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(54) **CABLE RETAINERS FOR PACKAGING AND METHODS OF PACKAGING A CABLE**

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(57)

**ABSTRACT**

(21) Appl. No.: **14/871,442**

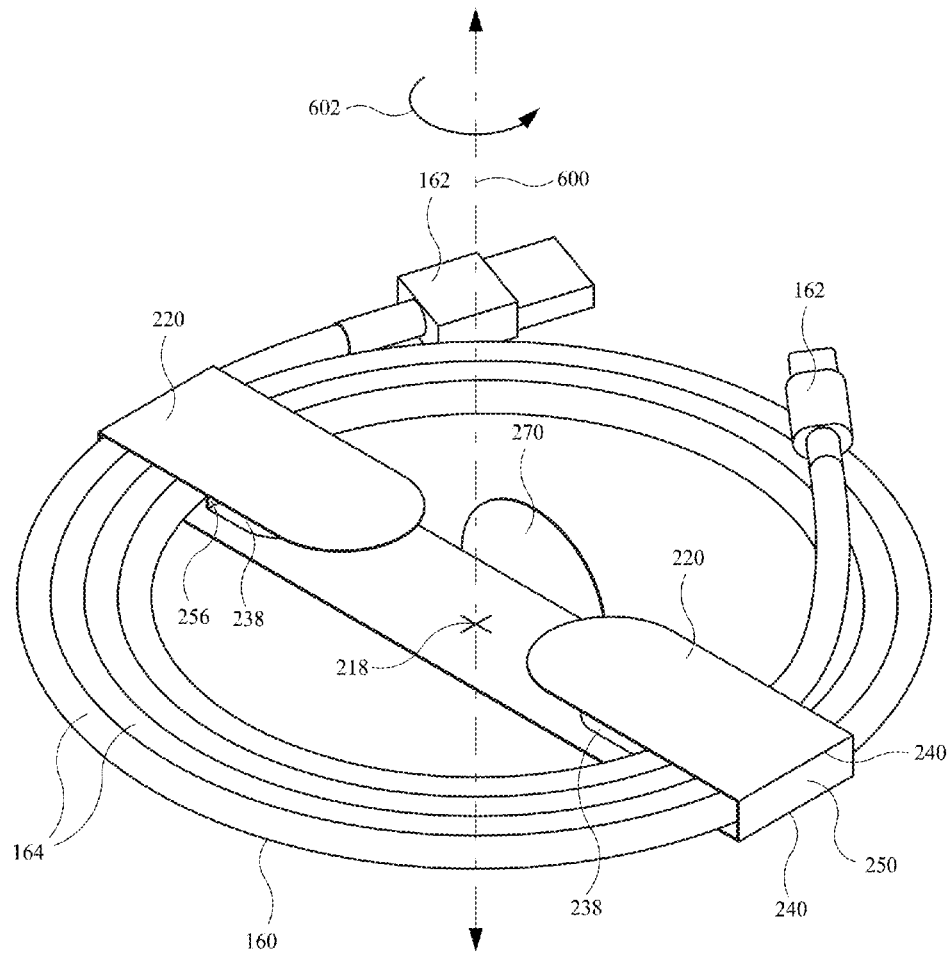
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Packaging and cable retainers for packaging wound cables are provided. The packaging may include a cavity configured to receive a wound cable held by a cable retainer. The cable retainer may be a single foldable piece of material. The cable retainer may include a plurality of fingers hingedly coupled to a panel and a plurality of flaps cut from the panel and hingedly coupled to the panel. The fingers may be attached to respective flaps to thereby define passageways through which a wound cable may extend. Methods of packaging wound cables are also discussed.

**Publication Classification**

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<i>B65D 85/671</i>	(2006.01)
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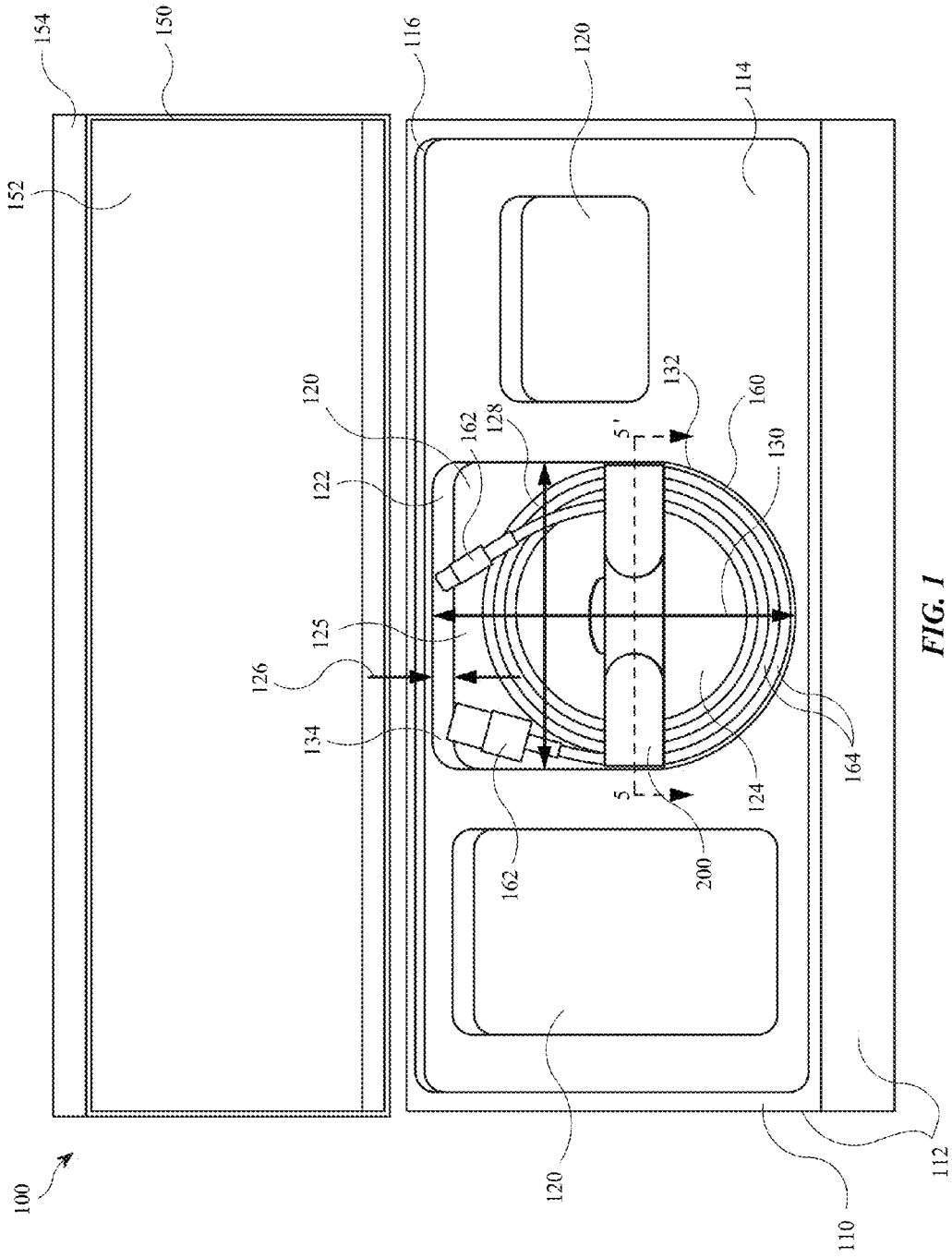
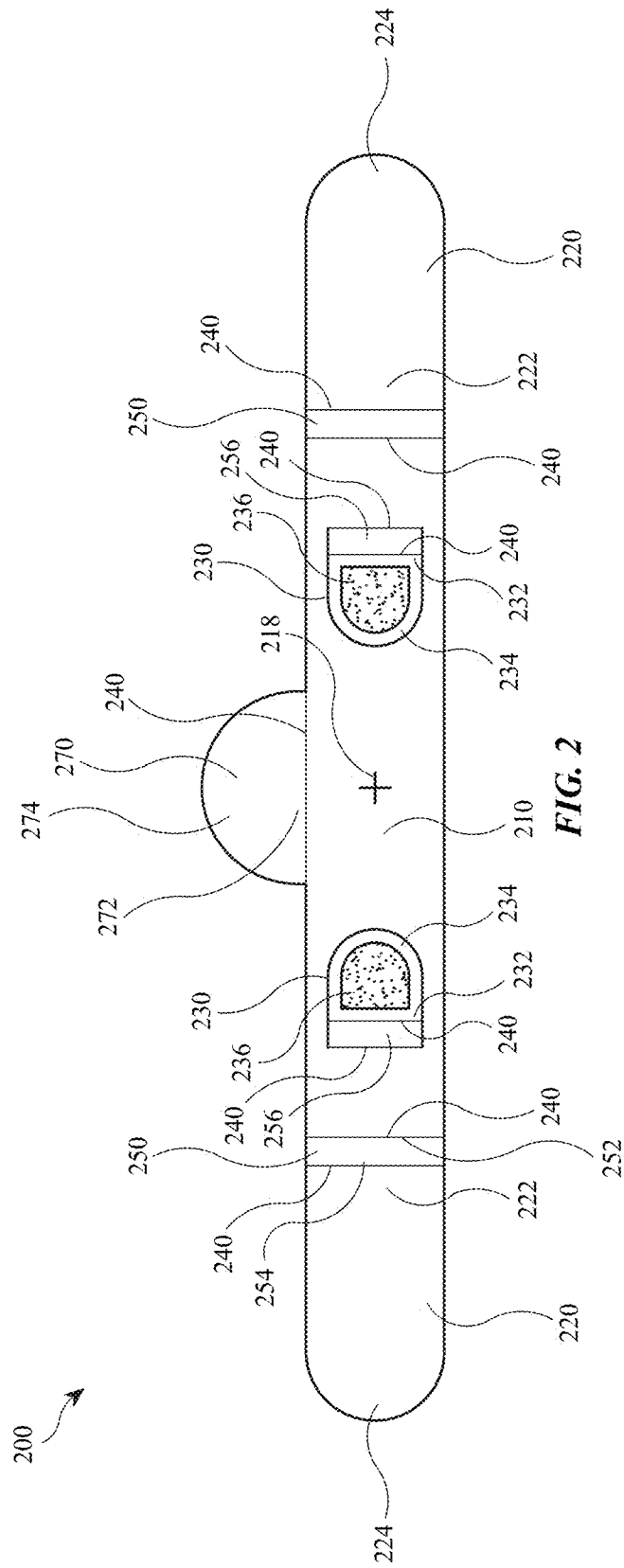
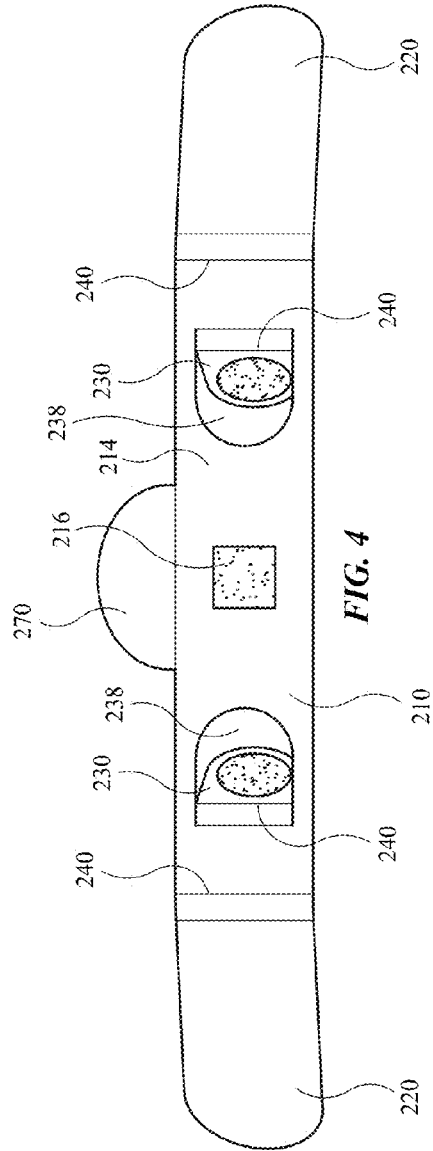
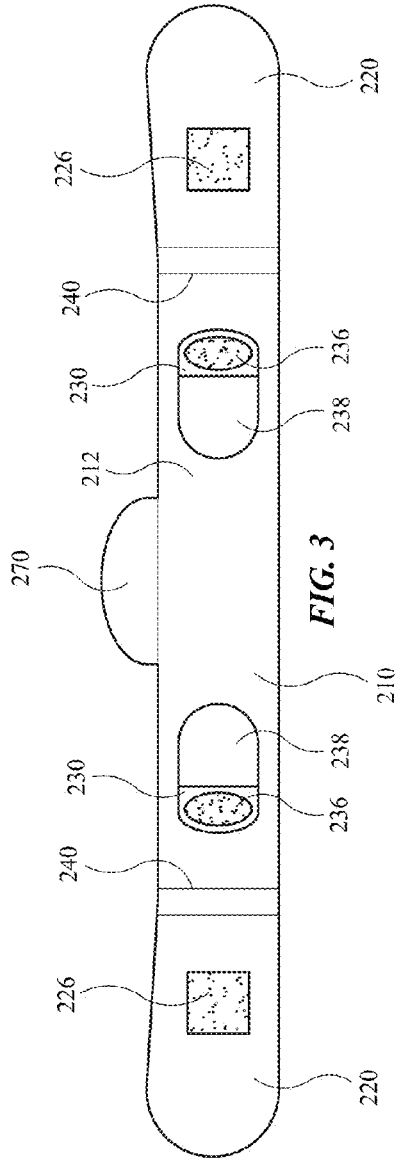


FIG. 1



**FIG. 2**



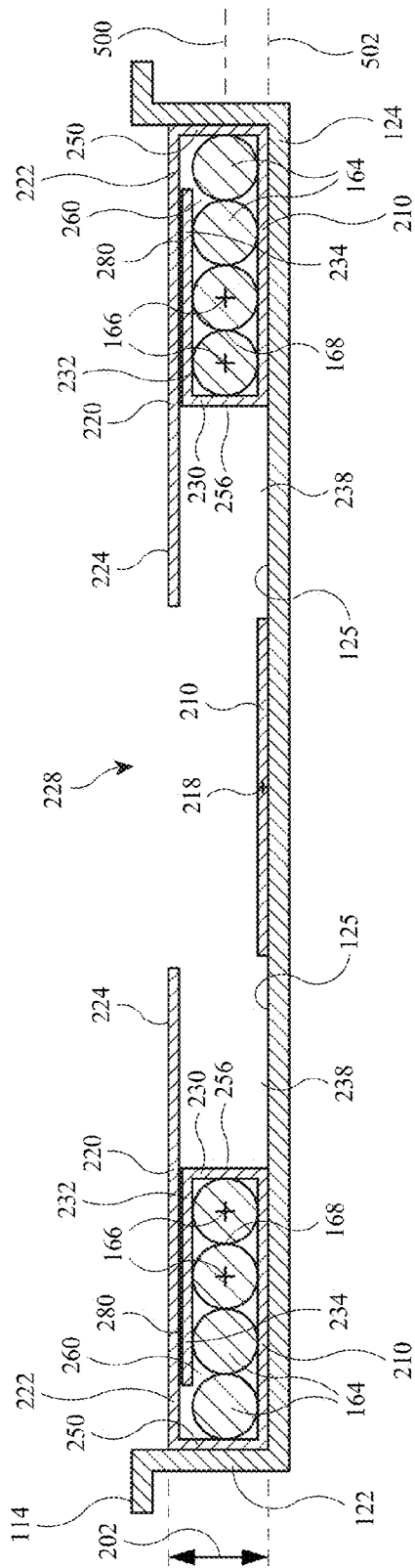


FIG. 5

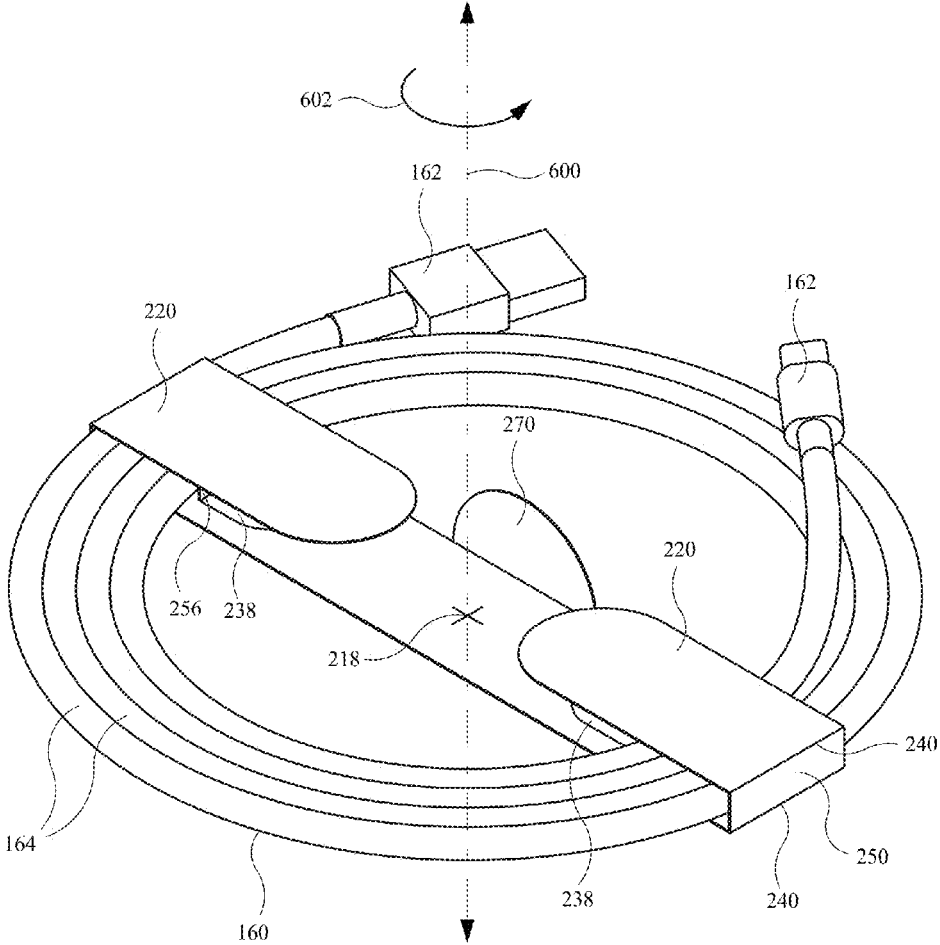


FIG. 6

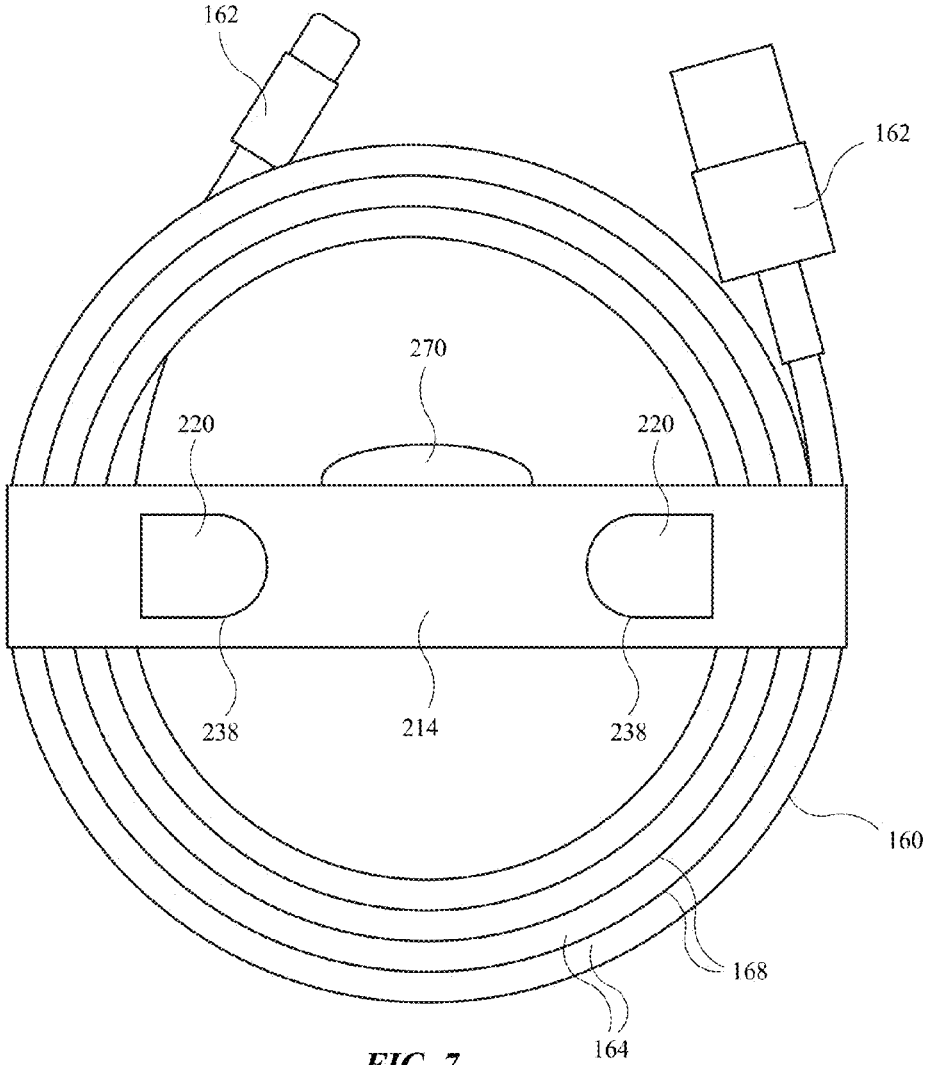


FIG. 7

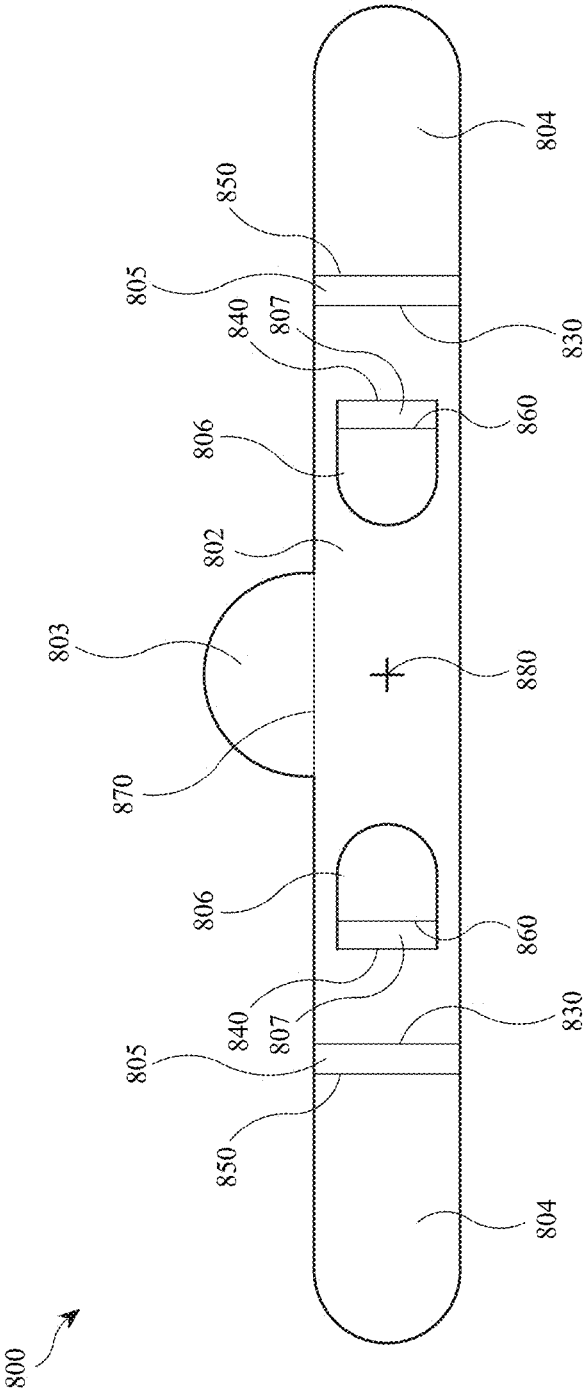


FIG. 8A



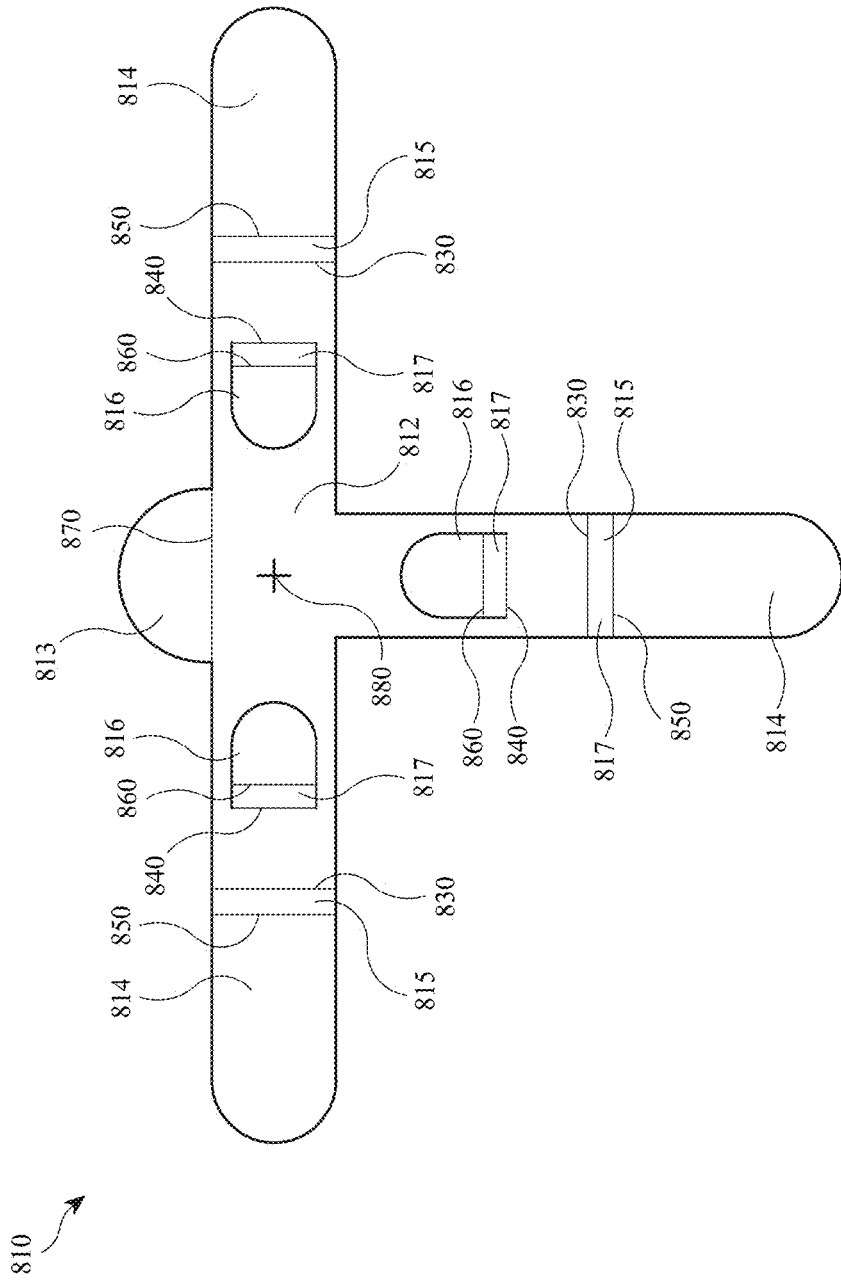


FIG. 8B

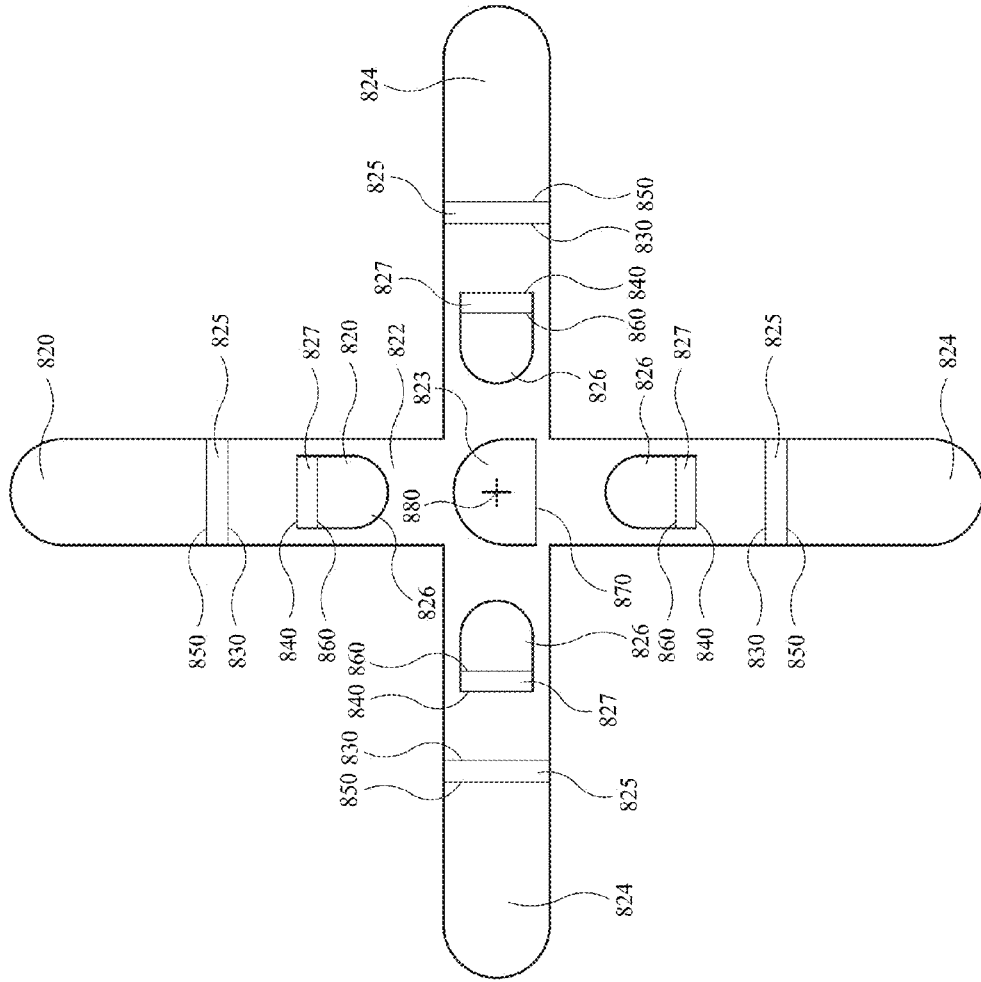


FIG. 8C

820 ↗

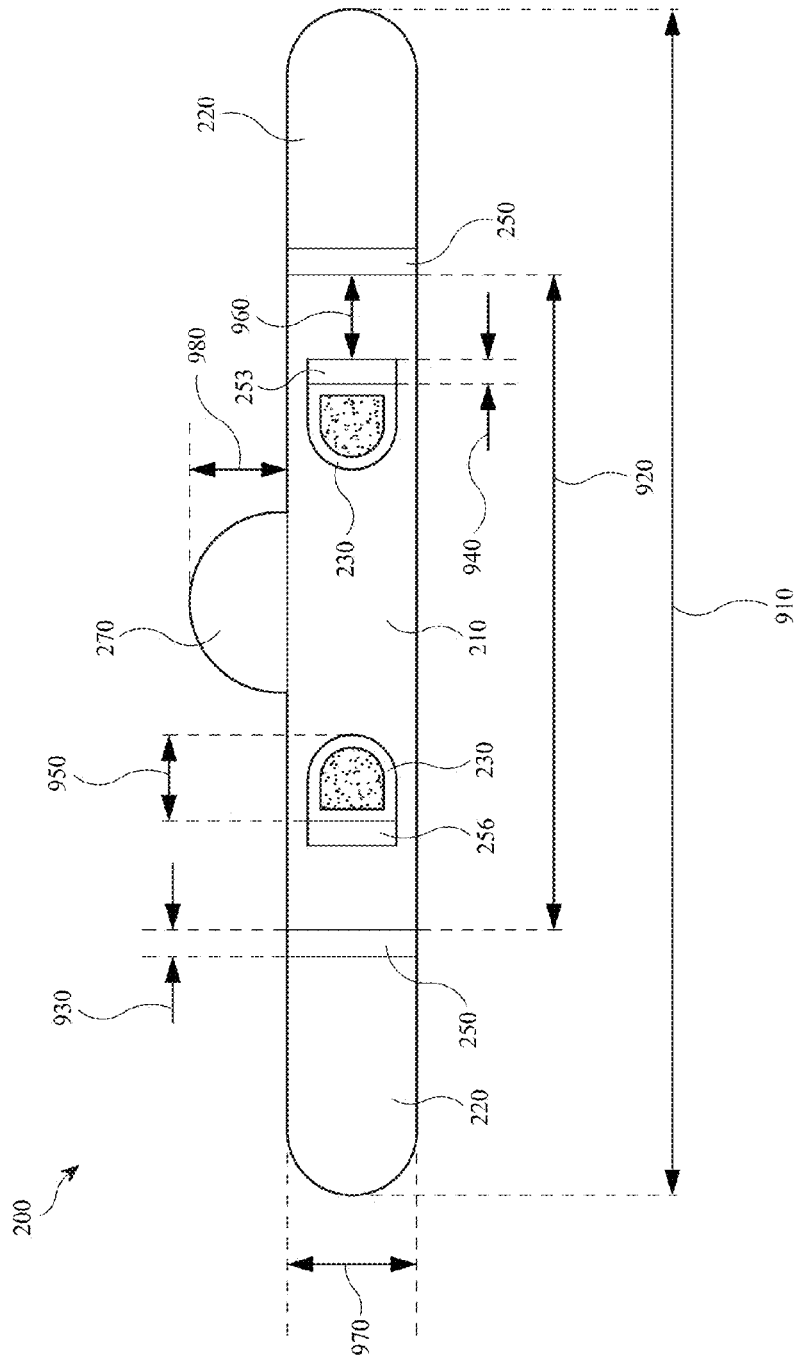


FIG. 9

## CABLE RETAINERS FOR PACKAGING AND METHODS OF PACKAGING A CABLE

### FIELD

[0001] The described embodiments relate generally to cable retainers. More particularly, the described embodiments relate to cable retainers for use in packaging.

### BACKGROUND

[0002] Many products utilize cables in some form or another. For example, an electronic device may utilize one or more cables to receive or transmit power and/or data (e.g., audio or video signals). In some instances, it may be desirable to store and/or package the cable(s) (e.g., between uses, in transit, or while presented for sale).

### SUMMARY

[0003] Packaging for consumer products protects the products from damage and facilitates brand recognition. Effective packaging can be an important tool used to attract and retain customers. In some embodiments, packaging can be used to engage the consumer's attention and focus that attention on the product(s) rather than the packaging itself. In some embodiments packaging is easily undone for removal of a product or product component/accessory. This can reduce frustration of a customer. In some embodiments packaging, or portions thereof, may be reused by the consumer, contributing to its overall utility.

[0004] While ease of operating packaging to access a packaged product may be desirable from a consumer standpoint, efficiency and cost in manufacturing and constructing (assembling) packaging may be a consideration for manufacturers and/or sellers of the packaging. For example, environmental considerations may play a role in developing packaging. Packaging made out of recyclable and/or biodegradable material can reduce environmental impact. Additionally, packaging that utilizes minimal resources, from a material, energy, and/or labor perspective, may be desirable. Further, packaging that requires a relatively small number of manufacturing and/or assembly steps may reduce costs (e.g., manpower and machine costs) associated with the packaging. Maintaining desired aesthetics and function of packaging in view of such environmental and resource considerations can be a challenge.

[0005] The packaging according to embodiments described herein, or elements thereof, accomplish one or more of these and other objectives.

[0006] Some embodiments are directed towards packaging having a base including a cavity, a cable retainer disposed within the cavity, the cable retainer including a panel extending across the cavity, a plurality of fingers, each finger hingedly coupled to the panel, and a plurality of flaps cut from the panel and hingedly coupled to the panel, where each finger is attached to a flap to thereby together define a passageway.

[0007] In some embodiments, each finger may be releasably attached to the flap via an attachment member. In some embodiments, the attachment members may include an adhesive.

[0008] In some embodiments, the passageways may extend parallel to a lower surface of the cavity. In some embodiments, the packaging may include a wound cable extending through the passageways. In some embodiments,

the wound cable may loop through the passageways multiple times, and each loop of the wound cable that extends through the passageways may be disposed on the same plane parallel to the lower surface of the cavity. In some embodiments, the cavity of the packaging may include a corner, and a plug of the cable may be positioned adjacent to the corner outside of the loops of the wound cable, such that contact between the plug and walls of the corner inhibits rotation of the wound cable.

[0009] In some embodiments, the panel, the fingers, and the flaps may be a single integrally formed piece.

[0010] In some embodiments, the panel of the cable retainer may be disposed on a lower surface of the cavity, and the cable retainer may have a maximum thickness of less than or equal to 7 millimeters measured perpendicularly from the lower surface of the cavity.

[0011] In some embodiments, the base of the packaging may include a product surface for supporting a product, and the cavity may be formed in the product surface. In some embodiments, the cavity may have a depth of less than or equal to 7 millimeters measured from the product surface to a lower surface of the cavity. In some embodiments, the cable retainer may be completely disposed within the cavity.

[0012] In some embodiments, the hinged couplings between each finger and the panel may be defined by grooves on the cable retainer. In some embodiments, the hinged couplings between each finger and the panel may be defined by fold lines on the cable retainer.

[0013] In some embodiments, each finger may be hingedly coupled to a segment that is hingedly coupled to the panel. In some embodiments, the panel, the segments, the fingers, and the flaps may define the passageways of the cable retainer.

[0014] In some embodiments, a free end of each finger attached to a flap points in a direction opposite the direction that a free end of the flap points.

[0015] In some embodiments, the cable retainer may be composed of a paper-based product.

[0016] In some embodiments, the cable retainer may have the same number of fingers as flaps. In some embodiments, the cable retainer may include a pull tab coupled to the panel.

[0017] In some embodiments, the panel of the cable retainer may be releasably coupled to a lower surface of the cavity.

[0018] Some embodiments are directed towards a cable retainer for packaging a wound cable, the cable retainer including a single foldable piece of material configured to fold from a flat configuration to a folded configuration, the single foldable piece of material including a panel, a plurality of fingers, each finger hingedly coupled to the panel, and a plurality of flaps cut from the panel and hingedly coupled to the panel, where, in the folded configuration, each finger is folded towards a geometric center of the panel and attached to a respective flap to define a plurality of passageways for receiving a wound cable.

[0019] In some embodiments, the attachment between the fingers and respective flaps may be a releasable attachment. In some embodiments, the releasable attachments may include one or more of an adhesive, a tab and slot coupling, a snap-fit coupling, and a hook and loop fastener.

[0020] In some embodiments, the cable retainer may include a pull tab hingedly coupled to the panel.

[0021] In some embodiments, the single foldable piece of material may be composed of a paper-based product. In some embodiments, the single foldable piece of material may be a compostable material. In some embodiments, the single foldable piece of material may be a recyclable material.

[0022] Some embodiments are directed towards a packaged cable including a cable retainer in a folded configuration and a wound cable extending through the passageways defined by the cable retainer.

[0023] In some embodiments, the wound cable may loop through the passageways defined by the cable retainer multiple times, each loop of the wound cable that extends through the passageways may be disposed on the same plane parallel to a top surface of the cable retainer panel, and no loop of the wound cable may be disposed on top of another loop of the wound cable.

[0024] Some embodiments are directed towards packaging including a base having a cavity, a cable retainer in a folded configuration disposed in the cavity, and a wound cable extending through the passageways defined by the cable retainer.

[0025] Some embodiments, are directed towards a method of assembling a packaged cable, the method including winding a cable to form a wound cable including a plurality of cable loops, folding a cable retainer about the wound cable, and positioning the cable retainer and the wound cable in a cavity formed in a packaging container, where folding the cable retainer includes folding flaps cut from a panel of the cable retainer, folding fingers hingedly coupled to the panel of the cable retainer, and attaching the fingers to respective flaps to thereby define a plurality of passageways through which the loops of the wound cable extend.

[0026] In some embodiments, each loop of the wound cable may be disposed on the same plane parallel to a top surface of the cable retainer panel. In some embodiments, the cable may be wound such that each loop of the cable is in contact with immediately adjacent loops along a majority of each loop.

[0027] Some embodiments are directed towards a blank for forming a cable retainer, the blank including a central panel connected to a plurality of fingers by a first set of upward fold lines and a plurality of flaps cut from the central panel and connected to the central panel by a second set of upward fold lines, where each upward fold line in the first set of upward fold lines is oriented parallel to an upward fold line in the second set of upward fold lines.

[0028] In some embodiments, the blank may include a plurality of segments, each segment may be disposed between the central panel and a respective finger, the segments may be connected to the fingers by the first set of upward fold lines, and the segments may be connected to the central panel by a third set of upward fold lines.

[0029] In some embodiments, the blank may include a pull tab connected to the central panel by a fourth upward fold line.

#### BRIEF DESCRIPTION OF THE DRAWINGS

[0030] The disclosure will be readily understood by the following detailed description in conjunction with the accompanying drawings, wherein like reference numerals designate like structural elements, and in which:

[0031] FIG. 1 shows packaging according to an embodiment.

[0032] FIG. 2 shows a cable retainer in a flat configuration according to an embodiment.

[0033] FIG. 3 shows a top view of a cable retainer in a partially folded configuration according to an embodiment.

[0034] FIG. 4 shows a bottom view of a cable retainer in a partially folded configuration according to an embodiment.

[0035] FIG. 5 shows a cross-sectional view along the line 5-5' in FIG. 1.

[0036] FIG. 6 shows a perspective view of a cable retainer folded about a wound cable according to an embodiment.

[0037] FIG. 7 shows a bottom view of a cable retainer folded about a wound cable according to an embodiment.

[0038] FIG. 8A shows a cable retainer blank according to an embodiment.

[0039] FIG. 8B shows a cable retainer blank according to an embodiment.

[0040] FIG. 8C shows a cable retainer blank according to an embodiment.

[0041] FIG. 9 shows a cable retainer according to an embodiment.

#### DETAILED DESCRIPTION

[0042] Reference will now be made in detail to representative embodiments illustrated in the accompanying drawings. It should be understood that the following descriptions are not intended to limit the embodiments to one preferred embodiment. To the contrary, it is intended to cover alternatives, modifications, and equivalents as can be included within the spirit and scope of the described embodiments as defined by the appended claims.

[0043] References to “one embodiment,” “an embodiment,” “some embodiments,” “an example embodiment,” etc., indicate that the embodiment described may include a particular feature, structure, or characteristic, but every embodiment may not necessarily include the particular feature, structure, or characteristic. Moreover, such phrases are not necessarily referring to the same embodiment. Further, when a particular feature, structure, or characteristic is described in connection with an embodiment, it is submitted that it is within the knowledge of one skilled in the art to effect such feature, structure, or characteristic in connection with other embodiments whether or not explicitly described.

[0044] The packaging and cable retainers discussed herein may be used to hold, display, and/or transport products, one or more cables that receive or transmit power and/or data (e.g., audio or video signals), or both. A cable (which may also be referred to as a cord) typically has a length many times greater than its width. For packaging, a cable may be coiled upon itself (i.e., wound) to create a compact configuration to occupy a compact area, in order to efficiently store/package the cable. A cable may be wound any suitable number of times. Adjacent cable windings may be flush with one another.

[0045] The packaging and cable retainers discussed herein may hold and display wound cables in an aesthetically appealing and consumer-friendly fashion. Packaging and cable retainers discussed herein may maintain a wound cable in a compact configuration, which may be aesthetically appealing to consumers. In some embodiments, a cable retainer may be disposed in a cavity of a packaging container and the cable retainer and cavity may work in concert to retain the cable in a compact configuration. In some embodiments, a cable retainer may be a standalone cable retainer provided to maintain a wound cable in a compact configuration.

ration. Additionally, the packaging, and in particular the cable retainer, may present a wound cable in a fashion that facilitates easy removal of the cable retainer and/or wound cable from the packaging by a consumer.

**[0046]** In some embodiments, the cable retainer may be presented in such a way that a consumer intuitively knows how to remove the cable retainer from a packaging container and/or undo the cable retainer to free the retained cable. In some embodiments, a cable retainer may be folded about the wound cable and secured to itself (e.g., with an adhesive or other attachment member). The cable retainer may present one or more free ends releasably attached to other portions the cable retainer to a consumer. Pulling the free ends may release the attachment between the cable retainer and the packaging and/or between different portions of the cable retainer. Pulling on the free ends may cause the cable retainer to unfold, thereby allowing a wound cable to be removed from a packaging container and/or the cable retainer. In some embodiments, the cable retainer may be re-constructed (e.g., re-folded) by re-attaching the free ends to respective portions of the cable retainer.

**[0047]** Additionally, the packaging and/or cable retainers may be manufactured in a cost-effective and environmentally friendly way. In some embodiments, the cable retainer may be constructed of a single integrally formed piece of material. The single integrally formed piece of material may be a foldable material that is folded into a configuration that holds and secures a wound cable, either alone or within a cavity of a packaging container. In some embodiments, the foldable material may be a single piece of material that is cut by a single operation (e.g., a single die cutting operation). In some embodiments, the foldable material may be die cut from a stock material (e.g., a sheet or roll of material). Single integrally formed pieces of material that are cut by a single cutting operation may facilitate efficient and reproducible manufacturing of cable retainers. Moreover, such manufacturing may reduce waste by reducing waste material during manufacturing.

**[0048]** Cable retainers discussed herein and features thereof may be used to package merchandise other than wound cables. In such cases, the cable retainer may be referred to as a “product retainer” or “accessory retainer.” For example, cable retainers discussed herein may be used to package products having a cable (or cord) physically attached to them, such as a wired headset, wired earphones, mouse, keyboard, or other device. Also, packaging and cable retainers discussed herein may be used to package non-wired products. For example, the cable retainers discussed herein may be used to package products/accessories with an opening or multiple products/accessories such that the cable retainer may be folded about the product(s)/accessory(ies). Such products/accessories may include but are not limited to, wireless headphones, wireless headsets, remote controls, or printed materials.

**[0049]** These and other embodiments are discussed below with reference to the figures. However, those skilled in the art will readily appreciate that the detailed description given herein with respect to these figures is for explanatory purposes only and should not be construed as limiting.

**[0050]** Some embodiments include packaging **100** for protecting, transporting, and/or displaying one or more consumer products. Consumer products may be, but are not limited to, electronic devices such as laptops, phones, multimedia devices, tablets, gaming devices, keyboards, headsets,

earphones, cameras, mice, trackpads, remotes, and watches. Packaging **100** may also house one or more wound cables (e.g., wound cable **160**) associated with the electronic device (s). A wound cable may be, for example, a power cable (e.g., a 120/220 volt wall charger or inductive charger), or a data cable. Data cables may include, but are not limited to, a Universal Serial Bus (USB) cable (which may also deliver power), a High-Definition Multimedia Interface (HDMI) cable, or an Ethernet cable. In some embodiments, packaging **100** may house only a wound cable (i.e., the only merchandise within the packaging may be a wound cable). Wound cable **160** may be held within a cavity (e.g., cavity **120**) formed in packaging **100**. In some embodiments, wound cable **160** may be held and secured within cavity **120** with a cable retainer (e.g., cable retainer **200**).

**[0051]** As shown in FIG. 1, packaging **100** may include a base **110**. Base **110** includes sidewalls **112** defining a perimeter of base **110**. Base **110** may include a product surface **114** for supporting a product (e.g., a consumer electronic device). In some embodiments, product surface **114** may include a product cavity **116**. Product cavity **116** may be sized and shaped to receive all or a portion of a product. In some embodiments, product surface **114** and/or product cavity **116** may be sloped to accommodate the shape of a product. As shown in FIG. 1, base **110** may include one or more cavities **120** formed therein (e.g., in product surface **114**). Each cavity **120** may be defined by a vertical wall **122** extending from and surrounding a horizontal wall **124**. Horizontal wall **124** and/or vertical wall **122** may be configured to support a wound cable, a product, or a product component/accessory within packaging **100**. Horizontal wall **124** defines a lower surface **125** of cavity **120**. In some embodiments, horizontal wall **124** may be perpendicular to vertical wall **122**.

**[0052]** Cable retainer **200** may be disposed in a cavity **120** and configured to, among other things, hold wound cable **160** in place within cavity **120**, orient wound cable **160** within cavity **120**, and retain the winding of wound cable **160** such that adjacent cable windings (loops) are flush with one another. Cable retainer **200** may include a panel **210** that, when disposed within cavity **120**, extends across the cavity **120** (e.g., across lower surface **125** of cavity **120**). In some embodiments, panel **210**, or a portion thereof, may extend completely across cavity **120** in one or more directions (i.e., from one side of vertical wall **122** to an opposing side of vertical wall **122**). In such embodiments, panel **210** may hold wound cable **160** in place within cavity **120** by preventing lateral movement between opposing sides of vertical wall **122**.

**[0053]** Cavities **120** may be sized and shaped to accommodate specific products, product components/accessories, or wound cables. In other words, vertical wall **122** and horizontal wall **124** may be sided and shaped to accommodate specific products, product components/accessories, or wound cables. In some embodiments, one or more cavities **120** may have a depth **126** of less than or equal to 7 millimeters (e.g., measured from product surface **114** to lower surface **125** of cavity **120**). In some embodiments, cavity **120** with cable retainer **200** disposed therein may have a maximum length **128** in the range of 95 millimeters to 105 millimeters. In some embodiments, maximum length **128** may be 90 millimeters+/-2 millimeters. In some embodiments, cavity **120** with cable retainer **200** disposed therein may have a maximum width **130** in the range of 100

millimeters to 120 millimeters. In some embodiments, maximum width **130** may be 109 millimeters $\pm$ 2 millimeters. In some embodiments, vertical wall **122** may include a curved portion **132**. Curved portion **132** may have a curvature corresponding to an exterior shape of wound cable **160** (or product, product component/accessory). In some embodiments, a diameter of curved portion **132** may equal length **128**. In some embodiments, curved portion **132** may aid in holding wound cable **160** within cavity **120** and may help inhibit undesired movement of wound cable **160** within cavity **120**.

**[0054]** In some embodiments, cavity **120** may include one or more corners **134** defined by vertical wall **122** and configured to hold and secure wound cable **160** within cavity **120**. In such embodiments, a plug **162** (e.g., USB plug) of wound cable **160** may be positioned within cavity **120** such that plug **162** is adjacent to a corner **134** outside the loops **164** of wound cable **160**. In such embodiments, contact between plug **162** and portions of vertical wall **122** defining the corner **134** may inhibit rotation of wound cable **160** within cavity **120**. In some embodiments, corner(s) **134** may be formed at approximately a 90 degree angle.

**[0055]** In some embodiments, base **110** may be a single integrally formed piece. In some embodiments, base **110** may include multiple pieces. For example, in some embodiments, base **110** may include a base box configured to receive all or a portion of a packaging insert the same as or similar to the base boxes and packaging inserts described in U.S. patent application Ser. No. 14/318,011, filed on Jun. 27, 2014, which is incorporated herein in its entirety by reference thereto. In some embodiments, base **110** may include a pedestal the same as or similar to the pedestals described in U.S. patent application Ser. No. 14/328,974, filed on Jul. 11, 2014, which is incorporated herein in its entirety by reference thereto.

**[0056]** Packaging may include a lid **150** having a top wall **152** and sidewalls **154**. When assembled in a closed configuration, lid **150** may be placed over base **110** and may receive at least a portion of base **110**. In some embodiments, lid **150** may receive the entire base **110**. Lid **150** may be the same as or similar to the lids discussed in U.S. patent application Ser. Nos. 14/318,011 and 14/328,974.

**[0057]** In some embodiments, base **110** and/or lid **150** may be composed of a recyclable and/or biodegradable (e.g., compostable) material. In some embodiments, base **110** and/or lid **150** may be composed of a paper-based product. Suitable paper-based products include, but are not limited to, cardboard, paperboard (e.g., solid bleached sulfate (SBS)), or molded fiber paper. In some embodiments, base **110** and/or lid **150** may be composed of a molded fiber paper (e.g., a molded fiber paper composed of 60 wt % to 70 wt % bamboo fibers and 30 wt % to 40 wt % bagasse fibers). In some embodiments, base **110** and/or lid **150** may be composed of one or more polymeric materials. Suitable polymeric materials include, but are not limited to, polyethylene, polypropylene, polyurethane, polystyrene, polymer blends including one or more of these polymers, or copolymers including one or more of these polymers.

**[0058]** As shown for example in FIGS. 2-4, cable retainer **200** may include one or more fingers **220** hingedly coupled to panel **210** via a hinged coupling **240**. Hinged couplings **240** may include, but are not limited to, structurally weakened regions on cable retainer **200**. Structurally weakened regions may include, but are not limited to, grooves formed

in cable retainer **200**, fold lines, and perforated lines. Grooves may be formed by removing material from a surface of cable retainer **200**. For example, grooves may be V-shaped or U-shaped grooves formed in a surface of cable retainer **200**. Fingers **220** may include a connection end **222** hingedly coupled to panel **210** at a hinged coupling **240** and a free end **224** not directly coupled to panel **210**. In some embodiments, fingers **220** may include an attachment member **226**. Attachment members **226** may be releasable attachment members. In some embodiments, attachment members **226** may be re-attachable attachment members. Attachment members **226** may include an adhesive, a male or female portion of a mechanical fastener (e.g., a hook portion of a hook and loop faster (e.g., Velcro®), or combination thereof. An attachment member **226** on a finger **220** may be configured to attach to a flap **230** cut from panel **210** and/or a corresponding attachment member **236** located on flap **230**.

**[0059]** Cable retainer **200** may also include one or more flaps **230** cut from panel **210** and hingedly coupled to panel **210**. Flaps **230** may be cut from panel **210** such that through holes **238** are formed in panel **210** (see, e.g., FIGS. 3 and 4). Similar to fingers **220**, each flap **230** may be hingedly coupled to panel **210** via a hinged coupling **240**. Also similar to fingers **220**, flaps **230** may include a connection end **232** hingedly coupled to panel **210** at a hinged coupling **240** and a free end **234** not directly coupled to panel **210**.

**[0060]** In some embodiments, flaps **230** may include an attachment member **236**. An attachment member **236** on a flap **230** may be configured to attach to a finger **220** hingedly coupled to panel **210** and/or a corresponding attachment member **226** located on finger **220**. Attachment members **236** may be releasable attachment members. In some embodiments, attachment members **236** may be re-attachable attachment members. Attachment members **236** may include an adhesive, a male or female portion of a mechanical fastener (e.g., a loop portion of a hook and loop faster (e.g., Velcro®), or a combination thereof. In some embodiments, attachment members **226/236** may include double-sided adhesive tape or other suitable adhesive such as glue. In some embodiments, cable retainer **200** may include the same number of flaps **230** as fingers **220**. Each finger **220** of cable retainer **200** may be configured to attach to a respective flap **230** via attachment members **226** and/or attachment members **236**. In some embodiments, cable retainer **200** may include one finger **220** and one flap **230** configured to attach to each other.

**[0061]** In some embodiments, one or more fingers **220** may be hingedly coupled to a segment **250** that is hingedly coupled to panel **210**. In such embodiments, segment(s) **250** may include an interior end **252** hingedly coupled to panel **210** via a hinged coupling **240** and an exterior end **254** hingedly coupled to finger **220**. In some embodiments, flaps **230** may be hingedly coupled to a segment **256** that is hingedly coupled to panel **210**. Segments **256** may be the same as or similar to segments **250**. In some embodiments, segments **256** may have a length that is shorter than the length of segments **250**. In some embodiments, the difference between the length of segments **256** and the length of segments **250** may be equal to the thickness of fingers **220**. This may facilitate a flush attachment between fingers **220** and segments **230**.

**[0062]** In some embodiments, cable retainer **200** may include a pull tab **270**. Pull tab **270** may include a connection end **272** hingedly coupled to panel via a hinged coupling **240**

and a free end 274 not directly coupled to panel 210. In some embodiments, pull tab 270 may be coupled to panel 210 in the same or similar fashion as finger(s) 220. In some embodiments, pull tab 270 may be cut from panel 210 in the same or similar fashion as flap(s) 230.

**[0063]** In some embodiments, cable retainer 200 may be a single foldable piece of material. In some embodiments, the single foldable piece of material may be an integrally formed piece of material (e.g., formed via injection molding, pressing, stamping, and/or die cutting). In other words, panel 210, finger(s) 220, flap(s) 230, segment(s) 250, segment(s) 256, and pull tab 270 may be a single integrally formed piece. In some embodiments, the foldable material may be a single piece of material that is cut using a single processing step. For example, the foldable material may be cut from a stock material (e.g., a sheet or roll of material) by a single die cutting step.

**[0064]** In some embodiments, cable retainer 200 may be composed of a recyclable material. In some embodiments, cable retainer 200 may be composed of a biodegradable (e.g., compostable) material. In some embodiments, cable retainer 200 may be composed of a paper-based product. Suitable paper-based products include, but are not limited to, cardboard or paperboard (e.g., solid bleached sulfate (SBS)). In some embodiments, cable retainer 200 may be composed of a polymeric material. Suitable polymeric materials include, but are not limited to, polyethylene, polypropylene, polyurethane, polystyrene, polymer blends including one or more of these polymers, or co-polymers including one or more of these polymers. In some embodiments, all or some of the exterior surfaces of cable retainer 200 may be laminated.

**[0065]** In operation, cable retainer 200 may be configured to fold from a flat configuration (see e.g., FIG. 2) to a folded configuration (see e.g., FIGS. 1, 6, and 7). In the folded configuration, finger(s) 220, flap(s) 230, and segment(s) 250/256 may be folded about their respective hinged couplings 240 to folded positions. When folded, each finger 220 may be folded towards a center point 218 of panel 210 between fingers 220 (i.e., free ends 224 of each finger 220 may point towards center point 218). When in the folded configuration, each flap 230 may be folded away from center point 218 of panel 210 (i.e., free ends 234 of each flap 230 may point in the opposite direction as free ends 224 of fingers 220—away from center point 218). Center point 218 may be the location on panel 210 around which fingers 220 and/or flaps 230 are radially disposed.

**[0066]** When folded, fingers 220 may attach to flaps 230 via attachment members 236 on flaps 230 and/or attachment members 226 on fingers 220 at attachment points 280 (see FIG. 5). In some embodiments, the attachment between a finger 220 and a respective flap 230 may be a releasable attachment. In some embodiments, the attachment between a finger 220 and a respective flap 230 may be a re-attachable attachment. The attachment between finger(s) 220 and respective flap(s) 230 may include one or more of: an adhesive, a tab and slot coupling, a snap-fit coupling, and a hook and loop fastener (e.g., Velcro®).

**[0067]** FIG. 5 shows a cross-sectional view of cavity 120, cable retainer 200, and wound cable 160 along the line 5-5' of FIG. 1 showing cable retainer 200 folded (i.e., in the folded configuration) about wound cable 160 within cavity 120. When disposed in cavity 120, panel 210 may be disposed on lower surface 125 of cavity 120. In some

embodiments, a bottom surface 214 of panel 210 may be in direct contact with lower surface 125 of cavity 120. In some embodiments, panel 210 may be attached to lower surface 125 of cavity 120. In some embodiments, panel 210 may be releasably attached to lower surface 125 of cavity 120 (e.g., via an attachment member 216 disposed on bottom surface 214 of panel 210 (see e.g., FIG. 4)). In some embodiments, attachment member 216 may be disposed on lower surface 125 of cavity 120.

**[0068]** In the folded configuration, each finger 220 may be attached to a respective flap 230 to, along with panel 210, define a passageway 260. In embodiments including segments 250/256, segments 250/256 may also define a portion of passageway 260. In other words, panel 210, finger(s) 220, flap(s) 230, and segment(s) 250/256 may define passageway (s) 260. In embodiments including segments 250/256, segments 250/256 may define a vertical dimension of passageway(s) 260 (i.e., in the vertical direction parallel to vertical axis 600 in FIG. 6).

**[0069]** Passageway(s) 260 may be sized and shaped to receive a wound cable 160 (e.g., a plurality of loops 164 of wound cable 160). In some embodiments, segments 250 may abut an outermost loop 164 of wound cable 160 and segments 256 may abut an innermost loop 164 of wound cable 160 to aid in holding adjacent cable loops 164 flush with one another in passageway 260. As used herein, cable loops 164 that are “flush” refers to adjacent cable loops 164 having circumferential sidewalls 168 that are in contact with each other. In some embodiments, segments 250 are the same length as a thickness of cable 160, to define a height of passageway 260 that is the same as the thickness of cable 160.

**[0070]** Panel 210, fingers 220, flaps 230, and segments 250/256 may form passageways 260 that are closed except for in a radial direction 602 around a vertical axis 600 extending through center point 218 of panel 210 (see e.g., FIG. 6). In some embodiments, passageways 260 may extend parallel to lower surface 125 of cavity 120, when a folded cable retainer 200 is disposed within a cavity 120 (i.e., lower surface 125 of cavity 120 may be parallel to radial direction 602 when a folded cable retainer 200 is disposed in a cavity 120).

**[0071]** In some embodiments, cable retainer 200 may be completely disposed within cavity 120 in the folded configuration. In other words, no portion of cable retainer 200 may extend from cavity 120 above product surface 114. In some embodiments, cable retainer 200 may have a maximum thickness 202 of less than or equal to 7 millimeters measured perpendicularly from lower surface 125 of cavity 120 (see FIG. 5).

**[0072]** As shown in FIG. 5, wound cable 160 may extend through passageways 260. In some embodiments, wound cable 160 may be looped through passageways 260 multiple times (e.g., one or more loops 164 of wound cable 160 may extend through passageways 260). In some embodiments, each loop 164 of wound cable 160 that extends through passageways 260 is disposed on the same plane (e.g., plane 500 in FIG. 5) parallel to lower surface 125 of cavity 120 (i.e., plane 502 in FIG. 5). In other words, the axial centers 166 of loops 164 may all be disposed on plane 500, which is parallel to plane 502. In this configuration, no loop 164 of wound cable 160 is disposed on top of another loop 164 of wound cable 160. Similarly, each loop 164 of wound cable 160 that extends through passageway 260 may be disposed









**25.** The cable retainer of claim **22**, further comprising a pull tab hingedly coupled to the panel.

**26.** The cable retainer of claim **22**, wherein the single foldable piece of material is composed of a paper-based product.

**27.** The cable retainer of claim **22**, wherein the single foldable piece of material is a compostable material.

**28.** The cable retainer of claim **22**, wherein the single foldable piece of material is a recyclable material.

**29.** A packaged cable comprising:

the cable retainer of claim **22** in the folded configuration, and

a wound cable extending through the passageways defined by the cable retainer.

**30.** The packaged cable of claim **29**, wherein the wound cable loops through the passageways defined by the cable retainer multiple times,

wherein each loop of the wound cable that extends through the passageways is disposed on the same plane parallel to a top surface of the cable retainer panel, and wherein no loop of the wound cable is disposed on top of another loop of the wound cable.

**31.** Packaging comprising:

a base comprising a cavity;

the cable retainer of claim **22** in the folded configuration disposed in the cavity, and

a wound cable extending through the passageways defined by the cable retainer.

**32.** A method of assembling a packaged cable, the method comprising:

winding a cable to form a wound cable including a plurality of cable loops;

folding a cable retainer about the wound cable, wherein the folding comprises:

folding flaps cut from a panel of the cable retainer, folding fingers hingedly coupled to the panel of the cable retainer, and

attaching the fingers to respective flaps to thereby define a plurality of passageways through which the loops of the wound cable extend; and

positioning the cable retainer and the wound cable in a cavity formed in a packaging container.

**33.** The method of claim **32**, wherein each loop of the wound cable is disposed on the same plane parallel to a top surface of the cable retainer panel.

**34.** The method of claim **32**, wherein the cable is wound such that each loop of the cable is in contact with immediately adjacent loops along a majority of each loop.

**35.** A blank for forming a cable retainer, the blank comprising:

a central panel connected to a plurality of fingers by a first set of upward fold lines; and

a plurality of flaps cut from the central panel and connected to the central panel by a second set of upward fold lines;

wherein each upward fold line in the first set of upward fold lines is oriented parallel to an upward fold line in the second set of upward fold lines.

**36.** The blank of claim **35**, further comprising a plurality of segments, each segment disposed between the central panel and a respective finger;

wherein the segments are connected to the fingers by the first set of upward fold lines, and wherein the segments are connected to the central panel by a third set of upward fold lines.

**37.** The blank of claim **35**, further comprising a pull tab connected to the central panel by a fourth upward fold line.

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