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(54) AEROSOL PROVISION DEVICE

(57) An aerosol provision system (10) comprises a housing element (42) defining an exterior surface and an interior surface (41) and a plurality of windows (50) formed through the housing element (42) from the exterior surface to the interior surface (41), a light shield (40) positioned beneath the interior surface (41) of the housing element (42), the light shield (40) comprising a plurality of cavities (48) and one or more ribs (54), each rib (54) separating two of the cavities (48), each rib (54) spaced from the interior surface (41) of the housing element (42) to define a gap (57) therefrom, and a plurality of light elements (46), each light element (46) positioned to be visible though one of the cavities (48) and one of the windows (50) in the exterior surface.

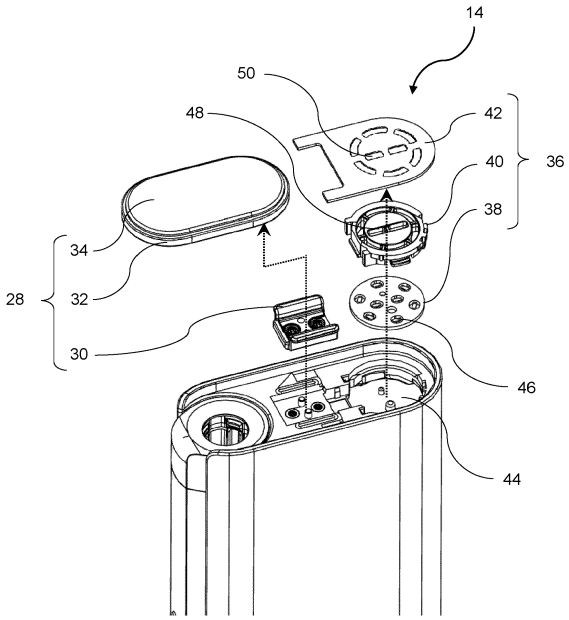

FIG. 3

EP 4 570 099 A1

Description

TECHNICAL FIELD

[0001] The present disclosure relates to an aerosol provision device, an aerosol provision system and a method of generating an aerosol.

BACKGROUND

[0002] Smoking items such as cigarettes, cigars and the like traditionally burn tobacco during use, producing tobacco smoke. Efforts are being made to create alternatives to such items. In this regard, it may be envisaged in particular to heat, but not burn, a suitable material to release certain compounds, particularly in an inhalable aerosol. A suitable material may or may not contain tobacco and may or may not contain nicotine. Such a material may, e.g., be provided in a cylindrical unit or, more generally, an article comprising an aerosol generating material.

[0003] Other examples are vapour provision devices and systems such as e-cigarettes which generally comprise a reservoir of a source liquid containing a formulation, which may or may not contain nicotine, from which an aerosol is generated, such as through vaporisation or other means.

SUMMARY

[0004] According to an aspect of the present disclosure, there is provided an aerosol provision system comprising a housing element defining an exterior surface and an interior surface and a plurality of windows formed through the housing element from the exterior surface to the interior surface, a light shield positioned beneath the interior surface of the housing element, the light shield comprising a plurality of cavities and one or more ribs, each rib separating two of the cavities, each rib spaced from the interior surface of the housing element to define a gap therefrom, and a plurality of light elements, each light element positioned to be visible though one of the cavities and one of the windows in the exterior surface.

[0005] In a further embodiment of the above, the plurality of light elements comprise a plurality of LEDs.

[0006] In a further embodiment of any of the above, the aerosol provision further comprises a battery, wherein the plurality of LEDs are configured to illuminate to indicate a charge level of the battery.

[0007] In a further embodiment of any of the above, each cavity is associated with one window, the cavity positioned directly below the associated window.

[0008] In a further embodiment of any of the above, the light elements are each arranged to emit light which directly passes through only one cavity and the associated window of the cavity.

[0009] In a further embodiment of any of the above, the rib is arranged so as to block any light emitted from the light element from passing directly through a window other than the associated window.

[0010] In a further embodiment of any of the above, each of the windows defines a cross-sectional area, each of the cavities defines a cross-sectional area, and each cavity has a cross-sectional area larger than the cross-sectional area of the associated window of that cavity.

[0011] In a further embodiment of any of the above, the housing element is separately formed and attached to a housing of the aerosol provision system.

[0012] In a further embodiment of any of the above, the housing element comprises a thermoplastic material.

[0013] In a further embodiment of any of the above, the housing element comprises acrylic.

[0014] In a further embodiment of any of the above, the light shield is separately formed and attached to the aerosol provision system.

[0015] In a further embodiment of any of the above, the aerosol provision system further comprises a receptacle for receiving an aerosol provision device and a lid moveable between a first position and a second position, wherein the lid in the first position covers the exterior surface of the housing element and in the second position covers the receptacle.

[0016] In a further embodiment of any of the above, the aerosol provision system further comprises an aerosol provision device, and a charging unit for charging or powering the aerosol provision device, the housing element, light shield, plurality of light elements and receptacle forming part of the charging unit, the aerosol provision device receivable within the receptacle when the lid is in the first position.

[0017] In a further embodiment of any of the above, the lid includes a structural bracket formed of a metal material and a film layer attached to an underside of the bracket to be positioned between the bracket and the exterior surface of the housing in the first position of the lid, the film layer formed of a thermoplastic material.

[0018] In a further embodiment of any of the above, the film comprises polyoxymethylene (POM) or polyethylene terephthalate (PET).

[0019] In a further embodiment of any of the above, the film is attached to the underside of the lid by an adhesive layer.

[0020] In a further embodiment of any of the above, the lid defines a lateral direction perpendicular to a direction of movement of the lid, and the film layer comprises two film layer portions separated in the lateral direction.

[0021] In a further embodiment of any of the above, the lid comprises an upper portion attached to the bracket, the upper portion forming an upper surface of the lid, the upper portion comprising a different material to the metal material of the bracket.

[0022] According to a further aspect of the present disclosure, there is provided an aerosol provision system comprising a housing, the housing comprising a surface, a receptacle formed through the surface of the housing for receiving an aerosol provision device, and a lid dis-

posed on and moveable over the surface between a first position and a second position, the lid including a structural bracket formed of a metal material and a film layer attached to an underside of the bracket to be positioned between the bracket and the surface of the housing, the film layer formed of a thermoplastic material.

[0023] In a further embodiment of the above, the aerosol provision system may comprise an aerosol provision device and a charging unit for charging or powering the aerosol provision device, the housing and receptacle forming part of the charging unit.

[0024] In a further embodiment of any of the above, the film comprises polyoxymethylene (POM) or polyethylene terephthalate (PET).

[0025] In a further embodiment of any of the above, the film is attached to the underside of the lid by an adhesive layer.

[0026] In a further embodiment of any of the above, the lid defines a lateral direction perpendicular to a direction of movement of the lid, and the film layer comprises two film layer portions separated in the lateral direction.

[0027] In a further embodiment of any of the above, the lid comprises an upper portion attached to the bracket, the upper portion forming an upper surface of the lid, the upper portion comprising a different material to the metal material of the bracket.

BRIEF DESCRIPTION OF THE DRAWING

[0028] Various embodiments will now be described, by way of example only, and with reference to the accompanying drawings, in which:

Figure 1 shows an aerosol provision system;

Figure 2 shows a charging unit of the aerosol provision system of Figure 1;

Figure 3 shows an exploded partial view of the charging unit of Figure 2;

Figure 4 shows a top-down view of the light shield and light element array of Figure 3;

Figure 5A shows a cross-sectional view of the light shield and light element array of Figure 4 along the line A;

Figure 5B shows a cross-sectional view of the light shield and light element array of Figure 4 along the line B;

Figure 6 shows a side view of the light element array, light shield and indicator surface element of Figure 2;

Figure 7 shows a cutaway view of the charging unit of Figure 2 sectioned along the line C; and

Figure 8 shows an isolated view of the lid bracket and lid surface element of Figure 7.

DETAILED DESCRIPTION

[0029] As used herein, the term "aerosol-generating material" is a material that is capable of generating aerosol, for example when heated, irradiated or energized in any other way. Aerosol-generating material may, for example, be in the form of a solid, liquid or gel which may or may not contain an active substance and/or flavourants. Aerosol-generating material may include any plant based material, such as tobacco-containing material and may, for example, include one or more of tobacco, tobacco derivatives, expanded tobacco, reconstituted tobacco or tobacco substitutes. Aerosol-generating material also may include other, non-tobacco, products, which, depending on the product, may or may not contain nicotine. Aerosol-generating material may for example be in the form of a solid, a liquid, a gel, a wax or the like. Aerosol-generating material may for example also be a combination or a blend of materials. Aerosol-generating material may also be known as "smokable material".

[0030] The aerosol-generating material may comprise a binder and an aerosol former. Optionally, an active and/or filler may also be present. Optionally, a solvent, such as water, is also present and one or more other components of the aerosol-generating material may or may not be soluble in the solvent. In some embodiments, the aerosol-generating material is substantially free from botanical material. In some embodiments, the aerosol-generating material is substantially tobacco free.

[0031] The aerosol-generating material may comprise or be an "amorphous solid". The amorphous solid may be a "monolithic solid". In some embodiments, the amorphous solid may be a dried gel. The amorphous solid is a solid material that may retain some fluid, such as liquid, within it. In some embodiments, the aerosol-generating material may, for example, comprise from about 50wt%, 60wt% or 70wt% of amorphous solid, to about 90wt%, 95wt% or 100wt% of amorphous solid.

[0032] The aerosol-generating material may comprise an aerosol-generating film. The aerosol-generating film may comprise or be a sheet, which may optionally be shredded to form a shredded sheet. The aerosol-generating sheet or shredded sheet may be substantially tobacco free.

[0033] According to the present disclosure, a "non-combustible" aerosol provision system is one where a constituent aerosol-generating material of the aerosol provision system (or component thereof) is not combusted or burned in order to facilitate delivery of at least one substance to a user.

[0034] In some embodiments, the delivery system is a non-combustible aerosol provision system, such as a powered non-combustible aerosol provision system.

[0035] In some embodiments, the non-combustible aerosol provision system is an electronic cigarette, also

known as a vaping device or electronic nicotine delivery system (END), although it is noted that the presence of nicotine in the aerosol-generating material is not a requirement.

[0036] In some embodiments, the non-combustible aerosol provision system is an aerosol-generating material heating system, also known as a heat-not-burn system. An example of such a system is a tobacco heating system.

[0037] In some embodiments, the non-combustible aerosol provision system is a hybrid system to generate aerosol using a combination of aerosol-generating materials, one or a plurality of which may be heated. Each of the aerosol-generating materials may be, for example, in the form of a solid, liquid or gel and may or may not contain nicotine. In some embodiments, the hybrid system comprises a liquid or gel aerosol-generating material and a solid aerosol-generating material. The solid aerosol-generating material may comprise, for example, tobacco or a non-tobacco product.

[0038] Typically, the non-combustible aerosol provision system may comprise a non-combustible aerosol provision device and a consumable for use with the non-combustible aerosol provision device.

[0039] In some embodiments, the disclosure relates to consumables comprising aerosol-generating material and configured to be used with non-combustible aerosol provision devices. These consumables are sometimes referred to as articles throughout the disclosure.

[0040] In some embodiments, the non-combustible aerosol provision system, such as a non-combustible aerosol provision device thereof, may comprise a power source and a controller. The power source may, for example, be an electric power source or an exothermic power source. In some embodiments, the exothermic power source comprises a carbon substrate which may be energised so as to distribute power in the form of heat to an aerosol-generating material or to a heat transfer material in proximity to the exothermic power source.

[0041] In some embodiments, the non-combustible aerosol provision system may comprise an area for receiving the consumable, an aerosol generator, an aerosol generation area, a housing, a mouthpiece, a filter and/or an aerosol-modifying agent.

[0042] In some embodiments, the consumable for use with the non-combustible aerosol provision device may comprise aerosol-generating material, an aerosol-generating material storage area, an aerosol-generating material transfer component, an aerosol generator, an aerosol generation area, a housing, a wrapper, a filter, a mouthpiece, and/or an aerosol-modifying agent.

[0043] An aerosol generating device can receive an article comprising aerosol generating material for heating. An "article" in this context is a component that includes or contains in use the aerosol generating material, which is heated to volatilise the aerosol generating material, and optionally other components in use. A user may insert the article into the aerosol generating device before it is heated to produce an aerosol, which the user subsequently inhales. The article may be, for example, of a predetermined or specific size that is configured to be placed within a heating chamber of the device which is sized to receive the article.

[0044] Fig. 1 shows an aerosol provision system 10 comprising an aerosol provision device 12 and a charging device or charging unit 14. The device 12 is shown located within a cavity or receptacle 16 of the charging unit 14. The device 12 is inserted into the receptacle 16 through an open end or opening 18 thereof. The charging unit 14 comprises a first or proximal end 20 at which the opening 18 is disposed, and a second or distal end 22 opposed to the proximal end. The charging unit 14 defines a longitudinal axis X along a direction which extends between the proximal end 20 and the distal end 22.

[0045] The charging unit 14 comprises a housing 24 which surrounds internal components of the charging unit 14. The housing 24 comprises a proximal end surface 26 which is arranged at the proximal end 20, the opening 18 of the cavity 16 extending through the proximal end surface 26.

[0046] The aerosol provision device 12 is withdrawable from the charging unit 14 to be used by a user separately from the charging unit 14, before being reinserted into the receptacle 16 through the opening 18. In some arrangements, the aerosol provision device 12 is also usable while inserted in the charging unit 14.

[0047] Fig. 2 shows the charging unit 14 of the aerosol provision system 10 of Fig. 1 in a second configuration. The charging unit 14 comprises a slidable lid 28 which is moveable or slidable between at least a first, open position and a second, closed position. Fig. 1 shows the slidable lid 28 in the open position, in which the opening 18 of the receptacle 16 is exposed to the user so that the aerosol provision device 12 may be inserted into the charging unit 14. Fig. 2 shows the slidable lid 28 in the closed position, in which the opening 18 of the receptacle 16 is covered by the slidable lid 28.

[0048] The slidable lid 28 allows the receptacle 16 to be closed when the aerosol provision device 12 is not inserted, which may help protect inner components of the charging unit 14 from damage, for example by exposure to contaminants.

[0049] The charging unit 14 comprises an indicator 36 disposed at the proximal end 20 thereof. The indicator 36 comprises a plurality of light emitters which change state in response to a controller in order to indicate to the user a condition of the aerosol provision system 10, aerosol provision device 12 and/or charging unit 14.

[0050] In the arrangement shown, the slidable lid 28 is configured to cover the indicator 36 when in the open position, so that the indicator 36 is not visible to the user. The indicator 36 is visible when the slidable lid 28 is in the closed position.

[0051] Fig. 3 shows an exploded partial view of the charging unit 14 of Fig. 2, showing elements which form

the slidable lid 28 and the indicator display 36.

[0052] The slidable lid 28 comprises a guide rail 30, a lid bracket 32 and a lid surface element 34. The lid surface element 34 is fixedly attached to the lid bracket 32, in one example as separately-formed parts which are connected together. The lid bracket 32 engages with the guide rail 30 in a slidable manner, to be moveable in one direction therealong. The guide rail 30 is fixedly attached to the charging unit 14 to retain the slidable lid 28 to the charging unit 14.

[0053] The indicator 36 comprises a light element array 38, a light shield 40, and an indicator surface element 42. The light element array 38 is received within the charging unit 14 in a recess 44 formed in the proximal end 20 thereof, so that the light element array 38 is disposed below the proximal end surface 26 and recessed into the charging unit 14. The light shield 40 is received within the recess 44 and positioned above and covering the light element array 38. The indicator surface element 42 is positioned above and covering the light shield 40 and the light element array 38.

[0054] The indicator surface element 42 forms part of the housing 24 of the charging unit 14, in particular forming part of the proximal surface 26 of the charging unit 14. The indicator surface element 42 may be separately formed from the charging unit and attached thereto. The indicator surface element 42 comprises an exterior surface which is visible and handleable by the user in normal use of the charging unit, and an interior surface below which the light shield 40 and light element array 38 are positioned. In one example, the indicator surface element 42 is formed of a thermoplastic material. In one example, the indicator surface element 42 is formed of acrylic.

[0055] The light element array 38 comprises a plurality of light emitting elements 46 configured to be controlled by a controller to change lighting states based on one or more conditions of the aerosol provision system 10, aerosol provision device 12 and/or charging unit 14. The light emitting elements 46 are arranged to emit light through cavities 48 formed in the light shield 40, and through indicator windows 50 formed in the indicator surface element 42. Either or both of the cavities 48 and the indicator windows 50 may each comprise empty spaces extending entirely through the respective light shield 40 and indicator surface element 42, or may comprise one or more transparent or translucent materials through which light can pass to be visible to the user.

[0056] The indicator windows 50 are separated by spacings which comprise material sections of the indicator surface element 42 through which light is substantially blocked from passing. The spacings separate the indicator windows 50 into discrete visual elements. It may be desirable to reduce, or keep small, the size of the spacings between indicator windows 50, to improve the ease with which the user may view the visual elements of the indicator 36, and to improve an overall user impression created by the system.

[0057] The use of a light shield 40 below the indicator surface element 42 allows the light from the light emitting elements 48 to be better divided into the discrete visual elements of the indicator 36.

[0058] In the illustrated example, each of the cavities 48 is associated with only one of the windows, and light passing through each cavity 48 passes through only one of the windows 50. Each cavity 48 is positioned directly below the associated window 50 so that a cross section of the associated window fully overlaps a cross-section of the cavity 48 in the direction in which the two are separated.

[0059] In the illustrated example, each of the plurality of light emitting elements 38 are arranged to emit light through only one of the cavities 48 and only the associated one of the plurality of windows 50. That is, the light emitting elements 38 comprise one corresponding cavity 48 and one corresponding indicator window 50 through which they are configured to primarily emit light. In other arrangements, light emitting elements may be arranged to emit light through multiple cavities and the associated windows of those cavities.

[0060] In the illustrated example, each cavity 48 comprises only one light emitting element 38. In other arrangements, cavities may comprise more than one light emitting element arranged to emit light through only that cavity.

[0061] Fig. 4 shows a top-down view of the light shield 40 and light element array 38 of Fig. 3. The cavities 48 are formed through a body 52 of the light shield 40, which is formed or a material or materials which substantially blocks light. The body 52 comprises ribs 54 which are regions of material formed between two adjacent ones of the cavities 48, for example being integrally formed as part of the body 52. In the illustrated example, the light shield 40 comprises a linear arrangement of a pair of inner cavities 48a disposed substantially in a centre of the body 52 with a rib 54 separating the two cavities 48a, and a circular arrangement of outer cavities 48b towards an outer edge of the body 52 and encircling the pair of inner cavities 48a, with ribs arranged between each adjacent two of the outer cavities 48b. It will be understood that the present disclosure extends to other arrangements which vary depending on the form of the indicator.

[0062] Fig. 5A shows a cross-sectional view of the light shield 40 and light element array 38 of Fig. 4 along the line A, passing through the inner cavities 48a. The light emitting elements 46 are disposed below the body 52 of the light shield 40, and are arranged to emit light at least along a direct path P1 which passes through one of the cavities 48 in order to be visible to a user through the indicator windows. The light emitting elements 46 further emit light along direct paths, such as those shown at P2, which are substantially blocked by the body 52 of the light shield 40, such that the light emitting element 46 emits light through only the one cavity 48 with which it corresponds. In particular, the ribs 54 between cavities 48 block light along some direct paths, such as those shown

at P4, which would otherwise pass through adjacent indicator windows and cause lighting bleed.

[0063] The form of the light shield 40 thereby reduces lighting bleed which might otherwise occur between the light emitting elements 46, especially between adjacent light emitting elements 46. Lighting bleed may lead to difficulty for the user in differentiating between the discrete light elements, and decrease the effectiveness of the indicator.

[0064] Fig. 5B shows a cross-sectional view of the light shield 40 and light element array 38 of Fig. 4 along the line B, passing through two of the outer cavities 48b. As will be appreciated, the body 52 of the light shield 40 and the ribs 54 limit light bleed between adjacent ones of the cavities in a similar manner to that described in relation to the inner cavities 48a of Fig. 5A.

[0065] Fig. 6 shows a side view of the light element array 38, light shield 40 and indicator surface element 42 of Fig. 2, with exaggerated spacing between the components for illustrative purposes. As described above, the light emitting elements 46 emit light at least along a direct path P1 which passes through one cavity 48 of the light shield 40 and through one indicator window 50 of the indicator surface element 42.

[0066] As can be seen, the light emitting array 38, light shield 40 and indicator surface element 42 must be carefully aligned so that every part of the indicator window 50 receives light from the light emitting element 46, including at extremes of the window 50 such as that receiving light along path P2. If the components are misaligned, for example due to manufacturing variability, sections of the indicator window 50 may not receive any light from the light emitting element 46 due to being obscured by part of the light shield 40 (such as rib 54), leading to reduced usability of the indicator and a poorer user impression.

[0067] In order to increase the tolerance for manufacturing and construction variability, the cavities 48 may comprise cross-sectional areas A1 which are greater than cross-sectional areas A2 of the respective indicator windows 50. As will be seen, the cross-sectional area is that which is in a plane along the primary light path from the light emitting element 46, which is generally a direction between the interior surface 41 of the indicator surface element and the light emitting element. Enlarging the cavity 48 relative to the indicator window 50 allows light to reach each extreme of the indicator window 50 without being obscured by parts of the light shield, even if the component parts of the indicator 36 are slightly misaligned.

[0068] The size of the cavities 48 and their cross-sectional area A1 may be limited by a required thickness of the ribs 54 between adjacent cavities 48. There may be a practical limitation on a minimum thickness of the ribs 54 in order for the body 52 of the light shield 40 to be easily manufacturable, and to avoid defects or damage.

[0069] In order to allow light to reach every part of the indicator window 50 without requiring overly-thin ribs 54 between adjacent cavities 48, each rib 54 may be formed with a gap or spacing 56 separating an upper surface of the rib 54 from the interior surface of the indicator surface element 42. The rib 54 may be formed with a gap or spacing 57 separating the upper surface of the rib 54 from an upper surface 58 of the body 52 of the light shield 40, in order to increase the spacing 56 from the indicator surface element 42. In one example, the upper surface 58 of the light shield 40 contacts the interior surface 41 of the indicator surface element 42, such that the spacing 56 of the rib 54 below the interior surface of the indicator surface element 42 is the same as the spacing 57 of the rib below the upper surface 58 of the light shield 40.

[0070] The spacing 56 of the rib 54 is large enough to allow light to pass along direct paths such as that shown at P2, which reaches one extreme end of the indicator window 50, and that shown at P3, which is blocked by the indicator surface element 42 at the spacing between adjacent indicator windows. Allowing light along path P3 does not contribute to lighting bleed, as the light does not reach an adjacent window, but does increase the available tolerance for forming and arranging the light shield 40.

[0071] At the same time, the spacing 56 of the rib 54 is small enough that the rib 54 still blocks light passing along direct paths such as that shown at P4, which would otherwise pass into an adjacent indicator window 50 and contribute to lighting bleed. As such, the rib 54 is arranged so that light from the light elements 46 cannot pass through the spacing 56 and into the adjacent indicator window 50.

[0072] An arrangement is shown in which light emitting elements are formed as part of a light element array which is separate to a light shield. In other arrangements, the light emitting elements or light element array may be formed as part of the light shield, as a single connected or integral component. In such arrangements, the light elements may be positioned within the cavities of the light shield, rather than below the cavities.

[0073] In one example, the plurality of light elements may comprise a plurality of light-emitting diodes. In one example, the plurality of light elements may be configured to indicate a condition of the aerosol provision system, aerosol provision device and/or charging unit by one or more of an on/off state of the light elements, a light intensity of the elements, or a visible light colour emitted by the light elements. In one example, the indicator may be configured to indicate a power or charge level of a power supply of the charging unit.

[0074] Fig. 7 shows a cutaway view of the charging unit 14 of Fig. 2 sectioned along the line C, showing in greater detail features of the slidable lid 28. As described above, the slidable lid comprises a guide rail 30, a lid bracket 32 and a lid surface element 34, or upper portion, which is fixedly attached to the lid bracket 32. The guide rail 30 is fixedly attached to the lid bracket 32, and is slidably received in a space 31 formed between the attached lid bracket 32 and lid surface element 34. The lid bracket

32 and lid surface element 34 are thereby slidable relative to the proximal surface 26 of the charging unit 14 along the direction 60 so that the slidable lid 28 may be moved from the closed position to the open position and back again.

[0075] The lid surface element 34 forms an upper surface of the slidable lid, and may be formed of a first material which may be selected for the impression created on the user, for example one which provides a tactile feel and which leads to easy actuation of the slidable lid 28. The first material may additionally or alternatively be a lightweight or easily manufacturable material. In one example, the first material comprises a polymer.

[0076] The lid bracket 32 may comprise a second material which has a greater stiffness, a greater strength and/or a greater hardness than the first material, in order to provide structural rigidity and reinforcement which might otherwise be lacking in the lid surface element alone. In one example, the second material comprises a metal.

[0077] As shown, the slidable lid 28 passes over the region of the proximal surface 26 in which the indicator may be positioned, and in which the surface may be formed by the indicator surface element 42. The movement of the lid bracket 32 over the proximal surface 26 may be prone to cause scratching or other damage to the visible proximal surface 26 due to the harder material used by the lid bracket 32. Damage may be especially prone to occur over the indicator surface element 42, which may be formed of a material chosen to form a particular user impression such as a thermoplastic or acrylic and which may have a reduced roughness as compared to other parts of the charging unit housing. In addition, scratches or damage may be particularly visible to the user at the location of the indicator, and may interfere with the visibility of the indicator.

[0078] Fig. 8 shows an isolated view of the lid bracket 32 and lid surface element 34 of Fig. 7 from below, showing an underside surface 62 of the lid bracket 32 which is positioned adjacent to the proximal surface of the charging unit in normal use. In order to reduce the potential for damage caused by the lid bracket 32, there is arranged at least one film layer 64 attached to the lid bracket 32 at the underside surface 62 so as to be arranged between the lid bracket 32 and the surface of the charging unit 14. In the example shown, film layer 64 comprises two separate portions 64a, 64b which are separated in a direction perpendicular to the direction in which the lid bracket 32 moves (which may be termed a lateral direction), which may allow other components to be arranged within an open centre region 66 of the lid bracket 32.

[0079] In some examples, the film layer 64 may be attached to the lid bracket 32 by an adhesive layer between the film layer 64 and the underside surface 62. The film layer 64 may be separately-formed to the lid bracket 32 and subsequently applied to the underside surface 62 using the adhesive.

[0080] In some examples, the film layer 64 may comprise polyoxymethylene (POM) or polyethylene terephthalate (PET), which are particularly suitable for interaction between the metal bracket and proximal surface to prevent scratching without limiting movement of the slidable lid.

[0081] The various embodiments described herein are presented only to assist in understanding and teaching the claimed features. These embodiments are provided as a representative sample of embodiments only, and are not exhaustive and/or exclusive. It is to be understood that advantages, embodiments, examples, functions, features, structures, and/or other aspects described herein are not to be considered limitations on the scope of the invention as defined by the claims or limitations on equivalents to the claims, and that other embodiments may be utilised and modifications may be made without departing from the scope of the claimed invention. Various embodiments of the invention may suitably comprise, consist of, or consist essentially of, appropriate combinations of the disclosed elements, components, features, parts, steps, means, etc, other than those specifically described herein. In addition, this disclosure may include other inventions not presently claimed, but which may be claimed in future.

Claims

1. An aerosol provision system (10) comprising:

   a housing element (42) defining an exterior surface and an interior surface (41) and a plurality of windows (50) formed through the housing element (42) from the exterior surface to the interior surface (41);
   a light shield (40) positioned beneath the interior surface (41) of the housing element (42), the light shield (40) comprising a plurality of cavities (48) and one or more ribs (54), each rib (54) separating two of the cavities (48), each rib (54) spaced from the interior surface (41) of the housing element (42) to define a gap (57) therefrom; and
   a plurality of light elements (46), each light element (46) positioned to be visible though one of the cavities (48) and one of the windows (50) in the exterior surface.

2. The aerosol provision system (10) of claim 1, wherein the plurality of light elements (46) comprise a plurality of LEDs.

3. The aerosol provision system (10) of claim 1 or 2, further comprising a battery, wherein the plurality of LEDs are configured to illuminate to indicate a charge level of the battery.

4. The aerosol provision system (10) of any one of claims 1 to 3, wherein each cavity (48) is associated with one window (50), the cavity (48) positioned directly below the associated window (50).

5. The aerosol provision system (10) of claim 4, wherein the light elements (46) are each arranged to emit light which directly passes through only one cavity (48) and the associated window (50) of the cavity (48).

6. The aerosol provision system (10) of claim 5, wherein the rib (54) is arranged so as to block any light emitted from the light element (46) from passing directly through a window (50) other than the associated window (50).

7. The aerosol provision system (10) of any one of claims 4 to 6, wherein each of the windows (50) defines a cross-sectional area, each of the cavities (48) defines a cross-sectional area, and each cavity (48) has a cross-sectional area larger than the cross-sectional area of the associated window (50) of that cavity (48).

8. The aerosol provision system (10) of any one of claims 1 to 7, wherein the housing element (42) is separately formed and attached to a housing (24) of the aerosol provision system (10).

9. The aerosol provision system (10) of any one of claims 1 to 8, wherein the housing element (42) comprises acrylic.

10. The aerosol provision system (10) of any one of claims 1 to 9, further comprising a receptacle (16) for receiving an aerosol provision device (12) and a lid (28) moveable between a first position and a second position, wherein the lid (28) in the first position covers the exterior surface of the housing element (42) and in the second position covers the receptacle (16).

11. The aerosol provision system (10) of claim 10, further comprising:

    an aerosol provision device (12); and
    a charging unit (14) for charging or powering the aerosol provision device (12), the housing element (42), light shield (40), plurality of light elements (46) and receptacle (16) forming part of the charging unit (14), the aerosol provision device (12) receivable within the receptacle (16) when the lid (28) is in the first position.

12. The aerosol provision system (10) of claim 10 or 11, wherein the lid (28) includes a structural bracket (32) formed of a metal material and a film layer (64) attached to an underside (62) of the bracket (32) to be positioned between the bracket (32) and the exterior surface of the housing (24) in the first position of the lid (28), the film layer (64) formed of a thermoplastic material.

13. The aerosol provision system (10) of claim 12, wherein the film (64) comprises polyoxymethylene (POM) or polyethylene terephthalate (PET).

14. The aerosol provision system (10) of claim 12 or 13, wherein the film (64) is attached to the underside (62) of the lid (28) by an adhesive layer.

15. The aerosol provision system (10) of any one of claims 12 to 14, wherein the lid (28) comprises an upper portion (34) attached to the bracket (32), the upper portion (34) forming an upper surface of the lid (28), the upper portion (34) comprising a different material to the metal material of the bracket (32).

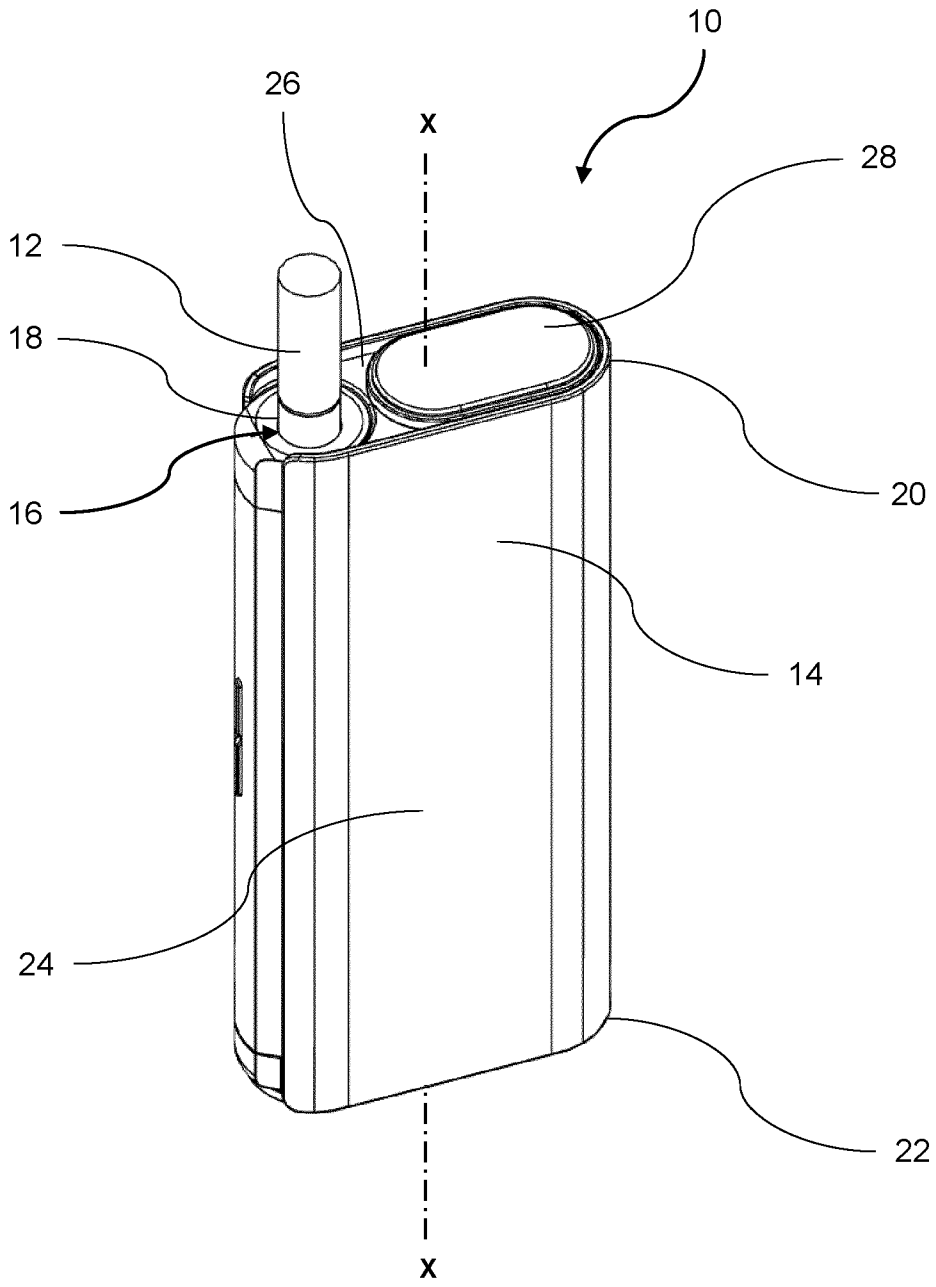

FIG. 1

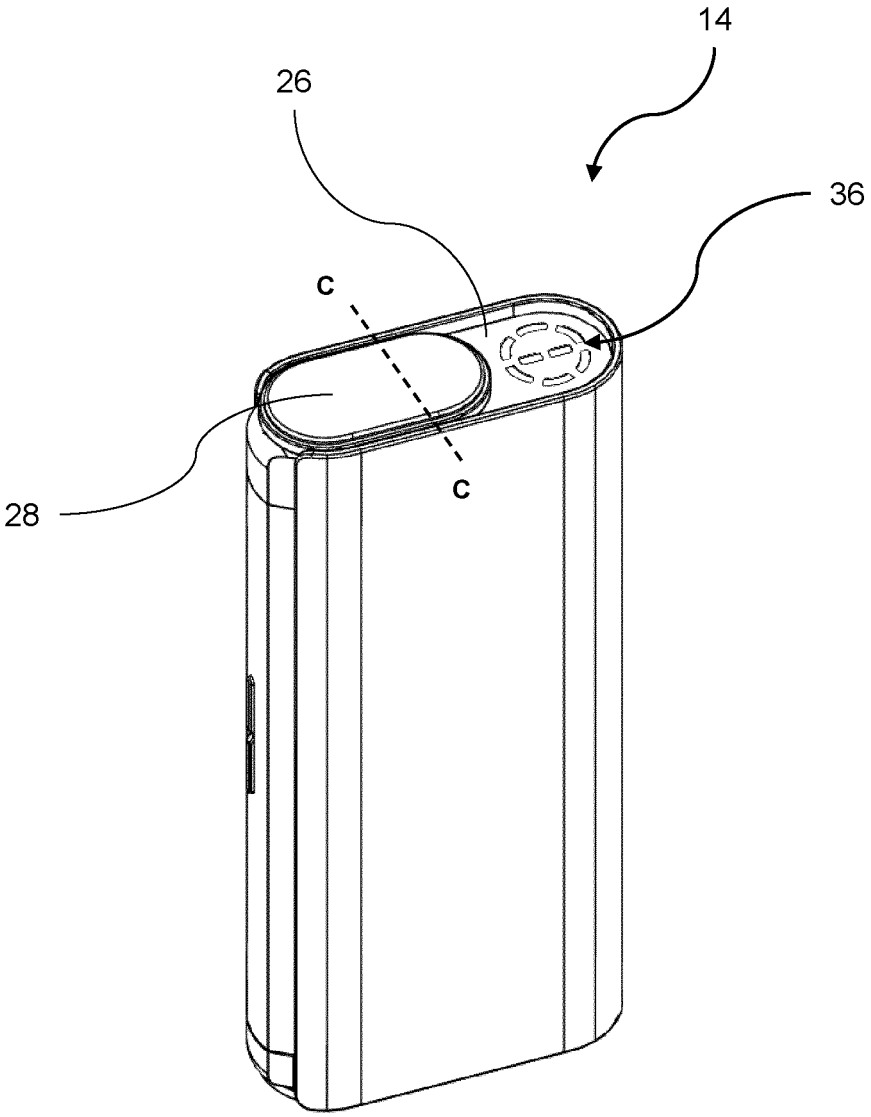

FIG. 2

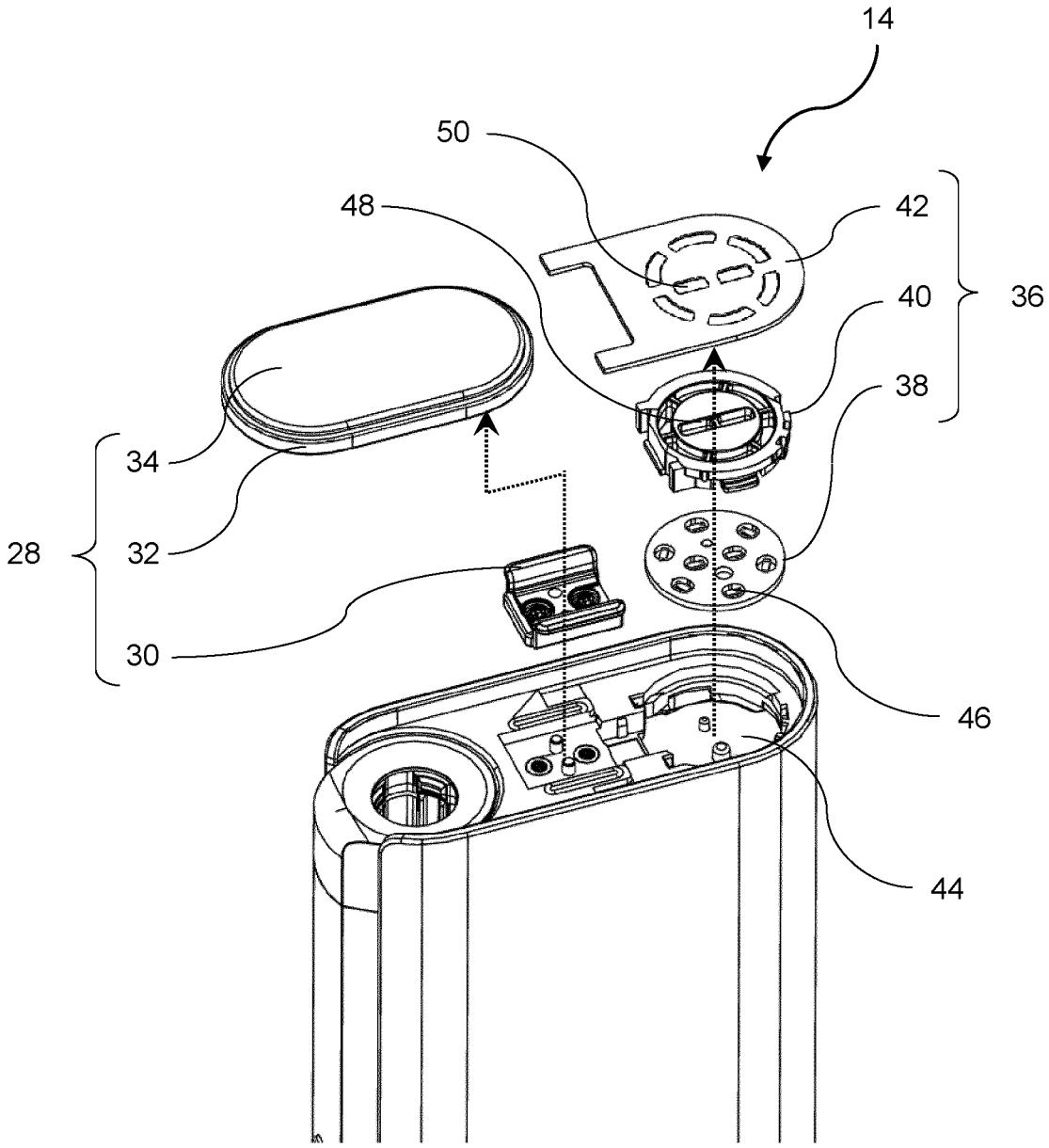

FIG. 3

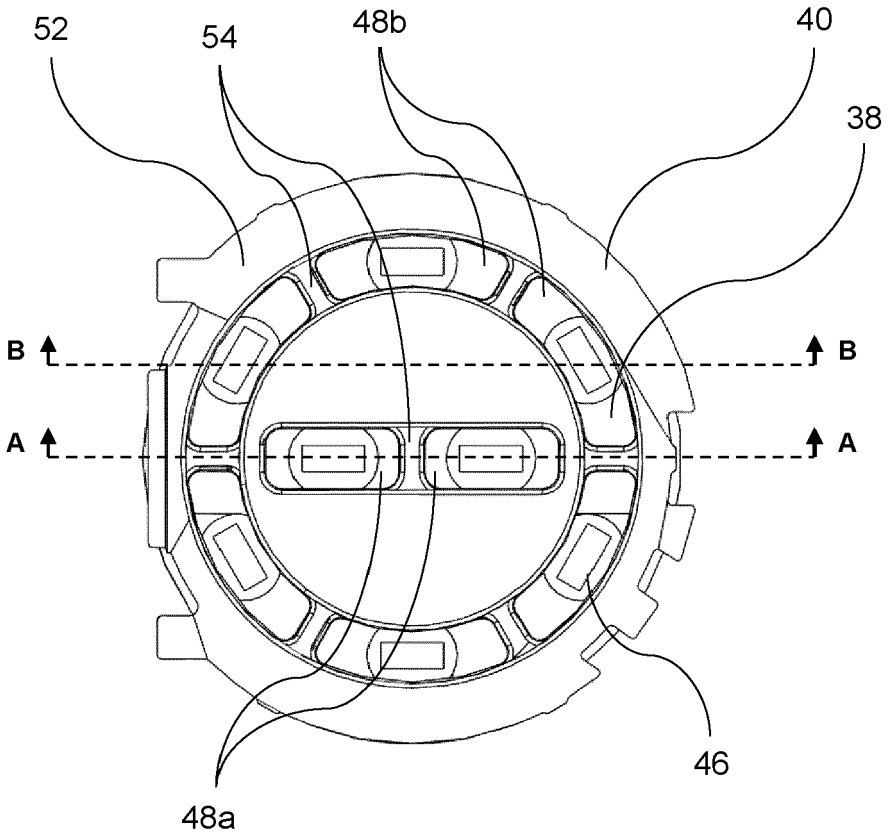

FIG. 4

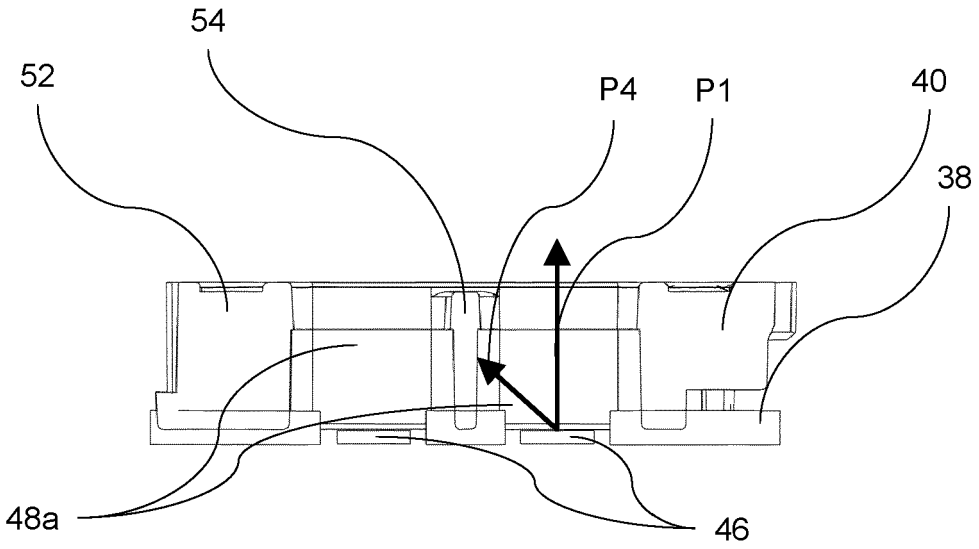

FIG. 5A

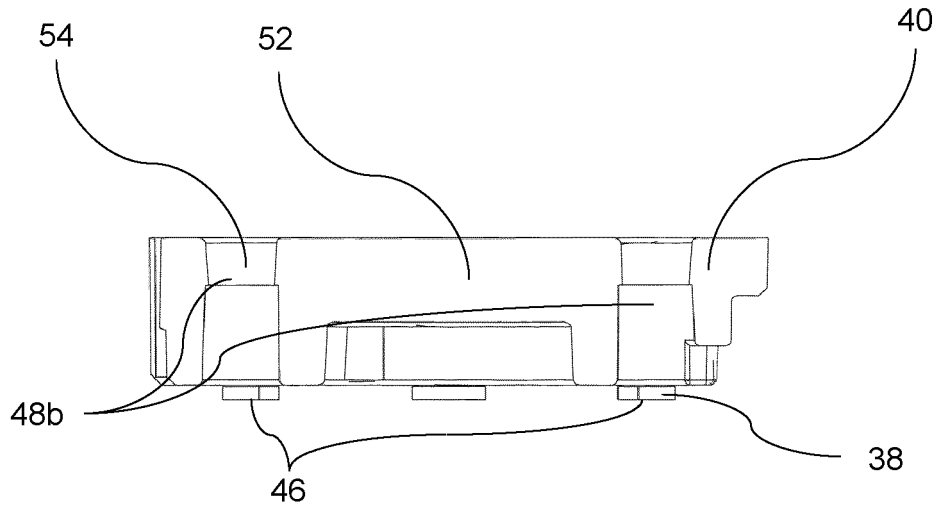

FIG. 5B

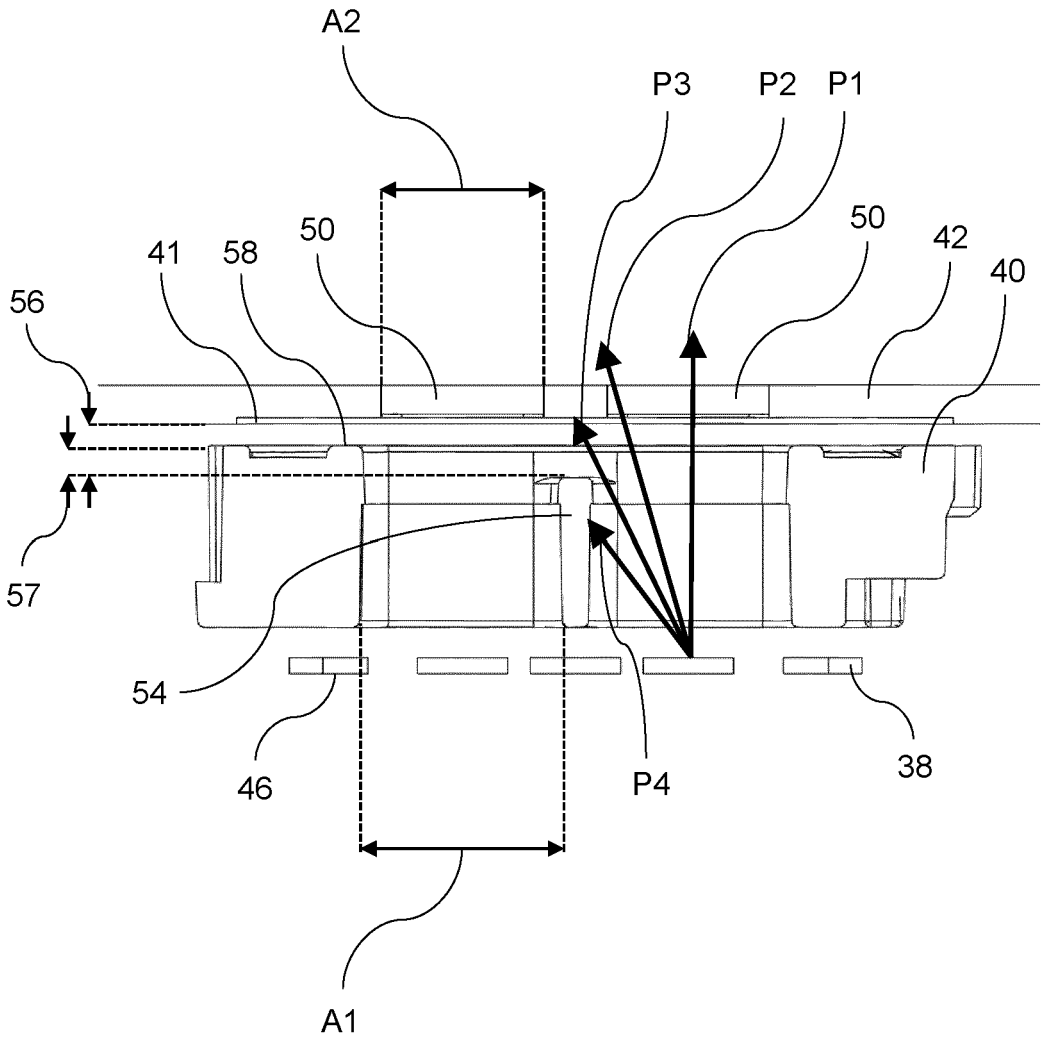

FIG. 6

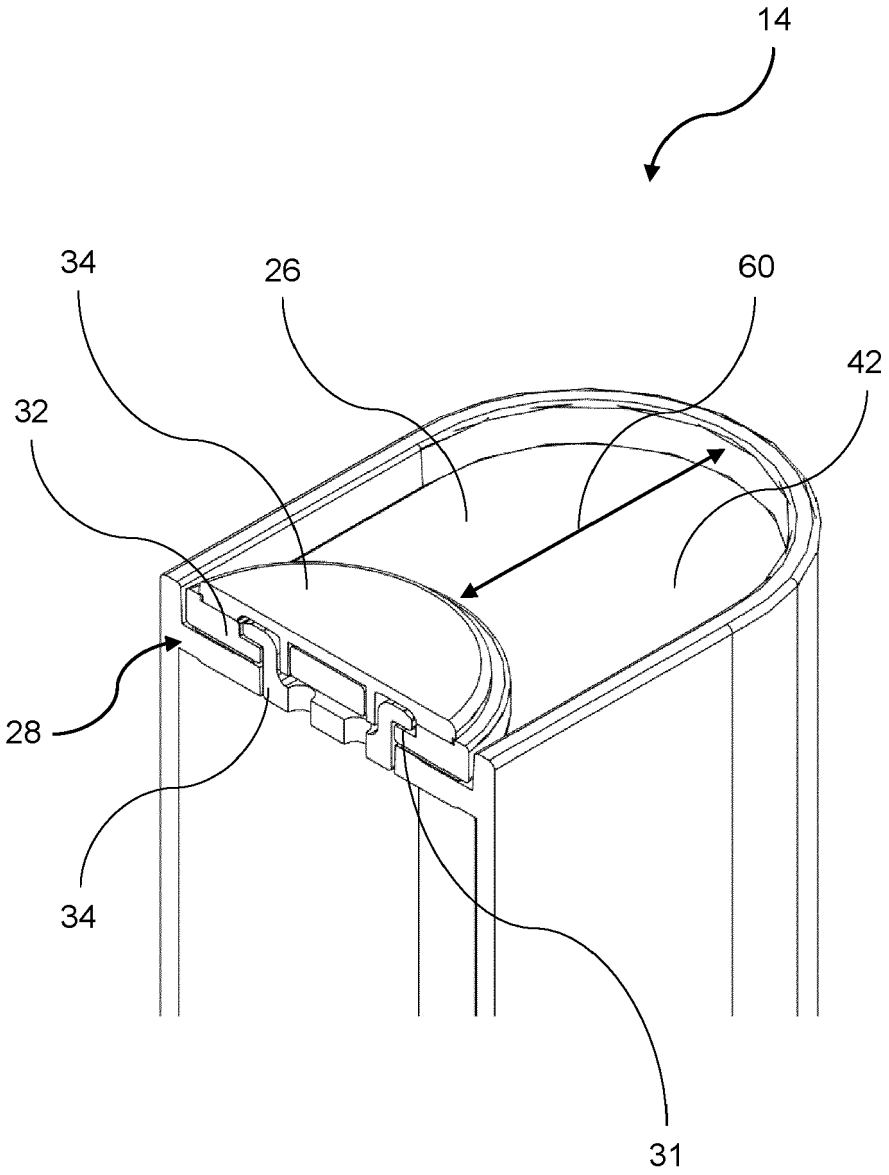

FIG. 7

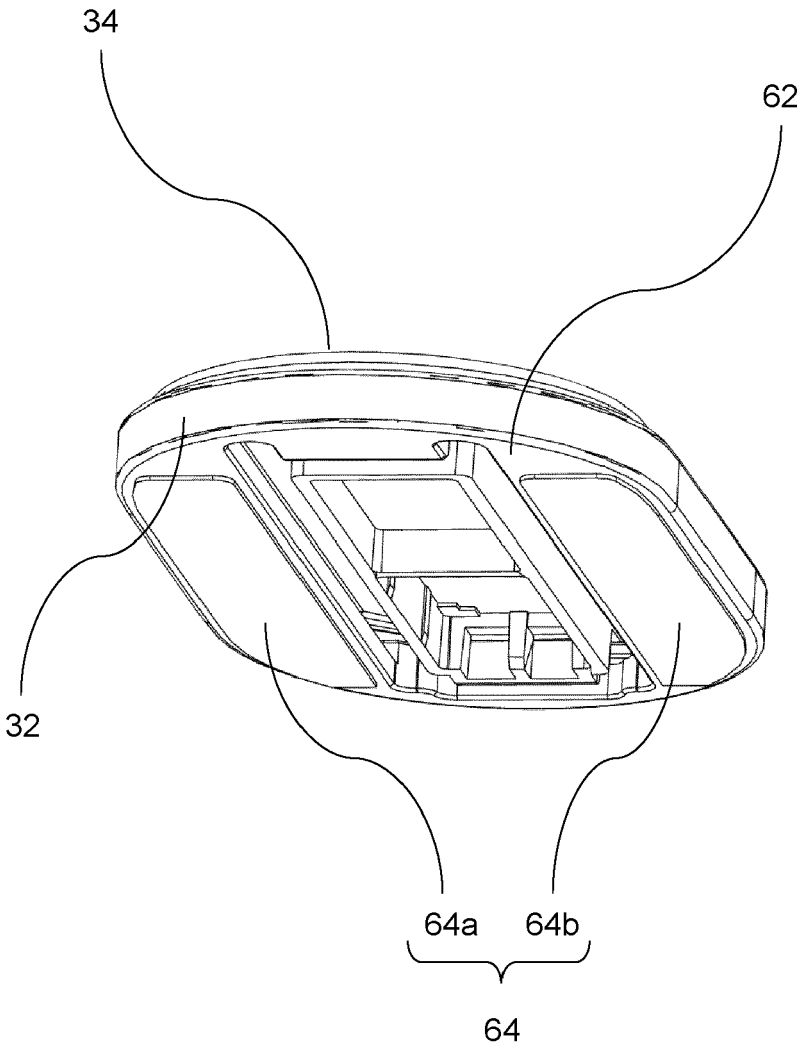

FIG. 8

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EUROPEAN SEARCH REPORT

Application Number
EP 24 15 4008

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X A	US 2022/151305 A1 (SAYED ASHLEY JOHN [GB] ET AL) 19 May 2022 (2022-05-19) * paragraphs [0043], [0055], [0089], [0091], [0094], [0097], [0098], [0100], [0101]; figures 1,9,10,11 *	1-9 12-15	
A	WO 2020/225099 A1 (JT INT SA [CH]) 12 November 2020 (2020-11-12) * page 8, line 13 - line 25; figures 1a,1b * * page 10, line 6 - line 15 * * page 11, line 20 * * page 16, line 27 - line 30; figure 4 * * page 21, line 18 - line 23; figure 6 * * page 21, line 31 - page 22, line 4; figure 5 * * page 29, line 29 - page 30, line 1; figures 15a,15b,15c *	1-15	TECHNICAL FIELDS SEARCHED (IPC) A24F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	17 July 2024	Ettlinger, Mark

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