



(43) International Publication Date
3 September 2015 (03.09.2015)

(51) International Patent Classification:
G06F 1/16 (2006.01)

(21) International Application Number:
PCT/US2014/019075

(22) International Filing Date:
27 February 2014 (27.02.2014)

(25) Filing Language: English

(26) Publication Language: English

(71) Applicant: **HEWLETT-PACKARD DEVELOPMENT COMPANY, L.P.** [US/US]; 11445 Compaq Center Drive West, Houston, Texas 77070 (US).

(72) Inventors: **SONG, Ki Bok**; 11445 Compaq Center Dr W, Houston, Texas 77070 (US). **CHEN, Eric**; 11445 Compaq Center Dr W, Houston, Texas 77070 (US). **LU, Wen-Yo**; 11445 Compaq Center Dr W, Houston, Texas 77070 (US).

(74) Agents: **MATHEW, Wilson T.** et al.; Hewlett-Packard Company, Intellectual Property Administration, 3404 E. Harmony Road, Mail Stop 35, Fort Collins, Colorado 80528 (US).

(81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM,

DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

- *as to the identity of the inventor (Rule 4.17(i))*
- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

Published:

- *with international search report (Art. 21(3))*

(54) Title: PROTECTIVE COVER FOR A DEVICE

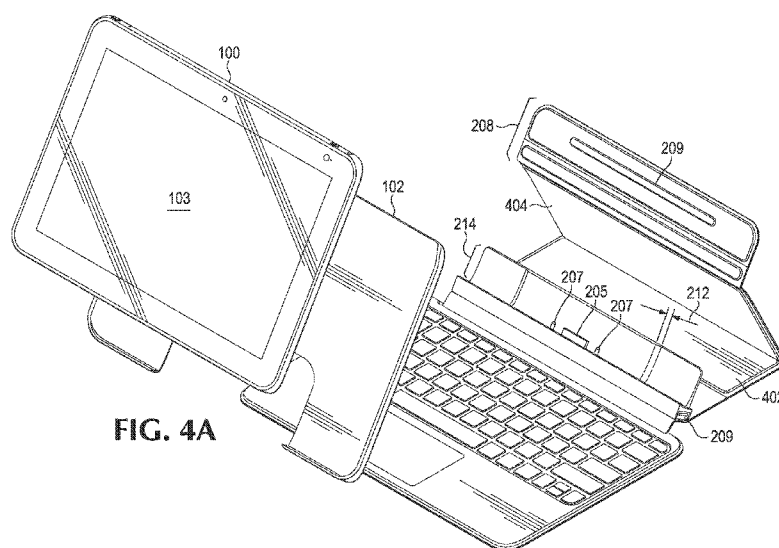


FIG. 4A

(57) Abstract: Examples disclosed herein provide a protective cover for a portable computing device. The protective cover can include a case for enclosing a back surface and sidewalls of the device. The case can include an opening for exposing a portion of the device comprising a portion of a first sidewall and a portion of the back surface adjacent to the first sidewall.

PROTECTIVE COVER FOR A DEVICE

BACKGROUND

[0001] The emergence and popularity of mobile computing has made portable computing devices, due to their compact design and light weight, a staple in today's marketplace. Tablet computers are examples of portable computing devices that are widely used. Tablet computers generally employ a touchscreen on a display surface of the tablet that may be used for both viewing and input. Users of tablets may interact with the touchscreen via finger or stylus gestures. As an example, an on-screen keyboard may be illustrated on the touchscreen surface for entering characters.

BRIEF DESCRIPTION OF THE DRAWINGS

[0002] FIGs. 1A-B illustrate a protective cover for a portable computing device, according to an example;

[0003] FIG. 1C illustrates the device docked to a docking station, while the device is enclosed by the protective cover, according to an example;

[0004] FIG. 2 illustrates a keyboard jacket of the protective cover, according to an example;

[0005] FIG. 3 illustrates magnetic members for coupling the device to the keyboard jacket, according to an example;

[0006] FIGs. 4A-B illustrate the coupling of the device and the protective cover to operate in a laptop mode, according to an example;

[0007] FIG. 4C illustrates the use of the protective cover to operate the device in another mode, according to an example; and

[0008] FIG. 5 illustrates the use of the protective cover to protect the device when it is not in use, according to an example.

DETAILED DESCRIPTION

[0009] As the computing power of portable computing devices such as tablet computers continue to increase, users may desire to expand the use of such devices, for example, from solely employing the touchscreen on the display surface of the tablet computer for both viewing and input. As an example, the tablet computer may be docked to a docking station, which may include various ports (e.g., USB, HDMI, etc.) for expanding the use of the tablet computer. Examples include viewing content from the tablet computer on a secondary monitor connected to a video port of the docking station (e.g., HDMI), and connecting the tablet computer to various peripherals via the ports of the docking station (e.g., keyboard, mouse, etc.).

[0010] With regards to a keyboard, there may be instances when users may desire to enter characters via an external, physical keyboard, particularly when creating content or typing for a prolonged period of time (e.g., creating a document, spreadsheet, or slides). By providing options in expanding the uses of tablet computers, users of tablet computer may have the flexibility to choose between the portable nature of such devices (e.g., employing the touchscreen on the display surface of the tablet computer for both viewing and input) or the expanded uses that allow users to operate the tablet computer similar to a desktop or notebook computer.

[0011] While using a portable computing device such as a tablet computer, it may be desirable to protect the tablet computer via a protective cover. As an example, the protective cover may prevent damage to the tablet computer from accidental drops. The protective cover may be used to cover various portions of the tablet computer, such as the display surface and/or the back surface opposite the display surface. As an example, the protective cover may protect at least the display surface when the tablet computer is not in use. When designing such protective covers, factors that may be considered include at least aesthetics and ease of use. When choosing a protective cover, users may consider the overall appearance of the tablet computer when fitted with the protective cover. With regards to ease of use, users may consider the ease of using the tablet computer while it is fitted to the protective cover. A challenge faced by designers of such protective covers is ensuring an ease

in transitioning from the portable use of the tablet computer to expanded uses as described above, all while protecting the tablet computer via the protective cover.

[0012] Examples disclosed herein provide a protective cover for a portable computing device such as a tablet computer. The protective cover may allow for users to dock the tablet computer to a docking station while the tablet computer is fitted to the protective cover.

[0013] In one example, a protective cover for a portable computing device can include a case for enclosing a back surface and sidewalls of the device. The case can include an opening for exposing a portion of the device comprising a portion of a first sidewall and a portion of the back surface adjacent to the first sidewall.

[0014] In another example, a protective cover for a portable computing device can include a case for enclosing a back surface and sidewalls of the device. The case can include an opening for exposing a portion of the device comprising a portion of a first sidewall and a portion of the back surface extending from the first sidewall.

[0015] In yet another example, a system can include a portable computing device including a display surface and a back surface opposite the display surface, and a protective cover for the device. The protective cover can include a case for enclosing the back surface and sidewalls of the device. The case can include an opening for exposing a portion of the device comprising a portion of a first sidewall and a portion of the back surface extending from the first sidewall.

[0016] With reference to the figures, FIGs. 1A-B illustrate a protective cover for a portable computing device such as a tablet computer 100 including a display surface 103 and a back surface 105 opposite the display surface 103, according to an example. The protective surface may include a case 102 for enclosing at least the back surface 105 and sidewalls of the tablet 100. In between the display surface 103 and the back surface 105, the tablet 100 may include sidewalls around a perimeter of the tablet 100. As an example, the tablet 100 may include four sidewalls (e.g., a left sidewall, a right sidewall, a top sidewall 109, and a bottom sidewall 107). Although a user may be able to view the tablet 100 in a portrait or

landscape orientation, the bottom sidewall 107 may refer to the same sidewall of the tablet 100.

[0017] Referring to FIGs. 1A-B, the case 102 may enclose at least the left and right sidewalls of the tablet 100, and portions of the bottom sidewall 107. A portion of the bottom sidewall 107 (a first sidewall) may be exposed due to an opening 104 in the case 102. In addition, a portion of the back surface 105 adjacent to the bottom sidewall 107 may be exposed, as illustrated in FIG. 1B. As an example, the exposed portion of the back surface 105 may be continuous and extend from the exposed portion of the bottom sidewall 107. Referring to FIG. 1B, the opening 104 or cutout may be U-shaped, but is not limited to the illustrated shape. As illustrated, a width of the opening 104 for exposing the portion of the tablet 100 (e.g., the portion of the bottom sidewall 107 and the portion of the back surface 105) may be less than a width of the tablet 100. As a result, portions of the bottom sidewall 107 and the back surface 105 adjacent to the exposed portions may be protected by the case 102 of the protective cover. The case 102 may have a thickness 106 that is sufficient to protect the tablet 100, for example, by absorbing any impact from an accidental drop of the tablet 100. In addition, the thickness 106 may be sufficient to protect even the portions of the tablet 100 exposed by the opening 104.

[0018] FIG. 1C illustrates the tablet 100 docked to a docking station 110 for the tablet 100, while the tablet is enclosed by a protective cover (e.g., the case 102), according to an example. As described above, the docking station 110 may include various ports (e.g., USB, HDMI, etc.) for expanding the use of the tablet computer 100. The opening 104 in the case 102 may allow for the tablet 100 to be docked to the docking station 110 without having to detach the case 102 from the tablet 100 prior to the docking. The opening 104 may allow for the exposed portion of the back surface 105 to make contact with the docking station. The docking station 110 may include a support element 112 to support the tablet 100 at a viewing angle that is appropriate for users. The support element 112 may make contact with all or a portion of the exposed portion of the back surface 105. As illustrated in FIG. 1C, the support element 112 may occupy the entire portion left exposed via the opening 104, according to an example. With the ability to dock the tablet 100 without having to detach the case 102, users may have a positive experience when transitioning from

a portable use of the tablet (e.g., employing the touchscreen on the display surface of the tablet computer for both viewing and input) to an expanded use, for example, via the docking station 110, all while having the tablet 100 protected via a protective cover.

[0019] As an example, in addition to the case 102, the protective cover may include a keyboard jacket, as illustrated in FIG. 2. As described above, there may be instances when users may desire to enter characters via an external, physical keyboard, particularly when creating content or typing for a prolonged period of time (e.g., creating a document, spreadsheet, or slides). Referring to FIG. 1C, an external keyboard may be attached as a peripheral via a port of the docking station 110. Rather than docking the tablet 100 to the docking station 110, the tablet 100 may be docked to the keyboard jacket (refer to FIG. 4A). As an example, the keyboard jacket may also function as a protective cover to protect at least the display surface of the device, as will be further described.

[0020] The keyboard jacket of the protective cover includes a first portion 202, which may include peripherals such as a keyboard and/or trackpad (as illustrated). The first portion 202 may be pivotally connected to a second portion 204, which may include a connector 205 and guide pins 207 to electrically couple the peripherals with the tablet 100 when the connector 205 is to connect with a port of the tablet 100 along a first sidewall of the tablet 100. Referring to FIG. 1A, the port and pair of cavities illustrated on the bottom sidewall 107 of the tablet 100 may be used to accommodate the connector 205 and guide pins 207 of the keyboard jacket to electrically couple the peripherals of the keyboard jacket. As an example, the port of the tablet 100 used for docking with the connector 205 may be a common port used for other various purposes, such as for charging the tablet 100.

[0021] When docking the tablet 100, fitted with the case 102, to the connector 205, the second portion 204 may include a support element 214 to assist in guiding the tablet 100 to the connector 205. As an example, the portion of the support element 214 aligned with the exposed portion of the back surface 105 (e.g., via the opening 104) may have a thickness 212 to match the thickness 106 of the case 102. As a result, the portion of the support element 214 having the thickness 212 may make

contact with all or a portion of the exposed portion of the back surface 105, similar to the support element 112 of the docking station 110. As an example, the support element 214 may be similarly shaped as the support element 112 (e.g., see FIG. 1C).

[0022] In addition to the peripherals, the second portion 204 may include one or more ports 209 to electrically couple with the tablet 100 when the connector 205 is to connect with the port of the tablet 100. The ports 209 may allow for users to further expand the use of the tablet by connecting to various other peripherals (e.g., camera, camcorder, secondary monitor). As an example, the second portion 204 may be composed of a rigid or semi-rigid material in order to provide a level of sturdiness and rigidity while supporting the tablet 100. Examples of materials that may be used for the second portion 204 include, but are not limited to, plastics, fiber glass, carbon fiber composites, and metals.

[0023] The first portion 202 and the second portion 204 of the keyboard jacket may be separated from each other by a folding region (e.g., pivotally or flexibly attached). In this way, the portions 202, 204 may be folded with respect to each other at the folding region, which may be composed of a foldable or pliable material. Similarly, the second portion 204 may be pivotally connected to a third portion 206 of the keyboard jacket, and the third portion 206 may be pivotally connected to a fourth portion 208 of the keyboard jacket. As an example, the fourth portion 208 of the keyboard jacket may be coupled to a back surface of the case 102 to operate the system in a laptop mode, where the peripherals disposed on the first portion 202 of the keyboard jacket (and other peripherals connected via ports 209) may be used as input for the tablet 100, as will be further described (e.g., see FIGs. 4A-B).

[0024] Referring to FIG. 3, the second portion 204 of the keyboard jacket may include one or more magnetic members 302 (e.g., magnetic members 302₁, 302₂) to magnetically couple with corresponding magnetic members 304 (e.g., magnetic members 304₁, 304₂) disposed within the case 102. As an example, the magnetic coupling may allow for the case 102 to properly align and attach with the second portion 204 when the connector 205 is to connect with the port of the tablet 100. The magnetic member disposed 304₁, 304₂ within the case 102 and the magnetic

members 302₁, 302₂ of the second portion 204 may be arranged to produce magnetic fields that cooperate with each other to generate a magnetic attractive force that attaches the tablet 100 (fitted within the case 102) and the second portion 204 together in a mating engagement. The magnetic members 302, 304 may be arranged in various locations. For example, magnetic member 302₂ may be disposed within the support element 214 of the second portion 204, as illustrated. Properties of the magnetic members that may be controlled include, but are not limited to, field strength and magnetic polarity.

[0025] With regards to magnetic polarity, magnetic elements having the same polarity (e.g., N-N or S-S) may generate a negative or repulsive magnetic force, whereas those corresponding magnetic elements having opposite polarities (e.g., N-S) will generate a positive or attractive magnetic force. As an example, a north pole of the magnetic members 302 of the second portion 204 of the keyboard jacket may generate a positive or attractive magnetic force with a south pole of the magnetic members 304 disposed within the case 102, as illustrated in FIG. 3. This positive or attractive magnetic force may be generated when the case 102 is placed within proximity of the second portion 204. In addition, controlling the magnetic polarity of the magnetic member 302, 304 may allow for the tablet 100 to attach to the second portion 204 in a specific orientation. For example, any attempt made to attach the tablet 100 (fitted in the case 102) to the second portion 204 in a reverse orientation may generate a repulsive magnetic force rather than an attractive magnetic force.

[0026] When detaching the case 102 from the keyboard jacket, the releasing force required to overcome this attractive magnetic force may be determined by controlling properties of one or more of the magnetic members 302, 304, such as the field strength. As mentioned above, the magnetic members 302, 304 may assure proper alignment and positioning of the case 102 with respect to the keyboard jacket. As a result, users may attach the tablet 100 fitted with the case 102 to the second portion 204 of the keyboard jacket in a desired and repeatable manner, such that they are consistently in a pre-determined position relative to one another.

[0027] FIGs. 4A-B illustrate the coupling of the tablet 100 and the protective cover (including the case 102 and the keyboard jacket) to operate in a laptop mode,

according to an example. The tablet 100 may be fitted to the case 102 as described above (e.g., the case 102 may enclose at least the left and right sidewalls of the tablet 100, and portions of the bottom sidewall 107). Thereafter, the tablet 100, fitted to the case 102, may connect to the connector 205 to power the peripherals disposed on the first portion 202 and ports 209 of the keyboard jacket. As described above with reference to FIG. 3, the magnetic coupling may allow for the tablet 100 to properly align and attach with the second portion 204 when the connector 205 is to connect with the port of the tablet 100.

[0028] In order to support the display surface 103 of the tablet 100 at a viewing angle that is appropriate for users (e.g., laptop mode), the fourth portion 208 of the keyboard jacket may be coupled to the back surface of the case 102, as illustrated in FIG. 4B. In order for the fourth portion 208 to be coupled to the back surface of the case 102, the third portion 206 of the keyboard jacket may include a first section 402 and a second section 404 separated from each other by a folding region (e.g., pivotally or flexibly attached). In this way, the sections 402, 404 may be folded with respect to each other at the folding region, which may be composed of a foldable or pliable material. As an example, the sections 402, 404 may be composed of a rigid or semi-rigid material in order to provide a level of sturdiness and rigidity while supporting the tablet 100 in laptop mode, as illustrated in FIG. 4B. Examples of materials that may be used for the sections 402, 404 include, but are not limited to, plastics, fiber glass, carbon fiber composites, and metals. As an example, the first portion 202 of the keyboard jacket may also be composed of rigid or semi-rigid material in order to provide a level of sturdiness to operate the system illustrated in FIG. 4B on various surfaces (e.g., on a user's lap or a level surface, such as a desk or table).

[0029] As an example, the fourth portion 208 of the keyboard jacket may be magnetically coupled to the back surface of the case 102. The case 102 may include magnetic member 108 (e.g., see FIG. 1B), and the fourth portion 208 may include a magnetic member 209 to magnetically couple with magnetic member 108 when the fourth portion 208 is placed within proximity of the back surface of the case 102, as described above with regards to magnetic coupling. The magnetic members 108, 209 may assure proper positioning of the fourth portion 208 with respect to the

back surface of the case 102. As a result, users may couple the keyboard jacket to the back surface of the case 102 in a desired and repeatable manner, such that they are consistently in a pre-determined position relative to one another. Magnetically coupling the case 102 to the keyboard jacket (via the fourth portion 208) may provide an appearance of oneness by in which the case 102 and the keyboard jacket can appear as a single, unified protective cover, providing uniformity in appearance.

[0030] Although FIG. 1B illustrates the magnetic member 108 disposed on an exterior surface of the case 102, the arrangement of the magnetic member 108 is not limited to what is illustrated. For example, the back surface of the case 102 may be formed of a non-magnetic material, such as a plastic or non-ferrous metal (e.g., aluminum) and the case 102 may include the magnetic member 108 disposed with the case 102, configured to work through the back surface of the case 102. By using magnetic members 108 disposed within the case 102, the back surface of the case 102 may have a smooth finish, contributing to the overall aesthetic appeal of the protective cover. As an example, the case 102 may have multiple rows of the magnetic member 108, allowing a user to adjust the viewing angle of the display surface 103 by choosing an appropriate row of the magnetic member 108 when coupling to the fourth portion 208 of the keyboard jacket to the back surface of the case 102.

[0031] The protective cover may allow for users to operate the tablet 100 in various modes. Referring to FIG. 4C, the protective cover may allow for users to operate the tablet 100 in a tent mode, according to an example. As an example, the first portion 202 of the keyboard jacket may be folded back at the folding region between the first portion 202 and the second portion 204, such that a base of the first portion 202 may rest on a surface (e.g., a level surface, such as a desk or table), as illustrated. In addition, the folding region between the first section 402 and the second section 404 may rest on the surface in order to support the display surface 103 of the tablet 100 at a viewing angle in the tent mode. As an example, the first portion 202 and the sections 402, 404 may be composed of a rigid or semi-rigid material in order to provide a level of sturdiness and rigidity while supporting the tablet 100 in tent mode (described above).

[0032] Referring to FIG. 5, the protective cover, including the case 102 and the keyboard jacket, may be used to protect the tablet 100 when it is not in use. From the laptop mode illustrated in FIG. 4B, upon applying a sufficient force to overcome the attractive magnetic force between magnetic members 108, 209, the fourth portion 208 of the keyboard jacket may detach from the back surface of the case 102. The keyboard jacket may be folded at the folding region between the second portion 204 and the third portion 206, such that the third portion may protect the back surface of the case 102. Similarly, the keyboard jacket may be folded at the folding region between the first portion 202 and the second portion 204 such that the first portion 202 may protect the display surface 103 of the tablet 100, as illustrated in FIG. 5.

[0033] The fourth portion 208 may wrap around the top sidewall 109 (opposite the bottom sidewall 107) to secure the tablet 100 within the protective cover. The fourth portion 208 may include a first section 502 and a second section 504 separated from each other by a folding region (e.g., pivotally or flexibly attached). In this way, the sections 502, 504 may be folded with respect to each other at the folding region, which may be composed of a foldable or pliable material. Referring to FIG. 5, the second section 504 may wrap around the top sidewall 109, and the first section 502 may include magnetic member 209 to magnetically couple to a magnetic member disposed within the first portion 202 of the keyboard jacket. The magnetic coupling may ensure that the protective cover remains closed to protect the tablet, until a sufficient force is applied to overcome the attractive magnetic force.

[0034] It is appreciated that examples described may include various components and features. It is also appreciated that numerous specific details are set forth to provide a thorough understanding of the examples. However, it is appreciated that the examples may be practiced without limitations to these specific details. In other instances, well known methods and structures may not be described in detail to avoid unnecessarily obscuring the description of the examples. Also, the examples may be used in combination with each other.

[0035] Reference in the specification to “an example” or similar language means that a particular feature, structure, or characteristic described in connection with the

example is included in at least one example, but not necessarily in other examples. The various instances of the phrase "in one example" or similar phrases in various places in the specification are not necessarily all referring to the same example.

[0036] It is appreciated that the previous description of the disclosed examples is provided to enable any person skilled in the art to make or use the present disclosure. Various modifications to these examples will be readily apparent to those skilled in the art, and the generic principles defined herein may be applied to other examples without departing from the spirit or scope of the disclosure. Thus, the present disclosure is not intended to be limited to the examples shown herein but is to be accorded the widest scope consistent with the principles and novel features disclosed herein.

CLAIMS

WHAT IS CLAIMED IS:

1. A protective cover for a portable computing device including a display surface and a back surface opposite the display surface, the protective cover comprising:
 - a case for enclosing the back surface and sidewalls of the device, wherein the case includes an opening for exposing a portion of the device comprising a portion of a first sidewall and a portion of the back surface adjacent to the first sidewall.
2. The protective cover of claim 1, comprising:
 - a first portion including a keyboard;
 - a second portion pivotally connected to the first portion and including a connector to electrically couple the keyboard with the device when the connector is to connect with a port of the device along the first sidewall of the device;
 - a third portion pivotally connected to the second portion; and
 - a fourth portion pivotally connected to the third portion and coupled to a back surface of the case to operate the system in a laptop mode.
3. The protective cover of claim 2, wherein the fourth portion is magnetically coupled to the back surface of the case.
4. The protective cover of claim 3, wherein the back surface of the case is formed of non-magnetic material and the case includes magnetic members disposed within the case.
5. The protective cover of claim 4, wherein the fourth portion comprises magnetic members to magnetically couple with the magnetic members disposed within the case when the fourth portion is placed within proximity of the back surface of the case.
6. The protective cover of claim 4, wherein the fourth portion is to magnetically detach from the back surface of the case, such that the third portion is to protect the

back surface of the case and the first portion is to protect the display surface of the device, wherein the fourth portion is to wrap around a second sidewall of the device opposite the first sidewall to magnetically couple to a magnetic member disposed within the first portion.

7. The protective cover of claim 2, wherein the second portion comprises magnetic members to magnetically couple with magnetic members disposed within the case to align the device with the second portion when the connector is to connect with the port of the device.

8. The protective cover of claim 2, wherein the second portion comprises one or more ports to electrically couple with the device when the connector is to connect with the port of the device.

9. The protective cover of claim 1, wherein a width of the opening for exposing the portion of the device is less than a width of the device.

10. The protective cover of claim 1, wherein the portion of the back surface makes contact with a docking station for the device when the device enclosed by the case is docked to the docking station.

11. A protective cover for a portable computing device including a display surface and a back surface opposite the display surface, the protective cover comprising:

a case for enclosing the back surface and sidewalls of the device, wherein the case includes an opening for exposing a portion of the device comprising a portion of a first sidewall and a portion of the back surface extending from the first sidewall.

12. The protective cover of claim 11, comprising:

a first portion including a keyboard;

a second portion pivotally connected to the first portion and including a connector to electrically couple the keyboard with the device when the connector is to connect with a port of the device along the first sidewall of the device;

a third portion pivotally connected to the second portion; and

a fourth portion pivotally connected to the third portion and coupled to a back surface of the case to operate the system in a laptop mode.

13. The protective cover of claim 11, wherein a width of the opening for exposing the portion of the device is less than a width of the device.

14. A system, comprising:

a portable computing device including a display surface and a back surface opposite the display surface; and

a protective cover for the device, comprising:

a case for enclosing the back surface and sidewalls of the device, wherein the case includes an opening for exposing a portion of the device comprising a portion of a first sidewall and a portion of the back surface extending from the first sidewall.

15. The system of claim 14, wherein the protective cover comprises:

a first portion including a keyboard;

a second portion pivotally connected to the first portion and including a connector to electrically couple the keyboard with the device when the connector is to connect with a port of the device along the first sidewall of the device;

a third portion pivotally connected to the second portion; and

a fourth portion pivotally connected to the third portion and coupled to a back surface of the case to operate the system in a laptop mode.

1/7

FIG. 1A

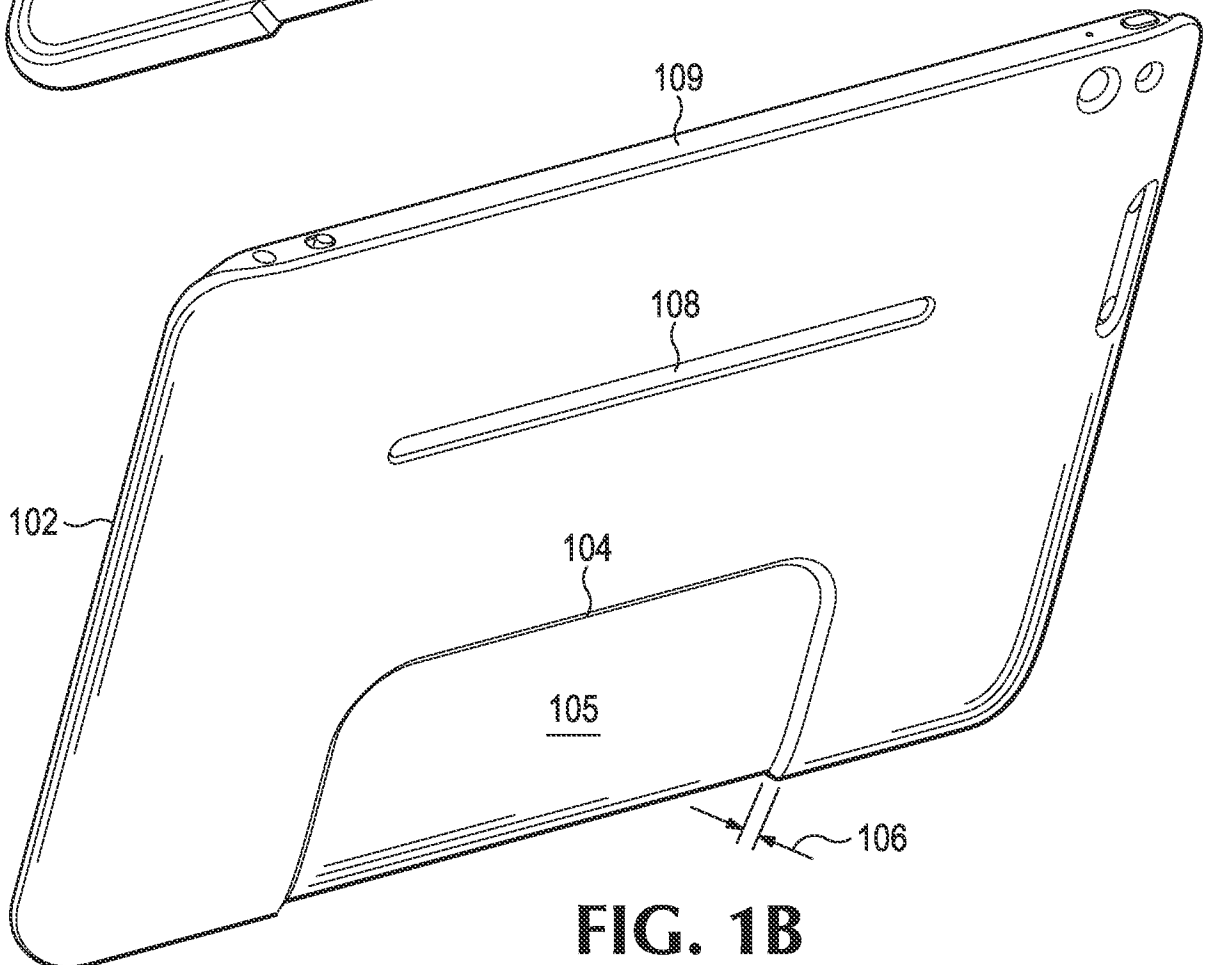
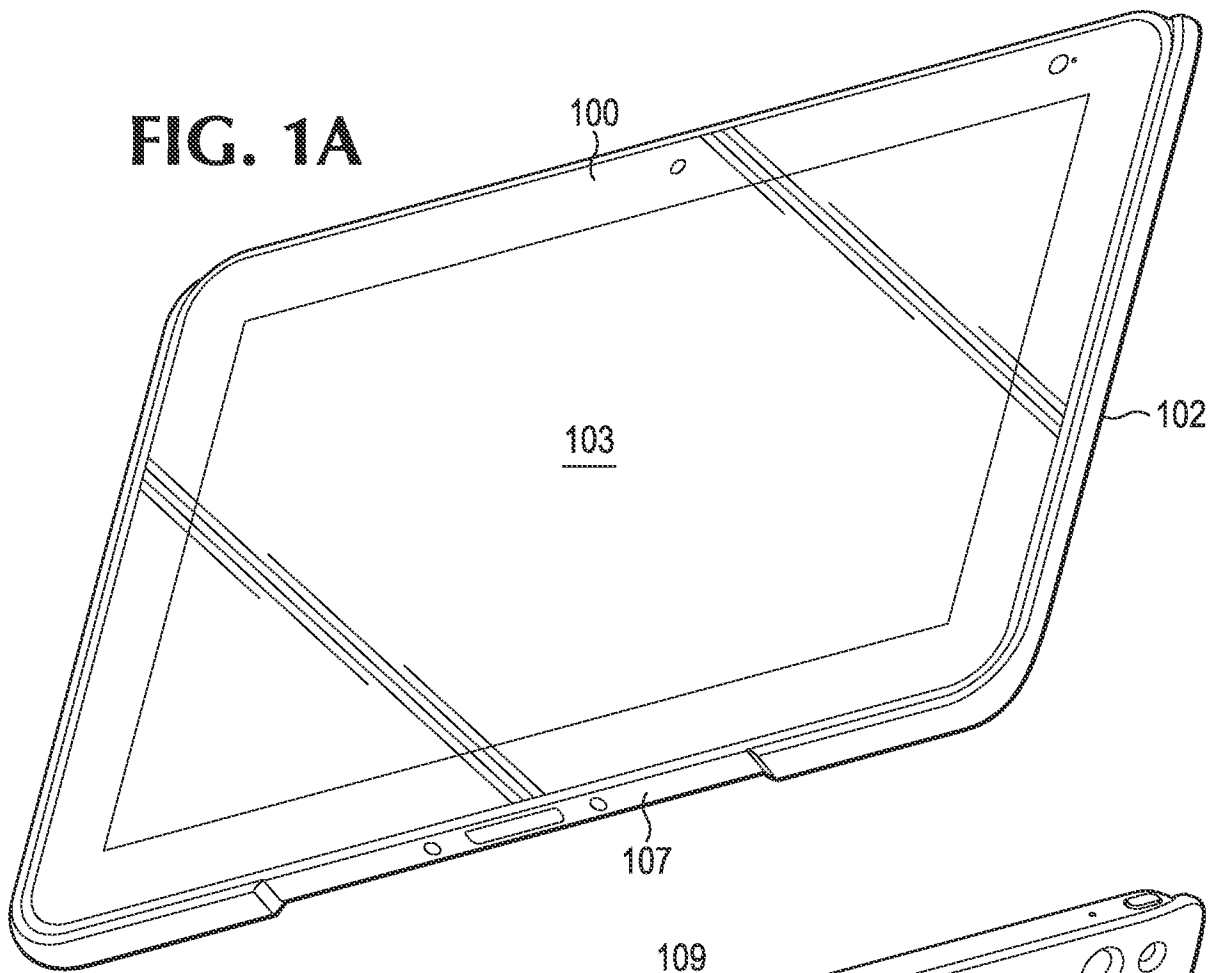
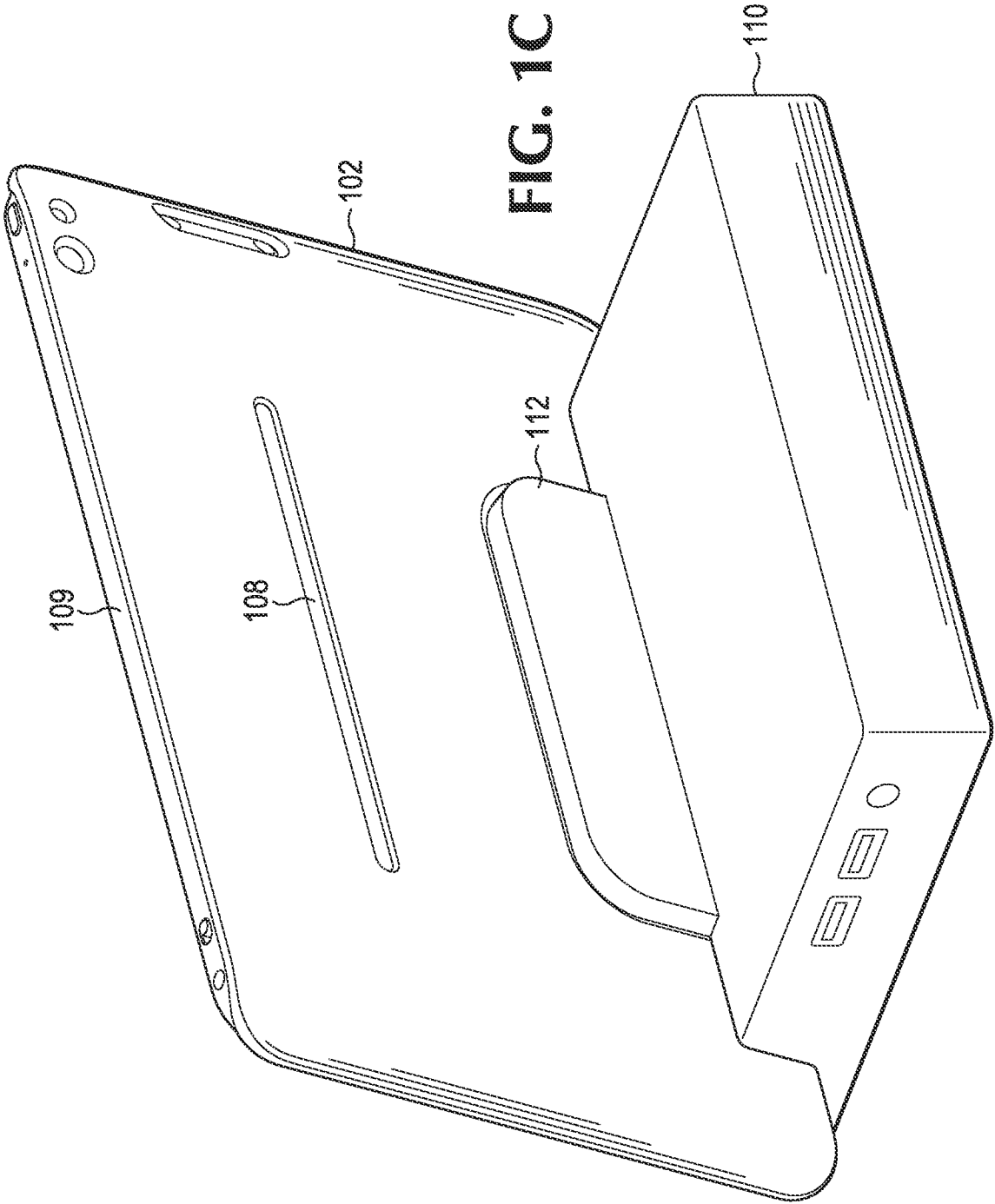
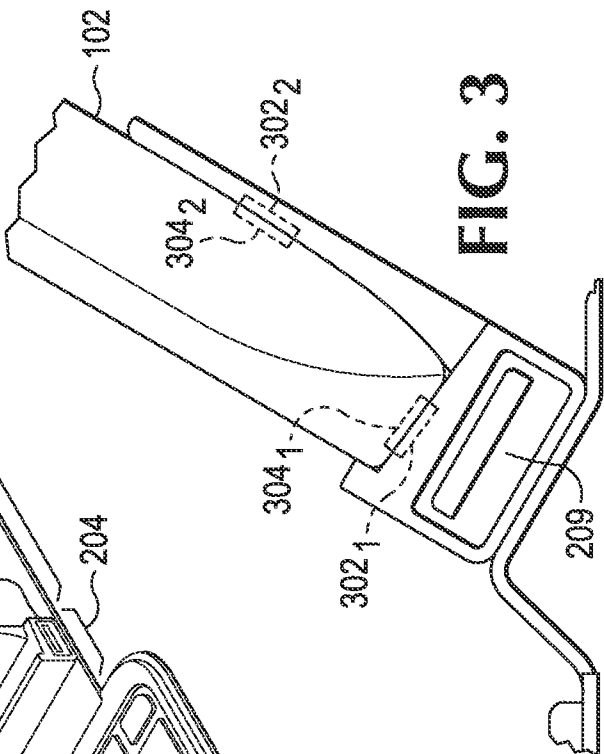
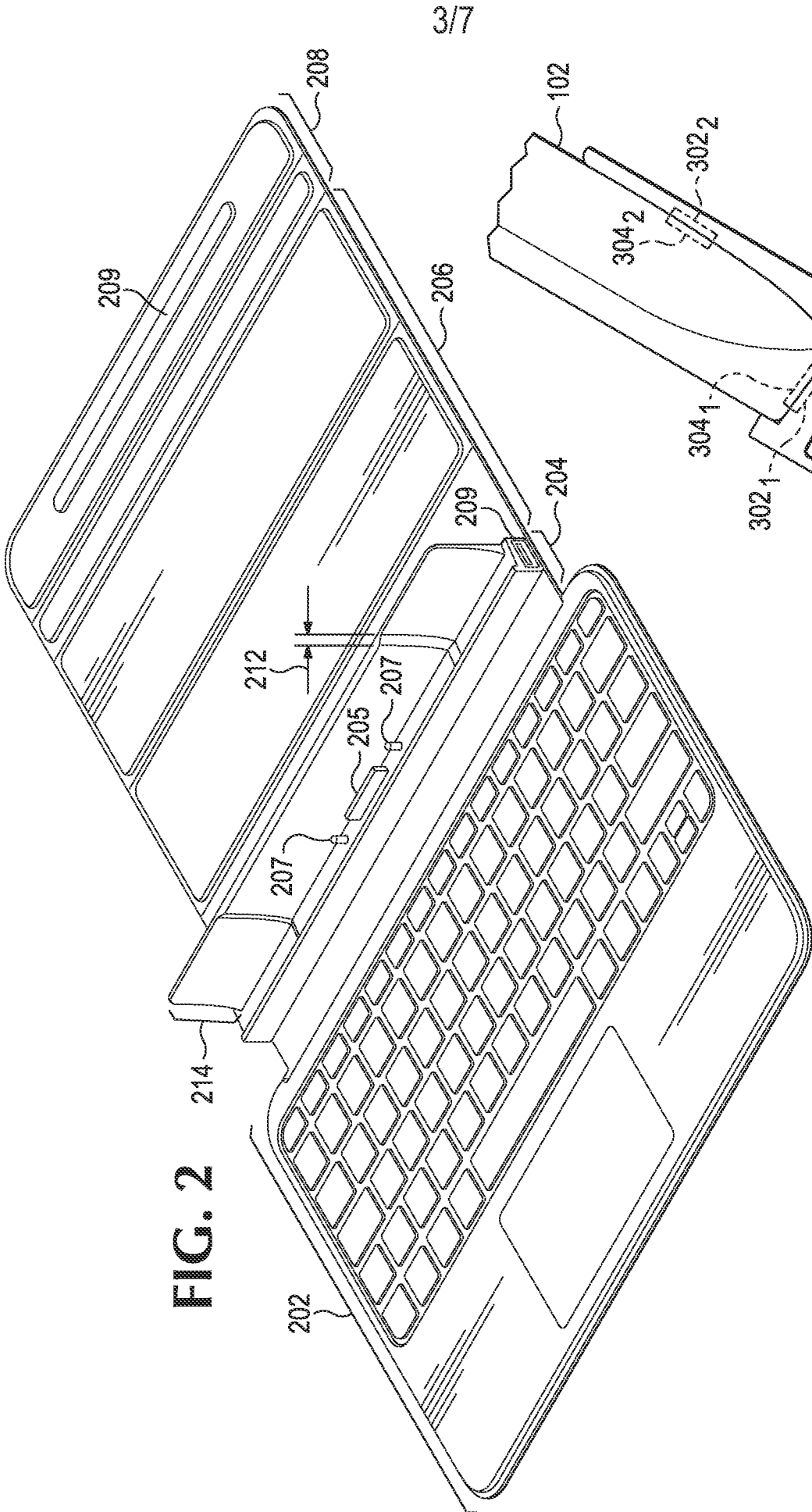


FIG. 1B





4/7

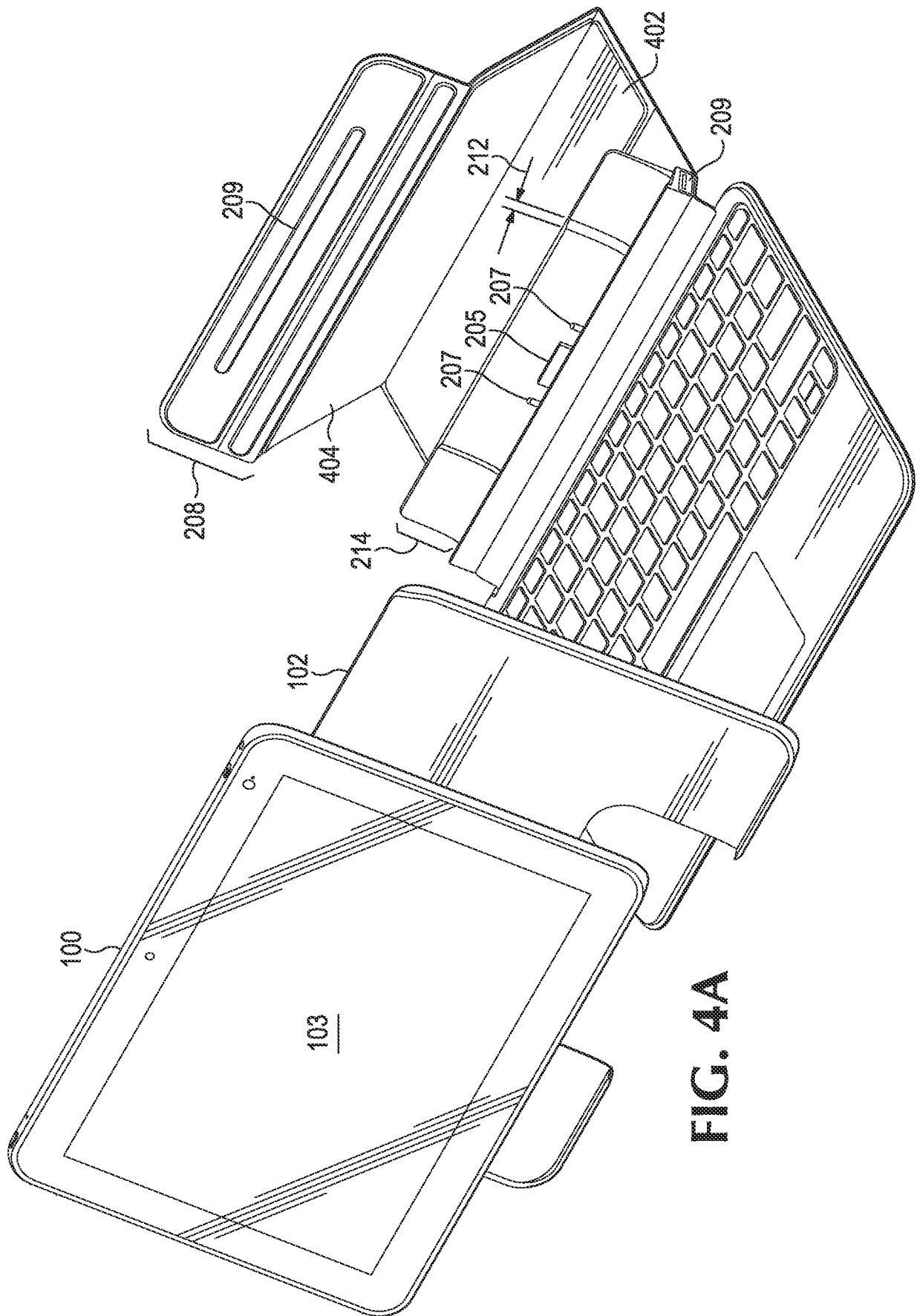
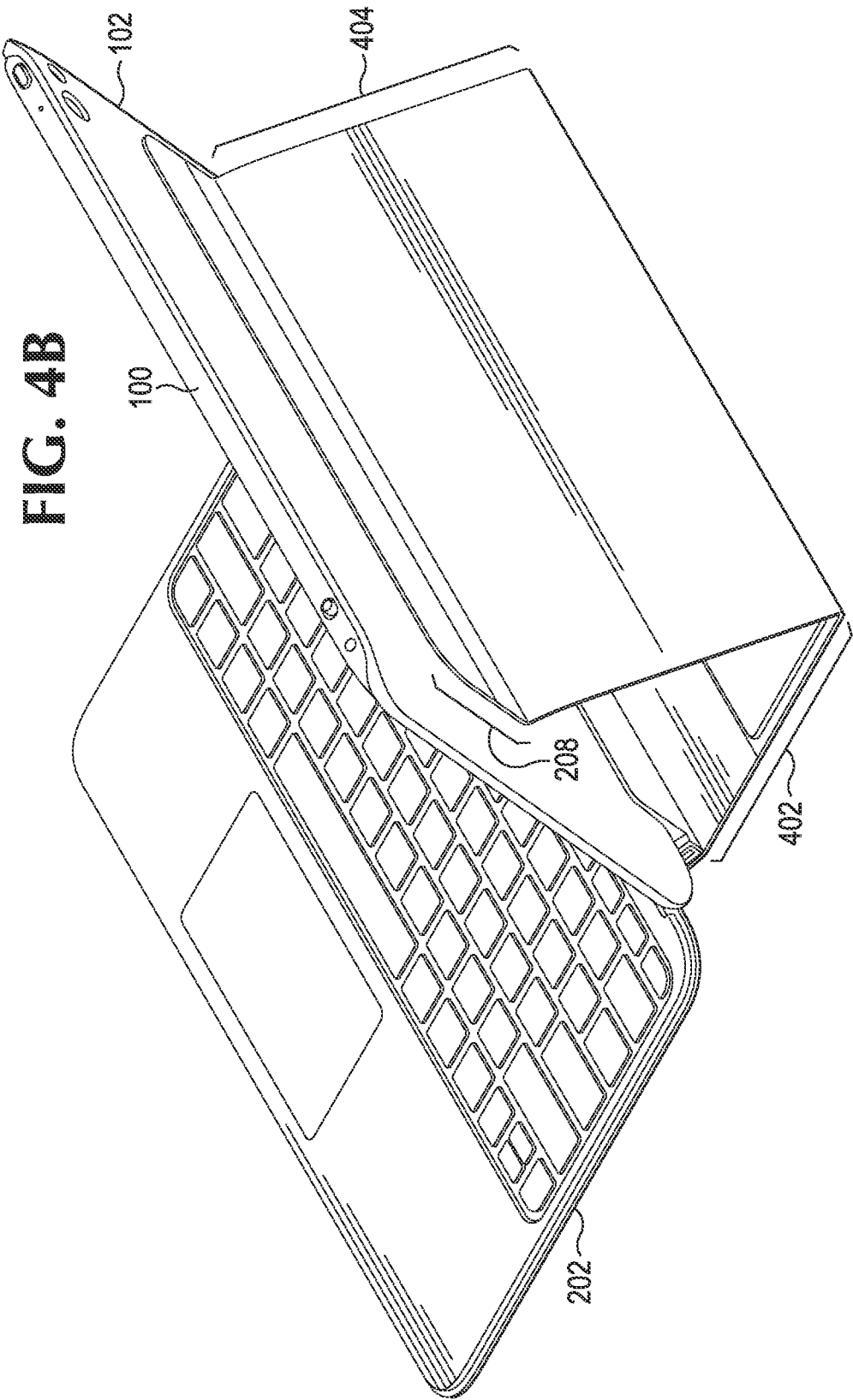


FIG. 4A



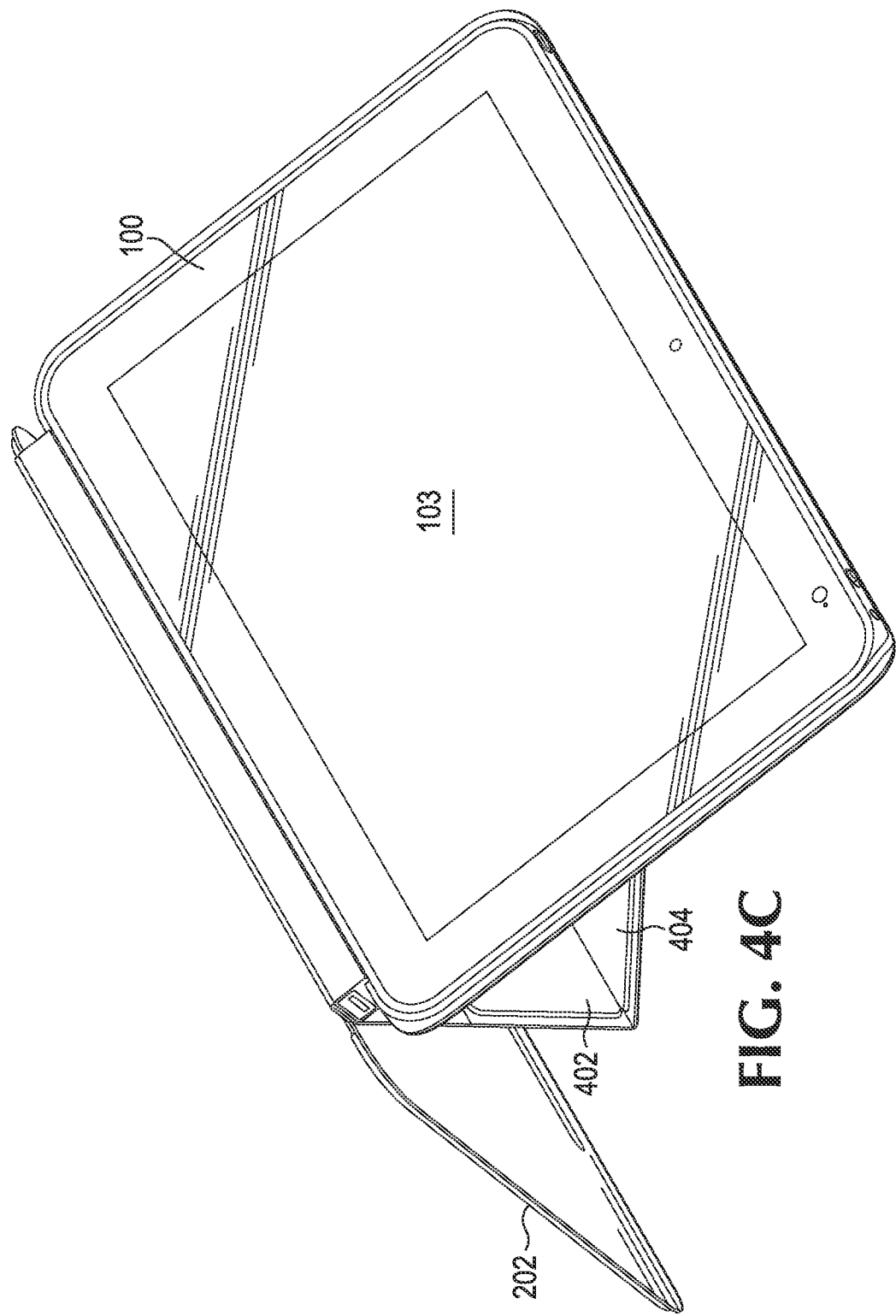


FIG. 4C

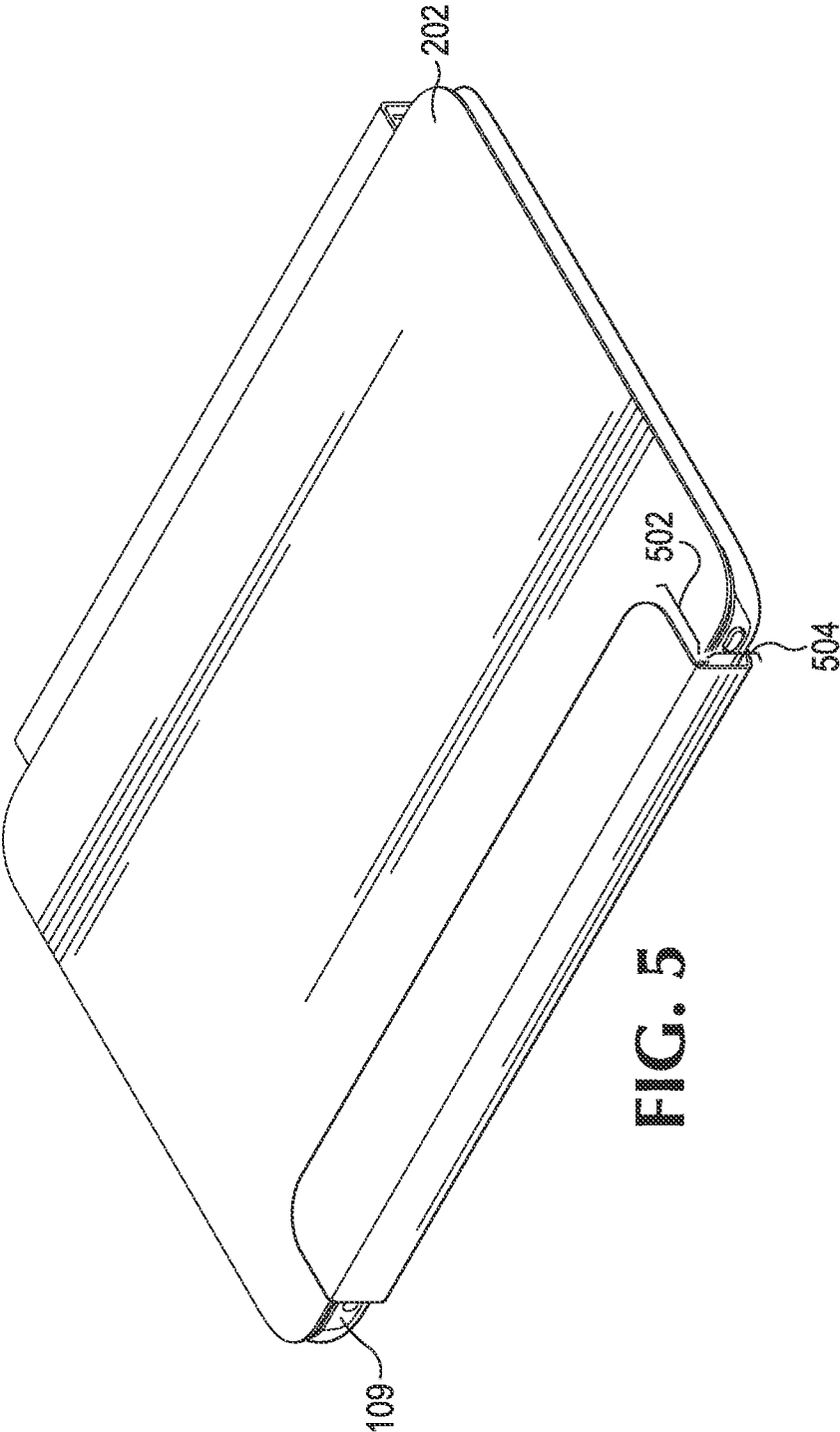


FIG. 5

A. CLASSIFICATION OF SUBJECT MATTER**G06F 1/16(2006.01)i**

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)

G06F 1/16; F16M 13/04; G06F 3/02; H05K 7/00; F16M 11/02; G06F 1/18; G06F 3/041

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

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & keywords: protective cover for portable computing device, opening, keyboard jacket

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2012-0281356 A1 (WESLEY G. BREWER et al.) 08 November 2012 See paragraphs [0033]–[0038]; and figures 2A–2D.	1, 9, 11, 13–14
Y		2–8, 10, 12, 15
Y	US 2012-0194448 A1 (FLETCHER R. ROTHKOPF) 02 August 2012 See paragraphs [0043]–[0045]; and figures 4A–5.	2–8, 12, 15
Y	WO 2012-054976 A1 (DAVID PETER BOLLIGER) 03 May 2012 See paragraphs [0249]–[0251]; and figures 6b–7b.	10
A	US 2013-0088431 A1 (RAFAEL A. BALLAGAS et al.) 11 April 2013 See paragraphs [0028]–[0034]; and figures 1–3.	1–15
A	US 2012-0268891 A1 (FABIO CENCIONI) 25 October 2012 See paragraphs [0032]–[0036]; and figures 3A–3C.	1–15



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:

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

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

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

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

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

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

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

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

"&" document member of the same patent family

Date of the actual completion of the international search

26 November 2014 (26.11.2014)

Date of mailing of the international search report

26 November 2014 (26.11.2014)

Name and mailing address of the ISA/KR

International Application Division
Korean Intellectual Property Office
189 Cheongsu-ro, Seo-gu, Daejeon Metropolitan City, 302-701,
Republic of Korea

Facsimile No. +82-42-472-7140

Authorized officer

LEE, Dong Yun

Telephone No. +82-42-481-8734



INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2014/019075

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2012-0281356 A1	08/11/2012	None	
US 2012-0194448 A1	02/08/2012	AU 2011-100423 A4	09/06/2011
		AU 2011-100424 A4	09/06/2011
		AU 2011-101116 A4	13/10/2011
		AU 2012-212534 A1	22/08/2013
		CA 2733214 A1	19/10/2011
		CA 2733214 C	12/03/2013
		CA 2733236 A1	06/09/2011
		CA 2733236 C	12/03/2013
		CA 2752520 A1	19/10/2011
		CA 2795588 A1	06/09/2011
		CA 2795588 C	05/11/2013
		CA 2810310 A1	19/10/2011
		CA 2810881 A1	06/09/2011
		CA 2826239 A1	22/03/2012
		CN 102147643 A	10/08/2011
		CN 102156510 A	17/08/2011
		CN 102411401 A	11/04/2012
		CN 102411401 B	06/08/2014
		CN 102411402 A	11/04/2012
		CN 102622052 A	01/08/2012
		CN 102692963 A	26/09/2012
		CN 103294124 A	11/09/2013
		CN 202548700 U	21/11/2012
		CN 202748695 U	20/02/2013
		CN 203102070 U	31/07/2013
		EP 2431835 A2	21/03/2012
		EP 2431835 A3	08/08/2012
		EP 2431836 A2	21/03/2012
		EP 2431836 A3	02/05/2012
		EP 2431984 A2	21/03/2012
		EP 2431984 A3	06/08/2014
		EP 2616896 A2	24/07/2013
		EP 2671133 A1	11/12/2013
		EP 2671139 A2	11/12/2013
		GB 2482931 A	22/02/2012
		GB 2482932 A	22/02/2012
		GB 2490183 A	24/10/2012
		JP 05331254 B2	30/10/2013
		JP 05386642 B2	15/01/2014
		JP 05528406 B2	25/06/2014
		JP 2012-529719 A	22/11/2012
		JP 2012-529720 A	22/11/2012
		JP 2013-080268 A	02/05/2013
		JP 2014-002749 A	09/01/2014
		JP 2014-508998 A	10/04/2014
		JP 2014-512552 A	22/05/2014
		KR 10-1110402 B1	05/04/2012

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2014/019075

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2012-054976 A1	03/05/2012	KR 10-1175903 B1	22/08/2012
		KR 10-1190391 B1	11/10/2012
		KR 10-1190466 B1	11/10/2012
		KR 10-1350567 B1	13/01/2014
		KR 10-1361467 B1	11/02/2014
		KR 10-2013-0076874 A	08/07/2013
		KR 10-2013-0118979 A	30/10/2013
		KR 10-2013-0121968 A	06/11/2013
		MX 2013008810 A	31/01/2014
		MX 2013008811 A	31/01/2014
		TW 201303559 A	16/01/2013
		TW 201303561 A	16/01/2013
		US 2012-0066865 A1	22/03/2012
		US 2012-0066873 A1	22/03/2012
		US 2012-0068797 A1	22/03/2012
		US 2012-0068798 A1	22/03/2012
		US 2012-0068919 A1	22/03/2012
		US 2012-0068942 A1	22/03/2012
		US 2012-0069502 A1	22/03/2012
		US 2012-0069503 A1	22/03/2012
		US 2012-0072167 A1	22/03/2012
		US 2014-0049911 A1	20/02/2014
		US 8143982 B1	27/03/2012
		US 8242868 B2	14/08/2012
		US 8253518 B2	28/08/2012
		US 8264310 B2	11/09/2012
		US 8289114 B2	16/10/2012
		US 8289115 B2	16/10/2012
		US 8344836 B2	01/01/2013
		US 8390411 B2	05/03/2013
		US 8390412 B2	05/03/2013
		US 8395465 B2	12/03/2013
		WO 2012-036710 A1	22/03/2012
		WO 2012-036711 A1	22/03/2012
		WO 2012-036712 A1	22/03/2012
		WO 2012-036713 A1	22/03/2012
		WO 2012-036714 A1	22/03/2012
		WO 2012-036715 A1	22/03/2012
		WO 2012-036716 A1	22/03/2012
		WO 2012-036717 A1	22/03/2012
		WO 2012-036891 A2	22/03/2012
		WO 2012-036891 A3	16/08/2012
		WO 2012-106092 A1	09/08/2012
		WO 2012-106215 A2	09/08/2012
		WO 2012-106215 A3	24/01/2013
		AU 2011-320022 A1	02/05/2013
		EP 2633223 A1	04/09/2013
		US 2013-0277529 A1	24/10/2013

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2014/019075

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2013-0088431 A1	11/04/2013	CN 103907073 A EP 2745183 A1 US 8766921 B2 WO 2013-053991 A1	02/07/2014 25/06/2014 01/07/2014 18/04/2013
US 2012-0268891 A1	25/10/2012	EP 2511790 A2 EP 2511790 A3 IT MI20110127 U1	17/10/2012 11/06/2014 15/10/2012