



(51) International Patent Classification:
H05K 7/00 (2006.01)

(21) International Application Number:
PCT/US2020/041244

(22) International Filing Date:
08 July 2020 (08.07.2020)

(25) Filing Language: English

(26) Publication Language: English

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(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, DJ, DK, DM, DO,

DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, IT, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, 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, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, 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, ST, 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))*

Published:

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

(54) Title: UNIVERSAL CLAMPS

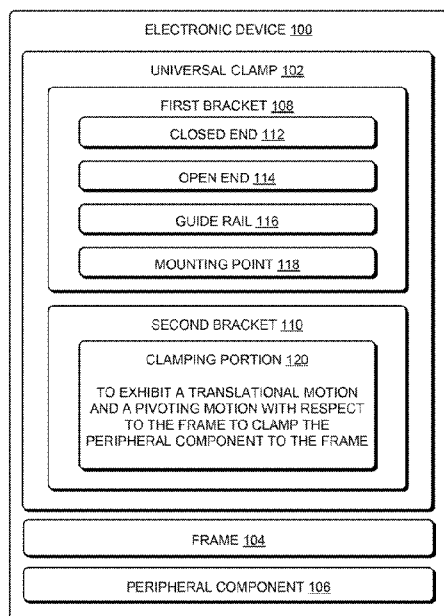


Figure 1

(57) Abstract: Examples universal clamps are described herein. In one example, a universal clamp has universal clamp a support element and a securing element. The support element has a mounting point to mount the support element to a frame of an electronic device. The securing element is movable relative to the support element and can exhibit a translational motion and a pivoting motion with respect to the mounting point of the support element.



UNIVERSAL CLAMPS

BACKGROUND

[0001] In general, clamps are used for fastening one component to another. In electronic devices, such as personal computers, mobile phones, and gaming consoles, clamps may be used to couple a component to either a frame of the electronic device or to another component, for instance, in order to efficiently use available space.

BRIEF DESCRIPTION OF FIGURES

[0002] The detailed description is provided with reference to the accompanying figures, wherein:

[0003] Figure 1 illustrates a schematic of an electronic device having a universal clamp, according to an example;

[0004] Figure 2 illustrates a cross-sectional view of the electronic device and the universal clamp in an assembled state, according to an example;

[0005] Figures 3A- 3D illustrate various views of the electronic device and the universal clamp in an assembled state, in accordance with another example;

[0006] Figure 4 illustrates a schematic of the universal clamp, according to an example;

[0007] Figure 5 illustrates a schematic of the universal clamp, according to another example;

[0008] Figures 6A-6B illustrate various views of the universal clamp, according to an example;

[0009] Figures 7A-7B illustrate the universal clamp in an extended position, according to an example;

[0010] Figures 8A-8B illustrate the universal clamp in a pivoted state, according to an example.

[0011] It should be noted that the description and the figures are merely examples of the present subject matter and are not meant to represent the subject matter itself. Throughout the drawings, identical reference numbers designate similar, but not identical, elements. The figures are not to scale, and the size of some parts may be exaggerated to more clearly illustrate the example shown. Moreover, the drawings provide examples and/or examples consistent with the description; however, the description is not limited to the examples and/or examples provided in the drawings.

DETAILED DESCRIPTION

[0012] Clamps may be used for mounting a peripheral component, such as a motherboard or a graphics card or graphical processing unit (GPU), to a floor or lateral wall of a frame of an electronic device. Generally, clamps for use with a component are designed with due consideration of the size and design of the component. For instance, for an NVIDIA™ graphics card, the clamp is designed in accordance with size of the printed circuit board of the graphics card and location of various ports and connectors, such that the graphics card can be adequately coupled without a hinderance in operability of the graphics card. The clamp so designed for one component may not be usable with other components. As a result, for each component, a separate clamp may have to be designed and manufactured which may involve individual tooling for each type of clamp to be manufactured. Accordingly, the cost of manufacturing may be considerable, which may be passed on to the consumer. At the same time, for the consumer, such as a manufacturer of computing devices which uses multiple variants of the components, an inventory of such differently sized clamps may have to be maintained. In addition, at the time of assembly, the appropriately sized bracket may have to be selected for use with the complementary component, which may adversely affect the productivity in assembly of the components. In certain instances, a manufacturer may have created the peripheral component, but may not have created a clamp that would allow installation of that peripheral component into a frame of the electronic device.

[0013] Examples of a universal clamp, for example, for use with a component of an electronic device, are described herein. In an example, the universal clamp may be mountable to a frame, such as a chassis or a cage, of the electronic device and, when so mounted, can be used for clamping or securing a peripheral component to the frame of the electronic device. According to an aspect, the universal clamp can include a support element having a mounting point to mount the support element to the frame of the electronic device. In addition, the universal clamp can include a securing element that is movable relative to support element, such that the securing element can exhibit a translational motion and a pivoting motion with respect to the mounting point of the support element, and hence, of the universal clamp.

[0014] In one example, the support element of the universal clamp can be a first bracket and the securing element can be a second bracket disposed in the first bracket. In said example, the first bracket can have a closed end, an open end, and a guide rail running between the closed end and the open end, while the second bracket can be disposed in the guide rail of the first bracket, such that the second bracket can be telescopically movable along the guide rail, in and out of the open end of the first bracket. The second bracket can have a clamping portion at an end distal from the closed end of the first bracket. Accordingly, the telescopic movement of the second bracket can provide a longitudinal extension to the universal clamp, such that the clamping portion can be adjusted to be at a range of distances, for instance, from the mounting point of the universal clamp. In addition, the first bracket can be pivotably mounted to the frame, such that the first bracket, and hence, the second bracket can exhibit a pivoting motion with respect to the frame. Such a motion, in turn, allows the clamping portion on the second bracket to exhibit the pivoting motion. Accordingly, as referred above, the second bracket and the clamping portion thereof can exhibit the translational and pivoting motion with respect to the frame.

[0015] In operation, when being used to mount the peripheral component, the universal clamp, for instance, the securing element or the second bracket of the universal clamp, can be adjusted in length as well as adjusted angularly with respect to the frame. Such a design allows the universal clamp to be usable with various sizes and dimensions of the peripheral components. In other words, the same universal clamp can be used with multiple peripheral components to adequately mount the peripheral components to the frame of the electronic device. In addition, differently located access points, such as ports and connectors, on the peripheral component remain accessible and usable, since the universal clamp can be adjusted to secure the peripheral component without causing a hinderance to the access points of the peripheral component.

[0016] The above aspects are further described in conjunction with the figures, and in associated description below. It should be noted that the description and figures merely illustrate principles of the present subject matter. Therefore, various arrangements that encompass the principles of the present subject matter, although not explicitly described or shown herein, may be devised from the description and are included within its scope. Additionally, the word “coupled” is used throughout for clarity of the description and can include either a direct connection or an indirect connection.

[0017] Figure 1 illustrates a schematic of an electronic device 100 having a universal clamp 102, in accordance with an example of the present subject matter. The electronic device 100 can be, for example, a laptop personal computer (PC), a desktop PC, or a notebook PC. In other examples, the electronic device 100 may be a mobile phone, a tablet PC, a personal digital assistant (PDA), a gaming console, or another type of electronic device.

[0018] In said example, the electronic device 100 can include a frame 104 and a peripheral component 106 mounted to the frame 104. As an example, the peripheral component 106 can be a component of the electronic device 100 that can either serviced or can be retrofitted. For instance, the peripheral component 106 can

be a graphics card, graphics processing unit (GPU), a motherboard, cooling equipment, or any other component of the electronic device 100. The universal clamp 102 of the electronic device 100 can be used to secure the peripheral component 106 to the frame 104. According to an aspect, the universal clamp 102 may be designed to effectively mount to various differently sized peripheral components, such as the peripheral component 106. In other words, the same universal clamp 102 can be usable with a variety of peripheral components of the electronic device 100 or can be used with the same peripheral component 106, such as a graphics card, designed for different electronic devices 100. In either case, the peripheral components, whether same or different, may have different configurations, for instance, of size as well as of location of access points, such as ports and connectors on the peripheral component 106, and the universal clamp 102 may be usable with all such different configurations.

[0019] Accordingly, in said example, the universal clamp 102 can include a first bracket 108 and a second bracket 110. The first bracket 108 has a closed end 112, an open end 114, and a guide rail 116 running between the closed end 112 and the open end 114. In addition, the first bracket 108 has a mounting point 118 by which the first bracket 108 is pivotably mounted to the frame 104. The second bracket 110, on the other hand, is disposed in the guide rail 116 of the first bracket 108 to be telescopically movable along the guide rail 116 out of the open end 114 of the first bracket 108. The second bracket 110 further has a clamping portion 120 at an end distal from the closed end 112 of the first bracket 108. The clamping portion 120 can exhibit a translational motion and a pivoting motion with respect to the frame 104 to clamp the peripheral component 106 to the frame 104. For example, the telescopic motion of the second bracket 110 with respect to the first bracket 108, and hence, the frame 104, allows for the translational motion of the clamping portion 120 of the second bracket 110. In addition, in an example, the first bracket 108 and the second bracket 110 can be so coupled that though the second bracket 110 is to exhibit the translation motion relative to the first bracket 108, the first bracket 108 and the second bracket 110 can, otherwise, move as a single unit. Accordingly, the pivoting

motion of the first bracket 108 with respect to the frame 104 causes the second bracket 110 to also pivot, which in turn causes the clamping portion 120 to exhibit the pivoting motion with respect to the frame 104 and also the mounting point 118.

[0020] Figure 2 illustrates a cross-sectional side view of the electronic device 100 having the universal clamp 102, in accordance with an example of the present subject matter. In the present example, as mentioned above, the electronic device 100 includes the frame 104 and the peripheral component 106 which is mounted to the frame 104 using the universal clamp 102. The universal clamp 102 can be mounted to the frame 104 and has, at a distal end 200, the clamping portion 120 which can clamp or secure the peripheral component 106 to the frame 104. In an example, the frame 104 can be a chassis of the electronic device 100, such as a laptop personal computer (PC), a desktop PC, or a gaming console. In another example, the frame 104 can be a body of the electronic device 100, for instance, in cases of a tablet PC.

[0021] The universal clamp 102, as the name suggests, is adjustable in order to be usable for securing various different shapes, sizes, and configurations of the peripheral component 106. In the present example, a length of the universal clamp 102 and a distance of the universal clamp 102 from the frame 104 is variable such that different lengths and different thicknesses of the peripheral component 106 can be accommodated and secured using the universal clamp 102. In addition, in case different peripheral components 106 have differently positioned ports or other access points, the variation in the length and the distance of the universal clamp 102 can allow for such ports or access points to be usable without hinderance.

[0022] As explained previously, the universal clamp 102 has the first bracket 108 and the second bracket 110 which is slidably accommodated in the guide rail 116 of the first bracket 108. In an example, the guide rail 116 is a term used to collectively refer to a plurality of guide rails 116 formed as parallel channels facing each other and in which the second bracket 110 can be slidably disposed. Accordingly, the second bracket 110 can telescopically slide with respect to the first bracket 108 to vary the length of the universal clamp 102. The universal clamp 102

includes a length adjustment mechanism 202 which can be used to create a relative translational motion between the universal clamp 102 and the frame 104 to vary and adjust the length of the universal clamp 102. In one example, the length adjustment mechanism 202 can be used to control the relative motion between the first bracket 108 and the second bracket 110 to adjust the length of the universal clamp 102.

[0023] In addition, the universal clamp 102 can include a pivot control mechanism 204 which can be used, in combination with the pivoted mounting of the universal clamp 102 to the frame 104 at the mounting point 118, to create a relative pivoting motion between the universal clamp 102 and the frame 104 to vary a distance between the universal clamp 102 and the frame 104, as shown in Figure 2, to accommodate various peripheral components 106 of different heights as well as to regulate a clamping force on the peripheral component 106. In an example, the pivot control mechanism 204 can be used to control the relative motion between the first bracket 108 and the frame 104 to adjust the distance therebetween.

[0024] In addition, at the clamping portion 120, padding material 206 can be provided, for example, to adequately distribute a clamping force on the peripheral component 106 as well as to achieve a non-slip clamping of the peripheral component 106.

[0025] The universal clamp 102 is shown in further detail in an assembled state, coupled to the frame 104 to the electronic device 100 in Figure 3A, Figure 3B, Figure 3C, and Figure 3D, according to an example of the present subject matter. In said example, Figure 3A illustrates a top perspective view of the universal clamp 102 assembled to the frame 104, whereas Figure 3B illustrates a bottom perspective view of the universal clamp 102 assembled to the frame 104. Further, Figure 3C illustrates a side view of the universal clamp 102 in the assembled state, while Figure 3D illustrates a cross-sectional side view of the universal clamp 102 in the assembled state. As can be seen in Figure 3A to Figure 3D, the first bracket 108 is mounted using the mounting point 118 to a mounting brace 302 provided on a surface of the frame 104. In an example, the mounting braces 302 can be integrally formed from the material of the frame 104 by bending cutouts from the surface of the frame 104,

as shown in Figure 3B. In other examples, the mounting braces 302 can be coupled to the frame 104 by welding or by using fasteners, such as screw, bolts, or studs.

[0026] Figure 4 illustrates a schematic of the universal clamp 102, in accordance with the example of the present subject matter as described in Figure 1. As described in reference to Figure 1, the universal clamp 102 includes the first bracket 108 and the second bracket 110. In addition to the closed end 112, the open end 114, and the guide rail 116, the first bracket 108 has the mounting point 118 to pivotably mount to a frame, such as the frame 104 of the electronic device 100, such that the first bracket 108 can pivot about the mounting point 118 relative to the frame 104 when assembled to the frame 104. In addition, the second bracket 110 is disposed in the first bracket 108 to be telescopically movable along the guide rail 116 of the first bracket 108. The clamping portion 120 of the second bracket 110 is at the distal end 200 away from the closed end 112 of the first bracket 108. When the universal clamp 102 is assembled to the frame 104 of the electronic device 100, i.e., in an assembled state, the pivoted mounting of the first bracket 108 can allow the clamping portion 120 to hinge about the mounting point 118.

[0027] Figure 5 illustrates a schematic of the universal clamp 102, according to another example of the present subject matter. In the present example, the universal clamp 102 has a support element 502 having a mounting point 504 to mount the support element 502 to the frame 104 of the electronic device 100. The universal clamp 102 also includes a securing element 506 which is movable relative to the support element 502. According to the present example, the securing element 506 can exhibit a translational motion and a pivoting motion with respect to the mounting point 504 of the support element 502.

[0028] In the examples, explained in Figure 1 and Figure 2 above, the support element 502 can be the first bracket 108 and the securing element 506 can be the second bracket 110, for instance, the clamping portion 120 of the second bracket 110 which can exhibit translational as well as pivoting motion with respect to the mounting point 504, such as the mounting point 504, as described above. In said example, while the second bracket 110 can exhibit the translational motion with

respect to the first bracket 108, during the pivoting motion about the mounting point 118, the second bracket remains stationary with respect to the first bracket 108. In such a case, the securing element 506, i.e., the clamping portion 120, exhibits the pivoting motion by virtue of the pivoting motion of the universal clamp 102 about the mounting point 118. Accordingly, in the present example, as mentioned above, the securing element 506 can be the second bracket 110 having the clamping portion 120 the distal end 200 of thereof. The second bracket 110 can slide along the guide rail 116 of the first bracket 108 to allow translational motion of the clamping portion 120 and the first bracket can be pivotably mounted to the frame 104 to allow the clamping portion 120 to hinge about the mounting point 118 in an assembled state.

[0029] However, in another example, the securing element 506 can be the second bracket 110. In such an example, the universal clamp 102 can be designed such that the second bracket 110 pivots about a stationary first bracket 108, along with being slidable with respect thereto. Accordingly, in the present example, the securing element 506 is the second bracket 110 which can slide along the guide rail 116 of the first bracket 108 to telescope in and out of the first bracket 108, and is also pivotably coupled to the first bracket 108 to exhibit the pivoting motion with respect to the first bracket 108, for instance, with respect to the mounting point 118.

[0030] The universal clamp 102 is described in further detail with reference to Figures 6A to 8B.

[0031] Figure 6A and Figure 6B illustrate various views of the universal clamp 102, according to an example of the present subject matter. In said example, Figure 6A illustrates a bottom perspective view of the universal clamp 102 whereas Figure 6B illustrates a top perspective view of the universal clamp 102. For the sake of brevity and ease of understanding, Figure 6A and Figure 6B have been described in conjunction.

[0032] In an example, the universal clamp 102 can be formed of a metallic material, a polymer or plastic material, or of a combination thereof, which is sufficiently durable to be able to withstand the various loads due to the clamping of the peripheral component 106 using the universal clamp 102. In another example,

different parts of the universal clamp 102 can be formed of different materials such that the universal clamp 102 has sufficient strength and durability, but at the same time, the overall cost of manufacturing the universal clamp 102 can be low.

[0033] As explained previously, the first bracket 108 of the universal clamp 102 can have the closed end 112, the open end 114, and the guide rail 116 connecting the closed end 112 and the open end 114 in which the second bracket 110 is disposed. For instance, the first bracket 108 can have two parallel guide rails 116 facing each other to form a channel in which the second bracket 110 can be slidably disposed. In such a position, the second bracket 110 can slide in the guide rails 116 and move telescopically with respect to the first bracket 108. In an example, the first bracket 108 and the second bracket 110 can both have a substantially C-shaped cross-section when viewed from a direction of telescopic movement of the two brackets 108, 110. The first bracket 108 is larger in size than the second bracket 110 such that the second bracket 110 is stacked or otherwise received in the first bracket 108, for example, in the guide rail 116 of the first bracket 108.

[0034] Further, in an example, at a proximal end 602 of the second bracket 110 opposite to the distal end 200, the second bracket can be coupled to the closed end 112 of the first bracket 108 through the length adjustment mechanism 202. In an example, the length adjustment mechanism 202, as explained earlier, can be used to move the second bracket 110 in a linear direction along the guide rail 116 relative to the first bracket 108 for a translational motion therebetween. In one case, the length adjustment mechanism 202 can include a first threaded shaft 604 by which the first bracket 108 and the second bracket 110 can be coupled. For instance, the first bracket 108 and the second bracket 110 can have aligned holes through which the first threaded shaft 604 can pass, thereby coupling the first bracket 108 and the second bracket 110. In the example shown in Figure 6A and Figure 6B, the first threaded shaft 604 can be a screw or a bolt having external threads on a surface thereof. In said example, the aligned holes of the first bracket 108 and the second bracket 110 can have internal threads that engage and cooperate with the external

threads of the first threaded shaft 604 to achieve the translational motion therebetween, as described above.

[0035] In another example, the length adjustment mechanism 202 can include, in addition to the first threaded shaft 604, a first biased member 606. In said example, the first biased member 606 can be a coil spring or a helical spring which can be wound around the first threaded shaft 604 and biased to retain the second bracket 110 in a non-extended state with respect to the first bracket 108. In other words, the first biased member 606 can be biased to exert a force on the first bracket 108 and the second bracket 110 such that the distal end 200 of the second bracket 110 is retained towards the closed end 112 of the first bracket 108. In other examples, other types of springs or elastic components may be employed at the first biased member 606.

[0036] The first bracket 108 and the second bracket 110 are mounted on the first threaded shaft 604 in such a manner that either the first bracket 108 or the second bracket 110 remains stationary with respect to the first threaded shaft 604 when the first threaded shaft 604 is rotated, while the other of the two moves relative to the one that is stationary. Accordingly, when the first threaded shaft 604 is rotated, a relative translational motion is achieved between the first bracket 108 and the second bracket 110 and the second bracket 110 is telescopically movable with respect to the first bracket 108 along the first threaded shaft 604. In the example shown in Figure 6A and also in Figure 3D, the second bracket 110 can be mounted on one end of the first threaded shaft 604 in a manner that the threads of the first threaded shaft 604 are not engaged with the second bracket 110. Accordingly, the first threaded shaft 604 is rotatable with respect to the second bracket 110 but the second bracket 110 does not move in a linear direction relative to the first threaded shaft 604. In other words, when the first threaded shaft 604 is rotated, the second bracket 110 remains stationary along a length of the first threaded shaft 604. On the other hand, the first bracket 108 is engaged with the threads on the first threaded shaft 604, and accordingly, upon rotation of the first threaded shaft 604, the first bracket 108 can move on a threaded surface of the first threaded shaft 604, along

the length of the first threaded shaft 604, so as to achieve a relative motion between the first bracket 108 and the second bracket 110, for instance, to vary the length of the universal clamp 102. The direction of movement of the first bracket 108 along the first threaded shaft 604 can depend on the direction of rotation of the first threaded shaft 604.

[0037] Figure 7A and Figure 7B illustrate the universal clamp 102 in an extended position, according to an example of the present subject matter. In the extended position, as seen, the first bracket 108 and the second bracket 110 can be positioned with respect to each other such that the distal end 200 of the second bracket 110 having the clamping portion 120 can be farthest from the closed end 112 of the first bracket 108.

[0038] Further, as mentioned previously, the universal clamp 102 can include the pivot control mechanism 204 for achieving the relative pivoting motion between the frame 104 and the universal clamp 102. As an example, the pivot control mechanism 204 is shown in a cross-section view in Figure 7B. In said example, the pivot control mechanism 204 can include a second threaded shaft 702. In the assembled condition, the mounting point 118 of the first bracket 108 is coupled to the mounting brace 302 of the frame 104 so that the first bracket 108, assembled with the second bracket 110, can pivot about the frame 104. In such a condition, the first bracket 108 and the frame 104 can have aligned holes through which the second threaded shaft 702 can pass, thereby coupling the first bracket 108 and the frame 104. The second threaded shaft 702 can be a screw or a bolt having external threads on a surface thereof. In said example, the aligned holes of the first bracket 108 and the frame 104 can have internal threads that engage and cooperate with the external threads of the first bracket 108 or of the frame 104 or of both to achieve the relative pivoting motion therebetween, as described above.

[0039] In another example as shown in Figure 7A, the pivot control mechanism 204 can include, in addition to the second threaded shaft 702, a second biased member 704. In said example, the second biased member 704 can be a u-spring or a leaf spring having a first limb 706 and a second limb 708 connected to the first limb

706 by a u-bend 710. In the assembled state, as shown in Figure 7B, the first limb 706 of the second biased member 704 is coupled to the frame 104 and the second limb 708 is coupled to the first bracket 108. The second biased member 704 may be biased to retain the first bracket 108 towards the frame 104. In other examples, the second biased member 704 can be a coil spring or a helical spring which can, for instance, be wound around the second threaded shaft 702. In yet other examples, other types of springs or elastic components may be employed as the second biased member 704.

[0040] The first bracket 108 and the frame 104 are mounted on the second threaded shaft 702 in such a manner that the second threaded shaft 702 and the frame 104 remain stationary with respect to each other for a translational motion therebetween. However, the second threaded shaft 702 is rotatable with respect to the frame 104. On the other hand, the first bracket 108 is disposed on the second threaded shaft 702 in such a manner that when the second threaded shaft 702 is rotated, a relative translational motion is achieved between the first bracket 108 and the frame 104, about the mounting point 118.

[0041] In another example shown in Figure 7A, the second threaded shaft 702 can be mounted in the hole in the frame 104 such that the second threaded shaft 702 can move in a translational motion with respect to the frame 104. An end 712 of the second threaded shaft 702 can abut against the first bracket 108 such that translational motion of the second threaded shaft 702 causes the first bracket 108 to move along with the end 712 of the first bracket 108. For instance, the second biased member 704 causes the first bracket 108 to return towards the frame 104 when the second threaded shaft 702 is rotated to move towards the frame 104 and away from the first bracket 108. When the second threaded shaft 702 is rotated, a relative translational motion is achieved between the first bracket 108 and the frame 104, about the mounting point 118.

[0042] In either of the above examples, as explained previously, during such a pivoting motion of the first bracket 108, the first bracket 108 and the second bracket 110 can move as a single unit with respect to the frame 104. Accordingly, the distal

end 200 of the second bracket 110 attached to the first bracket 108 also exhibits a pivoting motion and the clamping portion 120 at the distal end 200 can be used for clamping and securing the peripheral component 106. The universal clamp 102, for example, the first bracket 108, in the pivoted state is shown in Figure 8A and Figure 8B. Figure 8A illustrates a side view of the universal clamp 102 in a pivoted state with respect to the frame 104, whereas Figure 8B illustrates a cross-sectional side view of the universal clamp 102 in a pivoted state with respect to the frame 104.

[0043] Although aspects of the universal clamp 102 have been described in a language specific to structural features and/or methods, it is to be understood that the subject matter is not limited to the features or methods described. Rather, the features and methods are disclosed as examples of the universal clamp 102.

I/We claim:

1. A universal clamp comprising:
 - a support element having a mounting point to mount the support element to a frame of an electronic device; and
 - a securing element movable relative to the support element, wherein the securing element is to exhibit a translational motion and a pivoting motion with respect to the mounting point of the support element.
2. The universal clamp as claimed in claim 1, wherein the support element is a first bracket having a closed end, an open end, and a guide rail running between the closed end and the open end.
3. The universal clamp as claimed in claim 2, wherein the securing element is a second bracket disposed in the guide rail of the first bracket to be telescopically movable along the guide rail of the first bracket to exhibit the translational motion with respect to the first bracket, the second bracket being pivotably coupled to the first bracket to exhibit the pivoting motion with respect to the first bracket.
4. The universal clamp as claimed in claim 2, wherein the securing element is a second bracket comprising a clamping portion at an end distal from the closed end of the first bracket, wherein the second bracket is disposed in the guide rail of the first bracket to allow translational motion of the clamping portion and the first bracket is to be pivotably mounted to the frame to allow the clamping portion to hinge about the mounting point in an assembled state.
5. The universal clamp as claimed in claim 2, wherein the securing element is a second bracket coupled to the first bracket through a first threaded shaft, wherein

the second bracket is telescopically movable with respect to the first bracket along the first threaded shaft.

6. The universal clamp as claimed in claim 4, wherein the first bracket and the second bracket have a C-shaped cross-section, wherein the first bracket has a larger size than the second bracket to receive the second bracket therein.

7. A universal clamp comprising:

a first bracket having a closed end, an open end, and a guide rail running between the closed end and the open end, the first bracket comprising a mounting point to mount to a frame of an electronic device; and

a second bracket disposed in the guide rail of the first bracket to be telescopically movable along the guide rail of the first bracket, wherein the second bracket comprises a clamping portion at a distal end away from the closed end of the first bracket,

wherein the first bracket is to be pivotably mounted to the frame to allow the clamping portion to hinge about the mounting point in an assembled state.

8. The universal clamp as claimed in claim 7, wherein a proximal end of the second bracket opposite to the distal end is coupled to the first bracket through a length adjustment mechanism comprising a first threaded shaft, the second bracket being telescopically movable with respect to the first bracket along the first threaded shaft.

9. The universal clamp as claimed in claim 7, wherein the first bracket and the second bracket have a C-shaped cross-section, wherein the first bracket has a larger size than the second bracket to stack the second bracket therein.

10. An electronic device comprising:

a frame;

a peripheral component mounted to the frame; and

a universal clamp to secure the peripheral component to the frame, the universal clamp comprising:

a first bracket having a closed end, an open end, and a guide rail running between the closed end and the open end, the first bracket comprising a mounting point pivotably mounted to the frame; and

a second bracket disposed in the guide rail of the first bracket to be telescopically movable along the guide rail out of the open end of the first bracket, the second bracket comprising a clamping portion at a distal end away from the closed end of the first bracket, wherein the clamping portion is to exhibit a translational motion and a pivoting motion with respect to the frame to clamp the peripheral component to the frame.

11. The electronic device as claimed in claim 10, wherein a proximal end of the second bracket opposite to the distal end is coupled to the first bracket through a length adjustment mechanism comprising a first threaded shaft, the second bracket being telescopically movable with respect to the first bracket along the first threaded shaft.

12. The electronic device as claimed in claim 11, wherein the length adjustment mechanism comprises a first biased member to bias the first bracket and the second bracket towards each other.

13. The electronic device as claimed in claim 10, wherein the first bracket and the second bracket have a substantially C-shaped cross-section, wherein the first bracket has a larger size than the second bracket to stack the second bracket therein.

14. The electronic device as claimed in claim 10, wherein the first bracket is coupled to the frame through a pivot control mechanism comprising a second threaded shaft, the first bracket being pivotable with respect to the frame on the second threaded shaft.

15. The electronic device as claimed in claim 14, wherein the pivot control mechanism comprise a second biased member, second biased member being a u-spring having a first limb and a second limb connected to the first limb by a u-bend, the first limb being coupled to the frame and the second limb being coupled to the first bracket.

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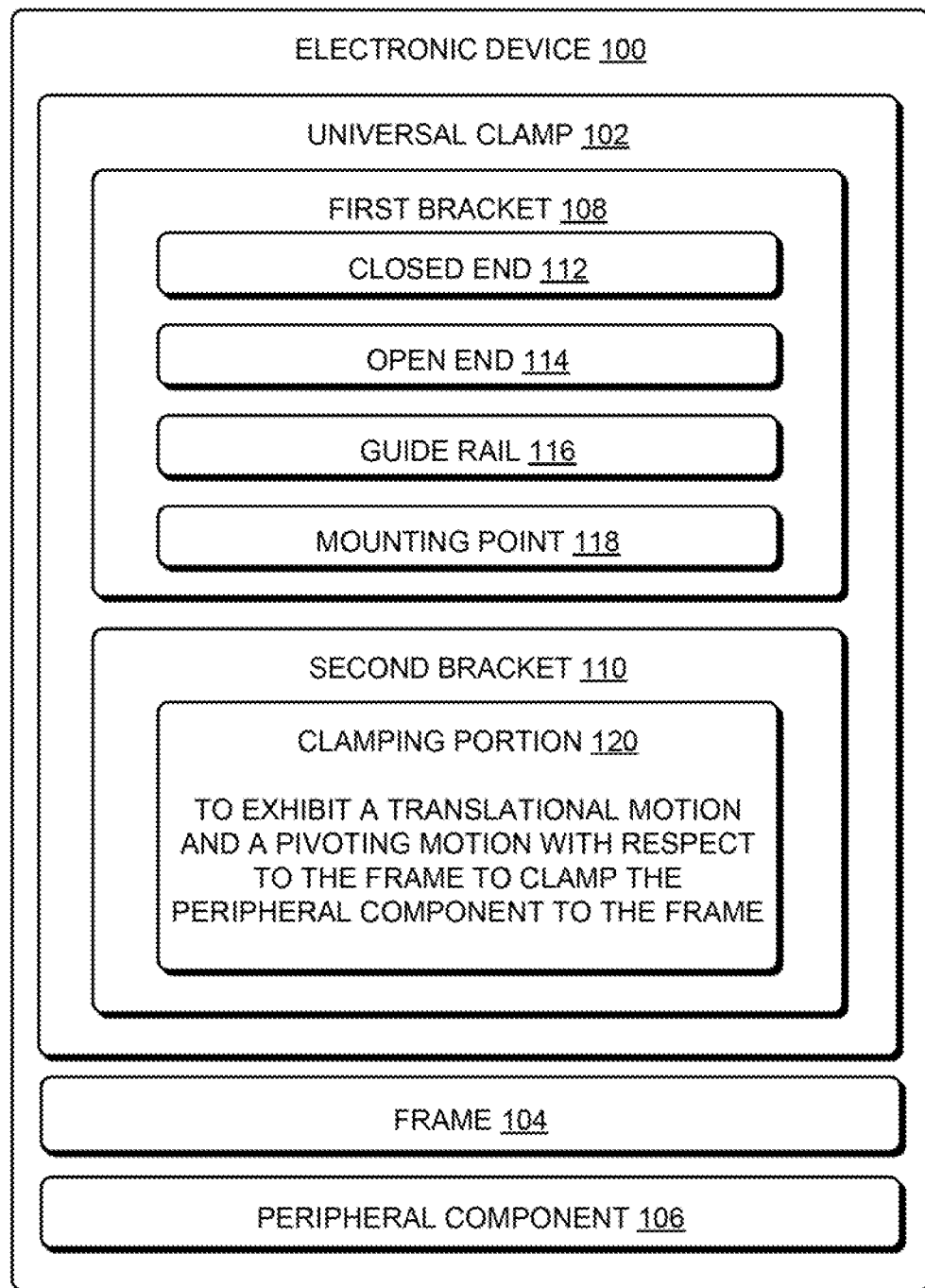


Figure 1

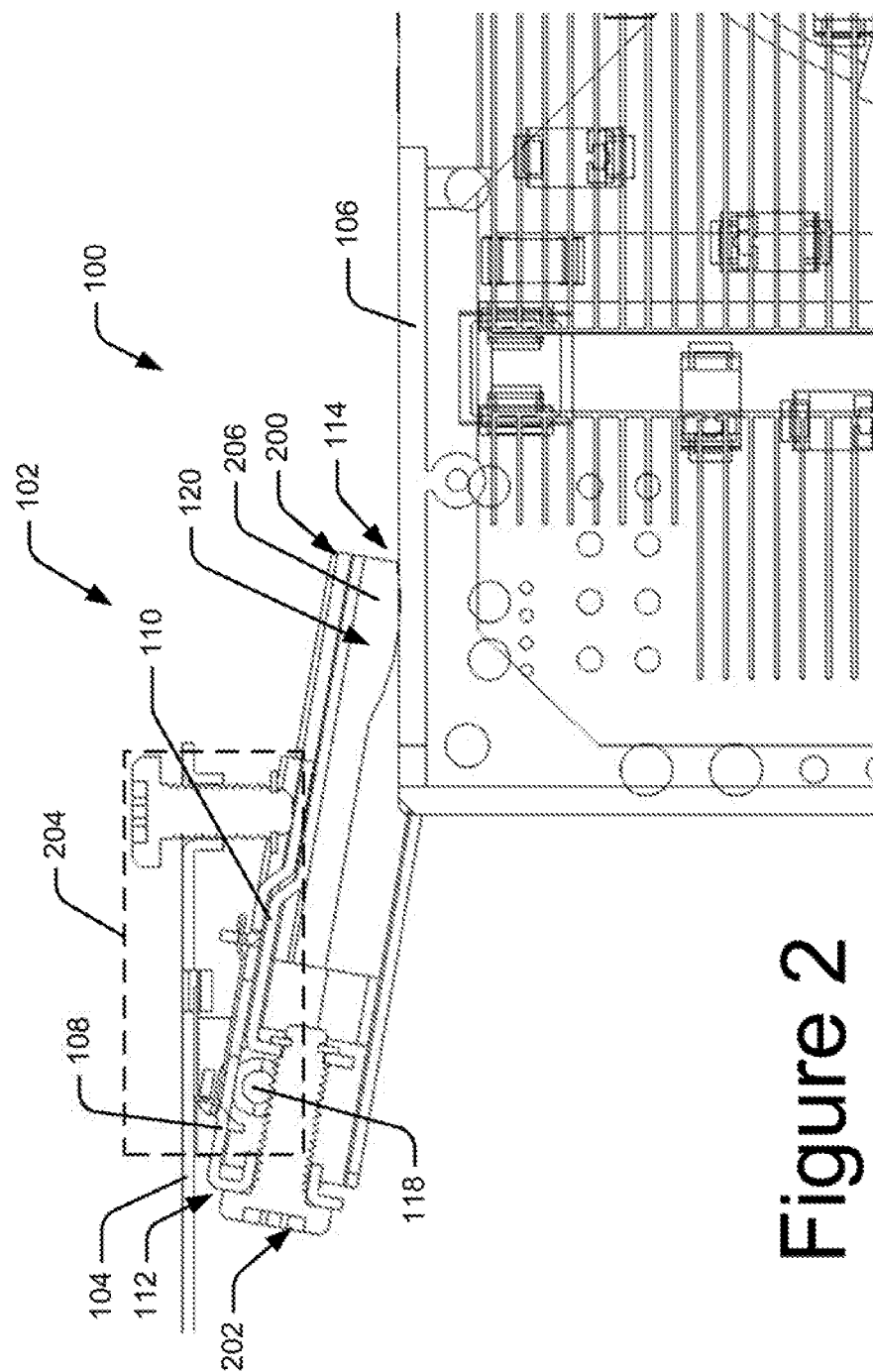


Figure 2

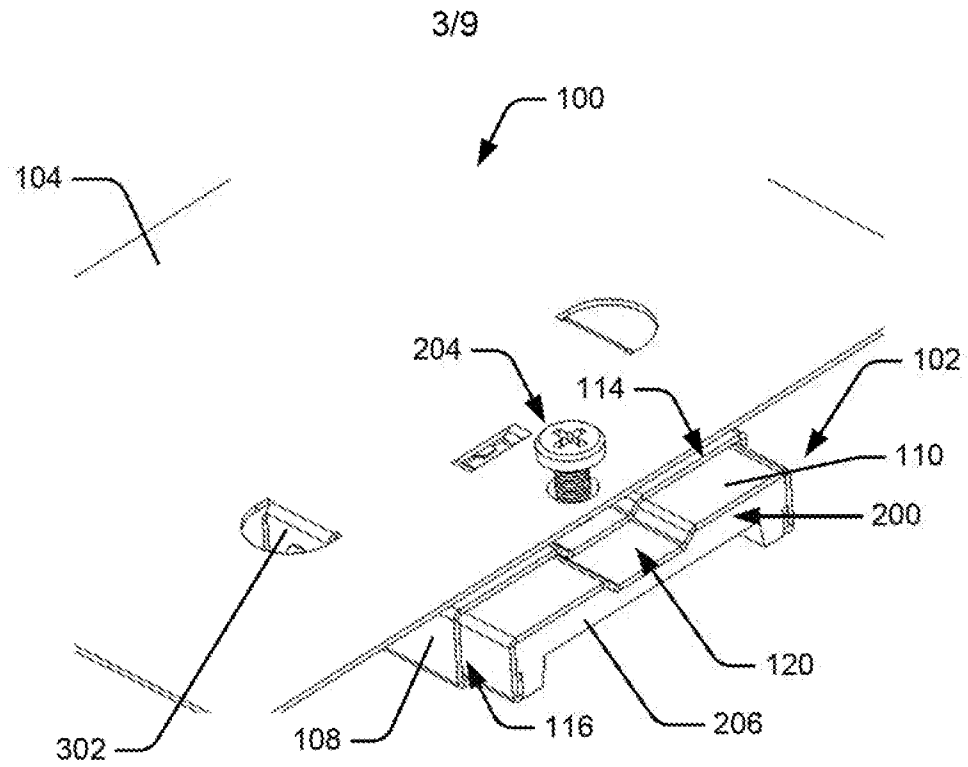


Figure 3A

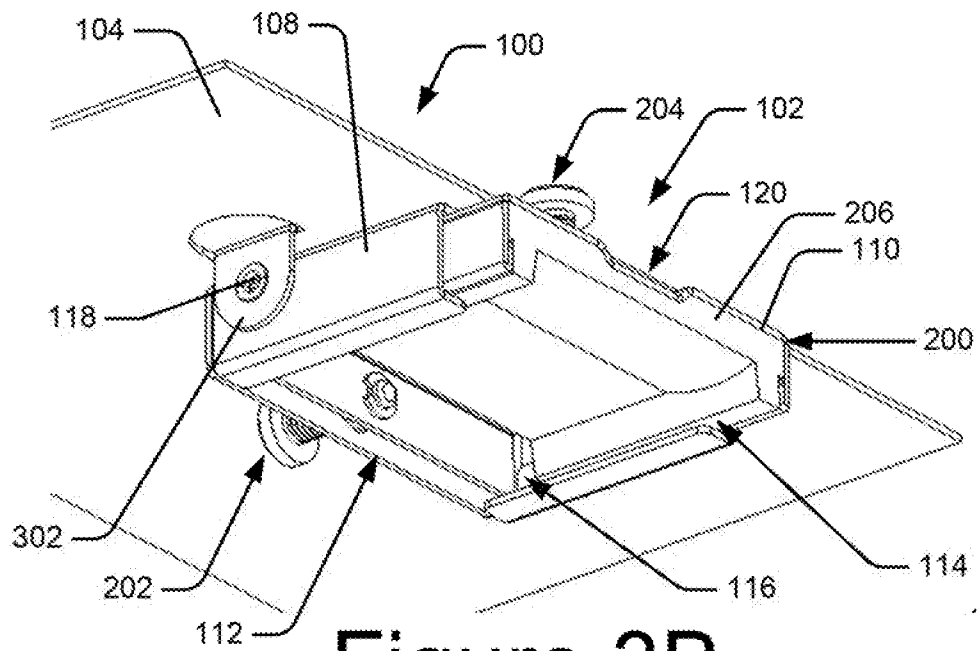


Figure 3B

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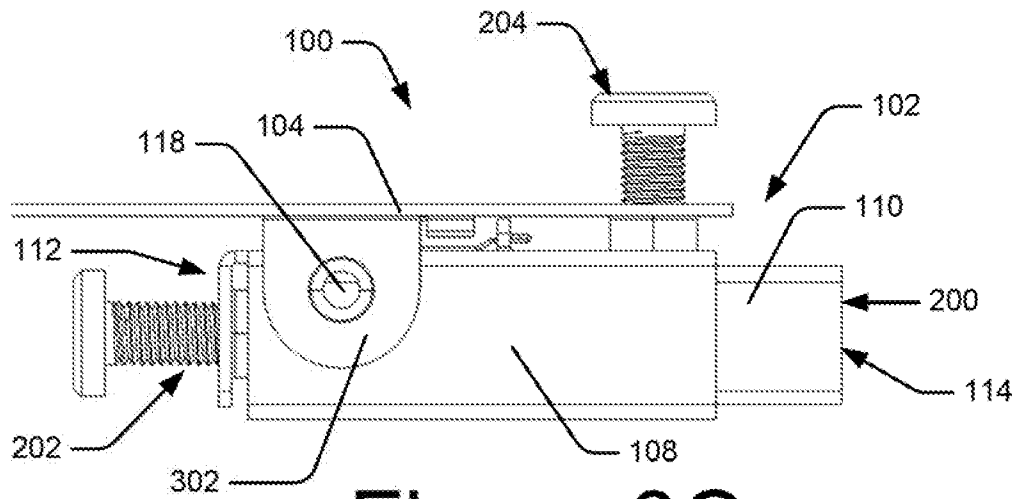


Figure 3C

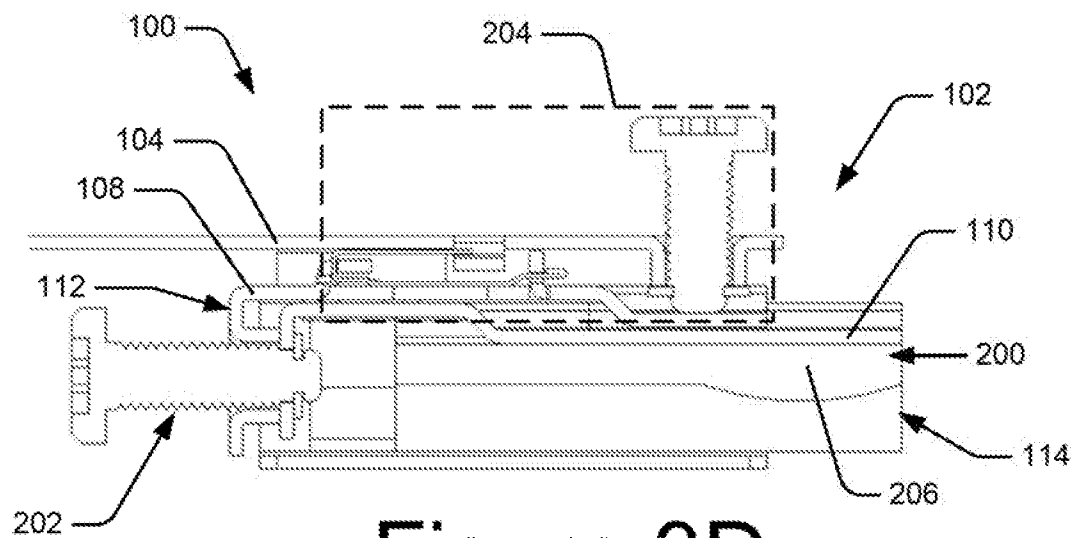
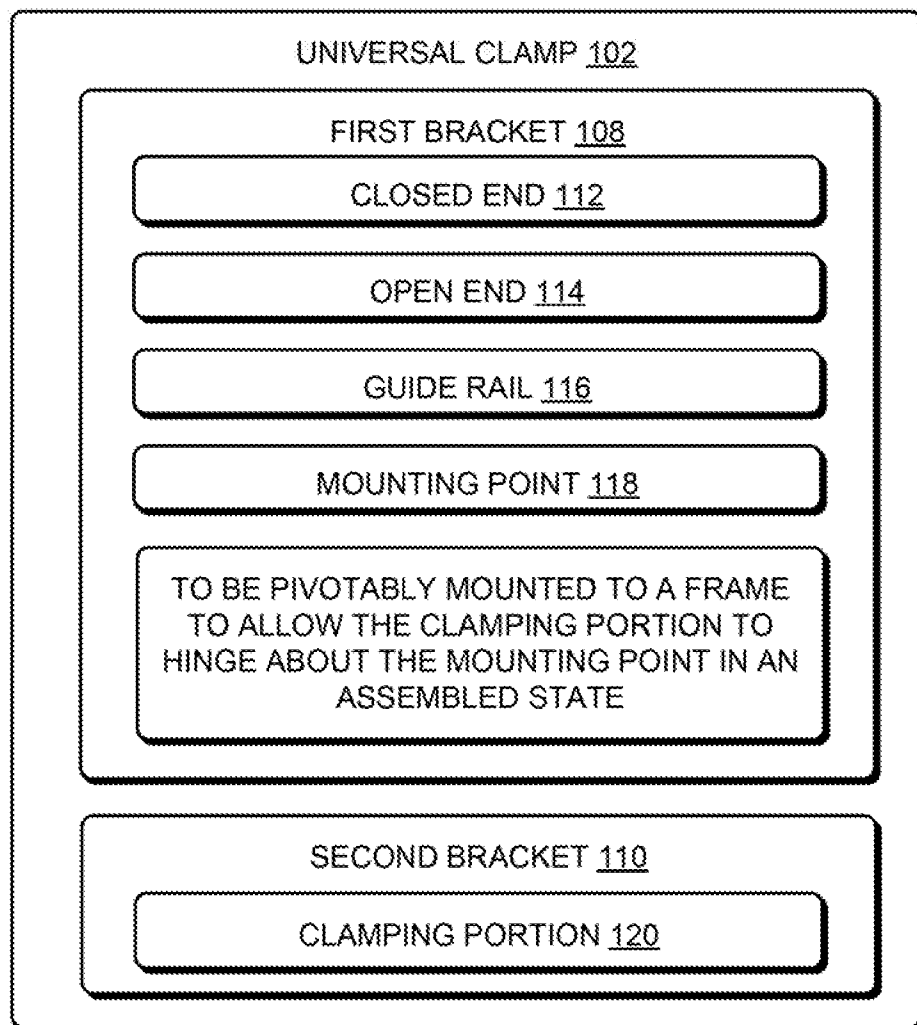


Figure 3D

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**Figure 4**

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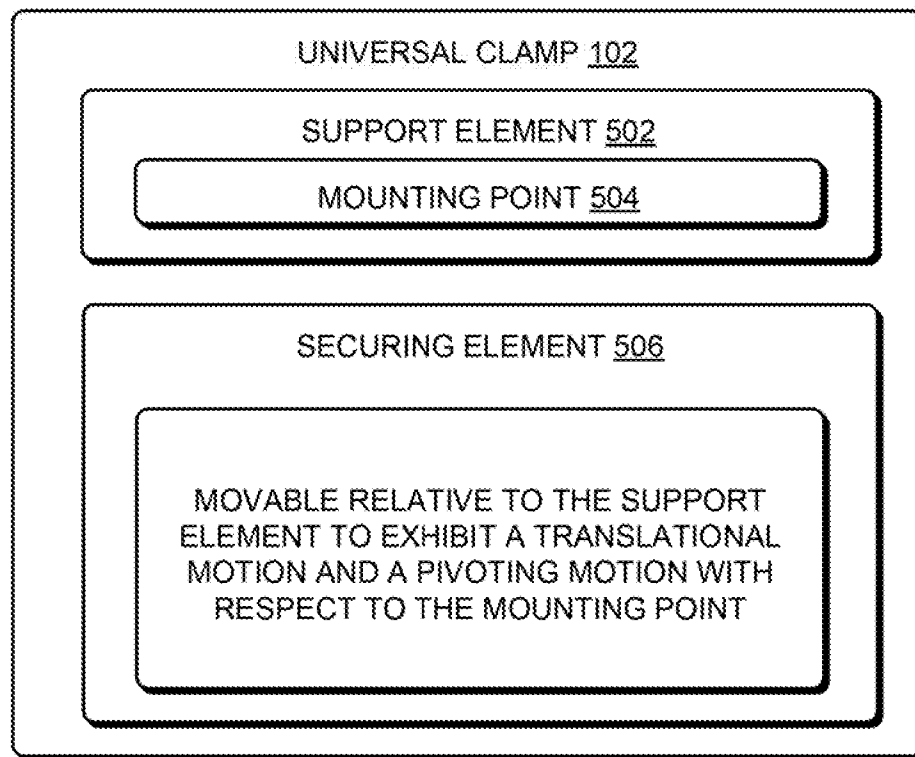


Figure 5

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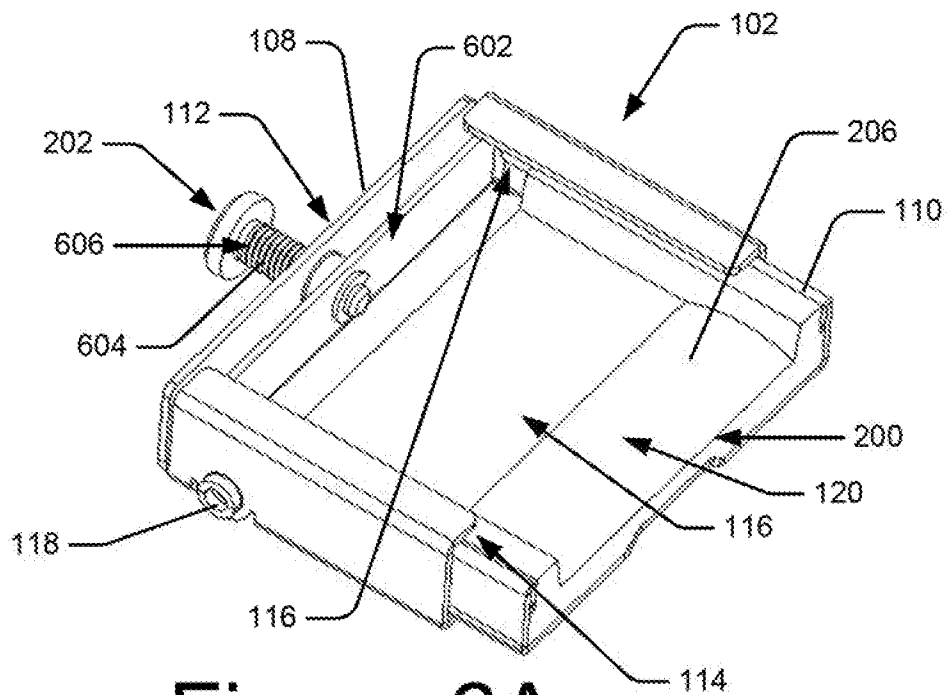


Figure 6A

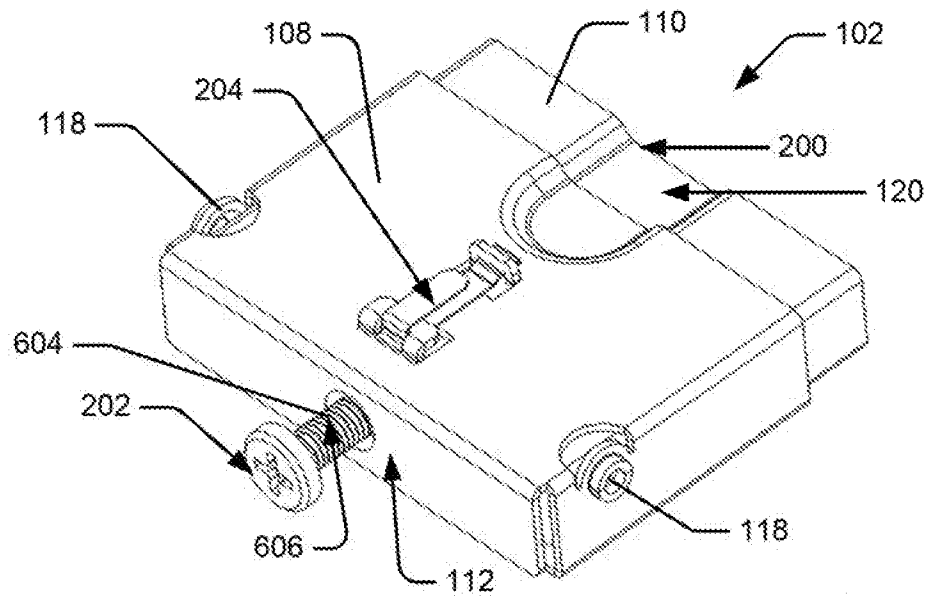


Figure 6B

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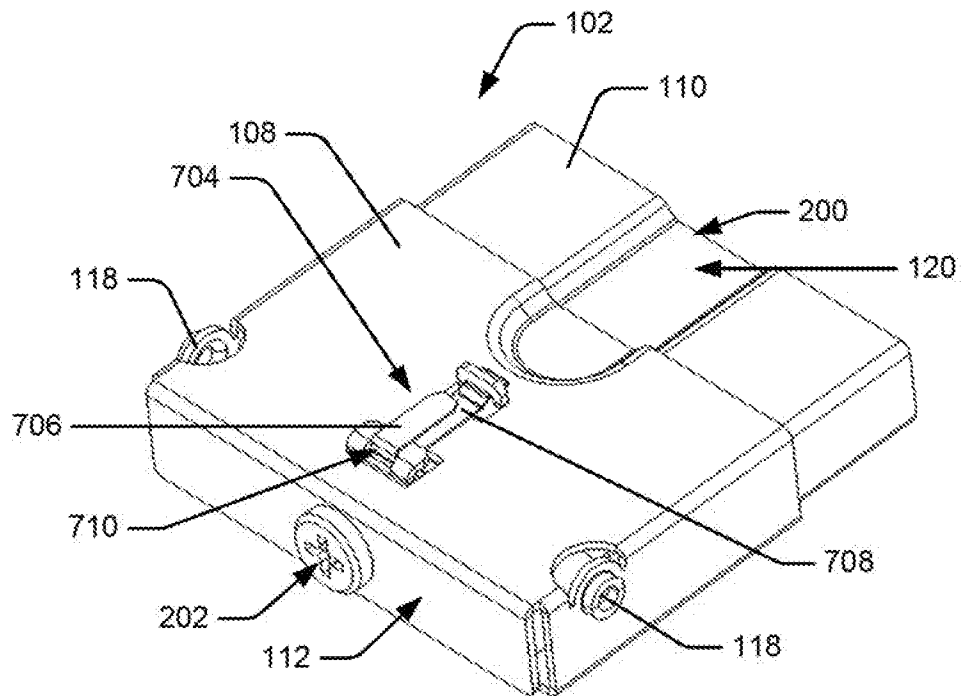


Figure 7A

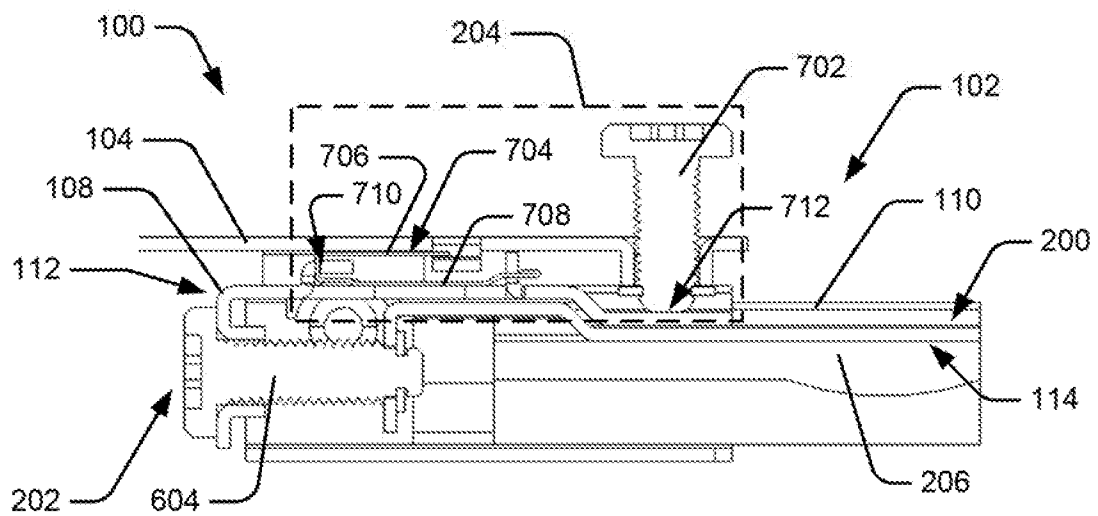
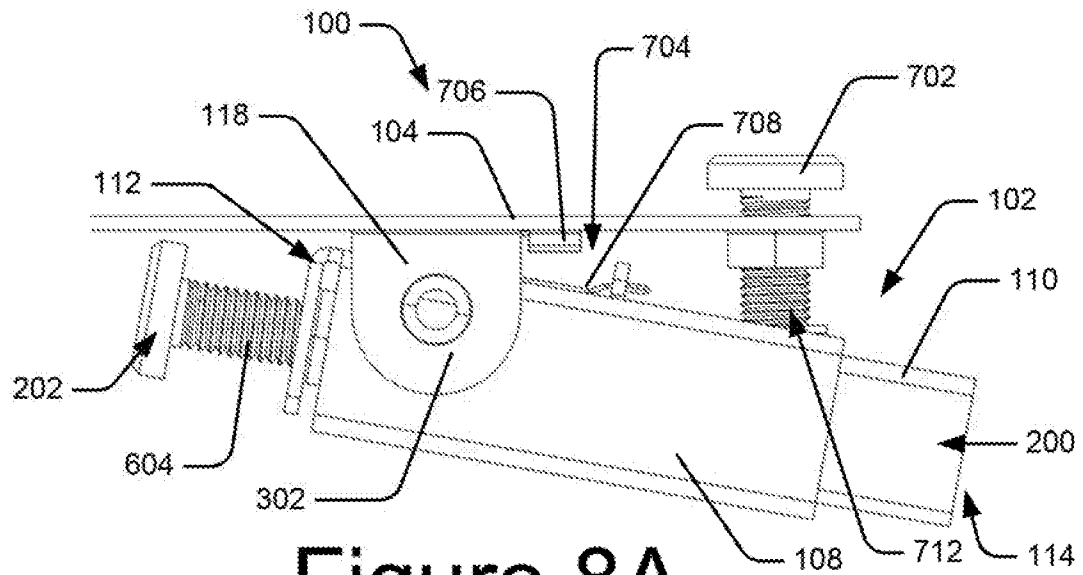
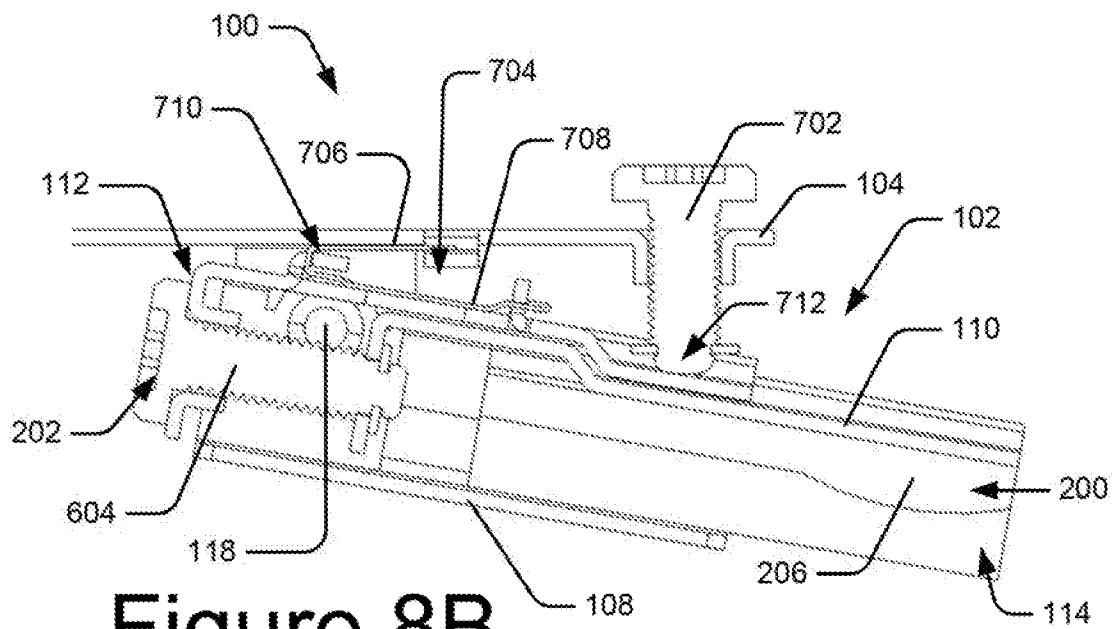


Figure 7B

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**Figure 8A****Figure 8B**

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 2020/041244

A. CLASSIFICATION OF SUBJECT MATTER <i>H05K 7/00 (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) G01D 11/00, 11/30, F16M 3/00, 11/00-11/28, G09F 9/00, H05K 7/00 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) Espacenet, PatSearch (RUPTO Internal), USPTO, CIPO														
C. DOCUMENTS CONSIDERED TO BE RELEVANT <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <thead> <tr> <th style="width: 15%; font-size: small;">Category*</th> <th style="width: 65%; font-size: small;">Citation of document, with indication, where appropriate, of the relevant passages</th> <th style="width: 20%; font-size: small;">Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td style="text-align: center; vertical-align: top;">X A</td> <td style="vertical-align: top;">WO 2018/002785 A1 (ILLINOIS TOOL WORKS, INC.) 04.01.2018, abstract, fig. 3B, 8</td> <td style="text-align: center; vertical-align: top;">1 2-15</td> </tr> <tr> <td style="text-align: center; vertical-align: top;">A</td> <td style="vertical-align: top;">CA 2910122 C (MYWORLD MEDIASTUDIO INC.) 11.07.2017</td> <td style="text-align: center; vertical-align: top;">1-15</td> </tr> <tr> <td style="text-align: center; vertical-align: top;">A</td> <td style="vertical-align: top;">CA 2826701 A1 (ERGOTRON, INC.) 16.08.2012</td> <td style="text-align: center; vertical-align: top;">1-15</td> </tr> </tbody> </table>			Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	X A	WO 2018/002785 A1 (ILLINOIS TOOL WORKS, INC.) 04.01.2018, abstract, fig. 3B, 8	1 2-15	A	CA 2910122 C (MYWORLD MEDIASTUDIO INC.) 11.07.2017	1-15	A	CA 2826701 A1 (ERGOTRON, INC.) 16.08.2012	1-15
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X A	WO 2018/002785 A1 (ILLINOIS TOOL WORKS, INC.) 04.01.2018, abstract, fig. 3B, 8	1 2-15												
A	CA 2910122 C (MYWORLD MEDIASTUDIO INC.) 11.07.2017	1-15												
A	CA 2826701 A1 (ERGOTRON, INC.) 16.08.2012	1-15												
☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.														
<table style="width: 100%; font-size: small;"> <tr> <td style="width: 50%; vertical-align: top;"> * Special categories of cited documents: “A” document defining the general state of the art which is not considered to be of particular relevance “D” document cited by the applicant in the international application “E” earlier document 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 </td> <td style="width: 50%; vertical-align: top;"> “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 </td> </tr> </table>			* Special categories of cited documents: “A” document defining the general state of the art which is not considered to be of particular relevance “D” document cited by the applicant in the international application “E” earlier document 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										
* Special categories of cited documents: “A” document defining the general state of the art which is not considered to be of particular relevance “D” document cited by the applicant in the international application “E” earlier document 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 03 March 2021 (03.03.2021)		Date of mailing of the international search report 25 March 2021 (25.03.2021)												
Name and mailing address of the ISA/RU: Federal Institute of Industrial Property, Berezhkovskaya nab., 30-1, Moscow, G-59, GSP-3, Russia, 125993 Facsimile No: (8-495) 531-63-18, (8-499) 243-33-37		Authorized officer Yu. Osipov Telephone No. (495) 531-64-81												