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Adjustable security bracket for laptop computers

Abstract

Apparatuses for physically securing a laptop in an open position to a display surface are disclosed. Such an apparatus comprises a main body from which fastener(s) extend downward, and left and right arms that are extendable and retractable relative to the main body. The left and right arms comprise, respectively, left and right braces. A tab extends through an opening in a bottom of the main body and is configured to transition the apparatus from a unidirectional configuration to a bidirectional configuration in response to being pressed. When the apparatus is in the unidirectional configuration the left and right arms are retractable in tandem relative to the main body, and the left and right arms are prevented from being extended relative to the main body. When the apparatus is in the bidirectional configuration the left and right arms are both retractable and extendable relative to the main body.

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Background/Summary

PRIORITY CLAIM (1) This application claims priority to U.S. Provisional Patent Application No. 63/492,749, filed Mar. 28, 2023, which is incorporate herein by reference.

RELATED APPLICATIONS
(1) This application is related to U.S. patent application Ser. No. 17/887,692, filed Aug. 15, 2022, titled GEARED ADJUSTABLE PHONE BRACKET, and U.S. patent application Ser. No. 17/887,698, filed Aug. 15, 2022, titled RATCHETING BUTTONS FOR SECURING ELECTRONIC DEVICES.
FIELD OF TECHNOLOGY
(2) Embodiments of the present technology relate to apparatuses that physically secure laptops to tabletops of display tables or to other display surfaces.
BACKGROUND
(3) Portable electronic devices, such as laptop computers, are often sold in retail stores. Laptop computers, as the term is used herein, include notebook computers, and can be referred to more succinctly as laptops. Such a laptop typically includes a lower body portion (that includes a keyboard) and an upper body portion (that includes a display screen) that are attached to one another by a hinge. The hinge allows the laptop to selectively be put in either a closed position or an open position by a person. When in the closed position, the lower and upper body portions are facing one another, and the keyboard and display screen are not viewable or accessible. When in the open position, the lower and upper body portions are at an angle relative to one another, and the keyboard and display screen are viewable and accessible.
(4) To enable customers to view, touch, and interface with laptops in a retail store, the laptops are often displayed on a display table. The laptops, which are often costly, are often secured to the display table to prevent theft. For example, a laptop can be physically secured to a table using a cable or a laptop security bracket. Such laptop security brackets may be customized for a specific size of a specific laptop. It often takes a few weeks to a few months lead-time for a laptop security bracket manufacturer to design, build, and distribute a new customized laptop security bracket that is suitable for securing a laptop to a display table. It is typically the case that whenever a new model of a laptop is released, the size (i.e., dimensions) of the laptop is changed compared to the previous model. Accordingly, it is typically the case that whenever a new model of a laptop is released, a new customized laptop security bracket (that is suitable for securing the laptop to a display table) is not available to retail stores for at least a few weeks, and potentially up to a few months. This leads to a retail store needing to order new security brackets each time a new model of a specific laptop is released. Where a retail store sells multiple different models of laptops, each year that store may need to buy numerous new security brackets, which can be very costly and can thus significantly increase the overhead of the retail store.
SUMMARY
(5) Embodiments of the present technology are directed to apparatuses for physically securing a laptop in an open position to a display surface, wherein the laptop includes a lower body portion including a keyboard and an upper body portion including a display screen and attached to the lower body portion by a hinge. In certain embodiments, the apparatus comprises a main body, one or more fasteners extending downward from the main body and configured to secure the main body to the display surface, left and right arms, a rotatable gear, and a gear stop. The rotatable gear

includes first engagement features extending from an outer circumference of the rotatable gear, and also includes second engagement features extending from a side of the rotatable gear. The gear stop includes third engagement features facing the second engagement features of the rotatable gear. The first engagement features of the rotatable gear engage portions of the left and right arms to provide for extension and retraction of the left and right arms in tandem relative to the main body. The gear stop has a first position and a second position. When the gear stop is in the first position, the third engagement features of the gear stop are biased (e.g., by a spring) against the second engagement features of the rotatable gear, during which the rotatable gear is rotatable in one of a clockwise and counterclockwise directions that allows for retraction of the left and right arms in tandem relative to the main body, and during which the rotatable gear is prevented from being rotated in the other one of the clockwise and counterclockwise directions, thereby preventing the extension of the left and right arms. By contrast, when the gear stop is in the second position, the third engagement features of the gear stop are moved away from the second engagement features of the rotatable gear, during which the rotatable gear is rotatable in both of the clockwise and counterclockwise directions, thereby allowing for the extension of the left and right arms.

(6) In accordance with certain embodiments, the main body of the apparatus comprises a main housing from which the left and right arms are extendable and retractable in tandem, and within which are located the rotatable gear and the gear stop. The main body also includes a base from which the one or more fasteners extend downward, and a pedestal that supports the main housing above the base at a distance above the display surface to which the apparatus is attached using the one or more fasteners.

(7) In accordance with certain embodiments, the portions of the left and right arms that engage the rotatable gear comprise rack gears of the left and right arms. In certain such embodiments, the first engagement features of the rotatable gear comprise teeth extending from the outer circumference of the rotatable gear, wherein the teeth extending from the outer circumference of the rotatable gear are configured to intermesh with teeth of the rack gears of the left and right arms.

(8) In accordance with certain embodiments, the second engagement features of the rotatable gear comprise right triangle teeth extending from the side of the rotatable gear, and the third engagement features of the gear stop comprise further right triangle teeth extending from the gear stop.

(9) In accordance with certain embodiments, the apparatus also includes a spring configured to normally bias the gear stop in the first position. In certain such embodiments, the apparatus further comprises a lever configured to selectively overcome the bias of the spring and move the gear stop from the first position to the second position, wherein a portion of the lever extends through an opening in a bottom of the main body. In certain such embodiments, the portion of the lever that extends through the opening in the bottom of the main body comprises a finger release tab. The finger release tab is configured to cause the lever to pivot about a pivot point that is between the finger release tab and a portion of the lever that is attached to the gear stop. The finger release tab is inaccessible, except from an underside of the display surface, when the apparatus is attached to the display surface, thereby preventing someone from releasing the left and right arms after the left and right arms have been retracted to secure the upper body portion of the laptop to the main body and the gear stop is in the first position.

(10) In accordance with certain embodiments, the left and right arms comprise, respectively, left and right braces configured to engage left and right sides of the upper body portion of the laptop so that the apparatus can accommodate various different widths that the laptop may have.

(11) In accordance with certain embodiments, the apparatus further comprises one or more ratcheting buttons configured to push against a backside of the upper body portion of the laptop that is secured between the left and right braces of the left and right arms so that the apparatus can accommodate various different thicknesses that the upper body portion of the laptop may have. In certain such embodiments, each ratcheting button, of the one or more ratcheting buttons, is located in a corresponding hole in the main body or in one of the left and right arms and is configured to be

movable in a first direction within the corresponding hole with a ratchet mechanism to prevent movement of the ratcheting button in a second direction opposite the first direction within the corresponding hole. Additionally, each ratcheting button, of the one or more ratcheting buttons, is configured to push against the backside of the upper body portion of the laptop that is secured between the left and right braces of the left and right arms, when moved in the first direction within the corresponding hole.

(12) In accordance with certain embodiments of the present technology, when the gear stop is in the first position, the third engagement features of the gear stop are biased against the second engagement features of the rotatable gear, during which the apparatus is in a unidirectional configuration that allows for rotation of the rotatable gear in a single direction that allows for the retraction of the left and right arms in tandem relative to the main body, and during which the rotatable gear is prevented from being rotated in a second direction that prevents the extension of the left and right arms. By contrast, when the gear stop is in a second position, the third engagement features of the gear stop are moved away from the second engagement features of the rotatable gear, during which the apparatus is in a bidirectional configuration that allows for rotation of the rotatable gear in both of the first and second directions, thereby allowing for the extension of the left and right arms. In certain such embodiments, a tab is configured to transition the apparatus from the unidirectional configuration to the bidirectional configuration in response to the tab being pressed. In certain such embodiments, the tab is part of a lever that is configured to overcome the bias of a spring and move the gear stop from the first position to the second position in response to the tab being pressed. In certain such embodiments, that tab extends through an opening in a bottom of the main body, and the tab is inaccessible, except from an underside of the display surface, when the apparatus is attached to the display surface.

(13) This Summary is provided to introduce a selection of concepts in a simplified form that are further described below in the Detailed Description. This Summary is not intended to identify key features or essential features of the claimed subject matter, nor is it intended to be used as an aid in determining the scope of the claimed subject matter.

Description

BRIEF DESCRIPTION OF THE DRAWINGS

(1) FIG. **1**A is a front perspective views of an adjustable laptop security bracket, according to an embodiment of the present technology, wherein arms of the security bracket are in their fully retracted positions in FIG. **1**A.

(2) FIGS. **1**B, **1**C and **1**D are, respectively, front, top, and side views of the adjustable laptop security bracket introduced in FIG. **1**A.

(3) FIG. **1**E is rear perspective exploded view of the adjustable laptop security bracket introduced in FIG. **1**A.

(4) FIGS. **1**F and **1**G are front perspective views of the adjustable laptop security bracket introduced in FIG. **1**A, with its arms partially extended, wherein in FIG. **1**G portions of the adjustable laptop security bracket are removed to show some of the internal elements thereof.

(5) FIGS. **1**H and **1**I are, respectively, a front view and a side view of the adjustable laptop security bracket securing a laptop (shown in broken line) to a tabletop.

(6) FIGS. **2**A, **2**B, **2**C and **2**D are, respectively, perspective, top, front and side views of one of the arms of the adjustable laptop security bracket, according to an embodiment of the present technology.

(7) FIG. **2**E illustrates how toothed edges of appendages of the arms of the adjustable laptop security bracket interact with a rotatable gear.

(8) FIGS. **3**A, **3**B and **3**C are, respectively, perspective, side and top views of a gear of the

adjustable laptop security bracket, according to an embodiment of the present technology.
(9) FIGS. **4**A, **4**B, **4**C and **4**D are, respectively, front perspective, rear perspective, top and side views of a gear stop, according to an embodiments of the present technology. FIG. **4**E is another side view of the gear stop, and FIG. **4**F is a section view of the gear stop along the lines F-F in FIG. **4**E.
(10) FIGS. **5**A, **5**B and **5**C are, respectively, front perspective, front and side views of a gear stop release lever of the adjustable laptop security bracket, according to an embodiment of the present technology.
(11) FIGS. **6**A and **6**B are used to show how the gear, gear stop and gear stop release lever operate according to an embodiment of the present technology.
(12) FIG. **7** is a perspective view of a pedestal and a base of the adjustable laptop security bracket, according to an embodiment of the present technology, with portions thereof removed.
(13) FIGS. **8**A, **8**B, **8**C and **8**D are, respectively, front perspective, front, top and side views of the main housing, with a front plate thereof removed, according to an embodiment of the present technology. FIG. **8**E is a section view of the main housing **112** along the lines E-E in FIG. **8**C.
(14) FIGS. **9**A-C illustrate ratcheting buttons of the adjustable laptop security bracket, according to an embodiment of the present technology.
(15) FIGS. **10**A-B illustrate an example of the ratcheting button engaging a ratchet surface on an inner wall of a hole.
(16) FIGS. **11**A-G illustrate examples of ratcheting buttons showing engagement and disengagement from two ratchet surfaces on an inner wall of a hole.

DETAILED DESCRIPTION

(17) Embodiments of the present technology generally relate to apparatuses that can be used to physically secure laptops to tabletops of display tables or to other display surfaces. Such a laptop, as is known in the art, includes a lower body portion and an upper body portion that are attached to one another by a hinge, wherein the lower body portion includes a keyboard, and the upper body portion includes a display screen that may or may not be a touch screen. The lower body portion may also include a touchpad or other type of pointing device that enables a cursor and/or other displayed elements to be maneuvered by a user. The hinge allows the laptop to be selectively put in either a closed position or an open position. When in the closed position, the lower and upper body portions face one another and the keyboard and display screen of the laptop are facing one another and not viewable or accessible. When in the open position, the lower and upper body portions are preferably at an obtuse angle relative to one another, and the keyboard and display screen are viewable and accessible.
(18) The benefits, features, and advantages of the various embodiments of the present technology will become better understood with regard to the following description and accompanying drawings. The following description is presented to enable one of ordinary skill in the art to make and use embodiments of the present technology as provided within the context of a particular application and its requirements. Various modifications to the embodiments described herein will, however, be apparent to one skilled in the art, and the general principles defined herein may be applied to other embodiments. Therefore, the embodiments of the present invention are not intended to be limited to the particular embodiments shown and described herein, but are to be accorded the widest scope consistent with the principles and novel features herein disclosed.
(19) FIGS. **1**A, **1**B, **1**C and **1**D are, respectively, front perspective, front, top and side views of an adjustable laptop security bracket **102**, according to an embodiment of the present technology. FIG. **1**E is a rear perspective exploded view of the adjustable laptop security bracket **102**. The adjustable laptop security bracket **102** is also referred to herein more succinctly as a laptop security bracket **102** or an adjustable security bracket **102**, and even more succinctly as a security bracket **102**. The adjustable laptop security bracket can also be referred to more generally herein as an apparatus for physically securing a laptop in an open position to a display surface. The adjustable laptop security

bracket **102** is shown as including a main housing **112**, a left arm **122***a* that extends from a left side of the main housing **112**, and a right arm **122***b* that extends from a right side of the main housing **112**. The left and right arms **122***a*, **122***b* can be referred to collectively as the arms **122**, or individually as an arm **122**. Each of the arms **122** includes a respectively inwardly projecting brace **130**, which are configured to engage and secure respective sides of an upper body portion of a laptop, which as noted above, is the portion of a laptop that includes a display screen. The braces **130** may have dimensions to accommodate a range of thicknesses of the upper body portions of laptops, which upper body portions include the display screens of the laptops.

(20) FIG. **1**E is rear perspective exploded view of the adjustable laptop security bracket **102**. FIGS. **1**F and **1**G are front perspective views of the adjustable laptop security bracket **102**, with its arms **122** partially extended, wherein in FIG. **1**G a front plate **114** of the main housing **112** and a front plate **144** of the pedestal **142** are removed to show some of the internal elements thereof of the security bracket **102**.

(21) As shown in FIG. **1**E, the security bracket **102** includes a rotatable circular gear **172** and a gear stop **182** that are located within the main housing **112**. The rotatable gear **172** can also be seen in FIG. **1**G. Additional details of the rotatable gear **172** are described below with reference to FIGS. **3**A-**3**C, and additional details of the gear stop **182** are described below with reference to FIGS. **4**A-**4**F. As will be described in more detail below, with reference to FIGS. **6**A and **6**B, the gear stop **182** has a first position and a second position.

(22) In FIGS. **1**A-**1**E, the arms **122***a*, **122***b* are shown as being in their fully retracted positions. FIG. **1**F is a front perspective view of the security bracket **102** with the arms **122***a*, **122***b* in partially extended positions. FIG. **1**G is front perspective view of the security bracket **102** with the front plate **114** of the main housing **112** removed, wherein the arms **122***a*, **122***b* of the security bracket **102** are in partially extended positions. The arms **122***a*, **122***b* can be collectively referred to as the arms **122**, or can be individually referred to as an arm **122**.

(23) As shown in FIGS. **1**A-**1**G, the main housing **112** is supported by a pedestal **142**, which is attached to a base **152**. More specifically, the pedestal **142** supports the main housing **112** at a distance above the base **152**, and thereby a distance above a support surface (e.g., tabletop or other display surface) upon which the base **152** rests and is attached thereto. Extending downward from the base **152** are fasteners **162**, which can be threaded bolts, but are not limited thereto. The main housing **112**, the pedestal **142** and the base **152** can be considered parts of a main body of the adjustable security bracket **102**. In the embodiments shown in the drawings, the main body is made up of three discrete parts (i.e., the main housing **112**, the pedestal **142** and the base **152**) that are attached to one another during assembly of the adjustable security bracket **102**. However, it is also possible that the main body can include more or less components, e.g., the main housing **112** and pedestal **142** can be a one component and the base **152** can be a second component, or the base **152** and the pedestal **142** can be one component, and the main housing **112** can be a second component. Other variations are also possible and within the scope of the embodiments described herein.

(24) The fasteners **162** can be used to secure the adjustable security bracket **102** (and a laptop secured thereto) to a tabletop of a display table that includes through-holes that are appropriately located (i.e., spaced apart) so as to accept the fasteners **162** that extend downwards from the security bracket **102**. The through-holes can be drilled in appropriate locations in a tabletop, or can be prearranged in a predetermined patterns of rows and columns of through-holes. Nuts (e.g., wingnuts) and/or other fastener hardware can then be used to secure the security bracket **102** (and a laptop secured thereto) to the tabletop of a display table from the underside of the tabletop. Preferably, the underside of the tabletop is made inaccessible to customers and potential thieves in a retail store, e.g., by being encased in a locked enclosure. This way potential thieves cannot remove the security bracket **102** from the display table, and thus, could not steal the laptop that is secured to the display table by the security bracket **102**. In specific embodiments, the fasteners **162** are threaded PEM™ stud fasteners available from PennEngineering (headquartered in Danboro,

Pennsylvania), but are not limited thereto. The length of each of the fasters can be, e.g., about 0.75 inches, but is not limited thereto.

(25) While two fasteners **162** are shown as extending downwards from the base **152**, more or less fasteners **162** can be included, i.e., one or more fasteners **162** can extend downward from the base **152**. The fastener(s) **162** is/are used to secure the base **152**, and more generally the security bracket **102**, to a support surface, such as a tabletop. In the embodiment shown, the fasteners **162** are two bolts with wingnuts. However, alternative types and/or quantities of fasteners **162** may extend downward from the base **152**, and more generally, from the main body.

(26) As also shown in FIGS. **1**A-**1**G, the main housing **112** includes holes **180***a* and **180***b*, which can be collectively referred to as the holes **180**, or individually as a hole **180**. The holes **180** may be configured to accommodate additional components (e.g., ratcheting buttons, discussed below) to press against a backside of an upper body portion of a laptop, to thereby firmly secure laptops having various different thicknesses to the security bracket **102**. In other words, the additional components (e.g., ratcheting buttons) that are used with the holes **180** enable the security bracket **102** to be used with various different laptops that have various different thicknesses, and more specifically, where upper portions of the laptops have various different thicknesses (i.e., a wide range of thicknesses).

(27) FIGS. **1**H and **1**I are, respectively, a front view and a side view of the adjustable laptop security bracket **102** securing a laptop **210** to a tabletop **220** or other display surface. The laptop **210** includes a lower body portion **214** and an upper body portion **212** that are attached to one another by a hinge **216**, wherein the lower body portion **214** includes a keyboard, and the upper body portion **212** includes a display screen that may or may not be a touch screen. The lower body portion **214** may also include a touchpad or other type of pointing device that enables a cursor and/or other displayed elements to be maneuvered by a user. The hinge **216** allows the laptop **210** to be selectively put in either a closed position or an open position, and also enables the upper body portion **212** to be placed at a one a plurality of different angles relative to the lower body portion **214**.

(28) FIGS. **2**A, **2**B, **2**C and **2**D are, respectively, perspective, top, front and side views of one of the arms **122**, e.g., the right arm **122***b*. The left arm **122***a* is the same as the right arm, but rotated 180 degrees. Indeed, in an embodiment the left and right arms **122***a*, **122***b* are identical to one another, i.e., are two separate instances of the same manufactured part, which simplifies manufacturing. The arm **122** includes a first appendage **124** and a second appendage **126** that are separated from one another by a gap. The first and second appendages **124**, **126** include, respectively, elongated guide channels **125** and **127** that are parallel to another, and teeth on the first appendage **124** that form a toothed edge **128** that faces in a direction of the second appendage **126**. The arm **122** also includes the inwardly projecting brace **130**. As can be appreciated from FIG. **2**C, the first and second appendages are not coplanar, but rather, they are slightly vertically offset from one another. This enables the first appendage **124** of the left arm **122***a* to slide above the second appendage **126** of the right arm **122***a*, and enables the first appendage of the right arm **122***b* to slide above the second appendage **126** of the left arm **122***b*. In FIG. **2**C, the first appendage **124** is vertically above the second appendage **126**. In an alternative embodiment, the second appendage **126** is instead vertically above the first appendage **124**.

(29) In certain embodiments, where the arms **122** are made of a metal or alloy, the inner surfaces of the braces **130** can be over-molding with a gripping material, such as a thermoplastic elastomer (TPE), rubber, silicon, polymeric material or other plastic, capable of increasing the adhesion, grip or coefficient of friction between the inner surfaces of the braces **130** and an upper body portion of a laptop. The gripping material should also reduce the probability of the braces scratching the upper body portion of a laptop.

(30) FIG. **2**E illustrates how toothed edges **128** of the appendages **124** of the arms **122***a* and **122***b* interact with the rotatable gear **172**. The toothed edge **128** of the appendage **124** of the left arm

122*a* provide a first rack gear. Similarly, the toothed edge **128** of the appendage **124** of the right arm **122***b* provide a second rack gear. The teeth **174** of the rotatable gear **172**, which can also be referred to as a rotatable circular gear **172**, intermesh with these first and second rack gears to thereby cause the left arm **122***a* and the right arm **122***b* to move in and out (aka, be retracted and extended) relative to the main housing **112** in tandem with one another. Protrusions **113** that extend from an interior of the main housing **112** fit within the guide channels **125** and **127** of the appendages **124** and **126** to act as guides for the arms **122**, and maintain proper alignment of the arms **122** relative to the main housing **112** and one another. The teeth **174** of the rotatable gear **172**, which are located about an outer circumference of the rotatable gear **172**, can also be referred to as first engagement features. Additional details of the rotatable gear **172**, according to an embodiment of the present technology, are described below with reference to FIGS. **3**A-**3**G.

(31) Referring to FIGS. **3**A-**3**C, the rotatable gear **172** is shown as including the first engagement features **174** (e.g., teeth or cogs) about its outer circumference, and second engagement features **176** (e.g., teeth or cogs) along a backside of the rotatable gear **172**. In the embodiment shown, the second engagement features **176** are right triangle teeth, as can be appreciated from FIG. **3**B. The rotatable gear **172** also includes a cylindrical rod **178** extending (aka protruding) axially from the backside of the rotatable gear **172**.

(32) Referring briefly to FIGS. **4**A-**4**F, the gear stop **182** includes engagement features **186** on a frontside thereof, which are configured to selectively engaged with the second engagement features **176** of the rotatable gear **172**. In the embodiment shown, the engagement features **186** are right triangle teeth, as can be appreciated from FIG. **4**D. A hollow dowel **188** extends from a backside of the gear stop **182**. A circumferential groove **189** in the hollow dowel **188** is configured to accept a ring clip, also known as a C-clip, E-clip, E-ring or circlip, that is used to secure the gear stop **182** to a gear stop release lever **192**, which are described below with reference to FIGS. **5**A-**5**C and FIGS. **6**A and **6**B.

(33) The gear stop **182** also includes a central hole **187** that extends axially through a center of the gear stop **182** and is sized to allow the cylindrical rod **178** of the rotatable gear **172** to fit within the hole **187**. The gear stop **182** also includes a pair of guide holes **185** that are parallel to the central hole **187**. The guide holes **185** are sized to accept protrusions **115** (shown in FIGS. **8**A and **8**B) within the main housing **112**. As will be described in additional detail below, with reference to FIGS. **6**A and **6**B, a spring **190** normally biases the gear stop **182** against the rotatable gear **172**. While the gear stop **182** is biased against the rotatable gear **172**, such that the engagement features **186** of the gear stop **182** intermesh with the second engagement features **176** of the rotatable gear **172**, the rotatable gear operates as a unidirectional gear that only allows that arms **122***a* and **122***b* of the security bracket **102** to be retracted, but prevents the arms **122***a* and **122***b* from being expanded. The above can be referred to herein as the unidirectional configuration.

(34) As noted above, the gear stop **182** has a first position and a second position. When the gear stop **182** is in its first position, the engagement features **186** of the gear stop **182** are normally biased by the spring **190** against the engagement features **186** of the rotatable gear **172**, during which the rotatable gear **172** is rotatable in one of a clockwise and counterclockwise directions that allows for the retraction of the left and right arms **122***a*, **122***b* in tandem relative to the main body, and during which the rotatable gear **172** is prevented from being rotated in the other one of the clockwise and counterclockwise directions, thereby preventing the extension of the left and right arms **122***a*, **122***b*. Accordingly, while the gear stop **182** is in its first position, the arms **122***a*, **122***b* can be manually retracted to thereby secure an upper body portion (e.g., **212**) of a laptop (e.g., **210**) between the braces **130** of the left and right arms **122***a*, **122***b*.

(35) By contrast, when the gear stop **182** is in its second position, the engagement features **186** of the gear stop **182** are moved away from the engagement features **176** on the front side of the rotatable gear **172**, during which the rotatable gear **172** is rotatable in both of the clockwise and counterclockwise directions, thereby allowing for the extension of the left and right arms **122***a*,

122*b*, as well as retraction of the left and right arms **122***a*, **122***b*. In the embodiment shown, it is the gear stop release lever **192** that is used to selectively transition the gear stop **182** from its first position to its second position. More specifically, to put the gear stop **182** in its second position, the gear stop release lever **192** is used to pull the gear stop **182** away from rotatable gear **172**, overcoming the bias created by the spring **190**, such that the engagement features **186** of the gear stop **182** do not intermesh with the second engagement features **176** of the rotatable gear **172**. When the engagement features **186** of the gear stop **182** do not intermesh with the second engagement features **176** of the rotatable gear **172**, the rotatable gear **172** operates as a unidirectional gear that allows that arms **122***a* and **122***b* of the security bracket **102** to be both expanded and retracted. The above can also be referred to herein as the bidirectional configuration. Accordingly, it can be appreciated that the adjustable security bracket **102** has both a unidirectional configuration and a bidirectional configuration.

(36) Referring to FIGS. **5**A-**5**C, the gear stop release lever **192** is shown as including an upper portion including an opening **193** (aka hole **193**) that accepts the hollow dowel **188** of the gear stop **182**. A central portion of the gear stop release lever **192** includes an opening **194** that is configured to accept a cylindrical rod **202** about which the lever **192** pivots. A lower portion of the gear stop release lever **192** includes a finger release tab **195**. During assembly of the adjustable security bracket **102**, the distal end of the hollow dowel **188** is inserted through the hole **193** and held in place by a ring clip **191** (also known as a C-clip, E-clip, E-ring or circlip) that is secured within the circumferential groove **189** of the hollow dowel **188**, and is thereby used to secure the gear stop **182** to the gear stop release lever **192**. Additionally, during assembly of the adjustable security bracket **102**, the finger release tab **195** is inserted through an opening **153** in the base **152** (which opening **153** is shown in FIG. **7**), and the cylindrical rod **202** is inserted through the opening **194** of the gear stop release lever **192**, so that the lever **192** can pivot about the rod **202**. The rod **202** is held in place by rod holders **204** of the main housing **112**, which rod holders **204** are shown in FIGS. **8**B-**8**E.

(37) Referring to FIGS. **6**A and **6**B, as explained above, the spring **190** normally biases the gear stop **182** against the rotatable gear **172** such that the second engagement features **176** of the rotatable gear **172** or interlocked with the engagement features **186** of the gear stop **182**. The spring **190**, and the configurations of the second engagement features **176** (of the rotatable gear **172**) and the engagement features **186** (of the gear stop **182**), allow the rotatable gear **172** to be rotated in one of a clockwise and counterclockwise directions, and prevents the rotatable gear **172** from rotating in the other one of the clockwise and counterclockwise directions (so as to enable the arms **122** to be retracted when the gear stop **182** engages the gear **172**, and prevent the arms **122** from be expanded when the gear stop **182** engages the gear **172**). Accordingly, the rotatable gear **172** normally operates as a unidirectional gear that only allows the arms **122** to be retracted towards the main housing **112**, except when the gear stop release lever **192** is used to overcome the normal biasing of the spring **190** and move the gear stop **182** away from the rotatable gear **172**, during which the rotatable gear **172** operates as a bidirectional gear that allows the arms **122** to be retracted towards the main housing **112** and expanded away from the main housing **112**. As can be appreciated from the above description, the adjustable laptop security bracket **102** is normally in its unidirectional configuration when the tab **195** is not being pressed, transitions from its unidirectional configuration to its bidirectional configuration in response to the tab **195** being pressed, and returns to its unidirectional configuration when the tab **195** is no longer being pressed.

(38) FIG. **7** is a perspective view of the pedestal **142** and the base **152** of the adjustable laptop security bracket **102**, with the front plate **144** of the pedestal removed, and the upper plate **154** of the base **152** removed. When the security bracket **102** is assembled, the finger release tab **195** extends downward through the opening **153** in a bottom of the base **152**.

(39) FIGS. **8**A, **8**B, **8**C and **8**D are, respectively, front perspective, front, top and side views of the main housing **112**, with the front plate **114** removed, according to an embodiment of the present

technology. FIG. **8**E is a section view of the main housing **112** along the lines E-E in FIG. **8**C. As can be seen in FIGS. **8**A and **8**B, as well as other FIGS., the main housing **112** is shown as including a pair of holes **180** (**180***a* and **180***b*) that accept ratcheting buttons (e.g., **940**), which are described below with reference to FIGS. **9**A-**11**G. Instead of the holes **180** being located in the main housing **112**, the holes **180** can instead be located in the arms **122**, e.g., the hole **180***a* can be located in a portion of the arm **122***a*, and the hole **180***b* can be located in a portion of the arm **122***b*.

(40) As noted above, the protrusions **113** that extend from an interior of the main housing **112** fit within the guide channels **125** and **127** of the appendages **124** and **126** to act as guides for the arms **122**, and maintain proper alignment of the arms **122** relative to the main housing **112** and one another. Additionally, the further protrusions **115** that extend from an interior of the main housing **112** fit within the guide holes **185** of the gear stop **182** to acts as guides for the gear stop **182** as the gear stop moves between its normally biased first position and its second position.

(41) As noted above, the braces **130** on the arms **122** may have dimensions to accommodate a range of device thicknesses, and more specifically, a range up thicknesses for the upper body portions of laptops. This may result in a gap between the main housing **112** and an upper body portion of a laptop that is secured by the braces **130** to the adjustable security bracket **102**, which gap may enable the laptop to be maneuvered relative to the adjustable security bracket **102** and potentially removed from the adjustable security bracket **102** by a thief. To eliminate or remove this gap, and more specifically, to tightly secure an upper body portion of a laptop to the adjustable security bracket **102**, the holes **180** and respective ratcheting buttons are used, as described below in more detail. Accordingly, aspects of the present technology enable use of braces **130** that can accommodate upper body portions of laptops having a wide range of thicknesses (e.g., not customized for each laptop) while eliminating or reducing gaps between the adjustable security bracket **102** and the upper body portions of laptops.

(42) Additional details of the holes **180**, and the ratcheting buttons that can be used therewith, according to various embodiments, are also described below with reference to FIGS. **9**A-**11**G. In certain embodiments, each such ratcheting button is located in a corresponding hole in the main housing **112** (or alternatively in an arm **122**), wherein each ratcheting button is configured to be movable in a first direction within the corresponding hole with a ratchet mechanism to prevent movement of the ratcheting button in a second direction, opposite the first direction, within the corresponding hole. The ratcheting buttons are configured to press against the backside of the upper body portion of a laptop that is secured between the arms **122** of the adjustable security bracket **102** so that the upper body portion of the laptop (which upper body portion includes a display) is firmly grasped by the security bracket **102**. This may eliminate or reduce any gaps between the security bracket **102** and the upper body portion of the laptop and may thereby eliminate or reduce gaps that might be used for insertion of tools (e.g., for a crowbar, screwdriver, or other prying instrument) that could be used to remove a laptop from the security bracket **102**.

(43) FIGS. **9**A and **9**B illustrate an example of a ratcheting button **940** that may be used in combination with any of the holes **180** above (e.g., holes **180***a* and **180***b* in main housing **112**) or similar holes. The ratcheting button **940** includes a first pawl **942** and a second pawl **944** extending from opposite sides of ratcheting button **940**. In other examples, different numbers of pawls may be provided (e.g., one pawl, or more than two pawls). The ratcheting button **940** has a cylindrical shape with the first pawl **942** extending through a first opening **946** and the second pawl **944** extending through a second opening **948** in a cylindrical outer wall **950** so that they both extend beyond the cylindrical outer wall **950** (e.g., beyond the radius of the cylindrical outer wall **950**).

(44) FIG. **9**B shows a top-down view of the ratcheting button **940** that shows how the first pawl **942** and the second pawl **944** extend beyond the cylindrical outer wall **950** of the ratcheting button **940**. In this arrangement, the first pawl **942** and the second pawl **944** are configured to engage one or more ratchet surface(s) that may be present on a cylindrical inner wall of a corresponding hole.

(45) FIG. **9**C shows an exploded view of the ratcheting button **940** that includes a cylindrical

thimble portion **952** with the first opening **946** and the second opening **948** on opposite sides of the cylindrical outer wall **950**. The ratcheting button **940** includes a spring **954** (to be located in the cylindrical thimble portion **952**), with a first end (to extend through the first opening **946**) to form the first pawl **942** and a second end (to extend through the second opening **948**) to form the second pawl **944**. The spring **954** may be formed of a suitable spring material (e.g., a metal, such as steel, or an alloy) so that it is elastic and can be deformed, or deflected, and return to its original shape. Thus, the first pawl **942** and the second pawl **944** may be deflected inwards (towards the center of the ratcheting button **940**) and returned to their prior configuration as ratcheting button is moved in a hole with one or more ratchet surface. A thimble cap **956** is provided to maintain the spring **954** in a specified location, with the first pawl **942** extending through the first opening **946** and the second pawl **944** extending through the second opening **948** and to provide a surface for applying upward force on the ratcheting button **940**. In certain embodiments, an upper surface **941** of the ratcheting button **940**, and more specifically the cylindrical thimble portion **952**, can be over-molding with a gripping material, such as a TPE, rubber, silicon, polymeric material or other plastic, capable of increasing the adhesion, grip or coefficient of friction between the backside of an upper body portion of a laptop and the upper surface **941** of the ratcheting buttons **940**.

(46) FIGS. **10**A-B illustrate the ratcheting button **940** in a hole (e.g., **180**) and how the pawls **942**, **944** engage the ratchet surface **938**. FIGS. **10**A-B shows the ratchet surface **938** extending circumferentially (through 360 degrees) about a central axis **1060** to engage the first pawl **942** and the second pawl **944**. The hole **180** is cylindrically symmetric about the central axis **1060** so that ratchet surface **938** can be seen on both sides of the ratcheting button **940** in FIG. **10**A and the ratchet surface **938** thus engages both pawls. The ratcheting button **940** is generally cylindrical, with the cylindrical outer wall **950** being defined by an axis that, when inserted in the hole **180**, coincides with central axis **1060**. Movement of ratcheting button **940** is generally in a first direction (represented by the arrow **1002**) along central axis **1060**. The ratcheting button **940** fits in the hole **180** with some small clearance between the cylindrical outer wall **950** and teeth of the ratchet surface **938**. Indentations between teeth of the ratchet surface **938** allow the first pawl **942** and the second pawl **944** to extend beyond the cylindrical outer wall **950** and engage the ratchet surface **938**. When pushed in the first direction **1002**, the first pawl **942** and the second pawl **944** are deflected inwards (towards the central axis **1060**) by teeth of the ratchet surface **938** as the spring **954** bends and then spring outwards into indentations of the ratchet surface **938** (FIG. **10**B shows the ratchet surface **938** as a shaded ring indicating the depth of teeth and indentations).

(47) When pushed in a second direction (represented by the arrow **1004**) that is opposite the first direction **1002**, the first pawl **942** and the second pawl **944** engage the ratchet surface **938** and prevent movement of the ratcheting button **940** in the second direction **1004**. Thus, the combination of the first pawl **942**, the second pawl **944** and the ratchet surface **938** provide a ratchet mechanism to prevent movement of the ratcheting button **940** in the second direction **1004** within corresponding hole **830**. Because the ratcheting button **940** cannot move in the second direction **1004** in the hole **180**, returning the ratcheting button **940** to a lower position (e.g., to allow insertion of another laptop) may include pushing the ratcheting button **940** all the way through and out of the hole **180** in the first direction **1002** and then reinserting it into the hole **180** in what may be referred to as a “push-through” configuration, which can only be performed when a security bracket **102** that includes the hole **180** and the ratcheting button **940** is not being used to secure a laptop.

(48) While the example shown in FIGS. **10**A-B includes a ratcheting button with a cylindrical outer wall that fits in a cylindrical hole, other shapes may also be used (e.g., square, rectangular, polygonal, elliptical, or other). A ratcheting surface or ratcheting surfaces may be configured according to the shape used and the location(s) of any pawl(s).

(49) In an alternative to the push-through arrangement above, a ratcheting button (e.g., ratcheting button **940**) may have two configurations. In a first configuration, the ratcheting mechanism prevents movement in the second direction **1004** while in a second configuration the ratcheting

mechanism is disengaged to enable movement in the second direction **1004**.
(50) FIGS. **11**A-D illustrate an example of a hole **1170** (e.g., any of the holes **180** in the main housing **112** or holes in the arms **122**) containing the ratcheting button **940**. The hole **1170** has a cylindrical inner wall including a first ratchet surface **1172** and a second ratchet surface **1174** on opposite sides of the hole **1170** (with shading to indicate depth of teeth/indentations). The ratchet surfaces **1172**, **1174** are separated by a first recess **1176** and a second recess **1178**, where no teeth are located so that no ratchet surface is present (e.g., an inner wall may be smooth).
(51) In the configuration illustrated in FIGS. **11**A-B, the ratcheting button **940** has a first orientation (with pawls extending on either side in this view) in which the first pawl **942** engages the first ratchet surface **1172** and the second pawl **944** engages the second ratchet surface **1174** to prevent movement of the ratcheting button **940** in the second direction **1004**. FIG. **11**A shows a top-down view and FIG. **11**B shows a cross sectional view along the plane marked B-B in FIG. **11**A. In this orientation, ratcheting button **940** can only be moved upwards and cannot be moved downwards.
(52) The ratcheting button **940** is rotatable within the hole **1170** and FIGS. **11**C-D illustrate the ratcheting button **940** in a second configuration (second orientation) that results from rotating it about ninety degrees (90°). FIG. **11**C shows a top-down view and FIG. **11**D shows a cross sectional view along the plane marked C-C in FIG. **11**C. When the ratcheting button **940** is in the second orientation shown, the first pawl **943** aligns with the first recess **1176** and the second pawl **944** aligns with the second recess **1178** so that first and second pawls **942** and **944** do not engage the first and second ratchet surfaces **1172** and **1174**. In this orientation, the ratcheting button **940** may be moved in the first or second directions **1002** or **1004**. This may allow the ratcheting button **940** to be repositioned (lowered) for insertion of an upper body portion of a laptop without removing the ratcheting button **940** from the hole **1170**. In some cases, a ratcheting button may be captured within such a hole with downward movement enabled by rotating the ratcheting button to an appropriate orientation. Such a ratcheting button that can be repositioned without removal from a corresponding hole and/or is captured within the corresponding hole reduces the risk of losing or damaging the ratcheting button.
(53) Features may be provided on the ratcheting button **940** to facilitate access for rotation of the ratcheting button **940** from the frontside of the apparatus **102** so that any such features are not accessible when a portable electronic device is present. For example, features for engaging a tool (e.g., a slot for a screwdriver) or for rotation by hand (e.g., a surface that is textured for enhanced grip) may be provided on the top (aka front) of the ratcheting button **940** and not on the bottom (aka back) (which may be smooth), so that the features that allow for manual rotation of the ratcheting button can only be accessed when a security bracket that includes hole **1170** and ratcheting button **940** is not being used to secure a laptop.
(54) FIGS. **11**E-F show examples of the ratcheting button **940** captured within a hole that includes a first opening having a diameter of d**1** and a second opening having a diameter of d**2**. Diameters d**1** and d**2** may be sufficiently narrow to ensure that ratcheting button **940** cannot be removed from the hole after insertion. For example, the pawls **942**, **944** and/or other features of the ratcheting button **940** may extend beyond the diameter d**2** to ensure that the ratcheting button **940** cannot be beyond a specified limit. The pawls **942**, **944** and/or other features of the ratcheting button **940** may extend beyond the diameter d**1** to ensure that the ratcheting button **940** cannot be pushed on the second direction **1004** beyond a specified limit (e.g., after initial insertion, the pawls **942**, **944** in their extended configuration may prevent removal in a the direction **1004**).
(55) FIG. **11**F shows a cross-sectional view of an implementation of the ratcheting button **940** including the pawls **942**, **944** engaging the first and second ratchet surfaces **1172** and **1174**, with the ratcheting button **940** captured so that it cannot be removed. The ratcheting button **940** may remain captured within the hole regardless of rotation (e.g., regardless of whether pawls are aligned with ratchet surfaces or not).

(56) In an example implementation, rotation of a ratcheting button (e.g., rotation between an orientation in which pawls engage ratchet surfaces and an orientation in which pawls are disengaged) may only be enabled when the ratcheting button is one or more vertical position. For example, when a ratcheting button is at or near a first limit of its range and/or at or near a second limit of its range, it may be rotatable. Otherwise, rotation may be prevented to avoid rotation and movement of a ratcheting button that has been ratcheted to engage a backside of an upper body portion of a laptop. With no laptop in place (e.g., after removal of a laptop) such a ratcheting button may be moved and rotated to disengage the pawls so that it can be moved within the hole. Subsequently, it may be rotated to engage pawls so that it can be moved to secure a laptop.
(57) FIG. **11**G shows an example implementation of a hole **1190** with features to limit movement of a ratcheting button. FIG. **11**G shows a cross sectional view of the hole **1190** that includes a flange **1192** extending about a first part of the hole **1190** to reduce the diameter of the upper part of the hole **1190** (e.g., to a diameter d**2** as shown in FIG. **11**E) and a flange **1194** extending about a second part of the hole **1190** to reduce the diameter of the first part of the hole **1190** (e.g., to a diameter d**1** as shown in FIG. **11**E). The flanges **1192** and **1194** may capture a ratcheting button in the hole **1190**. FIG. **11**G also shows the first ratchet surface **1172** on a portion of the inner wall of the hole **1190** (an opposing second ratcheting surface is not visible in this view). A first sidewall **1196** and a second sidewall **1198** extend vertically along sides of the ratchet surface **1172** to constrain a pawl (e.g., the first pawl **942** or the second pawl **944**) and prevent rotation of a ratcheting button when a pawl is engaged with first ratchet surface **1172**. The ratchet surface **1172** and the sidewalls **1196**, **1198** do not extend up to flange **1192** or down to flange **1194** so that there are gaps at the top and bottom to allow disengagement of pawls and rotation of a ratcheting button. While this provides an example of a hole configured to capture a ratcheting button and limit its rotation, other configurations may also be used.
(58) Each of the elements of the security bracket **102** are preferably made of a strong metal or alloy (aka metal/alloy) so that the security bracket **102** is sturdy and cannot be readily bent, cut through, or otherwise broken or tempered with. For example, such elements can be made of steel. Different elements of the security bracket **102** can be made of the same metal/alloy or different metals/alloys than other elements. All or subsets of such elements can be painted, powder coated, or otherwise covered to have any desired color and appearance. Certain elements of the security bracket **102** can be molded, cast and/or machined. Certain elements of the security bracket **102** can be made from blanks that are cut (e.g., laser cut or mechanically cut) or stamped from a sheet of metal/alloy, and then bent if appropriate into a desired final configuration. It would also be possible that certain elements, such as the front plate **114** of the main housing **112** be made of a strong plastic, where such elements is/are not accessible while the security bracket **102** is securing a laptop to a display surface.
(59) The adjustable security brackets of the embodiments of the present technology can be used to secure laptops to other display surfaces besides a horizontal display table. For example, such apparatuses can also be used to secure laptops to a vertical display wall, if desired, or more generally, to any one of various different types of display surfaces. As could be appreciated from the above discussion, because of the adjustability of the security bracket **102**, the security bracket can beneficially be used with laptops of various different dimensions, including various different widths, depths, and thicknesses.
(60) The description of the present disclosure has been presented for purposes of illustration and description, but is not intended to be exhaustive or limited to the disclosure in the form disclosed. Many modifications and variations will be apparent to those of ordinary skill in the art without departing from the scope and spirit of the disclosure. The aspects of the disclosure herein were chosen and described in order to best explain the principles of the disclosure and the practical application, and to enable others of ordinary skill in the art to understand the disclosure with various modifications as are suited to the particular use contemplated.

(61) The disclosure has been described in conjunction with various embodiments. However, other variations and modifications to the disclosed embodiments can be understood and effected from a study of the drawings, the disclosure, and the appended claims, and such variations and modifications are to be interpreted as being encompassed by the appended claims. In the claims, the word “comprising” does not exclude other elements or steps, and the indefinite article “a” or “an” does not exclude a plurality.
(62) For purposes of this document, it should be noted that the dimensions of the various features depicted in the figures may not necessarily be drawn to scale.
(63) For purposes of this document, reference in the specification to “an embodiment,” “one embodiment,” “some embodiments,” or “another embodiment” may be used to describe different embodiments or the same embodiment.
(64) For purposes of this document, a connection may be a direct connection or an indirect connection (e.g., via one or more other parts). In some cases, when an element is referred to as being connected or coupled to another element, the element may be directly connected to the other element or indirectly connected to the other element via intervening elements. When an element is referred to as being directly connected to another element, then there are no intervening elements between the element and the other element.
(65) For purposes of this document, without additional context, use of numerical terms such as a “first” object, a “second” object, and a “third” object may not imply an ordering of objects, but may instead be used for identification purposes to identify different objects.
(66) The foregoing detailed description has been presented for purposes of illustration and description. It is not intended to be exhaustive or to limit the subject matter claimed herein to the precise form(s) disclosed. Many modifications and variations are possible in light of the above teachings. The described embodiments were chosen in order to best explain the principles of the disclosed technology and its practical application to thereby enable others skilled in the art to best utilize the technology in various embodiments and with various modifications as are suited to the particular use contemplated. It is intended that the scope be defined by the claims appended hereto.
(67) Although the subject matter has been described in language specific to structural features and/or methodological acts, it is to be understood that the subject matter defined in the appended claims is not necessarily limited to the specific features or acts described above. Rather, the specific features and acts described above are disclosed as example forms of implementing the claims.

Claims

1. An apparatus for physically securing a laptop in an open position to a display surface, wherein the laptop includes a lower body portion including a keyboard and an upper body portion including a display screen and attached to the lower body portion by a hinge, the apparatus comprising: a main body; one or more fasteners extending downward from the main body and configured to secure the main body to the display surface; left and right arms; a rotatable gear including first engagement features extending from an outer circumference of the rotatable gear, and also including second engagement features extending from a side of the rotatable gear; and a gear stop including third engagement features facing the second engagement features of the rotatable gear; wherein the first engagement features of the rotatable gear engage portions of the left and right arms to provide for extension and retraction of the left and right arms in tandem relative to the main body; wherein the gear stop has a first position and a second position; wherein when the gear stop is in the first position, the third engagement features of the gear stop are biased against the second engagement features of the rotatable gear, during which the rotatable gear is rotatable in one of a clockwise and counterclockwise directions that allows for retraction of the left and right arms in tandem relative to the main body, and during which the rotatable gear is prevented from being rotated in the other one of the clockwise and counterclockwise directions, thereby preventing the

extension of the left and right arms; and wherein when the gear stop is in the second position, the third engagement features of the gear stop are moved away from the second engagement features of the rotatable gear, during which the rotatable gear is rotatable in both of the clockwise and counterclockwise directions, thereby allowing for the extension of the left and right arms.
2. The apparatus of claim 1, wherein the main body comprises: a main housing from which the left and right arms are extendable and retractable in tandem, and within which are located the rotatable gear and the gear stop; a base from which the one or more fasteners extend downward; and a pedestal that supports the main housing above the base at a distance above the display surface to which the apparatus is attached using the one or more fasteners.
3. The apparatus of claim 1, wherein the portions of the left and right arms that engage the rotatable gear comprise rack gears of the left and right arms.
4. The apparatus of claim 3, wherein: the first engagement features of the rotatable gear comprise teeth extending from the outer circumference of the rotatable gear; and the teeth extending from the outer circumference of the rotatable gear are configured to intermesh with teeth of the rack gears of the left and right arms.
5. The apparatus of claim 1, wherein: the second engagement features of the rotatable gear comprise right triangle teeth extending from the side of the rotatable gear; and the third engagement features of the gear stop comprise further right triangle teeth extending from the gear stop.
6. The apparatus of claim 1, further comprising: a spring configured to normally bias the gear stop in the first position.
7. The apparatus of claim 6, further comprising: a lever configured to selectively overcome the bias of the spring and move the gear stop from the first position to the second position; wherein a portion of the lever extends through an opening in a bottom of the main body.
8. The apparatus of claim 7, wherein the portion of the lever that extends through the opening in the bottom of the main body comprises a finger release tab; and the finger release tab is configured to cause the lever to pivot about a pivot point that is between the finger release tab and a portion of the lever that is attached to the gear stop.
9. The apparatus of claim 8, wherein: the finger release tab is inaccessible, except from an underside of the display surface, when the apparatus is attached to the display surface, thereby preventing someone from releasing the left and right arms after the left and right arms have been retracted to secure the upper body portion of the laptop to the main body and the gear stop is in the first position.
10. The apparatus of claim 1, wherein: the left and right arms comprise, respectively, left and right braces configured to engage left and right sides of the upper body portion of the laptop so that the apparatus can accommodate various different widths that the laptop may have.
11. The apparatus of claim 10, further comprising: one or more holes in the main body; and one or more ratcheting buttons each of which is located in a corresponding one of the one or more holes; the one or more ratcheting buttons configured to push against a backside of the upper body portion of the laptop that is secured between the left and right braces of the left and right arms so that the apparatus can accommodate various different thicknesses that the upper body portion of the laptop may have.
12. The apparatus of claim 11, wherein each ratcheting button, of the one or more ratcheting buttons, is configured to: be movable in a first direction within the corresponding hole with a ratchet mechanism to prevent movement of the ratcheting button in a second direction opposite the first direction within the corresponding hole; and push against the backside of the upper body portion of the laptop that is secured between the left and right braces of the left and right arms, when moved in the first direction within the corresponding hole.
13. An apparatus for physically securing a laptop in an open position to a display surface, wherein the laptop includes a lower body portion including a keyboard and an upper body portion including

a display screen and attached to the lower body portion by a hinge, the apparatus comprising: a main body; one or more fasteners extending downward from the main body and configured to secure the main body to the display surface; left and right arms that are extendable and retractable relative to the main body, the left and right arms comprising, respectively, left and right braces configured to engage left and right sides of the upper body portion of the laptop; a rotatable gear including first engagement features extending from an outer circumference of the rotatable gear, and also including second engagement features extending from a side of the rotatable gear; and a gear stop including third engagement features facing the second engagement features of the rotatable gear; wherein the first engagement features of the rotatable gear engage rack gears of the left and right arms to provide for extension and retraction of the left and right arms in tandem relative to the main body; wherein the gear stop has a first position and a second position; wherein when the gear stop is in the first position, the third engagement features of the gear stop are biased against the second engagement features of the rotatable gear, during which the apparatus is in a unidirectional configuration that allows for rotation of the rotatable gear in a first direction that allows for the retraction of the left and right arms in tandem relative to the main body, and during which the rotatable gear is prevented from being rotated in a second direction that prevents the extension of the left and right arms; and wherein when the gear stop is in a second position, the third engagement features of the gear stop are moved away from the second engagement features of the rotatable gear, during which the apparatus is in a bidirectional configuration that allows for rotation of the rotatable gear in both of the first and second directions, thereby allowing for the extension of the left and right arms.

14. The apparatus of claim 13, further comprising: a tab configured to transition the apparatus from the unidirectional configuration to the bidirectional configuration in response to the tab being pressed.

15. The apparatus of claim 14, wherein: the tab is part of a lever that is configured to overcome the bias of a spring and move the gear stop from the first position to the second position in response to the tab being pressed.

16. The apparatus of claim 15, wherein that tab: extends through an opening in a bottom of the main body; and is inaccessible, except from an underside of the display surface, when the apparatus is attached to the display surface.

17. The apparatus of claim 13, further comprising: one or more ratcheting buttons configured to push against a backside of the upper body portion of the laptop that is secured between the left and right braces of the left and right arms so that the apparatus can accommodate various different thicknesses that the upper body portion of the laptop may have; wherein each ratcheting button, of the one or more ratcheting buttons, is located in a corresponding hole in the main body or in one of the left and right arms; and wherein each ratcheting button, of the one or more ratcheting buttons, is movable in a first direction within the corresponding hole with a ratchet mechanism to prevent movement of the ratcheting button in a second direction opposite the first direction within the corresponding hole.

18. An apparatus for physically securing a laptop in an open position to a display surface, wherein the laptop includes a lower body portion including a keyboard and an upper body portion including a display screen and attached to the lower body portion by a hinge, the apparatus comprising: a main housing; a base from which one or more fasteners extend downward; a pedestal that supports the main housing above the base; left and right arms that are extendable and retractable relative to the main housing, the left and right arms comprising, respectively, left and right braces; and a tab configured to transition the apparatus from a unidirectional configuration to a bidirectional configuration in response to the tab being pressed; wherein when the apparatus is in the unidirectional configuration the left and right arms are retractable in tandem relative to the main body, and the left and right arms are prevented from being extended relative to the main body; wherein when the apparatus is in the bidirectional configuration the left and right arms are both

retractable and extendable relative to the main body; and wherein the apparatus is normally in the unidirectional configuration when the tab is not pressed, the apparatus transitions from the unidirectional configuration to the bidirectional configuration in response to the tab being pressed, and the apparatus returns to the unidirectional configuration when the tab is no longer being pressed.

19. The apparatus of claim 18, wherein: the tab extends through an opening in a bottom of the base, extends below the display surface, and is inaccessible from above the display surface when the apparatus is secured to the display surface by the one or more fasteners.

20. The apparatus of claim 18, further comprising: one or more ratcheting buttons configured to push against a backside of the upper body portion of the laptop that is secured between the left and right braces of the left and right arms so that the apparatus can accommodate various different thicknesses that the upper body portion of the laptop may have; wherein each ratcheting button, of the one or more ratcheting buttons, is located in a corresponding hole in the main body or in one of the left and right arms; and wherein each ratcheting button, of the one or more ratcheting buttons, is movable in a first direction within the corresponding hole with a ratchet mechanism to prevent movement of the ratcheting button in a second direction opposite the first direction within the corresponding hole.

21. An apparatus for physically securing a laptop in an open position to a display surface, wherein the laptop includes a lower body portion including a keyboard and an upper body portion including a display screen and attached to the lower body portion by a hinge, the apparatus comprising: a main body; one or more fasteners extending downward from the main body and configured to secure the main body to the display surface; left and right arms including, respectively, left and right braces configured to engage left and right sides of the laptop so that the apparatus can accommodate various different widths that the laptop may have; a rotatable gear including first engagement features extending from an outer circumference of the rotatable gear, and also including second engagement features extending from a side of the rotatable gear; a gear stop including third engagement features facing the second engagement features of the rotatable gear; wherein the first engagement features of the rotatable gear engage portions of the left and right arms to provide for extension and retraction of the left and right arms in tandem relative to the main body; wherein the gear stop has first and second positions; wherein when the gear stop is in the first position the third engagement features of the gear stop are against the second engagement features of the rotatable gear, during which the rotatable gear is rotatable in a first rotational direction that allows for retraction of the left and right arms in tandem relative to the main body, and during which the rotatable gear is prevented from being rotated in a second direction rotational direction that is opposite the first rotational direction thereby preventing the extension of the left and right arms; and wherein when the gear stop is in the second position the third engagement features of the gear stop are not against the second engagement features of the rotatable gear, during which the rotatable gear is rotatable in both of the first and second rotational directions, thereby allowing for the extension of the left and right arms in tandem.

22. The apparatus of claim 21, wherein: the gear stop is normally biased in one of the first and second positions; and the gear stop is movable from the one of the first and second positions to the other one of the first and second positions by overcoming the bias.

23. The apparatus of claim 21, further comprising: a spring configured to normally bias the gear stop in one of the first and second positions.

24. The apparatus of claim 23, wherein: the gear stop is movable from the one of the first and second positions to the other one of the first and second positions by overcoming the bias of the spring.