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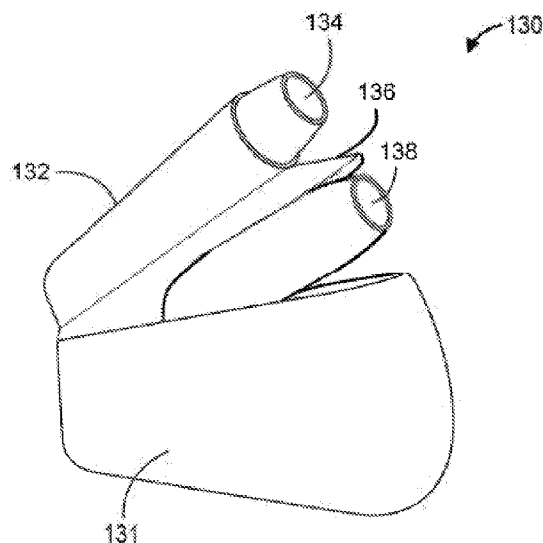


FIG. 9

(57) Abstract: A cover for a device-holder portion of a charging case including a coupler and a storage portion. The coupler may be operable to releasably retain the cover to an external wall of the device-holder portion. The storage portion may define a storage volume in the cover for storing at least one item.



CHARGER DOOR COVER WITH EXTENDED FEATURES

The present invention relates to a charging case for receiving an aerosol generating device and particularly to a cover for a device-holder portion of a charging case. The cover includes a storage volume for storing an item.

Charging cases generally include a pivotable opening configured to releasably hold an aerosol-generating device with a cover, in other words, a charger door cover. Typically, the cover is a solid body to simply retain the aerosol-generating device in the charger.

In some systems, the aerosol-generating device is configured to receive an aerosol-generating article comprising a solid aerosol-forming substrate, such as a gathered, crimped sheet of tobacco. In these systems, the device typically comprises an atomiser, which is arranged to heat the aerosol-forming substrate when the article is received in the device. The aerosol-generating article may also comprise a filter, which is wrapped together with the aerosol-forming substrate in the form of a rod, similar to a conventional cigarette. In other systems, the device is configured to receive a cartridge comprising an atomiser and a liquid aerosol-forming substrate. Such cartridges are often referred to as cartomisers. Common types of atomiser used in cartomisers comprise a coil of heater wire wound around an elongate wick soaked in liquid aerosol-forming substrate.

Some electrically operated aerosol-generating systems comprise a case for releasably holding the aerosol-generating device when not in use. Such cases may provide a degree of protection for the aerosol-generating device and may also provide additional functions such as recharging and refilling with aerosol-forming substrate.

Cases for holding aerosol-generating devices often comprise housings defining narrow openings into which a user is required to insert the device. The narrow openings typically have a width similar to the width of the aerosol-generating device. Users inserting an aerosol-generating device into these cases are generally required to closely align the aerosol-generating device with the narrow opening to insert the device into the case. This can be difficult for users, especially in low light or when the user is moving.

It would be desirable to provide a solution for adapting covers or a charger door cover to provide functionality for a variety of different users of the charging case. It would be desirable to provide a charger door cover that can contain and optionally charge an aerosol-generating device.

According to this disclosure, there is provided a cover for a device-holder portion of a charging case, the cover comprising a coupler and a storage portion. The coupler is operable to releasably

retain the cover to an external wall of the device-holder portion. The storage portion defines a storage volume in the cover for storing at least one item.

According to this disclosure, there is provided a cover for an external wall of a device-holder portion of a charging case, the cover comprising a coupler and a storage portion. The coupler is configured to releasably retain the cover to the external wall of the device-holder portion. The storage portion defining a storage volume in the cover for storing at least one item

According to this disclosure, there is provided a charging case for receiving and charging an aerosol-generating device, the case comprising a housing, a device-holder portion, and a cover. The housing has an opening. The device-holder portion is moveably coupled to the housing and moveable relative to the housing between an open position and a closed position. The device-holder portion may be pivotally coupled to the housing. The device-holder portion comprises an external wall and one or more internal walls arranged to releasably hold an aerosol-generating device. The cover comprises a storage portion, and the cover is retained to an external wall of the device-holder portion. The storage portion defines a storage volume in the cover for storing at least one item. Preferably, the cover comprises a coupler arranged to releasably retain the cover to the external wall.

According to this disclosure, there is provided a kit comprising a charging case. The case comprising a housing, a device-holder portion, and a cover. The housing has an opening. The device-holder portion is moveably coupled to the housing and moveable relative to the housing between an open position and a closed position, the device-holder portion comprising an external wall and one or more internal walls arranged to releasably hold an aerosol-generating device. The cover comprises a coupler and a storage portion. The coupler is operable to releasably retain the cover to an external wall of the device-holder portion. The storage portion defines a storage volume in the cover for storing at least one item. The device-holder portion may be moveably coupled to the housing, and moveable relative to the housing between an open position and a closed position.

Providing a cover with a storage portion as described above provides improved functionality of a charging case since the storage portion can accommodate various items. For example, the storage portion can accommodate an aerosol-generating device thereby allowing a charging case to accommodate at least two aerosol-generating devices. This may enable the charger to contain and optionally charge two aerosol-generating devices at the same time. Alternatively, the storage portion may provide a device that can accommodate customizable displays or other electronics. Displays and electronics may enable functionality for a variety of different users, for instance to meet the demands of visually impaired users without producing a charging case specifically for such users.

Other electronics may include biometric sensors that may allow for a charging case with security features and prevent access to a minor.

Preferably, the storage portion is configured to receive and store an aerosol-generating device within the storage volume.

5 Preferably, the cover comprises a lid having an open position and a closed position. The lid may be configured to expose the storage volume when in the open position. The lid may also be configured to cover the storage volume in the closed position. Furthermore, the lid may be configured to pivot between the open position and the closed position. Alternatively, the lid may pivot about a hinge. Preferably, the cover further comprises a bottom wall and one or more side walls. The bottom
10 wall may comprise the coupler and the one or more side walls may extend from a surface of the bottom wall. Furthermore, the lid may be coupled to at least one of the one or more side walls such that the storage volume is defined between the bottom wall, the one or more side walls, and the lid when the lid is in the closed position.

Preferably, the storage portion is configured to receive electronic circuitry. Preferably, the
15 cover further comprises an electronic coupler operable to electrically couple the electronic circuitry to the case when the electronic circuitry is received in the storage portion. Preferably, the cover is electrically coupled to the charging case when retained to the external wall of the device-holder portion. Preferably, the electronic circuitry is operable to electrically couple the cover to the charging case when the cover is retained to the external wall of the device-holder portion.

20 Preferably, the cover further comprises an at least partially transparent wall adjacent the storage portion. The storage portion may be configured to receive a visual display, or an electronic display.

Preferably, the storage portion is configured to receive a tactile display. Preferably, the
25 storage portion is configured to receive aerosol-generating articles or aerosol-generating device accessories.

The coupler may comprise a magnetic material for coupling to a magnet of the charging case. The coupler may comprise a mechanical interface, such a clip, for coupling to a corresponding mechanical interface of the charging case. Preferably, the coupler comprises a first magnetic coupler and a second magnetic coupler offset at a distance from one another. The first and second magnetic
30 couplers may comprise magnetic material. For instance, the magnetic material may be iron, nickel, cobalt, or other materials that may become magnetized or be magnetically attracted to magnets. In another example, the magnetic material may be a magnet. The first magnetic material may be

positioned towards a proximal end of the cover and the second magnetic material may be positioned towards a distal end of the cover.

The distance between the center of the first magnetic coupler and the center of the second magnetic coupler may be in a range from about 60mm to about 70mm. Preferably, the distance
5 between the center of the first magnetic coupler and the center of the second magnetic coupler is about 60mm to 70mm. Preferably, the distance between the center of the first magnetic coupler and the center of the second magnetic coupler is about 65mm. The first magnetic coupler or the second magnetic coupler may be in a range from about 5mm to about 15mm wide. Preferably, the first magnetic coupler or the second magnetic coupler is about 10mm wide. The first magnetic coupler or
10 the second magnetic coupler may have a circular shape. The diameter of the first magnetic coupler or the second magnetic coupler may be in a range of about 5mm to about 15mm. Preferably, the diameter of the first magnetic coupler or the second magnetic coupler is about 10mm. The first magnetic coupler and the second magnetic coupler may extend outwardly from the cover in order to be received within a corresponding recess in the charging case. The first magnetic coupler and the
15 second magnetic coupler may be positioned within a recess in the cover in order to receive a corresponding protrusion of the charging case. Thus, it is possible for the cover to be secured to the charging case in a stable manner.

Preferably, the storage portion comprises a storage volume in the cover having a width in a range from about 10mm to about 15mm. Preferably, the storage volume in the cover has a width of
20 about 14mm. Preferably, the storage volume in the cover has a length in a range from about 90mm to about 100mm. Preferably, the storage volume in the cover has a length of about 92mm. Preferably, the storage volume in the cover has a depth in a range from about 10mm to about 15mm. Preferably, the storage volume in the cover has a depth of about 14mm. Preferably, the storage volume is polyhedral shaped.

Preferably, the cover further comprises an open end configured to receive at least a portion of an aerosol-generating device into the storage portion. Preferably, the cover further comprises a closed portion configured to releasably hold the at least a portion of the aerosol-generating device when received in the storage portion. Preferably, the closed portion is at an end of the cover.

Preferably, the charging case according comprises a coupler operable to releasably retain
30 the cover to the external wall of the device-holder portion. The coupler may comprise a single magnet. Alternatively, the coupler of the case may comprise a first magnet and a second magnet offset at a distance from one another. The charging case may further comprise at least one power channel arranged to provide electrical power to electronic circuitry in the cover. The charging case may still

further comprise at least one data channel arranged to provide transmit or receive data to or from electronic circuitry in the cover.

The cover may comprise an electronic coupler operable to electrically couple to the charging case. The electronic coupler may be configured to receive power from the charging case. The electronic coupler may be electrically coupled to the charger case using any suitable wired or wireless connection. The electronic coupler may couple to the charging case through the external wall of the device-holder. The electronic coupler may be operable to receive power from the charging case. The electronic coupler may be operable to transmit data to or receive data from the charging case.

Preferably, the kit further comprises one or more aerosol-generating devices.

Advantageously, covers that include a storage portion as described herein may provide a simple way to add features to charging cases without the need for disassembling the charger. As a result, charging cases may be easily customized. Furthermore, the same charger may be used to provide different functionalities by swapping out one cover with a particular functionality for a second cover with a different functionality. Still further, the cover may provide additional functionality that is easy to produce and repair. Additionally, the covers may provide a product that may be easier to update to new standards, trends in electronics, or increase the functionality of the charging case for a user thereby increasing user satisfaction.

According to this disclosure, there is provided a cover for a device-holder portion of a charging case, the cover comprising a storage portion fixed to an external wall of the device-holder portion. The storage portion defines a storage volume in the cover for storing at least one item. In various embodiments, the cover fixed to the external wall of the device-holder portion includes the additional features described above.

Advantageously, the storage portion of the covers may be configured to receive electronics including biometric sensors, displays, wired communication devices, wireless communication devices, charging devices, data storage devices, or aerosol-generating devices.

As used herein, the term "aerosol generating article" is used herein to denote an article wherein an aerosol generating substrate is heated to produce and deliver inhalable aerosol to a consumer. As used herein, the term "aerosol generating substrate" denotes a substrate capable of releasing volatile compounds upon heating to generate an aerosol.

As used herein, the term "aerosol-generating device" refers to a device comprising a heater element that interacts with the aerosol generating substrate of the aerosol generating article to generate an aerosol.

As used herein, the term “charging case” refers to a case capable of receiving an aerosol-generating device and charging a battery the aerosol-generating device. The charging case may include a housing and a device-holder portion. The housing may generally form the shape of the charging case. The device-holder portion may be configured to receive the aerosol-generating device. The device-holder portion may include an external wall capable of being coupled to a cover. The external wall of the device-holder portion may be a surface that faces away from the charging device housing. In other words, the external wall of the device-holder portion may define an external surface of the charging case when a cover is not attached.

The cover may include a coupler and a storage portion. The coupler may be configured to releasably retain the cover to an external wall of the device-holder portion. The storage portion may define a storage volume in the cover for storing at least one item. The storage portion may be outside of the charging case when releasably retained to the external wall of the device-holder portion. In other words, the cover may reside outside of the housing of the charging case when coupled to the device-holder portion. Furthermore, the cover may not extend into a housing of the charging case when coupled to the device-holder portion and the device-holder portion is in a closed position. Advantageously, the cover may provide add-on storage to the charging case without modifying the housing of the charging case. This add-on storage may be customized by the user and easily modified to suit the users needs.

As used herein, the term “storage volume” refers to a volumetric space defined within the cover that may include a recess in the cover or a portion of the cover that is able to receive or house an item. Items that may be stored or received in the storage portion may include one or more of, for example, aerosol-generating devices, aerosol-generating articles, accessories, or electronics. The term “accessories” refers to articles and devices for aerosol-generating devices or charging cases such as, for example, charging cables, cleaning articles or tools, or trays for used aerosol-generating articles.

The main body of the cover may define a long oval shape. The ends of the cover may be rounded. The bottom of the cover may be flat to fit tightly against a charging case. The cover may further include one or more couplers comprising a magnetic material that may provide a strong and stable separable connection. The storage portion may be located in the middle of the cover. The storage portion may have a rectangular cross-sectional area. The storage portion may have a length in a range from about 90mm to about 105mm, a width in a range from about 10mm to about 20mm, and a depth in a range from about 10mm to about 20mm.

The cover may be capable of receiving electronics in the storage portion. The storage portion

may be capable of receiving electronics such as, for example, a near-field communication (NFC) device, a Bluetooth device, a wireless charging device, a reverse wireless charging device, a radio-frequency identification (RFID) device, a Wireless Fidelity (WiFi) device, an inductively chargeable battery, a data storage device, or displays. The cover may include, for example, electronic couplers that may be incorporated into the couplers. The electronic couplers may enable electronics received in the cover to operatively couple to electronics of the charging case. The electronic couplers may provide electronic power and signal coupling.

The cover may further include connector springs on one or more walls that define the storage portion. The electronic couplers may provide an electrical coupling between the connector springs. The connector springs may apply a force on inserted electronics to ensure a tight seating when the cover is detached from the charging case. The connector springs may act as an electrical contact point for electrical contacts of electronics received in the storage portion of the cover.

Electronics may include a housing, electronic circuitry, electronic couplers, and electronic contacts. The electronic circuitry may have a board on chip design and may include any suitable electronics such as, for example, sensors, chips, power storage, passive electrical components, processors, or controllers. The electronic couplers may extend through the housing from the electronic circuitry to the electronic contacts to operatively couple the electronic circuitry to external devices such as, for example, the electronic couplers of the cover or electronics of a charging case. The electronic circuitry may communicate, receive power, or provide power via the electronic couplers and electronic contacts.

Electronics such as RFID, NFC, or WiFi devices may enable the electronic circuitry to communicate with other devices. An RFID device may act as a key to open doors, like a wallet to perform payments, or may be used to interact with services over the internet. Electronics such as a wireless charging device or a reverse charging device may enable the electronic circuitry to charge a charging case inductively or enable an attached charging case to charge another portable device such as for example, a smartphone, inductively (for example, reverse charging). Electronics such as data storage may enable the electronic circuitry to receive or send data for the charging case such as for example, updating the firmware, setting up the user preferences for the charging case or tracking behaviour of the user. If the electronics are not inserted to the cover, the storage portion may be used to store aerosol-generating articles or accessories.

The cover may include a surface that may be at least partially transparent. In other words, the cover may include a surface that may be translucent. The term "transparent" refers to the nature of a material or article to allow visible light to pass through it so that objects behind it may be seen

by a consumer of the device. The at least partially transparent surface may allow electronics received in the cover to further include electronics such as, for example, light emitting displays, reflective displays (for example, electronic ink displays), biometric sensors, or optical sensors. The at least partially transparent surface may allow the displays to be seen through the cover without be exposed.

5 Additionally, the at least partially transparent surface allows biometric sensors or optical sensors to work without being exposed. The at least partially transparent surface provides protection from damage, dust, liquids, contaminants, and other hazards while still allowing the electronics to function properly. The at least partially transparent surface may allow an inactive display to remain hidden below the at least partially transparent surface. An activated display may be visible through the at
10 least partially transparent surface. The at least partially transparent display may have a total transmittance of about 50 percent and about 100 percent. Preferably the at least partially transparent display may have a total transmittance of about 100 percent, or at least about 90 percent, or at least about 80 percent, or at least about 70 percent, or at least about 60 percent, or at least about 50 percent.

15 The storage portion of the cover may receive a reflective display. The reflective display may include electrophoretic, electro wetting, electronic ink or other reflective display technologies. The reflective display can have cover-pigment particles and contrast-pigment particles that may rotate when a very low voltage is applied. Voltages may be applied to the reflective display to form information, a pattern, or a picture. The at least partially transparent surface may allow light to reflect
20 off the reflective display to allow the user to see the information, patterns, or pictures formed on the reflective display. Alternatively, a light emitting display may be used. The light emitting display may be any suitable display such as, for example, a liquid crystal display (LCD), light emitting diode (LED) displays, organic light emitting diode (OLED) display, for example. The at least partially transparent surface may allow light from the light emitting display to pass through the surface of the cover to allow
25 the user to see the display.

The cover may include an opening at a top surface that may allow a user to touch a surface of electronics that may be inserted in the cover. The top surface may face away from the charging case when the cover is attached to such. The opening may have a smaller are than the electronics in order to ensure a tight seating and to prevent the electronics from sliding through the opening. The
30 surface of the electronics may have a matrix of moveable pins providing a tactile display. Said moveable pins can be moved upwards to create an elevation that a user can perceive through touch. The moveable pins may be selectively moved to convey messages in braille or provide tactile images to the user.

Additionally, a lid may be coupled to the top surface that may be pivotable between an open position and a closed position. In the open position the surface of the electronics may be exposed allowing the user to touch the surface of the electronics. In the closed position the lid may cover the electronics protecting the electronics from damages, dust, debris, contaminants, for example. The lid
5 may be pivotally coupled to the top surface via a hinge.

The storage portion may generally be shaped for storing an aerosol-generating device. The cover may include an access point or opening at the top surface that is configured to receive at least a portion of the aerosol-generating device into the storage portion. The aerosol-generating device may be slidably received into the storage portion. The aerosol-generating may be inserted “upside-
10 down” device from being exposed to dust and other contaminants. In other words, the aerosol-generating device may be inserted with an end of the aerosol-generating device with the opening for aerosol generating articles down into the storage portion or slot, thus leaving a connector end at an open top end of storage portion.

The cover may include a lid configured to cover the access point or opening in the top surface.
15 The lid may be pivotable between an open position and a closed position. In the open position the storage volume may be exposed, and the aerosol-generating device, or any other devices or accessories, may be inserted or removed from the storage portion. In the closed position, the lid is configured to cover the storage volume protecting any contents of the storage portion from dust, liquid, debris, or other contaminants. The lid may be coupled to the top surface via a hinge.

20 The storage portion may further include a bottom wall and one or more side walls extending from a surface of the bottom wall. The lid may be coupled to the one or more side walls such that the storage volume is defined between the bottom wall, the one or more side walls, and the lid when the lid is in the closed position. The lid may be coupled to the one or more side walls via the hinge. The lid may be replaceable or interchangeable.

25 The storage portion may be configured to hold or receive an aerosol-generating device, aerosol-generating articles, accessories, for example. This may enable the charging case to receive at least 2 aerosol-generating devices. Additionally, this may enable the charging case to charge at least 2 aerosol-generating devices. Alternatively, the storage portion may be configured to store a power-bank for carrying extra energy to give an attached charging case additional energy storage or
30 to recharge the charging case.

In one embodiment, the cover may be fixed to an external wall of a device-holder portion of a charging case. In other words, the cover may be integrally formed with the device-holder portion. In this embodiment, the cover may not be releasably retained to the charging case. The cover fixed to

the external wall may include a storage portion as described herein. For example, the cover fixed to the external wall may include a storage portion configured to receive an aerosol-generating device, a power-bank, or electronics. The cover fixed to the external wall may further include a bottom wall and one or more side walls extending from a surface of the bottom wall. The lid may be coupled to the one or more side walls such that the storage volume is defined between the bottom wall, the one or more side walls, and the lid when the lid is in the closed position. The lid may be coupled to the one or more side walls via the hinge. The lid may be replaceable or interchangeable.

All scientific and technical terms used herein have meanings commonly used in the art unless otherwise specified. The definitions provided herein are to facilitate understanding of certain terms used frequently herein.

As used in this specification and the appended claims, the singular forms “a”, “an”, and “the” encompass embodiments having plural referents, unless the content clearly dictates otherwise.

As used in this specification and the appended claims, the term “or” is generally employed in its sense including “and/or” unless the content clearly dictates otherwise.

As used herein, “have”, “having”, “include”, “including”, “comprise”, “comprising” or the like are used in their open-ended sense, and generally mean “including, but not limited to”. It will be understood that “consisting essentially of”, “consisting of”, and the like are subsumed in “comprising,” and the like.

The words “preferred” and “preferably” refer to embodiments of the invention that may afford certain benefits under certain circumstances. However, other embodiments may also be preferred under the same or other circumstances. Furthermore, the recitation of one or more preferred embodiments does not imply that other embodiments are not useful, and is not intended to exclude other embodiments from the scope of the disclosure, including the claims.

FIG. 1 is a schematic diagram of a charging case in a closed position with releasable covers.

FIGS. 2A–2C are schematic diagrams of a cover for a device-holder portion of a charging case.

FIGS. 3A–3C are schematic diagrams of another cover for a device-holder portion of a charging case.

FIGS. 4A and 4B are schematic diagrams of electronics for a cover for a device-holder portion of a charging case.

FIG. 5 is a cover for a device-holder portion of a charging case with inserted electronics.

FIG. 6 is a schematic diagram of a cover for a device-holder portion of a charging case with inserted consumables.

FIGS. 7A and 7B are schematic diagrams of a cover for a device-holder portion of a charging case with an inserted customizable display.

FIG. 8 is a schematic diagram of a cover for a device-holder portion of a charging case with an inserted tactile display.

5 **FIG. 9** is a schematic diagram of a charging case in an open position with a cover for a device-holder portion of a charging case with a storage portion for an aerosol-generating device.

FIGS. 10 and 11 are schematic diagrams of another charging case with a cover for a device-holder portion of a charging case with a storage portion for an aerosol-generating device.

10 The covers for a device-holder portion of a charging case depicted in **FIGS. 1-11** illustrate one or more embodiments of covers described above. The schematic drawings are not necessarily to scale and are presented for purposes of illustration and not limitation. The drawings depict one or more aspects described in this disclosure. However, it will be understood that other aspects not depicted in the drawings fall within the scope and spirit of this disclosure.

15 The charging case depicted in **FIG. 1** illustrates a charging case **10** that includes a main body **12**, a releasable cover **14**, and a cover **16** with extended features. The charging case **10** may receive an aerosol-generating device within the main body **12** and charge such devices received therein. The cover **14** may be releasably attached to a holder (not shown) of the charging case **10**. The cover **14** may be removed and from the charging case **10** and replaced with the cover **16** with extended features. The cover **16** may include a storage volume with an opening **17**. The cover **16** may
20 accommodate an aerosol-generating device within the storage volume such as, for example, aerosol-generating device **18**. The aerosol-generating device **18** may be received through the opening **17**. Once the aerosol-generating device **18** has been received through the opening **17**, the aerosol-generating device **18** abuts against a closed portion of the cover **16** which in this example is a closed end of the cover **16**. The closed end may releasably hold at least a portion of the aerosol-generating
25 device **18** when received in the cover **16**. For instance, there may be a magnet in the closed end for releasably holding the aerosol-generating device **18**.

30 The cover depicted in **FIGS. 2A-2C** illustrates a cover **20** that includes a main body **22**, couplers **24** and a storage portion **26** defining a storage volume. **FIG. 2A** depicts a bottom view of the cover **20**, **FIG. 2B** depicts a side view of the cover **20**, and **FIG. 2C** depicts a top view of the cover **20**. The main body **22** of the cover **20** may have an elongate oval shape. The ends of the cover **20** may be rounded, and the sides of the cover **20** may be approximately straight. The bottom of the cover **20** may be flat to fit tightly against a charging case. The bottom of the cover **20** may be concave in order to fit against a convex surface of a charging case, thus ensuring a secure connection between

the cover **20** and the charging case. The bottom of the cover **20** may be convex in order to fit against a concave surface of a charging case, thus ensuring a secure connection between the cover **20** and the charging case. The couplers **24** may provide a strong and stable separable connection. For example, the couplers **24** may include magnetic material to magnetically attach to a charging case.

5 In the middle of the cover **20**, there may be a recess, or storage volume, which forms the storage portion **26**.

The cover depicted in **FIGS. 3A–3C** illustrates a cover **40** that includes a main body **42**, couplers **44**, and storage portion **46** that may be capable of receiving electronics in the storage portion **46**. **FIG. 3A** depicts a bottom view of the cover **40**, **FIG. 3B** depicts a side view of the cover **40**, and

10 **FIG. 3C** depicts a top view of the cover **40**. The cover **40** may include electronic couplers **48** that may be incorporated into the couplers **44**. The cover **40** may be provided with the electronic couplers **48** to operatively couple with electronics of the charging case. The electronic couplers **48** may provide electronic power or signal coupling. The electronic couplers **48** may provide a physical connection to connector springs **50** located at the inside of the recess that forms the storage portion **46**. The

15 connector springs **50** may apply a force on inserted electronics to ensure a tight seating when the cover **40** is detached from the charging case. Suitable electronics for the storage portion **46** may include a near-field communication (NFC) device, a Bluetooth device, a wireless charging device, a reverse wireless charging device, a radio-frequency identification (RFID) device, a Wireless Fidelity (WiFi) device, an inductively chargeable battery, a data storage device, or any other suitable

20 electronics.

The electronics depicted in **FIGS. 4A** and **4B** illustrates electronics **60** that may be capable of being inserted into a cover (for example, the cover **40** of **FIG. 3**) as shown in **FIG. 5**. **FIG. 4A** depicts a bottom view of the electronics **60** and **FIG. 4B** depicts a side view of the electronics **60**. The electronics **60** may include a housing **62**, electronic circuitry **64**, electronic couplers **66**, and

25 electronic contacts **68**. The electronic circuitry **62** may have a board on chip design and may include any suitable electronics such as, for example, sensors, chips, power storage, passive electrical components, processors, controllers, for example. The electronic couplers **66** may extend through the housing **62** from the electronic circuitry **64** to the electronic contacts **68** to operatively couple the electronic circuitry **64** to external devices such as, for example, a cover or a charging case. The

30 electronic circuitry **62** may communicate, receive power, or provide power via electronic couplers **64** and electronic contacts **66**.

Electronics such as RFID, NFC, or WiFi devices may enable the electronic circuitry **62** to communicate with other devices. An RFID device may act as a key to open doors, like a wallet to

perform payments, or may be used to interact with services over the internet.

Electronics such as a wireless charging device or a reverse charging device may enable the electronic circuitry **62** to charge a charging case inductively or enable an attached charging case to charge another portable device such as for example, a smartphone, inductively (for example, reverse charging).

Electronics such as data storage may enable the electronic circuitry **62** to receive or send data for the charging case such as for example, updating the firmware, setting up the user preferences for the charging case or tracking behaviour of the user.

If the electronics are not inserted to the cover **70**, the storage portion **74** may be used to store aerosol-generating articles or accessories **76** as shown in **FIG. 6**.

The covers depicted in **FIG. 7A** and **7B** illustrates covers **80**, **90** where a surface of the door may be at least partially or fully transparent. The at least partially or fully transparent surfaces may allow electronics received in the cover to further include electronics such as, for example, light emitting displays, reflective displays (for example, electronic ink displays), biometric sensors, optical sensors, for example.

As depicted by cover **80**, the surface **82** may be at least partially transparent. As depicted by cover **90**, the surface **92** may be fully transparent. Partially or fully transparent surfaces **82**, **92** enable covers **80**, **90** to house, or receive, electronics that have a display on a surface of the electronics intended to face the at least partially or fully transparent surfaces. An inactive display can remain hidden below the surfaces. An activated display may be visible to the user as shown in **FIG. 7A** and **7B**.

A reflective display **86** may be used. The reflective display **86** may include electrophoretic, electro wetting, electronic ink or other technologies. The reflective display **86** can have cover-pigment particles **87** and contrast-pigment particles **88** that may rotate when a very low voltage is applied. Voltages may be applied to the reflective display **86** to form information, a pattern, or a picture. Alternatively, a light emitting display **96** may be used. The light emitting display **96** may be any suitable display such as, for example, a liquid crystal display (LCD), light emitting diode (LED) displays, organic light emitting diode (OLED) display, for example. The light emitting display **96** may include one or more pixels **98**. A single pixel may include one or more of, for example, an LED, an OLED, a light, a liquid crystal, or a quantum dot.

The cover depicted in **FIG. 8** illustrates a cover **110** that may have an opening **112** at a top surface **114** that may allow a user to touch a surface **118** of electronics that may be inserted in the cover **110**. The opening **112** may have a smaller area than the electronics in order to ensure a tight seating and to prevent the electronics from sliding through the opening. The surface **118** of the

electronics may have a matrix of moveable pins **120**. Said moveable pins **120** can be moved upwards to create an elevation that a user can perceive through touch.

The charging case depicted in **FIG. 9** illustrates a charging case **130** in an open position that may include a housing **131**, a device-holder portion **136**, a first aerosol-generating device **138**, and a cover **132** that may include a storage portion for storing a second aerosol-generating device **134**. The aerosol-generating device **134** may be slidably received into the storage portion of the cover **132**. To protect the aerosol-generating device from being exposed to dust and other contaminants, the aerosol-generating device may be inserted "upside-down." In other words, the aerosol-generating device may be inserted with the end of the aerosol-generating device with the opening for aerosol generating articles down into the storage portion or slot, thus leaving a connector end at an open top end of storage portion. The cover **132** may be retained to an external wall of a charging case **130**. In one embodiment, the cover **132** may be releasably retained or releasably attached to the external wall of the device-holder portion **136**.

In one embodiment, the cover **132** may be fixed to the external wall of a device-holder portion of the charging case **130**. In other words, the cover **132** may be integrally formed with the device-holder portion **136**. In this embodiment, the cover **132** may not be releasably retained to the charging case **130**.

The charging device depicted in **FIGS. 10 and 11** illustrates a charging device **150** including a housing **151** and a cover **153** that may include a storage portion **152** and that may include a lid **154**. Additionally, the charging device **150** may include a device-holder portion **166** that may contain an aerosol-generating device **164** as depicted in **FIG. 11** with the charging device in an open position. The lid **154** may have an open position as depicted in **FIG. 10** and a closed position as depicted in **FIG. 11**. The lid **154** may be configured to expose a storage volume **156** defined by the storage portion **152** when in the open position. The lid **154** may be configured to cover the storage volume **156** when in the closed position. The lid **154** may be configured to pivot between the open position and the closed position. The cover may further include a hinge **158**. Additionally, the lid **154** may be configured to pivot about the hinge **158**.

The storage portion **152** may further include a bottom wall **160** and one or more side walls **162** extending from a surface of the bottom wall. The lid **154** may be coupled to the one or more side walls such that the storage volume **156** is defined between the bottom wall **160**, the one or more side walls **162**, and the lid **154** when the lid is in the closed position. The lid **154** may be coupled to the one or more side walls **162** via the hinge **158**. The lid **154** may be replaceable or interchangeable.

The storage portion **152** may be configured to hold or receive an aerosol-generating device,

aerosol-generating articles, accessories, for example. The storage portion **152** may enable the charging case **150** to store a second aerosol-generating device in addition to aerosol-generating device **164**. Additionally, holding two aerosol-generating devices may enable the charging case to charge both aerosol-generating devices. Alternatively, the storage portion **152** may be configured to
5 store a power-bank for carrying extra energy to give an attached charging case additional energy storage or to recharge the charging case.

Although the examples of a cover provided herein depict examples comprising two couplers, the invention as described herein may comprise a single coupler to releasably retain the cover to a charging case. The use of additional couplers, for example, two or more couplers may help to retain
10 the position of the cover on the charging case.

The exemplary embodiments described above are not limiting. Other embodiments consistent with the exemplary embodiments described above will be apparent to those skilled in the art.

CLAIMS

1. A cover for an external wall of device-holder portion of a charging case, the cover comprising:
5 a coupler configured to releasably retain the cover to the external wall of the device-holder portion; and
a storage portion defining a storage volume in the cover for storing at least one item.
2. A cover according to claim 1, wherein the storage portion is configured to receive and store
10 an aerosol-generating device within the storage volume.
3. A cover according to any preceding claim, wherein the cover comprises a lid having an open position and a closed position, wherein the lid is configured to expose the storage volume when in the open position; and wherein the lid is configured to cover the storage volume in the
15 closed position.
4. A cover according to any preceding claim, wherein the storage portion is configured to receive electronic circuitry.
- 20 5. A cover according to any preceding claim, wherein the cover further comprises an at least partially transparent wall adjacent the storage portion; and
wherein the storage portion is configured to receive a visual display.
6. A cover according to any preceding claim, wherein the storage portion is configured to
25 receive a tactile display.
7. A cover according to any preceding claim, wherein the storage portion is configured to receive at least one aerosol-generating article or at least one aerosol-generating device accessory.
- 30 8. A cover according to any preceding claim, wherein the coupler comprises a first magnetic coupler and a second magnetic coupler offset at a distance from one another.

9. A cover according to claim 8, wherein the distance between the center of the first magnetic coupler and the center of the second magnetic coupler is about 60mm to 70mm.

10. A cover according to any preceding claim, wherein the storage portion comprises a storage volume in the cover having at least one of a width of at least about 10mm to 20mm, a length of at least about 90mm to 100mm, and a depth of at least about 10mm to 20mm.

11. A cover according to any preceding claim, wherein the cover further comprises:
an open end configured to receive at least a portion of an aerosol-generating device into the storage portion.

12. A cover according to claim 11, wherein the cover further comprises:
a closed portion configured to releasably hold the at least a portion of the aerosol-generating device when received in the storage portion.

13. A charging case for receiving and charging an aerosol-generating device, the case comprising:

a housing having an opening;

a device-holder portion moveably coupled to the housing and movable relative to the housing between an open position and a closed position, the device-holder portion comprising an external wall and one or more internal walls arranged to releasably hold an aerosol-generating device; and

a cover comprising a storage portion defining a storage volume for storing at least one item, wherein the cover is retained to the external wall.

14. A kit comprising:

a charging case for receiving and charging an aerosol-generating device, the case comprising:

a housing having an opening;

a device-holder portion movably coupled to the housing and movable relative to the housing between an open position and a closed position, the device-holder portion comprising an external wall and one or more internal walls arranged to releasably hold an aerosol-generating device; and

a cover according to any one of claims 1–12.

15. A kit according to claim 14, further comprising one or more aerosol-generating devices.

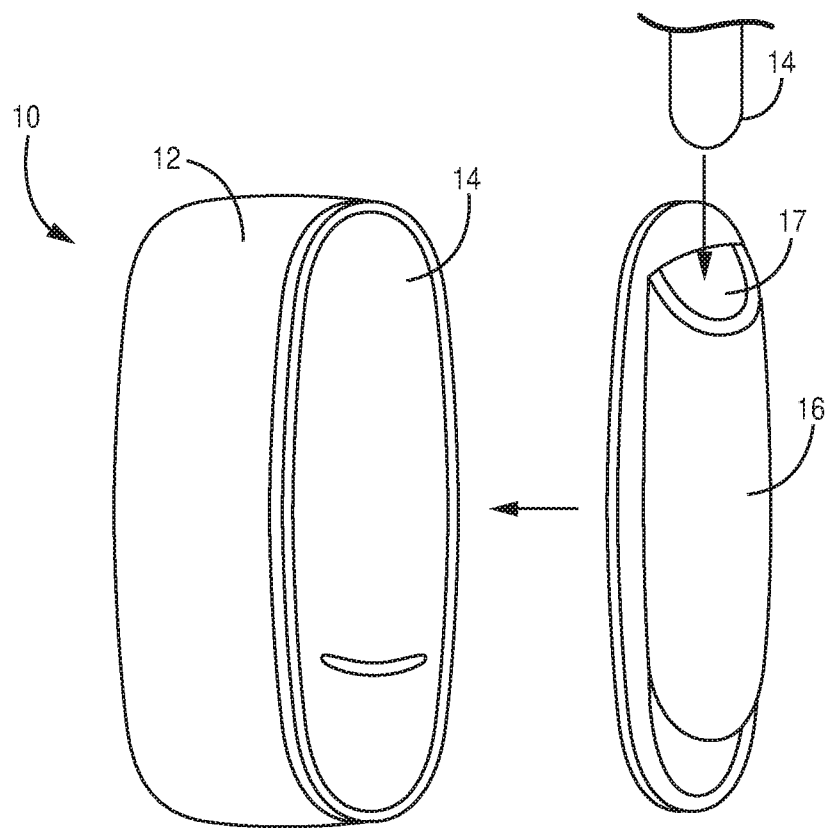


FIG. 1

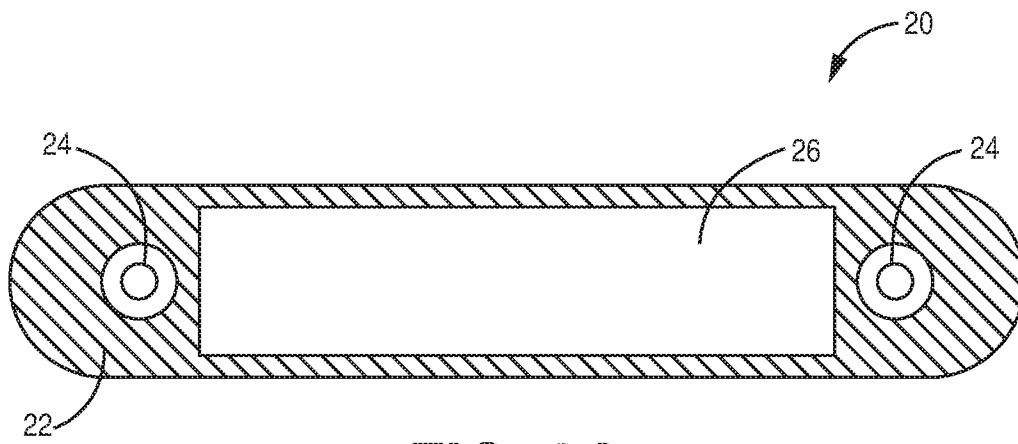


FIG. 2A

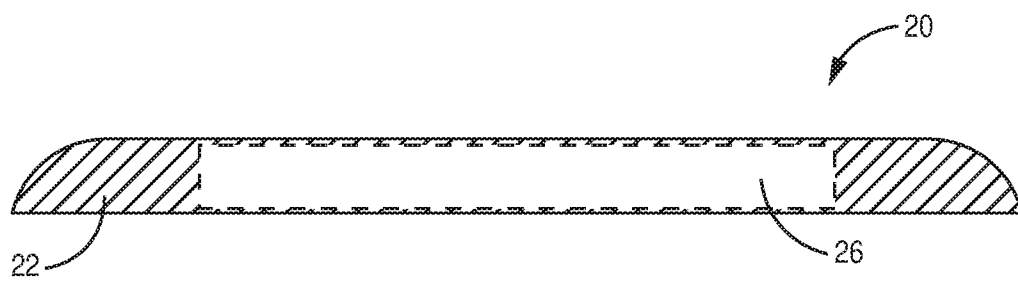


FIG. 2B

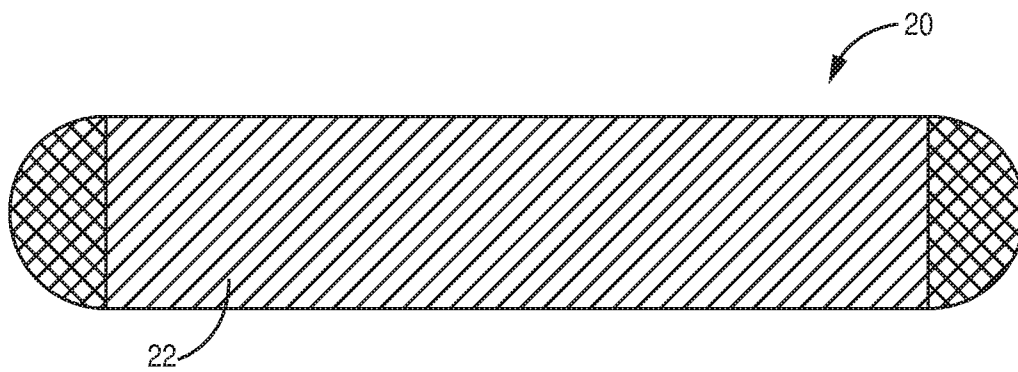


FIG. 2C

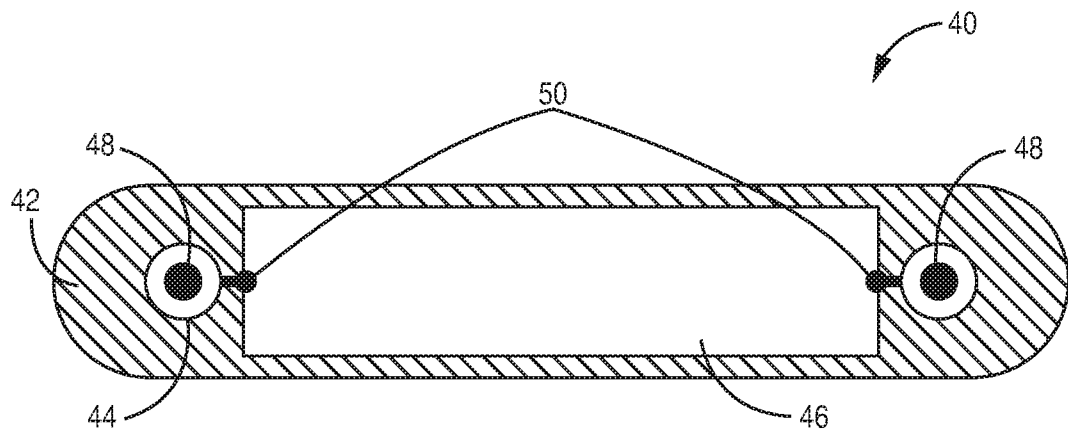


FIG. 3A

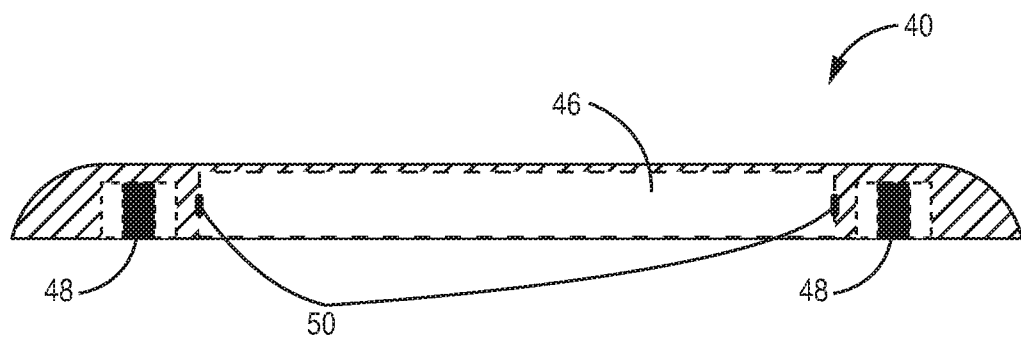


FIG. 3B

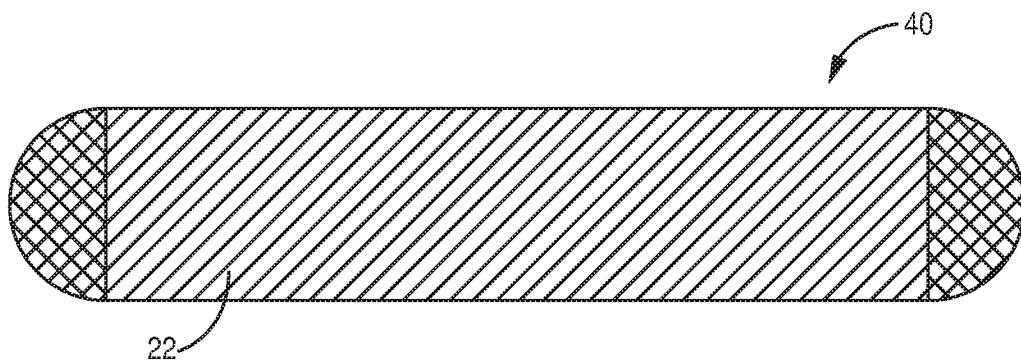


FIG. 3C

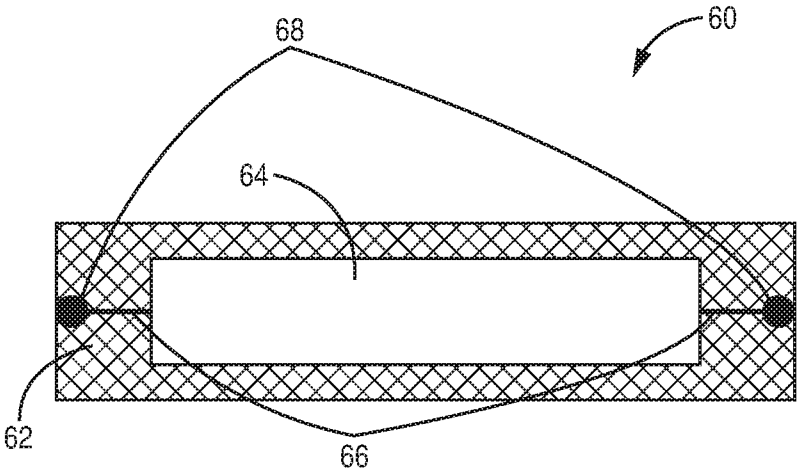


FIG. 4A

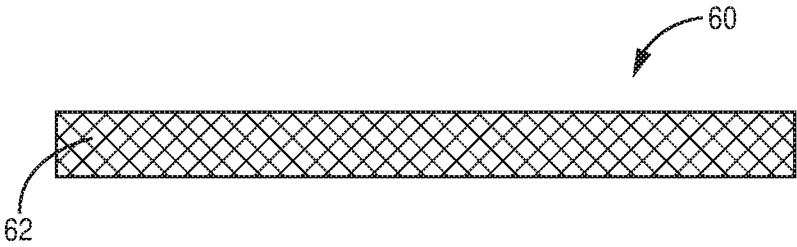


FIG. 4B

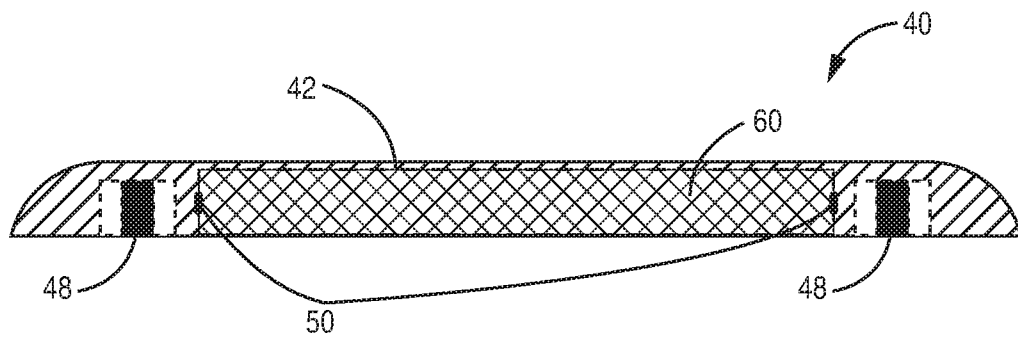


FIG. 5

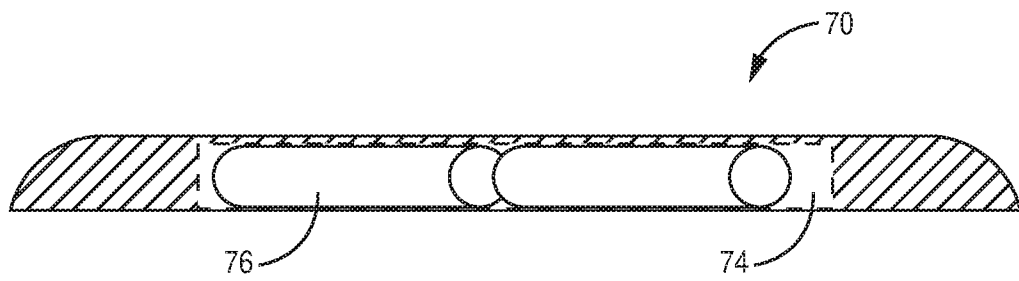


FIG. 6

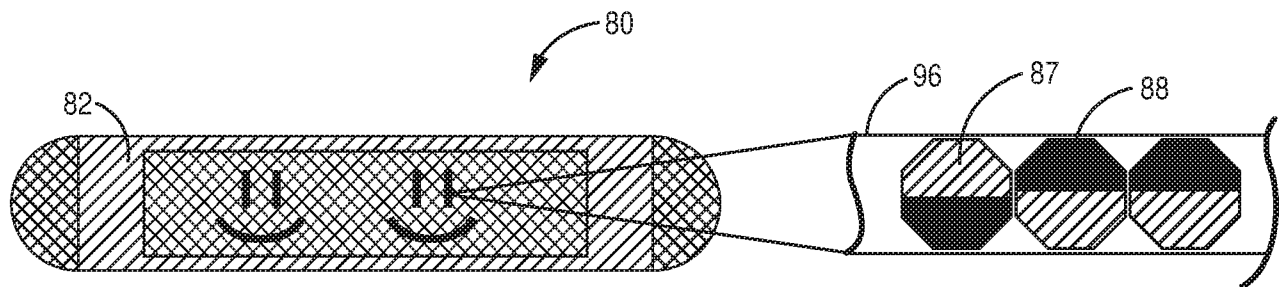


FIG. 7A

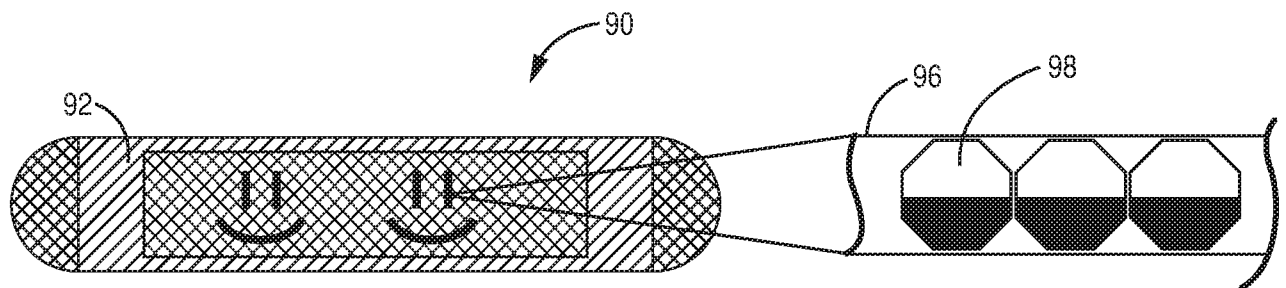
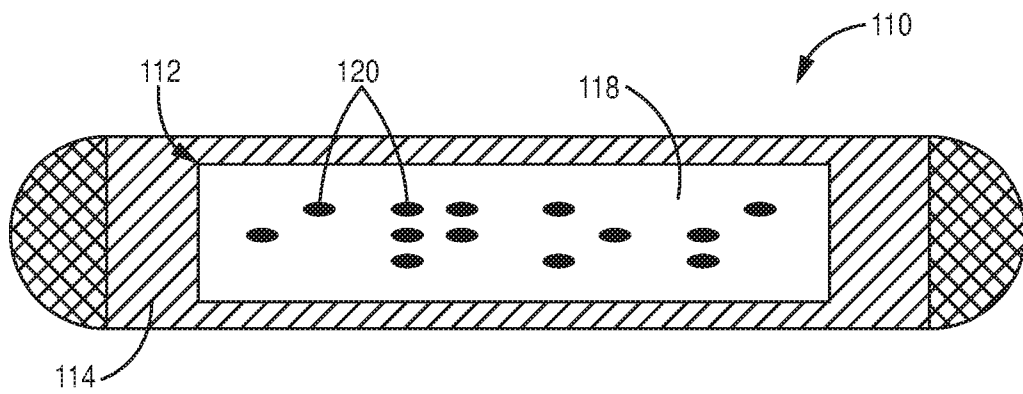


FIG. 7B

**FIG. 8**

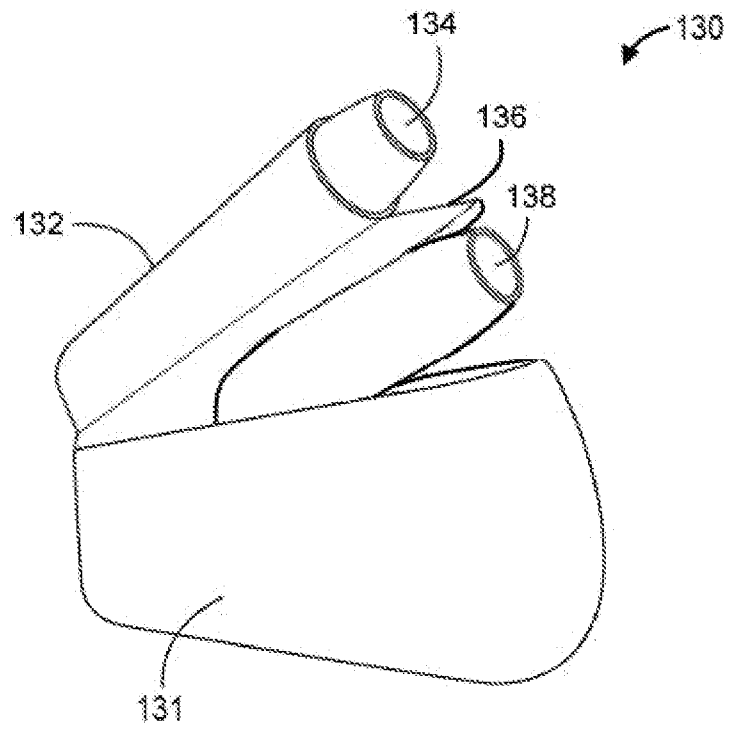


FIG. 9

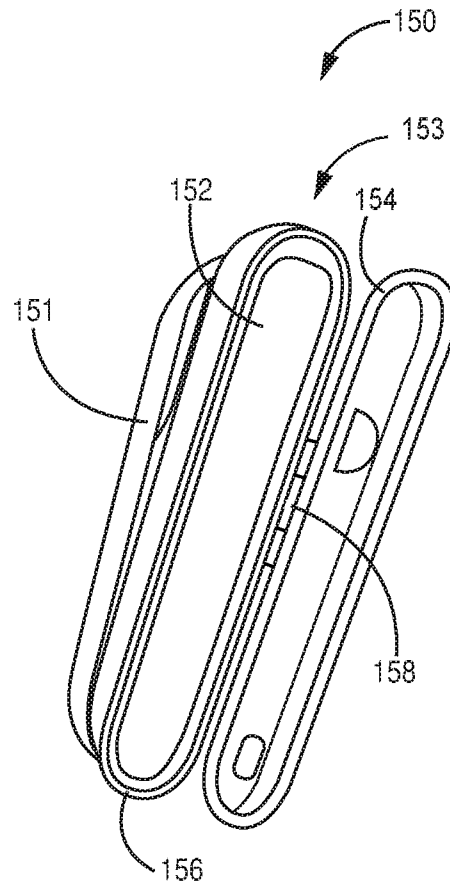


FIG. 10

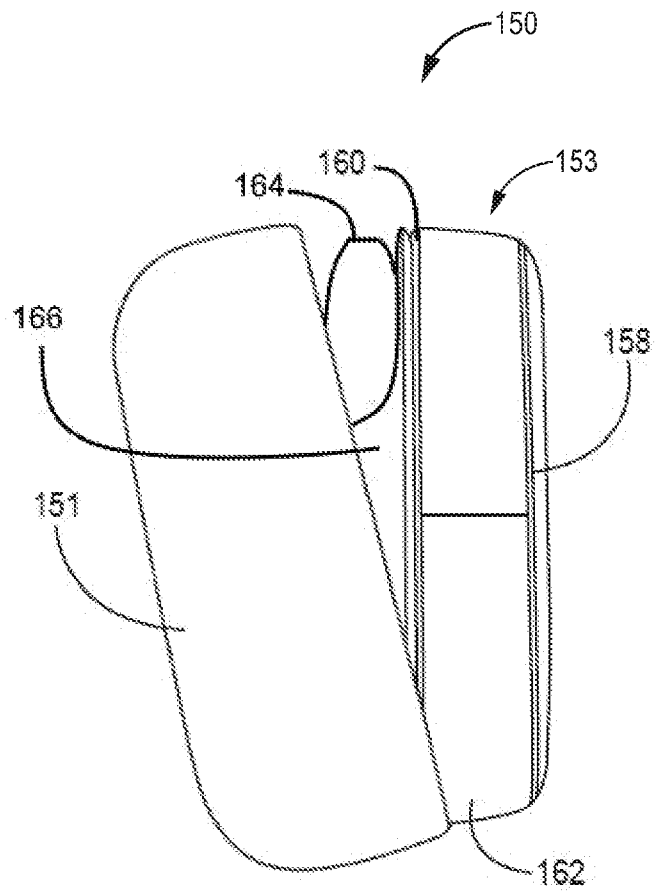


FIG. 11

INTERNATIONAL SEARCH REPORT

International application No
PCT/IB2020/058137

A. CLASSIFICATION OF SUBJECT MATTER
INV. A24F15/01
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)
A24F

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)

EP0-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	WO 2018/202732 A1 (PHILIP MORRIS PRODUCTS SA [CH]) 8 November 2018 (2018-11-08)	1-12
Y	page 1, line 10 - line 23 page 7, line 4 - line 23 page 10, line 29 - page 11, line 14 page 13, line 19 - line 30 page 14, line 10 - line 15; claims; figures	13-15
X	----- US 2015/366264 A1 (THERON MORNE ROUSSEAU [ZA]) 24 December 2015 (2015-12-24) paragraphs [0006] - [0021]; claims; figures	1-3,7-15
X	----- WO 2015/088744 A1 (MEADWESTVACO CORP [US]) 18 June 2015 (2015-06-18) paragraphs [0002] - [0004]; claims; figures	1-3,5-7, 10-12
	----- -/--	



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents :

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"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

9 November 2020

Date of mailing of the international search report

17/11/2020

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INTERNATIONAL SEARCH REPORT

International application No

PCT/IB2020/058137

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	KR 101 186 917 B1 (KIM JONG BEOM [KR]; KIM JONG PAL [KR]) 2 October 2012 (2012-10-02) abstract; figures -----	13-15

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/IB2020/058137

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