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(54) **A SEMI-FINISHED STRUCTURE TO BE ASSEMBLED OF AN IMPROVED COUNTER DISPLAY AND RELATED FABRICATION PROCESS**

(57) This disclosure relates to a semi-finished assembly structure for a counter display, a kit for a counter display and a related manufacturing process. The edges of the semi-finished structure and a flat diaphragm to be removed are defined along parallel planes, so it is possible to define the edges of the structure and remove the flat diaphragm, to define a counter display mouth, by performing a die-cutting operation along a same operation plan of the die cutting machine.

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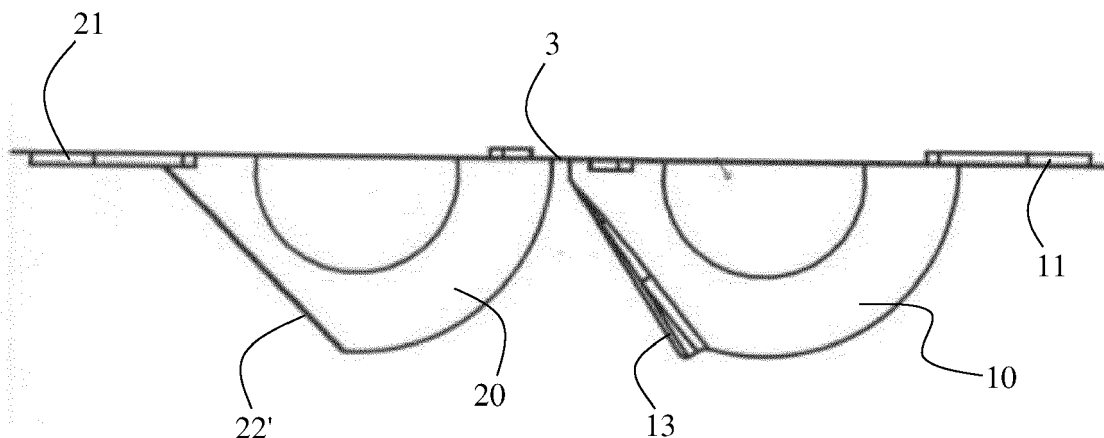


FIG. 1

Description

TECHNICAL FIELD

[0001] The present description generally relates to containers for goods to be displayed on a counter, and more particularly relates to a semi-finished structure to be assembled for a counter display unit and a related process for making such a counter display.

BACKGROUND

[0002] Counter displays made of plastic material are available, which define a container having a flattened support base and an upper mouth, substantially opposite the base. An example of a counter display of this type is shown in figure 1. These counter displays, used to contain small objects such as candies, also include a transparent visor that allows the insertion of information or promotional material concerning the product contained in the inside of the vessel. The visor is positioned at a certain angle, approximately 45°, with respect to the support surface of the container, so that the tag is more evident and legible to users approaching the counter display.

[0003] Counter displays of this type are typically made of plastic, preferably transparent to leave the product visible, and are obtained by assembling a semi-finished structure made by molding or thermoforming.

[0004] A commercial model of such counter displays is obtained by assembling directly in situ a structure of the type shown in figure 2, defining two half-shells connected by a hinge 3. Advantageously, a single injection molding or thermo forming process is sufficient which provides the semi-finished structure to be assembled in a single piece of plastic material, preferably transparent, comprising the two half-shells and the hinge that joins them.

[0005] Each of the two half-shells comprises a respective flat half-visor 11, 21, and a respective cap 10, 20. By bringing the two caps 10, 20 close to each other, a counter display container is defined. At the same time, by overlapping the flat half-visors 11, 21, a tag-holder visor is formed. The two flat half-visors 11, 21 are superimposed by sandwiching a tag and are closed together by means of a pressure closing mechanism so that the tag remains trapped between them.

[0006] One of the two caps 10 is shaped so as to define a flattened and thickened part that forms the base 13 of the counter display, while the other cap 20 comprises a flat portion that forms a flat diaphragm to be removed in a subsequent finishing operation, for example by punching, to obtain the mouth 22' of the counter display.

[0007] The structure to be assembled has a main development plan corresponding to the opening plane of the mold. Such a plan of the main development is substantially coincident with the planes of the two half-visors door-card 11, 21, and, consequently, the base 13 and

the diaphragm plane to be removed are angled with respect to it and therefore also with respect to the opening plane of the mold. Since the opening plane of the mold generally coincides with that of operation of the die-cutting machine in the production line, it is not possible to define both the edges of the structure and the mouth 22' of the counter display unit with the same die-cutting operation. In fact, after having punched the edges, it is necessary to manipulate the semi-finished structure to be assembled so that the plane of the flat diaphragm to be removed (to define the mouth 22' of the container) is parallel to the plane of the punching machine.

[0008] This handling operation takes time and significantly increases the production time and costs of such a structure to be assembled for counter displays.

SUMMARY

[0009] An object of the present description is therefore to provide a counter display which can be produced with a significantly simplified production process, while maintaining the final appearance of the known counter display illustrated above.

[0010] This object is achieved with the structure to be assembled and with the relative production process to obtain it, the main characteristics of which are specified in the attached claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] Further advantages and characteristics of the counter display according to the present description will become evident to those skilled in the art from the following detailed and non-limiting description of one of its embodiments with reference to the attached drawings in which:

Figure 1 shows a known assembled counter display; Figure 2 shows a known structure to be assembled; Figure 3 is a perspective view of a semi-finished structure to be assembled according to the present description;

Figure 4 is a profile view of the structure to be assembled of Figure 3;

Figure 5 is a plan view of the structure to be assembled of figure 3;

Figure 6 is a profile view of the structure of Figure 3 when assembled;

Figure 7 is a profile view of a counter display of this disclosure obtained with the structure of Figure 6 after having rotated the visor until it elastically passes over a raised rib on the cap;

Figure 8 is a perspective view of the counter display of figure 7.

EXAMPLARY EMBODIMENTS

[0012] With reference to figures 3-5, a semi-finished

structure to be assembled, i.e. at the end of only some of the industrial process operations to produce it, comprises a first half-shell 1 and a second half-shell 2 connected by a hinge 3 which defines an assembly rotation axis Y. The assembly of this structure, carried out by a user, requires the two half-shells 1, 2 to be rotated around the assembly rotation axis Y, so that they match each other, as will be discussed in more detail below.

[0013] According to one aspect, the first half-shell 1 comprises a first cap 10 and a first tag-holder half-visor 11 preferably having a substantially planar development. This first cap 10 is delimited by a first perimeter edge 10a which lies on a first cap plane and which comprises first coupling means. The second half-shell 2 comprises a second cap 20 and a second tag-holder half-visor 21 also preferably having a substantially planar development. This second cap 20 is delimited by a second perimeter edge 20a which lies on a second cap plane and which comprises second coupling means in a position corresponding to the first coupling means.

[0014] The hinge 3 binds the first shell 10 to the second shell 20 and, by rotating the first half-shell 1 relative to the second half-shell 2 around the assembly rotation axis Y, the first perimeter edge of the first shell 10 and the second perimeter edge of the second cap 20 may be made to mate and may be coupled by engaging the first coupling means with the second coupling means, forming a container of a counter display, with main characteristics similar to those described with reference to figure 1. In this way, the first half-visor 11 for the tag holder and the second half-visor 21 for the tag holder can be made to mate to form a visor which will sandwich a tag of the counter display unit.

[0015] The second cap 20 comprises a flat diaphragm configured to form, when removed, a mouth 22' of the container of the assembled counter display.

[0016] According to one aspect, the first coupling means of the first cap 10 comprise a cap rib 100, along the perimeter of the first perimeter edge 10a; the second coupling means of the second cap 20 comprise a seat 200 along the second perimetral edge 20a. The rib 100 is able to penetrate flush inside the seat 200 so as to allow the coupling of the first cap 10 to the second cap 20.

[0017] According to one aspect, the coupling means of the second cap 20 comprise at least one button 101a and the second coupling means of the first cap 10 also comprise at least one seat 101b, equal in number to that of the buttons 101a. The at least one button 101a and the at least one seat 101b are configured to be able to interlock each other by means of the pressure exerted by a user.

[0018] The first and second cap 10, 20 comprise, in correspondence with the first and second perimeter edges 10a 20a, a first radial flange 115 and a second radial flange 215 with a geometry that follows the outer perimeter of the edges 10a, 20a. The two radial flanges 115 and 215 extend outwardly with respect to the internal cavity of the caps 10, 20, along the respective planes of

the cap.

[0019] According to one aspect, the pairs of buttons 101a and seats 101b rise perpendicularly starting from the radial flanges 115, 215.

[0020] A finished structure to be assembled differs from the semi-finished one obtained after this first process step just described because the flat diaphragm is at least partially removed, so as to create an opening which will constitute the mouth 22', visible in figure 5. The flat diaphragm is therefore configured to be removed in a subsequent die cutting operation. Advantageously, the presence of the flat diaphragm considerably simplifies the obtainment of the semi-finished structure to be assembled by injection molding or thermoforming.

[0021] According to one aspect, an industrial production process for obtaining a finished structure to be assembled according to this description comprises the production of the semi-finished structure to be assembled described by an injection molding or thermoforming operation. Advantageously, the first and second plane of the cap are coplanar and parallel to an opening plane of the mold used for the injection molding or thermoforming operation. The industrial production process for obtaining the finished structure to be assembled according to this description consequently comprises at least one further step of removing the diaphragm to obtain the mouth 22' by preferably a punching operation.

[0022] Advantageously, a perimeter 22a of the flat diaphragm lies on a plane of the mouth of the counter display parallel to the second plane of the cap. In this way, the opening plane of the mold coincides with an operation plane of the punching machine that cuts and removes the flat diaphragm, thus simplifying the transport and manipulation, of the semi-finished structure to be assembled, between the molding or thermoforming station and the die-cutting station.

[0023] The first cap 10 also comprises a flattened part 13 so as to form a support base for the counter display. Preferably, the flattened part 13 is defined so that the mouth of the assembled counter display is inclined with respect to a hypothetical support surface parallel to the ground where the base of the counter display unit is positioned. It should be understood that this inclination is such as to allow greater evidence of the products contained inside the counter display to a possible user of the same.

[0024] According to one aspect, the tag-holder visor of the counter display according to this description can advantageously rotate with respect to the container so that it can be carried, from an angle of 180° with respect to a mouth plane defined by the mouth of the counter display, at an angle between 30° and 60° so that the commercial material shown by the visor is more evident. For this purpose, the first half-visor 11 is indirectly fixed to the first cap 10 by means of a first pair of arms 110, which lie in said first cap plane and which respectively connect longitudinally opposite portions of the first half-visor 11 to respective diametrically portions of the first cap 10. Fur-

thermore, this first pair of arms 110 is advantageously configured to allow the first half-visor 11 to be rotated with respect to a first axis of rotation half-visor Y'1 passing through these two diametrically opposite points of said first shell.

[0025] Similarly, the second half-visor 21 is indirectly fixed to the second cap 20 through a second pair of arms 210, which lie in said second cap plane and which respectively connect longitudinally opposite points of the second half-visor 21 to respective diametrically points of the second cap 20, this second pair of arms 210 being configured to allow the first half-visor to be rotated with respect to a second axis of rotation half-visor Y'2 passing through these two diametrically opposite points of said first cap. When the finished assembly structure is assembled the two axes Y'1, Y'2 substantially coincide, consequently the tag holder visor, assembled by the two half-visors 11, 21, can rotate around a visor rotation axis Y', coincident with the axes Y'1, Y'2.

[0026] In the embodiment according to this description, the axes Y'1, Y'2 and Y' are parallel to the assembly rotation axis Y.

[0027] According to one aspect, the structure to be assembled comprises a cut between the first pair of arms 110 and a portion of the outer perimeter of the first edge 10a of the first cap 10 in correspondence with said first pair of arms 110 and one between the second pair of arms 210 and a portion of the outer perimeter of the second edge 20a of the second cap 20 in correspondence with said second pair of arms 210.

[0028] According to one aspect, the rotation between the half-visors 11, 21 and the respective caps 10, 20 is possible thanks to plastic hinges of the first and second visors 14 and 24 which respectively connect a distal end portion 110a, 210a of the pairs of arms a respective end portions 110a, 210a of the flanges 115, 215.

[0029] The plastic hinges 14, 24 lie respectively along the first and second half-visor rotation axis Y'1, Y'2 and are preferably made by means of an appropriately configured flap of the material that makes up the structure to be assembled.

[0030] According to one aspect, the industrial production process to obtain the structure to be assembled, finished according to this description, therefore comprises a further step of cutting to obtain the cuts between the edges 10a 20a and the pairs of arms 110, 210 of the half-visors 11, 21. These cuts are also preferably obtained by a punching operation.

[0031] It is to be understood that the two die-cutting steps, of the flat diaphragm and the pairs of arms 110, 210 of the industrial production process to obtain the finished structure to be assembled, both taking place by means of a die-cutting machine, can be made in line in any order according to convenience or even simultaneously.

[0032] According to one aspect, the pairs of arms 110, 210 comprise a longitudinal stiffening rib. These ribs are also configured to be able to couple each other.

[0033] The structure to be assembled preferably comprises at least two button-seat pairs 101a-101b, each element of the pair comprised respectively on the end portions 115a, 215a of the flanges 115, 215 in correspondence with the plastic hinges of the first and second visor 14, 24. This positioning ensures advantageously that the rotation of the visor in the assembled counter display does not separate the two caps which form the container of the container.

[0034] The second cap 20 also comprises, on one of its surfaces which will define the external surface of the counter display container, locking means 25 for the tag holder visor configured to stop rotation of the tag holder visor at a certain desired inclination with respect to the mouth surface of the counter display.

[0035] Said blocking means are preferably made by means of at least one blocking rib 25 along the outer surface of the cap 20. This at least one blocking rib 25 lies on a rib plane, incident with respect to the mouth plane which also includes the rotation axis visor Y'. This plane is preferably tilted with respect to the mouth plane by an angle of between 30° and 60°.

[0036] The industrial production process to make the finished assembly structure of a counter display includes the following operations:

- obtaining the semi-finished structure to be assembled as described above by injection molding or thermoforming;
- keeping the semi-finished structure stationary on a flat work surface, so that the perimeter edges 10a and 20a of the first 10 and second 20 caps are coplanar;
- carrying out a punching operation to define the first 10a and second 20a edges and at least to remove the flat diaphragm so as to form the mouth 22' of the counter display. If the first 11 and second 21 half-visors come out of the mold integral with the respective first 10 and second 20 caps, with the same punching operation it is possible to make the cuts between the edges 10a and 20a joining the first 10 and second 20 caps and the arms 110, 210 of the half-visors 11, 21 so that the half-visors 11, 21 are not directly connected to the respective caps.

[0037] Each structure to be assembled can be equipped with a respective lid to close the mouth of the counter display, thus composing a kit for counter display. Conveniently, the kits will be distributed by stacking the structures to be assembled on top of each other open, and the lids on each other.

[0038] The assembly process of the finished structure to be assembled to obtain a counter display according to the present description comprises the steps of:

1. Rotating the two half-shells around the assembly rotation axis Y, taking care that the first edge 10a is coupled with the second edge 20a so as to obtain

the container and that the half-visors 11, 21 are coupled together for obtaining the tag-holder visor, obtaining the counter display of figure 6; and
 2. Rotating the visor around the visor rotation axis Y' and, through a plastic deformation thereof, make it pass over one or more of the blocking ribs 250 so as to prevent the visor from returning to its initial position, obtaining the counter display in the final configuration of Figures 7 and 8.

[0039] Any variations or additions can be made by those skilled in the art to the embodiment described and illustrated here, remaining within the scope of the following claims. In particular, further embodiments may comprise the technical characteristics of one of the following claims with the addition of one or more technical characteristics described in the text or illustrated in the drawings, taken individually or in any reciprocal combination.

Claims

1. A semi-finished structure to be assembled of a counter display, including:

a first half-shell (1), comprising a first cap (10) and a first tag-holder half-visor (11), in which said first cap (10) is delimited by a first perimeter edge (10a) which lies in a first plane and has first hooking means;

a second half-shell (2) comprising a second cap (20) and a second tag-holder half-visor (21), in which said second cap (10) is delimited by a second perimeter edge (20a) which lies in a second plane and having second coupling means in a position corresponding to said first coupling means;

a hinge (3) which defines an assembly rotation axis (Y) and which connects the first cap (10) to the second cap (20);

said first half-shell (1) and said second half-shell (2) being configured so that, by rotating said first half-shell (1) relative to said second half-shell (2) around said assembly rotation axis (Y):

- the first perimeter edge of the first cap (10) and the second perimeter edge of the second cap (20) can be matched and can be coupled by engaging said first hooking means with said second hooking means, forming a container for a counter display; and

- said first tag-holder half-visor (11) and said second tag-holder half-visor (21) can be matched forming a tag-holder visor suitable for sandwiching a tag of said counter display;

said second cap (20) comprising a flat diaphragm configured to form, when removed, a mouth (22') of said container of said assembled counter display,

said flat diaphragm lies on a plane of mouth parallel to said second plane of the second perimeter edge;

said first half-visor (11) is indirectly fixed to the first cap (10) through a first pair of arms (110), which lie in said first plane and which connect respectively longitudinally opposite portions of the first half-visor (11) to respective diametrically opposite portions of the first cap (10), said first pair of arms (110) being configured to allow rotation of the first half-visor with respect to a first rotation axis (Y'1) passing through said diametrically opposite portions of said first cap (10); is said second half-visor (21) is indirectly fixed to the second cap (20) through a second pair of arms (210), which lie in said second plane and which respectively connect longitudinally opposite portions of the second half-visor (21) to respective diametrically opposite portions of the second cap (20), said second pair of arms (210) being configured to allow rotation of the second half-visor with respect to a second rotation axis (Y'2), passing through said diametrically opposite portions of said second cap (20), substantially coinciding with said first rotation axis (Y'1).

2. The semi-finished structure to be assembled of a counter display according to claim 1, wherein said first and second caps (10, 20) comprise, in correspondence with said first and second perimeter edges (10a, 20a), respectively:

a first perimeter flange (115) and a second perimeter flange (215) which follow said perimeter edges (10a, 20a), developing outwardly with respect to respective internal cavities of said caps (10, 20) along said respective first plane and second plane, starting from respective distal ends (110a, 210a) of said pairs of arms (110, 210);

said hooking means being defined at said first perimeter flange (115) and at said second perimeter flange (215).

3. The semi-finished structure to be assembled of a counter display according to claim 2, wherein said semi-finished structure to be assembled further comprises:

two first plastic hinges (14), lying along said first rotation axis (Y'1), which connect distal end portions (110a) of said first pair of arms (110) to terminal ends (115a) of said first flange (115), configured to allow rotation of said first half-visor

- (11) with respect to said first cap (10); and two second plastic hinges (24), lying along said second rotation axis (Y'2), which connect distal end portions (210a) of said second pair of arms (210) to terminal ends (215a) of said second flange (215), configured to allow rotation of said second half-visor (21) with respect to said second cap (20).
4. The semi-finished structure to be assembled of a counter display according to one of the preceding claims, wherein said first coupling means of the first cap comprise a cap rib (100), along the perimeter of the first perimeter edge (10a); and said second hooking means of the second cap comprise a seat (200) along the second perimeter edge (20a); wherein said rib (100) is configured to engage and fit into said seat (200) to allow coupling of said first cap (10) to said second cap (20).
 5. The semi-finished structure to be assembled of a counter display according to one of the preceding claims, wherein:

said first half-visor (11) is separated from said first cap (10) by a first cut which also separates said first pair of arms (110) and a portion of the external perimeter of the first edge (10a) of the first cap (10) at said first pair of arms (110); and said second half-visor (21) is separated from said second cap (20) by a second cut between said second pair of arms (210) and a portion of the external perimeter of the second edge (20a) of the second cap (20) in correspondence of said second pair of arms (210).
 6. The semi-finished structure to be assembled of a counter display according to claims 2 or 3, wherein said first and second means for attaching the first (10) and second (20) caps comprise respective elements of snap fasteners (101-101b), each element of said snap fasteners (101a-101b) being comprised respectively on said end portions (115a, 215a) of said first (115) and second (215) perimeter flanges.
 7. The semi-finished structure to be assembled of a counter display according to any one of the preceding claims, comprising at least one protruding rib (25) on an outer surface of said second cap (20), functionally configured to stop the tag-holder visor (11, 21) at a desired inclination with respect to a mouth plane defined by said mouth of the counter display.
 8. The semi-finished structure to be assembled of a counter display according to any of the preceding claims, wherein said flat diaphragm has been re-
- moved to define a mouth (22') of the container of the counter display.
9. A kit for a counter display, including:

a structure to be assembled according to claim 8;

a cover configured to close said mouth (22') of said counter display.
 10. An industrial process to obtain a semi-finished structure to be assembled according to claim 8, comprising the steps of:

realizing by injection molding or thermoforming a semi-finished structure to be assembled according to one of claims 1 to 7;

arranging said semi-finished structure to be assembled on a same flat work surface so that said first plane and second plane lie along the flat work surface;

while keeping said semi-finished structure to be assembled on the flat work surface, performing a die-cutting operation to define the first perimeter edge, the second perimeter edge and to remove said flat diaphragm to define a mouth (22') of the container of the counter display.
 11. The industrial process according to claim 10, wherein, while said semi-finished structure to be assembled is kept still on the flat work surface, the following operations are carried out:

making a first cut between said first pair of arms (110) and a portion of the external perimeter of the first edge (10a) of the first cap (10) in correspondence with said first pair of arms (110), to separate said first half-visor (11) from said first cap (10);

making a second cut between said second pair of arms (210) and a portion of the external perimeter of the second edge (20a) of the second cap (20) in correspondence with said second pair of arms (210), to separate said second half-visor (21) from said second cap (20).

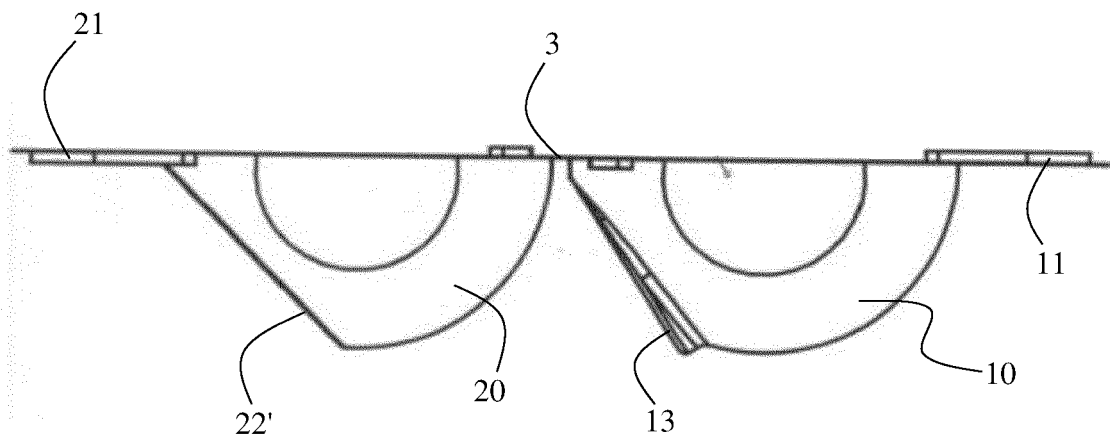


FIG. 1

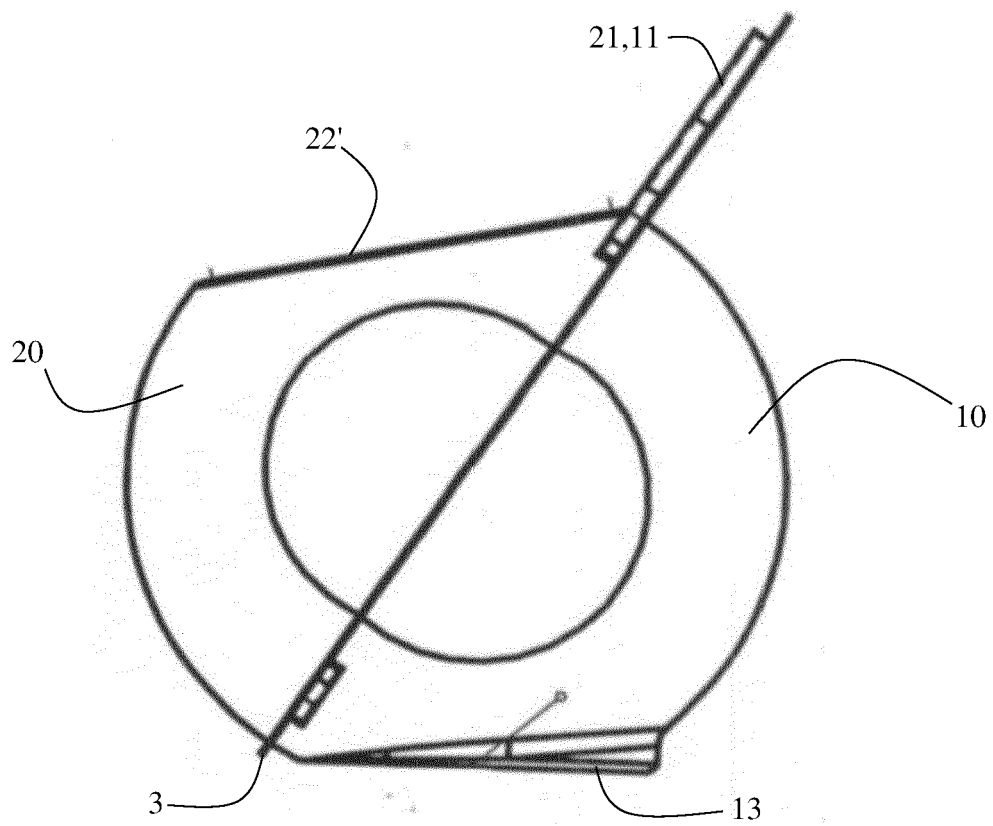
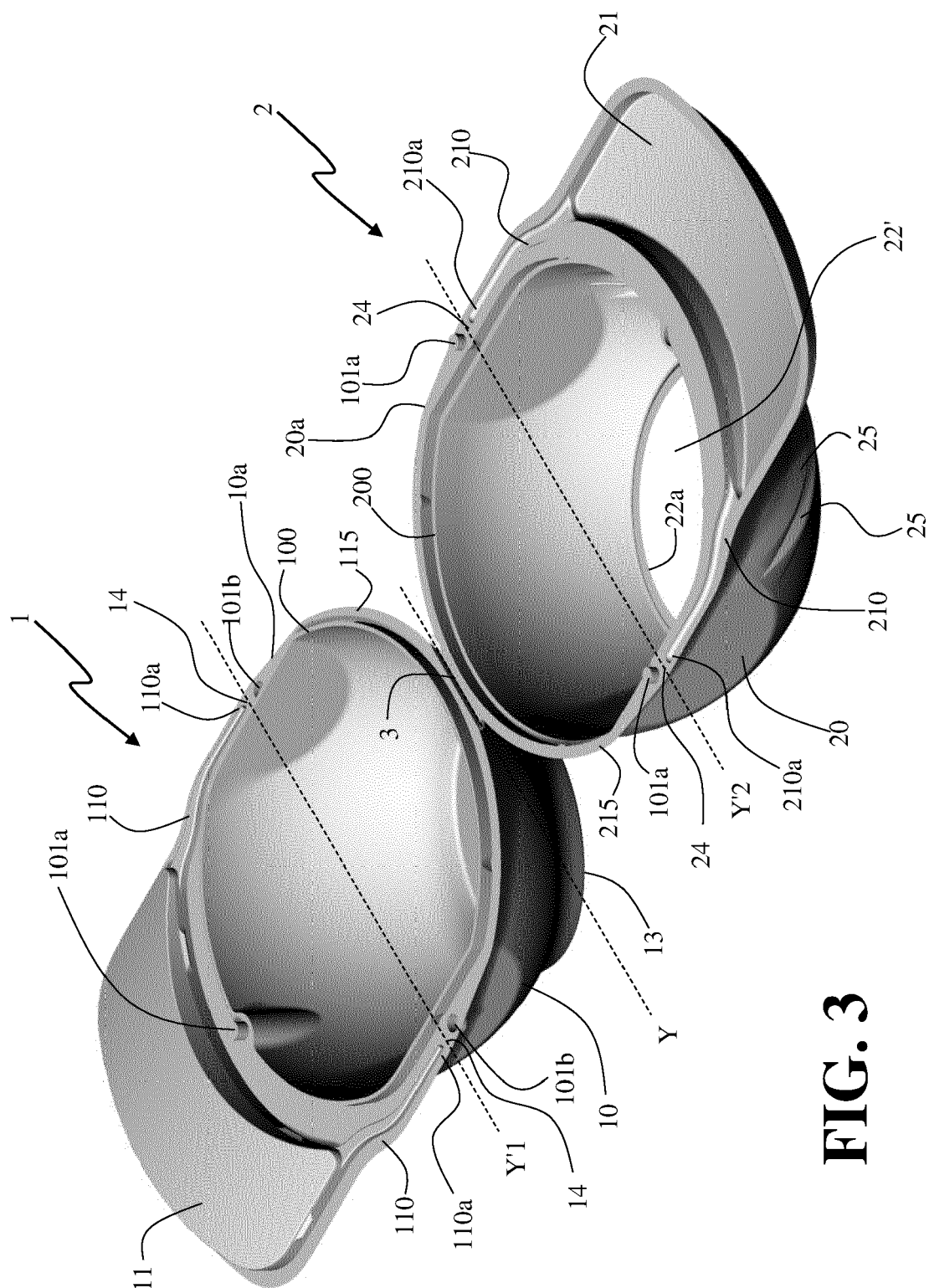


FIG. 2



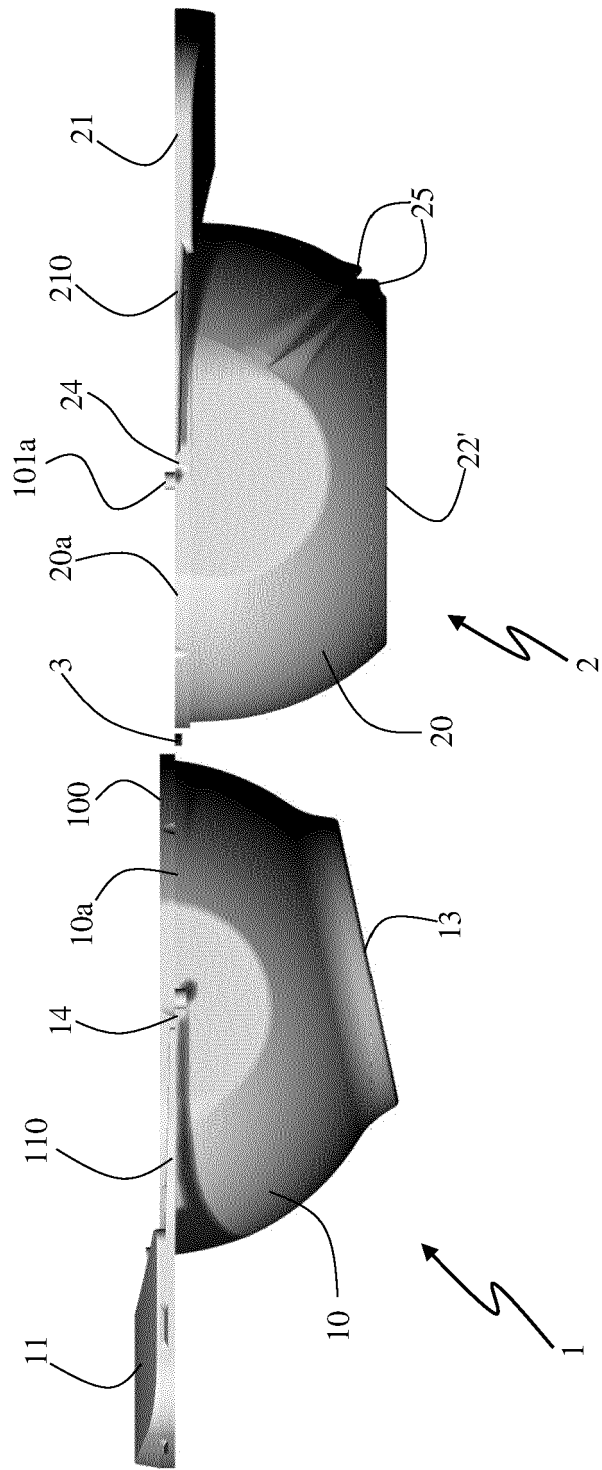


FIG. 4

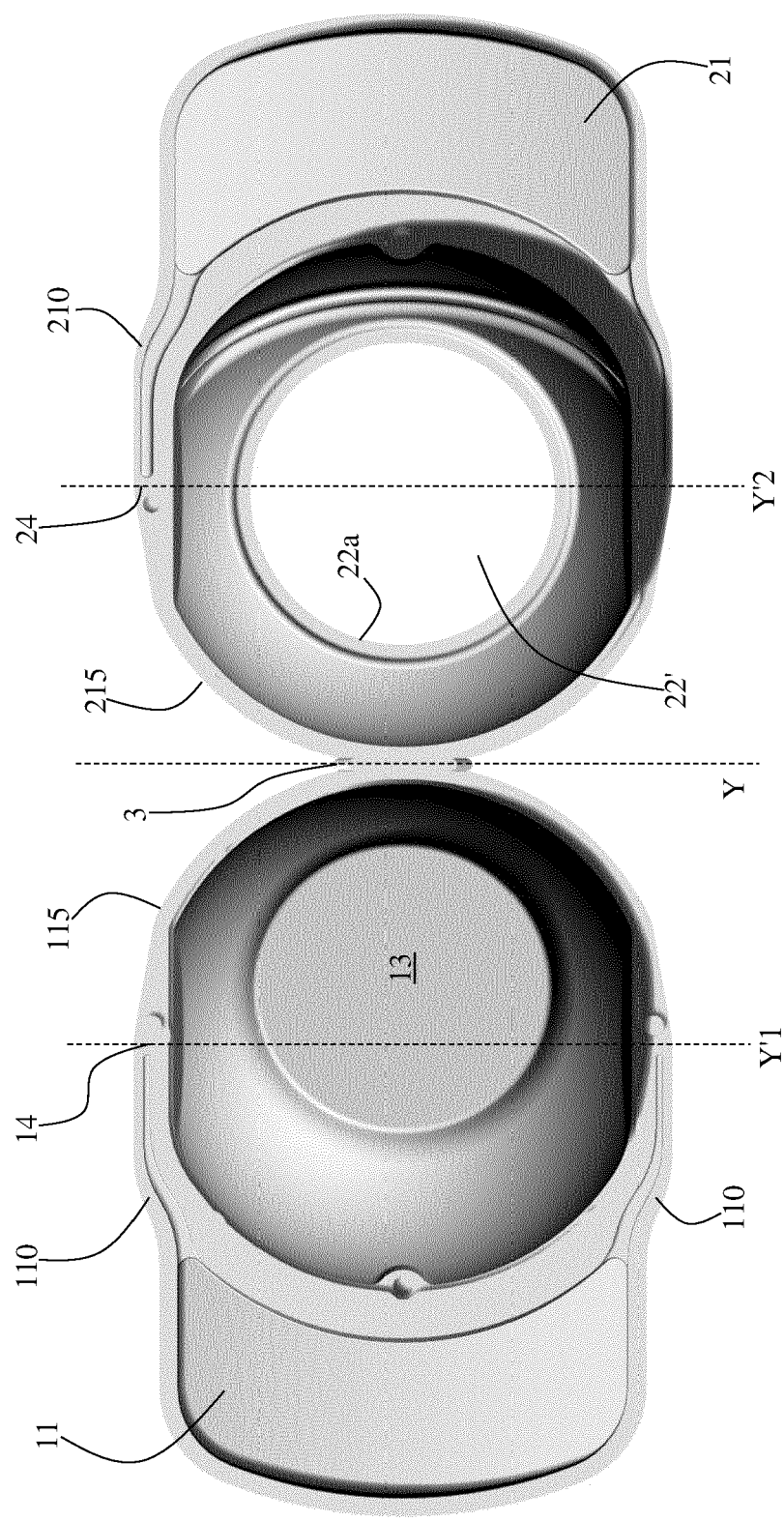


FIG. 5

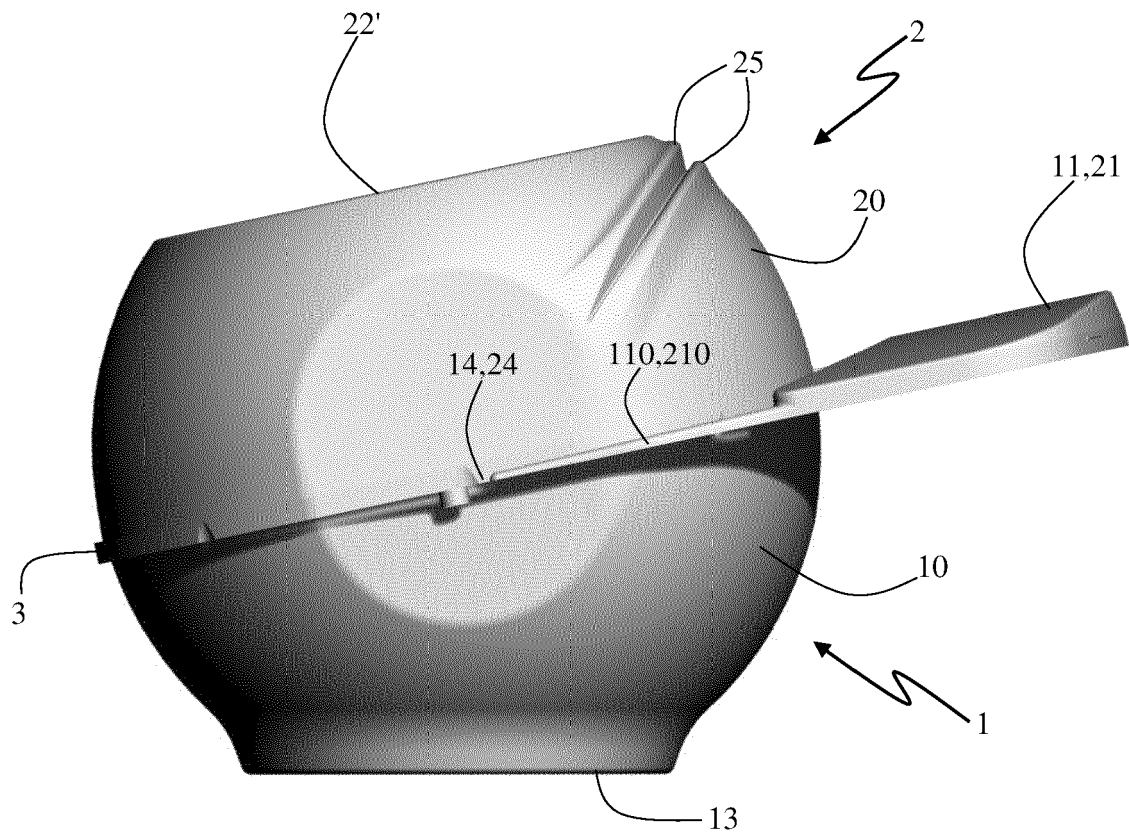


FIG. 6

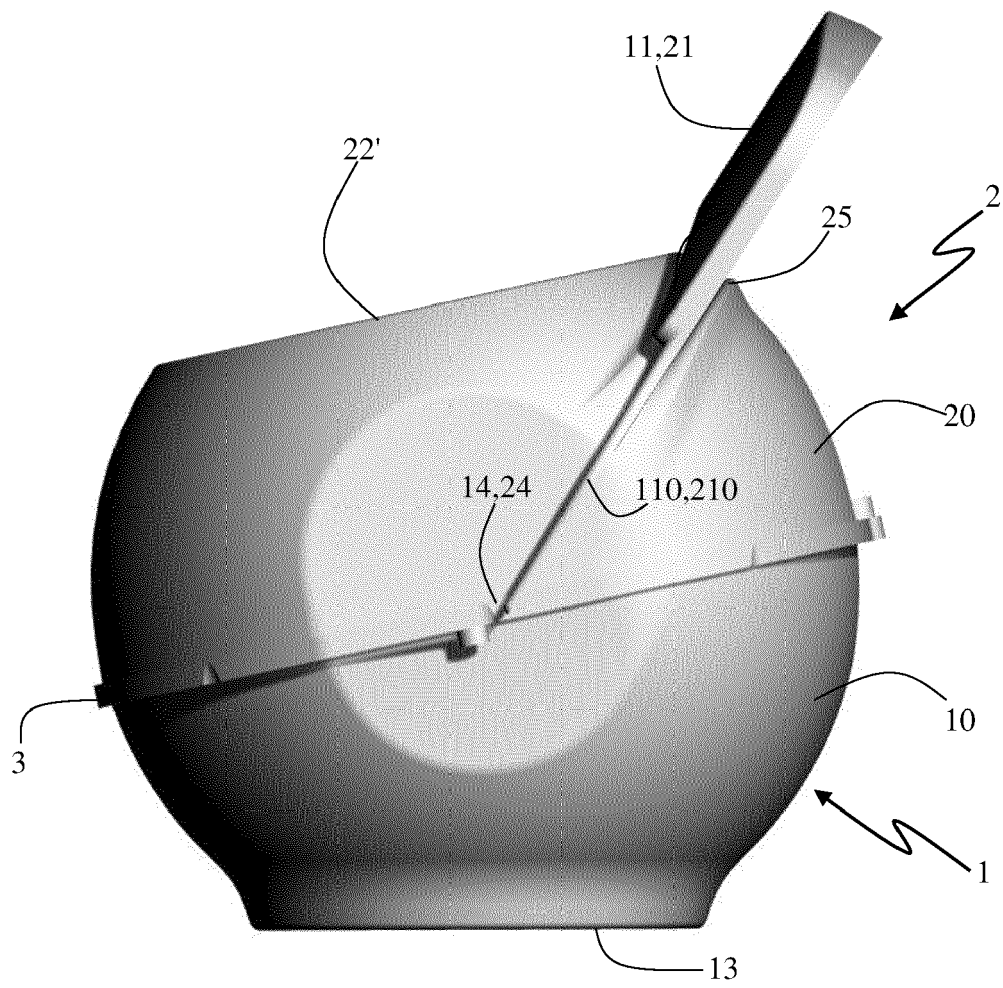


FIG. 7

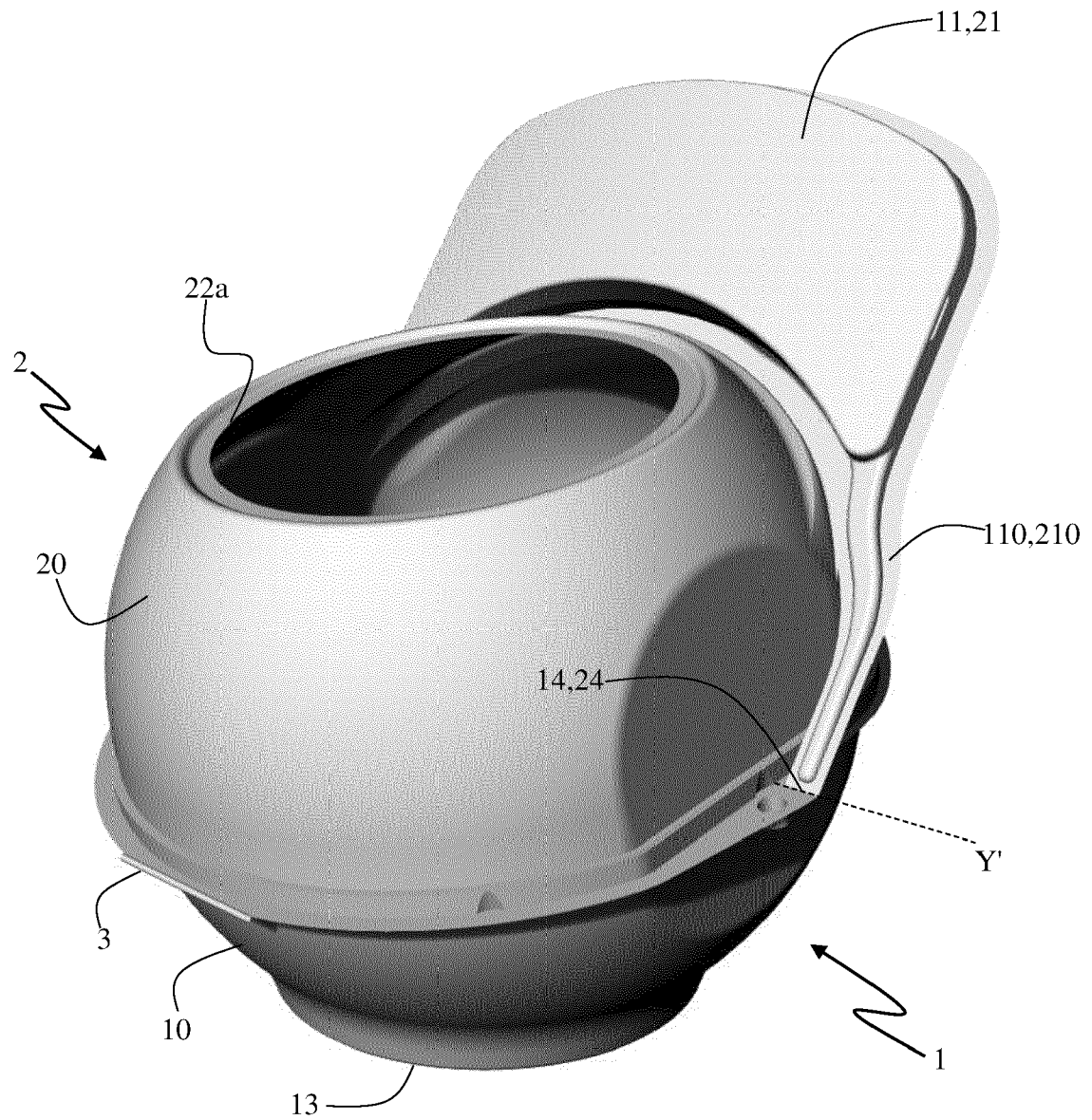


FIG. 8



EUROPEAN SEARCH REPORT

Application Number
EP 20 20 8908

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The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC)
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Place of search		Date of completion of the search	Examiner
The Hague		20 January 2021	Ibarrondo, Borja
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**ANNEX TO THE EUROPEAN SEARCH REPORT
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