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[Continued on next page]

- (54) Title: **RELEASING OPTICAL DISK DRIVES (ODD) FROM ODD BRACKETS**

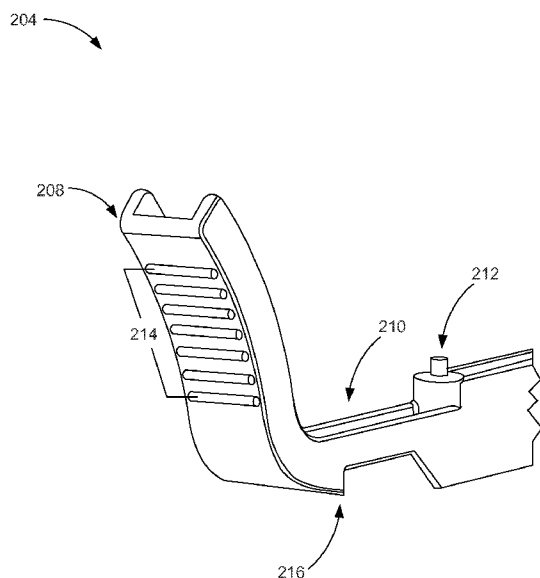


Fig. 2B

- (57) Abstract: Example implementations relate to releasing an optical disk drive (ODD) from an ODD bracket. For example, a system for releasing an ODD from an ODD bracket includes the ODD, the ODD bracket, and a retention latch for securing the ODD to the ODD bracket via a hook of the retention latch and a ramp of the ODD bracket.

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

Published:

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RELEASING OPTICAL DISK DRIVES (ODD) FROM ODD BRACKETS

BACKGROUND

[0001] A desktop computer is a personal computer in a form intended for use at a single location. The form of the desktop computer may include a desktop tower. The desktop tower accommodates a number of computer components. The computer components may include optical disk drives (ODD) such as compact disk (CD) drives and digital video disk (DVD) drives, a central processing unit (CPU), peripheral component interconnect (PCI) cards, memory, other computer components, or combinations thereof.

BRIEF DESCRIPTION OF THE DRAWINGS

[0002] The accompanying drawings illustrate various examples of the principles described herein and are a part of the specification. The examples do not limit the scope of the claims.

[0003] Fig. 1 is a diagram of a system for releasing an optical disk drive (ODD) from an ODD bracket, according to an example.

[0004] Fig. 2A is a diagram of a retention latch, according to an example.

[0005] Fig. 2B is a diagram of a retention latch, according to an example.

[0006] Fig. 3A is a diagram of a system for releasing an ODD from an ODD bracket, according to an example.

[0007] Fig. 3B is a diagram of a system for releasing an ODD from an ODD bracket, according to an example.

[0008] Fig. 3C is a diagram of a system for releasing an ODD from an ODD bracket, according to an example.

[0009] Fig. 4 is a flowchart of a method for releasing an ODD from an ODD bracket, according to an example.

[0010] Throughout the drawings, identical reference numbers designate similar, but not necessarily identical, elements.

DETAILED DESCRIPTION

[0011] As mentioned above, a desktop tower accommodates a number of computer components. The computer components may include optical disk drives (ODD) such as compact disk (CD) drives and digital video disk (DVD) drives, a central processing unit (CPU), peripheral component interconnect (PCI) cards, memory, other computer components, or combinations thereof. To accommodate the computer components such as the ODD, the desktop tower includes a number of ODD brackets. The ODD brackets are permanently secured, via screws or welding, to the desktop tower. The ODD brackets include a slot to allow an ODD to fit inside the ODD bracket. The ODD is secured to the ODD bracket via a locking device. The locking device physically engages the ODD bracket and the ODD.

[0012] Often, the ODD is removed for maintenance purposes and/or to be upgraded. To remove the ODD, the user accesses two zones of in the desktop tower. A first zone in the desktop tower may be for finger clearance to allow the user to access the locking device and release the locking device. A second zone of in the desktop tower allows the user to physically push the ODD forward and out of the ODD bracket. Using two zones to remove the ODD may be difficult, especially if there is limited space and/or access in the desktop tower. As a result, the user may become frustrated. Further, the two zones may occupy valuable space in the desktop tower. Occupying valuable space in the desktop tower may compromise design configurations of the computer components in the desktop tower.

[0013] The examples described herein include a system for releasing an ODD from an ODD bracket. Such a system includes an ODD, an ODD bracket, and a retention latch for securing the ODD to the ODD bracket via a

hook of the retention latch and a ramp of the ODD bracket. Such a system allows the retention latch to be released from the ramp and allows the ODD to slide out of the ODD bracket with one motion. As a result, the ODD may be removed for maintenance purposes by accessing a single zone. Further, the ODD to be configured closer to other computer components in the desktop tower. This allows for greater design configurations of the computer components in the desktop tower.

[0014] As used herein, the term “ODD” means a computer component that is a disk drive that uses laser light or electromagnetic waves within or near the visible light spectrum as part of the process of reading or writing data to or from optical disks. The ODD may be used to read computer program and/or consumer media distributed on an optical disk. The ODD may record data on the optical disk for archival and data exchange purposes. The ODD may include compact disk (CD) drives and digital video disk (DVD) drives.

[0015] As used herein, the term “ODD bracket” means a mechanism to accommodate an ODD in a desktop tower. The ODD bracket is permanently secured, via screws or welding, to the desktop tower. The ODD bracket includes a slot to allow an ODD to fit inside the ODD bracket and be secured via a retention latch as long as a hook of the retention latch is engaging a ramp of the ODD bracket.

[0016] As used herein, the term “retention latch” means a mechanism to secure an ODD to an ODD bracket. The retention latch may engage an ODD bracket to secure to the ODD to the ODD bracket. Further, the retention latch may disengage from the ODD bracket to allow the user to remove the ODD from the desktop tower.

[0017] As used herein, the term “thin flexible zone” means a section of a retention latch that flexes when a force is applied to a push tab of the retention latch. The thin flexible zone may flex in an upwards motion to allow the retention latch to disengage from an ODD bracket.

[0018] As used herein, the term “hook” means a mechanism of a retention latch to secure the retention latch to an ODD bracket. Further, the hook may be secured to a ramp of the ODD bracket.

[0019] As used herein, the term “push tab” means a section of a retention latch that allows a user to apply a force. The push tab may include a number of traction tabs.

[0020] As used herein, the term “force” means a physical interaction between a user and a retention latch that causes a hook of the retention latch to disengage from a ramp of an ODD bracket. The force may be sufficient to flex a thin flexible zone of the retention latch.

[0021] Further, as used herein, the term “a number of” or similar language is meant to be understood broadly as any positive number comprising 1 to infinity; zero not being a number, but the absence of a number.

[0022] In the following description, for purposes of explanation, numerous specific details are set forth in order to provide a thorough understanding of the present systems and methods. It will be apparent, however, to one skilled in the art that the present apparatus, systems, and methods may be practiced without these specific details. Reference in the specification to “an example” or similar language means that a particular feature, structure, or characteristic described in connection with that example is included as described, but may not be included in other examples.

[0023] Referring now to the figures, Fig. 1 is a diagram of a system for releasing an ODD from an ODD bracket, according to an example. As will be described below, the system includes a retention latch that is secured to an ODD. Further, a hook of the retention latch secures the retention latch to an ODD bracket.

[0024] As illustrated the system (100) includes an ODD (102). The ODD (102) may be a computer component that is a disk drive. The ODD (102) uses laser light or electromagnetic waves within or near the visible light spectrum as part of the process of reading or writing data to or from optical disks. The ODD (102) may be used to read computer programs and/or consumer media distributed on the optical disks. The ODD (102) may record data to the optical disks for archival and data exchange purposes. The ODD (102) may include compact disk (CD) drives or a digital video disk (DVD) drives.

In some examples, the ODD (102) may be a standard size. In other examples, the ODD (102) may be a smaller size such as a slim size.

[0025] As illustrated the system (100) includes an ODD bracket (106). The ODD bracket (106) is a mechanism to accommodate the ODD (102) in a desktop tower. The ODD bracket (106) is permanently secured, via screws or welding, to the desktop tower. As will be described in other parts of this specification, the ODD bracket (106) includes a slot to allow the ODD (102) to fit inside the ODD bracket (106). Further, the ODD (102) is secured to the ODD bracket (106) via a retention latch (104) as long as the retention latch (104) is engaging the ODD bracket (106). This secures the ODD (102) to the ODD bracket (106). More information about the ODD bracket (106) will be described in other parts of this specification.

[0026] As illustrated the system (100) includes a retention latch (104). The retention latch (104) secures the ODD (102) to the ODD bracket (106) via a hook of the retention latch (104) and a ramp of the ODD bracket (106). As will be described in other parts of this specification, the retention latch (104) includes a number of features. The features include a push tab, a thin flexible zone, at least one alignment pin, and a hook. The features of the retention latch (104) allow the ODD (102) to be secured to the ODD bracket (106) or allow the ODD (102) to be physically removed from the ODD bracket (106). More information about the retention latch (104) will be described in other parts of this specification.

[0027] Fig. 2A is a diagram of a retention latch, according to an example. As will be described below, the retention latch may be made of plastic. Further, the retention latch may be defined by a width, a length, and a height.

[0028] As mentioned above, the retention latch (204) is a mechanism to secure an ODD to an ODD bracket. The retention latch (204) may be made from plastics. The plastic may be any of a wide range of synthetics or semi-synthetic organic solids that include characteristics of elasticity. The elasticity allows the thin flexible zone to function properly.

[0029] While this example has been described with reference to the retention latch (204) being made of plastics, the retention latch (204) may be made from other materials. The other materials may include polymers, fiberglass, carbon fiber reinforced plastics, resins, or combinations thereof.

[0030] Further, the retention latch (204) may be defined by a height (215-2). The height (215-2) may be between 40 millimeters (mm) and 50 mm. In an example, the height (215-2) is 45.59 mm. The retention latch (204) may be further defined by a width (215-1). The width (215-1) may be between 7 mm to 13 mm. In an example, the width (215-1) may be 9.55 mm. Further, the retention latch (204) may be defined by a length (215-3). The length (215-3) may be between 130 mm and 150 mm. In an example, the length (215-3) may be 140.59 mm.

[0031] Fig. 2B is a diagram of a retention latch, according to an example. As mentioned above, the retention latch includes a number of features. The features include a push tab, a thin flexible zone, an alignment pin, and a hook.

[0032] In an example, the retention latch (204) has a lower profile than a standard locking mechanism to secure an ODD to and ODD bracket. As a result, the ODD may be mounted closer to other components in the desktop tower. This allows more freedom for configuration of components in the desktop tower by enabling architecture configurations that are not possible with a standard locking mechanism.

[0033] As illustrated, the retention latch (204) includes a push tab (208). The push tab (208) may be used for applying a force to the retention latch (204). Further, the push tab (208) may be a curved shape. As will be described below, the curved shape of the push tab (208) forces a thin flexible zone (210) of the retention latch (204) to flex when the force is applied. Further, the push tab (208) includes a number of traction tabs (214). The traction tabs (214) allow the user to grip the push tab (208) while applying a force such that the user's finger does not slip. In one example, the traction tabs (214) may be a number of bumps that gives adhesive friction to the push tab (208).

[0034] While this example has been described with reference to the traction tabs (214) being a number of bumps, the traction tabs (214) may be other mechanisms that give adhesive friction to the push tab (208). For example, the traction tabs (214) may be an adhesive that coats the push tab (208), the traction tabs (214) may be divots in the push tab (208), other mechanisms that gives adhesive friction to the push tab (208), or combinations thereof.

[0035] As illustrated, the retention latch (204) includes a hook (216). The hook (216) is used to secure the retention latch (204) to a ramp of an ODD bracket. As will be described below, when no force is applied to the push tab (208), a thin flexible zone (210) does not flex. As a result, the hook (216) engages a ramp of the ODD bracket. This secures an ODD to an ODD bracket. However, when a force is applied to the push tab (208), the thin flexible zone (210) flexes. As a result, the hook (216) disengages from the ramp of the ODD bracket. This releases the ODD from the ODD bracket. Further, the force is to be sufficient to release the hook from the ramp of the ODD bracket. If the force is insufficient, the hook is not released from the ramp. As a result, the ODD remains secured to the ODD bracket.

[0036] As illustrated, the retention latch (204) includes an alignment pin (212). The alignment pin (212) is used to secure the retention latch (204) to the ODD. The alignment pin (212) may be ridged. As a result, the alignment pin (212) may snap into an alignment slot of the ODD. The alignment pin (212) may be a spring loaded alignment pin. As a result, the top of the alignment pin (212) when depressed may retract into the retention latch (204). However, when the alignment pin (212) lines up with an alignment slot of the ODD, the alignment pin (212) is no longer depressed and engages with the alignment slot of the ODD. As a result, the alignment pin (212) secures the retention latch (204) to the ODD.

[0037] While this example has been described with reference to the retention latch (204) including one alignment pin, the retention latch (204) may include a number of alignment pins. For example, if the ODD includes two alignment holes, the retention latch (204) may include two alignment pins.

Further, the two alignment pins may be spaced on the retention latch (204) such that the two alignment pins may engage the two alignment slots of the ODD.

[0038] As illustrated, the retention latch (204) includes the thin flexible zone (210). The thin flexible zone (210) allows the retention latch (204) to flex to release the hook (216) from the ramp of the ODD bracket. As will be described in other parts of this specification, when a force is applied to the push tab (208), the thin flexible zone (210) flexes in an upwards motion. As a result, the hook (216) disengages from the ramp of the ODD bracket. This releases the ODD from the ODD bracket.

[0039] Figs. 3A to 3C are diagrams of a system for releasing an ODD from an ODD bracket. As will be described in Figs. 3A to 3C an ODD may be released from an ODD bracket when a force is applied to a push tab of a retention latch. As a result, the ODD may be physically removed for maintenance purposes and/or to be upgraded.

[0040] Turning specifically to Fig. 3A, Fig. 3A is a diagram of a system for releasing an ODD from an ODD bracket, according to an example. As will be described in Fig. 3A, a retention latch secures an ODD to an ODD bracket.

[0041] As illustrated, the system (300) includes an ODD (302) that is secured to an ODD bracket (306) via a retention latch (304). As illustrated, the ODD bracket (306) includes a top (326), a bottom (330), and a first side (328). The top (326), bottom (330), and first side (328) may be sized to accommodate the ODD (302). As a result, the ODD (302) may slide in and out of the ODD bracket (306). This allows the ODD (302) may be removed for maintenance purposes and/or to be upgraded.

[0042] As illustrated, the bottom (330) of the ODD bracket (306) includes a ramp (320). The ramp (320) secures the hook (316) of the retention latch (304) to the ODD bracket (306). Further, the ramp (320) secures the hook (316) of the retention latch (304) to the ODD bracket (306) as long as a force is not applied to the push tab (308).

[0043] In some examples, the ODD bracket (306) may be a common ODD bracket. Further, any common ODD bracket may be used in the system (300) as long as the common ODD bracket includes a mechanism to allow the

hook of the retention latch to engage the mechanism. For example, the mechanism may be a ledge on the ODD bracket that allows the hook of the retention latch to engage with. As a result, the ODD may be secured to the ODD bracket via the ledge and the hook.

[0044] Turning specifically to Fig. 3B, Fig. 3B is a diagram of a system for releasing an ODD from an ODD bracket, according to an example. As will be described in Fig. 3B, when a force is applied to a push tab, a thin flexible zone of a retention latch flexes.

[0045] As illustrated in Fig. 3B, a force is applied to a push tab (308) of the retention latch (304). As mention above, the push tab (308) may be a curved shape. The curved shaped of the push tab (308) causes the retention latch (304) to move in an upward motion. The upward motion causes a thin flexible zone (310) of the retention latch (304) to flex when the force is applied. If the force is sufficient, the thin flexible zone (310) flexes such that the hook (316) disengages from the ramp (320) as illustrated in Fig. 3B. As a result, the bottom of the hook (316) clears the top of the ramp (320). This fully disengages the hook (316) from the ramp (320).

[0046] Turning specifically to Fig. 3C, Fig. 3C is a diagram of a system for releasing an ODD from an ODD bracket, according to an example. As will be described in Fig. 3C the force disengages a hook of the retention latch from a ramp of an ODD bracket to allow the ODD to be physically removed with one motion.

[0047] Since the force is sufficient to flex the thin flexible zone (310), the hook (316) disengages from the ramp (320). As illustrated in Fig. 3C, the bottom of the hook (316) clears the top of the ramp (320). This allows the ODD (302) to be physically removed from the ODD bracket (306). As long as the force is continually applied to the push tab (308), the ODD (302) may be physically removed from the ODD bracket (306).

[0048] While this example has been described with reference to releasing the ODD (302) from the ODD bracket (306), the ODD (302) may be re-secured to the ODD bracket (306). For example, in Fig. 3C, a force may be applied to a side (324) of the ODD (302) to push the ODD (302) into the ODD

bracket (306). A curved section (322) of the retention latch (304) contacts the ramp (320). As the force is continually applied to the side (324) of the ODD (302), the thin flexible zone (310) flexes and allows the hook (316) to clear the ramp (320). Once the hook (316) clears the ramp (320), the thin flexible zone (310) relaxes and the hook (316) engages the ramp (320) as illustrated in Fig. 3A. This secures the ODD (302) to the ODD bracket (306).

[0049] Fig. 4 is a flowchart of a method for releasing an ODD from an ODD bracket, according to an example. In this example, the method (400) includes receiving (401) a force to flex a thin flexible zone of a retention latch when the force is applied to a push tab, and disengaging (402), based on the force, a hook of the retention latch from a ramp of an ODD bracket to allow the ODD to be physically removed.

[0050] As mentioned above, the method (400) includes receiving (401) a force to flex a thin flexible zone of a retention latch when the force is applied to a push tab. In an example, the force may be received from a user's fingers. The user's fingers may contact the push tab. As the user's fingers push on the push tab, a force is applied to the retention latch. Due to the curved shape of the retention latch, the push tab is forced in an upward motion. The upward motion causes the thin flexible zone of the retention latch to flex.

[0051] As mentioned above, the method (400) includes disengaging (402), based on the force, a hook of the retention latch from a ramp of an ODD bracket to allow the ODD to be physically removed. If the force is sufficient, the thin flexible zone of the retention latch flexes such that the hook disengages from the ramp of the ODD bracket. Once the hook disengages from the ramp of the ODD bracket, the force may still be applied to the push tab to remove the ODD from the ODD bracket. This allows the ODD to be removed from the ODD bracket with one motion. As a result, the ODD may be removed for maintenance purposes and/or upgrade purposes.

[0052] The preceding description has been presented to illustrate and describe examples of the principles described. This description is not intended to be exhaustive or to limit these principles to any precise form disclosed. Many modifications and variations are possible in light of the above teaching.

CLAIMS

WHAT IS CLAIMED IS:

1. A system for releasing an optical disk drive (ODD) from an ODD bracket, the system comprising:
 - the ODD;
 - the ODD bracket; and
 - a retention latch for securing the ODD to the ODD bracket via a hook of the retention latch and a ramp of the ODD bracket.
2. The system of claim 1, wherein the ODD bracket comprises:
 - a top;
 - a bottom; and
 - a first side;wherein the bottom comprises the ramp for securing the hook of the retention latch to the ramp.
3. The system of claim 1, wherein the retention latch comprises:
 - a push tab for applying a force to the retention latch;
 - a thin flexible zone to allow the retention latch to flex to release the hook from the ramp; and
 - the hook.
4. The system of claim 3, wherein the push tab comprises a number of traction tabs.
5. The system of claim 1, wherein the retention latch is secured to the ODD via at least one alignment pin.
6. The system of claim 1, wherein the ODD bracket is sized to accommodate the ODD with the retention latch.

7. A retention latch for releasing an optical disk drive (ODD) from an ODD bracket, the retention latch comprising:
 - a push tab for applying a force to the retention latch;
 - a hook to secure the retention latch to a ramp of the ODD bracket; and
 - a thin flexible zone to allow the retention latch to flex to release the hook from the ramp.
8. The retention latch of claim 7, wherein the push tab comprises a number of traction tabs.
9. The retention latch of claim 7, wherein the thin flexible zone flexes when the force is applied to the push tab.
10. The retention latch of claim 9, wherein the force is sufficient to release the hook from the ramp of the ODD bracket.
11. The retention latch of claim 7, further comprising at least one alignment pin to secure the retention latch to the ODD.
12. A method for releasing an optical disk drive (ODD) from an ODD bracket, the method comprising:
 - receiving a force to flex a thin flexible zone of a retention latch when the force is applied to a push tab; and
 - disengaging, based on the force, a hook of the retention latch from a ramp of the ODD bracket to allow the ODD to be physically removed.
13. The method of claim 12, wherein the force is sufficient to release the hook of the retention latch from the ramp of the ODD bracket.

14. The method of claim 12, wherein the push tab comprises a number of traction tabs.
15. The method of claim 12, wherein the retention latch is secured to the ODD via at least one alignment pin.

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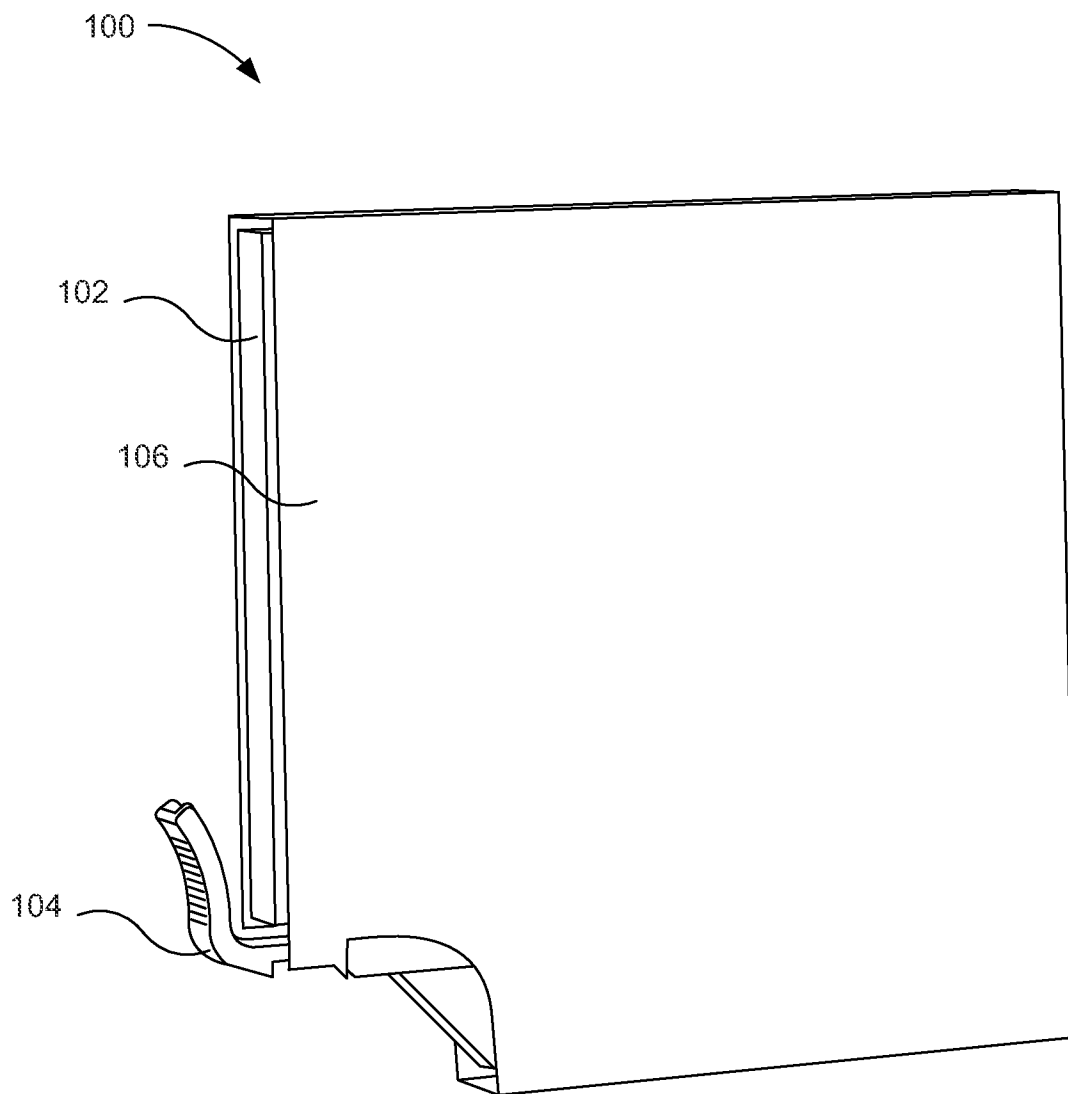


Fig. 1

204

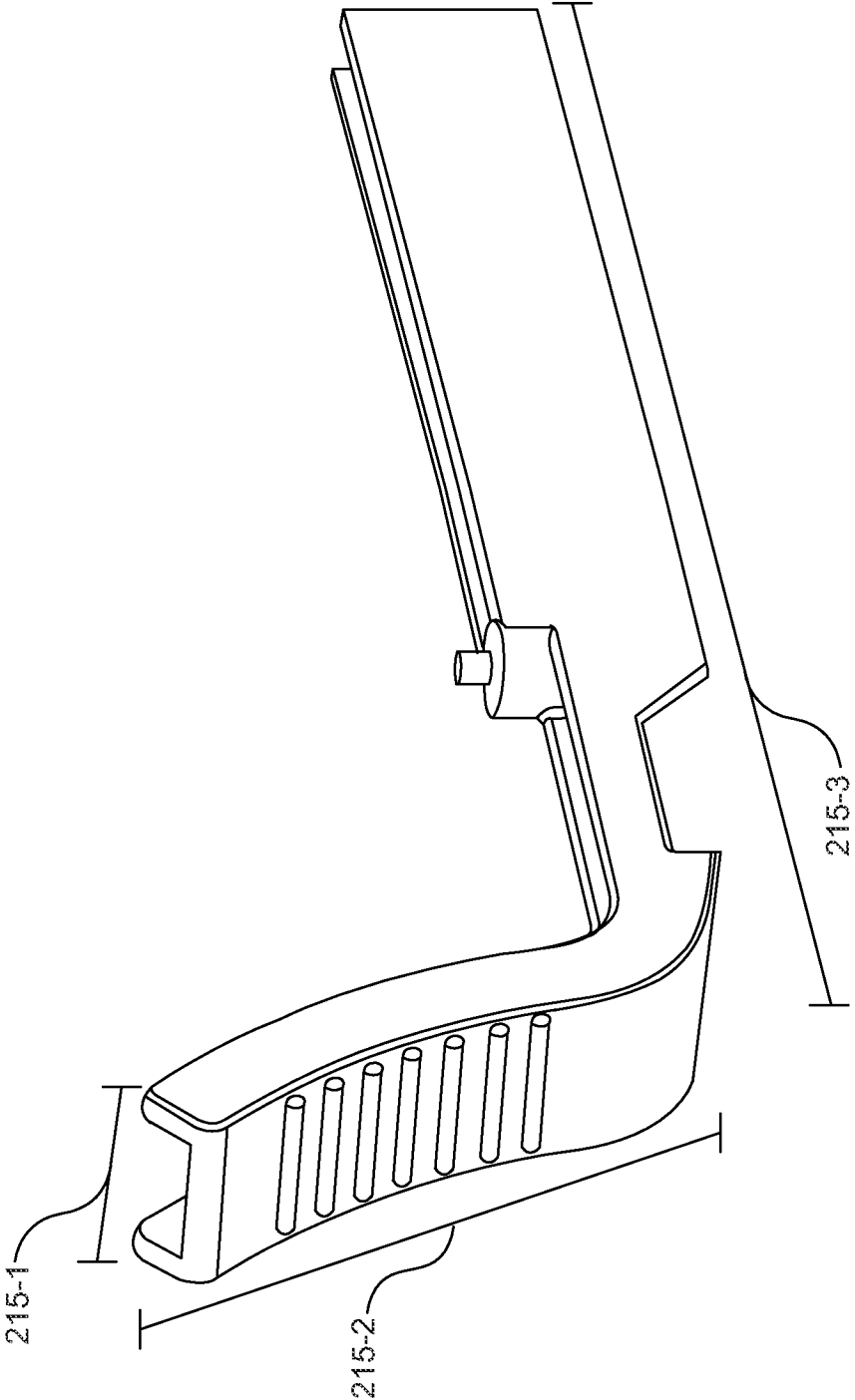


Fig. 2A

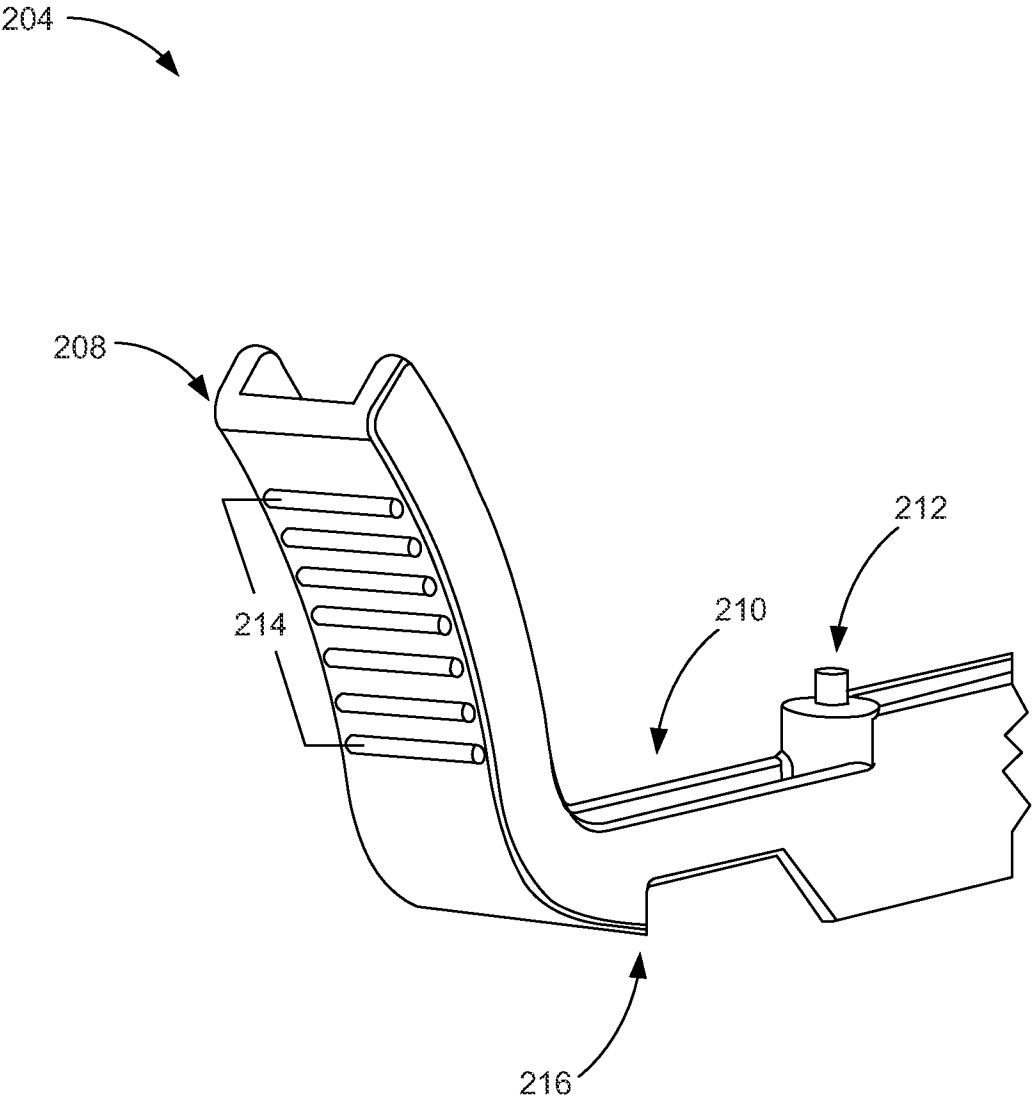
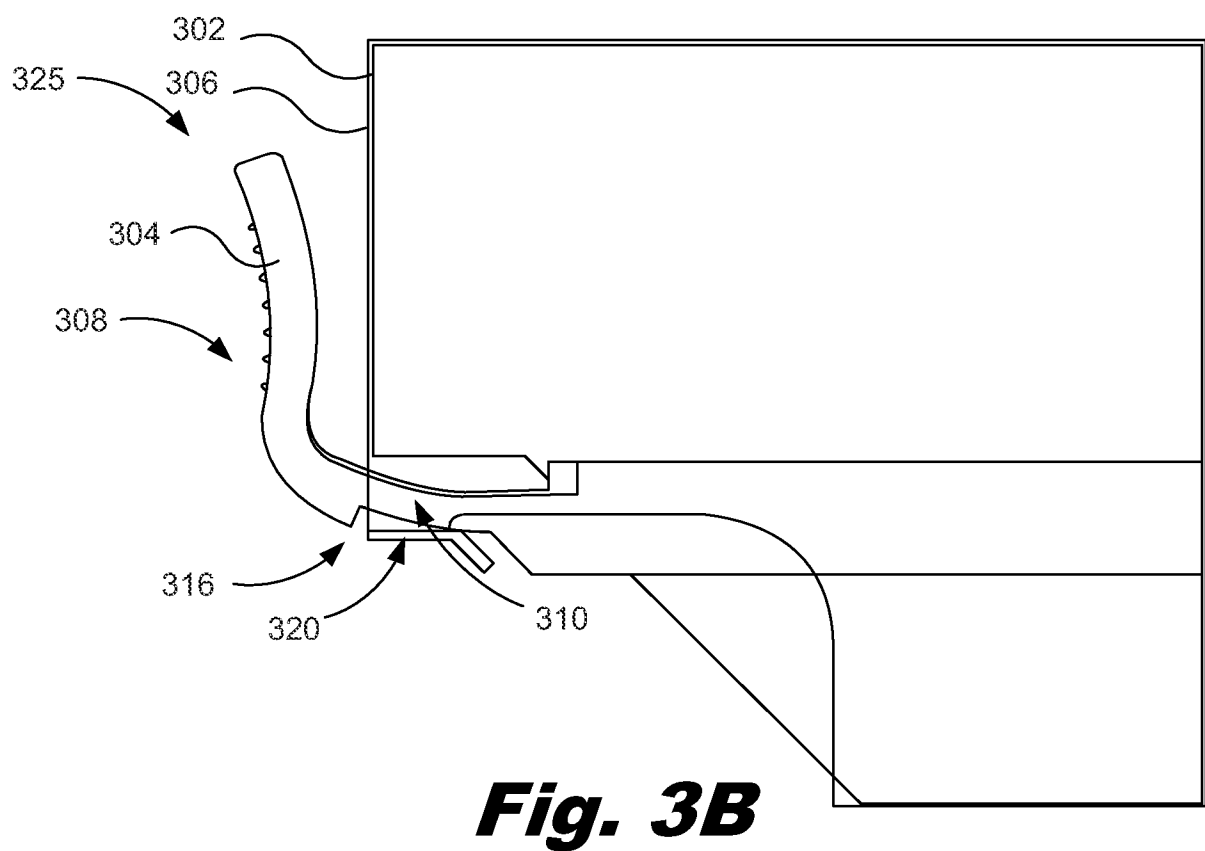
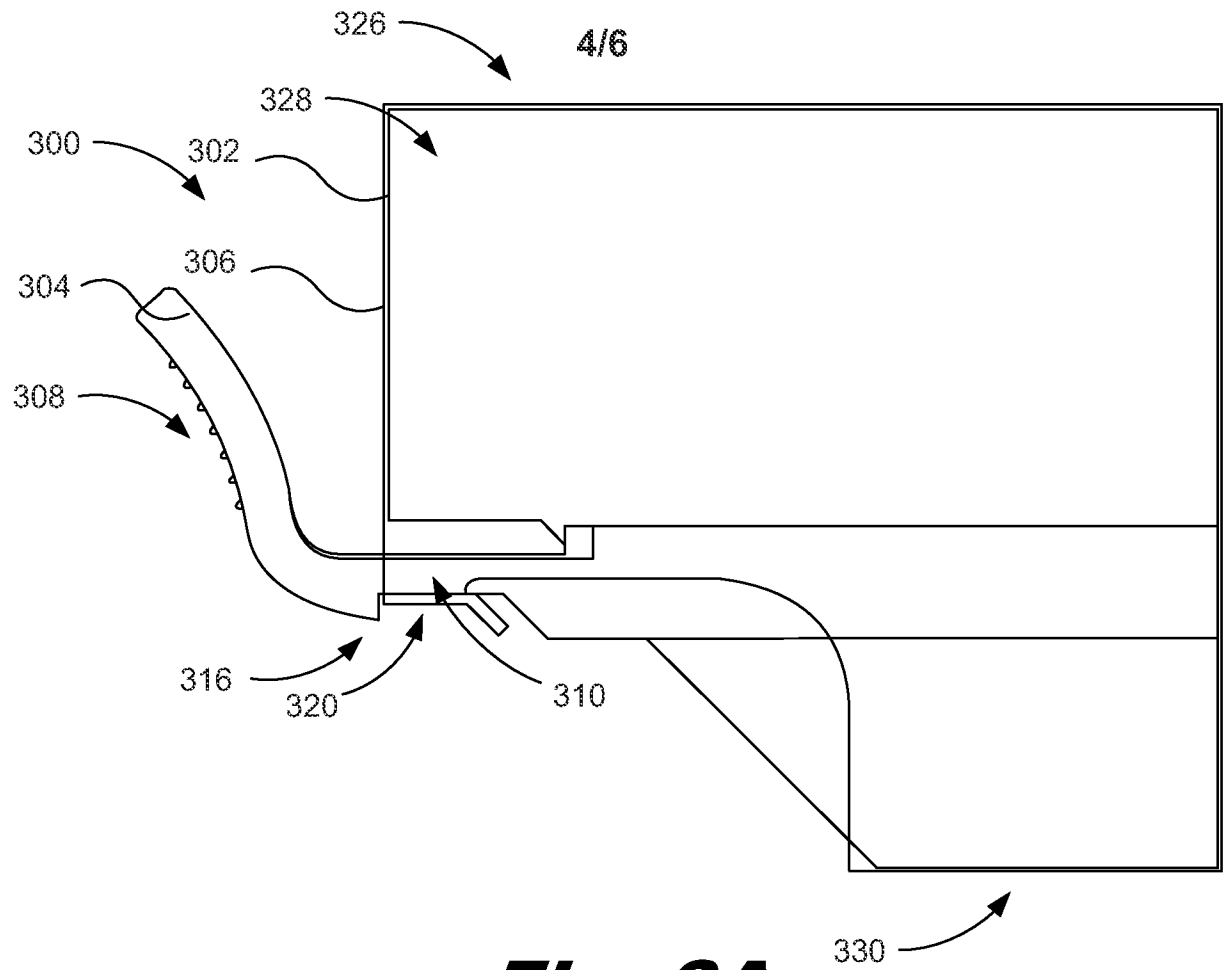


Fig. 2B



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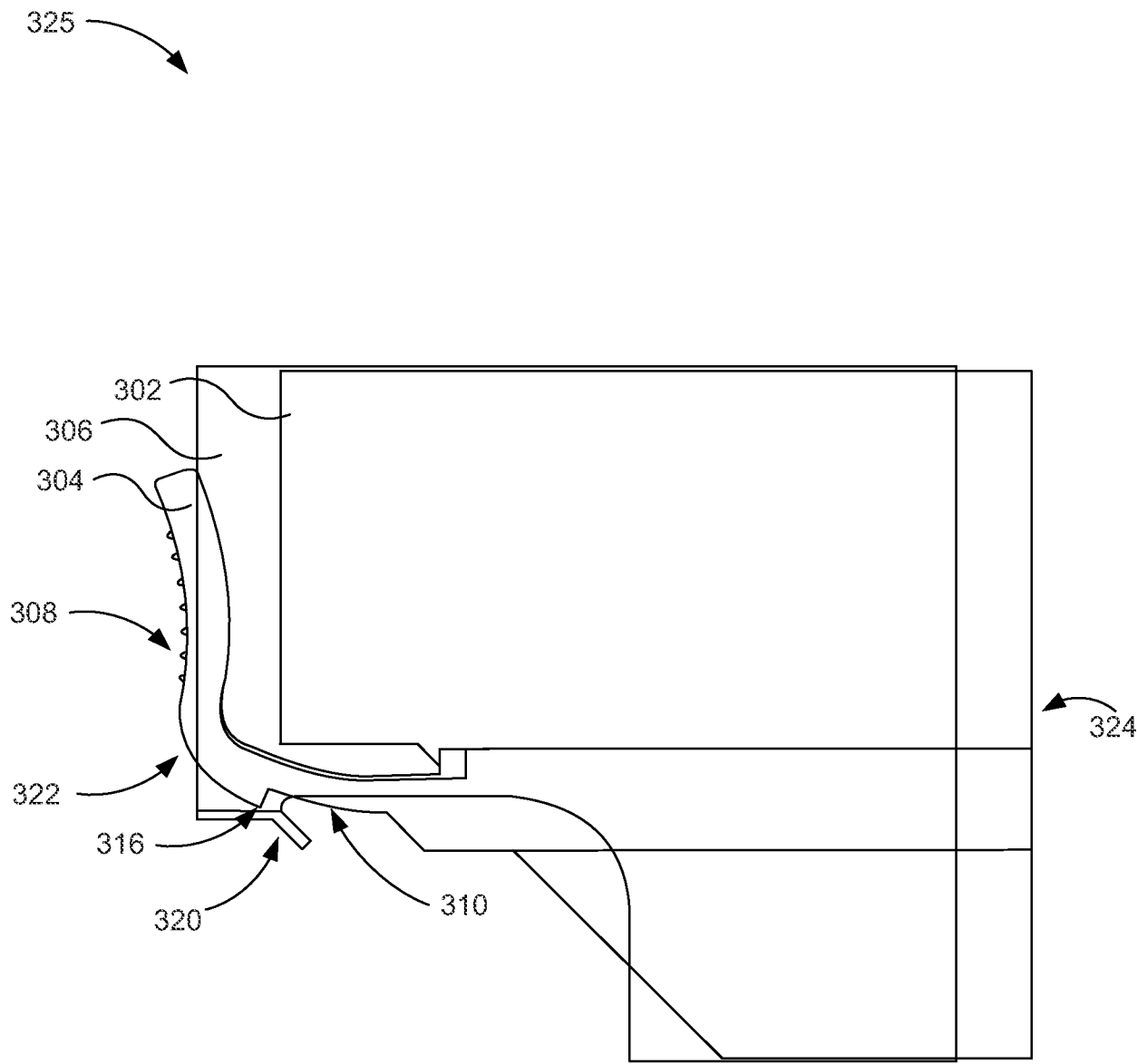
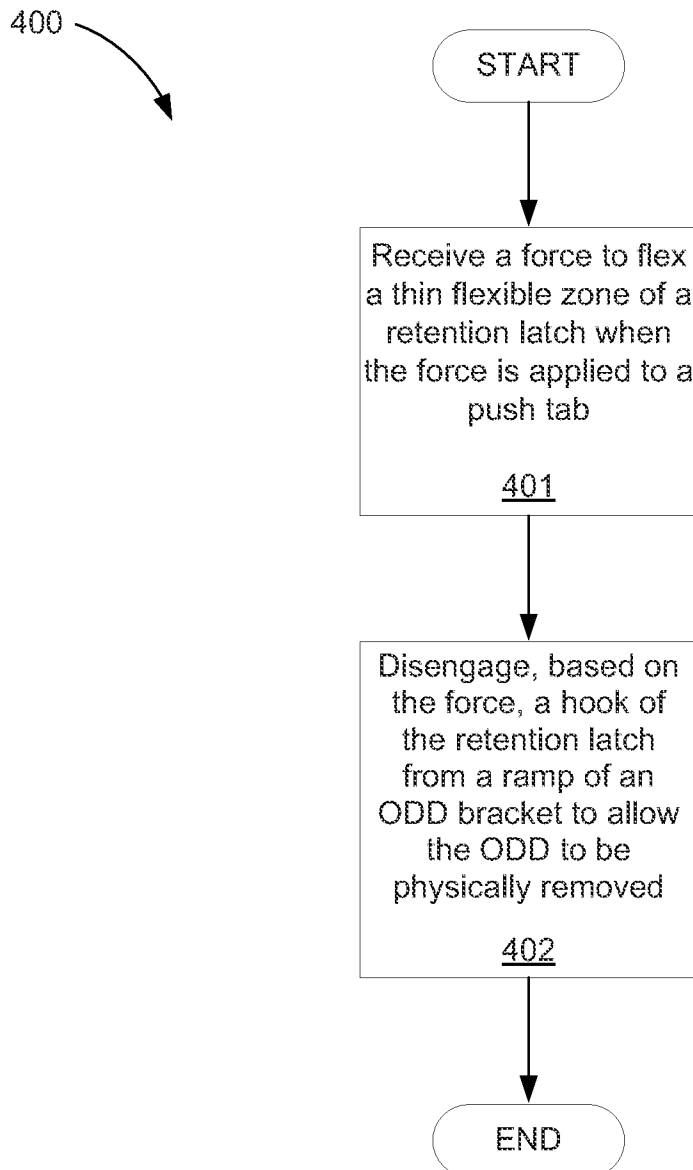


Fig. 3C

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**Fig. 4**

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2015/019719**A. CLASSIFICATION OF SUBJECT MATTER****G06F 1/18(2006.01)i, G11B 33/04(2006.01)i, G11B 33/12(2006.01)i**

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHEDMinimum documentation searched (classification system followed by classification symbols)
G06F 1/18; G11B 33/02; H05K 7/14; H01R 13/627; G06F 1/16; G11B 33/04; G11B 33/12Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Korean utility models and applications for utility models
Japanese utility models and applications for utility modelsElectronic data base consulted during the international search (name of data base and, where practicable, search terms used)
eKOMPASS(KIPO internal) & keywords: optical disk drive(ODD), ODD bracket, release, retention latch, hook, ramp**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2003-0022545 A1 (STEVEN E. HEIDENREICH et al.) 30 January 2003 See paragraphs [0047]-[0048]; and figures 7-8.	1-9, 11
Y		10, 12-15
Y	KR 20-0132654 Y1 (SAMSUNG ELECTRONICS CO., LTD.) 15 December 1998 See page 3; and figures 2-3.	10, 12-15
A	KR 20-1995-0007349 Y1 (DAEWOO TELECOM CO., LTD.) 07 September 1995 See page 2; and figures 2-3.	1-15
A	US 2013-0229766 A1 (DAVID WILLIAMS et al.) 05 September 2013 See paragraphs [0055]-[0062]; and figures 6-10.	1-15
A	US 8199483 B2 (XIN JI et al.) 12 June 2012 See column 1, lines 48-56; column 2, line 52 - column 3, line 15; and figure 2.	1-15



Further documents are listed in the continuation of Box C.



See patent family annex.

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