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Remarks:

Amended claims in accordance with Rule 137(2) EPC.

(54) **Mounting bracket for slide assembly**

(57) A mounting bracket for a slide assembly includes a side wall (42), an end wall (44), at least one installation member (50), a stop (46), and a resilient member (48). The end wall (44) is substantially perpendicular to the side wall (42). The at least one installation member (50) is connected to the end wall (44). The stop (46) is pivotably connected to the side wall (42) and includes a

first portion (70) and a middle portion (74) which is connected to the first portion (70). The middle portion (74) has a first end portion (84). The resilient member (48) provides a force to the stop (46) to position the first end portion (84) of the stop (46) to be located corresponding to the end wall (44).

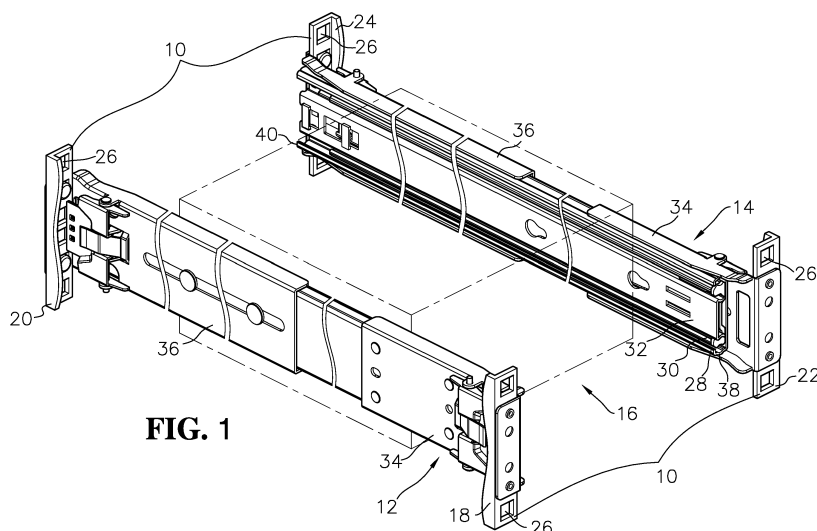


FIG. 1

Description

FIELD OF THE INVENTION

[0001] The present invention relates to a mounting bracket, and more particularly, to a mounting bracket for a slide assembly.

BACKGROUND OF THE INVENTION

[0002] U.S. Patent No. 7,281,694 B2 to Allen et al. discloses a mounting bracket having a side plate, an end plate, a base member, a pair of pins, an abutment member and an action mechanism, wherein the abutment member has a free end. The pins are installed to the end plate of the mounting bracket, and the base member is connected to the side plate. The abutment member is fixed to the base member, and the action mechanism extends through the base member and contacts the abutment member. When the pins are installed to the holes of a post of a rack, the abutment member is deformed to allow the post of the rack to pass therethrough and abuts against the post of the rack, so as to form an enclosed room with the pins.

[0003] However, the abutment member utilized to abut against the rack and disclosed by Allen et al. is a metal resilient plate which lacks sufficient strength and may affect the stability of installation of the mounting bracket to the rack.

[0004] The present invention intends to provide a mounting bracket for a slide assembly such that the slide assembly is easily installed to a rack or removed from a rack by the mounting bracket. The mounting bracket is firmly connected to the rack.

SUMMARY OF THE INVENTION

[0005] The present invention relates to a mounting bracket for a slide assembly and comprises a side wall, an end wall substantially perpendicular to the side wall, at least one installation member connected to the end wall, a stop pivotably connected to the side wall and having a first portion and a middle portion which is connected to the first portion, the middle portion having a first end portion, and a resilient member providing a force to the stop to position the first end portion of the stop to be located corresponding to the end wall.

[0006] Preferably, the side wall has a face. The stop has a second portion connected to the middle portion. At least one of the first portion and the second portion has an extension section located corresponding to the face of the side wall. The extension section responds to the force of the resilient member and abuts against the face of the side wall.

[0007] Preferably, the face of the side wall has a contact member. A room is defined by the contact member and the face so that the resilient member is partially inserted into the room.

[0008] Preferably, the contact member has a contact portion. The resilient member has a bent portion which contacts the contact portion of the contact member.

[0009] Preferably, the contact member has a contact portion. The resilient member has two bent portions respectively located on two ends thereof. One of the two bent portions contacts the contact portion of the contact member.

[0010] Preferably, the middle portion of the stop has a side plate which is substantially perpendicular to the middle portion.

[0011] Preferably, the side wall has a first window which is located adjacent to the end wall. The first end portion of the stop is partially inserted into the first window by an external force.

[0012] Alternatively, the present invention provides a slide assembly which comprises a first rail having a first end and a second end which is located corresponding to the first end. A second rail is slidably connected to the first rail. A third rail is slidably connected to the second rail. A first mounting bracket is connected adjacent to the first end of the first rail. A second mounting bracket is connected adjacent to the second end of the first rail. At least one of the first mounting bracket and the second mounting bracket has a side wall, an end wall substantially perpendicular to the side wall, at least one installation member connected to the end wall, and a stop which is pivotably connected to the side wall. The stop has a first portion, a second portion and a middle portion which is connected to the first and second portions. The middle portion has a first end portion. A resilient member provides a force to the stop to position the first end portion of the stop to be located corresponding to the end wall.

[0013] Preferably, the side wall has a face. At least one of the first portion and the second portion of the stop has an extension portion located corresponding to the face of the side wall. The extension section responds to the force of the resilient member and abuts against the face of the side wall.

[0014] Preferably, the face of the side wall has a contact member. A room is defined by the contact member and the face so that the resilient member is partially inserted into the room. The contact member has a contact portion. The resilient member has a bent portion which contacts the contact portion of the contact member.

[0015] Preferably, the resilient member has a bent portion and a fork portion. The middle portion of the stop has a second end portion. The bent portion contacts the side wall. The fork portion contacts the second end portion of the stop.

[0016] In addition, the present invention also provides a slide assembly for being installed to a rack which has at least two posts. Each post has a plurality of holes. The slide assembly comprises a first rail having a first end and a second end which is located corresponding to the first end. A second rail is slidably connected to the first rail. A third rail is slidably connected to the second rail. A first mounting bracket is connected adjacent to the first

end of the first rail. The first mounting bracket is installed to one of the posts of the rack. A second mounting bracket is connected adjacent to the second end of the first rail. The second mounting bracket is installed to the other one of the posts of the rack. At least one of the first mounting bracket and the second mounting bracket has a side wall. An end wall is substantially perpendicular to the side wall. At least one installation member is connected to the end wall. A stop has a first portion, a second portion and a middle portion which is connected to the first and second portions. The middle portion has a first end portion. A resilient member provides a force to the stop to position the first end portion of the stop to be located corresponding to the end wall. The at least one installation member is installed to one of the holes of the at least two posts of the rack. The at least two posts are located between the at least one installation member and the stop.

[0017] The primary object of the present invention is to provide a mounting bracket for a slide assembly. The slide assembly is easily installed to or removed from a rack by the mounting bracket. The installation member is securely connected to the rack.

[0018] The present invention will become more obvious from the following description when taken in connection with the accompanying drawings which show, for purposes of illustration only, a preferred embodiment in accordance with the present invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[0019]

FIG. 1 is a schematic view to show that the mounting bracket of the present invention is installed to a rack;
 FIG. 2 is an exploded view to show the mounting bracket of the present invention;
 FIG. 3A is a schematic view to show the mounting bracket of the present invention;
 FIG. 3B is a schematic view to show the stop of the mounting bracket and the resilient member of the present invention;
 FIG. 4 is an end view to show that the mounting bracket of the present invention is installed to the rack;
 FIG. 5 is an end view to show the first action to remove the mounting bracket of the present invention from the rack;
 FIG. 6 is an end view to show the second action to remove the mounting bracket of the present invention from the rack;
 FIG. 7 is a schematic view to show the second embodiment of the mounting bracket of the present invention; and
 FIG. 8 is a schematic view to show the third embodiment of the mounting bracket of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0020] Referring to FIG. 1, the present invention comprises a rack 10, a first slide assembly 12, a second slide assembly 14 and a chassis 16. The rack 10 comprises a first post 18, a second post 20, a third post 22 and a fourth post 24. Each of the first post 18, the second post 20, the third post 22, and the fourth post 24 has a plurality of holes 26. The first slide assembly 12 is connected between the first and second posts 18, 20 of the rack 10. The second slide assembly 14 is connected between the third and fourth posts 22, 24 of the rack 10. The first and second slide assemblies 12, 14 are parallel to each other. The chassis 16 is installed between the first and second slide assemblies 12, 14.

[0021] The first and second slide assemblies 12, 14 have the same structure and are located symmetrically with each other. Each of the first and second slide assemblies 12, 14 comprises a first rail 28, a second rail 30, a third rail 32, a first mounting bracket 34, and a second mounting bracket 36. In the following, the second slide assembly 14 is used as an illustration; wherein, the first rail 28 has a first end 38 and a second end 40 which is located corresponding to the first end 38. The second rail 30 is slidably connected to the first rail 28. The third rail 32 is slidably connected to the second rail 30. The first mounting bracket 34 is connected adjacent to the first end 38 of the first rail 28 and is installed to the third post 22 of the rack 10. The second mounting bracket 36 is connected adjacent to the second end 40 of the first rail 28 and is installed to the fourth post 24 of the rack 10.

[0022] FIG. 2 shows that the first mounting bracket 34 has a side wall 42, an end wall 44, a stop 46, a resilient member 48 and at least one installation member 50. The side wall 42 has a top wall 52, a bottom wall 54 and a face 56 which is substantially connected between the top wall 52 and the bottom wall 54 perpendicularly. The face 56 has a first window 60 and a second window 62, wherein a contact member 58 protrudes from the face 56 and toward a direction opposite to the top and bottom walls 52, 54. A difference of height is formed between the contact member 58 and the face 56, so that a room 66 is defined between the contact member 58 and the face 56. The contact member 58 has a contact portion 64 which is located adjacent to the second window 62. The first window 60 is located close to the end of the side wall 42 from which the end wall 44 extends. The end wall 44 is located close to the first window 60 and substantially perpendicularly to the face 56 of the side wall 42. The end wall 44 has at least one positioning hole 68. In one embodiment of the present invention, the side wall 42 has two lugs 61 and two supports 63, wherein the lugs 61 protrude from the top wall 52 and the bottom wall 54 respectively and extend toward the protruding direction of the contact member 58. The two lugs 61 are located close to two sides of the second window 62. Each of the two lugs 61 has a hole 65, and the holes 65 of the two

lugs 61 are located corresponding to each other. The two supports 63 are located between the two lugs 61. Each of the two supports 63 has an arc concave 67 located corresponding to the holes 65 of the two lugs 61. The two supports 63 extend and protrude from the edge of the second window 62. The stop 46 has a first portion 70, a second portion 72 and a middle portion 74 which is connected to the first and second portions 70, 72. The first and second portions 70, 72 are located symmetrically with each other. Each of the first and second portions 70, 72 has a first side 76, a second side 78 and a connection wall 80 which is connected between the first and second sides 76, 78. Each of the first and second sides 76, 78 has a hole 77. The two respective holes 77 of the first and second sides 76, 78 are located symmetrically with each other. The first side 76 has an extension section 82. The middle portion 74 has a first end portion 84 and a second end portion 86 which is located corresponding to the first end portion 84. The resilient member 48 has a bent portion 88 and a fork portion 90. The bent portion 88 is located corresponding to the contact portion 64 of the contact member 58. The fork portion 90 has a recessed area 92 located corresponding to the second end portion 86 of the middle portion 74 of the stop 46. The at least one installation member 50 is located corresponding to the positioning hole 68 of the end wall 44. A pivotal member 47 is configured to the holes 77 on the first and second sides 76, 78 of the first and second portions 70, 72 of the stop 46, the holes 65 of the lugs 61 of the side wall 42, the arc concaves 67 of the supports 63 of the side wall 42. It is noted that the first and second mounting brackets 34, 36 have the same structure, the second mounting bracket 36 needs not to be described in detail.

[0023] FIGS. 3A and 3B show that the stop 46 is pivotably connected to the side wall 42 by extending the pivotal member 47 through the holes 77 on the first and second sides 76, 78 of the first and second portions 70, 72 of the stop 46, the holes 65 of the lugs 61 of the side wall 42, the arc concaves 67 of the supports 63 of the side wall 42. The resilient member 48 is partially inserted into the room 66 between the face 56 of the side wall 42 and the contact member 58. The bent portion 88 of the resilient member 48 contacts the contact portion 64 of the contact member 58, and the fork portion 90 of the resilient member 48 contacts the second end portion 86 of the middle portion 74 of the stop 46. The stop 46 is applied by the force from the resilient member 48, and the extension section 82 of the stop 46 abuts against the face 56 of the side wall 42 to maintain the stop 46 at a pre-set position. The at least one installation member 50 is fixed to the end wall 44. When in assembling, the first mounting bracket 34 partially extends through the hole 26 of the third post 22, from outside toward inside, and is positioned by the at least one installation member 50, so that the first mounting bracket 34 is installed to the third post 22, and the first end portion 84 of the middle portion 74 of the stop 46 is located corresponding to the third post 22. In detail, a surface 83 of the middle portion

74 of the stop 46 of the first mounting bracket 34 first contacts the third post 22, and a force F1 is applied to let the stop 46 overcome the force of the resilient member 48 and swing an angle. The at least one installation member 50 is aimed to the hole 26 of the third post 22, and a force F2 is applied to the installation member 50 which then partially extends through the hole 26. In the meanwhile, the stop 46 is moved away from the third post 22, and returns to its pre-set position by the force released from the resilient member 48. Therefore, the first mounting bracket 34 is installed to the third post 22.

[0024] FIG. 4 shows that the first mounting bracket 34 is installed to the third post 22, the installation member 50 of the first mounting bracket 34 extends through the hole 26 of the third post 22, and by being located adjacent to the third post 22, the first end portion 84 of the middle portion 74 of the stop 46 of the first mounting bracket 34 blocks the way that the installation member 50 is removed from the third post 22. Therefore, the installation member 50 is installed to the third post 22 by the stop 46 of the first mounting bracket 34. By the blocking of the stop 46, the installation member 50 does not remove from the third post 22.

[0025] FIGS. 5 and 6 show the operation of removing the first mounting bracket 34 from the third post 22. First, a force F3 is applied to the middle portion 74 of the stop 46 of the first mounting bracket 34, and overcomes the force from the resilient member 48, so that the stop 46 pivots an angle relative to the pivotal member 47. Preferably, the first end portion 84 of the middle portion 74 of the stop 46 is partially inserted into the first window 60 to remove the blocking of the stop 46 from the third post 22, so that the installation member 50 of the first mounting bracket 34 can be removed from the hole 26 of the third post 22, and the first mounting bracket 34 is removed from the third post 22.

[0026] FIG. 7 shows the second embodiment of the present invention, wherein the stop 200 of the first mounting bracket 34 can only comprise the first portion 202 and the middle portion 204. The middle portion 204 has a side plate 206 to fix the resilient member 48.

[0027] FIG. 8 shows the third embodiment of the present invention, wherein the resilient member 300 has two bent portions 302 at two ends thereof respectively. The two bent portions 302 respectively contact the contact member 58 of the first mounting bracket 34 and the second end portion 86 of the stop 46.

[0028] While we have shown and described the embodiment in accordance with the present invention, it should be clear to those skilled in the art that further embodiments may be made without departing from the scope of the present invention.

Claims

1. A mounting bracket for a slide assembly comprising:

- a side wall (42), an end wall (44) substantially perpendicular to the side wall (42), and at least one installation member (50) connected to the end wall (44); **characterized in that** a stop (46) is pivotably connected to the side wall (42) and has a first portion (70) and a middle portion (74) connected to the first portion (70), the middle portion (74) has a first end portion (84), and a resilient member (48) provides a force to the stop (46) to position the first end portion (84) of the stop (46) to be located corresponding to the end wall (44).
2. The mounting bracket as claimed in claim 1, wherein the side wall (42) has a face (56), the stop (46) having a second portion (72) connected to the middle portion (74), at least one of the first portion (70) and the second portion (72) having an extension section (82) located corresponding to the face (56) of the side wall (42), the extension section (82) responding to the force of the resilient member (48) and abutting against the face (56) of the side wall (42).
 3. The mounting bracket as claimed in claim 2, wherein the face (56) of the side wall (42) has a contact member (58), wherein a room (66) is defined by the contact member (58) and the face (56) so that the resilient member (48) is partially inserted into the room (66).
 4. The mounting bracket as claimed in claim 3, wherein the contact member (58) has a contact portion (64), the resilient member (48) having a bent portion (88) which contacts the contact portion (64) of the contact member (58).
 5. The mounting bracket as claimed in claim 3, wherein the contact member (58) has a contact portion (64), the resilient member (48) having two bent portions (88) respectively located on two ends thereof, one of the two bent portions (88) contacting the contact portion (64) of the contact member (58).
 6. The mounting bracket as claimed in claim 1, wherein the middle portion (204) of the stop (200) has a side plate (206) which is substantially perpendicular to the middle portion (204).
 7. The mounting bracket as claimed in claim 1, wherein the side wall (42) has a first window (60) which is located adjacent to the end wall (44), the first end portion (84) of the stop (46) being partially inserted into the first window (60) by an external force.
 8. A slide assembly comprising:

a first rail (28) having a first end (38) and a second end (40) which is located corresponding to
 - the first end (38), a second rail (30) slidably connected to the first rail (28), a third rail (32) slidably connected to the second rail (30); **characterized in that** a first mounting bracket (34) is connected adjacent to the first end (38) of the first rail (28), a second mounting bracket (36) is connected adjacent to the second end (40) of the first rail (28), and at least one of the first mounting bracket (34) and the second mounting bracket (36) is the mounting bracket according to claim 1, wherein the stop (46) further has a second portion (72), and the middle portion (74) is connected to the first and second portions (70, 72).
 9. The slide assembly as claimed in claim 8, wherein the side wall (42) has a face (56), at least one of the first portion (70) and the second portion (72) of the stop (46) having an extension portion (82) located corresponding to the face (56) of the side wall (42), the extension section (82) responding to the force of the resilient member (48) and abutting against the face (56) of the side wall (42).
 10. The slide assembly as claimed in claim 9, wherein the face (56) of the side wall (42) has a contact member (58), wherein a room (66) is defined by the contact member (58) and the face (56) so that the resilient member (48) is partially inserted into the room (66), the contact member (58) having a contact portion (64), the resilient member (48) having a bent portion (88) which contacts the contact portion (64) of the contact member (58).
 11. The slide assembly as claimed in claim 8, wherein the resilient member (48) has a bent portion (88) and a fork portion (96), the middle portion (74) of the stop (46) having a second end portion (86), the bent portion (88) contacting the side wall (42), the fork portion (96) contacting the second end portion (86) of the stop (46).
 12. A slide assembly according to claim 8 for being installed to a rack (10) which has at least two posts (22, 24), each post (22/24) having a plurality of holes (26); **characterized in that** the first mounting bracket (34) is adapted to be installed to one of the posts (22) of the rack (10), the second mounting bracket (36) is adapted to be installed to the other one of the posts (24) of the rack (10), the at least one installation member (50) is adapted to be installed to one of the holes (26), and at least one of the posts (22/24) is located between the at least one installation member (50) and the stop (46).

Amended claims in accordance with Rule 137(2) EPC.

1. A mounting bracket for a slide assembly comprising:

a side wall (42), an end wall (44) substantially perpendicular to the side wall (42), and at least one installation member (50) connected to the end wall (44); a stop (46) is pivotably connected to the side wall (42) and has a first portion (70) and a middle portion (74) connected to the first portion (70), the middle portion (74) has a first end portion (84), and a resilient member (48) provides a force to the stop (46) to position the first end portion (84) of the stop (46) to be located corresponding to the end wall (44), **characterized in that** the side wall (42) has a face (56), the stop (46) having a second portion (72) connected to the middle portion (74), at least one of the first portion (70) and the second portion (72) having an extension section (82) located corresponding to the face (56) of the side wall (42), the extension section (82) responding to the force of the resilient member (48) and abutting against the face (56) of the side wall (42).

2. The mounting bracket as claimed in claim 1, wherein the face (56) of the side wall (42) has a contact member (58), wherein a room (66) is defined by the contact member (58) and the face (56) so that the resilient member (48) is partially inserted into the room (66).

3. The mounting bracket as claimed in claim 2, wherein the contact member (58) has a contact portion (64), the resilient member (48) having a bent portion (88) which contacts the contact portion (64) of the contact member (58).

4. The mounting bracket as claimed in claim 2, wherein the contact member (58) has a contact portion (64), the resilient member (48) having two bent portions (88) respectively located on two ends thereof, one of the two bent portions (88) contacting the contact portion (64) of the contact member (58).

5. The mounting bracket as claimed in claim 1, wherein the middle portion (204) of the stop (200) has a side plate (206) which is substantially perpendicular to the middle portion (204).

6. The mounting bracket as claimed in claim 1, wherein the side wall (42) has a first window (60) which is located adjacent to the end wall (44), the first end portion (84) of the stop (46) being partially inserted into the first window (60) by an external force.

7. A slide assembly comprising:

a first rail (28) having a first end (38) and a second end (40) which is located corresponding to the first end (38), a second rail (30) slidably connected to the first rail (28), a third rail (32) slidably connected to the second rail (30); a first mounting bracket (34) is connected adjacent to the first end (38) of the first rail (28), a second mounting bracket (36) is connected adjacent to the second end (40) of the first rail (28), and at least one of the first mounting bracket (34) and the second mounting bracket (36) is the mounting bracket according to claim 1, wherein the stop (46) further has a second portion (72), and the middle portion (74) is connected to the first and second portions (70, 72), **characterized in that** the side wall (42) has a face (56), at least one of the first portion (70) and the second portion (72) of the stop (46) having an extension portion (82) located corresponding to the face (56) of the side wall (42), the extension section (82) responding to the force of the resilient member (48) and abutting against the face (56) of the side wall (42).

8. The slide assembly as claimed in claim 7, wherein the face (56) of the side wall (42) has a contact member (58), wherein a room (66) is defined by the contact member (58) and the face (56) so that the resilient member (48) is partially inserted into the room (66), the contact member (58) having a contact portion (64), the resilient member (48) having a bent portion (88) which contacts the contact portion (64) of the contact member (58).

9. The slide assembly as claimed in claim 7, wherein the resilient member (48) has a bent portion (88) and a fork portion (96), the middle portion (74) of the stop (46) having a second end portion (86), the bent portion (88) contacting the side wall (42), the fork portion (96) contacting the second end portion (86) of the stop (46).

10. A slide assembly according to claim 7 for being installed to a rack (10) which has at least two posts (22, 24), each post (22/24) having a plurality of holes (26); **characterized in that the first mounting bracket (34) is adapted to be installed to one of the posts (22) of the rack (10), the second mounting bracket (36) is adapted to be installed to the other one of the posts (24) of the rack (10), the at least one installation member (50) is adapted to be installed to one of the holes (26), and at least one of the posts (22/24) is located between the at least one installation member (50) and the stop (46).**

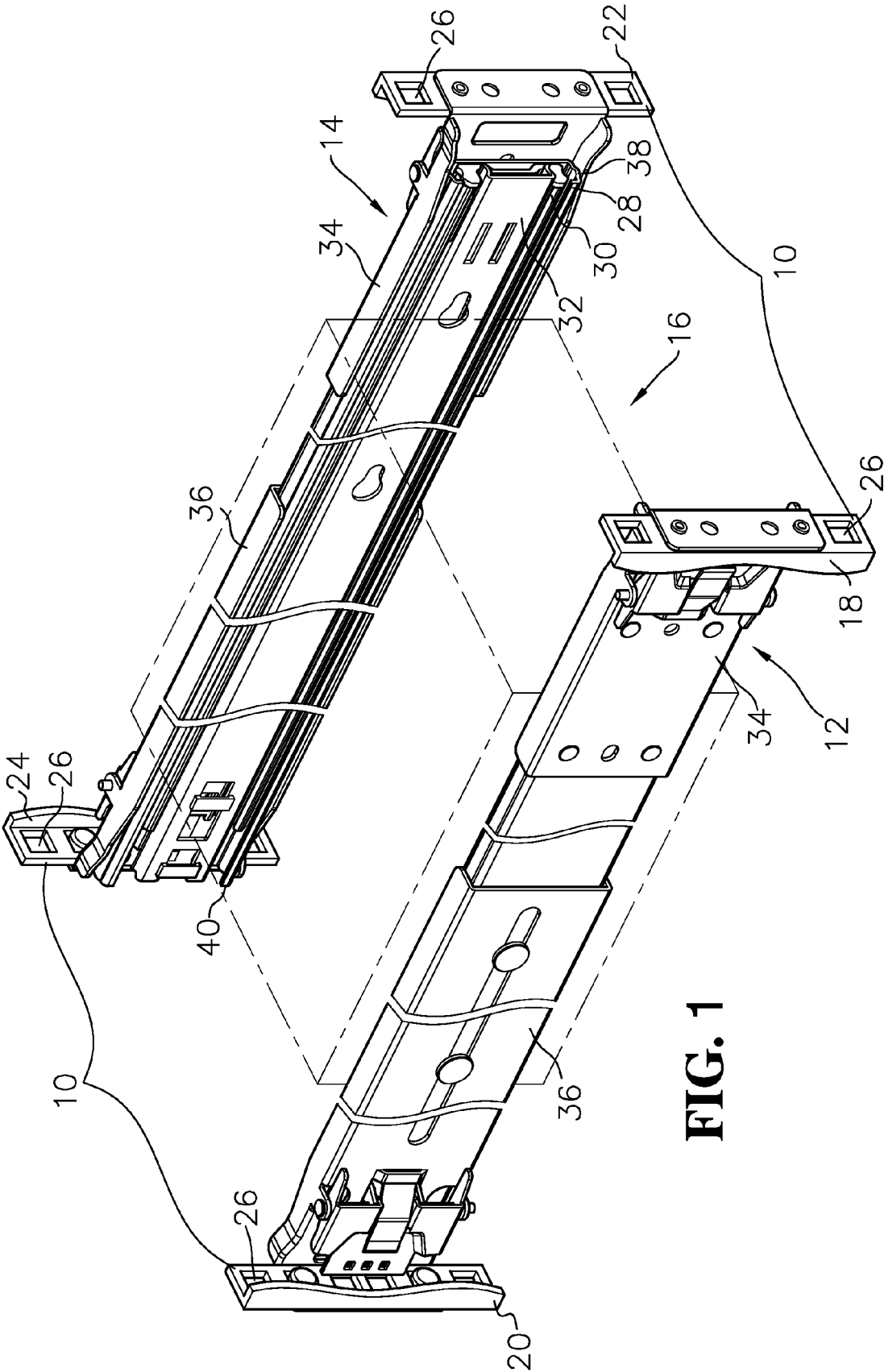


FIG. 1

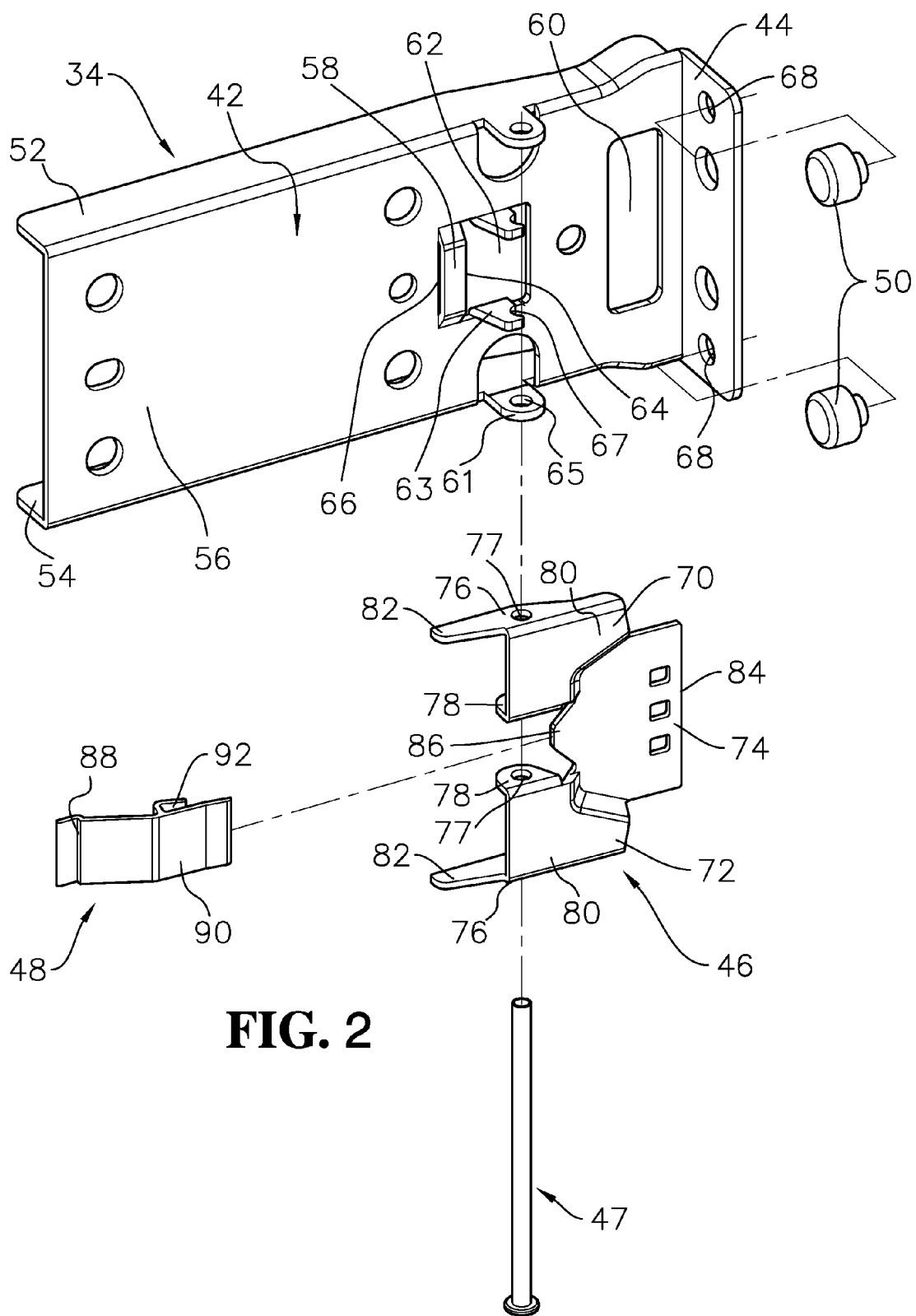
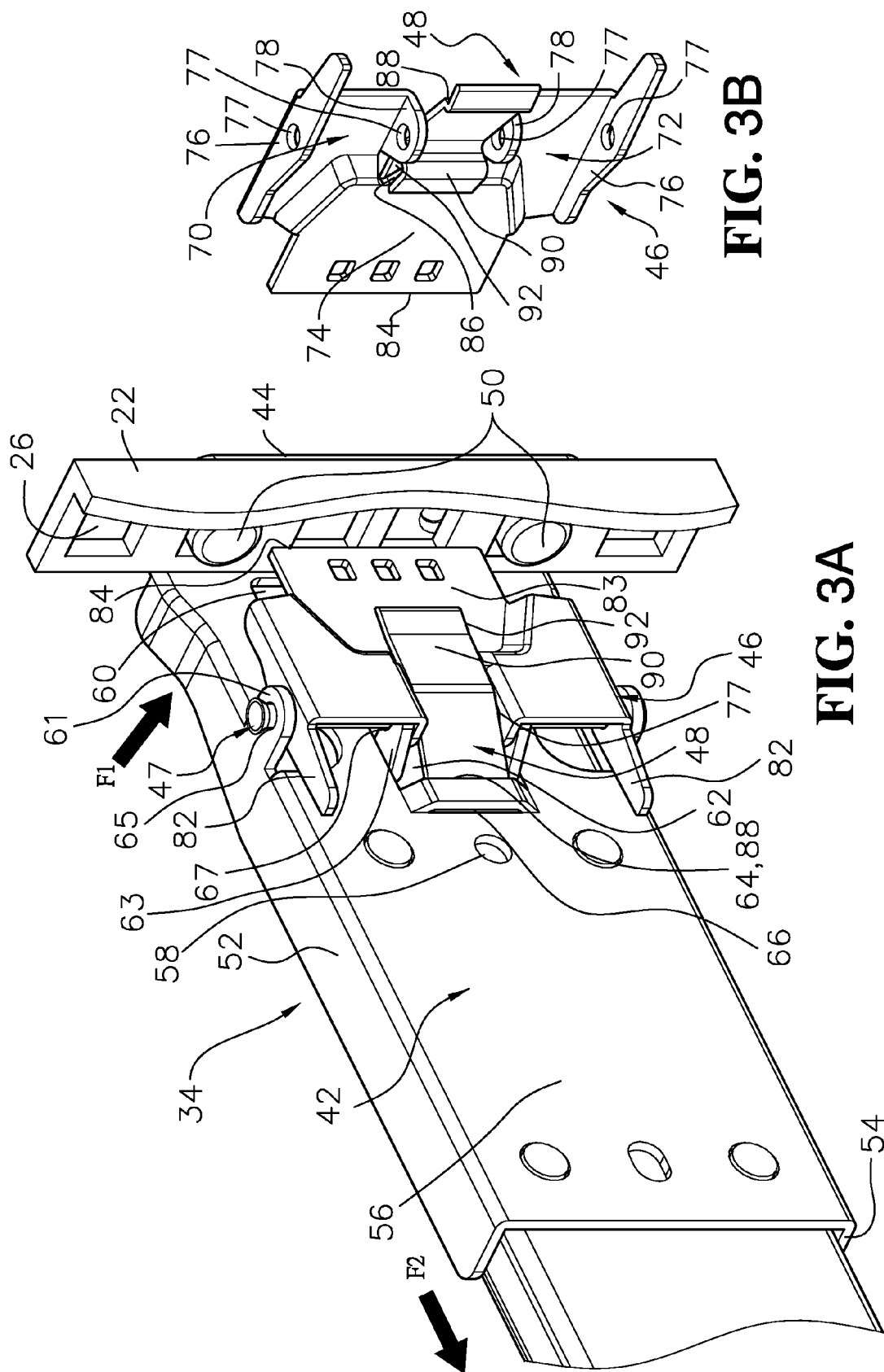


FIG. 2



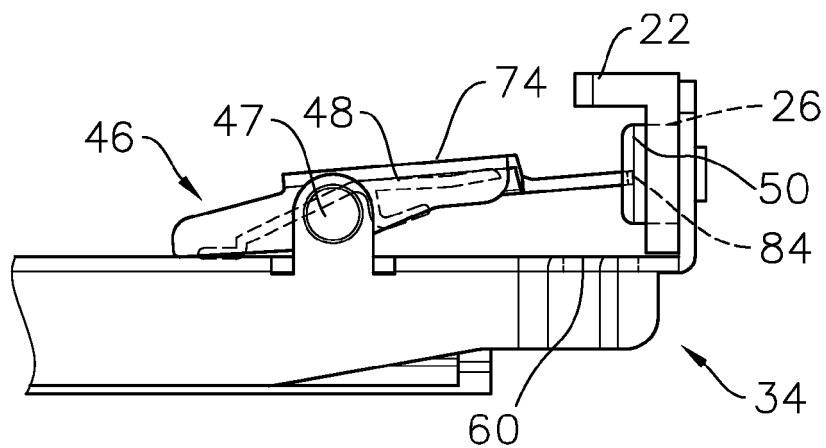


FIG. 4

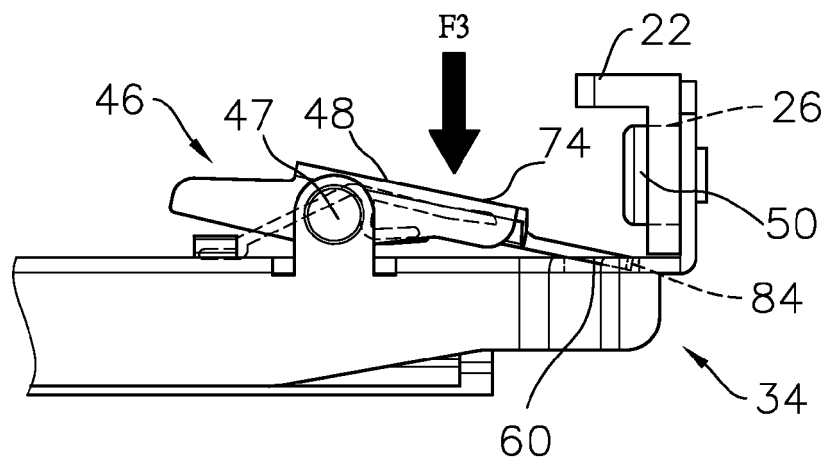


FIG. 5

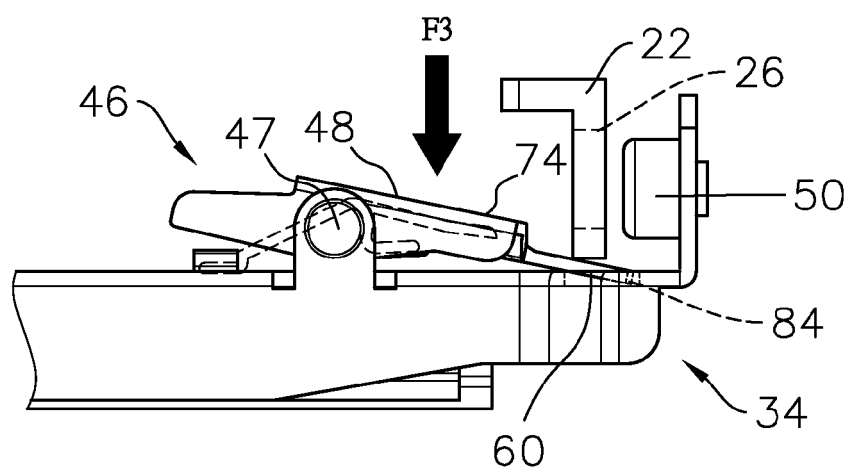


FIG. 6

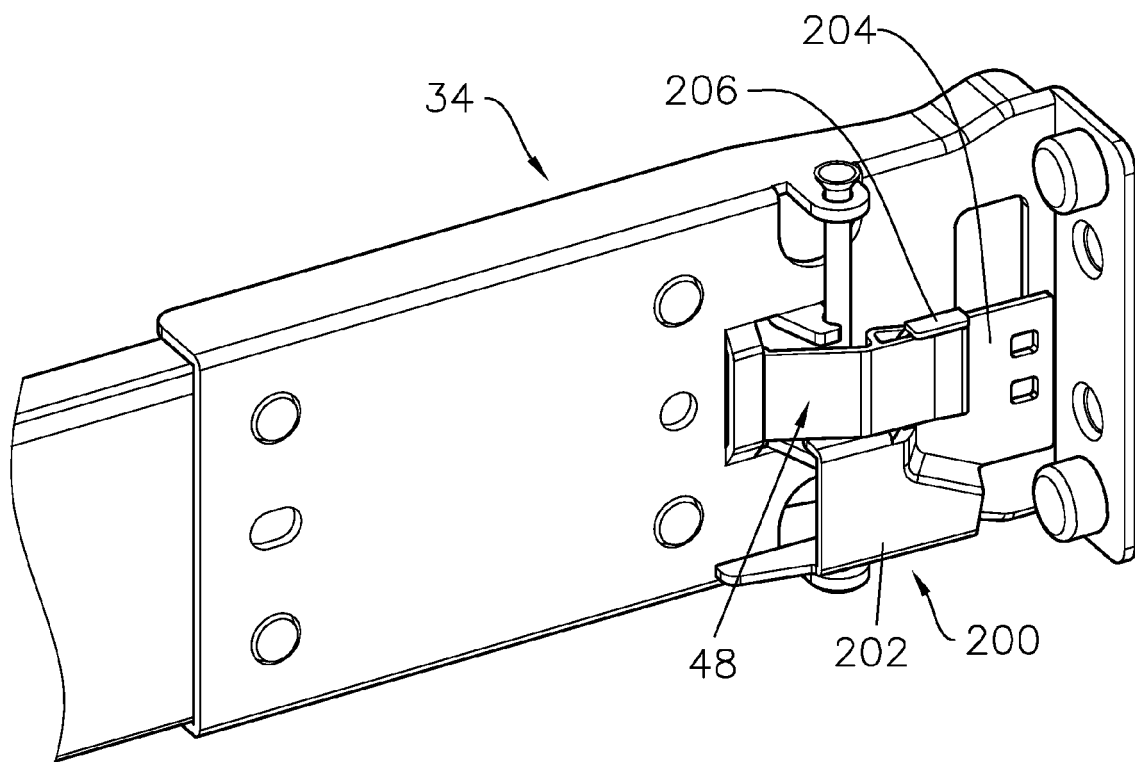


FIG. 7

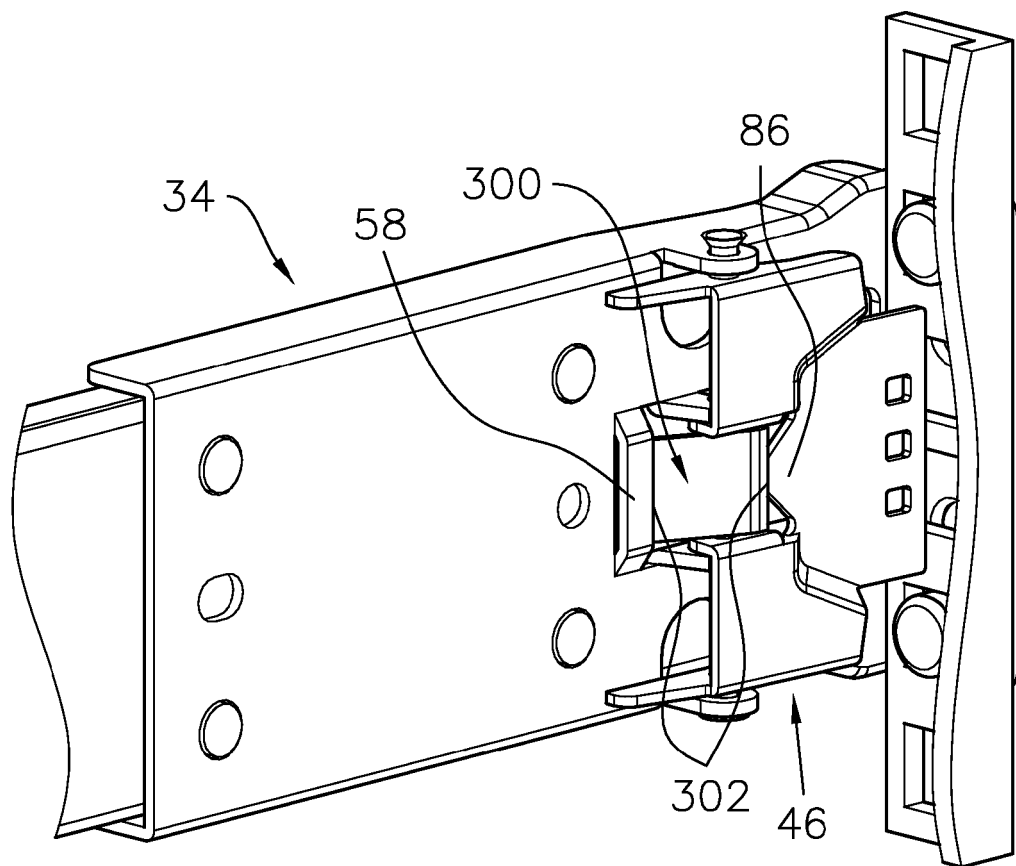


FIG. 8



EUROPEAN SEARCH REPORT

Application Number
EP 13 18 4080

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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A	* the whole document *	2-5,9-11	
A	US 2013/119215 A1 (CHEN KEN-CHING [TW] ET AL) 16 May 2013 (2013-05-16) * abstract; figures *	1-12	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC)
			A47B H05K
Place of search		Date of completion of the search	Examiner
The Hague		23 January 2014	Ottesen, Rune
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 13 18 4080

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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