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Fixture for use with vacuum hoist

Abstract

A removable fixture may include a cover assembly, comprising a cover having a top surface which is generally planar and substantially void of any features formed thereon, one or more first alignment features mechanically coupled to a side of the cover, and a wing. The wing may have one or more keyholes configured to mechanically engage with one or more corresponding coupling structures on a physical object and one or more second alignment features configured to mechanically engage with the one or more first alignment features in order to, when the one or more first alignment features are mechanically engaged with the one or more second alignment features, constrain translation of the cover relative to the physical object to a linear translation.

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Background/Summary

TECHNICAL FIELD
(1) The present disclosure relates in general to information handling systems, and more particularly to systems and methods for providing a removable and reusable fixture for a physical object, such as an information handling system server, wherein such removable fixture is adapted for use with a vacuum hoist for lifting and moving the physical object.
BACKGROUND
(2) As the value and use of information continues to increase, individuals and businesses seek additional ways to process and store information. One option available to users is information handling systems. An information handling system generally processes, compiles, stores, and/or communicates information or data for business, personal, or other purposes thereby allowing users to take advantage of the value of the information. Because technology and information handling needs and requirements vary between different users or applications, information handling systems may also vary regarding what information is handled, how the information is handled, how much information is processed, stored, or communicated, and how quickly and efficiently the information may be processed, stored, or communicated. The variations in information handling systems allow for information handling systems to be general or configured for a specific user or specific use such as financial transaction processing, airline reservations, enterprise data storage, or global communications. In addition, information handling systems may include a variety of hardware and

software components that may be configured to process, store, and communicate information and may include one or more computer systems, data storage systems, and networking systems.

(3) Information handling system servers are often heavy and difficult for a person to lift without the aid of specialized tools or devices to assist in lifting and moving servers. This is particularly true in packaging of servers into boxes, as repetitive lifting and moving of servers may cause injury to an operator. Accordingly, vacuum hoists are often used for packaging heavy server products, so as to prevent injury to an operator, prevent damage to the server products being packaged, and allow for a single operator to package a heavy server. A vacuum hoist may comprise a system, device, or apparatus that employs a mechanical vacuum wherein vacuum heads are engaged with a surface of the server to create a mechanical force that offsets and/or overcomes the force of gravity upon the server to lift and move the server.

(4) However, one disadvantage in using vacuum hoists is that servers often include seams and embossing that render it difficult for vacuum heads of the vacuum hoist to form an airtight vacuum seal. Thus, in some instances, vacuum heads may not fully attach, leading to risk of dropping of the server, which could cause damage. Further, some segments of a surface of an information handling system server may deform during lifting, which could also damage the server.

(5) Accordingly, systems and methods that overcome such disadvantages may be desirable.

SUMMARY

(6) In accordance with the teachings of the present disclosure, the disadvantages and problems associated with use of a vacuum hoist to lift and move an information handling system or other physical object may be reduced or eliminated.

(7) In accordance with embodiments of the present disclosure, a cover assembly may include a cover having a top surface which is generally planar and substantially void of any features formed thereon and one or more alignment features mechanically coupled to a side of the cover and configured to mechanically engage with one or more corresponding alignment features of a physical object in order to, when the one or more alignment features are mechanically engaged with the one or more corresponding alignment features, constrain translation of the cover relative to the physical object to a linear translation.

(8) In accordance with these and other embodiments of the present disclosure, a wing may include one or more keyholes configured to mechanically engage with one or more corresponding coupling structures on a physical object and one or more alignment features configured to mechanically engage with one or more corresponding alignment features of a side of a cover assembly in order to, when the one or more alignment features are mechanically engaged with the one or more corresponding alignment features, constrain translation of the cover relative to the physical object to a linear translation.

(9) In accordance with these and other embodiments of the present disclosure, a removable fixture may include a cover assembly, comprising a cover having a top surface which is generally planar and substantially void of any features formed thereon, one or more first alignment features mechanically coupled to a side of the cover, and a wing.

(10) The wing may have one or more keyholes configured to mechanically engage with one or more corresponding coupling structures on a physical object and one or more second alignment features configured to mechanically engage with the one or more first alignment features in order to, when the one or more first alignment features are mechanically engaged with the one or more second alignment features, constrain translation of the cover relative to the physical object to a linear translation.

(11) In accordance with these and other embodiments of the present disclosure, a system may include a first alignment feature, a spring-loaded locking feature mechanically coupled to the first alignment feature, the spring-loaded locking feature having a recess formed therein, a second alignment feature configured to mechanically engage with the first alignment feature in order to, when the first alignment feature is mechanically engaged with the second alignment feature,

constrain translation of the first alignment feature to the second alignment feature to a linear translation, and a plunger assembly mechanically coupled to the second alignment feature via a compressive spring that mechanically biases the plunger towards the second alignment feature, the plunger assembly comprising a plunger and a tongue extending from the plunger. The spring-loaded locking feature may be configured to, as first alignment feature is translated relative to the second alignment feature in a first direction, mechanically translate to a locked position under a spring force bias in order to mechanically engage with a lock engagement feature of the second alignment feature in order to mechanically retain the first alignment feature in a fixed position relative to the second alignment feature. When the spring-loaded locking feature is translated into a unlocked position, the tongue may be configured to mechanically engage with the recess to overcome the spring force bias to maintain the spring-loaded locking feature in an unlocked position.

(12) In accordance with these and other embodiments of the present disclosure, a system may include a first alignment feature and a spring-loaded locking feature mechanically coupled to the first alignment feature, the spring-loaded locking feature having a recess formed therein. The first alignment feature may be configured to mechanically engage with a second alignment feature in order to, when the first alignment feature is mechanically engaged with the second alignment feature, constrain translation of the first alignment feature to the second alignment feature to a linear translation. The spring-loaded locking feature may be configured to, as the first alignment feature is translated relative to the second alignment feature in a first direction, mechanically translate to a locked position under a spring force bias in order to mechanically engage with a lock engagement feature of the second alignment feature in order to mechanically retain the first alignment feature in a fixed position relative to the second alignment feature. When the spring-loaded locking feature is translated into an unlocked position, a tongue of a plunger assembly mechanically coupled to the second alignment feature via a compressive spring that mechanically biases a plunger of the plunger assembly mechanically coupled to the tongue towards the second alignment feature may be configured to mechanically engage with the recess to overcome the spring force bias to maintain the spring-loaded locking feature in an unlocked position.

(13) In accordance with these and other embodiments of the present disclosure, a system may include a first alignment feature configured to mechanically engage with a second alignment feature in order to, when the first alignment feature is mechanically engaged with the second alignment feature, constrain translation of the first alignment feature to the second alignment feature to a linear translation and a plunger assembly mechanically coupled to the first alignment feature via a compressive spring that mechanically biases the plunger towards the first alignment feature, the plunger assembly comprising a plunger and a tongue extending from the plunger. A spring-loaded locking feature mechanically coupled to the second alignment feature may be configured to, as the second alignment feature is translated relative to the first alignment feature in a first direction, mechanically translate to a locked position under a spring force bias in order to mechanically engage with a lock engagement feature of the first alignment feature in order to mechanically retain the second alignment feature in a fixed position relative to the first alignment feature. When the spring-loaded locking feature is translated into an unlocked position, the tongue may be configured to mechanically engage with the recess to overcome the spring force bias to maintain the spring-loaded locking feature in an unlocked position.

(14) Technical advantages of the present disclosure may be readily apparent to one skilled in the art from the figures, description and claims included herein. The objects and advantages of the embodiments will be realized and achieved at least by the elements, features, and combinations particularly pointed out in the claims.

(15) It is to be understood that both the foregoing general description and the following detailed description are examples and explanatory and are not restrictive of the claims set forth in this disclosure.

Description

BRIEF DESCRIPTION OF THE DRAWINGS

(1) A more complete understanding of the present embodiments and advantages thereof may be acquired by referring to the following description taken in conjunction with the accompanying drawings, in which like reference numbers indicate like features, and wherein:

(2) FIG. **1** illustrates a perspective view of an example information handling system server, in accordance with embodiments of the present disclosure;

(3) FIGS. **2**A-**2**C illustrate perspective views of a removable fixture mechanically coupled to an information handling system server, the fixture for use with a vacuum hoist for lifting and moving the information handling system server, in accordance with embodiments of the present disclosure;

(4) FIGS. **3**A and **3**B illustrate perspective close-in views of details of a wing and a cover of the removable fixture depicted in FIGS. **2**A-**2**C, in accordance with embodiments of the present disclosure;

(5) FIGS. **4**A and **4**B illustrate perspective close-in views of a spring-loaded locking mechanism, in accordance with embodiments of the present disclosure; and

(6) FIGS. **5**A and **5**B illustrate perspective close-in views of another spring-loaded locking mechanism, in accordance with embodiments of the present disclosure.

DETAILED DESCRIPTION

(7) Preferred embodiments and their advantages are best understood by reference to FIGS. **1** through **5**B, wherein like numbers are used to indicate like and corresponding parts.

(8) For the purposes of this disclosure, an information handling system may include any instrumentality or aggregate of instrumentalities operable to compute, classify, process, transmit, receive, retrieve, originate, switch, store, display, manifest, detect, record, reproduce, handle, or utilize any form of information, intelligence, or data for business, scientific, control, entertainment, or other purposes. For example, an information handling system may be a personal computer, a personal digital assistant (PDA), a consumer electronic device, a network storage device, or any other suitable device and may vary in size, shape, performance, functionality, and price. The information handling system may include memory, one or more processing resources such as a central processing unit (“CPU”), microcontroller, or hardware or software control logic. Additional components of the information handling system may include one or more storage devices, one or more communications ports for communicating with external devices as well as various input/output (“I/O”) devices, such as a keyboard, a mouse, and a video display. The information handling system may also include one or more buses operable to transmit communication between the various hardware components.

(9) FIG. **1** illustrates a perspective view of an example information handling system server **100**, in accordance with embodiments of the present disclosure. As shown in FIG. **1**, server **100** may include a chassis **101** made of metal or other suitable material for housing functional components of the server **100** (e.g., processors, memories, storage drives, fans, etc.). Chassis **101** may include, among other things, sides **102**, a top **104**, and a bottom. As shown in FIG. **1**, top **104** may include a generally planar surface that may include features, such as seams **106** and embosses **108**, that may pose difficulties for a vacuum head of a vacuum hoist to form an airtight vacuum seal of the surface of top **104**. As also shown in FIG. **1**, enclosure **101** may include rail attachment features **110** configured to mechanically engage with corresponding rails of an enclosure (e.g., server rack or server tower) in order to locate and retain chassis **101** within a desired location of such enclosure.

(10) FIGS. **2**A-**2**C (which may be referred to herein collectively as “FIG. **2**”) illustrate perspective views of a removable fixture mechanically coupled to information handling system server **100**, the fixture for use with a vacuum hoist for lifting and moving information handling system server **100**, in accordance with embodiments of the present disclosure. FIGS. **3**A and **3**B illustrate perspective

close-in views of details of a wing **202** and a cover **204** of the removable fixture depicted in FIGS. **2**A-**2**C, in accordance with embodiments of the present disclosure.
(11) As shown in FIG. **2**, the removable fixture may include a pair of removable wings **202** mechanically coupled to opposite sides **102** of chassis **101**. In some embodiments, removable wings **202** may be coupled to chassis **101** at approximately the center of gravity of information handling system server **100**. As shown in FIGS. **2** and **3**, each wing **202** may include a plurality of keyholes **206** configured to mechanically engage with corresponding t-pins **208** extending from a side **102** of chassis **101**. Thus, to mechanically couple a wing **202** to a side **102** of chassis **101**, an operator may align larger-diameter portions **210** (see FIG. **3**) of keyholes **206** with t-pins **208** and translate wing **202** towards side **102** such that heads of t-pins **208** pass through larger-diameter portions **210** of keyholes **206**. The operator may then slide (e.g., upward in the perspective shown in FIGS. **2** and **3**) wing **202** such that necks of t-pins **208** slide from larger-diameter portions **210** of keyholes **206** to smaller-diameter portions **212** (see FIG. **3**) of keyholes **206**, wherein such smaller-diameter portions **212** may be smaller in diameter than the heads of t-pins **208**, thus enabling t-pins **208** and wing **202** to mechanically engage and causing wing **202** to be mechanically coupled to side **102** in a fixed position.
(12) In some embodiments, wing **202** may include one or more magnets or be made in whole or part from ferromagnetic material to provide further mechanical retention between wing **202** and side **102**. In these and other embodiments, wings **202** may be configured (e.g., sized and shaped) to mechanically engage with rail attachment features **110** to provide further mechanical retention between wing **202** and chassis **101**.
(13) Cover **204** may have a top surface which is generally planar and substantially void of any features formed thereon or therein that may negatively affect forming of an airtight vacuum seal by a vacuum head of a vacuum hoist. Cover **204** may be formed from any suitable material, including without limitation metal, plastic, or ceramic. As shown in FIG. **2**, in some embodiments, cover **204** may have one or more guiding features **214** extending therefrom that assist an operator in guiding and aligning cover **204** onto chassis **101** when coupling cover **204** to chassis **101**, as described in greater detail below.
(14) As shown in FIGS. **2** and **3**, each wing **202** may include alignment features **216** configured to engage with corresponding alignment features **218** of mechanically coupled to opposite sides of cover **204**. Together, alignment features **216** and **218** may be configured (e.g., sized and/or shaped) to, when cover **204** is lowered onto chassis **101**, mechanically engage with one another to constrain mechanical translation of cover **204** relative to chassis **101** to a linear translation.
(15) Further, as shown in FIGS. **2** and **3**, each cover **204** may include on opposite sides thereof (e.g., proximate to an alignment feature **218** or integral to an alignment feature **218** as shown in FIGS. **2** and **3**) a spring-loaded locking feature **222**. Spring-loaded locking feature **222** may be biased by a spring to an open position (e.g., as shown in FIGS. **2**A, **2**C, and **3**B) in the absence of a mechanical force applied to spring-loaded locking feature **222**, and may be configured to, when a mechanical force is applied to spring-loaded locking feature **222** in a direction opposite to the spring force of the spring of spring-loaded locking feature **222**, translate to a retracted position (e.g., as shown in FIGS. **2**B and **3**A).
(16) In order to mechanically couple cover **204** to chassis **101**, an operator may lower cover **204** onto top surface **104** of chassis **101**, using guiding features **214** (if present) to align sides of cover **204** with sides **102** of chassis **101**. As cover **204** is lowered onto chassis **101**, a guiding feature **218** of each side of cover **204** may pass through an opening **220** formed between alignment features **216** of wing **202**. Once alignment feature **218** of each side of cover **204** has passed through its corresponding opening **220**, an operator may apply a force to cover **204** (e.g., via side handles **224**) to slide (e.g., leftward in the perspective shown in FIGS. **2** and **3**) cover **204** relative to chassis **101**, such that alignment features **216** and alignment features **218** mechanically engage with each other to maintain desired alignment of cover **204** relative to chassis **101** during mechanical translation of

cover **204** relative to chassis **101**.

(17) During such mechanical translation, a ramped portion **226** of spring-loaded locking feature **222** may mechanically engage with an alignment feature **216** such that the alignment feature **216** applies a force to ramped portion **226** to cause spring-loaded locking feature **222** to translate from its open position to its retracted position. Spring-loaded locking feature **222** may remain in such retracted position as it passes under the alignment feature **216**, until cover **204** is translated to a position in which spring-loaded locking feature **222** aligns with a lock engagement feature **228** formed within such alignment feature **216**, at which point a lack of force applied to spring-loaded locking feature **222** may cause spring-loaded locking feature **222** to translate to its open position under the force of the spring of spring-loaded locking feature **222**. Once in such open position, spring-loaded locking feature **222** may mechanically engage with lock engagement feature **228** to maintain cover **204** in a fixed position relative to chassis **101**.

(18) With cover **204** mechanically affixed to information handling system server **100** as described above, an operator may cause one or more vacuum pads of a vacuum hoist to engage with the top surface of cover **204** in order to lift and/or move information handling system server **100** to a desired location (e.g., into a box or other packaging). Once information handling system server **100** has been moved to a desired location, the operator may decouple cover **204** from chassis **101** by unlocking spring-loaded locking feature **222** from lock engagement feature **228** by applying a force to spring-loaded locking feature **222** to cause spring-loaded locking feature **222** to translate into its retracted position, and then mechanically translate cover **204** relative to chassis **101** in a direction opposite to that used to couple cover **204** to chassis **101**.

(19) FIGS. **4**A and **4**B illustrate perspective close-in views of a spring-loaded locking mechanism **222**A, in accordance with embodiments of the present disclosure. In some embodiments, spring-loaded locking mechanism **222**A may be used to implement spring-loaded locking mechanism **222** described above. As shown in FIGS. **4**A and **4**B, spring-loaded locking mechanism **222**A may be configured to mechanically engage with a plunger assembly **400**, as described in greater detail below. As shown in FIGS. **4**A and **4**B, spring-loaded locking mechanism **222**A may comprise a recess **410** formed in spring-loaded locking mechanism **222**A. Further as shown in FIGS. **4**A and **4**B, plunger assembly **400** may include a plunger **402** mechanically coupled to alignment feature **216** via a spring **404** biased with a compressive spring force that biases a head **406** of plunger **402** towards alignment feature **216**. Such spring force may be perpendicular to the direction of linear translation between alignment features **216** and **218**.

(20) FIG. **4**A depicts spring-loaded locking mechanism **222**A mechanically engaged with lock engagement feature **228** in order to prevent linear translation of alignment feature **216** relative to alignment feature **218**, as described above. To disengage spring-loaded locking mechanism **222**A from lock engagement feature **228** in order to allow linear translation of alignment feature **216** relative to alignment feature **218** (e.g., in order to decouple cover **204** from chassis **101**), an operator may apply force (e.g., with a finger) to spring-loaded locking mechanism **222**A to translate spring-loaded locking mechanism **222**A from its open position to its retracted position, and mechanically manipulate plunger **400** in order to cause a tongue **408** to mechanically engage with recess **410** in order to overcome the spring force that biases spring-loaded locking mechanism **222**A in the open position in order to retain spring-loaded locking mechanism **222**A in its retracted position, so that alignment feature **216** may be linearly translated relative to alignment feature **218** (e.g., in order to decouple cover **204** from chassis **101**). As alignment feature **216** is linearly translated relative to alignment feature **218**, tongue **408** may egress from recess **410** via a cutout **412** of recess **410**.

(21) FIGS. **5**A and **5**B illustrate perspective close-in views of a spring-loaded locking mechanism **222**B, in accordance with embodiments of the present disclosure. In some embodiments, spring-loaded locking mechanism **222**B may be used to implement spring-loaded locking mechanism **222** described above. Spring-loaded locking mechanism **222**B depicted in FIGS. **5**A and **5**B may be

similar in many respects to spring-loaded locking mechanism **222**A depicted in FIGS. **4**A and **4**B. Accordingly, only certain differences between spring-loaded locking mechanism **222**A and spring-loaded locking mechanism **222**B may be described herein.

(22) In particular, spring-loaded locking mechanism **222**B may include a ramped feature **500** leading from recess **410**. Accordingly, when an operator applies force (e.g., with a finger) to spring-loaded locking mechanism **222**B to translate spring-loaded locking mechanism **222**B from its open position to its retracted position, tongue **408** may engage with ramped feature **500** such that, due to the spring force of spring **404**, tongue **408** may automatically mechanically engage with recess **410** in response to spring-loaded locking mechanism **222**B being translated into its retracted position in order to overcome the spring force that biases spring-loaded locking mechanism **222**B in the open position in order to retain spring-loaded locking mechanism **222**B in its retracted position, so that alignment feature **216** may be linearly translated relative to alignment feature **218** (e.g., in order to decouple cover **204** from chassis **101**). As alignment feature **216** is linearly translated relative to alignment feature **218**, tongue **408** may egress from recess **410** via a cutout **412** of recess **410**.

(23) Although FIGS. **4**A, **4**B, **5**A, and **5**B depict a plunger assembly **400** mechanically coupled to alignment feature **216**, it is understood that embodiments of the present disclosure may be realized without the presence of such plunger assembly **400**, such as shown in FIGS. **2** and **3**.

(24) Although the foregoing discussion contemplates use of a removable fixture to lift and move an information handling system server, the systems and methods disclosed herein may also be applied to using a fixture to lift and move any suitable physical object.

(25) As used herein, when two or more elements are referred to as “coupled” to one another, such term indicates that such two or more elements are in electronic communication or mechanical communication, as applicable, whether connected indirectly or directly, with or without intervening elements.

(26) This disclosure encompasses all changes, substitutions, variations, alterations, and modifications to the example embodiments herein that a person having ordinary skill in the art would comprehend. Similarly, where appropriate, the appended claims encompass all changes, substitutions, variations, alterations, and modifications to the example embodiments herein that a person having ordinary skill in the art would comprehend. Moreover, reference in the appended claims to an apparatus or system or a component of an apparatus or system being adapted to, arranged to, capable of, configured to, enabled to, operable to, or operative to perform a particular function encompasses that apparatus, system, or component, whether or not it or that particular function is activated, turned on, or unlocked, as long as that apparatus, system, or component is so adapted, arranged, capable, configured, enabled, operable, or operative. Accordingly, modifications, additions, or omissions may be made to the systems, apparatuses, and methods described herein without departing from the scope of the disclosure. For example, the components of the systems and apparatuses may be integrated or separated. Moreover, the operations of the systems and apparatuses disclosed herein may be performed by more, fewer, or other components and the methods described may include more, fewer, or other steps. Additionally, steps may be performed in any suitable order. As used in this document, “each” refers to each member of a set or each member of a subset of a set.

(27) Although exemplary embodiments are illustrated in the figures and described above, the principles of the present disclosure may be implemented using any number of techniques, whether currently known or not. The present disclosure should in no way be limited to the exemplary implementations and techniques illustrated in the figures and described above.

(28) Unless otherwise specifically noted, articles depicted in the figures are not necessarily drawn to scale.

(29) All examples and conditional language recited herein are intended for pedagogical objects to aid the reader in understanding the disclosure and the concepts contributed by the inventor to furthering the art, and are construed as being without limitation to such specifically recited

examples and conditions. Although embodiments of the present disclosure have been described in detail, it should be understood that various changes, substitutions, and alterations could be made hereto without departing from the spirit and scope of the disclosure.
(30) Although specific advantages have been enumerated above, various embodiments may include some, none, or all of the enumerated advantages. Additionally, other technical advantages may become readily apparent to one of ordinary skill in the art after review of the foregoing figures and description.
(31) To aid the Patent Office and any readers of any patent issued on this application in interpreting the claims appended hereto, applicants wish to note that they do not intend any of the appended claims or claim elements to invoke 35 U.S.C. § 112(f) unless the words "means for" or "step for" are explicitly used in the particular claim.

Claims

1. A cover assembly, comprising: a cover having a top surface which is generally planar and substantially void of any features formed thereon; and one or more alignment features mechanically coupled to a side of the cover and configured to mechanically engage with one or more corresponding alignment features of a physical object in order to, when the one or more alignment features are mechanically engaged with the one or more corresponding alignment features, constrain translation of the cover relative to the physical object to a linear translation; and one or more keyholes configured to mechanically engage with one or more corresponding coupling structures on a physical object.
2. The cover assembly of claim 1, further comprising a spring-loaded locking feature proximate to the one or more alignment features and configured to, as the cover is translated in the linear translation relative to the physical object, mechanically engage with a lock engagement feature of the one or more corresponding alignment features in order to mechanically retain the cover assembly in a fixed position relative to the physical object.
3. The cover assembly of claim 1, further comprising one or more handles mechanically coupled to the cover proximate to the one or more alignment features and configured to enable an operator to linearly translate the cover assembly relative to the physical object.
4. The cover assembly of claim 1, further comprising one or more guiding features extending from the cover configured to align the cover with the physical object as the cover is lowered relative to the physical object.
5. The cover assembly of claim 1, wherein the physical object is an information handling system server.
6. A wing, comprising: one or more keyholes configured to mechanically engage with one or more corresponding coupling structures on a physical object; and one or more alignment features configured to mechanically engage with one or more corresponding alignment features of a side of a cover assembly in order to, when the one or more alignment features are mechanically engaged with the one or more corresponding alignment features, constrain translation of the cover relative to the physical object to a linear translation.
7. The wing of claim 6, further comprising a lock engagement feature formed within one of the one or more alignment features and configured to, as the cover is translated in the linear translation relative to the physical object, mechanically engage with a spring-loaded locking feature proximate to the one or more corresponding alignment features in order to mechanically retain the cover assembly in a fixed position relative to the physical object.
8. The wing of claim 6, wherein the physical object is an information handling system server.
9. A removable fixture, comprising: a cover assembly, comprising: a cover having a top surface which is generally planar and substantially void of any features formed thereon; one or more first alignment features mechanically coupled to a side of the cover; and a wing, comprising: one or

more keyholes configured to mechanically engage with one or more corresponding coupling structures on a physical object; and one or more second alignment features configured to mechanically engage with the one or more first alignment features in order to, when the one or more first alignment features are mechanically engaged with the one or more second alignment features, constrain translation of the cover relative to the physical object to a linear translation.

10. The removable fixture of claim 9, the cover assembly further comprising a spring-loaded locking feature proximate to the one or more first alignment features and configured to, as the cover is translated in the linear translation relative to the physical object, mechanically engage with a lock engagement feature of the one or more second alignment features in order to mechanically retain the cover assembly in a fixed position relative to the physical object.

11. The removable fixture of claim 9, the cover assembly further comprising one or more handles mechanically coupled to the cover proximate to the one or more first alignment features and configured to enable an operator to linearly translate the cover assembly relative to the physical object.

12. The removable fixture of claim 9, the cover assembly further comprising one or more guiding features extending from the cover configured to align the cover with the physical object as the cover is lowered relative to the physical object.

13. The removable fixture of claim 9, wherein the physical object is an information handling system server.