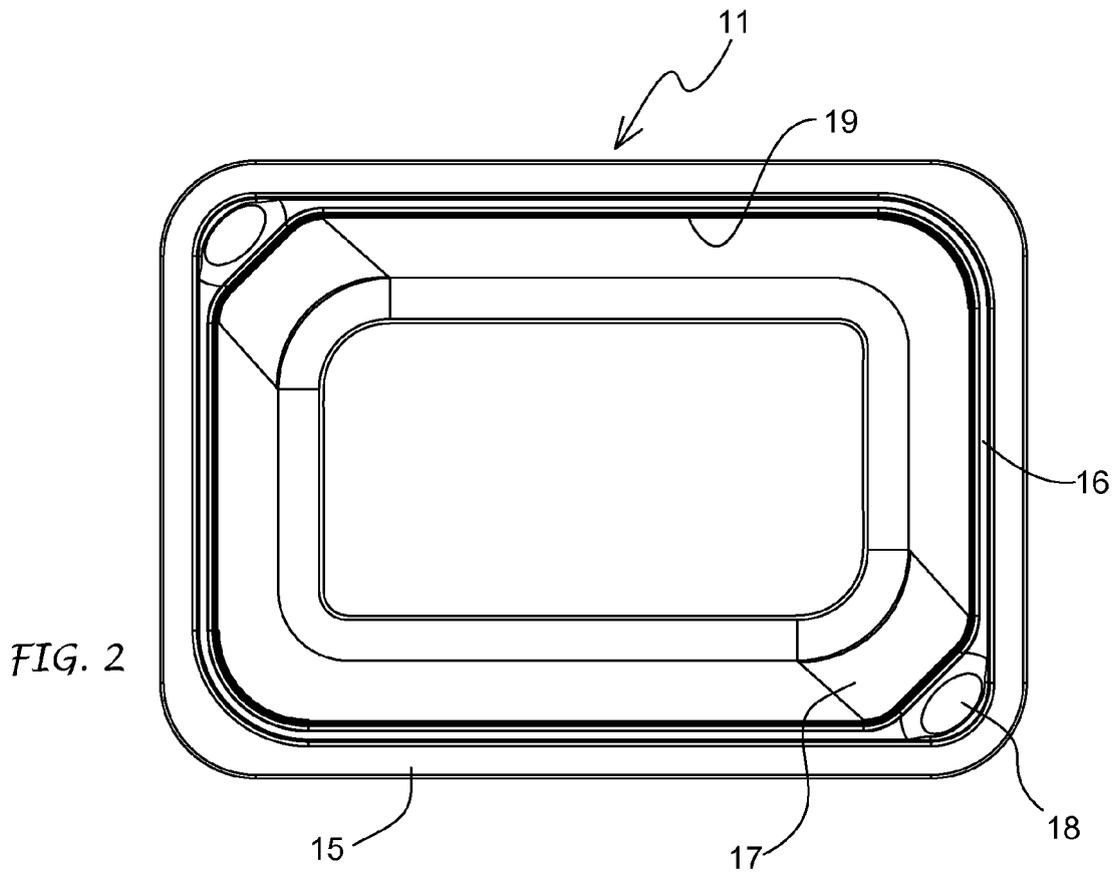
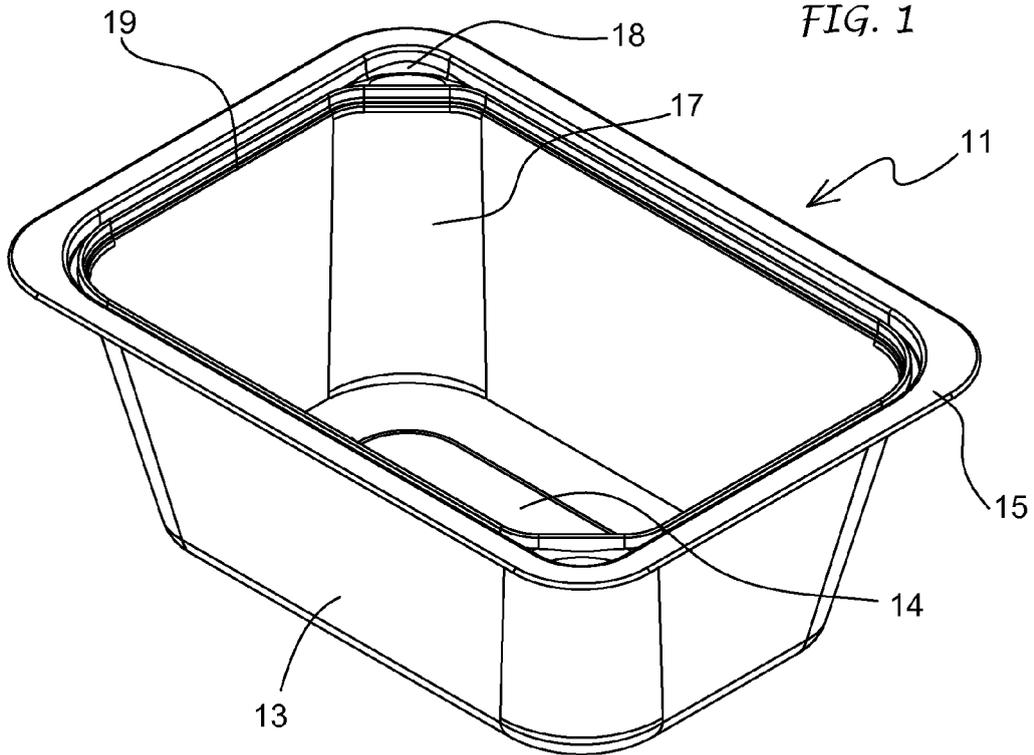
4. Tub according to claim 3, wherein said lid (12) has, in at least one corner area thereof, a catching tab (22) placed outside the peripheral rim (20), said catching tab (22) facing and being at least partially superjacent the corner plane (18) of the body of the tub.

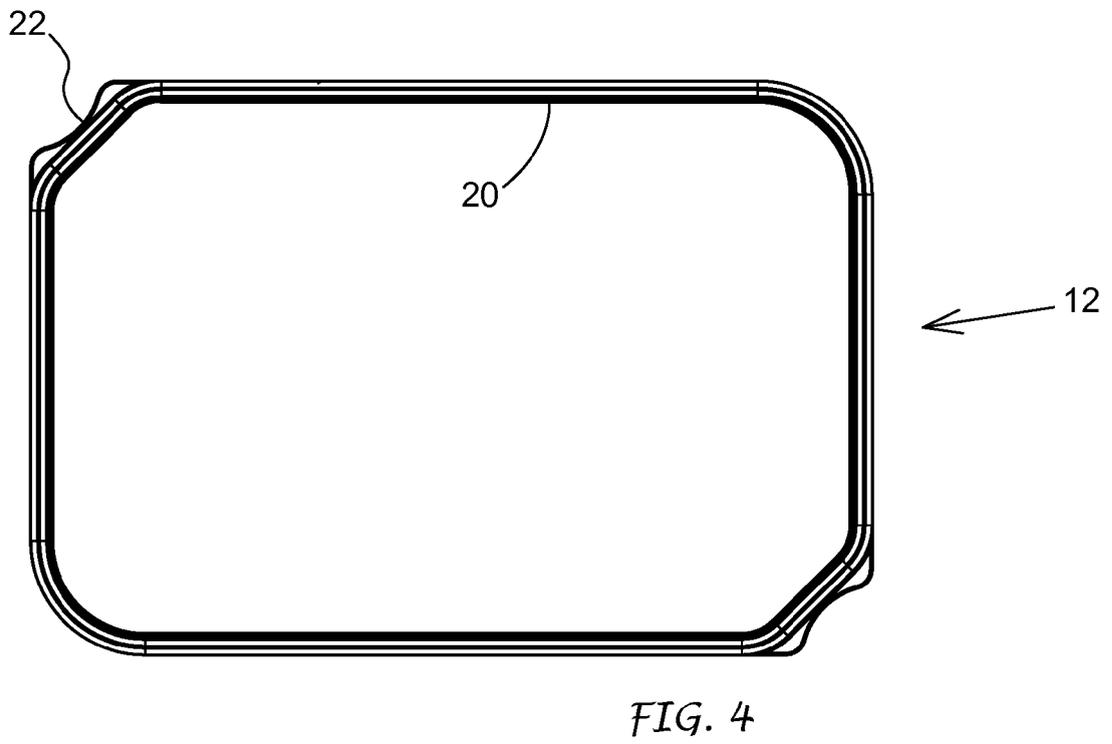
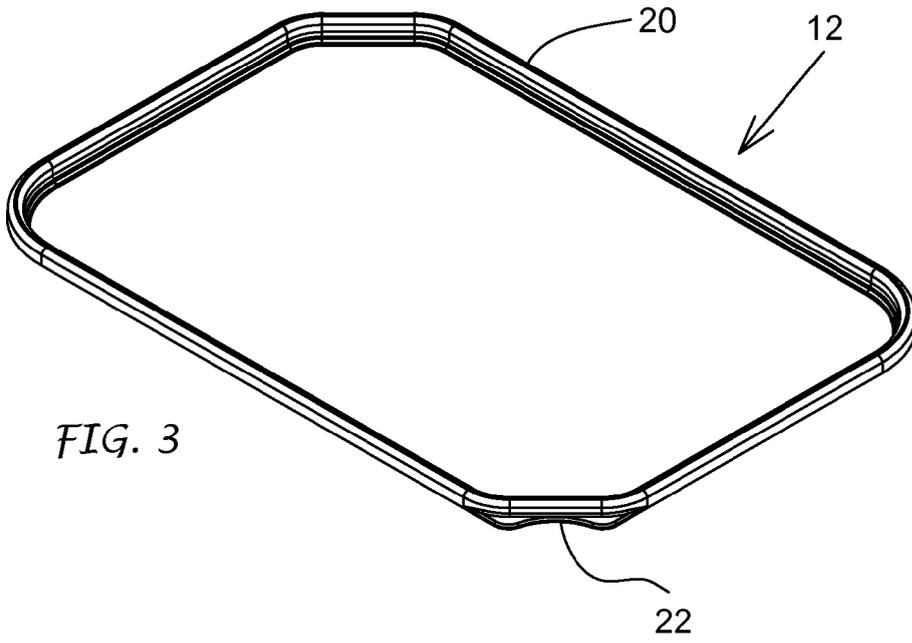
5. Tub according to claim 4, wherein the or each corner plane (18) of body of the tub has a concave surface, and wherein the or each catching tab (22) has a curved, concave shape.

6. Tub according to the claim 4 or 5, wherein the or each corner plane is at the rounded off or beveled portion of the body of the tub and at the top thereof.

7. Tub according to any one of the preceding claims, wherein said coupling rib (19) is continuous or discontinuous.

8. Tub according to any one of the preceding claims, further comprising a protecting and sealing film of said body of the tub (11) and said lid (12), constrained to said flat peripheral band (15).





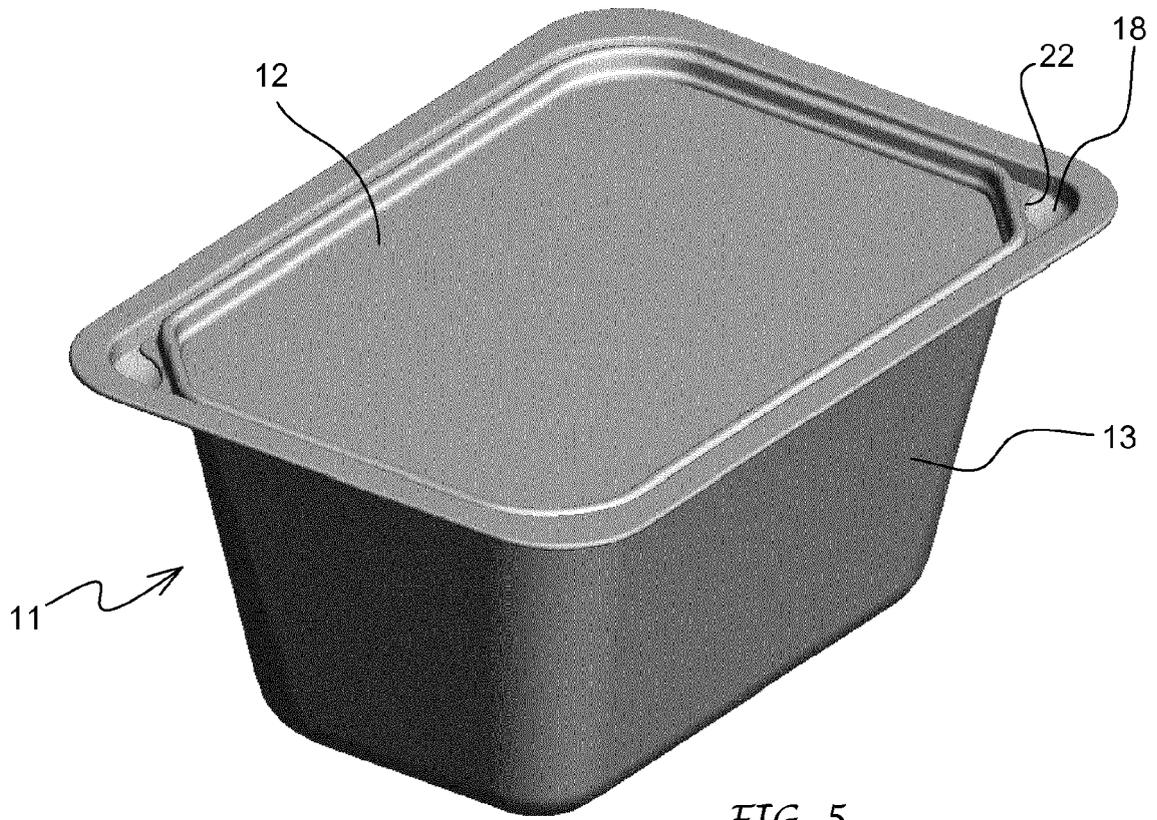
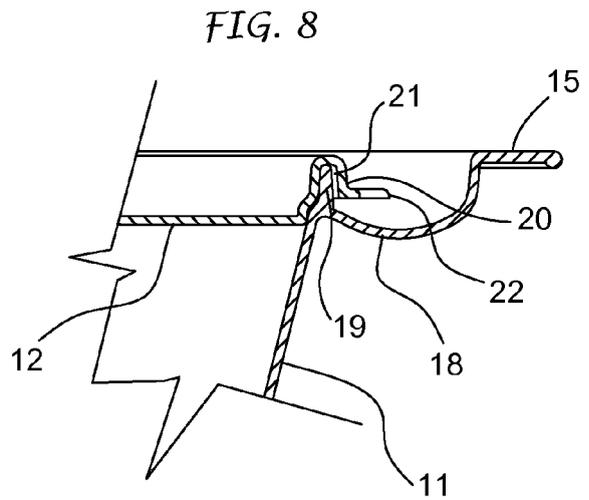
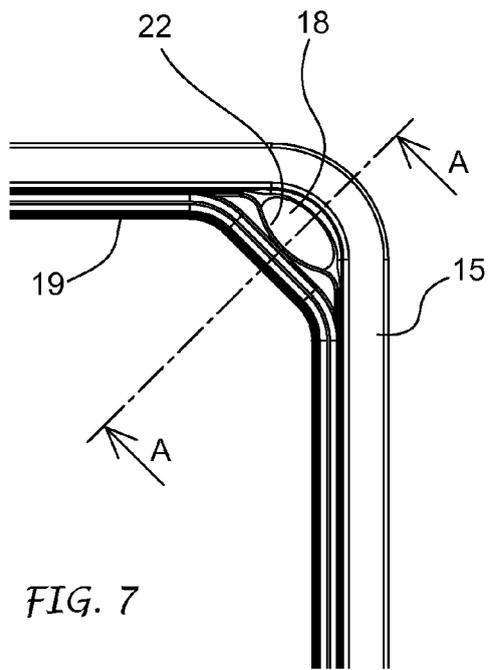
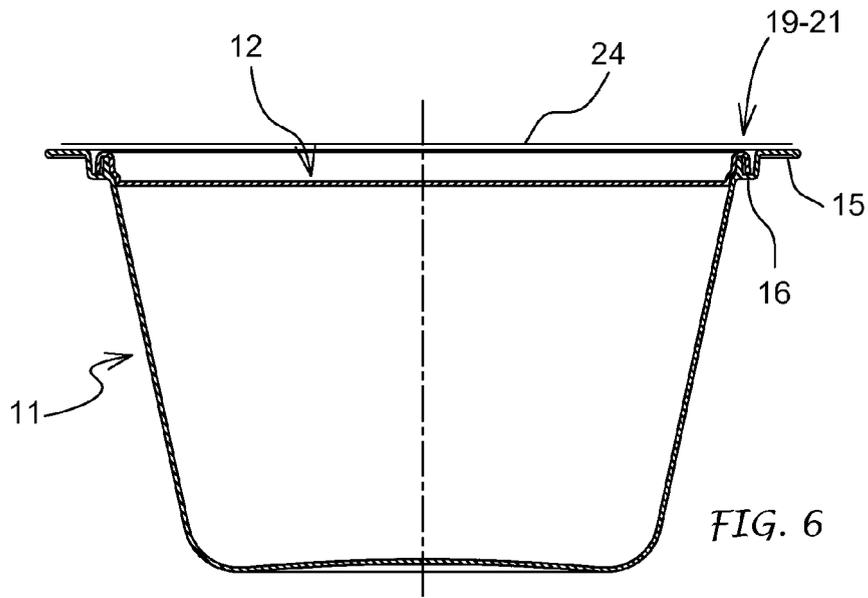


FIG. 5





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