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(54) **CONTAINER DEVICE AND FILLING AND PRODUCTION METHODS**

(57) The present invention is directed to a product container with a base part and a top part, wherein the base part has a centrally placed elevated platform and a ring structure that is positioned between the platform and an outer wall of the container. The platform and the ring structure support and retain the product in the base part after incorporation into the container. An opening in the bottom of the base part allows for filling the inverted container with a liquid composition when placed upside down.

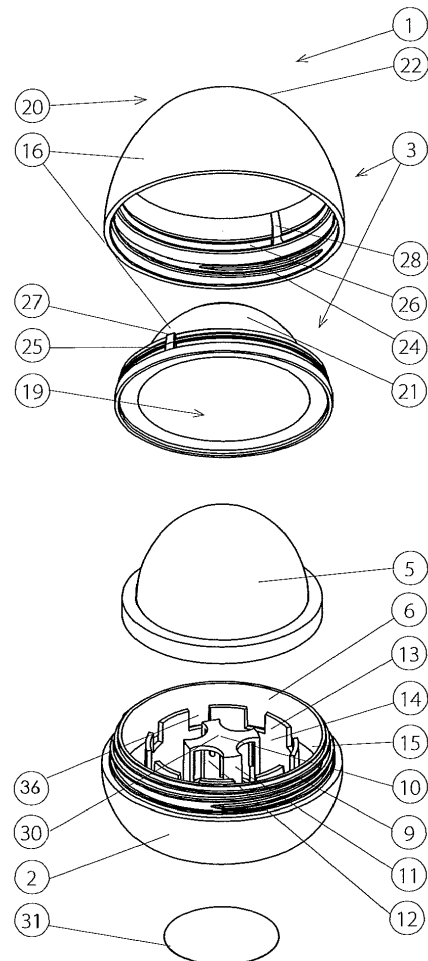


Fig. 2

Description

Technical field

[0001] The present invention is directed to a container for a product, in particular a cosmetic product, the container comprising a base part and a top part. The invention is further directed to a method of producing a container for a product, in particular a cosmetic product including injection molding a base part and a top part. Further, the invention is directed to a method of filling a container with a product, in particular a cosmetic product, comprising filling the inverted top part with the product in liquid form and allowing the product to solidify.

Background to the invention

[0002] Containers for products such as deodorants and creams have for instance been described in GB 2,162,822 and WO2011/071792. We have found that the containers of the art however suffer from multiple drawbacks, including restricted options for construction and design of the container, manufacturing complexities, assembly challenges, complications with filling of the container, issues with container and product storage and/or inconvenient handling of the container by the user.

Summary of the invention

[0003] The present invention addresses one or more of the above mentioned problems and/or provides other benefits. Accordingly, the present invention relates to a container for a product, in particular a cosmetic product, the container comprising:

- a base part with a lower end and an upper end,
- a top part with a lower end and an upper end,

wherein the base part comprises:

- * a wall comprising an external thread, the external thread being located at the upper end of the base part;
- * a platform on extensions that protrude upwards from the bottom of the base part; and
- * a ring structure protruding upwards from the bottom of the base part and located between the platform and the wall of the base part, and

wherein the top part comprises an internal thread located at the lower end of the top part, and wherein the external thread is engageable with the internal thread to lock the base part on the top part in an assembled state of the container.

[0004] Preferably, the ring structure is disposed with a first space to the inner surface of the top part in the assembled state of the container and/or the ring structure is disposed with a second space to the wall. Preferably,

the bottom of the base part has an opening with a largest width of less than 1/3 of the largest width of the base part. Preferably, the opening is covered by a plug or a sticker. Preferably, the platform has a smaller surface than opening. Preferably, the platform has a surface with a closed center. Preferably, the top part includes an inner top part and an outer top part (22), the inner top part (21) extending internally of an outer top part, the inner top part being peripherally connectable at its lower end to the outer top part in an area of the outer top part above the internal thread. Preferably, the top part has a flattened top or inwardly curved top. Preferably, the height ratio of an externally exposed section of the base part and an externally exposed section of the top part of the assembled container is from 1:1 to 1:3.7. Preferably, the ring structure has a crenulated appearance. Preferably, the extensions include an axially extending opening in communication with the opening. Preferably, the container comprises a product extending outwards radially from the platform beyond the ring structure against the wall of the base part immersing at least part of the platform, at least part of the extensions, and at least part of both sides of the ring structure.

[0005] The invention further relates to a method of producing a container for a product, in particular a cosmetic product including the steps of:

- injection molding a base part with a lower end and an upper end, comprising:
 - * a wall with an external thread, the external thread being located at the upper end of the base part;
 - * a platform on extensions that protrude upwards from the bottom of the base part;
 - * a ring structure protruding upwards from the bottom of the base part and located between the platform and the wall of the base part, and
- injection molding a top part with a lower end and an upper end comprising an internal thread located on the inside of the lower end of the top part, the external thread being engageable with the internal thread to lock the base part on the top part in an assembled state of the container.

[0006] The invention further relates to a method of filling a container according to the invention with a product, in particular a cosmetic product, comprising the steps of:

- placing the top part upside down,
- filling the top part at least partially with the product in a liquid form,
- immersing at least part of the platform, at least part of the extensions and at least part of both sides of the ring structure with the liquid product, and
- allowing the product to solidify.

[0007] Further, the invention further relates to a method of filling a container according to the invention with a product, in particular a cosmetic product, comprising the steps of:

- combining the top part and the base part into the container,
- placing the top part upside down,
- filling the top part at least partially with the product in a liquid form through the opening in the bottom of the base part and the axially extending opening of the extensions of the base part,
- immersing at least part of the platform, at least part of the extensions and at least part of both sides of the ring structure with the liquid product, and
- allowing the product to solidify.

[0008] The product container of the present invention surprisingly offers multiple advantages. The base part can be easily manufactured out of one piece using a molding process, preferably an injection molding process. Further, manufacturing of the base part can be conducted at high speed with reduced costs and increasing volume. Manufacturing of the base part does not require complicated equipment, such as for instance a complicated turning mechanism for the mold or for the base part to separate the base part from the mold.

The construction and design with the preferred double layered top part allows for even thickness of the container wall throughout the top part, leading to less variances in production of top parts, possibly due to more even cooling-down and less shrinkage variances in the top part, leading to better fittings of the assembled top part and container. This results in reduced challenges during container assembly, fewer rejections and less waste.

[0009] The present invention surprisingly reduces complications for filling the container. The container may be placed stably upside down without the need for any specialty holding equipment during the processing. The container can be flexibly stored, straight up or upside down. Further, the container may be conveniently filled with a product, preferably through an opening in the bottom of the base part of the inverted container. Further, the product is well retained in and fixed to the base part of the container, for example the product enclosing the platform, covering at least part of both sides of the crenulated ring structure and/or extending beyond the ring structure to the wall of the base part. The product covering at least part of both sides of the ring structure is particularly important vs the prior art. The crenulated ring structure allow for product and air flow between different compartments of the base part during the filling process, ensuring even filling and spreading of the product up to the wall of the container.

[0010] Further, the container allows for convenient handling by the user with outer dimensions allowing for convenient opening of the container, access to and application of the product as well as subsequent closing of

the container, even with slippery or otherwise compromised hands. Beneficially, closing of the container does not affect the shape of the product inside the container, unlike the ridge in the base part of the container disclosed in GB2162822.

[0011] In a preferred embodiment, the double layer of the top part of the container allows for multiple construction and design options. The inner top part allows for different shapes for the product while, independently, the outer top part allows for different shapes of the container, providing a wide range of options.

[0012] The container can be easily filled with the product in liquid form and the product can subsequently conveniently solidify. In fact, we have found that the container of the present invention combines easy manufacturing, with convenient filling allowing for different customer-preferred product shapes, excellent attachment of the product to the container and convenient usage by the customer.

Brief description of the figures

[0013]

Figure 1 schematically illustrates in an "exploded view" the elements of a preferred embodiment of the product container device according to the present invention. Figure 2 schematically illustrates in an "exploded view" the elements including the product in a preferred embodiment of the product container device according to the present invention.

Figure 3 schematically illustrates a cross-section of the container according to a preferred embodiment of the present invention. Figure 4 schematically illustrates a cross section in perspective according to a preferred embodiment of the present invention. Figure 5 schematically illustrates a perspective of an open container with product on the base part and with a top part according to a preferred embodiment of the present invention.

Detailed description of the invention

[0014] The present invention is directed to a container comprising a base part and a top part. Preferably, the container comprises a seal at the bottom. The container is preferably used for containing a product.

[0015] The base part of the container of the invention preferably comprises a wall on the sides and at the bottom that surrounds an internal space. Preferably, the base part is open at the top. The base part has a lower end and a higher end. Preferably, the bottom of the base part has an opening.

[0016] The base part comprises a thread at the upper end in the wall. The thread is preferably an external thread. Preferably, the thread of the base part is located on the outside wall at the upper end of the base part, preferably on the side of the open top of the base part.

[0017] According to the invention, the base part preferably comprises a platform. The platform is preferably elevated from the bottom of the base part with extensions. Preferably, the platform is located at the upper end of the base part. Preferably, the platform is located at or below the horizontal plane represented by the top of the wall of the base part. The platform is preferably located in the center of the base part. Preferably, the platform has a surface with a closed center, allowing for more convenient injection molding. The platform is preferably flat and preferably extends parallel to the horizontal plane of the top of the wall of the base part. The platform may have or be based on different shapes, for instance a circular plate, a cross, or variations thereof. Preferably, the platform may comprise of a circular plate, optionally with parts of the plate between supporting extensions cut out. The platform is preferably cross-shaped with outward stretched elements that may be called legs. Preferably at least part of the platform is supported with extensions, preferably at least at the perimeter of the platform and/or at one or more of the legs (outward stretched elements) of the cross. In a preferred embodiment, a cross-shaped platform is supported at each of its legs with an extension.

[0018] Preferably, the base part comprises extensions that support the platform and elevate the platform from the bottom of the base part upwards. The extensions are preferably placed on the bottom, preferably around the center of the base part. Preferably, the extensions surround an opening in the bottom of the base part. Preferably, the extensions protrude upwards from the bottom of the base part, preferably around the center of the base part. Preferably, the extensions enclose an at least partially hollow space. This space may for instance be covered or filled with a seal. The extensions preferably have openings, preferably on the sides, preferably axially extending. Preferably, the openings in the extensions are located at least at the top of the extensions. In a preferred embodiment, the openings in the extensions axially extend from the bottom of the base part to the platform. Preferably, the axially extending openings in the extension are in communication with the opening at the bottom of the base part. Preferably, the openings in the bottom of the base part, the openings in the extensions and/or the openings in the platform are in communication, allowing introduction of a product in liquid form into the container, while, at the same time, allowing air to escape from the container.

[0019] According to the invention, the base part preferably comprises a ring structure. The ring structure preferably protrudes upwards from the bottom of the base part, preferably around the center of the base part. The ring structure preferably has an inner side and an outer side. The ring structure is preferably located between the platform and the wall of the base part. The shortest horizontal distance between the top of the ring structure and the combined extension and the platform is represented by a third space. The shortest horizontal distance between the top of the ring structure and the wall is repre-

sented by a second space. The ratio between the third space to the second space is preferably at least 1:10, more preferably at least 1:5 and preferably at most 10:1, more preferably at most 5:1, most preferably between 1:4 and 4:1, for instance between 2:1 and 1:2 and in many cases the optimal ratio for retaining the product in the base part is 1:1. Preferably, the ring structure is located at or below the horizontal plane represented by the top of the wall of the base part and preferably at the same level as the platform. The ring structure preferably has openings that are preferably located at the top of the ring structure. According to the invention, these openings at the top are called indentations. Indentations may have different shapes but are preferably rectangular. Battlements are the parts of the ring structure pointing upwards between the openings or indentations, battlements and indentations may form complements at the top of the ring structure. Accordingly, the ring structure preferably has a crenulated appearance. The ring structure preferably assists in retaining the product incorporated in the container. Particularly the product covering at least part of both sides of the ring structure is important vs the prior art. The crenulated appearance of the ring structure further assists in such product retention. The ring structure also contributes to stabilizing the product during usage when pressure -for instance rotational, sideways or inward- is applied to the product in the container. The crenulated appearance of the ring structure further contributes to that. The beneficial crenulated appearance allows for air and/or product flow between the outer and inner sides of the ring. This has been found to be particularly useful during the container filling procedure to ensure even spreading of the product throughout the container also between the ring and the wall of the base part.

[0020] According to the present invention, the bottom of the base part is preferably flat. Preferably, the bottom has an opening that is preferably placed centrally in the base part. The opening may be cross-shaped, circular or cylindrical. The opening of the base part is preferably small, preferably having a largest width of less than 1/3 of the largest width of the base part and preferably more than 1/20. If circular or cylindrical, the largest diameter is preferably less than 1/3 of the largest diameter of the base part and preferably larger than 1/20. Preferably, the opening in the bottom has a larger surface area than the platform inside the base part. In case of a circular opening, the diameter or largest width of the platform is preferably smaller than the surface of the opening in the bottom of the base part. This offers a platform that is wide and strong enough to serve as support and retainer for the product to be incorporated but also allowing for more convenient manufacturing of the base part using injection molding, in particular for easily retracting a mold from the opening at the bottom of the base part.

[0021] The opening at the bottom of the container may be left open but is preferably sealed. Preferably, the opening is sealed with a plug or a sticker. According to a preferred embodiment of the invention, the opening

allow for filling of the container with a product. The invention beneficially allows for a container with a small opening. The container can be manufactured with a small opening in the bottom of the base part. The container can be conveniently filled through the small opening and a product can be incorporated and stably retained inside the container. The small opening in the bottom of the base part does not interfere with subsequent usage, is esthetically more pleasing than a larger opening, and even allows for coverage with simple measures such as a sticker without compromising the integrity and practicality of the cover. Use of a sticker is also preferred and allows for fast processing and avoids entry of material into the bottom of the container.

[0022] Retention of the product inside the base part of the container is improved with several elements of the base part including: the platform (for instance central location, elevation and/or shape), the extensions (for instance, location, shape and/or the extension openings), ring structure (for instance, location, shape and/or crenulated appearance), and/or the wall of the base part. These elements allow the product to be retained in the base part, even upon application of various pressures - such as rotational, sideways, and/or inwards- to the product in the container during usage. Despite the small opening in the bottom of the base part and the preferably smaller platform, the product is well retained in the base part with the features of the base part. Particularly the ring structure and more particularly its crenulated shape contribute to further the retention.

[0023] The top part of the container of the invention has a lower end and an upper end. The top part is preferably built up from at least two parts, preferably comprising an inner top part extending internally of an outer top part. Use of at least two separate parts for the top part allows for independently designing the outer shape of the container and the inner shape of the top part, while maintaining an overall similar thickness of the walls of all parts. Changing the outer shape of the container allows for accommodating consumer preferences. Changing the inner shape may beneficially be used for producing different shapes of the cosmetic product using the inner shape as a mold. Using similar wall thickness reduces shrinkage variances due to different cooling-down times which could otherwise lead to longer cooling-down time, negatively impacting manufacturing time. Variances in shrinkage between parts of different thickness may negatively impact the shape of the cooled-down parts which subsequently can compromise the proper putting together of the parts.

[0024] To ensure intimate connection between the inner and outer parts of the top part, particularly when rotating the outer top part, the inner top part is preferably peripherally connectable at its lower end to the outer top part, preferably in an area of the outer top part above the internal thread. Preferably the top part has by one or more protrusions -respectively depressions- on the inner part and one or more depressions -respectively protrusions-

on the outer part for such connection between the two parts.

[0025] Preferably, an outward protruding element on the inner part is inserted (preferably snapped) into a depression on the outer part or-alternatively- a protruding element on the outer part into a depression on the inner part. The protruding element and corresponding depression are preferably located at the lower end at the interior of the top part and are preferably discontinuous (for instance at least two locations). In a preferred embodiment, the protruding element is a circular ridge on the inner or outer part and the depression a matching circular depression on the outer respectively inner part. The circular ridge may also be called an outward protruding circular ridge. Preferably, at least one stopper protrusion perpendicular to the circular ridge is added to the inner or outer part with at least one matching depression (that is perpendicular to the circular depression) added to the outer respectively inner part to ensure the inner part and the outer part of the top part remain connected and do not rotate with respect to each other, for instance when a rotational pressure is applied the inner and/or outer parts. In a preferred embodiment, the protruding element comprises a circular ridge with an additional protruding stopper on the inner part with corresponding circular and stopper depressions on the outer part. The combination of protrusion and depression ensures the inner part rotates with the outer part and does not stick to the product on the inside while further ensuring retention of the product inside the inner part.

[0026] Preferably, the top part comprises a thread, preferably an internal thread. The thread is preferably located at the lower end of the top part, more preferably at the lower end of the outer part. The thread is preferably located on the inside of the top part, more preferably on the inside of the outer part. Preferably, the top part has an internal thread located at the lower end of the outer part.

[0027] Preferably, the top part has a flattened top or inwardly curved top. A flat or inwardly curved top allows the top part or the entire container to stand stable when turned upside down. This offers surprising benefits, particularly during filling of the inverted container or for storage. For instance, the container automatically stays in a standardized position upon inversion, no special grips or molds are required to keep the inverted top part in position, benefiting the container filling process.

[0028] The present invention relates to a container for use with products. Preferred products for incorporation into the container are cosmetic products, particularly lip balm and deodorant. Other products that are applied by hand from a container holder include car wax, cleaning products, adhesives, etc.

[0029] Preferably, the product can be liquefied upon increasing the temperature. While the container of the present invention can be used for solid products, for instance by pressing (or shooting) the product into the base part with pressure, the container of the present invention

is preferably and conveniently filled with a product that is first liquefied and subsequently solidified inside the container, preferably by cooling (i.e. lowering of the temperature of the product). Preferably, the product is preferably liquid at a temperature of at least 40°C. Preferably, the product is solid at room temperature.

[0030] The container according to the invention includes a base part and a top part. The container is assembled by locking the top part base on the base part by engaging the internal thread of the top part and the external thread of the base part. The base part and the top part are fastened together with the external and internal threads. Preferably, the height ratio of an externally exposed section of the base part and an externally exposed section of the top part of the assembled container is from 1:1 to 1:3.7. We have found that this ratio range allows for convenient handling of the container by the user including convenient opening of the container, access to and application of the product as well as subsequent closing of the container, even with slippery or otherwise compromised hands. We have found that such handling is compromised if a base part has a ratio that is relatively lower or higher compared to the top part.

[0031] The platform and the top of the ring structure inside the container are preferably located at, more preferably below, the horizon plane represented by the top of the wall of the base part, resulting in solid product retention. Placement at or preferably below this plane beneficially avoids interference of the platform and ring structure with the application of the product when the product has been used up to reach a level of around the horizontal plane represented by the top of the wall of the base part.

[0032] In the assembled state of the container, the ring structure is preferably free from the wall and/or from inner part of top part. The shortest distance between the top edge of the ring structure and the inner surface of the top part in the assembled state of the container is represented by a first space. The ratio of the first space to the second space is preferably at least 1:10, more preferably at least 1:5 and preferably at most 10:1, more preferably at most 5:1, most preferably between 1:4 and 4:1, for instance between 2:1 and 1:2. The ratio of first space to third space is preferably at least 1:10, more preferably at least 1:5 and preferably at most 10:1, more preferably at most 5:1, most preferably between 1:4 and 4:1, for instance between 2:1 and 1:2.

[0033] Preferably, the outer shape of the container has a rotation-symmetry. Preferably, the outside of the base part and/or the outside of top part have rotation-symmetry.

[0034] According to the invention, the container preferably comprises a product. The product preferably extends upwards into the inner part of the top part. The product preferably extends from the center of the base part radially outwards from the platform to beyond the ring structure against the wall of the base part. Preferably, the product immerses (covers) at least part of the plat-

form, at least part of the extensions, and at least part of both sides of the ring structure. Figure 3 shows fill line A which is located below the surface of the platform, at least partially covering the extensions, at least partially covering the extension openings and below the top of the ring structure. By filling the product to fill line A, the product immerses at least partially the platform, the extensions, the extension openings, both sides of the ring structure and rests against the wall of the base part, thus creating solid retention (or anchoring) of the product in the container base part.

[0035] The present invention relates to a method of producing a container for a product, in particular a cosmetic product. The method involves producing the base part and the top part, preferably involving injection molding. Subsequently, the external thread of the base part is engaged with the internal thread of the top part to lock the top part on the base part in an assembled state of the container. The method of producing the container comprises the step of assembling the container by fastening together the external thread of the base part with the internal thread of the top part.

[0036] The container according to the present invention preferably has a one-piece molded base part. The design of the base part allows for a simple injection molding process, yet provides all filling and user benefits discussed in the application. Preferably, the container has a two-piece molded top part, allowing for different shapes of the inner part and the outer part. In this preferred embodiment, the inner part of the top part can now be used as a mold for the product shape to be included in the container while the shape of the outer part of the top part can be different to accommodate a consumer preferred shape, for instance for handling and esthetics.

[0037] Preferably, the container of the invention is produced using injection molding. Preferably, the container of the invention is prepared from a thermoplastic material. Preferably, at least four molds are used for manufacturing of the base part. Preferably, the injection point is located in the center of the base part at the level of the platform, preferably in the middle of the platform to allow for optimal flow during the process and optimal product qualities (avoiding bulges in visible areas). Preferably, the platform of the base part has a surface with a closed center, allowing for such injection molding. Preferably, the base part is produced by injection from the bottom.

[0038] To allow for easier retraction of the molds after injection molding process, the base part is preferably designed such as having a platform with a smaller surface area than the opening in the bottom of the base part. Also, the inside of the extensions of the base part preferably converge in upward direction. Further, the outside of the extensions of the base part, the ring structure and the inside of the wall of the base part preferably diverge in upward direction. Even though the container preferably has only a small opening at the bottom and an even smaller platform, the product inside the container is well retained through the use of the particular ring structure (im-

mersing at least part of both sides of the ring structure, the crenulated appearance, the ring structure being free from the wall, and/or the platform being located between the platform and the wall) as well as by the product extending to the wall of the container. The base part of the container has elements that provide for a good connection with product. The top part offers an inner part that can be designed independently from the outer part as mold for different product shapes.

[0039] The present invention relates to a method of filling the container of the invention with a product. The filling method preferably comprises placing the top part upside down, filling the container (at least the inner part of the top part) with a product in a liquid form, immersing at least part of the platform of the base part, at least part of the extensions of the base part and at least part of both sides of the ring structure of the base part with the liquid product, and allowing the product to solidify. The base part may be locked into the top part after the filling, but preferably before filling.

[0040] In a preferred embodiment of the present invention, the top part and the base part are first combined into the container and subsequently the top is inverted (placed upside down). Then, the top part is at least partially filled with the product in a liquid form through the small opening in the bottom of the base part, through the axially extending openings of the extensions of the base part and preferably through indentations of the ring structure. The container is preferably filled to a level (fill level A) such that the product immerses at least part of the platform, at least part of the extensions, at least part of both sides of the ring structure and is positioned against the wall of the container wall, preferably the wall of the base part. The indentations in the ring structure allow the liquid product to enter between the ring structure and the wall and allow air to escape from that space. Then, the product is allowed to solidify inside the container. After product filling, the opening in the bottom of the base part is preferably closed with a seal, preferably a plug or a sticker. After the product is solid, the container may be placed on the bottom of the base part.

Detailed description of the figures

[0041] The following provides a detailed description of the figures. It should be understood that each of the features described in the figures may be individually used -separate and/or independent from the other described features of the figure- as part of the above more generally described invention.

[0042] Figure 1 shows an exploded view of product container (1) with base part (2), top part (3), and plug (32).

[0043] Top part (3) is comprised of outer part (22) and inner part (21). Inner part (21) has an outward protruding circular ring (25) and stopper protrusion (27) that respectively fit circular depression (26) (not shown) and stopper depression (not shown) on the inside of outer part (22). Outer part (22) has an internal thread (24) (not shown)

at the lower end of the top part. Base part (2) has an external thread (9) located on the outside at the upper end of wall (6). The external thread (9) can be engaged with the internal thread (24) of the top part (3). Base part (2) has a platform (10) that is centrally located that has a closed surface (30) and that is elevated from the bottom of base part (2) with extensions (11) that have openings (12), and ring structure (13) that has a crenulated appearance with indentations (36). The third space (14) represents the shortest horizontal distance between the combination of extensions (11) and platform (10) and on the other hand the top of ring structure (13). The second space (15) represents the shortest horizontal distance between the top of ring structure (13) and wall (6) of base part (2). As shown, in figure 1, the third space is chosen to be about the same distance as the second space. The platform (10) is smaller than the opening (35) at the bottom of the base part. The base part (2) retains the product -after its introduction- with the relatively small platform (10), extensions (11) and openings (12), both sides of the ring structure, the crenulated appearance (36) of the ring structure as well as the wall (6) of the base part (2).

[0044] Figure 2 shows an exploded view of product container (1) with top part (3), product (5), base part (2) and sticker (31). Wall (16) of the top part is represented by the outer part (22) and inner part (21) of top part (3), both shown from the bottom perspective. The inner part (21) has circular protrusion (25) and stopper protrusion (27) externally which respectively engage (snap into) with the circular depression (26) and stopper depression (28) of the outer part. Further, the outer part (22) has an internal thread (24) at the lower end on the inside. Product (5) is shaped by the inner part (21) of the top part (3). Base part (2) has a wall (6), an external thread (9), a circular ring structure (13) with indentations (36), and a platform (10) that is closed in the center (30) and that is elevated by extensions (11) that have openings (12). The third space (14) represents the shortest distance between on the one hand the combined extension (11) and platform (10) and on the other hand the top of ring structure (13). The second space (15) represents the shortest distance between the top of ring structure (13) and wall (6) of base part (2).

[0045] Figure 3 shows a cross-section of the container (1) with top part (3), base part (2), seal (4) and product (5). The top part (3) has a flat (23) and inwardly curved top (29) located in the outer part (22). The top part (3) has an upper end (18) and a lower end (17). The wall (16) of top part (3) is represented by the outer part (22) and inner part (21). Inner part (21) is connected with outer part (22) through snapping circular protrusion (25) and stopper protrusion (27; not shown) in circular depression (26) and stopper depression (28; not shown). Internal thread (24) is located on the inside of the outer part (22) at the lower end (17) of the top part. Base part (2) has upper end (8) and lower end (7), wall (6), opening (35) that is filled with seal (4), ring structure (13) with indentations (36), platform (10) with extensions (11) and open-

ings (12). The third space (14) represents the shortest horizontal distance between -on one hand- the combination of extension (11) and platform (10) and -on the other hand- the top of ring structure (13). The second space (15) represents the shortest horizontal distance between the top of ring structure (13) and wall (6) of base part (2). The first space (37) represents the shortest distance between the top of the ring structure (13) and the inside of the inner part (21) of the top part (3). Product (5) is filled to fill line A and encompasses at least partially both sides of the ring structure (13), the indentations (36) of the ring structure (13), the platform (10), the extensions (11) and the extension openings (12). The product (5) partially fills the space between the combined extension (11) platform (10) and the ring structure (13), the space between the ring structure (13) and the wall (6) of the base part (2), and the space between the ring structure (13) and the inside of the inner part (21) of the top part (3). The base part (2) further has an external thread (9) at the upper end (8) that engages with internal thread (24) of the top part (3). Externally exposed base part (34) and externally exposed top part (33) illustrate the grip the user has for opening and closing the container (1).

[0046] The container (1) of figure 3 was filled with product (5) using the following steps:

The top part (3) and the base part (2) were locked using the internal thread (24) and external thread (9), closing the container (1). Subsequently, the container (1) was inverted the container (1) and put on the flat (23) and inwardly curved (29) top and seal (4) can be removed from the upwards pointing bottom. The product (5) was separately liquefied and poured into opening (35) of base part (2). The liquid product (5) flowed through opening (35), past extension (11), through extension opening (12), and through indentations (36) of ring structure (13) into the inner part (21) of top part (3). Product (5) reached level A and surrounded at least part of platform (10), at least part of extensions (11), at least part of both sides of the ring structure (13) and at least part of the indentations (36). Importantly, the product (5) was present between the ring structure (13) and the wall (6). The product (5) was left to solidify by letting the product cool down (lowering the temperature of the product). Once the product (5) was solid, the container could be turned up straight and the container (1) was stored. The container (1) could be opened for application of the product (5) by holding and turning the base part (2) and the top part (3) of the container (1), releasing the internal (24) and external (9) threads. The top shape of the product (5) follows the interior shape of the top part (3). The product (5) was well retained in the base part and did not move. After extensive application of the product (5), the platform (10) and the ring structure (13) did not appear above the horizontal plane at the top of the wall (6) of the base part (2) and did not interfere with the application

of product (5).

[0047] Figure 4 shows a cross section in perspective of container (1) with top part (3), base part (2), and seal (4) represented by plug (35). This representation of the container does not contain any product (5). The inner side (19) and the outside (2) of the container are shown. The top part (3) has an upper end (18) and a lower end (17). The wall (16) of top part (3) has a double layer, represented by the outer part (22) and inner part (21). The top part (3) has an inwardly curved top (29) surrounded by a flat top (23) that is located at the top of the outer part (22). Inner part (21) is connected with outer part (22) by snapping circular protrusion (25) and stopper protrusion (27; not shown) in circular depression (26) and stopper depression (28; not shown). The top part (3) has an internal thread (24) located on the inside of the outer part (22) at the lower end (17) of the top part (3). Base part (2) has upper end (8) and lower end (7). The base part (2) has an external thread (9) at the upper end (8) that engages with internal thread (24) of the top part (3) for closing the container. Base part (2) has a wall (6) with a bottom that has an opening (35) that may be filled with seal (4), platform (10) with extensions (11) and openings (12) and ring structure (13) with indentations (36). Externally exposed base part (34) and externally exposed top part (33) show the use has grip on both parts of the container for opening and closing the container (1).

[0048] Figure 5 shows a perspective of the container (1) with a base part (2) and a top part (3). The base part (3) has an external thread (9) and product (5). Top part (3) has a flat top (23; not shown), a wall (16), an outer part (22) and an inner part (21), wherein the top part has an internal thread (24) at the lower end. A user may place his hand on the outside (20) of top part (3) against wall (16) and turn the top part (3) with internal thread (24) and external thread (9) on top of base part (2). Product (5) will then enter the inside (19) of top part (3).

[0049] A list of the elements and their numbers in the figures is as follows:

1. product container
2. base part
3. top part
4. seal
5. product
6. wall of base part
7. lower end of base part
8. upper end of base part
9. external thread
10. platform
11. extensions
12. axially extending openings
13. ring structure
14. third space (shortest horizontal distance between top of ring structure and the combined extensions and platform)
15. second space (shortest horizontal distance be-

tween top of ring structure and wall of base part)
 16. wall of top part (represented by outer part and inner part)
 17. lower end of top part
 18. upper end of top part
 19. inside of top part
 20. outside of top part
 21. inner part of top part
 22. outer part of top part
 23. flat top of top part
 24. internal thread
 25. outward protruding circular ridge
 26. circular depression
 27. stopper protrusion
 28. stopper depression
 29. inward curvature
 30. closed surface (of elevated platform)
 31. sticker
 32. plug
 33. externally exposed section of top part
 34. externally exposed section of base part
 35. opening (of base part)
 36. indentation (or openings vs battlements); crenulated appearance (of ring structure)
 37. first space (shortest distance between top of the ring structure and the inside of the inner part of top part 21)

A. fill line product.

Claims

1. Container (1) for a product (5), in particular a cosmetic product (5), the container (1) comprising:

- a base part (2) with a lower end (7) and an upper end (8),
- a top part (3) with a lower end (17) and an upper end (18),

wherein the base part (2) comprises:

- * a wall (6) comprising an external thread (9), the external thread (9) being located at the upper end (8) of the base part (2);
- * a platform (10) on extensions (11) that protrude upwards from the bottom of the base part (2); and
- * a ring structure (13) protruding upwards from the bottom of the base part (2) and located between the platform (10) and the wall (6) of the base part (2), and

wherein the top part (3) comprises an internal thread (24) located at the lower end (17) of the top part (3),

and
 wherein the external thread (9) is engageable with the internal thread (24) to lock the base part (2) on the top part (3) in an assembled state of the container (1).

2. Container (1) according to claim 1, wherein the ring structure (13) is disposed with a first space (37) to the inner surface of the top part (3) in the assembled state of the container and/or the ring structure (13) is disposed with a second space (15) to the wall (6).

3. Container (1) according to claims 1 or 2, wherein the bottom of the base part (2) has an opening (35) with a largest width of less than 1/3 of the largest width of the base part (2).

4. Container (1) according to claim 3, wherein the opening (35) is covered by a plug (32) or a sticker (31).

5. Container (1) according to claims 3-4, wherein the platform (10) has a smaller surface than opening (35).

6. Container (1) according to any of claims 1-5, wherein the platform (10) has a surface with a closed center (30).

7. Container (1) according to any of claims 1-6, wherein the top part (3) includes an inner top part (21) and an outer top part (22), the inner top part (21) extending internally of an outer top part (22), the inner top part (21) being peripherally connectable at its lower end to the outer top part (22) in an area of the outer top part (22) above the internal thread (24).

8. Container (1) according to any of claims 1-7, wherein the top part (3) has a flattened top (23) or inwardly curved top (29).

9. Container (1) according to any of claims 1-8, wherein the height ratio of an externally exposed section (34) of the base part (2) and an externally exposed section (33) of the top part (3) of the assembled container (1) is from 1:1 to 1:3.7.

10. Container (1) according to any of claims 1-9, wherein the ring structure (13) has a crenulated appearance (36).

11. Container (1) according to any of claims 1-10, wherein the extensions (11) include an axially extending opening (12) in communication with the opening (35).

12. Container (1) according to any of claims 1-11, comprising a product (5) extending outwards radially from the platform (10) beyond the ring structure (13)

against the wall (6) of the base part (2) immersing at least part of the platform (10), at least part of the extensions (11), and at least part of both sides of the ring structure (13).

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- 13.** Method of producing a container (1) for a product (5), in particular a cosmetic product (5) including the steps of:

- injection molding a base part (2) with a lower end (7) and an upper end (8), comprising:

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* a wall (6) with an external thread (9), the external thread (9) being located at the upper end (8) of the base part (2);

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* a platform (10) on extensions (11) that protrude upwards from the bottom of the base part (2);

* a ring structure (13) protruding upwards from the bottom of the base part (2) and located between the platform (10) and the wall (6) of the base part (2), and

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- injection molding a top part (3) with a lower end (17) and an upper end (18) comprising an internal thread (24) located on the inside of the lower end (17) of the top part (3), the external thread (9) being engageable with the internal thread (24) to lock the base part (2) on the top part (3) in an assembled state of the container (1).

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- 14.** Method of filling a container (1) according to one or more of claims 1 to 13 with a product (5), in particular a cosmetic product, comprising the steps of:

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- placing the top part (3) upside down,
 - filling the top part (3) at least partially with the product (5) in a liquid form,
 - immersing at least part of the platform (10), at least part of the extensions (11) and at least part of both sides of the ring structure (13) with the liquid product (5), and
 - allowing the product (5) to solidify.

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- 15.** Method of filling a container (1) according to one or more of claims 11 to 13 with a product (5), in particular a cosmetic product, comprising the steps of:

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- combining the top part (3) and the base part (2) into the container (1),
 - placing the top part (3) upside down,
 - filling the top part (3) at least partially with the product (5) in a liquid form through the opening (35) in the bottom of the base part (2) and the axially extending opening (12) of the extensions (11) of the base part (2),
 - immersing at least part of the platform (10), at least part of the extensions (11) and at least part

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of both sides of the ring structure (13) with the liquid product (5), and
 - allowing the product (5) to solidify.

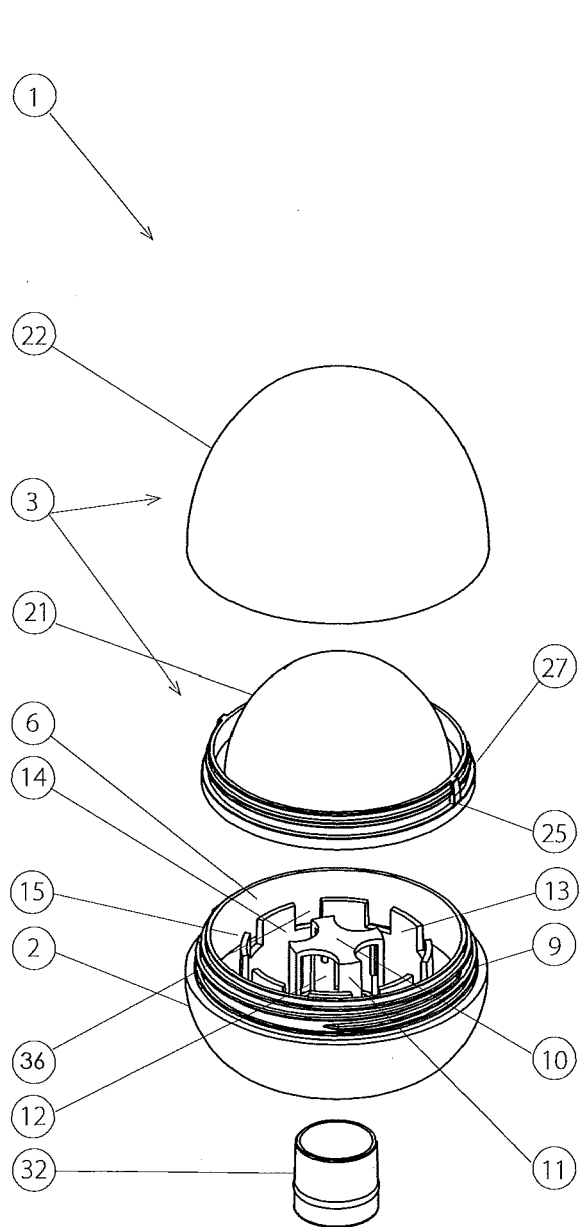


Fig. 1

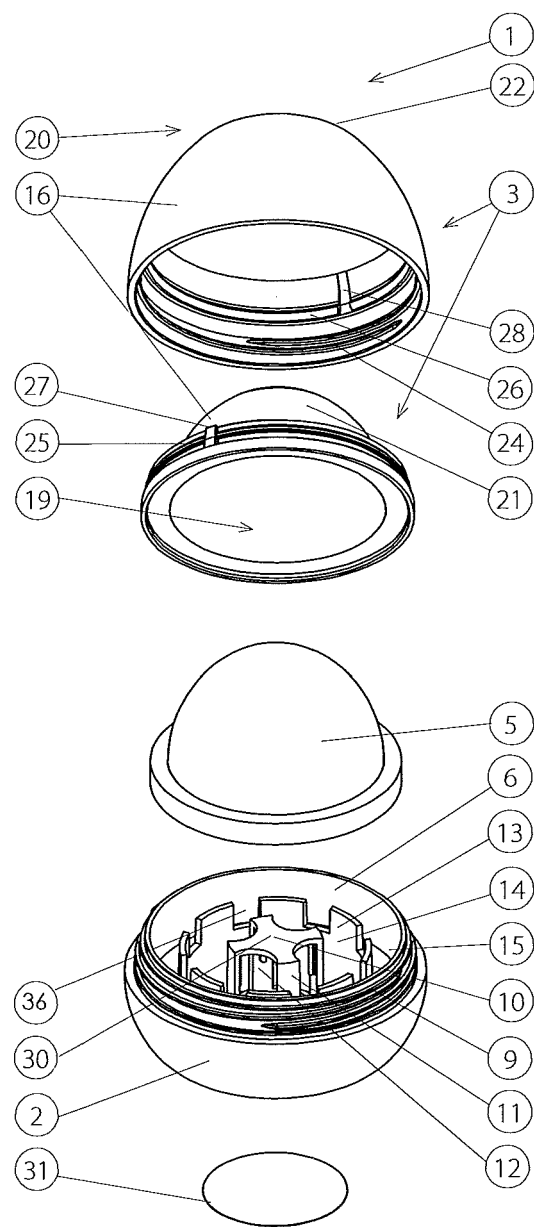


Fig. 2

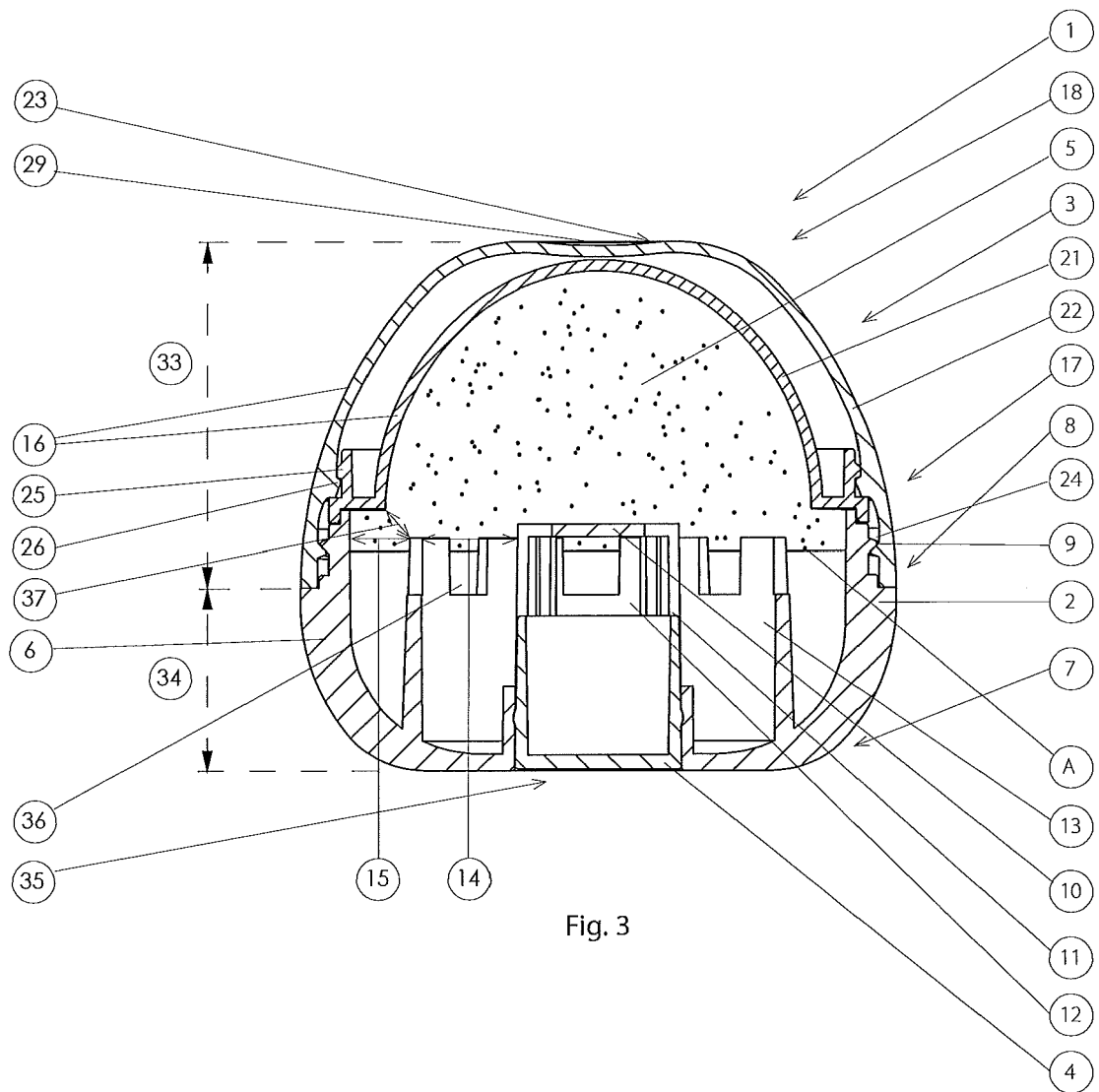
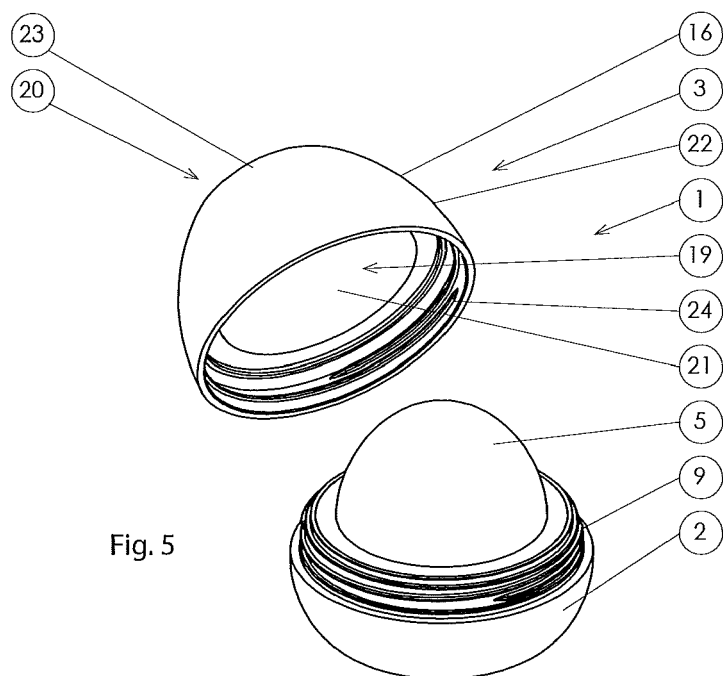
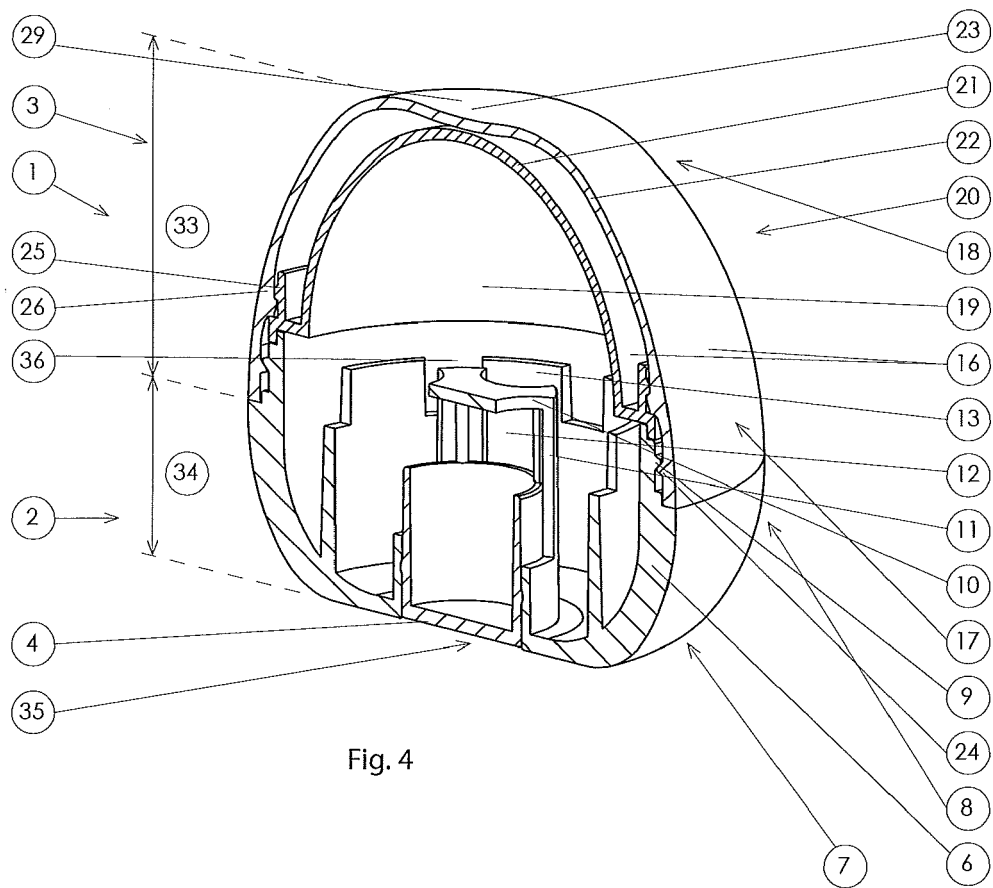


Fig. 3





EUROPEAN SEARCH REPORT

Application Number
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Place of search The Hague		Date of completion of the search 14 July 2017	Examiner Ionescu, C
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