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(54) **ADJUSTABLE MOUNTING RAIL LATCHES**

(52) **U.S. Cl.**

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**ABSTRACT**

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Presented herein are adjustable mounting rail latches that each comprise first and second latch modules. The latch modules each have a first side configured to be attached to at least one equipment unit, and a second side that includes an attachment system configured to be mechanically coupled to a mounting rail. A slide-rail system is integrated with each of the first and second latch modules that is configured to slideably couple the first latch module with the second latch module. Additionally, the adjustable mounting rail latches comprise at least one selectively engageable retention device configured to exert a force on the mounting rail to prevent movement of the first and second latch modules along the mounting rail.

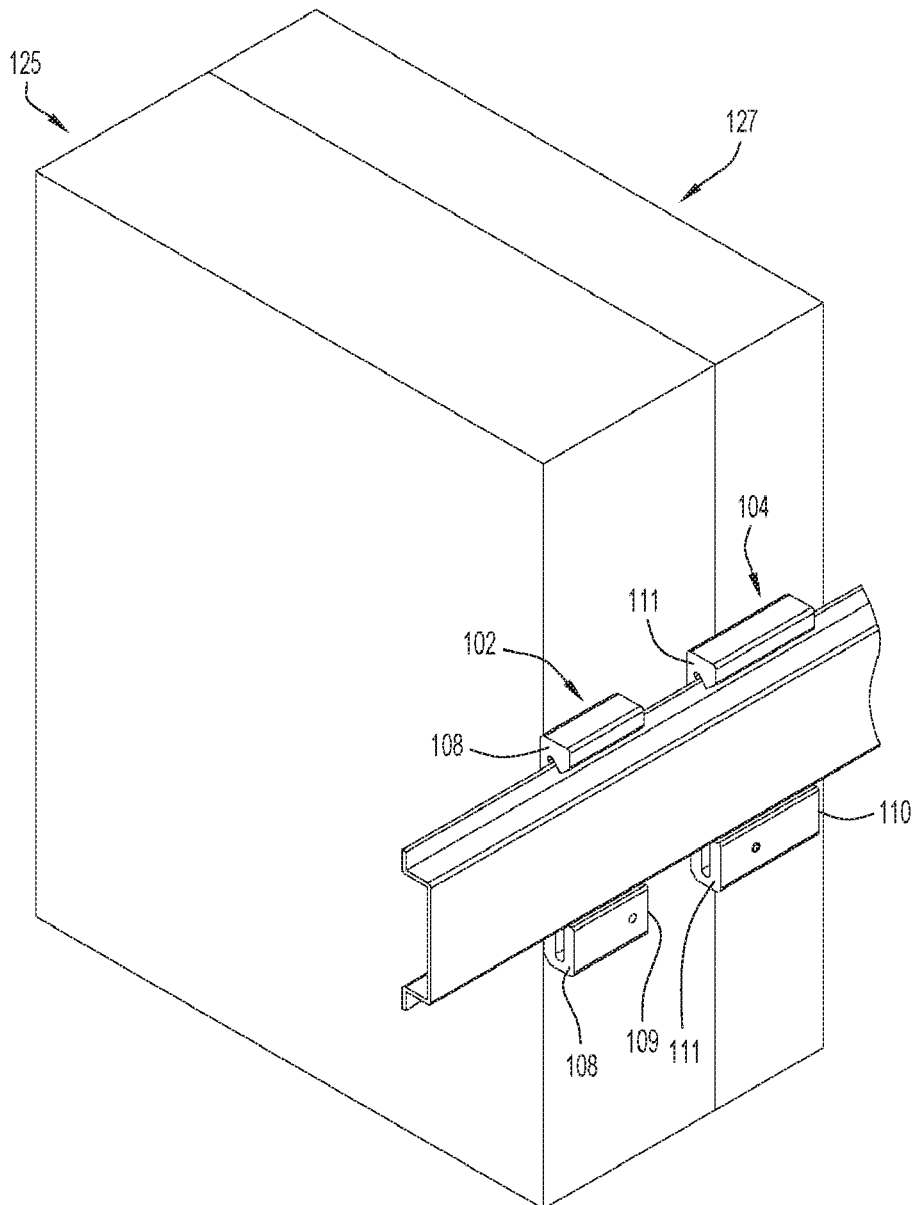
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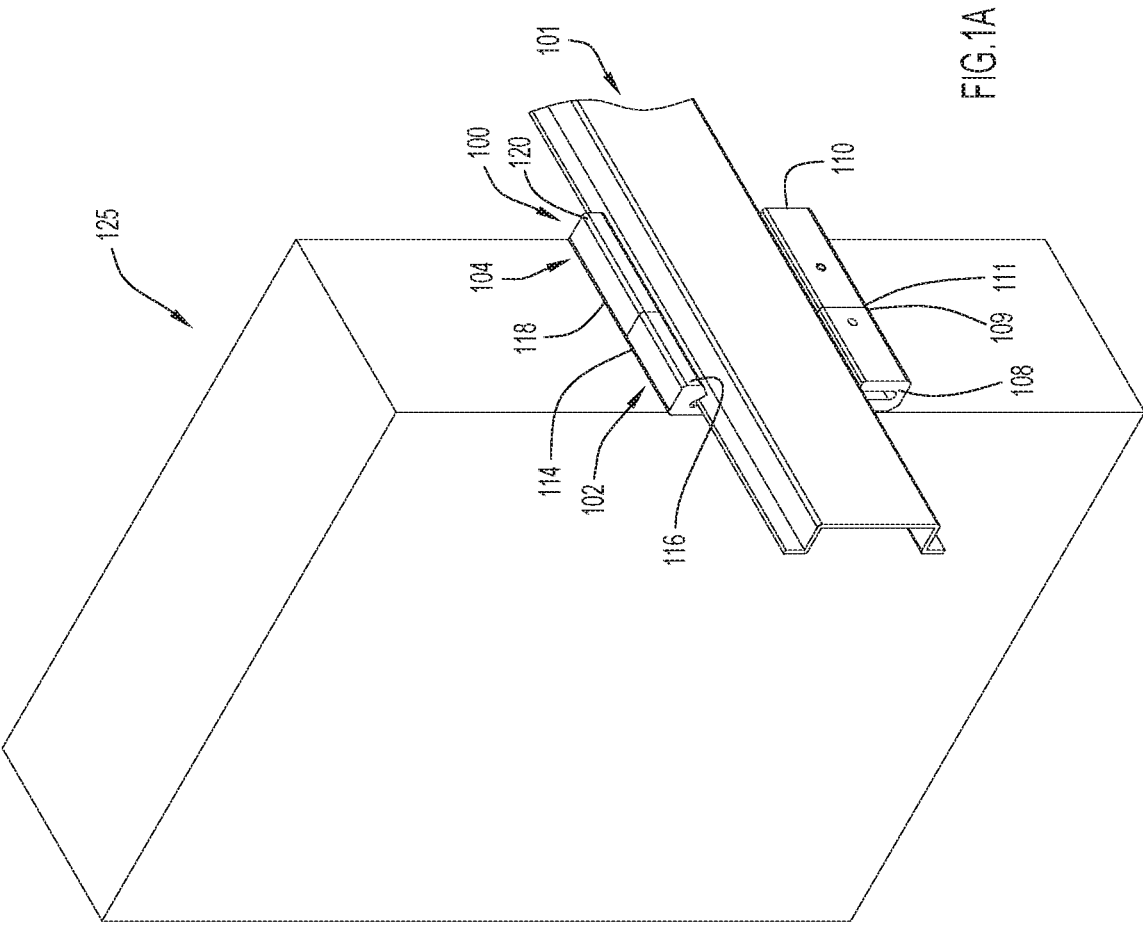


FIG. 1A



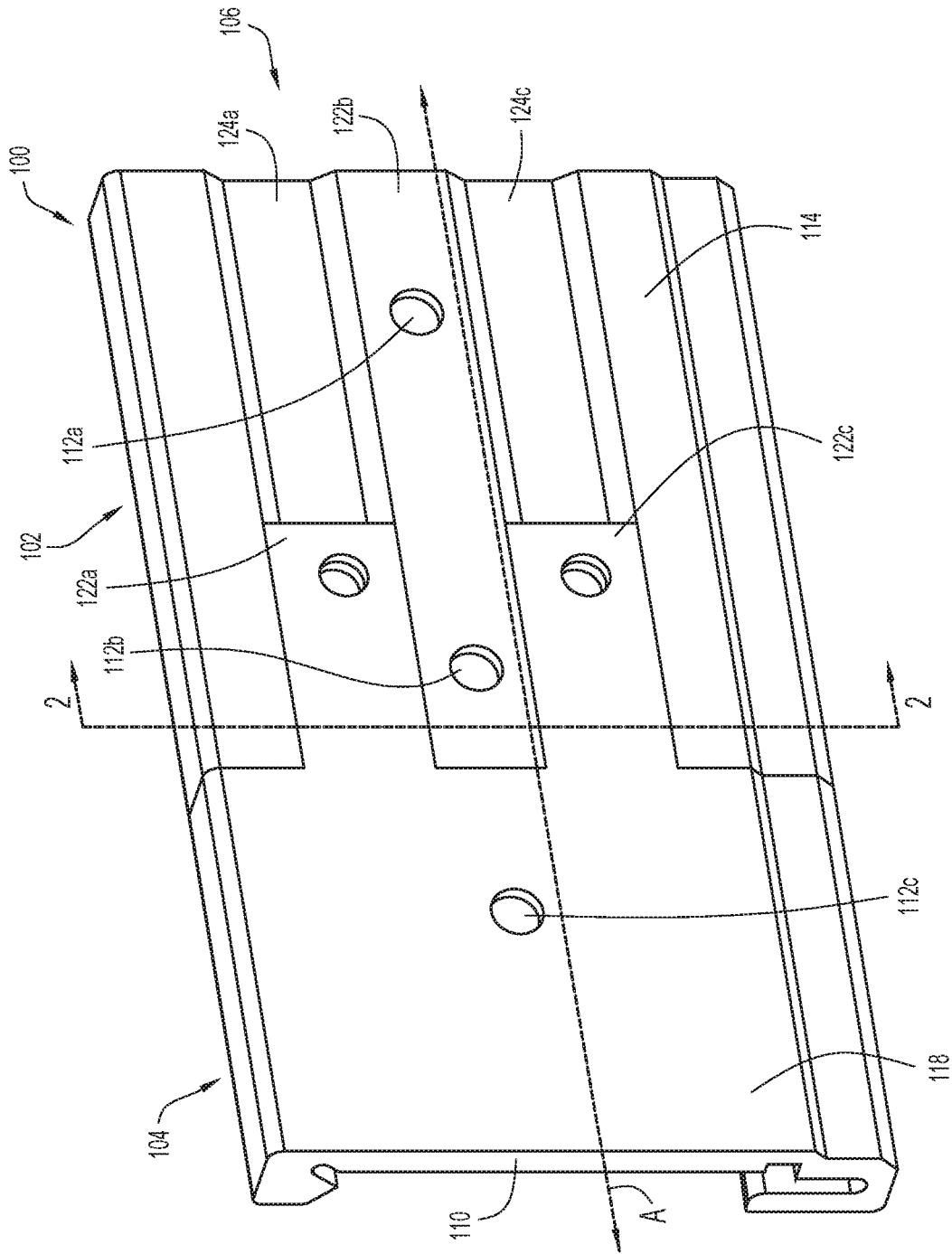


FIG. 2A

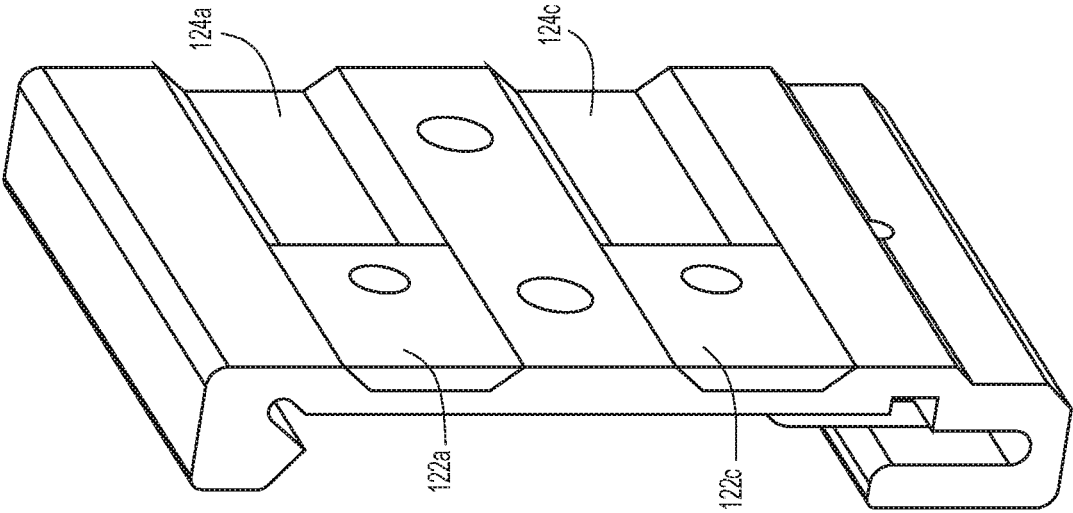


FIG.2C

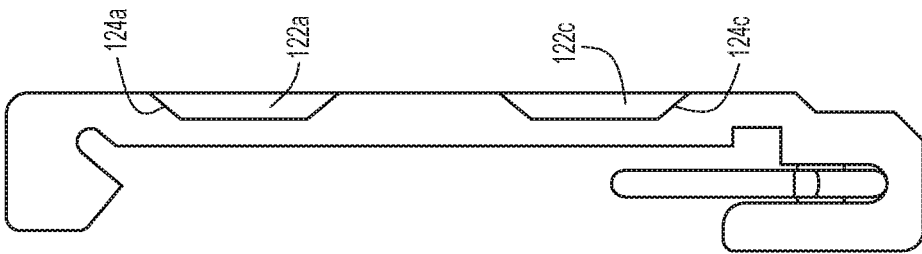


FIG.2B

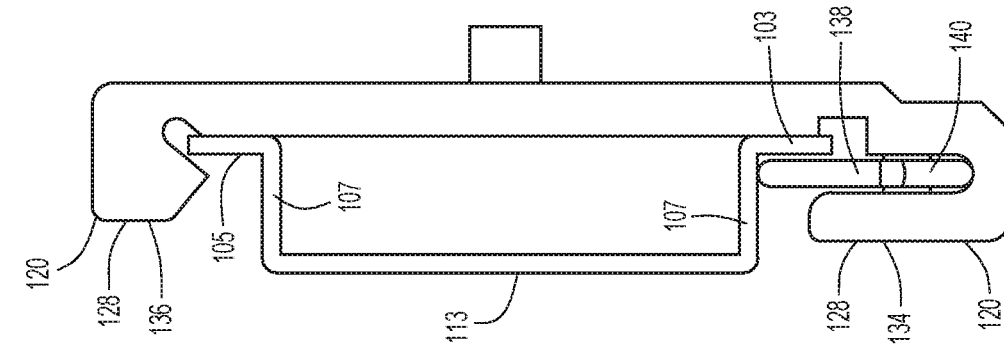


FIG.3B

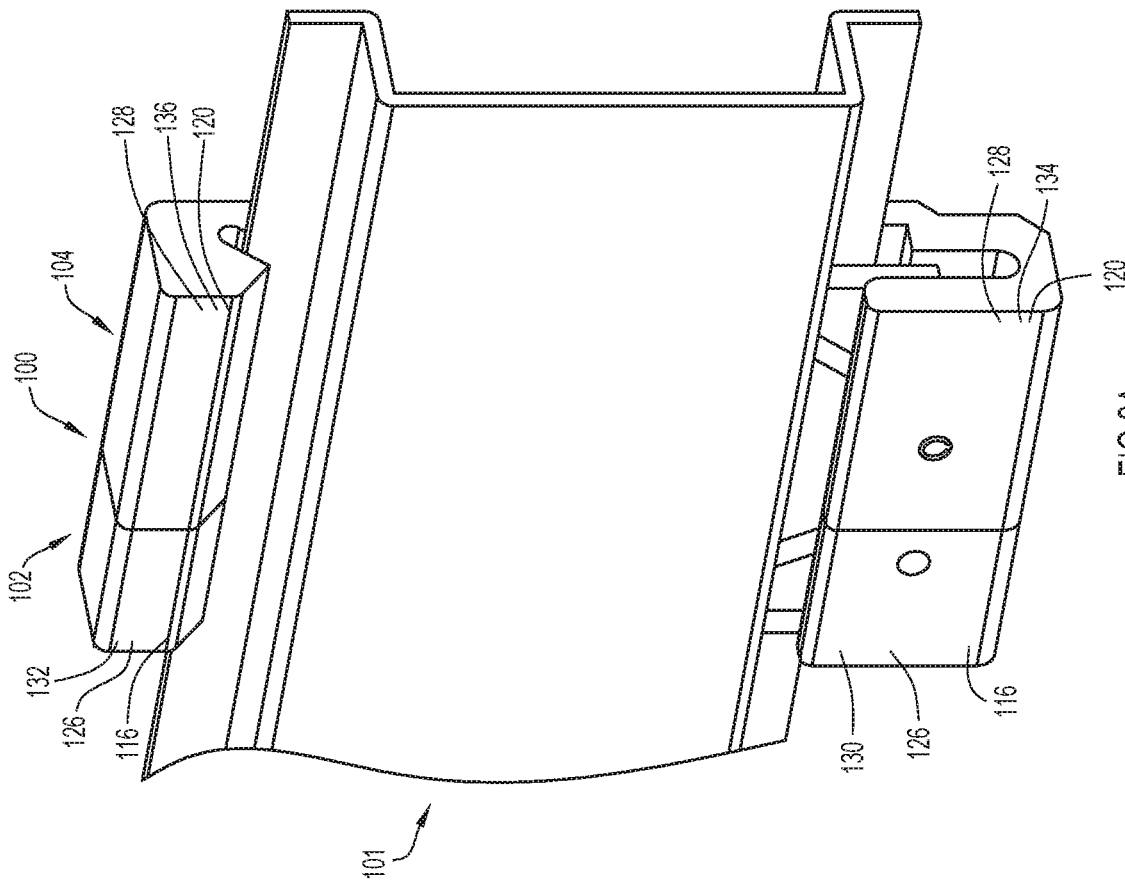


FIG.3A

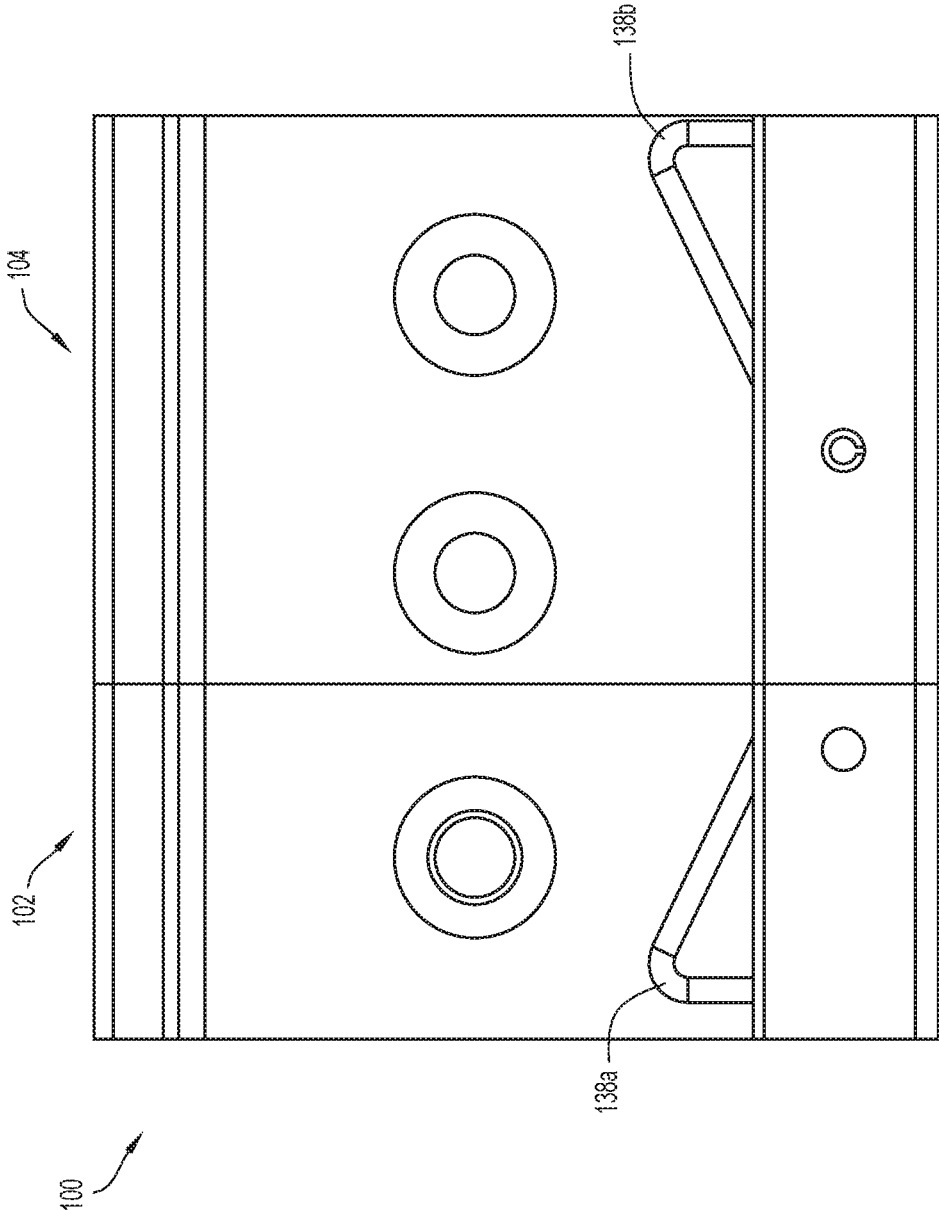


FIG.4A

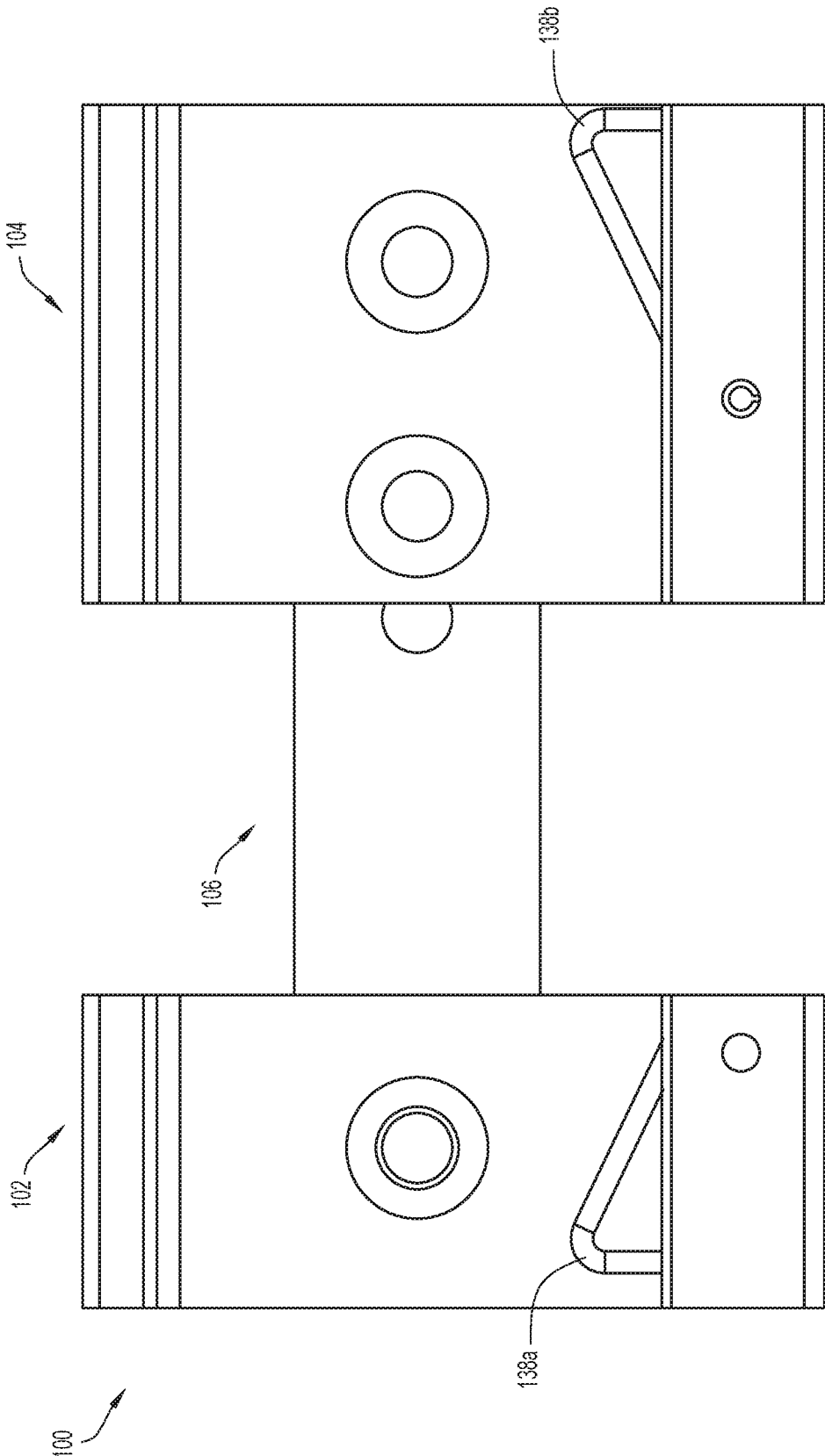


FIG.4B



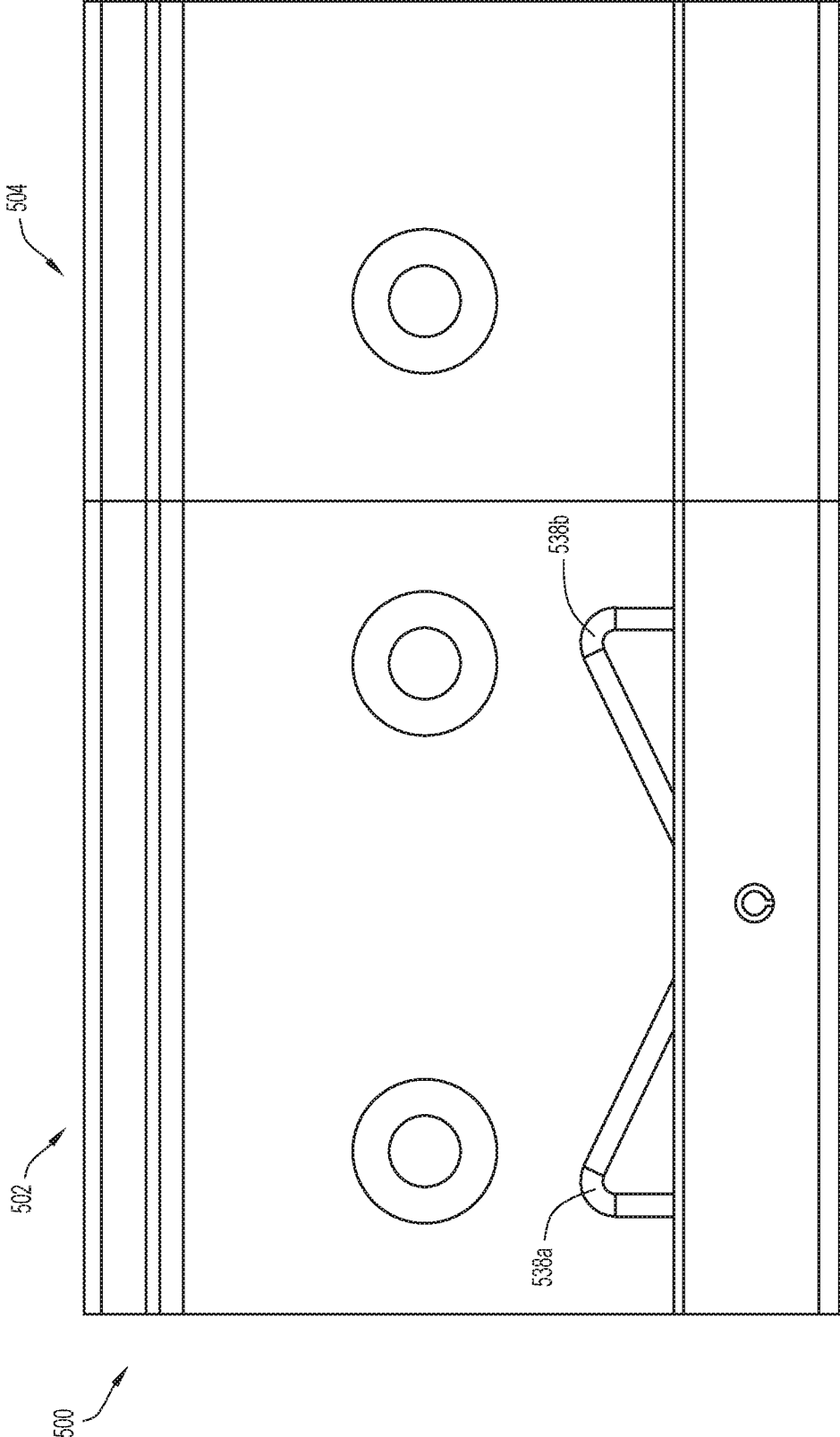


FIG. 5A

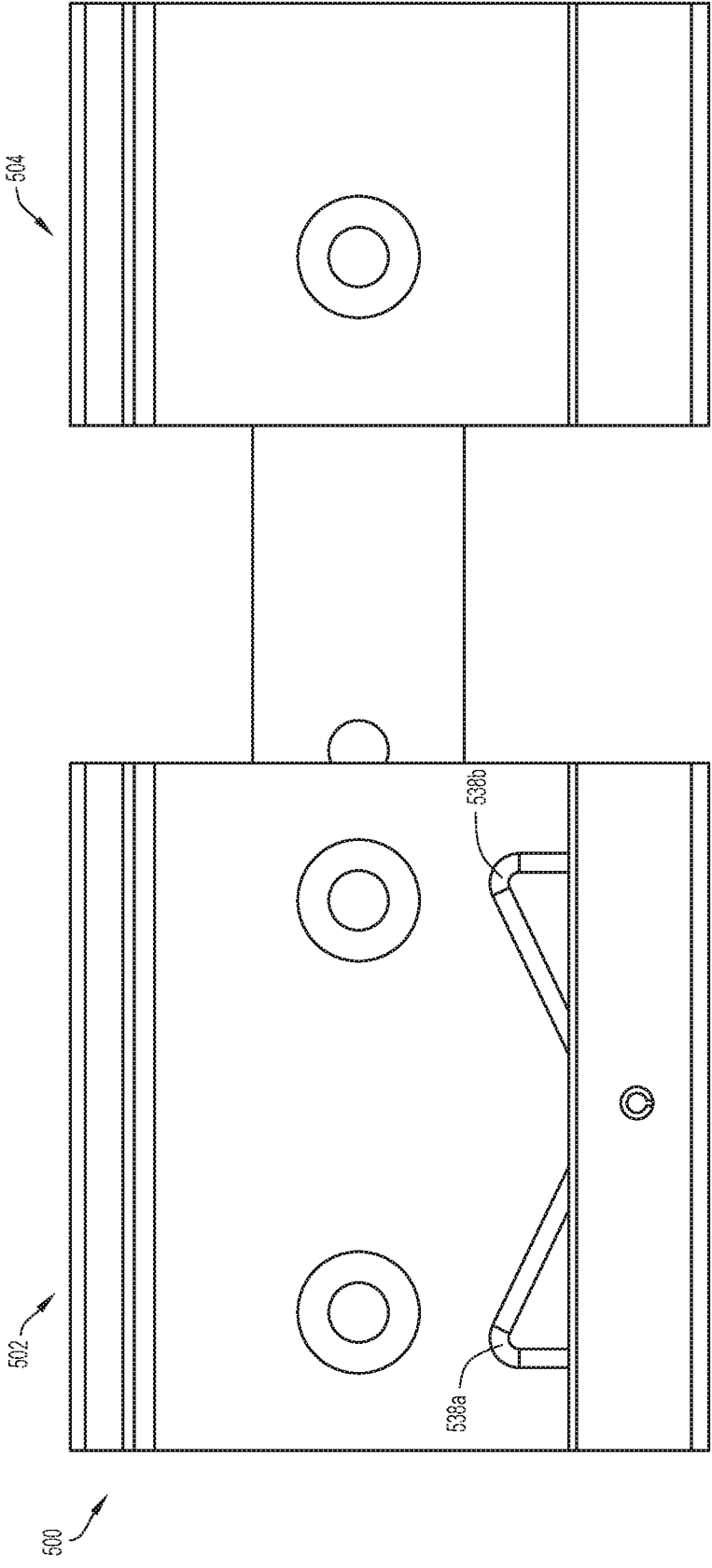


FIG.5B

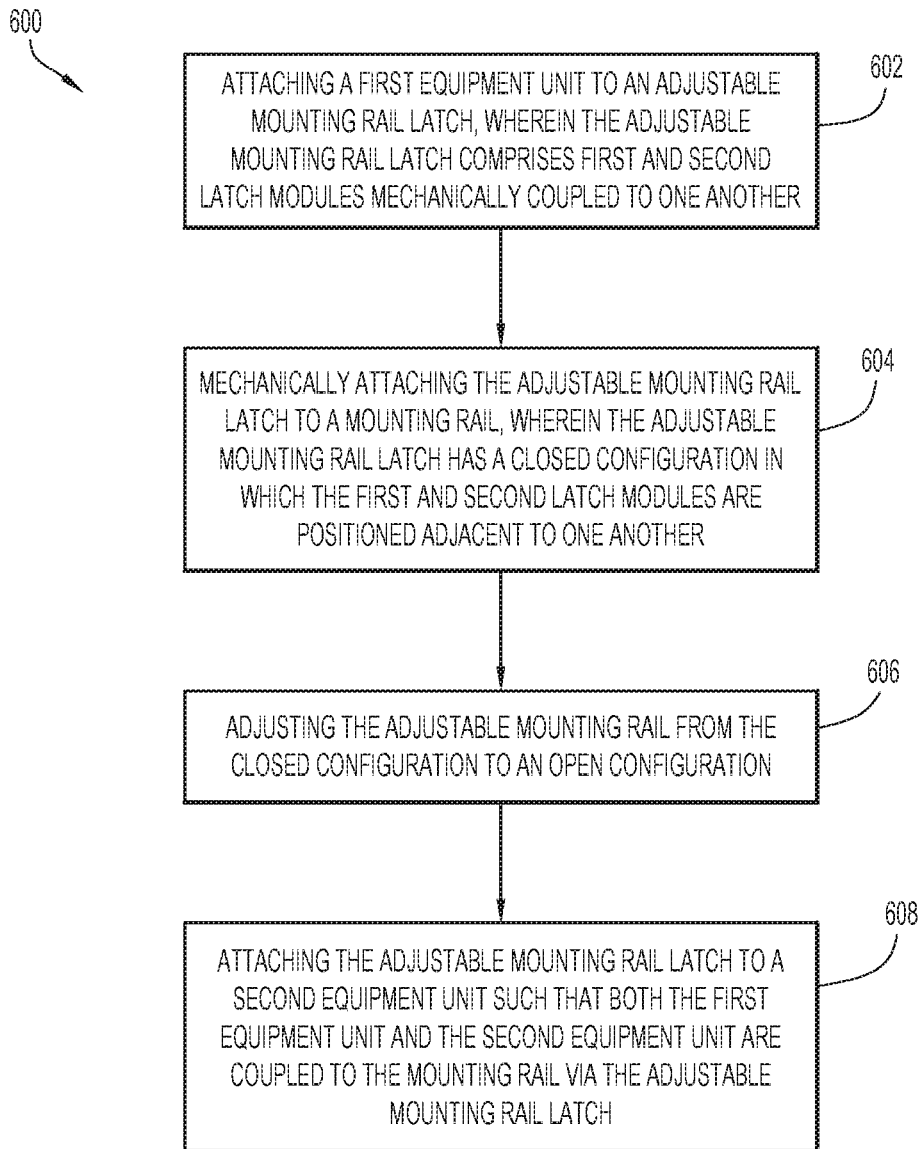


FIG.6

## ADJUSTABLE MOUNTING RAIL LATCHES

### TECHNICAL FIELD

**[0001]** The present disclosure relates generally to adjustable latches for use with mounting rails.

### BACKGROUND

**[0002]** It is common for various electronic systems, such as equipment units, to be mounted onto equipment racks via mounting rails (DIN rails) and latches/brackets. In general, the term “DIN” originates from the original specifications published by Deutsches Institut für Normung (DIN) in Germany, which have since been adopted as European (EN) and international (IEC) standards. In typical arrangements, a DIN mounting latch/bracket is used to mechanically couple an electronic system to a DIN rail.

### BRIEF DESCRIPTION OF THE DRAWINGS

**[0003]** FIG. 1A is a perspective view of an adjustable mounting rail latch, according to an example embodiment, shown in a closed configuration and mechanically coupled to a mounting rail and to a first equipment unit.

**[0004]** FIG. 1B is a perspective view of the adjustable mounting rail latch of FIG. 1A shown in an open configuration and mechanically coupled to the mounting rail and to the first equipment unit.

**[0005]** FIG. 2A is a rear perspective view of the adjustable mounting rail latch of FIG. 1A shown in a closed configuration and separate from the mounting rail and the first equipment unit.

**[0006]** FIG. 2B is a sectional view of the adjustable mounting rail latch of FIG. 1A shown separate from the mounting rail and the first equipment unit.

**[0007]** FIG. 2C is another rear perspective view of a section of the adjustable mounting rail latch of FIG. 1A shown separate from the mounting rail and the first equipment unit.

**[0008]** FIG. 3A is a perspective view of the adjustable mounting rail latch of FIG. 1A shown in a closed configuration and mechanically coupled to the mounting rail, but separate from the first equipment unit.

**[0009]** FIG. 3B is a side view of the adjustable mounting rail latch of FIG. 1A shown mechanically coupled to the mounting rail, but separate from the first equipment unit.

**[0010]** FIG. 4A is a front view of the adjustable mounting rail latch of FIG. 1A, shown in a closed configuration and separate from the mounting rail and the first equipment unit.

**[0011]** FIG. 4B is a front view of the adjustable mounting rail latch of FIG. 1A, shown in an open configuration and separate from the mounting rail and the first equipment unit.

**[0012]** FIG. 5A is a front view of another adjustable mounting rail latch, according to an example embodiment, shown in a closed configuration.

**[0013]** FIG. 5B is a front view of the adjustable mounting rail latch of FIG. 5A, shown in an open configuration.

**[0014]** FIG. 6 is a flow chart of a method, according to an example embodiment.

### DESCRIPTION OF EXAMPLE EMBODIMENTS

#### Overview

**[0015]** Presented herein are adjustable mounting (DIN) rail latches. An adjustable mounting rail latch comprises first

and second latch modules that each have a first side and a second side. The first sides are configured to be attached to at least one equipment unit and each of the second sides includes an attachment system configured to mechanically couple to a mounting rail. A slide-rail system is integrated with each of the first and second latch modules that is configured to slideably couple the first latch module with the second latch module. Additionally, the adjustable mounting rail latch comprises at least one selectively engageable retention device configured to exert a force on the mounting rail to prevent movement of the first and second latch modules along the mounting rail.

#### Example Embodiments

**[0016]** Today, various customizable options are available for installation of electronic systems, such as network equipment units or other types of equipment units. For example, a first equipment unit (e.g., a base unit) that provides one or more features may be initially deployed by a user. At a later time, one or more additional equipment units (e.g., expansion units) may be deployed with the base unit in order to provide additional and/or supplementary features. In certain arrangements, users may have the flexibility to select different expansion units for use with the base unit (e.g., for a particular use/application). However, as a result of this flexibility, the form factor of the equipment may change. For example, the form factor (e.g., width and weight) of the deployed equipment may increase in different manners for different types of expansion units.

**[0017]** Electronic systems, such as equipment units, are often attached to equipment racks, for example, inside a cabinet via mounting rails, generally referred to herein as DIN rails, for example, and mounting (DIN) rail latches/brackets. Conventional mounting rail latches used to mount base units onto mounting rails may be inadequate, for example, in size and/or retention ability, for mounting both the base unit and any additional expansion units attached to the base unit. One solution to such a problem is to use multiple latches or a single, wider latch on the now wider product assembly. However, this solution is inefficient as it takes considerable time to install/configure and the additional latches need to be ordered by the customer. It is also not cost effective for the mounting rail latch provider in terms of managing multiple latch accessory options to accommodate different customer configurations.

**[0018]** As such, presented herein are adjustable (sliding) mounting (DIN) rail latches for use in attaching one or more equipment units to a mounting rail. More specifically, an adjustable mounting rail latch in accordance with examples presented herein has a first (closed) configuration that enables the mounting rail latch to be used for attachment of a first equipment unit (e.g., a base unit) to a mounting rail. If the customer adds one or more additional equipment units (e.g., expansion units) in the future, the same mounting rail latch can be subsequently adjusted to a second (open) configuration that enables the mounting rail latch to also be used for attachment of the expansion unit(s) to the mounting rail.

**[0019]** The adjustable/sliding mounting rail latch in accordance with examples presented herein is comprised of first and second latch modules coupled to one another via an integrated slide-rail system. The slide-rail system enables the first and second latch modules to be positioned adjacent one another in the first (closed) configuration for use in

mounting the base unit to a mounting rail. When an expansion unit is added to the configuration, growing the form factor of the product, the slide-rail system enables the first and second latch modules to be separated from one another to form the second (open) configuration. In other words, the integrated slide-rail system allows the adjustable mounting rail latch to become wider so as to also accommodate the expansion unit. This slide-rail system is configured to have different widths in the open configuration.

[0020] The adjustable mounting rail latches presented herein enable the end users to quickly and easily adjust the dimensions of the latch to conform to a product's changing form factor (e.g., as equipment units are added, removed, replaced, etc.). That is, instead of un-installing and re-installing new latch designs each time the product form factor changes, at least a part of the adjustable mounting rail latch may remain attached and may be adjusted depending on the configuration change. As such, use of the adjustable mounting rail latch simplifies customer product upgrades.

[0021] For ease of description, adjustable (sliding) mounting rail latches in accordance with embodiments presented herein are described with reference to DIN rails and DIN rail latches. However, this is not intended to be limiting. It is to be understood that adjustable mounting rail latches in accordance with embodiments presented herein may be configured for use with any suitable type(s) of mounting rail(s).

[0022] FIG. 1A is a front perspective view of an adjustable DIN rail latch **100** in accordance with embodiments presented herein. The adjustable DIN rail latch **100** may be formed from aluminum, a rigid polymer, and/or any other suitable materials. In FIG. 1A, the adjustable DIN rail latch **100** is shown in a closed configuration, where the adjustable DIN rail latch **100** is mechanically coupled/attached to both a DIN rail **101** and to a first equipment unit **125**.

[0023] As shown, the adjustable DIN rail latch **100** includes a first latch module **102** and a second latch module **104**. As described further below, the first latch module **102** includes a first side **114** (e.g., a back side) and a second side **116** (e.g., a front side). The second latch module **104** includes a first side **118** (e.g., a back side) and a second side **120** (e.g., a front side). Each of the first sides **114**, **118** is configured to be attached to at least one equipment unit. Each of the second sides **116**, **120** is configured to be attached to a DIN rail. In the example shown in FIG. 1A, each of the first sides **114**, **118** is attached to the first equipment unit **125** and each of the second sides **116**, **120** is attached to the DIN rail **101**. The first latch module **102** and a second latch module **104** are attached to one another via an integrated slide-rail system (not shown in FIG. 1A).

[0024] As noted, FIG. 1A illustrates the adjustable DIN rail latch **100** in a closed configuration. When the adjustable DIN rail latch **100** is in a closed configuration, the first latch module **102** and the second latch module **104** are positioned immediately adjacent one another (i.e., the adjustable DIN rail latch is configured at its minimum form factor width). In this arrangement, the adjustable DIN rail latch **100** is attached to the first equipment unit **125**.

[0025] Referring next to FIG. 1B, shown is a perspective view of the adjustable DIN rail latch **100** in an open configuration. In an open configuration, the adjustable DIN rail latch **100** is mechanically coupled to the DIN rail **101**, the first equipment unit **125**, and a second equipment unit **127**, according to an example embodiment. More specifically, in FIG. 1B, the first latch module **102** and the second

latch module **104** are shown separated from one another (e.g., non-adjacent to one another), where one or both of the latch modules **102**, **104** have been moved (slid) along the integrated slide-rail system **106**. As such, in FIG. 1B, the adjustable DIN rail latch **100** has a different form factor width than in the closed configuration of FIG. 1A. Due to this different form factor width, the adjustable DIN rail latch **100** is able to be attached to both the first equipment unit **125** and the second equipment unit **127**.

[0026] As shown, the first latch module **102** has a first end **108** and a second end **109**, while the second latch module **104** has a first end **110** and a second end **111**. In the closed configuration of FIG. 1A, second ends **109** and **111** of the first and second latch modules **102**, **104**, respectively, are immediately adjacent one another (e.g., abutting one another). In an open configuration, the second ends **109** and **111** of the first and second latch modules **102**, **104**, respectively, are separated from one another. The form factor width of the adjustable DIN rail latch **100** is defined as the distance between ends **108**, **110** of the adjustable DIN rail latch **100**.

[0027] As described further below, the first latch module **102** and the second latch module **104** are each configured to be mechanically coupled to the DIN rail **101**. Additionally, while in the closed configuration, the adjustable DIN rail latch **100** (FIG. 1A) is used to attach the first equipment unit **125** to the DIN rail **101**. At a subsequent point in time, the second equipment unit **127** may be provided to for example, upgrade the first equipment unit **125**, provide supplemental functionality, etc. To install the second equipment unit **127**, the adjustable DIN rail latch **100** is adjusted to the open configuration (e.g., the first latch module **102** and the second latch module **104** are separated from one another). The adjustable DIN rail latch **100** may be adjusted from the first configuration to the second configuration based on the wider form factor of the first and second equipment units **125**, **127** as compared to the first equipment unit **125**. The adjustable DIN rail latch **100** may be adjusted between/to different form factor widths based on the particular equipment unit(s) being attached (e.g., added or removed) to the adjustable DIN rail latch **100**.

[0028] Once opened, the adjustable DIN rail latch **100** remains attached to the first equipment unit **125**, and can then be attached to the second equipment unit **127**. The first and second equipment units **125**, **127** may or may not be connected to each other.

[0029] Referring next to FIG. 2A, shown is a rear perspective view of the adjustable DIN rail latch **100** in a closed configuration. FIG. 2B is a cross-sectional view of the adjustable DIN rail latch **100**, taken along line "2-2," while FIG. 2C is another rear perspective view of a section of the adjustable DIN rail latch **100**. For ease of description, FIGS. 2A-2C will be described together. Additionally, in FIGS. 2A-2C, the adjustable DIN rail latch **100** is shown separate from the DIN rail **101** and separate from the first and second equipment units **125**, **127**.

[0030] As shown in FIGS. 2A-2C, the adjustable DIN rail latch **100** includes a slide-rail system **106** integrated with the first and second latch modules **102**, **104**. The slide-rail system **106** is configured to slideably couple the first latch module **102** with the second latch module **104**. In other words, the slide-rail system **106** enables the first and second latch modules **102**, **104** to be slideably moveable relative to one another in a direction along an axis "A" (FIG. 2A). This relative movement of the first and second latch modules **102**,

**104** enables the width of the adjustable DIN rail latch **100** to change (e.g., the distance between ends **108**, **110** decreases or increases).

**[0031]** In the specific example shown in FIGS. 2A-2C, the slide-rail system **106** includes a plurality of slide members **122** and a plurality of rails **124**. The plurality of rails **124** are configured to slideably accommodate the plurality of slide members **122** in such a way that the first and second latch modules **102**, **104** are slideably coupled. That is, the plurality of slide members **122** are configured to slideably move along the plurality of rails **124**. For example, as the first and second latch modules **102**, **104** are moved from the closed configuration shown in FIG. 2A, to an open position, the slide members **122a** and **122c** may be configured to move along the rails **124a** and **124c**, respectively, and the slide member **122b** may be configured to move along its corresponding rail (not shown). FIG. 2B illustrates that the plurality of slide members **122** may be received by the plurality of rails **124**.

**[0032]** As shown in FIGS. 2A-2C, the slide members **122** and rails **124** may form a dovetail-type connection. This, however, is only exemplary and any suitable connection type may be utilized.

**[0033]** FIGS. 2A and 2C also illustrate that the adjustable DIN rail latch **100** includes a plurality of attachment apertures **112**. A user may use these attachment apertures **112** to attach one or more equipment units to the adjustable DIN rail latch **100** via insertion of fasteners through the plurality of attachment apertures **112**. The fasteners may include, for example, screws, bolts, and/or any suitable fastening mechanisms.

**[0034]** The plurality of attachment apertures **112** may correspond to one or more attachment apertures of one or more equipment units (e.g., the first and second equipment units **125**, **127**). When the adjustable DIN rail latch **100** is in a closed configuration, for example, the plurality of attachment apertures **112**, may be configured to be aligned with respective attachment apertures of the first equipment unit **125**. When the adjustable DIN rail latch **100** is in an open configuration, for example, the attachment apertures **112b** and **112c** may be configured to be aligned with respective attachment apertures of the first equipment unit **125** and the attachment aperture **112a** may be configured to be aligned with an attachment aperture of the second equipment unit **127**. It is to be understood that not all of the attachment apertures may be used to facilitate attachment of one or more equipment units to the DIN rail latch **100**. For example, to attach the DIN rail latch **100** in the closed configuration to the equipment unit **125**, fasteners may be disposed through the attachment apertures **112a** and **112c** but not the attachment aperture **112b**. Whether some or all of the attachment apertures are used to facilitate attachment of one or more equipment units may depend on, for example, the size and/or weight of the one or more equipment units, the type(s) of fastener(s), the position of the attachment apertures of the DIN rail latch **100** with respect to the attachment apertures of the one or more equipment units, conditions of the environment the DIN rail latch **100** and the equipment units are to be deployed, and/or any other suitable considerations.

**[0035]** It is to be appreciated that, although the adjustable DIN rail latch **100** is shown as including three attachment apertures **112**, this is for exemplary purposes only and not intended to be limiting. Therefore, adjustable DIN rail

latches in accordance with embodiments presented herein may include any suitable number of attachment apertures.

**[0036]** Referring next to FIG. 3A, shown is a perspective view of the adjustable DIN rail latch **100** of FIG. 1A shown in a closed configuration. In FIG. 3A, the adjustable DIN rail latch **100** is shown mechanically coupled to the DIN rail **101**, but separate from the first equipment unit **125**. FIG. 3B is a side view of the adjustable DIN rail latch **100**. For ease of description, FIGS. 3A and 3B will be described together.

**[0037]** As noted above, the first latch module **102** includes the second side **116**, and the second latch module **104** may include the second side **120**. The second side **116** of first latch module **102** includes an attachment system **126**, while the second side **120** of second latch module **104** includes an attachment system **128**. Each of the attachment systems **126**, **128** may be configured to mechanically couple to a DIN rail, such as, for example, the DIN rail **101**. In particular, the attachment system **126** includes a first latch end **130** (e.g., a bottom latch end) and a second latch end **132** (e.g., a top latch end). The attachment system **128** includes a first latch end **134** (e.g., a bottom latch end) and a second latch end **136** (e.g., a top latch end). Each of the first latch ends **130**, **134** may be configured to receive at least a portion of a first lip **103** (e.g., a bottom lip) of the DIN rail **101**. Each of the second latch ends **132**, **136** may be configured to receive at least a portion of a second lip **105** (e.g., a top lip) of the DIN rail **101**. In this way, the adjustable DIN rail latch **100** can be attached to the DIN rail **101** (i.e., a second side of each of the latch modules is mechanically coupled to the DIN rail).

**[0038]** The adjustable DIN rail latch **100** further includes at least one retention device **138** configured to be selectively engaged to create a force on the DIN rail **101** to prevent unintended movement of the first and second latch modules **102**, **104** along the DIN rail. The retention device **138** may comprise, for example, one or more spring members **140**. In certain examples, one or more retention devices **138** may be positioned on each of the first latch module **102** and/or the second latch module **104**. For example, the one or more retention devices **138** (e.g., one or more spring members **140**) may be mechanically coupled (e.g., pinned) to the first and/or second latch modules **102**, **104**. For example, at least one retention device **138** (e.g., at least one spring members **140**) may be pinned by a pin (e.g., a press fit retention pin) to the first or second latch modules **102**, **104** in such a way that allows the retention device **138** to move/rotate at least partially with respect to/around the pin. It is to be appreciated that the at least one retention device **138** being pinned to the first and/or second latch modules **102**, **104** is only exemplary and that the at least one retention device **138** may be mechanically coupled to the first and/or second latch modules **102**, **104** by any suitable mechanism(s). Further, it is to be appreciated that if a retention device **138** is pinned to the first or second latch module **102**, **104**, any suitable type(s) of pin(s) may be used, as a press fit retention pin is only exemplary.

**[0039]** The DIN rail **101** comprises a base member **113**, a first lip **103**, and a second lip **105**. The lips **103** and **105** are coupled to the base member **113** via arms **107**. To secure the adjustable DIN rail latch **100** to the DIN rail **101**, the adjustable DIN rail latch **100** may be positioned such that a force is exerted on the retention device **138** by the arm **107** of the DIN rail **101**.

[0040] Referring next to FIGS. 4A and 4B, shown are front views of the adjustable DIN rail latch 100. In particular, FIG. 4A illustrates the adjustable DIN rail latch 100 in a closed configuration, while FIG. 4B illustrates the adjustable DIN rail latch 100 in an open configuration. As noted above, the DIN rail latch 100 includes a retention device 138 on each of the first and second latch modules 102, 104. Such a configuration of the retention devices 138, where at least one retention device 138 is positioned on the first latch module 102 (e.g., the first retention device 138a) and at least one retention device 138 positioned on the second latch module 104 (e.g., the second retention device 138b) is sometimes referred to herein as a “split” configuration.

[0041] It is to be appreciated that the split configuration for the retention devices, as shown in FIGS. 4A and 4B, is illustrative and that retention devices in accordance with embodiments presented herein may have different arrangements. For example, FIGS. 5A and 5B are front views of an adjustable DIN rail latch 500, according to an example embodiment, having a different configuration of retention devices.

[0042] FIG. 5A illustrates the adjustable DIN rail latch 500 in a closed configuration, while FIG. 5B illustrates the adjustable DIN rail latch 500 in an open configuration. The adjustable DIN rail latch 500 includes first and second latch modules 502, 504. The adjustable DIN rail latch 500 may be the same as the adjustable DIN rail latch 100, except the DIN rail latch 500 includes retention devices only on one of its two latch modules. In particular, the DIN rail latch 500 includes retention devices 538a, 538b, both of which are positioned on the first latch module 502.

[0043] Referring next to FIG. 6, shown is a flowchart of a method 600, according to an example embodiment. The method 600 may be performed with any of the adjustable mounting rail latches described herein. At 602, a first equipment unit is attached to an adjustable mounting rail latch, wherein the adjustable mounting rail latch comprises first and second latch modules mechanically coupled to one another.

[0044] At 604, the adjustable mounting rail latch is mechanically attached to a mounting rail, wherein the adjustable mounting rail latch has a closed configuration in which the first and second latch modules are positioned adjacent to one another.

[0045] At 606, the adjustable mounting rail is adjusted from the closed configuration to an open configuration. The adjustable mounting rail latch may comprise an integrated slide-rail system, and adjusting the adjustable mounting rail from the closed configuration to the open configuration may comprise, for example, separating the second latch module from the first latch module via the slide-rail system.

[0046] At 608, the adjustable mounting rail latch is attached to a second equipment unit such that both the first equipment unit and the second equipment unit are coupled to the mounting rail via the adjustable mounting rail latch.

[0047] The adjustable mounting rail latch may comprise at least one selectively engageable retention device, and the method may further comprise exerting a force on the mounting rail with the selectively engageable retention device to prevent movement of the first and second latch modules along the mounting rail. The at least one selectively engageable retention device may comprise a first selectively engageable retention device positioned on the first latch

module and a second selectively engageable retention device positioned on the second latch module.

[0048] In one aspect, an adjustable mounting rail latch is provided comprising: first and second latch modules each comprising a first side and a second side, wherein each of the first sides is configured to be attached to at least one equipment unit and each of the second sides includes an attachment system configured to mechanically couple to a mounting rail; a slide-rail system integrated with the first and second latch modules, wherein the slide-rail system is configured to slideably couple the first latch module with the second latch module; and at least one selectively engageable retention device configured to exert a force on the mounting rail to prevent movement of the first and second latch modules along the mounting rail.

[0049] In certain aspects, the at least one selectively engageable retention device comprises one or more spring members. In certain aspects, the one or more spring members are positioned on the first side of the first latch module. In certain aspects, the one or more spring members are positioned on the first side of the second latch module. In certain aspects, a first spring member is positioned on the first side of the first latch module and a second spring member is positioned on the first side of the second latch module.

[0050] In certain aspects, the first and second latch modules each comprise at least one attachment aperture for attachment to the at least one equipment unit.

[0051] In certain aspects, the slide-rail system includes a plurality of slide members and a plurality of rails. The plurality of slide members are configured to slideably move along the plurality of rails.

[0052] In certain aspects, the at least one selectively engageable retention device is configured to be selectively engaged by an arm of the mounting rail.

[0053] In certain aspects, the attachment system includes respective latch ends configured to receive at least a portion of a lip of the mounting rail.

[0054] In another aspect, a method is provided. The method comprises: attaching a first equipment unit to an adjustable mounting rail latch, wherein the adjustable mounting rail latch comprises first and second latch modules mechanically coupled to one another; mechanically attaching the adjustable mounting rail latch to a mounting rail, wherein the adjustable mounting rail latch has a closed configuration in which the first and second latch modules are positioned adjacent to one another; adjusting the adjustable mounting rail latch from the closed configuration to an open configuration; and attaching the adjustable mounting rail latch to a second equipment unit such that both the first equipment unit and the second equipment unit are coupled to the mounting rail via the adjustable mounting rail latch.

[0055] In yet another aspect, an adjustable mounting rail latch is provided. The adjustable mounting rail latch comprises: first and second latch modules each comprising a first side and a second side, wherein each of the first sides is configured to be attached to at least one equipment unit and each of the second sides includes an attachment system configured to mechanically couple to a mounting rail; and a slide-rail system integrated with the first and second latch modules, wherein the slide-rail system comprises at least one slide member and at least one rail, wherein the at least one rail is configured to slideably accommodate the at least

one slide member in such a way that the first and second latch modules are slideably coupled to one another.

**[0056]** The above description is intended by way of example only. Although the techniques are illustrated and described herein as embodied in one or more specific examples, it is nevertheless not intended to be limited to the details shown, since various modifications and structural changes may be made within the scope and range of equivalents of the claims.

1. An adjustable mounting rail latch, comprising:  
first and second latch modules each comprising a first side and a second side, wherein each of the first sides is configured to be attached to at least one equipment unit and each of the second sides includes an attachment system configured to mechanically couple to a mounting rail;
- a slide-rail system integrated with the first and second latch modules, wherein the slide-rail system is configured to slideably couple the first latch module with the second latch module and permit relative longitudinal movement of the first and second latch modules to a plurality of different relative locations, wherein each of the different relative locations are configured for attachment to the mounting rail; and
- at least one selectively engageable retention device configured to exert a force on the mounting rail to prevent movement of the first and second latch modules along the mounting rail.
2. The adjustable mounting rail latch of claim 1, wherein the at least one selectively engageable retention device comprises one or more spring members.
3. The adjustable mounting rail latch of claim 2, wherein the one or more spring members are positioned on the first side of the first latch module.
4. The adjustable mounting rail latch of claim 2, wherein the one or more spring members are positioned on the first side of the second latch module.
5. The adjustable mounting rail latch of claim 2, wherein the one or more spring members comprise a first spring member positioned on the first side of the first latch module and a second spring member positioned on the first side of the second latch module.
6. The adjustable mounting rail latch of claim 1, wherein the first and second latch modules each comprise at least one attachment aperture for attachment to the at least one equipment unit.
7. The adjustable mounting rail latch of claim 1, wherein the slide-rail system includes a plurality of slide members and a plurality of rails, wherein the plurality of slide members are configured to slideably move along the plurality of rails.
8. The adjustable mounting rail latch of claim 1, wherein the at least one selectively engageable retention device is configured to be selectively engaged by an arm of the mounting rail.
9. The adjustable mounting rail latch of claim 1, wherein the attachment system includes respective latch ends configured to receive at least a portion of a lip of the mounting rail.
- 10-13. (canceled)
14. An adjustable mounting rail latch, comprising:  
first and second latch modules each comprising a first side and a second side, wherein each of the first sides is configured to be attached to at least one equipment unit

and each of the second sides includes an attachment system configured to mechanically couple to a mounting rail; and

- a slide-rail system integrated with the first and second latch modules and configured to permit relative longitudinal movement of the first and second latch modules to a plurality of different relative locations, wherein each of the different relative locations are configured for attachment to the mounting rail, wherein the slide-rail system comprises at least one slide member and at least one rail, wherein the at least one rail is configured to slideably accommodate the at least one slide member in such a way that the first and second latch modules are slideably coupled to one another.
15. The adjustable mounting rail latch of claim 14, further comprising at least one selectively engageable retention device configured to exert a force on the mounting rail to prevent movement of the first and second latch modules along the mounting rail.
16. The adjustable mounting rail latch of claim 15, wherein the at least one selectively engageable retention device comprises one or more spring members.
17. The adjustable mounting rail latch of claim 16, wherein the one or more spring members are positioned on the first side of the first latch module.
18. The adjustable mounting rail latch of claim 16, wherein the one or more spring members are positioned on the first side of the second latch module.
19. The adjustable mounting rail latch of claim 16, wherein the one or more spring members comprise a first spring member positioned on the first side of the first latch module and a second spring member positioned on the first side of the second latch module.
20. The adjustable mounting rail latch of claim 14, wherein the first and second latch modules each comprise at least one attachment aperture for attachment to the at least one equipment unit.
21. The adjustable mounting rail latch of claim 1, wherein the first and second latch modules have opposing ends, wherein the plurality of different relative locations of the first and second latch modules include a first position and a second position, wherein in the first position the opposing ends of the first and second latch modules are positioned a first distance apart from each other so as to accommodate attachment to at least one first equipment unit and in the second position the opposing ends of the first and second latch modules are positioned a second distance apart from each other so as to accommodate attachment to at least one second equipment unit, and wherein the first distance is greater than the second distance.
22. The adjustable mounting rail latch of claim 14, wherein the first and second latch modules have opposing ends, wherein the plurality of different relative locations of the first and second latch modules include a first position and a second position, wherein in the first position the opposing ends of the first and second latch modules are positioned a first distance apart from each other so as to accommodate attachment to at least one first equipment unit and in the second position the opposing ends of the first and second latch modules are positioned a second distance apart from each other so as to accommodate attachment to at least one second equipment unit, and wherein the first distance is greater than the second distance.



**23.** The adjustable mounting rail latch of claim **1**, wherein the first and second latch modules have opposing ends, and wherein the opposing ends of the first and second latch modules have different physical separations in each of the different relative locations of the first and second latch modules.

**24.** The adjustable mounting rail latch of claim **14**, wherein the first and second latch modules have opposing ends, and wherein the opposing ends of the first and second latch modules have different physical separations in each of the different relative locations of the first and second latch modules.

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