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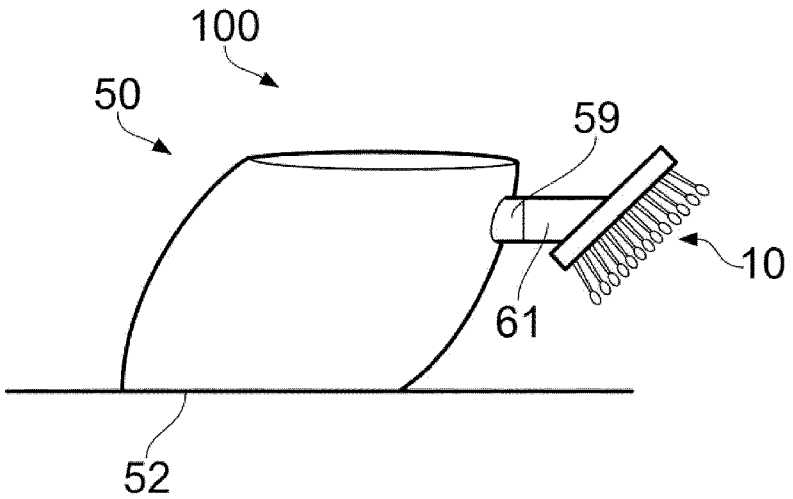


FIG. 1

(57) Abstract: A non-razor personal care device handle comprising: a handle body (50) and a tool connecting structure (59) to attach a non-razor tool for personal care; wherein the handle body is chunky and bulbous in two orthogonal directions, widening away from an end surface (52) towards the centre of the body.

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PERSONAL CARE DEVICES

Field

Embodiments described herein relate to a personal care device, to a handle for a personal care device, and to a kit of at least one personal care tool (or head) with a personal care handle.

Background

Non-razor (or non-cutting) handheld personal care devices (also referred to as articles or utensils) used to care for or treat the skin or hair or nails (e.g. to brush, comb, file, clean, massage, exfoliate and/or apply creams, cleansing solutions or other substances to the skin or hair or nails or teeth) are known and in particular facial care devices have gained increasing popularity. Such devices require handles that are easy to manipulate and grip, compact and aesthetically pleasing.

Brief Summary

Embodiments of the invention provide a non-razor personal care handle comprising: a handle body and a tool connecting structure to attach a non-razor tool for personal care such as a brush, comb, pad, file, block of solid product, or exfoliator; wherein the handle body is chunky, and bulbous in two orthogonal directions, widening away from an end surface towards the centre of the body.

Such a handle body is surprisingly comfortable to hold and easy to manoeuvre, because it fits into the palm of the hand. It allows a firm grip but facilitates precise handling. A chunky handle body may have a ratio of length in a direction orthogonal to the end surface to width in a direction parallel to the end surface of between 3 and one third, preferably between 2 and one half, more preferably between 1.5 and 0.75. The two orthogonal directions may be parallel to the end surface.

In another definition, embodiments of the invention provide a personal care handle in the form of a brush handle or comb handle or pad handle or file handle or body-of-solid-product handle or exfoliator handle comprising: a handle body and a tool connecting structure to attach a brush or comb or pad or file or block of solid product or

exfoliator; wherein the handle body is bulbous in two orthogonal directions, widening away from an end surface towards the centre of the body.

As mentioned above, such a handle may be for a brush (for example a tooth, hair, tooth or skin brush), comb, pad (for example for application or removal of a product or for general cleaning or massaging/treating the skin), file (such as a nail file or all-purpose hard-skin file), block of solid product (for instance in the form of a soap or cream for example) or exfoliator (for example a rough-surface exfoliator).

The handle may be permanently or non-permanently attached to the tool. In this latter case, there may be provided a kit of parts comprising a handle with a personal-care tool connecting structure to attach a personal care tool; wherein the handle body is bulbous in two orthogonal directions, widening away from an end surface towards the centre of the body; and two or more tools in the form of a brush or comb or pad or file or block of solid product or exfoliator or safety-razor cartridge. Hence in some cases the handle in the kit may no longer be described as a non-razor handle. Advantageously, the ergonomically formed handle can be combined with different heads (tools) using a universal connecting structure/stem. Thus the user can be provided (for example) with a bathroom set of a handle and various heads to go with it, cutting down on storage space. More than one handle may also be provided, for example of the same or different shapes and/or colour and/or size.

In another definition, embodiments of the invention provide a personal care device comprising a personal care tool in the form of a brush or comb or pad or file or block of solid product or exfoliator attached to a handle via connecting structure of the handle and corresponding means of the personal care tool, wherein the body of the handle is bulbous in two orthogonal directions, widening away from an end surface towards the centre of the body.

In this and other scenarios, a number of handles may be provided, each of the same or a different colour and/or shape and/or size, one with a toothbrush, another with a facial brush, a third with a hairbrush, a fourth with a file, etc. A further handle may be provided as a safety razor handle.

The handle body is bulbous in two orthogonal directions, widening away from an end surface towards the centre of the body. An outline/silhouette of the handle body in both these directions may be generally fat and round, for example with a ratio of length in a direction orthogonal to the end surface to width in a direction parallel to the end surface of between 3 and one third, preferably between 2 and one half, more preferably between 1.5 and 0.75. The two orthogonal directions may be parallel to the end surface. This “chunky” or “bulky” bulbous shapes of the handle allows a particularly flexible ergonomic handling, giving many varied gripping positions for the human hand and easy twisting of the handle within the grip to reach different angles.

Some prior art handles for personal care (such as toothbrushes) have been elongate as a rule, but the embodiments are chunky rather than elongate, which gives better user feel across a range of personal care products.

The handle body may comprise a further end surface opposite to the end surface. The two opposite surfaces may be connected by a convex side surface which widens (away from a central axis between the two opposite surfaces) towards the centre (or approximate centre) of the body to give the bulbous shape. The opposite further end surface gives an even better handling feel, particularly if there are opposite flat surfaces which are parallel.

Of course, the handle body may widen away from the end surface not just in two orthogonal directions but in many or all of the directions in between these two orthogonal directions, so that the increase in size is general and thus of most of or the entire cross section. The side surface may be a single continuous curved side surface (for example linking the two end surfaces). This curved side surface, or a plurality of curved side surface portions, may provide the handle body with a cross section that increases continuously (without decreasing) away from the flat end surfaces towards the centre of the body, forming the bulbous shape mentioned above.

The further end surface may be a front end surface. This surface thus forms the front of the device in use, facing in the opposite direction to a direction of treatment. Correspondingly, the end surface may be a rear end surface facing in the treatment

direction in use. The tool connecting structure may be on the side surface, for example closer to the front end surface than to the rear end surface, for ease of use.

In use, the personal care device may be pulled across the skin in the treatment direction. The end surface may therefore be in front of the personal care tool in the direction of treatment (to the rear of the tool if the personal care tool is seen as at the front), and the further end surface behind the personal care tool (hereinafter tool) in the treatment direction (to the front of the device).

As mentioned above, one or both end surfaces may be flat. The flat end surfaces may be parallel, providing a symmetrical feel which gives the user a better tactile impression of the overall handle, for improved treatment experience. One or both of the flat end surface(s) may be circular or elliptical, for example.

In one embodiment of a personal care handle, the handle body is in the form of a slanted barrel shape, with a skewed barrel surface between two end (front and rear) surfaces. The barrel shape may be terminated at either end with a slanted end surface, in that it is not orthogonal to the barrel axis. Neither is the barrel shape itself necessarily formed from a circle of varying diameter extruded along a central straight axis. Rather, the handle body as a whole may be viewed as having a skewed barrel shape (potentially with a curved barrel axis).

When the two parallel end surfaces are in a vertical orientation, with the tool attachment extending downwards, the barrel surface may be skewed/slanted upwards from the front end surface towards the rear end surface.

If the tool attachment projects from the side surface and parallel to the end surface, then a slanted/overhang design of the handle (with the end surface(s) extending at a slant (non-perpendicular angle) to the average direction of the side surface between the centres of the two end surfaces) allows the handle body to sit with the rear end surface at the back of the user's hand grip on or towards the palm of the hand, with the user's fingers positioned on the front end surface and side surface. In this position the end surfaces slope up and back towards the user's hand, allowing a better view of the tool.

The barrel shape may have a substantially circular or substantially elliptical cross section perpendicular to its longitudinal axis (which may be straight or curved). The barrel shape may widen continuously from the two end surfaces towards the centre.

The handle body is not elongate. For example, the largest diameter of the barrel shape (which may be central along its axis) may be between a third and three times the length of the longitudinal axis of the barrel, preferably between a half and twice. The largest diameter of the barrel shape may be larger than the length of its longitudinal axis.

Any connection between the tool and the handle body may be used. For example, a part of the tool may simply fit into a recess in the handle body. In this case there may be a fitting in the recess which attaches to that part of the tool. Alternatively, structure which is part of the handle may be provided outside or inside the handle body (or recess) for attachment of the tool. This structure may be on (and/or inside) the side surface, or on (and/or inside) the flat end surface and the side surface.

Tool connecting structure may be in the form of a handle stem which connects the tool and the handle body. This stem may extend from the side surface (for example in and beyond a recess, and preferably in the same direction as the recess). This may provide a convenient potion of the tool with respect to the hand.

In a kit of parts, if the handle and tool separate at the stem, a part or all of the stem may be permanently attached to the handle body and a part or all of the stem may be permanently attached to the tool. For example, there may be a handle stem and a tool stem which are releasably attached together. The handle stem may extend into the tool stem when the two are attached or vice versa to provide a connection.

The end surface may be provided with a recess or other interface allowing attachment to another part, such as packaging or a travelling case, or suspension from a hook (which could be provided separately) on a wall or other vertical surface.

The handle body may be made of a single part and material (excluding any minor additions of logos etc). In one embodiment it is made of two or more parts, such as a

core and an external layer, or two opposite halves, which are fabricated individually, and then connected. The stem may also be connected to the handle body to form the full handle at the same stage.

Any stem part extending from the handle body may fabricated from one part, for example to include a tool release mechanism and the handle body may be fabricated from another part, possibly a translucent part. Alternatively, the handle body may be fabricated from two parts, such an inner core and an outer layer as mentioned above. The handle may have an outer, softer (and thus tactile/haptic layer) and an inner harder core. One or both layers may be translucent. Such translucency aids use of the tool, since anything behind the handle body may be glimpsed through the body, assisting user orientation.

In some embodiments, the handle body houses an insert inside a translucent material of the handle body. This insert may be used to permanently and attractively display a logo.

The handle body may have any suitable construction. The handle body may comprise a single material or may comprise a core material and an outer material. Inserts may be made in the same material or one or more different materials. In one embodiment the handle body is solid or contains a hard core or hard hollow core. This may allow the use of a softer material for the rest of the body.

In one embodiment, the handle body comprises a single moulded translucent or transparent body (forming a core or hollow core, an outer layer or the full body) of elastomeric material such as silicone, TPU (thermoplastic polyurethane), TPE (thermoplastic elastomer) PETG (Polyethylene Terephthalate Glycol), TPS or rubber (such as liquid silicone rubber or compression silicone rubber) for example having a Shore A hardness of around 5 to 80, preferably a squeezable 20 Shore A under the ASTM D2240–00 testing standard.

In the embodiment in which the handle body comprises two materials, such as a core material and an outer material, the core may be harder than the outer layer. Materials for the hard core may be transparent or opaque i.e. virgin or recycled polyethylene

terephthalate, polycarbonate, polystyrene, styrene-acrylnitrile, acrylonitril-butadiene-styrene (ABS), or polymethyl methacrylate with Shore A hardness range of around over 80. The softer component in the shell may be TPEs (thermoplastic elastomers), silicone, rubber, or polyurethane, for example having the Shore A hardness range of around 5 to 80 as set out above.

As used herein, TPEs are thermoplastic elastomers, for example thermoplastic elastomers selected from the group of styrenic block copolymers (TPE-s including TPE SBS and the hydrogenated version of TPE-SEBS; e.g. Thermoplast K, Thermolast M, Sofprene, or Laprene), thermoplastic olefins (TPE-o; e.g. For-Tec E), elastomeric alloys (TPE-v or TPV; e.g. Thermolast A, Thermolast V, Hipex, Forprene, Termoton-V, or Vegaprene), thermoplastic polyurethanes (TPU; e.g. Copec), thermoplastic copolyesters (TPE-E), thermoplastic polyamides and mixtures thereof.

As used herein, silicones (or polysiloxanes) are polymers that include any inert, synthetic compound made up of repeating units of siloxane.

These materials give a superior tactile feeling with a material that is soft and yet strong due to the shape of the handle. Moreover, the body being translucent or transparent allows the user to gain a better feel of the positioning of the handle (and thus of the attached blade unit) with respect to the hand and to the skin to be treated.

The stem/attachment to the tool may be fabricated separately, for example from PPA Polyphthalamide)(/PPS (Polyphenylene sulphide)/LCP (Liquid Crystal Polymer) or ABS (Acrylonitrile Butadiene Styrene). The material may have a glass filling of 0% up to 40%, or 10% to 30%, preferably around 20%.

The materials and/or fabrication process may be chosen in such a way that the insert and core material will chemically bond with the handle material.

In one embodiment, the handle body (or external layer) is made entirely from a soft transparent silicon and the insert forming the stem is made from PPA (Polyphthalamide) with 20% glass filling. In another embodiment, the handle body (or external layer) is made entirely from a soft transparent TPE (thermoplastic elastomer)

and the insert is made from PP (polypropylene) with 20% glass filling. In another embodiment, a handle body external portion is made from a soft transparent TPE (thermoplastic elastomer) and a handle body core and the stem are formed separately or together from a thermoplastic.

The handle body may has a hollow centre (or a hollow insert) to store a fluid, and the tool connecting structure allows the fluid to be applied on to the tool. For example, a squeezable handle body may allow a cream to be squeezed onto the tool by the user.

A further embodiment relates to the handle and an attached personal care tool, together forming a personal care device. According to this further embodiment there is provided a personal care device comprising a personal care handle as previously described and a personal care tool. For example, there may be provided a personal care device comprising a handle and a personal care tool, the personal care device having: a handle body and a tool connecting structure; wherein the handle body is bulbous in two orthogonal directions, widening away from an end surface towards the centre of the body.

In an alternative definition, embodiments of the invention provide a non-razor personal care device (to which a personal care tool may be fixed or detachable) comprising: a handle body with a substantially flat end surface and a side surface; and a personal care tool attached to the side surface, wherein: when the flat end surface is in contact with a horizontal plane, the device is in a stable position of rest, the flat end surface forming the devices only region of contact with the plane and elevating the personal care tool above the plane.

The flat end surface allows the handle to stand on a horizontal plane, such as a basin edge or shelf with the blades and any pad/brush of the tool suspended above the surface and no other point of contact between the device and the horizontal plane. This can help prevent wear or corrosion of the tool by contact with the surface.

The term “flat” is used herein to describe a surface which is completely or substantially flat and which thus may include some portions which are not flat (and thus some portions which are not in contact with the horizontal plane). For example, the surface

may include patterns, a logo, an opening or writing recessed into the flat surface, some surface texturing or curvature or the like. However, the surface may be substantially unbroken. Preferably over 80%, or more preferably over 90% of the surface is in contact with the horizontal plane.

The term “stable position of rest” indicates that the personal care device will stay in the upright position on its flat end surface with the tool elevated without any external assistance/force.

In one embodiment, an overall handle body shape is bulbous in two orthogonal directions. Thus an outline/silhouette of the handle body in both directions may be generally fat and round (over the whole extent of the handle body).

The side surface may be a curved surface (made up of a single surface on several curved surface portions) adjacent to the flat end surface. This can give a good handling feel, with a flat face and possibly also an edge between the flat face and a curved face providing a tangible spatial reference to the user in combination with an easy-grip curved surface.

In a further alternative definition, embodiments of the invention provide a non-razor personal care handle comprising: an underneath surface portion facing the skin of the user in use and comprising an connecting structure for attachment to a personal care tool; a front surface and opposite rear surface portion; a top surface portion and side surface portions, one directed to either side of the tool width in use; wherein the top surface portion, underneath surface portion and side surface portions together form a continuous smooth surface which is a substantially cylindrical or substantially ellipsoid or substantially partially spherical surface; and/or wherein: the distance between the front surface portion and rear surface portion is between one third and three times, preferably between a half and twice, the largest dimension of the largest cross section through the continuous smooth surface.

The term “underneath” is used to describe features of the tool that are positioned on the skin-contacting side of the tool (i.e., on a personal care-side or underneath of the

tool), and the term “top” is used to describe features of the tool that are positioned on a side opposite the skin-contacting side (i.e., on a user side or on top of tool).

The term substantially cylindrical or substantially ellipsoid or substantially partially spherical surface is used to describe a shape which is close to cylindrical or ellipsoid or partially spherical form, for example with a 10% deviation from one of those forms. In one measure, a section (or all sections) taken vertically through the continuous smooth surface (for example in a direction parallel to the tool width) or parallel to the front and rear surfaces overlaps with a circle or ellipse drawn to just cover the whole section with the areas of the circle or ellipse which are not covered by the section being up to one tenth of the area of the section.

The above indicated definitions, aspects and embodiments refer to the same handle shape and may be combined with each other (if not obviously mutually exclusive) to achieve the advantageous effects as described above. Further embodiments, features, and advantages of the invention, as well as the structure and operation of the various embodiments of the invention are described in detail below with reference to the accompanying drawings.

Description of Figures

The accompanying drawings, which are incorporated herein and form a part of the specification, illustrate the present invention and, together with the description, further serve to explain the principles of the invention and to enable a person skilled in the pertinent art to make and use the invention.

Reference will now be made to Figures 1 to 12, in which:

Figure 1 is a side view of a personal care device in the form of a brush standing upright on its flat end surface on a horizontal plane;

Figure 2 is a side view of a personal care device in the form of a body of solid product in a use position;

Figure 3 is a front view of a personal care device in the form of a comb shown in a front view;

Figure 4 is a perspective view from the side and underneath of a personal care device in the form of a file in an upright position;

Figure 5a is a perspective front view from above of a personal care device in the form of a handled-sponge;

Figure 5b is a perspective side view of the personal care device in Figure 5a;

Figure 6 is a side view of a safety razor in a use position;

Figure 7 shows two perspective partially exploded side views of a personal care device with a dispensing pad in a use position;

Figures 8a, 8b and 8c are a front view, perspective view and side view respectively of a personal care handle before a personal care tool is attached;

Figures 9a, 9b, and 9c are side views of different handle body constructions.

Figures 10(a) to (f) are views of personal care tools for use in a kit with a personal care handle;

Figures 11(a) to (f) are views of the different devices of Figures 10(a) to (f) before attachment of the tool to the personal care handle; and

Figure 12(a) to (l) shows different personal care tool shapes and their use.

Detailed Description

The following detailed description refers to the accompanying drawings that illustrate examples and embodiments consistent with this invention. Other embodiments are possible, and modifications can be made to the embodiments within the spirit and scope of the invention. Therefore, the detailed description is not meant to limit the invention.

Reference will now be made to Figures 1 to 12, which are views of a personal care tool 10 and handle body 50 joined by a stem 59, 61. Generally speaking, the described embodiments can be differentiated from one another in terms of the personal care tool and/or the shape of the handle body 50, and its connection to the personal care tool.

Figures 1 to 6 show different views of a handle body 50 of rounded, chunky design attached to various different personal care tools 10. The handle gives an excellent user feel for cosmetic and cleansing purposes and this can be harmonised across a range of personal care activities by using the same detachable handle for different personal tools, or using a range of personal care devices with the same or closely similar handles.

Figure 1 shows a brush head attachment, which may for example be a hair or skin or nail brush.

The handle body has a flat end surface 52 on which it can rest stably upright on a (substantially) horizontal surface, as shown in Figure 1. In this orientation, the flat end surface rests on the horizontal plane and thus forms an underneath surface, and the further end surface forms a top surface of the device. Here, the in-use definitions of directions set out for the general case above do not apply. The handle includes the handle body and a handle stem or tool connecting structure 59. When the handle body is upright in its position of rest on a plane, the connecting structure 59 which is provided on the side surface of the handle body towards the top surface is elevated above the plane. This elevates the tool itself above the plane, since the lowest point of the tool is only slightly below the connecting structure.

When the personal care device is in use, the flat end surface forms the rear surface of the device, as shown in Figure 2. Figure 2 shows a personal care device with a solid body of product, such as soap or a moisturiser.

Opposite to the flat end surface is a further flat end surface 51. This is a front surface portion when the device is in use, as shown in Figure 2, and in the upright resting position is at the top, as previously mentioned. Any of the surfaces of the handle body,

but particularly the front surface in use may be provided with information, logos, or other signs and patterns. Such a logo, for example, may have a different surface texture (gloss or matt or rough, for example) from the surrounding material, be protruded or recessed from the surrounding material or have a combination of finish and relief. If the handle body is made from more than one material, the combination of materials (for example using cut-outs or embossing) may be used to distinguish the logo.

These two opposite surfaces are parallel, and are separated by a single continuous side surface 56. As can be seen clearly from Figure 3, which shows a comb attachment, this side surface is approximately barrel-shaped and bulbous, with a chunky form that expands from the end surfaces towards the centre of the handle body. The largest barrel diameter is larger than the distance between the two opposite end surfaces. The barrel shape is terminated at either end with a slanted end surface, which is not orthogonal to the barrel axis. Neither is the barrel shape itself formed from a circle of varying diameter extruded along a central straight axis. Rather, the handle body as a whole may be viewed as having a skewed barrel shape (with a curved barrel axis as shown in Figure 1). The skewed barrel shape gives a visual effect, for example, of a deformed barrel shape which is produced when a flexible, “jelly” material attached on its circular barrel end surface to a horizontal supporting plane is skewed laterally and parallel to the end surface by movement of the top (or further end) surface.

The side surface of the handle body 56 has a curved underneath portion 53, a curved top portion 54 and curved lateral portions 55 in use as shown in Figures 2, 4 and 5. Figure 4 shows a personal care device in the form of a file for rough skin or nails, with treatment surface 18. Here and also in other tools in a matching kit, the tool is elongate in a side-to-side direction and has straight front and rear edges 20, connected by curved side edges 42. Figure 5 shows a personal care device in the form of a sponge attached to a handle. A handle stem 59 extends from the curved underneath portion of the handle body parallel to the end surfaces. The curved surface portions together form a continuous smooth curved surface which is substantially circular or ellipsoid in cross section, but may vary in shape and size along its length between the front and rear of the handle.

The tool 10 can be connected to the handle body 50, either fixedly or detachably by connection between the handle stem 59 and a tool stem 61 (see Figure 1). For example, cooperating means (not shown) on the handle stem and tool stem may provide a clipped, sprung-loaded connection which can be unclipped using a moving part (not shown) which is contacted by the user to attach and/or detach the handle body and tool.

Figure 6 shows a handle with an attachment in the form of a razor cartridge. Any kit of personal care tools which may be attached to the handle may include a razor cartridge. Equally, any range of personal care devices with the handle as described herein may include a safety razor.

In some embodiments, and as shown in Figure 7 with a sponge or pad attachment for exemplary purposes only, the handle body may have a hollow centre or a hollow insert. In this way, the handle may store a fluid, such as a face wash or any other fluid cosmetic product (which may for example contain hair conditioner and/or moisturiser). In this case, the stem between the tool and handle body may include a fluid passage for a product to be dispensed from within the body and the body (and insert) may include a dispensing aperture. If the handle is squeezable, the user may squeeze it to dispense the product.

In the embodiment shown in Figure 7, a shell 80 forms the rear surface portion and part of the underneath and side surface portions of the handle. In this case, the shell may fit over the elastomeric material (such as TPE, rubber or silicone) body described previously. It may fit into receded surface portions of the body, so that the combination of the shell and the body provides a smooth external surface.

Figures 8a to 8c show the handle body and stem without any personal care device attached. The handle body may be provided separately, or as part of a kit with different personal care tools, or with one personal care tool (detachable or fixed to the handle).

Figures 9a, 9b and 9c show three different manufacturing options.

The handle body can be made of one or multiple parts or part combinations and/or have different materials and/or material combinations. The different parts and materials could introduced from a design perspective and/or have economic and/or functional reasons. The handle may be fabricated from the following materials: thermoplastic elastomers / thermoplastics / thermoset / silicones / metals / ceramics / natural materials (like wood or stone) / glass or composites. These materials can have different colouring, be opaque, translucent or transparent

The outside of the handle body could be separately fabricated from lacquers or coated with different materials to improve design or functionality.

The handle can be manufactured in different ways. Plastics can be fabricated by casting / injection moulding / compression moulding / milling / stamping / etc. The handle body can be manufactured all at once in one piece (as shown in Figure 9a) or by dividing the handle into multiple sections which are fabricated individually and combined or connected later during fabrication or by the user. Because the handle has a thick roundish shape it is difficult to injection mould this part without visual imperfections in an affordable way. For this reason the handle might be split up in different parts which have a thinner wall thickness compared to the final shape and are joined to give a smooth continuous external curved surface. Figures 9b and c show different options to enable this. In Figure 9b, two opposite halves are castellated at their internal join. An upper part (in the in-use position) has one or more peaks and troughs. These may extend in a direction perpendicular or parallel to the two opposite surfaces. The lower part has the opposite configuration of troughs or peaks so that the two parts together form a solid hole with no gaps. The lower part may form the entire rear flat end surface. A neck insert may be integral with the lower part, or separately provided. In Figure 9c, a core is surrounded by an external layer, which may be, for example of an even thickness of between one tenth and one half, preferably around one sixth of the extent of the core as shown in the diagram in cross section. In the first stage of the injection moulding process part 1 is moulded. In a second stage part 2 is added and together they form a solid handle body with individual parts that cannot be distinguished from each other by the user, even if they are both translucent.

In each case, the stem of the handle or neck housing for connection to the tool is shown as a separate piece. However, the stem may be of the same material as and/or integrally formed with either of part 1 and part 2. In one advantageously simple and elegant construction, the core and stem are integrally formed of the same material.

The handle body of Figure 9a may be made entirely from a translucent silicone or TPE-SEBS. The material is translucent and light coloured, so light can easily transmit through it. The translucent material is not only attractive but also practical in allowing parts behind the body to be glimpsed through the body and thus aiding user orientation and treatment. The surface looks and feels silky and non-sticky to the hands of the user. The handle stem 59 may extend into the body. The stem and any other interface part may be made of a harder plastic, such as PPA/PPS/LCP or ABS.

The handle body may be formed by either LSR or injection or compression moulding. The full device may weigh around 40 to 60 grams, preferably around 55 grams and the handle body (or outside of the handle body) may have a Shore A hardness of approximately 10 to 50, preferably 15 to 40 or around 20, to give a squeezable feel and pleasurable tactile sensation when gripped by the user. It may include a logo on the front surface (the further end surface which is on the top when the device is in the upright position).

If the handle body comprises two “concentric” materials, such as a core material and an outer material as in Figure 9c, the core may be harder than the outer layer. Materials for the hard core may be transparent or opaque i.e. virgin or recycled polyethylene terephthalate, polycarbonate, polystyrene, styrene-acrylonitrile, acrylonitrile-butadiene-styrene (ABS), or polymethyl methacrylate. The softer component in the shell may be TPEs (thermoplastic elastomers), silicone, rubber, or polyurethane, for example having the Shore A hardness range of around 5 to 80 and other characteristics as set out above.

The stem may be fixedly connected to the handle body, such as by chemical connection.

In an shape definition which can be applied to these figures and the earlier and later figures, some embodiments of the invention provide a personal care handle comprising: an underneath surface portion 53 facing the skin of the user in use and comprising an connecting structure (such as a stem) for attachment to a personal care tool; a front surface portion 51 facing in the opposite direction from the treatment direction in use; a rear surface portion 52 facing in the treatment direction in use; a top surface portion 54 and lateral surface portions 55, one directed to either side of the blade length in use; wherein the top surface portion, underneath surface portion and side surface portions together form a continuous smooth surface which is a substantially cylindrical or substantially ellipsoid or substantially partially spherical surface; and wherein: the distance between the front surface portion and rear surface portion is between one third and three times, preferably between a half and twice, the largest dimension of the largest cross section through the continuous smooth surface.

The term substantially cylindrical or substantially ellipsoid or substantially partially spherical surface is used to describe a shape which is close to cylindrical or ellipsoid or partially spherical form, for example with a 10% deviation from one of those forms. In one measure, a section (or all sections) taken vertically through the continuous smooth surface (for example in a direction parallel to the blade length) overlaps with a circle or ellipse drawn to just cover the whole section with the areas of the circle or ellipse which are not covered by the section being up to one tenth of the area of the section.

In a further definition of the handle, invention embodiments provide a personal care handle comprising a moulded translucent or transparent body or outer layer of elastomeric material such as TPE, silicone or rubber having a Shore A hardness of 5 to 65 or preferably 10 to 50; wherein the body has a shape which is rounded and chunky (or bulbous), extending with perpendicular length l, width w and height h, wherein none of the maximum length, width and height of the body is more than 2, 3 or 4 times the size of the maximum in the other two dimensions.

For example, the height may be the largest vertical cross section through the side smooth surface previously defined, the width may be the largest horizontal cross section through the side surface and the length may be the horizontal distance (parallel with the skin) between the end surfaces.

Any of the previous features of the handle and personal care device may be applied to these embodiments.

Figures 10a to 10f are views of personal care tools for use in a kit each with a personal care handle. The personal care tools include a sponge, a facial brush, a hair brush, a file and a comb. Each personal care tool includes the same tool stem or other connecting structure to attach to the handle stem. Each tool is shown with a separate handle and the handles may be identical or differently shaped and/or sized and/or coloured.

Figures 11a to 11f are views of the same tools in a kit, before connection to a handle. Each tool is shown with a different handle, but there may be a single personal care handle for the whole kit, or a few personal care handles, but not one per tool.

Figures 12a to 12h show alternative shapes of a personal care device. In each case, the personal care tool is simply represented in side view as a rounded rectangle and the handle body shape provided also in side view. The skilled reader will appreciate that any kind of suitable connection, whether releasable or fixed, may be provided between the personal care tool and handle body.

Figure 12a shows a cut-off elliptical cross-section handle body, with the tool attached to the underneath side in use, preferably off-centre at the cut-off, approximately perpendicular to the vertical rotation axis.

Figure 12b shows a cut-off spherical handle body with a tool attached to it off-centre at the cut-off in the sense that the assumed stem direction is not parallel to the radius direction.

Figure 12c shows a part-spherical handle body with a cut-off plane orthogonal to the axis connecting the centre of the plane to the centre of the handle body, with a tool attached off-centre to the part-spherical surface.

Figure 12d shows a part spherical handle body with two parallel cut-off planes, each orthogonal to the axis connecting the centre of the plane to the centre of the handle body, with a tool attached off-centre to the part-spherical surface.

Figure 12e shows a cylindrical handle body with a tool attachable to one side towards the end of the handle body.

Figure 12f and 12g show different proportions of the skewed barrel shape previously described, with a longer barrel axis and a shorter barrel axis.

Figure 12h shows a handle body with a front flat surface and continuously curved side and rear portion, with the personal care tool attached to the curved side portion.

Figures 12i, 12j,12k and 12l show a personal care device in use, demonstrating how its chunky form fits well into the human hand.

The breadth and scope of the present invention should not be limited by any of the above-described exemplary embodiments, but should be defined only in accordance with the following claims and their equivalents.

Reference numbers

10 non-razor personal care tool
11 razor cartridge
18 treatment surface of personal care tool
20 straight edges of personal care tool
42 curved edges of personal care tool
50 handle body
51 front surface portion or opposite end surface
52 rear surface portion or flat end surface
53 underneath surface portion
54 top surface portion
55 lateral surface portion
56 continuous side surface

59 handle stem/tool connecting structure

61 tool stem

70 moulded body

80 hard shell

82 receded portions of body

83 dispensing aperture

100 personal care device

Claims

1. A non-razor personal care device handle comprising:

a handle body (50) and a tool connecting structure (59) to attach a non-razor tool for personal care; wherein the handle body is bulbous in two orthogonal directions, widening away from an end surface (52) towards the centre of the body.

2. A device handle according to claim 1, further comprising a further end surface (51) opposite to the end surface (52), the two opposite surfaces being connected by a convex side surface (56) which widens towards the centre of the body.

3. A device handle according to claim 2, wherein there is a single continuous side surface (56) between the two end surfaces.

4. A device handle according to claim 3, wherein the further end surface is a front end surface (52) facing in the opposite direction to the treatment direction in use and the end surface (51) is a rear end surface facing in the treatment direction in use, wherein the tool connecting structure is on the continuous curved side surface closer to the front end surface than to the rear end surface.

5. A device handle according to any of the preceding claims wherein one or both end surfaces (51, 52) are flat, and preferably wherein the end surfaces are parallel.

6. A device handle according to any of the preceding claims, wherein the handle body (50) is in the form of a barrel shape, which is preferably slanted, with a skewed barrel surface between two end surfaces.

7. A device handle according to claim 6, wherein the largest diameter of the barrel shape is between a third and three times the length of the longitudinal axis of the barrel preferably between a half and twice; and more preferably, the largest diameter of the barrel shape is larger than the length of its longitudinal axis.

8. A device handle according to any of the preceding claims, wherein the tool connecting structure is in the form of a stem (61), which connects the tool and the handle body, and extends preferably from the side surface.

9. A device handle according to any of the preceding claims, wherein the handle body is made of two or more parts which are fabricated individually.

10. A device handle according to any of the preceding claims, wherein the handle body is made up of a softer inner core and a harder outer layer, preferably wherein one or both layers are translucent.

11. A device handle according to any of the preceding claims, wherein the handle body has a hollow centre to store a fluid, and the tool connecting structure allows the fluid to be applied on to the tool.

12. A device handle according to any of the preceding claims, wherein the handle body includes an insert inside a translucent material of the handle body.

13. A personal care handle in the form of a brush handle or comb handle or pad handle or file handle or body-of-solid-product handle or exfoliator handle comprising: a handle body and a tool connecting structure to attach a brush or comb or pad or file or block of solid product or exfoliator; wherein the handle body is bulbous in two orthogonal directions, widening away from an end surface towards the centre of the body.

14. A kit of parts comprising a handle with a personal-care tool connecting structure to attach a personal care tool; wherein the handle body is bulbous in two orthogonal directions, widening away from an end surface towards the centre of the body; and two or more tools in the form of a brush or comb or pad or file or block of solid product or exfoliator or safety-razor cartridge.

15. A kit of parts according to claim 14, comprising one or more further handles.

16. A personal care device (100) comprising a personal care tool in the form of a non-razor personal care tool such as a brush or comb or pad or file or block of solid product or exfoliator attached to a personal care handle as defined in any of claims 1 to 13.

17. A non-razor personal care device comprising: a handle body (50) with a substantially flat end surface and a side surface; and a personal care tool attached to the side surface, wherein: when the flat end surface is in contact with a horizontal plane, the device is in a stable position of rest, the flat end surface forming the devices only region of contact with the plane and elevating the personal care tool above the plane.

18. A non-razor personal care handle comprising: an underneath surface portion facing the skin of the user in use and comprising an connecting structure for attachment to a personal care tool; a front surface and opposite rear surface portion; a top surface portion and side surface portions, one directed to either side of the tool width in use; wherein the top surface portion, underneath surface portion and side surface portions together form a continuous smooth surface which is a substantially cylindrical or substantially ellipsoid or substantially partially spherical surface; and/or wherein: the distance between the front surface portion and rear surface portion is between one third and three times, preferably between a half and twice, the largest dimension of the largest cross section through the continuous smooth surface.

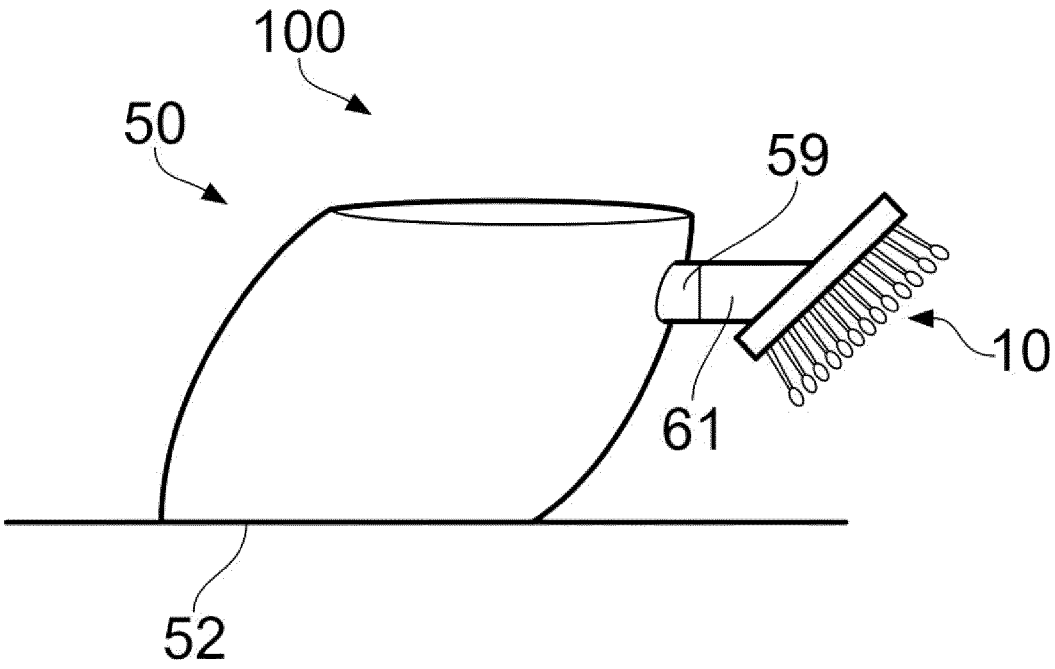


FIG. 1

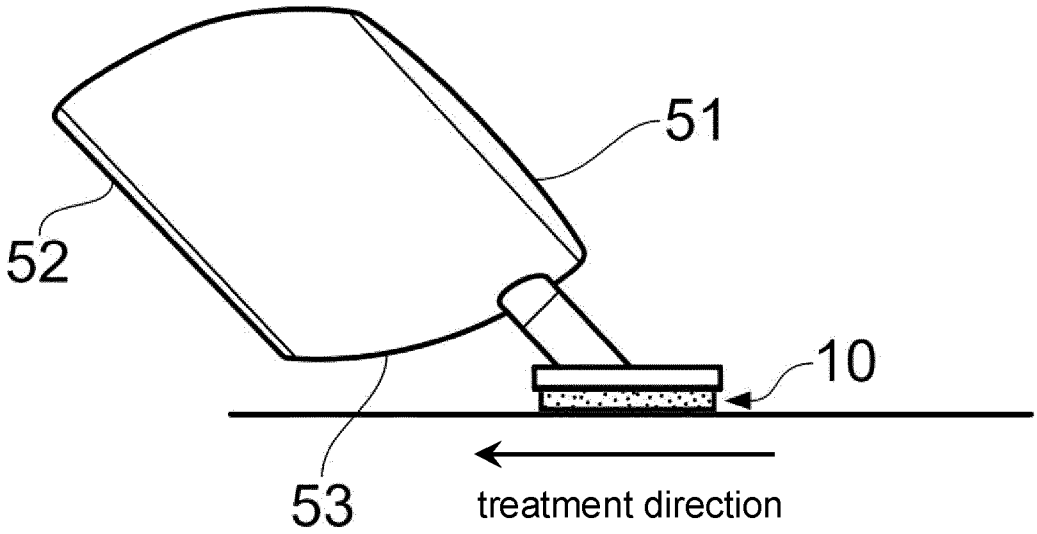


FIG. 2

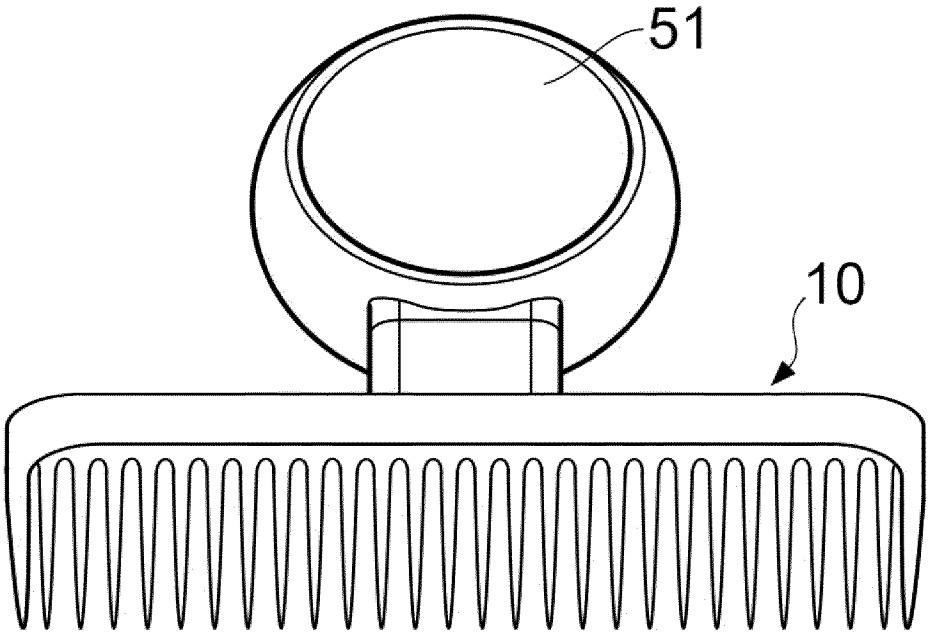


FIG. 3

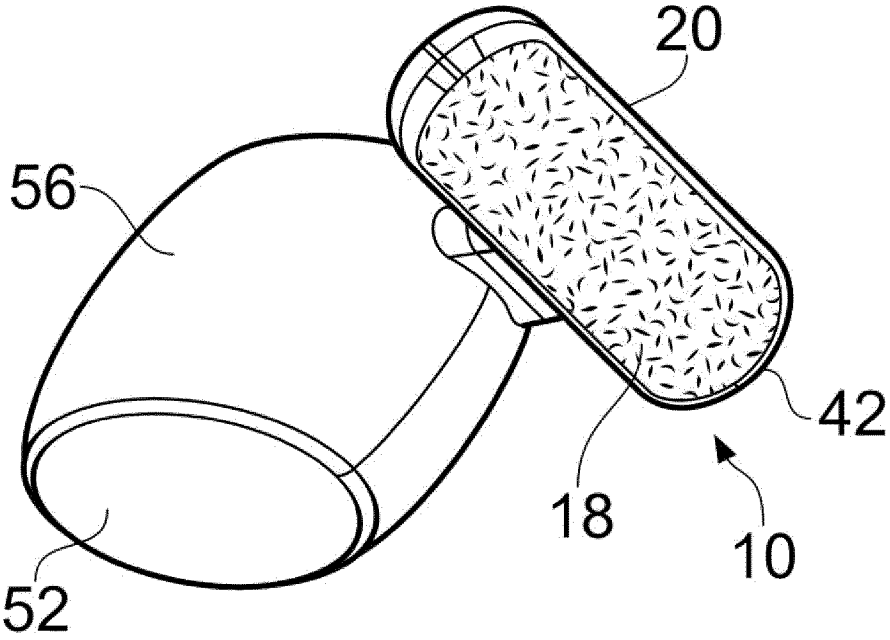


FIG. 4

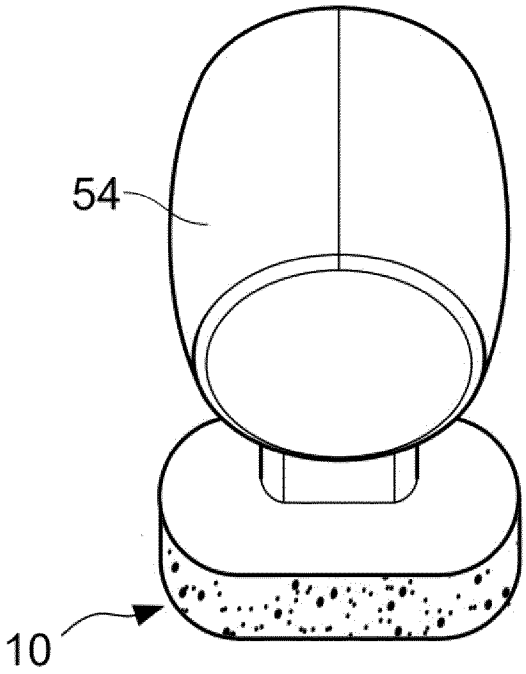


FIG. 5a

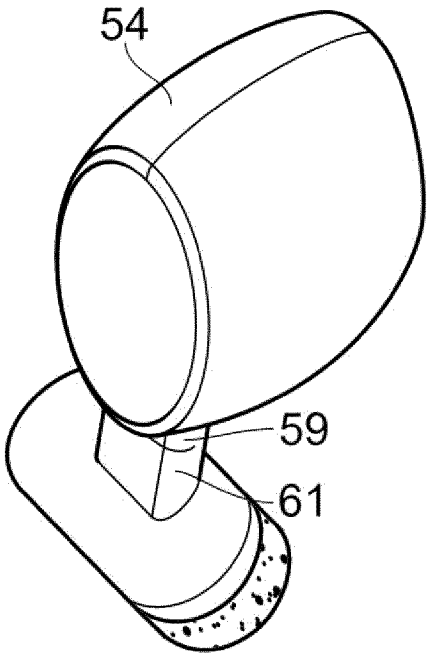


FIG. 5b

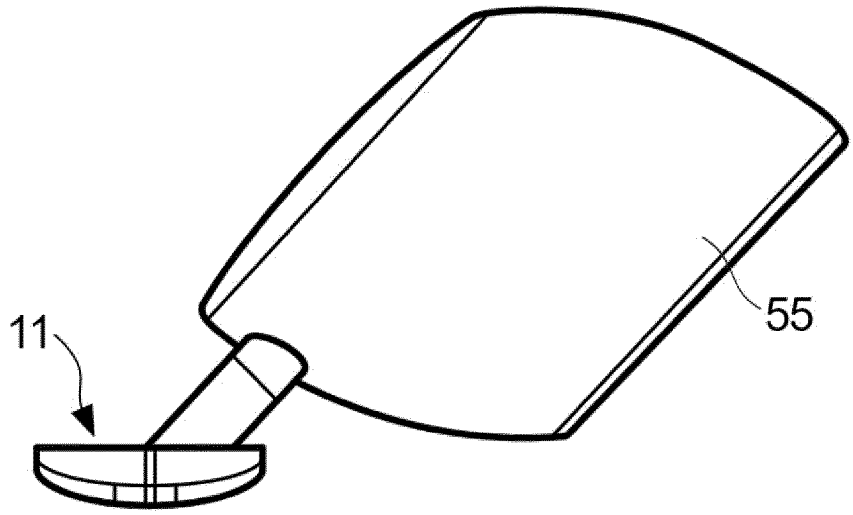


FIG. 6

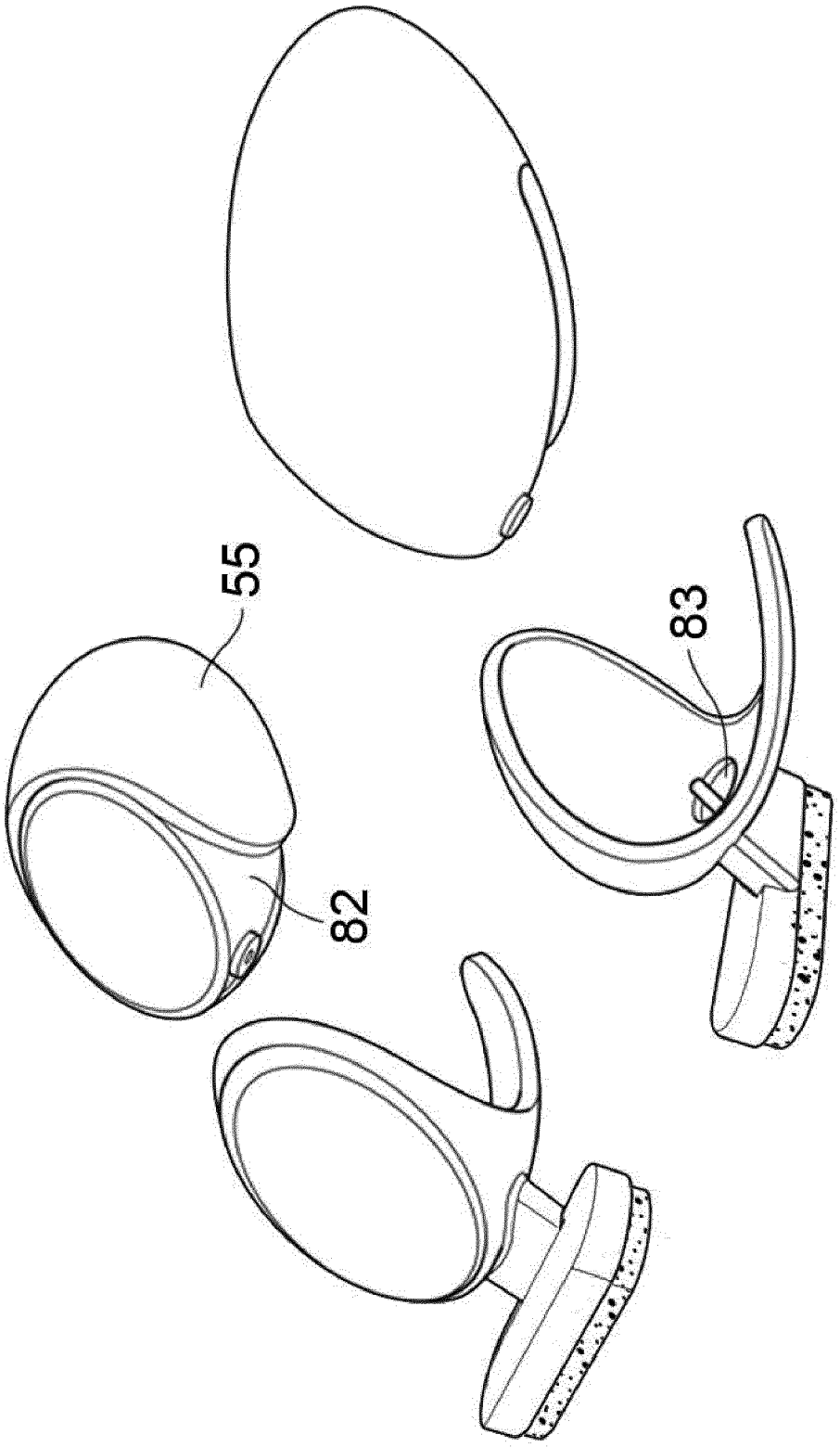


FIG. 7

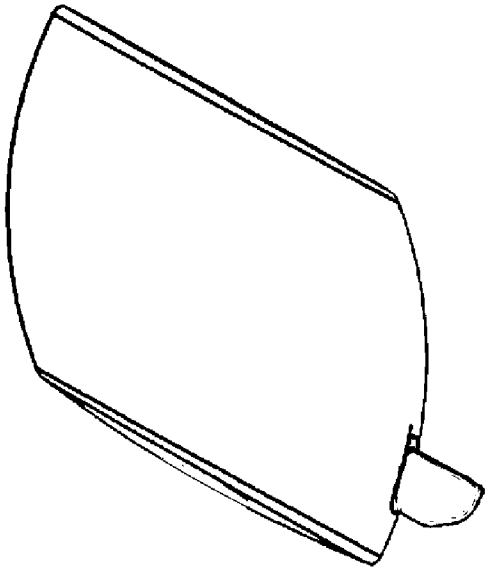


FIG. 8c

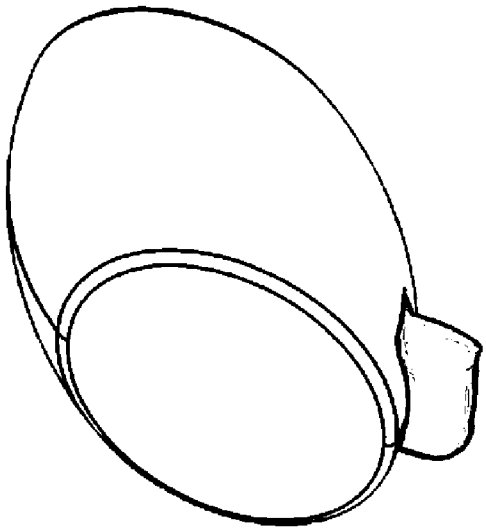


FIG. 8b

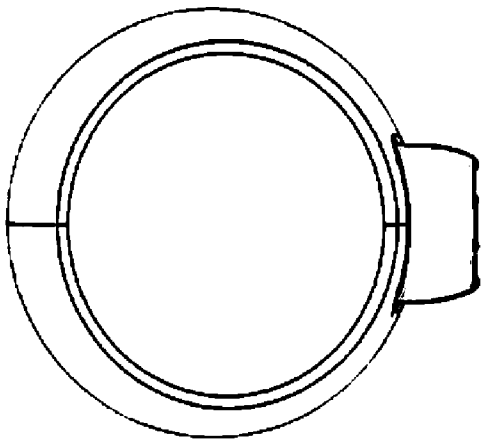


FIG. 8a

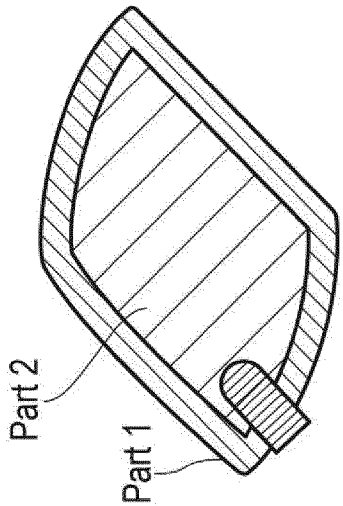


FIG. 9c

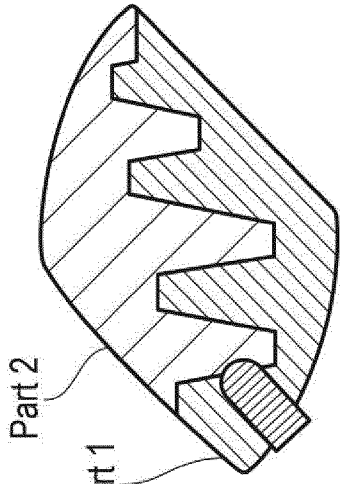


FIG. 9b

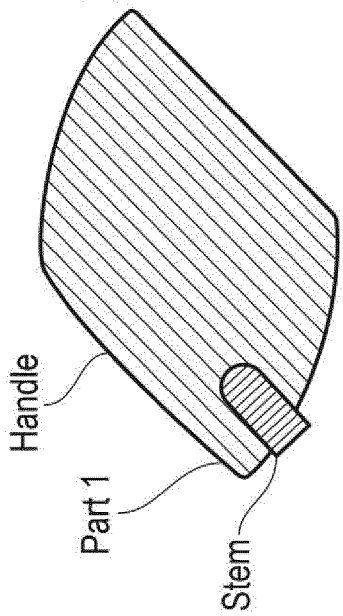


FIG. 9a

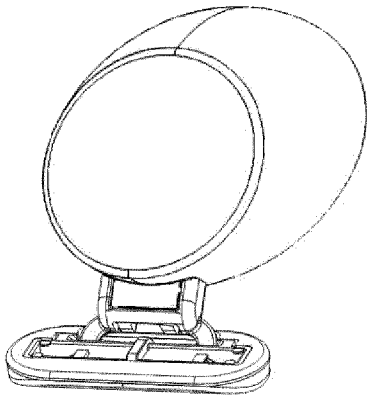


FIG. 10a

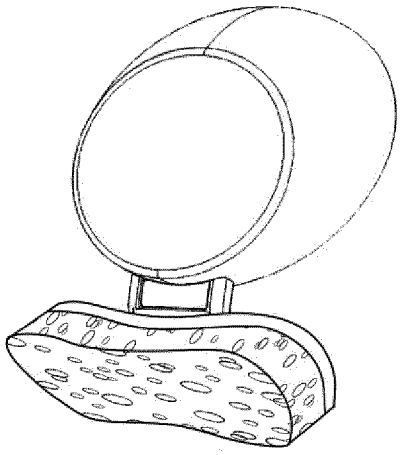


FIG. 10b



FIG. 10c

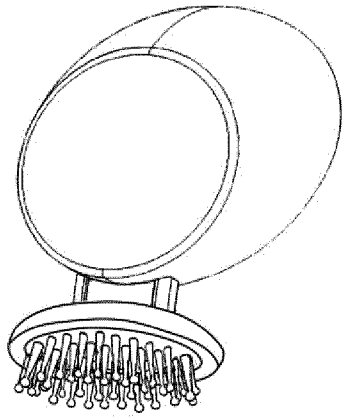


FIG. 10d

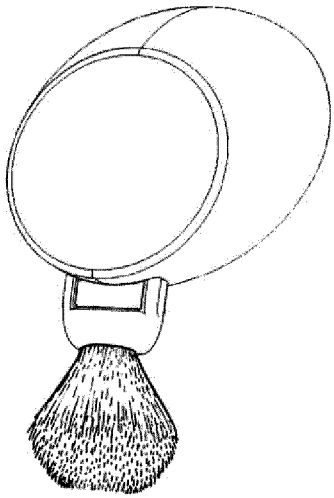


FIG. 10e

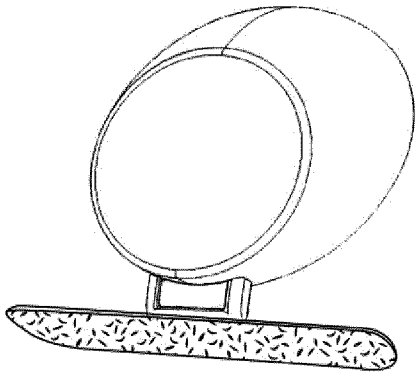


FIG. 10f

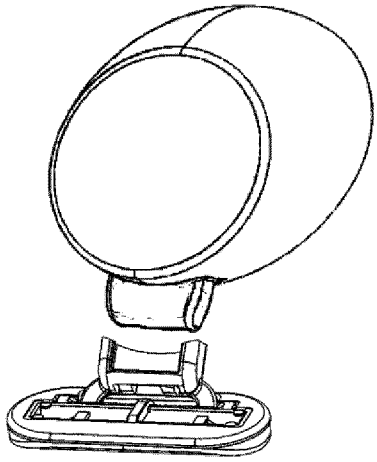


FIG. 11a

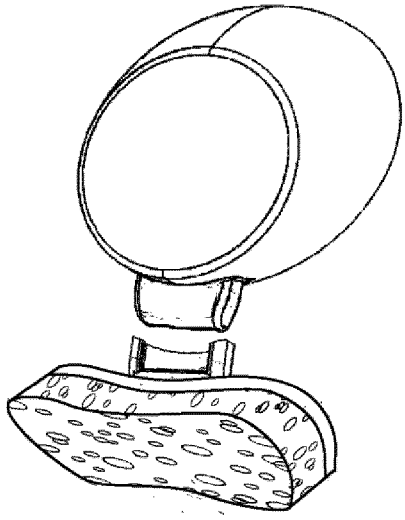


FIG. 11b

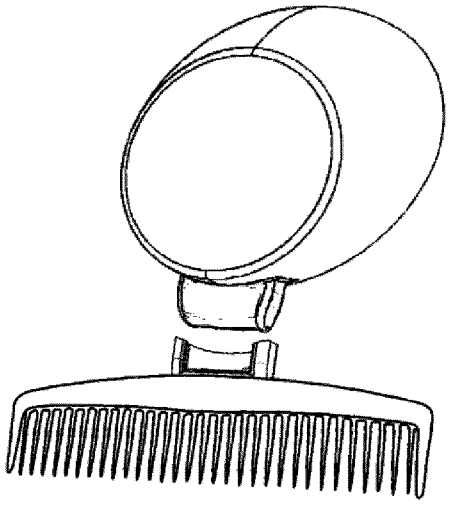


FIG. 11c

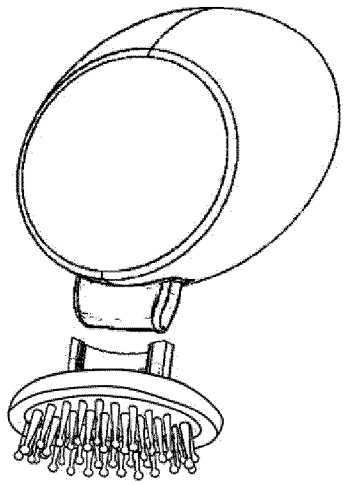


FIG. 11d

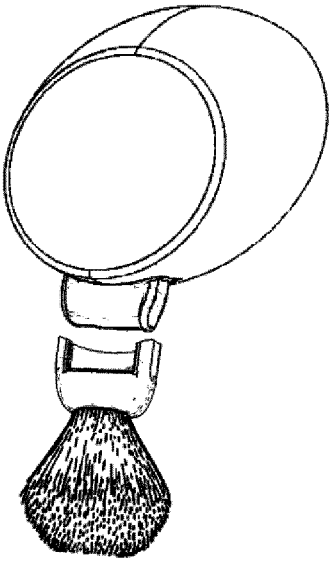


FIG. 11e

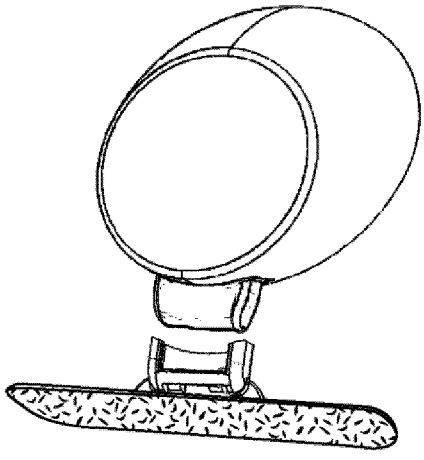


FIG. 11f

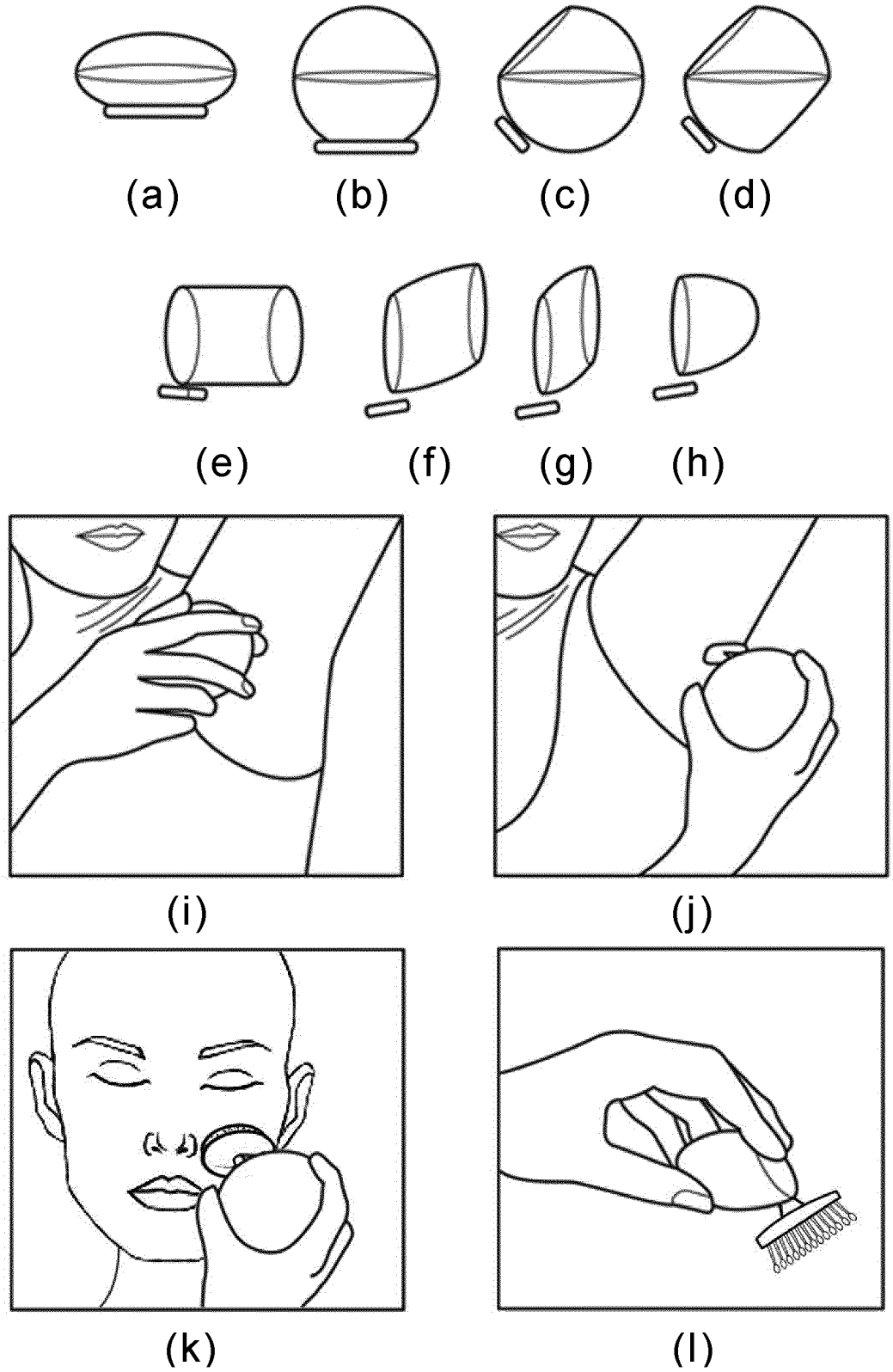


FIG. 12

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2020/050820

A. CLASSIFICATION OF SUBJECT MATTER
INV. A45D34/04 A46B5/02
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
A45D A61D A46B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	KR 2008 0005654 U (-) 26 November 2008 (2008-11-26) paragraphs [0015] - [0016] claim 1 figures 1 left, 1 right -----	1-3, 5-13, 16-18
X	WO 2012/002889 A1 (MUUKKI SVERDRUP CAMILLA THERESIA [NO]) 5 January 2012 (2012-01-05) page 4, lines 30-33 page 5, line 4 - page 7, line 33 page 12, lines 9-15 claim 16 figures 1,2 ----- -/--	1-18

[X] Further documents are listed in the continuation of Box C.

[X] See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
13 March 2020	24/03/2020

Name and mailing address of the ISA/	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Witkowska-Piela, A

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Form PCT/ISA/210 (second sheet) (April 2005)

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2020/050820

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2017/049297 A1 (DHILLON RASHPAL [GB]) 23 February 2017 (2017-02-23) paragraphs [0006] - [0010], [0038] - [0047], [0051] - [0056], [0069], [0070] figures 1-7 -----	1-3,5-15

1

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/EP2020/050820

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
KR 20080005654 U	26-11-2008	NONE	
WO 2012002889 A1	05-01-2012	NONE	
US 2017049297 A1	23-02-2017	EP 3136907 A1	08-03-2017
		US 2017049297 A1	23-02-2017
		WO 2015166206 A1	05-11-2015