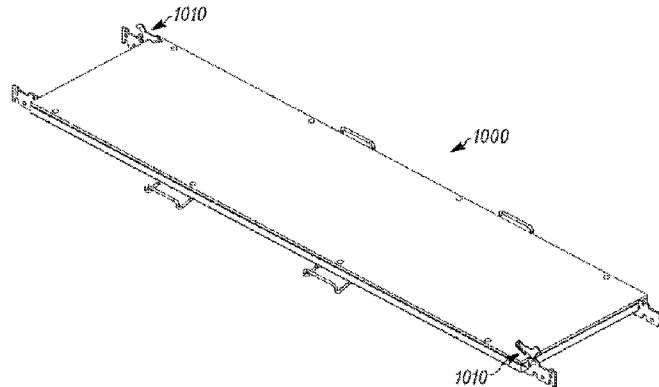




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 (54) Title: WORK PLATFORM SYSTEM INCLUDING SUSPENDED paneled PORTION AND METHOD OF
 IMPLEMENTING SAME



(57) **Abrégé/Abstract:**

A work platform system (860) for implementation in relation to a structure (100), as well as subsystems and components thereof and methods of implementation and use relating thereto, are disclosed herein. In at least one embodiment, the work platform system (860) includes a first pair of flexible elements and a second pair of flexible elements, where a respective first end of each of the flexible elements is coupled at least indirectly to a first support component (132) and a respective second end of each of the flexible elements is coupled at least indirectly to a second support component (134). The work platform system (860) can further include a plurality of panel structures supported upon the flexible elements, a suspension component, and a suspender structure coupled to at least one of the first pair of flexible elements and the second pair of flexible elements. The panel structures can include one or more support extension.

**WORK PLATFORM SYSTEM INCLUDING
SUSPENDED paneled PORTION AND
METHOD OF IMPLEMENTING SAME**

FIELD OF THE INVENTION

[0001] The present invention relates, generally, to the field of work platform systems that are erected to facilitate accessing various parts of various structures. More particularly, the present invention relates to work platform systems that are capable of being erected to extend lengthwise over significant distances between end regions, where the work platform systems further extend beneath at least some portions of the structures with respect to which the work platform systems are facilitating access.

BACKGROUND OF THE INVENTION

[0002] A number of types of work platform systems are available on the market for use in a variety of environments, circumstances, and projects including, for example, construction or maintenance projects. Whether a project is a public works project (e.g., low bid), or a private project, reducing costs and/or maintaining costs at reasonable levels are important considerations for the parties involved (e.g., contractors and/or the owner). One environment in which work platform systems are used is along and particularly beneath structures that extend significant distances lengthwise, such as bridges. Such work platform systems can be employed for various reasons including, for example, to allow workers to perform various maintenance procedures (such as inspecting, cleaning, painting, repairing, or refurbishing) or construction procedures with respect to the structures, particularly in relation to regions along or proximate underside regions of the structures such as along the undersides of bridges. Also, such work platform systems can serve to perform a shielding function in terms of limiting the extent to which debris arising from such maintenance or construction procedures or otherwise can fall to regions beneath the work platform systems.

[0003] Various conventional work platform systems exist that can be implemented in such environments, and these various work platform systems vary in a

number of their attributes. At least some such conventional work platform systems are catenary-based systems in which deck portions are mounted on wires that extend between end regions of the overall work platform systems, where the wires are further suspended at various intervals along the lengths of the wires by way of additional supports.

[0004] Although some such catenary-based systems can be relatively inexpensive to implement, at least some of these systems can be disadvantageous in certain respects. Among other things, one or more conventional catenary-based systems can be relatively difficult to erect or require conditions (e.g., lane closure) or expertise for proper implementation that are difficult to obtain or guarantee. Also, one or more conventional catenary-based systems are made of components that are limited in terms of lifespan or reusability, and/or employ components that lack sufficient durability or stability or are ergonomically undesirable for other reasons. Further, at least some such conventional systems provide walking surfaces that lack desired levels of flatness (e.g., the walking surfaces bend or experience excessive undulation).

[0005] For at least these reasons, therefore, it would be advantageous if a new or improved work platform system and/or method of use (e.g., in terms of installing the work platform system) could be developed that addressed one or more of the above-described concerns, and/or other concerns.

SUMMARY OF THE INVENTION

[0006] In at least some exemplary embodiments, the present invention relates to a work platform system for implementation in relation to a structure. The work platform system includes a first flexible element and a second flexible element, where a respective first end of each of the flexible elements is coupled at least indirectly to a first support component and a respective second end of each of the flexible elements is coupled at least indirectly to a second support component. The work platform system also includes a plurality of panel structures supported upon the flexible elements and substantially extending between the first flexible element and the second flexible element, wherein the panel structures are positioned in succession with one another so as to form a row of the panel structures extending along the flexible elements. Each of the panel structures includes a first pair of opposed edges each extending substantially parallel to the flexible

elements and a second pair of opposed edges each extending between the first pair of opposed edges. A first of the panel structures includes a first support extension extending outward away from a first one of the respective second pair of opposed edges of the first panel structure. Additionally, the first support extension of the first panel structure includes a first formation into which a second one of the respective second pair of opposed edges of a second of the panel structures is positioned, the first formation serving to at least partly limit movement of the second panel structure relative to the first panel structure.

[0007] Additionally, in at least some embodiments, the present invention relates to a work platform system for implementation in relation to a structure. The work platform system includes a first pair of flexible elements and a second pair of flexible elements, where a respective first end of each of the flexible elements is coupled at least indirectly to a first support component and a respective second end of each of the flexible elements is coupled at least indirectly to a second support component. The work platform system also includes a plurality of panel structures supported upon the flexible elements and substantially extending between the first pair of flexible elements and the second pair of flexible elements, where the panel structures are positioned in succession with one another so as to form a row of the panel structures extending along the flexible elements. Each of the panel structures includes a first pair of opposed edges each extending substantially parallel to the flexible elements and a second pair of opposed edges each extending between the first pair of opposed edges. A first of the panel structures includes a first support extension extending outward away from a first one of the respective second pair of opposed edges of the first panel structure. Additionally, the first support extension of the first panel structure includes a first formation into which a second one of the respective second pair of opposed edges of a second of the panel structures is positioned, the first formation serving to at least partly limit movement of the second panel structure relative to the first panel structure.

[0008] Additionally, in at least some embodiments, the present invention relates to a work platform system for implementation in relation to a structure. The work platform system includes a first pair of flexible elements, a second pair of flexible elements, and a third pair of flexible elements, where a respective first end of each of the

flexible elements is coupled at least indirectly to a first support component and a respective second end of each of the flexible elements is coupled at least indirectly to a second support component. The work platform system further includes a plurality of panel structures supported upon the flexible elements. Each of the panel structures includes a first pair of opposed edges each extending substantially parallel to the flexible elements and a second pair of opposed edges extending between the first pair of opposed edges. A first of the panel structures is supported upon at least one flexible element of the first and second pairs of flexible elements, substantially extending between the first and second pairs of flexible elements. A second of the panel structures is supported upon at least one flexible element of the second and third pairs of flexible elements, substantially extending between the second and third pairs of flexible elements. At least a first portion of the remaining plurality of panel structures are positioned in succession with the first panel structure and at least a second portion of the remaining plurality of panel structures are positioned in succession with the second panel structure, thereby forming two rows of panel structures extending along the flexible elements. The work platform system further includes a plurality of additional cover portions positioned between the two rows of panel structures and at least indirectly engaging both flexible elements of the second pair of flexible elements.

[0009] Further, in at least some embodiments, the present invention relates to a method of implementing a work platform system in relation to a structure. The method includes attaching a first pair of flexible elements and a second pair of flexible elements at least indirectly to a first support and a second support, respectively, and installing a first panel section onto the first and second pairs of flexible elements. The method also includes installing a second panel section onto the first and second pairs of flexible elements, where the installing of the second panel section includes placement of a second side edge of the second panel section into at least one support component extending outward from a first side edge of the first panel section and rotating the second panel section until the second panel is supported on the first and second pairs of wire extensions.

[0009a] According to an aspect of the present invention, there is provided a work platform system for implementation in relation to a structure, the work platform system comprising: a first flexible element and a second flexible element, wherein a respective first end of each of the flexible element is coupled at least indirectly to a first support component and a respective second end of each flexible element is coupled at least indirectly to a second support component; and a plurality of panel structures supported upon the flexible elements and substantially extending between the first and second flexible elements, wherein the panel structures are positioned in succession with one another so as to form a row of the panel structures extending along the flexible elements; wherein each of the panel structures includes a respective first pair of opposed edges each extending substantially parallel to the flexible elements and a respective second pair of opposed edges each extending between the respective first pair of opposed edges, wherein a first of the panel structures includes a first support extension extending outward away from a first one of the respective second pair of opposed edges of the first panel structure in a direction parallel or substantially parallel to the first pair of opposed edges of the first panel structure, wherein the first support extension of the first panel structure includes a first formation into which a second one of the respective second pair of opposed edges of a second of the panel structures is positioned, the first formation serving to at least partly limit movement of the second panel structure relative to the first panel structure, wherein the second panel structure includes a second support extension extending outward away from the second one of the respective second pair of opposed edges, and wherein the second support extension includes a second formation into which the first one of the respective second pair of opposed edges of the first panel structure is positioned, the second formation serving to at least partly limit movement of the second panel structure relative to the first panel structure.

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BRIEF DESCRIPTION OF THE DRAWINGS

[0010] FIG. 1 is a side elevation view of an example bridge on which an example work platform system has been partly implemented;

[0011] FIG. 2 is an enlarged detail view of a portion of the side elevation view of FIG. 1 that particularly shows, in addition to a portion of the example bridge shown in FIG. 1, a portion of a partly implemented suspended subsystem of the partly implemented work platform system of FIG. 1, in combination with a portion of a support subsystem of that partly implemented work platform system;

[0012] FIG. 3 is a top plan, partly cross-sectional view of the portion of the side elevation view of FIG. 1 shown in the detail view of FIG. 2, taken along line 3-3 of FIG. 2, except that in FIG. 3 the floor panels that are actually present in the support subsystem are not shown to be present, so as to reveal more clearly certain underlying structural support components of the support subsystem;

[0013] FIG. 3A is a detail view of a portion of the cross-sectional view of FIG. 3 showing a first pair of wire tendons included in the partly implemented support subsystem;

[0014] FIG. 4 is a top perspective view of an example hub employed in forming the support subsystem that is shown to be partly implemented in FIGS. 1-3;

[0015] FIG. 5 is a top perspective view of an example joist employed in forming the support subsystem that is shown to be partly implemented in FIGS. 1-3;

[0016] FIGS. 6A and 6B respectively show an exploded top perspective cutaway view and a top perspective cutaway view of an example interconnection between the hub and joist of FIGS. 4 and 5;

[0017] FIG. 7 is a top plan, partly cross-sectional view taken along line 7-7 of FIG. 12;

[0018] FIG. 7A is a detail view of a portion of the cross-sectional view of FIG. 7;

[0019] FIG. 7B is a further detail view of the portion of the partly-completed work platform system that is shown in FIG. 7A, but which shows that portion of the work platform system as it would be seen from underneath (rather than from above) the work platform system;

- [0020] FIG. 8A is a top plan view of an example panel section included in the partly completed work platform system as shown in FIG. 7;
- [0021] FIG. 8B is a top plan view of an alternative example panel section;
- [0022] FIG. 9 is a front side elevation view of the panel section of FIG. 8A;
- [0023] FIG. 9A is a cutaway view of an alternate embodiment of a wire tendon support extension that can be employed in a panel section such as the panel section of FIG. 9;
- [0024] FIG. 10 is a right end side elevation view of the panel section of FIG. 8A;
- [0025] FIGS. 11A, 11B, and 11C respectively show first, second, and third partially cutaway schematic views of the example panel section of FIGS. 8-10 along with an additional panel section of the same type in three different arrangements, respectively, so as to illustrate how panel sections of a given row of panel sections can be implemented in relation to one another;
- [0026] FIGS. 11D, 11E, 11F, and 11J show perspective views of alternative panel sections;
- [0027] FIG. 11G shows a cross-sectional view of two alternative panel sections of FIG. 11D in side-by-side relation;
- [0028] FIGS. 11H, 11K, 11L, and 11M show top plan views of alternative panel sections having features differing from the panel section of FIGS. 8-10;
- [0029] FIG. 11I shows a side elevation view of two alternative panel structures of FIG. 11H in side-by-side relation;
- [0030] FIGS. 11N, 11O, 11P, 11Q and 11R show alternative panel sections having gravity latches;
- [0031] FIGS. 11S, 11T, 11U illustrate further alternative panel sections having gravity latches;
- [0032] FIG. 12 is an additional enlarged detail view that shows both the same portion of the example bridge of FIG. 1 that is shown in FIG. 2 and also shows a portion of a partly completed work platform system, where the work platform system is the same work platform system as that of FIG. 2 except that the suspended subsystem of the work platform system is in a different, more advanced, state of partial implementation;

[0033] FIG. 13A is an exploded perspective side view of an example suspender structure included in the partly completed work platform system as shown in FIGS. 12, 7, 7A, and 7B;

[0034] FIG. 13B is a top plan view of the suspender structure shown in FIG. 13A, with certain portions of the suspender structure shown in phantom;

[0035] FIG. 14A is a side perspective view of an alternative suspender structure;

[0036] FIG. 14B shows a bolt assembly for use with the alternative suspender structure of FIG. 14;

[0037] FIG. 15 is a side elevation view of the example bridge of FIG. 1, along with the work platform system of FIG. 1 after the work platform system has been fully implemented in relation to the bridge;

[0038] FIG. 16 is a flow chart showing example steps of a process of implementation of the work platform system in relation to the bridge of FIGS. 1 and 15;

[0039] FIGS. 17A, 17B, 17C, and 17D respectively show side perspective, top plan, side elevation, and end elevation views of an example tendon retainer structure;

[0040] FIGS. 17E and 17F illustrate an alternative tendon retainer structure;

[0041] FIG. 18A is a perspective view of an example additional cover structure (or gap filler);

[0042] FIGS. 18B, 18C and 18D show an alternative additional cover structure;

[0043] FIGS. 18E and 18F show a further alternative additional cover structure;

[0044] FIGS. 18G and 18H show yet a further alternative additional cover structure;

[0045] FIGS. 18I, 18J, 18K, 18L, 18M and 18N show yet a further alternative additional cover structure using a tendon clip;

[0046] FIG. 19 is a perspective view of an example retainer bracket;

[0047] FIG. 20 is an exploded, perspective, partly cutaway view of the tendon retainer structure of FIGS. 17A-17D, the additional cover structure of FIG. 18A, the retainer bracket of FIG. 19, a bolt, and wire tendons in relation to one another;

[0048] FIG. 21 shows a panel section with a toe board frame and rail post;

- [0049] FIGS. 22A and 22B are side perspective views of an exemplary toe board frames;
- [0050] FIG. 23 is a side perspective view of an exemplary rail post mount;
- [0051] FIG. 24 is a side perspective view of an exemplary rail post secured in a rail post mount;
- [0052] FIG. 25 is a portion of an exemplary work platform system with installed toe boards and rail posts;
- [0053] FIG. 26 shows an alternative toe board frame;
- [0054] FIG. 27 shows an alternative toe board for use with the toe board frame of FIG. 26;
- [0055] FIGS. 28A and 28B illustrate an alternative rail post;
- [0056] FIG. 29 illustrates an exemplary work platform system similar to that shown in FIG. 25 using the alternative toe board frame, toe board and rail post of FIGS. 26, 27, 28A and 28B with a chain rail system installed; and
- [0057] FIG. 30 is a schematic illustration of a portion of an example suspended subsystem that is implemented in a nonlinear manner.

DETAILED DESCRIPTION

[0058] Referring to FIG. 1, a side elevation view is provided of a suspension bridge 100 in combination with a partly implemented (or partly installed) work platform system 110 that is being implemented in relation to the suspension bridge for the purpose of allowing one or more work operations to be performed by work personnel in relation to the suspension bridge. It should be appreciated that the suspension bridge 100 is merely one example of a structure in relation to which a work platform system such as the partly implemented work platform system 110 (or that work platform system when in a different state of implementation as discussed further below) can be implemented and utilized. That said, the present disclosure is intended to encompass work platform systems and implementations of work platform systems in relation to any of a variety of structures rather than merely suspension bridges. Thus, although FIG. 1 shows the suspension bridge 100, it should be appreciated that the present disclosure is intended to

encompass work platform systems and implementations of work platform systems in relation to a variety of other structures including, for example, other types of bridges such as arched bridges, buildings, towers, rigs (e.g., oil rigs), piers, conveyors, and other structures.

[0059] It is envisioned that at least some of the work platform systems disclosed herein are particularly suitable for use in relation to structures such as the suspension bridge 100, where it is desired that the work platform system extend significant distances along (and often underneath) the structure. To this end, the present disclosure particularly encompasses work platform systems that include both a respective support subsystem and a respective suspended subsystem that extends (and potentially extends significant distances) between portions of the support subsystem. In this regard, referring still to FIG. 1, it can be seen that the partly implemented work platform system 110, even when in the partly implemented state as shown, both includes a partly implemented suspended subsystem 120 as well as a support subsystem 130. As shown, the support subsystem 130 includes a first portion 132 and a second portion 134 that respectively are at opposite ends of the partly implemented suspended subsystem 120 and respectively supported upon respective towers 140 of the suspension bridge 100, with the partly suspended subsystem 120 extending between the portions 132 and 134 of the support subsystem 130.

[0060] It should be appreciated that, although FIG. 1 begins by showing the work platform system 110 in a partly implemented state, it will be apparent from additional description provided below as to how this work platform system (and particularly the suspended subsystem thereof) is further modified so as to include additional components and otherwise take on additional features so as to form a fully implemented work platform system as ultimately shown in FIG. 15. That is, although FIG. 1 (as well as FIGS. 2 and 3) shows an early stage of an implementation (installation) process of a work platform system in relation to the suspension bridge 100, during which the work platform system takes the form of the partly implemented work platform system 110, additional description provided below provides detail as to how the partly implemented work platform system 110 evolves into a fully implemented work platform system, which is ultimately shown in FIG. 15.

[0061] Referring additionally to FIG. 2, an enlarged detail view of a region or portion 150 of the side elevation view of FIG. 1 is provided, to show a portion of the suspension bridge 100 along with an assembly 200 of the first portion 132 of the support subsystem 130 and an additional portion of the partly implemented suspended subsystem 120 of the partly implemented work platform system 110. More particularly as shown in FIG. 2, in the present example in which the partly implemented work platform system 110 is being implemented in relation to the suspension bridge 100, the first portion 132 of the support subsystem 130 is implemented so as to be attached to and supported by a respective one of the towers (or piers) 140 of the bridge, with the partly implemented suspended subsystem 120 in turn being supported by that portion 132 of the support subsystem generally at a junction 225. Thus, in the detail view provided in FIG. 2, the first portion 132 of the support subsystem 130 is mounted on and supported by a first of the towers 140 of the bridge 100, albeit it should be understood (e.g., as shown in FIG. 1) that another substantially identical portion (the second portion 134) of the support subsystem is mounted on/supported by the other of the towers 140 (e.g., at another junction corresponding to the junction 225).

[0062] As discussed further in relation to FIG. 3, the first and second portions 132 and 134 of the support subsystem 130 are supported directly in relation to the towers 140 (e.g., by way of anchors as discussed below). However, in addition to such manner of support, as is evident from FIG. 2 (as well as from FIG. 1 upon close inspection), it should also be appreciated that in the present embodiment the first and second portions 132 and 134 of the support subsystem 130 are further supported by support chains 220. As shown, the support chains 220, which can be considered to constitute additional parts of the support subsystem 130, are connected to and extend downward from locations along a deck 222 of the suspension bridge 100 to locations along the main body of the support subsystem 130 (particularly to certain structural support components thereof, as discussed further below). The support chains 220 not only allow for suspension of the support subsystem 130 (particularly the main body of that support subsystem) in relation to the deck 222 of the suspension bridge 100, but also allow for implementation of the support subsystem 130 in relation to the suspension bridge. In particular, in the present embodiment it is envisioned that the support chains 220 are used to hoist the otherwise-

fully-assembled portions 132 and 134 of the support subsystem 130 upward and into place at appropriate vertical levels along the towers 140, where the portions 132 and 134 are then anchored into place in relation to the towers by way of anchors as discussed below.

[0063] Referring additionally to FIG. 3, a top plan, partly cross-sectional view taken along a line 3-3 of FIG. 2 is provided, to further show a portion of the suspension bridge 100 in relation to the assembly 200 of FIG. 2. FIG. 3 particularly illustrates features of the portions of the partly implemented work platform system 110 that are included within the assembly 200. In this regard, FIG. 3 shows the first portion 132 of the partly implemented support subsystem 130 as extending fully around the first of the towers 140 of the suspension bridge 100. It will be understood that, although not shown in FIG. 3, the second portion 134 of the support subsystem 130, which is provided on the other of the towers 140 of the suspension bridge, similarly extends fully around that tower in the present embodiment. Further, even though in the present embodiment the first portion 132 and second portion 134 respectively extend entirely around the respective towers 140 in relation to which those portions are respectively positioned and/or supported, in alternate embodiments the first portion and/or the second portion (or some other platform or platform portion) need not encircle the respective tower (or pier or other structure) but rather can simply be positioned along and/or supported in relation a single side or a single region or portion of the respective tower (or pier or other structure).

[0064] Further, the partly implemented suspended subsystem 120 in the present embodiment is shown to include multiple pairs of flexible elements 230, such as, for example, wire tendons in the embodiment shown. More particularly, the pairs of wire tendons 230 in the present embodiment include first, second, third, fourth, fifth, sixth, seventh, eighth, and ninth pairs of wire tendons 301, 302, 303, 304, 305, 306, 307, 308, and 309, respectively. A portion of the first pair of wire tendons 301 is shown in an additional detail view provided as FIG. 3A to particularly illustrate that, although pairs of wire tendons are not visible in FIG. 3, each of the pairs of wire tendons 230 does nevertheless include two distinct wire tendons, which run side-by-side along with one another (that is, the two wire tendons at corresponding positions along their respective

lengths are at substantially the same vertical levels, as measured relative to the ground or some similar vertical or substantially vertical reference). Also, in the present embodiment, each of the wire tendons of each pair of the wire tendons is a 7/16 inch diameter wire tendon, although in other embodiments other sizes of wire tendons (e.g., 5/8 inch diameter wire tendons) can be used, with different sizes of wire tendons particularly being selected to provide desired load capacity.

[0065] It should be appreciated that pairs of flexible elements (e.g., wire tendons) in the present embodiment can be considered "paired" particularly in the sense that the support role played by each given tendon of the pair, in terms of supporting other structures upon it (e.g., a particular side edge of a panel section such as one of the panel sections 750 discussed below) is also performed equally or substantially equally by the other wire tendon of the pair, such that the other wire tendon plays a substantially redundant or auxiliary support role relative to the given wire tendon of the pair (and vice-versa). Through the use of pairs of redundant wire tendons, support can still be achieved for the suspended subsystem 120 even in circumstances where one of the wire tendons ceases to provide its intended support role.

[0066] Further with respect to the pairing of wire tendons, it should be noted that the mere presence of two wire tendons in support roles in a given suspended subsystem does not necessarily make those two wire tendons "paired" if the support roles provided by each respective wire tendon fail to be shared or overlap to a significant degree or if the support role being provided by the two wire tendons lacks any substantial qualitative similarity. For example, it would be appropriate to consider two wire tendons to be paired if both of the wire tendons support at least one component in the same or a substantially same manner (e.g., where each of two wire tendons supports the same edge of a panel section such as one of the panel sections 750 discussed below). This could be true even if the two wire tendons do not provide equal amounts of support (e.g., where one of the tendons bears 60% of the burden and the other bears 40% of the burden). Alternatively, also for example, it would not be appropriate to consider two wire tendons to be paired in a circumstance where a given one of the wire tendons supported a first side edge of a panel section but the other wire tendon supported a second opposite side edge of that panel section, and where the wire tendons otherwise did not share or

substantially share any other support role (e.g., share some other support role with respect to some other component).

[0067] Notwithstanding the above description, it should be understood that the present disclosure is also intended to encompass numerous other embodiments employing numerous other arrangements of wire tendons. For example, in some alternate embodiments, the wire tendons of a given pair need not be arranged side-by-side (need not share common vertical levels along their lengths) but rather can be arranged above or below one another or in some other manner. Also for example, in some other embodiments, instead of employing pairs of wire tendons, single wire tendons can be employed independently (that is, employed to perform a support role that is not shared or substantially shared by any other redundant wire tendon or tendons), or groups of more than two wire tendons that are paired with one another (that is, paired in the sense described above, in terms of a shared or substantially shared support role) can be employed. Also, depending upon the embodiment, a given arrangement of paired (or independent) wire tendons can be employed repeatedly throughout the suspended subsystem in a consistent manner, as is the case with the partly implemented suspended subsystem 120 of FIG. 3, or alternatively differing numbers of paired (or independent) wire tendons can be employed in a varying manner at different locations in a given suspended subsystem.

[0068] As for the first portion 132 of the support subsystem 130, FIG. 3 particularly shows that first portion of the support subsystem 130 with floor panels and suspension chains removed so as to more clearly reveal several structural support components of that first portion 132 that together form a "skeleton" of that first portion. Such floor panels (upon which work personnel and/or tools or machinery or other items can be supported and move or be moved) and suspension chains (which assist in supporting the first portion 132 relative to the suspension bridge 100) are shown elsewhere in FIGS. 2, 7, and 12, with FIG. 7 particularly illustrating the floor panels. That said, as shown in FIG. 3, in the present embodiment the structural support components (that is, the "skeleton") of the first portion 132 of the support subsystem 130 particularly include a plurality of anchors 300, a plurality of hubs 310, and a plurality of joists 330, where the hubs 310 are connected with one another by way of the joists 330.

It will be appreciated from FIG. 3 that the anchors 300 particularly to anchor or support the remainder of the support subsystem 130 in relation to the tower 140, where there is a respective anchor positioned respectively between the tower 140 and each respective hub 310. The anchors 300 can take a variety of forms including, for example, expansion anchors (where bolting to the tower 140 takes place) or chemical anchors (e.g., involving glue).

[0069] Referring to FIGS. 4 and 5, there is illustrated in more detail an example of one of the hubs 310, as well as one of the hubs 310 in connection with an example of one of the joists 330. A joist such as the joist 330 can be considered any elongate structural member adapted for bearing or supporting a load, such as a bar joist, truss, shaped-steel (i.e., I-beam, C-beam, etc.), or the like. By contrast, a hub such as the hub 310 is an interconnection structure, such as a node, hinge, pivot, post, column, center, shaft, spindle, or the like. In the present example, the hub 310 of FIG. 4 (and, indeed, each of the hubs 310 of FIG. 3) is configured so that, when attached to one of the joists 330 as shown in FIG. 5, the hub 310 is capable of articulation relative to the joist 330 (and vice-versa). Articulation, as used herein, is defined as the capability to swing, and/or rotate, about a pivot point or axis. This articulation feature among other things allows for less manpower to readily assemble and disassemble components of the system in, or near, the desired finished position.

[0070] Further as shown in FIGS. 4 and 5, the hub 310 includes a top element 311 and a bottom element 312 spaced at distal ends of a middle section 315. The top element 311 and bottom element 312 can be substantially planar in configuration, as well as parallel to each other. The top element 311 and bottom element 312, in the embodiment shown, are substantially planar surfaces that are octagonal in shape (as viewed from a plan view). The middle section 315 can be a cylindrical section where a longitudinal axis of the middle section 315 is normal to the planes of the top element 311 and bottom element 312. In the embodiment shown, the middle section 315 is a right circular cylinder. In FIG. 4, a lower portion of the middle section 315 is removed for clarity (at a location 323) to reveal that the middle section 315 is hollow. Further as shown in FIG. 4, there are a plurality of openings 313, 314 extending through both the top element 311 and bottom element 312, respectively. The plurality of openings 313 (e.g., 313A, 313B,

313C, 313D, 313E, 313F, 313G, 313H) are interspersed on the top element 311 so as to offer various locations for connecting to one or more of the joists 330 (see, e.g., FIG. 5). The plurality of openings 314 (e.g., 314A, 314B, 314C, 314D, 314E, 314F, 314G, 314H) are similarly spaced on the bottom element 312 so that respective pairs of the openings 313 and 314 (e.g., 313A and 314A) are coaxial.

[0071] It should particularly be appreciated that, in the present embodiment, the wire tendons 230 of the partly implemented suspended subsystem 120 can also be coupled to the support subsystem 130 by coupling those wire tendons to respective ones of the openings 313 (or 314) of the appropriate ones of the hubs 310. In the present embodiments, these connection locations generally constitute the junction 225 mentioned above in relation to FIG. 2. The actual mechanism by which coupling takes place can vary depending upon the embodiment. For example, in some embodiments, the wire tendons 230 can have looped ends, and then additional loop structures, C-bracket structures, clasping structures, or hook-type components are provided so as to extend through both the respective looped ends of respective ones of the wire tendons 230 and corresponding ones of the openings 313 (or 314) of the hubs 310 so as to achieve attachment. In other embodiments, any of a variety of other connective, clasping, locking, or fastening mechanisms or brackets can be employed to achieve attachment of the wire tendons 230 (and ultimately the fully completed suspended subsystem) to the support subsystem 130 at the junction 225, and such structures can be supplemented by additional structures that facilitate a clean transition between the floor panels of the support subsystem and the corresponding floor panels of the suspended subsystem.

[0072] Also as shown, at the center of the top element 311 is a center opening 316, which is configured to be able to receive a linkage or suspension connector by which the hub 310 can be suspended from another structure, such as from a deck 222 (see FIG. 2) of the suspension bridge 100. The center opening 316 can be generally cruciform in configuration with a center opening area 319 and four slots 317 (e.g., 317A, 317B, 317C, 317D) extending therefrom. Transverse to each of the four slots 317A, 317B, 317C, 317D, and interconnected thereto, are also a series of cross slots 318A, 318B, 318C, 318D. For added strength a reinforcing plate 320 is added to the underside of the top element 311, where openings on the reinforcing plate 320 correspond to (and are

generally coextensive with) the center opening 316 configuration and all the ancillary openings thereto (e.g., the slots and area 317, 318, 319). A handle 322 is optionally added to a side of the middle section 315. Although not visible in FIGS. 4 and 5, it should be appreciated that an identical (center) opening is formed on the bottom element 312, and the bottom element along its top side can likewise include a reinforcing plate with the same opening. Also not shown, attached to the reinforcing plate along the bottom element 312 and the interior face of the middle section 315 can be a plurality of gussets that provide added support to the hub 310.

[0073] In addition to FIG. 5 depicting a top perspective view of the interconnection between a single one of the hubs 310 and a single one of the joists 330, further FIGS. 6A and 6B show an exploded top perspective cutaway view, and a regular (unexploded) top perspective cutaway view, respectively, of a typical connection between the hub 310 and joist 330. As shown, the joist 330 includes an upper element 332 and a bottom element 333. Interspersed between the elements 332, 333 are a plurality of diagonal support members 338. Each of the elements 332, 333 is made of two L-shaped pieces of angle iron 339A, 339B. The elements 332, 333 typically can be identical in construction, with the exception being that the upper element 332 includes connector holes 354A, 354B at its midspan. The joist 330 includes a first end 331A and a second end 331B. At each of the ends 331A, 331B of both the upper element 332 and bottom element 333, there extends an upper connecting flange 335 and a lower connecting flange 336. Additionally, through each of the upper and lower connecting flanges 335, 336, there are connecting holes 337.

[0074] Thus, given the above description, it should be appreciated that there are four upper connecting flanges 335A, 335B, 335C, 335D and four lower connecting flanges 336A, 336B, 336C, 336D, as well as four connecting holes 337A, 337B, 337C, and 337D, on the joist 330. Accordingly, at the first end 331A, extending from the upper element 332, is an upper connecting flange 335A and lower connecting flange 336A, with a connecting hole 337A therethrough (see both FIG. 5 and FIG. 6A). Similarly, at the second end 331B of the upper element 332, there extends an upper connecting flange 335B and lower connecting flange 336B, with a connecting hole 337B therethrough. Also, at the first end 331A of the lower element 333 there extends an upper connecting

flange 335D and lower connecting flange 336D. Through these connecting flanges 335D, 336D are a connecting hole 337D. Further at the second end 331B of the joist 330 extending from the lower element 333 is an upper connecting flange 335C and lower connecting flange 336C with a connecting hole 337C therethrough. In addition to the respective connecting holes 337A, 337B, 337C, 337D, each of the connecting flanges 335A, 335B, 335C, and 335D additionally includes a respective additional locking hole 360A, 360B, 360C, 360D, respectively, all of which are located inwardly of the respective connecting holes (that is, axially toward the center of the joist 330 relative to the connecting holes).

[0075] Further as shown in FIGS. 6A and 6B, pins 340A can be placed through the connecting holes 337 of the connecting flanges 335, 336 at each of the first end 331A and second end 331B of the joist 330 and further through any two corresponding ones of the openings 313, 314 of the hub 310. FIGS. 6A and 6B particularly show one of the pins 340A employed at the first end 331A, it being understood that the same or substantially same arrangement can be present at the end 331B. In this manner, the joist 330 can be connected in a virtually limitless number of ways, and angles, to the hub 310. For example, as shown particularly in FIGS. 6A and 6B, one of the pins 340A can be placed in through the connecting flange 335A, through the opening 313A, through the connecting flange 336A (all at the first end 331A of the upper element 332), through the connecting flange 335D, through the opening 314A, and then through the connecting flange 336D. In this scenario, the pin 340A further threads through connecting holes 337A and 337D.

[0076] Also as shown (particularly see FIGS. 6A and 6B), each of the pins 340A additionally includes two roll pins 342 at its upper end. The lower of the two roll pins 342 acts as a stop, thereby preventing the pin 340A from slipping all the way through the joist 330 and hub 310. The upper roll pin 342 acts as a finger hold to allow easy purchase and removal of the pin 340A from the joist 330 and hub 310. The design of these various parts is such that free rotation of both the joist 330 and hub 310 is allowed, even while the joist 330 and hub 310 are connected together. Rotational arrows R_1 of FIGS. 5 and 6B show the rotation of the joist 330 relative to the hub 310, while rotational arrows R_2 show the rotation of the hub 310 relative to the joist 330 of FIGS. 5 and 6B. These

rotational capabilities of the joist 330 and hub 310 relative to one another provide, in part, the articulating capability of the present design.

[0077] Although articulation of the joist 330 and hub 310 relative to one another can occur in some embodiments or operational circumstances, in other embodiments or circumstances such articulation is precluded. In particular, articulation is typically precluded when the work platform system is fully implemented, or even when the structural support components of the partly implemented support subsystem 130 are installed as shown in FIG. 3. To preclude such articulation, as shown in FIGS. 6A and 6B, optional locking pins 340B (one of which is shown) are installed in relation to the interfacing hubs 310 and joists 330. More particularly as shown, locking of the hub 310 and joist 330 of FIGS. 6A and 6B, so as to prevent relative articulation, is achieved by adding the locking pin 340B through the locking holes 360A and 360D proximate the end 331A of the joist 330. The locking pin 340B particularly operates to preclude such articulation (at least in part) due to contact with the hub 310 along two of several grooves (or slots/dimples) 324 formed along the perimeters of the upper element 311 and lower element 312 of the hub 310. Because the locking pin 340B extends through two of the grooves 324, the locking pin effectively is prevented from moving around the perimeters of the upper and lower elements 311, 312 and correspondingly prevents such movement of the joist 330 relative to the hub 310.

[0078] As with the pin 340A, the locking pin 340B can include additional two roll pins 342 as shown, which serve the same purposes as discussed above with respect to the roll pins provided on the pin 340A. Although not shown in FIGS. 6A and 6B, it should be likewise understood that another of the locking pins 340B can similarly be added through the locking holes 360B and 360C proximate the end 331B (see FIG. 5) of the joist 330 when that end is connected to another one of the hubs 310 by another of the pins 340A.

[0079] It should be appreciated that, in the present embodiment the support subsystem 130 employs components and features according to the QuikDeck™ suspended access system available from Safway Services, LLC of Waukesha, Wisconsin, the beneficial assignee of the present patent application. As already discussed, and as further discussed below, these components of the support subsystem 130 among other

things include the anchors 300, hubs 310, and joists 330 and related subcomponents discussed above as well as the floor panels 732 and support chains 220 further discussed below. Nevertheless, it should also be appreciated that a variety of other support subsystems and support subsystem components can also or instead be utilized depending upon the embodiment or circumstance, and such other support subsystems and associated components are also intended to be encompassed herein.

[0080] Among other things, the present disclosure is particularly also intended to encompass support subsystems that employ other component(s) such as any of those described in U.S. Patent No. 7,779,599 entitled "Articulating Work Platform Support System, Work Platform System, and Methods of Use Thereof", issued on August 24, 2010 (said issued patent being assigned to a common assignee with the present patent application). Also, for example, notwithstanding the above description of the hubs 310, joists 330, and associated components shown in FIGS. 4, 5, 6A, and 6B, it should be appreciated that these components are only example components that can be employed among the components forming the underlying/internal structural support components (or "skeleton") of the support subsystem 130 and that other structural support components can be employed in other embodiments. Further for example, depending upon the embodiment, the support subsystem 130 can include a variety of other components in addition to, and/or instead of, the anchors, hubs, joists, floor panels, and support chains already discussed above.

[0081] Additionally for example, depending upon the embodiment, various differently-shaped components can be utilized. For example, while joists such as the joist 330 can be bar joists, the joists can also be open-web joists and/or structural tubing. Further for example, one or more of the joists 330 can be made of multiple pieces of structural tubing shapes, or the joists 330 can be one single structural tubing shape. Similarly, the joist 330 could be made of shaped steel (e.g., wide flange elements, narrow flange members, etc.), or other suitable shapes and materials. Also, additionally other types of joists that are curved rather than linear (straight) can be employed, as can other types of panel portions and supports for such panel portions. Further, although in the present embodiment it is envisioned that the first and second portions 132 and 134 of the support subsystem 130 (including all hubs, joists, anchors, floor panels, and support

chains thereof) will be fully assembled and installed in relation to the towers 140 prior to any portions of the suspended subsystem (e.g., the partly implemented subsystem 120) being implemented, in alternate embodiments it is possible that portions of the support subsystem 130 will be implemented contemporaneously with, or subsequent to, implementation of the suspended subsystem.

[0082] Turning now to FIG. 7, a top plan, partly cross-sectional view of an assembly 700 of portions of a further implemented work platform system 710 corresponding to (that is, portions of the system which would be positioned in) the region 150 of FIG. 1 is shown. The particular view provided by FIG. 7 is one taken along line 7-7 of FIG. 12, which as discussed further below shows an additional enlarged detail view of a side elevation view of the assembly 700 in combination with portions of the suspension bridge 100 corresponding to the region 150 of FIG. 1. The further implemented work platform 710 should be understood particularly to be the partly implemented work platform system 110 of FIGS. 1-3 as further modified to include additional components. In particular, the portions of the further implemented work platform system 710 shown in FIG. 7 include both the support subsystem 130 discussed above as well as portions of a further implemented suspended subsystem 720, which is the partly implemented suspended subsystem 120 after being modified to include additional components.

[0083] Although the support system 130 appears somewhat different in FIG. 7 by comparison with FIG. 3, this is merely because FIG. 7 now shows panel sections 732 that are supported upon the hubs 310 and joists 330 (the "skeleton") of the support structure that were shown and discussed in relation to FIG. 3. As already mentioned above, the panel sections 732 effectively provide a floor upon which work personnel can walk and on which equipment and components can be transported and supported. Notwithstanding this difference in appearance, it should nevertheless be understood that the support subsystem 130 of FIG. 7 is the same as that shown in FIG. 3, as well as the same as that shown in FIGS. 2 and 12, and thus particularly includes all of the hubs 310, joists 330, and anchors 300 shown in FIG. 3 as well as the panel sections 732 and the support chains 220 shown and discussed in relation to FIGS. 2 and 12. It should additionally be understood that, although the support subsystem 130 is considered to be a fully

implemented or installed support structure for the present embodiment, in other embodiments additional components not shown in FIG. 7 (or in FIGS. 2, 3, or 12), such as railings, can still be added to the support subsystem 130 and that the support subsystem would only be complete after such additional components are implemented.

[0084] With respect to the further implemented suspended subsystem 720, as shown in FIG. 3 this suspended subsystem differs from the partly implemented suspended subsystem 120 of FIG. 3 particularly insofar as the subsystem 720 includes multiple panel sections 750 that have been installed so as to be supported upon the various pairs of wire tendons 230. More particularly as shown, given the presence of the nine pairs of wire tendons 230 (that is the pairs of wire tendons 301, 302, 303, 304, 305, 306, 307, 308, and 309), there are shown to be eight partly completed rows of the panel sections 750, namely, first, second, third, fourth, fifth, sixth, seventh, and eighth rows 751, 752, 753, 754, 755, 756, 757, and 758, where each respective one of the rows (e.g., 751, 752, etc.) is supported upon a corresponding pair of successive ones of the pairs of the wire tendons 230 (e.g., the pairs 301 and 302, the pairs 302 and 303, etc.). It should be appreciated that the actual number of rows of panel sections 750, as well as the actual number of pairs of wire tendons 230, can vary depending upon the embodiment. For example, in some other embodiments, there is only a single row of the panel sections 750 positioned on and between two pairs of the wire tendons 230, while in other embodiments, there can be more than or less than eight rows of panel sections and more than or less than nine pairs of wire tendons.

[0085] Turning now to FIGS. 8A, 9, and 10, a top plan view, side elevation view, and right end side elevation view of an example one of the panel sections 750 of FIG. 3 are respectively shown. For example, FIGS. 8A, 9, and 10 can be considered to show a panel section 765 shown in FIG. 3, which is the rightmost panel section of the sixth row 756 of panel sections, and which can be considered identical to each of the other panel sections 750 shown in FIG. 3. As illustrated, the panel section 765 is generally in the shape of an elongated rectangle, and in the present embodiment has a width dimension 759 of 92 inches (or about eight feet) and a length dimension 761 of 24 inches (two feet). For purposes of the present discussion, the width dimension 759 corresponds substantially to the distance between neighboring ones of the pairs of wire tendons,

between which the panel section 765 extends, and the length dimension 761 by contrast corresponds to the length of the panel section 765 along the wire tendons (albeit in other embodiments length and width dimensions can be defined differently).

[0086] In other embodiments, these dimensions of any one or more of the panel sections that are employed in a given suspended subsystem can vary from those shown with respect to the panel section 765. For example, in another embodiment, the panel section can be approximately eight feet long by one foot wide. Indeed, the panel section need not be an elongated rectangle but also could be another shape, such as that of a square. Additionally, although not shown in FIG. 7, in some embodiments different panel sections having different sizes (and/or shapes) can be implemented in the same work platform system. For example, certain of the panel sections can have the two feet by eight feet dimensions stated above, and others of the panel sections in the same work platform system can have one foot by eight feet dimensions. Through the use of panel sections of varying dimensions (e.g., different length and/or width dimensions), a variety of practical issues associated with the implementation of the work platform system can be conveniently addressed. For example, if one or more obstacles (e.g., a pipe jutting beneath the deck 22) precludes the implementation of one of the panel sections 750 along one of the rows of panel sections, it can still potentially be possible for a panel section of a different size to be implemented instead.

[0087] As an example, the panel section 765 particularly includes a top panel surface 763 having dimensions that are equal to the previously-mentioned width and length dimensions 759 and 761 of the overall panel section 765, and that is the surface upon which work personnel can walk. In the present embodiment, the top panel surface 763 is made of wood (e.g., plywood). Use of wood as the top panel surface 763 can be particularly advantageous in that surface provides better traction even during conditions where moisture exists on the surface (e.g., during a rainstorm) than if other materials such as sheet metal were used. Nevertheless, the particular material employed to form the top panel surface 763 can vary depending upon the embodiment.

[0088] Further with respect to the panel section 765, the top panel surface 763 is mounted upon steel tubes or struts 760, which are shown in each of FIGS. 8A, 8B, 9, and 10 (the struts are shown in phantom particularly in FIGS. 8A and 8B), and which form a

support structure or "skeleton" underlying the panel surface 763. Additionally as shown, the struts 760 particularly include a pair of side struts 762, a pair of end struts 764, and a supporting strut(s) 766. The side struts 762 and end struts 764 effectively form a loop that follows along the perimeter of the panel surface 763, with the side struts 762 extending the full length of the width dimension 759 and the end struts 764 extending the full width of the length dimension 761. The supporting strut(s) 766 is positioned underneath the panel surface 763 so as to extend between the two side struts 762.

[0089] As shown in FIG. 8A, the struts 760 forming the underlying support structure (i.e., side struts 762, end struts 764 and supporting struts 766) can have the same shape, thickness and inner and outer dimensions. In other embodiments, struts 760 can have different shapes, thicknesses, and outer and inner dimensions. For example, in one embodiment, the side struts 762 and end struts 764 can be square tubular steel while supporting struts 766 can be rectangular tubular steel.

[0090] In the embodiment shown in FIG. 8A, the panel section 765 contains a single supporting strut 766 positioned midway between the end struts 764. In the embodiment shown in FIG. 8B, the panel section 765 contains two supporting struts 766 evenly positioned between end struts 764. As illustrated through FIGS. 8A and 8B, more or fewer supporting struts 766 can be used to support the panel surface 763, and the number and positioning of supporting struts 766 can depend on the material, weight, strength and/or thickness of panel surface 763. For example, in one embodiment, a single supporting strut 766 can be used with a panel surface 763 having a 1/2-inch thickness, while two supporting struts 766 can be required with a panel surface 763 having a 3/8-inch thickness.

[0091] In addition to the top panel surface 763 and the struts 760, the panel section 765 additionally includes several support components that extend outward from the struts 760 and allow for the mounting of the panel section 765 in relation to the wire tendons 230 and also in relation to other ones of the panel structures 750 as shown in FIG. 7 (e.g., so as to form the rows of panel sections). More particularly as shown, these support components include four wire tendon support extensions 770 as well as four handle support extensions 780, all of which extend outward beyond the confines of either the width and length dimensions 759 and 761 mentioned above. As shown, the wire

tendon support extensions 770 particularly extend outward away from the end struts 764, that is, outward along directions that are parallel or substantially parallel to the width dimension 759. Two of the wire tendon support extensions 770 extend outward generally at opposite ends of one of the side struts 762, and the other two of the wire tendon support extensions 770 extend outward generally at opposite ends of the other of the side struts 762. By contrast, the handle support extensions 780 extend outward from the side struts 762 in directions parallel or substantially parallel to the length dimension 761, and are all positioned at locations well inward of the end struts 764.

[0092] As is evident from FIGS. 8A and 8B, the wire tendon support extensions 770 include small bends 774 such that outer portions 776 of the extensions 770 are shifted slightly relative to inner portions 778 by which the extensions 770 are affixed to the end struts 764. More particularly, in the present embodiment, each of the wire tendon support extensions 770 extending from a first one of the end struts 764 (e.g., the right end strut shown in FIG. 8A) has a respective outer portion 776 that is offset or shifted in a first direction along the length dimension 761, and each of the wire tendon support extensions 770 extending from the other one of the end struts 764 (e.g., the left end strut shown in FIG. 8A) has a respective outer portion 776 that is offset or shifted in a direction opposite that of the first direction. Such oppositely-directed offsets (or "joggles") of the outer portions 776 that are at opposite ends of the panel section 765 are complementary so as to make it possible for two of the panel sections 750 in neighboring ones of the rows (e.g., two panel sections that are respectively positioned, side by side, in the rows 756 and 757 of FIG. 7) to be supported upon a shared pair of the wire tendons 230 (e.g., by the pair of wire tendons 307) and also to be aligned such that the corresponding side struts 762 of each of the panels sections are exactly aligned with one another. Thus, in FIG. 7, the rows 751, 752, 753, 754, 755, 756, 757, and 758 of the panel sections 750 are shown to be completely aligned with one another.

[0093] Further as illustrated, particularly in FIG. 9, each of the wire tendon support extensions 770 and particularly the outer portions 776 thereof includes a pair of indentations 772 that extend upward from a bottom ridge of those portions. It is by virtue of these indentations 772 that the outer portions 776 of the wire tendon support extensions 770 can be slipped over and onto the two pairs of wire tendons 230 between

which the panel 750 is to be positioned. Thus, for example, continuing to assume that the panel section 750 of FIGS. 8A, 8B, 9, and 10 is the panel section 765 of FIG. 7 that is the rightmost one of the panel sections of the sixth row of panel sections 756, then the indentations 772 of the leftward one of the outer portions 776 shown in FIG. 9 can be considered to be the indentations that receive (slip over) the pair of wire tendons 307, and the indentations 772 of the rightward one of the outer portions 776 shown in FIG. 9 can be considered to be the indentations that receive (slip over) the pair of wire tendons 306.

[0094] In addition to the above features, it will be observed from FIG. 9 that in the present embodiment each of the wire tendon support extensions 770 also includes an orifice or notch 781, positioned generally in between the indentations 772 of the respective wire tendon support extension. By virtue of the presence of the orifices 781 of the wire tendon support extensions, in some embodiments, additional structures such as guard rail posts or wires or other structures (not shown) can be affixed to the wire tendon support extensions and thus to the remainder of the suspended subsystem.

[0095] Notwithstanding the above discussion concerning the wire tendon support extensions 770, it should be appreciated that those extensions (or similar structures employed to allow the panel sections 750 to be supported upon flexible support elements such as the wire tendons 230) can take on different forms in other embodiments. For example, in some alternate embodiments, the wire tendon support extensions do not have any offsets (or "joggles"). That is, in such embodiments, the wire tendon support extensions are straight such that the inner and outer ends (that is, the portions of the wire tendon support extension corresponding to the inner and outer portions 778 and 776 discussed above) are aligned. The offsets (or "joggles") need not be employed in all embodiments, since the thickness of the wire tendon support extensions can be small, and since there is not always any particular need that panel sections provided in rows on opposite sides of a given pair of wire tendons be fully aligned (that is, so that the side struts 762 of panel sections in different rows are lined up).

[0096] Further in some alternate embodiments one or more subfeatures of one or more the wire tendon support extensions can take a form different than those discussed above with respect to FIGS. 8A, 8B, 9, and 10. For example, in one alternate embodiment, one or more of the wire tendons support extensions of a panel section can

take the form of a wire tendon support extension 770A shown in FIG. 9A, which for comparison purposes is shown to correspond to a portion of one of the wire tendon support extensions 770 of FIG. 9. In this example, rather than having the two indentations 772 that are identical in shape, instead the wire tendon support extension 770A has a first indentation 772A and a second indentation 772B that are somewhat different in shape, with the second indentation 772B identical or substantially identical to the indentations 772 of FIG. 9 but the first indentation 772A having an additional cutout region 783A expanding the indentation beyond the size and shape of the indentations 772 of FIG. 9. The expanded size of the first indentation 772A with the additional cutout region 783A allows, in at least some embodiments, easier mounting of the wire tendon support extension 770A onto pairs of wire tendons such as the wire tendons 230. Also it can be noted that, in the alternate embodiment of FIG. 9A, the wire tendon support extension 770A includes an orifice 781A corresponding to the orifice 781 of one of the wire tendon support extensions 770 of FIG. 9 except insofar as the orifice 781A is positioned lower and closer to the second indentation 772B than to the first indentation 772A (at least when compared to the uppermost tips of the two indentations) to accommodate the presence of the additional cutout region 783A of the first indentation 772A. Notwithstanding the above description concerning FIGS. 9 and 9A, it should be understood that the wire tendon support extensions can be modified in other manners as well. For example, in some additional embodiments, additional holes (e.g. in addition to the orifice 781 or orifice 781A can be added to facilitate fixturing and/or for use on scaffold arrangements of other sizes).

[0097] Referring still to FIGS. 8A, 8B, 9, and 10, the handle support extensions 780 take a different structural form than the wire tendon support extensions 770 insofar as each of the extensions 780 is a looping structure that extends outward away from one of the side struts 762 (outward away from the top panel surface 763), then extends sideways generally parallel to the side struts so as to form a respective intermediate handle portion 779, and then loops back so as to connect up again with the respective side strut from which it originally extended (at a different location along that side strut). In this sense, each of the handle support extensions 780 is a U-shaped extension. Further as evident from FIG. 10, when the panel section 765 is viewed from the right end side (or

the left end side), it becomes apparent that each of the handle support extensions 780 not only is U-shaped but also has an L-shaped characteristic. More particularly as shown, each of the handle support extensions 780 juts outward from the respective side strut 762 on which it is mounted, in a generally horizontal manner (that is, parallel to the top panel surface 763), but then extends further to include a hook-like formation 785, at which the respective handle support extension first dips down (that is, away from the top panel surface) slightly and then curves back upward (that is, toward the plane of the top panel surface) to a location at which the intermediate handle portion 779 of the extension is formed. In the present embodiment, the respective intermediate handle portions 779 of the respective handle support extensions 780 are at respective locations that are substantially higher than the respective locations at which the respective handle support extension 780 first extend horizontally outward.

[0098] The particular hook-shaped configuration of the handle support extensions 780 of each of the panel sections 750 such as the panel section 765 serves several purposes. To begin, shape of the handle support extensions 780 allows those extensions to serve as handles by which work personnel (or other installation equipment) can grasp and support (and thus lift and move) the panel sections 750 during implementation of the work platform system. Additionally, the shape and positioning of the handle support extensions 780 (as discussed further below) allows for adjoining ones of the panel sections 750 in any given row of the panel sections to be easily positioned in relation to one another and ultimately interlocked with one another. Indeed, due to this interlocking of panel section sections of a given row afforded by the handle support extensions 780, in combination with the weight of the panel sections themselves, the panel sections 750 in the present embodiment can generally be supported and mounted onto the pairs of wire tendons 230 (with the indentations 772 receiving the pairs of wire tendons) without any additional securing mechanisms that would tend to preclude lifting of the panel sections off of the wire tendons. That is, the panel sections 750, once in place, are not positively locked to the wire tendons but merely remain in place relative to those tendons because of their weight and their interconnections with neighboring panel sections. That said, it should also be appreciated that, in alternate embodiments, the panel sections 750 can

include other features by which the panel sections are positively locked or secured to the pairs of wire tendons on which those panel sections are supported.

[0099] Further in regard to the installation and interlocking of the panel sections 750 such as the panel section 765, FIGS. 11A, 11B, and 11C respectively provide first, second, and third partially cutaway schematic views of an additional panel section 791 (which is of the same type as each of the panel sections 750) being installed in relation to the panel section 765 that has already been positioned onto the wire tendons 230 (e.g., on to the sixth and seventh pairs 306 and 307 of the wire tendons), so that the additional panel section 791 likewise is positioned onto and supported by those wire tendons. More particularly, each of FIGS. 11A, 11B, and 11C is a cross-sectional view that is taken through both of the panel sections 765 and 791, along a line that corresponds to a line 11-11 shown in FIG. 8 with respect to the panel section 765, where as shown in FIG. 8 the line 11-11 cuts through one of the handle support extensions 780 of the panel section 765 that is along that one of the side struts 762 of that panel section adjacent to which the additional panel structure 791 is to be placed. Further in this regard, it should be understood that, although FIG. 8 does not show also the additional panel section 791, the cross-sectional view that is provided in FIGS. 11A, 11B, and 11C is that which would be appropriate given a typical installation process of the additional panel section 791 in relation to the panel section 765 in which the end struts 764 of the two panel sections are aligned with one another.

[00100] More particularly, FIG. 11A shows how, when the additional panel section 791 is first being installed in relation to the panel section 765, the additional panel section 791 is first positioned (e.g., by work personnel lifting the panel section 791 into place using the handle support extensions 780) so that the top panel surface 763 of the additional panel section 791 is received into and extends substantially vertically upward from the two co-aligned handle support sections 780 of the panel section 765. When positioned in this manner, a first of the side struts 762 of the additional panel section 791 is positioned into the hook formations 785 of the handle support extensions 780 of the first panel section 765 into which the additional panel section 791 has been received. Also, in this initial position, the top panel surface 763 extends downward to the handle support extensions 780 of the panel section 765 (or almost to those handle support

extensions) and extends in between the neighboring side struts 762 of the panel sections 765 and 791).

[00101] Turning to FIGS. 11B and 11C, respectively, upon the additional panel section 791 being positioned into place relative to the panel section 765 as shown in FIG. 11A, then further installation of the additional panel section 791 occurs by rotation of that panel section 791 in a direction generally indicated by an arrow 792 of FIG. 11B, that is, rotation generally downward and outward away from the panel section 765, up until such time as the additional panel section 791 is fully in place such that the top panel surface 763 of that panel section is horizontal and parallel to the top panel surface 763 of the panel section 765. When such rotational movement is fully completed, it will be appreciated that both of panel sections 765 and 791 are then supported upon the wire tendons 306 and 307 between which those panels both extend, by way of the wire tendon support extensions 770 formed on each of those panels (as discussed above with respect to FIGS. 8 and 9). Also, upon full installation, the neighboring side struts 762 of the panel sections 765 and 791 generally adjoin one another.

[00102] It will be appreciated that, to allow for proper rotation of the additional panel section 791 relative to the panel section 765, the handle support extensions 780 necessarily extend outward away from the side strut 762 of the first panel section 765 on which those handle support extensions are mounted by a distance that is somewhat in excess of the cross-sectional width of the side struts 762 of the additional panel section 791, with such an excess distance being shown in FIG. 11C as a distance 794. It will further be appreciated that, following proper and full installation, panel section 765 assembled in side-by-side relation will be at least partially restricted in movement in at least one of the side-to-side and up-and-down directions, more preferably in both the side-to-side and up-and-down directions, as a result of the interconnection of handle support extensions. Handle support extensions, in combination with tendon support extensions 770 (not shown), therefore at least partially, preferably completely, limit movement of fully installed panel sections in side-by-side relation in all three axes of movement, that is, side-to-side, up-and-down, and front-to-back. In some embodiments, therefore, panel sections 765 are secured to tendons and each other without the necessity of additional locks or securing structures, mechanisms or devices.

[00103] Further as shown in FIG. 11C (although not shown in FIGS. 11A and 11B), the additional panel section 791 includes handle support extensions 780 just as does the panel section 765. Given that the spacing of the handle support extensions 780 on each of the panel sections 765, 791 is the same as that shown in FIG. 8 (which is representative of the features of each of the panel sections 750 including the panel sections 765 and 791), it should be recognized that the handle support extensions 780 on one of the side struts 762 of each of the panel sections 750 are offset in a first direction, relative to the middle strut 766 of the respective panel section, but that the handle support extensions 780 on the opposite one of the side struts 762 of the respective panel section 750 are offset from the middle strut in the opposite direction. That is, the handle support extensions 780 along the top one of the side struts 762 as shown in FIG. 8 are offset to the right while the handle sections along the bottom one of the side struts 762 are offset to the left. More particularly, in the present example embodiment of the panel section 765 as shown in FIG. 8, the leftmost portion of the left handle support extension 780 extending from the upper one of the side struts 762 is offset thirty-two inches from the left side edge of that panel section, which is also the left side edge of the left one of the end struts 764, and the leftmost portion of the right handle support extension 780 extending from that side strut is offset over another twenty-eight inches from the leftmost portion of that left handle support extension. By contrast, the rightmost portion of the right handle support extension 780 extending from the lower one of the side struts 762 is offset thirty-two inches from the right side edge of that panel section, which is also the right side edge of the right one of the end struts 764, and the rightmost portion of the left handle support extension extending from that side strut is offset over another twenty-eight inches from the rightmost portion of that right handle support extension.

[00104] Given this arrangement of the handle support extensions 780 on each of the panel sections 750, it should be appreciated that the handle support extensions 780 of each of the panel sections 750 are substantially complementary. That is, due to the oppositely-shifted arrangements of the handle support extensions 780 on opposite sides of each of the panel sections 750, neighboring panel sections can be positioned next to one another in a manner in which, instead of the handle support extensions 780 of the neighboring panel sections encountering and obstructing one another, the handle support

extensions 780 of each of the neighboring panel structures serves to engage or mesh with the other of the neighboring panel structures. For example, when one of the panel sections 750 such as the additional panel section 791 is implemented in relation to another of the panel sections such as the panel section 765 as shown in FIG. 11C, the handle support extensions 780 on the side of the panel section 765 facing the additional panel section 791 extend under and up and around the adjoining side strut 762 of the additional panel section 791, and likewise the handle support extensions 780 on the side of the panel section 791 facing the panel section 765 (as shown in phantom in FIG. 11C) extend under and up and around the adjoining side strut 762 of the panel section 765.

[00105] Although the panel section 765 shown in FIGS. 8, 9, and 10 and again in FIGS. 11A, 11B, and 11C is one example type of panel section that can be employed in a suspended subsystem such as the further implemented suspended subsystem 720, as already discussed it should be appreciated that depending upon the embodiment or circumstance numerous types of panel sections having many different types of features can be employed. In addition to variations in the overall sizes, dimensions, or shapes of the panel sections that are employed, which can vary with the particular suspended subsystem and even vary in the context of a given suspended subsystem, it is also possible for features of the panel sections such as the handle support extensions to vary as well. FIGS. 11D, 11E, 11F, 11G, 11H, 11I, 11J, 11K, 11L, and 11M are several examples of alternative panel sections 850, 856, 860, 870, 880, 885, 888, and 890 having certain features differing from those of the panel section 765. More particularly, as shown, in these example embodiments, each of the alternative panel sections includes wire tendon support extensions 770 substantially identical to those of the panel section 756, but instead have different types or arrangements of handle support extensions and/or complementary components for interfacing handle support extensions.

[00106] More particularly in this regard, referring to FIG. 11D, a perspective view is provided of the alternative panel section 850, which is substantially identical to the panel section 765 except insofar as, although the alternative panel section 850 includes a pair of the handle support extensions extending from a first side 852 of the alternative panel section, no other handle support extensions are provided on the opposite side 854 of the alternative panel section. Additionally, rather than employing the hooked type of

handle support extensions 780 present in the panel section 756, the alternative panel section 850 employs handle support extensions 851 that differ from the handle support extensions in that the handle support extensions merely extend outward from the side 852 horizontally and then experience an upward 90 degree bend, as is shown particularly well in FIG. 11G, which is discussed further below.

[00107] Further, referring to FIG. 11E, a perspective view is provided of the alternative panel section 856, which is substantially identical to the alternative panel section 850 except insofar as, although the alternative panel section 856 includes a pair of the handle support extensions 851, one (rather than two) of those handle support extensions is provided on a first side 858 of that alternative panel section and the other of those handle support extensions is provided on an opposite side 859 of that alternative panel section. Additionally, referring to FIG. 11F, a perspective view is provided of the alternative panel section 832, which is substantially identical to the alternative panel section 856 except insofar as the alternative panel section 832 only includes a single one of the handle support extensions 851 along a first side 861 (positioned generally at the middle of that side), but no handle support extension along an opposite side 864.

[00108] Although the type, number, and positioning of the handle support extension(s) 851 in each of the alternative panel sections 850, 856, and 832 varies from that of the panel section 756, it should be appreciated that the handle support extension(s) in each of these alternative panel sections still can perform to at least some extent the functions performed by the handle support extensions 780 in the panel section 756 (and the panel section 791) as illustrated in FIGS. 11A, 11B, and 11C. The handle support extension(s) 851 can still be used for carrying and moving of the alternative panel sections 850, 856, and 832 (as shown in FIGS. 11D-11G). Also, the handle support extension(s) 851 can further serve (at least to some extent) to orient, capture and support adjacent panel sections. For example, as illustrated in FIG. 11G, which illustrates in a cross-sectional, partly cutaway view two of the alternative panel sections 850 of FIG. 11D in an assembled positioned adjacent to one another side-by-side (as if in a row of the panel sections), it is still the case in such an embodiment that the handle support extensions 851 extending from the opposite side 852 of one of those alternative panel sections will extend under, up, and around a neighboring side strut 862 of the other of

those alternative panel sections 832, and thus serve to at least partly hold in place and support that other panel section.

[00109] Further, with respect to FIG. 11H, the alternative panel section 870 by contrast with the alternative panel section 850 of FIG. 11D includes a pair of handle support extensions 872 extending from a first side 874 that, in contrast to the handle support extensions 851, have no bends at all but rather merely are U-shaped structures extending out purely horizontally from the first side 874. Additionally, on an opposite side 878 of the alternative panel section 850, rather than having any handle support extensions of any type, instead that alternative panel section includes a pair of complementary interlocking devices or protrusions 876. As shown, each of the respective interlocking devices 876 is aligned, along the opposite side 878, with a respective one of the handle support extension 872 positioned on the first side 874, and the interlocking devices 876 are sized and configured so that protruding portions of the interlocking devices will respectively fit within complementary interior orifice regions of the handle support extensions 872 of another one of the alternative panel sections 870 when two such alternative panel sections are assembled.

[00110] Such an arrangement is shown in FIG. 11I, which provides a side elevation view of two of the alternative panel sections 870 of FIG. 11H positioned adjacent to one another side-by-side (as if in a row of the panel sections). As illustrated, the interlocking devices 876 along the opposite side 878 of one of the alternative panel sections 870 are received within, and extend through and beneath, respective ones of the handle support extensions 872 positioned on the first side 874 of another of the alternative panel sections. Given such positioning of the interlocking devices 876 within the handle support extensions 872, the two alternative panel sections 870 are interconnected with one another. Further, as with the handle support extensions 780 and 851, the handle support extensions 872 again serve both as handles to facilitate carrying and moving of the alternative panel sections 870, but also serve to support the adjacent alternative panel section. For example, as illustrated in FIG. 11I, the handle support extensions 872 receiving the interlocking devices 876 also extend beneath a neighboring side strut 879 of the alternative panel section associated with those interlocking devices.

[00111] Although the alternative panel section 870 shown in FIGS. 11H and 11I is one example of an alternative panel section employing the handle support extensions 872 that are flat, the alternative panel sections 880, 885, 888, and 892 respectively shown in respective FIGS. 11J, 11K, 11L, and 11M are additional examples in this regard. In contrast to the alternative panel section 870, however, none of the alternative panel sections 880, 885, 888, and 892 include any of the interlocking devices 876. More particularly, FIG. 11H shows a perspective view of the alternative panel section 880, and shows that panel section as having only one of the handle support extensions 872 extending from a first side 882 (generally from a middle location along that side) but having no other handle support extension 872 extending from an opposite side 883. By contrast, FIG. 11K shows the alternative panel section 885 as having one of the handle support extensions 872 extending from a first side 884 and another of the handle support extensions 872 extending from an opposite side 886, FIG. 11L shows the alternative panel section 888 as having two of the handle support extensions 872 extending from a first side 887 but no handle support extensions extending from an opposite side 889, and FIG. 11M shows the alternative panel section 892 as having two of the handle support extensions 872 extending from a first side 890 and another two of the handle support extensions 872 extending from an opposite side 894.

[00112] It should be appreciated that, as with the handle support extensions 780 of the panel section 756, the pairs of the handle support extensions 872 extending from the first and opposite sides 892 and 894 of the alternative panel section 890 of FIG. 11M are offset from one another along the lengths of those respective sides, so as to be complementarily positioned to facilitate the positioning of multiple ones of the alternative panel sections 890 side-by-side. Likewise, as with the handle support extensions 851 of the alternative panel section 856 of FIG. 11E, the handle support extensions 872 of the alternative panel section 885 of FIG. 11K are offset from one another along the lengths of the sides 884 and 886 so that the handle support extensions on the opposite sides are positioned complementarily.

[00113] Turning now to FIGS. 11N, 11O, 11P, 11Q and 11R, a further alternative panel section 1000 is shown. Alternative panel section 1000 includes gravity latch 1010. Gravity latch 1010, shown in the up position in FIGS. 11N and 11O, is joined with

tendon extensions 770 at pivot point 1015. Gravity latch 1010 includes a tendon-engaging portion 1012 configured to directly or indirectly engage tendons 230 when in a down position as shown in FIGS. 11P and 11Q, and extension 1013 with securing aperture 1014 and upper surface 1016. In the exemplary embodiment illustrated, tendon-engaging portion 1012 has a C-shape or configuration.

[00114] Gravity hook 1010 is specifically designed with a center of gravity A which is just offset from pivot point 1015 when in both the up position and down position, as illustrated in FIGS. 11P and 11Q. In FIGS. 11O and 11R, the center of gravity A is indicated using a circular marking solely to reference the area A. Embodiments of gravity hook 1010 may or may not include a visible or physical indication of the center of gravity.

[00115] Because the center of gravity A is offset from pivot point 1015 when in both the up and down positions, gravity hook 1010 will stay in the up position until hook 1010 is physically rotated such that the center of gravity A passes to the other side of pivot point 1015. Similarly, gravity hook 1010 will stay in the down position until hook 1010 is physically rotated such that the center of gravity A passes back over pivot point 1015. Gravity hook 1010 therefore acts to prevent upward movement of panel sections 750 relative to tendons 230.

[00116] Aperture 1014 of extension 1013 is configured to correspond to aperture 1017 of tendon extension 770. For added stability, a securing component, such as a zip-tie, bolt, or other structure, can be secured through apertures 1014, 1017, thereby physically connecting gravity hook 1010 and tendon extension 770 at a second point, the first being pivot point 1015. Similarly, notch 1018 of tendon extension 770 is configured to correspond to the location of upper surface 1016 when gravity hook is the down position, allowing an additional cover structure (discussed below) to be installed between panel sections 750 over gravity hook 1010. Notch 1018 also allows access to upper surface 1016 to pivot gravity hook 1010 from a down position to an up position.

[00117] For example, as illustrated in FIGS. 11N, 11O, 11P and 11Q, upper surface 1016 is configured to provide a graspable area or contact area for manipulating gravity hook 1010. For example, when in the up position, upper surface 1016 can be pushed, such as with a toe strike or by hand, to pivot gravity hook 1010 to its down

position. When in the down position, upper surface 1016 protrudes above notch 1018 so that gravity hook 1010 can be returned to its up position such as by manipulating the hook 1010 by foot or grasping upper surface 1016 by hand.

[00118] FIG. 11R illustrates the gravity hook 1010 in further detail. As shown in FIG. 11R, tendon engaging portion 1012 includes an inclined surface 1020. Under uplift conditions (i.e., under tendon pull force 1030), angled surface 1020 causes gravity hook 1010 to rotate clockwise (relative to the view shown in FIG. 11R), thereby keeping the gravity hook 1010 in a closed position.

[00119] The location of the center of gravity A and pivot point 1015 also serves to keep gravity hook 1010 closed under uplift conditions. Specifically, in the closed position, center of gravity A is offset from the center of pivot point 1015 at a distance of 1024 and also set below the center of pivot point 1015. The position of the tendon 230 is also offset from the center of pivot point 1015. As a result, under uplift conditions (i.e., under tendon pull force 1030), gravity hook 1010 is rotated in a clockwise position and remains closed.

[00120] It should be appreciated that the panel section 1000 described above can have any configuration of handle support extensions as discussed herein. Additionally, it should be appreciated that the examples of alternative panel sections discussed above are merely examples and that numerous other variations of panel sections can be implemented in embodiments encompassed by the present disclosure.

[00121] FIGS. 11S and 11T illustrate modified tendon extension 770a' and 770b' for use with panel 1000 and gravity latch 1010. Modified tendon extensions 770a' and 770b' provide support and stability when stacking unassembled panel sections 1000. As illustrated in FIGS. 11S and 11T, modified tendon extensions 770a' and 770b' include contoured portions 771b, making tendon extension 770a' distinctly a right-side tendon extension and tendon extension 770b' distinctly a left-side tendon extension. In other words, tendon extensions 770a' and 770b' are mirror images of each other.

[00122] FIG. 11T shows modified tendon extension 770a' in more detail. As shown, contoured portion 771b angles away from the body 771a of tendon extension 770a' and the plane of the panel section 1000. When panel sections 1000 are stacked on top of one another (such as for storage or transport, for example), respective right and left

tendon extensions 770a', 770b' on adjacently stacked panel sections engage each other in an overlapping fashion to prevent or limit movement (e.g., side-to-side movement) of the panels 1000 during storage and transport.

[00123] FIG. 11U shows an alternative embodiment of a gravity latch 1010'. Gravity latch 1010' functions the same as described with reference to FIGS. 11N-11R, but has a more hook-shaped tendon engaging portion 1012'. In some embodiments, as shown in FIG. 11U, gravity latch 1010' includes receiving aperture 1019' for engaging a protuberance and a toe board.

[00124] Returning to FIG. 7 and further turning to FIGS. 7A and 7B, full implementation of the suspended subsystem includes not only implementing the panel sections 750 onto the wire tendons 230, but also involves implementation of additional components as well. To illustrate these additional components, FIG. 7A provides a detail view of a region 961 of FIG. 7 particularly focused upon a location at which several of the panel sections 750 of each of two neighboring rows of the panel sections 751 and 752 are supported upon an intermediate pair of the wire tendons 230, namely, the wire tendons 302. Further, FIG. 7B is also provided to show the same region (region 961) as shown in FIG. 7A, as that region would be seen from underneath (that is, FIG. 7A is a top plan view of the region 961 while FIG. 7B is a bottom plan view of that region or substantially the same region).

[00125] From FIGS. 7A and 7B, it should particularly be evident that, due to the configuration of the panel sections 750 and the wire tendon support extensions 770, the top panel surfaces 763 of the panel sections do not cover over the supporting wire tendons 302, but rather there is a space or gap between the top panel surfaces of the panel sections 750 of neighboring rows of the panel sections such as the rows 751 and 752. Given the presence of these gaps between the top panel surfaces 763 of neighboring rows of the panel sections 750 such as the panel sections of the rows 751 and 752, in the present embodiment additional cover structures (or gap fillers) 767 are provided subsequent to the implementation of the panel sections onto the wire tendons 230, with one of the additional cover structures 767 particularly being shown in FIGS. 7A and 7B. The additional cover structures 767 serve to fill in the gaps between the top panel surfaces 763 of the panel sections 750 of neighboring rows of the panel sections (again,

such as the rows 751 and 752) and to cover over the pairs of wire tendons 230 therebetween (e.g., the pair of wire tendons 302) along generally the entire lengths of those wire tendons except for locations at which suspension chains are coupled to the wire tendons by way of suspender structures discussed further below.

[00126] As illustrated particularly in FIGS. 7A and 7B, the additional cover structures 767 have widths that are greater than the gaps between the rows of panel sections such that outer edges 899 of the additional cover structures actually extend over edge portions of the panel sections (FIG. 7B shows the outer edges 899 in phantom). Additionally, as illustrated in FIGS. 7A, 7B, as well as FIGS. 17A, 17B, 17C, 17D, 18, 19, and 20 discussed further below, the additional cover structures 767 in the present embodiment are coupled tightly to the wire tendons 230 by way of additional components.

[00127] More particularly, in the present embodiment, the additional cover structures 767 includes a pair of bolt holes 950 by which the additional cover structures 767 can be bolted to a pair of tendon retainer structures 769. FIG. 18 shows a perspective view of one of the additional cover structures 767 and particularly shows the bolt holes 950. FIGS. 17A, 17B, 17C, and 17D, respectively, show a perspective side view, top plan view, side elevation view, and end elevation view of an example one of the tendon retainer structures 769. As shown, the tendon retainer structure 769 includes a main outer shell 952 having a roof 954 and first and second side walls 956 and 957 respectively extending downwards from each of two sides of the roof, respectively. Also, the tendon retainer structure 769 includes a flat internal compression structure 958 that includes two ear extensions 960 that respectively fit into two complementary slots 962 formed near the bottom edges of each of the two side walls 956, 957. Although generally complementary, the complementary slots 962 are slightly larger than the ear extensions 960, particularly in a vertical direction. Consequently, when the flat internal compression structure 958 is positioned within an internal channel 964 between the side walls 956 and 957 of the main outer shell 952 such that the ear extensions 960 extend within the complementary slots 962, the flat internal compression structure 958 can move vertically upward and downward relative to the main outer shell 952.

[00128] In addition to the above-mentioned features, the first side wall 956 of the main outer shell 952 has first and second wire receiving indentations 966 and 967, respectively, and the second side wall 957 has third and fourth wire receiving indentations 968 and 969, respectively. As shown, all of the wire receiving indentations 966, 967, 968, and 969 are generally located at a vertical level that is substantially the same, but slightly higher, than the complementary slots. Also, the first and second wire receiving indentations 966 and 967 are located respectively at generally opposite ends of the first side wall 956, and the third and fourth wire receiving indentations 968 and 969 are located respectively at generally opposite ends of the second side wall 957. As will be discussed further below, the first and third indentations 966 and 968, respectively, share in common a first shape that includes an elongated indented portion 970, and are respectively located at respectively opposite ends of the first and second side walls 956 and 957, respectively. By comparison, the second and fourth indentations 967 and 969, respectively, share in common a second shape that lacks the elongated indented portion, and are located at respectively opposite ends of the first and second side walls 956 and 957, respectively. Additionally, it will be appreciated that the roof 954 of the main outer shell 952 includes an orifice 971 and the flat internal compression structure 958 also includes snap-in cage nut having a threaded internal orifice 972 that is generally aligned with the orifice 971 when the ear extensions 960 are within the complementary slots 962.

[00129] Turning to FIG. 20, an exploded perspective, partly cutaway view is provided of the tendon retainer structure 769 in relation to each of the additional cover structure 767 of FIG. 18, an additional retainer bracket 980, a retaining bolt 982, and the pair of wire tendons 302. FIG. 20 particularly indicates how the tendon retainer structure 769 can be positioned onto the pair of wire tendons 302 and, once so positioned, can grip the wire tendons. More particularly, it can be appreciated that the tendon retainer structure 769 first can be positioned onto the wire tendons 230 by first positioning the tendon retainer structure generally in between the wire tendons so that the channel 964 is generally aligned with the lengths of the wire tendons, and then rotating the tendon retainer structure in a direction indicated by an arrow 984 so that the wire tendons are fit into the first, second, third, and fourth wire receiving indentations 966, 967, 968, and 969. It will be appreciated that this process of rotating the tendon retainer structure 769

into position in this regard is facilitated by the elongated indented portions 970 of the first and third wire receiving indentations 966 and 968.

[00130] Additionally, with the tendon retainer structure 769 positioned onto the wire tendons 302, the additional cover structure 767 is positioned so that one of the bolt holes 950 is over the orifice 971 and particularly aligned with the threaded internal orifice 972. Further, the retainer bracket 980, which in the present embodiment is an L-shaped bracket having two orifices 985 that are located respectively on each of a horizontal wall portion 986 and a vertical wall portion 988 of the bracket, is aligned so that the orifice 985 on the horizontal wall portion 986 is also aligned with the threaded internal orifice 972. With all of these components so aligned and positioned so that the additional cover structure 767 is atop the roof 954 and the horizontal wall portion 986 is atop the additional cover structure, then the bolt 982 can be inserted through the orifice 985, bolt hole 950, orifice 971 and into the threaded internal orifice 972. Rotational tightening of the bolt 982 then has the effect of rotating the cage nut within which the threaded internal orifice 972 is formed, thus causing the flat internal compression structure 958 to move upwards relative to the shell 952 so as to grip the wire tendons 302 with flat internal compression structure and the upper surfaces of the indentations 966, 967, 968, and 969. As this occurs, the retainer bracket 980 is held against the tendon retainer structure 769 with the additional cover structure 767 sandwiched in between, such that ultimately all of the retainer bracket, additional cover structure, and the tendon retainer structure are fixedly coupled to the wire tendons 302 in a robust manner. In view of the securing function of tendon retainer structure 769 relative to the panels, tendon retainer structure 769 can in some embodiments be referred to as a deck retainer clamp.

[00131] FIGS. 17E and 17F illustrate an alternative embodiment of tendon retainer structure 1200. In some embodiments of suspended subsystem 120, tendons 230 are configured lower in relation to panel sections 750. In such embodiments, a tendon retainer structure 1200 as illustrated in FIGS. 17E and 17F can be used. Tendon retainer structure 1200 is essentially identical to retainer structure 769 except for side walls 956', 957' which are elongated to account for tendons 230 at a lower position, and internal compression structure 958' which is contoured instead of flat.

[00132] Also, in some embodiments, the tendon retainer structure 1200 includes an internal compression structure 958' which is elongated, as shown in FIGS. 17E and 17F. Importantly, it is not necessary for an internal compression structure to be contoured (as in 958') in order to be elongated. The tendon retainer structure 769 of FIG. 20, for example, also contains an elongated internal compression structure 958. Referring back to FIG. 11P or 11Q, it is more easily seen that the elongated internal compression structures 958/958' are designed to project into the tubular struts forming the framework of the panel structures.

[00133] With respect to the retainer bracket 980 in particular, it should be appreciated such retainer brackets are only optional with respect to the implementation of any given one of the tendon retainer structures 769 and additional cover structures 767. The retainer brackets 980 can particularly be provided in areas where it is desired to fixedly mount other structures in relation to (or as part of) the wire tendons 230 and/or the panel structures 750, for example, to mount guard rails. That said, it should be evident from FIGS. 7A and 7B that, in the embodiment shown there, no retainer brackets are present. Rather, as illustrated by FIG. 7B, only the additional cover structure 767 is affixed to the tendon retainer structure 769, which is particularly shown in FIG. 7B. Nevertheless, it should be particularly evident from FIGS. 7A and 7B that, thanks to the fixed coupling of the additional cover structure 767 to the tendon retainer structure 769 and the fixed coupling of both of those structures to the wire tendons 302 by way of the bolt 982, the additional cover structure 767 because of its edges 899 overlapping the panel sections can fill in the gap between the neighboring rows of the panel sections and also act as a redundant means of securing panel sections in relation to the wire tendons 302.

[00134] Referring now to FIGS. 18B-18H, additional cover structure can have alternative configurations which allow additional cover structure to be used without tendon retainer structure 769. In such instances, additional cover structures function as gap fillers to cover the gaps between decking panels.

[00135] As illustrated in FIGS. 18B, 18C and 18D, alternative embodiments of additional cover structure 1300 include a first end 1302 with a protuberance 1303 and a second end 1315 with a receiving aperture 1316 and tendon-engaging side wall 1317.

The protuberance 1303 is designed to engage the receiving aperture 1316 of a subsequent cover section 1300. For example, as illustrated in FIGS. 18B, 18C and 18D, and perhaps best in FIG. 18C which is a side view of the cover section 1300 of FIG. 18B, Z-shaped protuberance 1303 includes horizontal extension portion 1305 which transitions to vertical side wall 1306 at a distance away from the main body portion of additional cover structure 1300. Vertical side wall 1306 then transitions to engaging protuberance 1307 which extends horizontally from vertical side wall 1306.

[00136] In the exemplary embodiments shown in FIGS. 18B, 18C and 18D, Z-shaped protuberance 1303 has a substantially Z-like configuration with vertical side wall 1306 angled outward away from additional cover structure 1300, and horizontal extension portion 1305 and engaging protuberance 1307 are substantially parallel with each other. In further exemplary embodiments, Z-shaped protuberance 1303 can include a vertical side wall 1306 with a different angle, and horizontal extension portion 1305 and engaging protuberance 1307 can be other than substantially parallel.

[00137] When assembled as illustrated in FIG. 18D, a first additional cover structure 1300 is held approximately perpendicular to an already installed additional cover structure 1301 such that the Z-shaped protuberance 1303 of the first additional cover structure 1300 is over the receiving aperture 1316 of the installed additional cover structure 1301. As the engaging protuberance 1307 of the first additional cover structure enters the receiving aperture 1316 of the installed additional cover structure 1301, the first additional cover structure 1300 is rotated to a more horizontal position such that the engaging protuberance 1307 extends under the installed additional cover structure 1301 and vertical side wall 1306 enters the receiving aperture 1316 of installed additional cover structure 1301.

[00138] As the first additional cover structure 1300 continues to rotate to a final horizontal position, wire tendons 302 contact, directly or indirectly, the tendon-engaging side wall 1317. In the exemplary embodiments shown in FIGS. 18B-18D, tendon-engaging side walls include two legs 1318, each including a tendon indentation 1312 and a corresponding angled side surface 1311, separated by cut-away 1319. As first additional cover structure 1300 continues to a horizontal position, wire tendons 302 will first contact angled side surfaces 1311. The pressure exerted on angled side surfaces

1311 causes legs 1318 to flex towards each other, allowing tendons 302 to continue sliding up angled side surfaces 1311 as the first additional cover structure 1300 continues to its final horizontal position.

[00139] Once first additional cover structure 1300 reaches its final position, Z-shaped protuberance 1303 fully engages receiving aperture 1316 and tendons 302 snap into position at tendon indentations 1312. Legs 1318 are no longer flexed, and upward movement of the additional cover structure 1300 relative to the tendons 302 is prevented by the engagement of tendons 302 in tendon indentations 1312.

[00140] It is to be appreciated that alternate configurations of protuberance 1303 can require different positioning and rotating to engage protuberance 1303 with receiving aperture 1316.

[00141] FIGS. 18E and 18F illustrate a second alternative embodiment of additional cover structure 1320 which includes a first end 1322 with a tendon-engaging side wall 1325 and a second end 1324 with a tendon-engaging side wall 1325.

[00142] FIGS. 18G and 18H illustrate a third alternative embodiment of additional cover structure 1330 having tendon-engaging side wall 1335 and receiving aperture 1336 at a first end 1334 and a tapered body 1331 resulting in a second end 1332 having a smaller width than first end 1334. Second end 1332 is inserted directly into receiving aperture 1336 to secure additional cover structures 1330 together, with tendon-engaging side wall 1335 engaging tendons 302 as described above.

[00143] It will be appreciated that there is some overlap of additional cover structures when installed. It will further be appreciated that tendon retainer structure 769 is not necessary when using alternative additional cover structures 1300, 1320, 1330 because additional cover structures 1300, 1320, 1330 engage tendons 302 directly or indirectly. However, additional cover structures 1300, 1320, 1330 can, in some instances, still be used with tendon retainer structures 769, such as, for example, when installing a guard rail at an interior point, i.e., a point not along the exterior perimeter of a suspended subsystem 120.

[00144] As illustrated in each of FIGS. 18B-18H, each additional cover structure 1300, 1320, 1330 includes a central aperture, or bolt hole 950'. Central aperture 950' can be used to secure additional structures to additional cover structures 1300, 1320, 1330,

including but not limited to containment brackets, rail posts, uplift posts and other structures known and used in the art. It will further be appreciated that the additional cover structures of FIGS. 18B-18H grip tendons by simply pushing the structures downward onto the tendons and allowing the tendons to engage the respective tendon-engaging portions. In other words, no moving components are used (i.e., no opening and/or closing of tendon-engaging structures) for quick and easy installation of additional cover structures/gap fillers.

[00145] FIGS. 18I-18M illustrate yet a further embodiment of an additional cover structure 1300'. In the exemplary embodiment shown in FIGS. 18I-18M, additional cover structure 1300' has a first end 1302' including an engaging contour 1303', which in FIG. 18I is shown as a Z-bend, and a first clip slot 1310'. As shown in FIG. 18I, Z-shaped protuberance 1303' is substantially similar to protuberance 1303 in structure and function, as described above in reference to FIGS. 18B-18D. Additional cover structure 1300' also has a second end 1315' including a plurality of Z-bend slots 1316' and a second clip slot 1310'. In the exemplary embodiment shown, clip slots 1310' include a plurality of raised bumps 1304' arranged in pairs on either side of clip slots 1310'.

[00146] FIG. 18J shows a clip 1111' that is used with additional cover structure 1300'. Clip 1111' is an oblong component having a grasping portion 1112', neck 1113', and clip body 1114'. As explained in further detail with respect to FIGS. 18 K and 18L, grasping portion 1112' has a length and width approximately equal to, though just smaller than, the dimensions of clip slot 1310' so that it passes through clip slot 1310'. Similarly, neck 1113' has a length and width such that it can rotate within clip slot 1310'. Clip body 1114' includes two tendon-engaging portions 1115', each being flexible to slide over and receive a tendon. Tendon-engaging portions each comprise two legs 1116' with lower angled surfaces 1117' and together the legs 1116' form tendon-receiving apertures 1118' and flex gaps 1119'. It will be appreciated that, like additional cover structures of FIGS. 18B-18H, clip 1111' engages tendons without moveable components (i.e., no opening and/or closing of tendon-engaging structures).

[00147] FIGS. 18K and 18L show how clip 1111' engages additional cover structure 1300' prior to assembly with a platform system. As illustrated in FIG. 18K, clip 1111' is first inserted into clip slot 1310' from the bottom such that grasping portion

1112' is parallel with clip slot 1310'. Once clip 1111' projects through clip slot 1310' such that neck 1113' is within the clip slot 1310', clip 1111' is rotated such that grasping portion 1112' is perpendicular with clip slot 1310'. To that end, it is appreciated that neck portion 1113' has a diameter just smaller than the width of clip slot 1310' to permit free rotation of clip 1111' within clip slot 1310'. As a result, grasping portion 1112' is disposed between pairs of bumps 1304'. Bumps 1304' prevent rotational movement of clip 1111'. It should be appreciated that other structures and devices, as well as different configurations of raised bumps, can be used to prevent rotation of clip 1111' while engaging tendons.

[00148] FIGS. 18M and 18N illustrate clip 1111' engaged with additional cover structure 1300a' to engage tendons. As illustrated in FIG. 18M, additional cover structure 1300b' is installed with clip 1111' engaging tendons. Additional cover structure 1300a' is installed by first engaging the Z-bend 1303' with corresponding Z-bend slots 1316' of additional cover structure 1300b'. It is appreciated that clip slots 1310' on the respective additional cover structures 1300a' and 1300b' do not overlap. Rather, each clip slot 1310' of additional cover structures 1300a' and 1300b' can be used to secure additional cover structures 1300a' and 1300b' to the tendons as required.

[00149] As additional cover structure 1300a' is pivoted downward (as described generically with reference to FIGS. 18B-18D), tendon-engaging portions 1115' of clip 1111' are aligned over tendons. Tendons first engage lower angled surfaces 1117', forcing legs 1116' of each tendon-engaging portion 1115' to separate slightly. Flex gaps 1119' allow the legs 1116' to separate in this manner without requiring a worker or other individual to physically manipulate (that is open or close) tendon engaging portion 1115' or legs 1116'. With further pushing, legs 1116' separate enough to permit tendons to enter tendon-receiving apertures 1118', as illustrated in FIG. 18N.

[00150] It is appreciated that additional cover structures 1300' do not directly contact or rest on tendons. Rather, as illustrated in the figures, clips 1111' act as an indirect connection between tendons and additional cover structures 1300'. As illustrated with reference to, for example, FIG. 18H, it is further understood that additional cover structures 1300' overlap panel sections 765, thereby transferring at least part of any load

placed on additional cover structures 1300' to panel section 765 and not directly to tendons through clips 1111'.

[00151] Referring still to FIGS. 7, 7A, and 7B, and also referring now to FIG. 12, in the present embodiment the further implemented suspended subsystem 720 also includes, in addition to the pairs of wire tendons 230 and the panel structures 750 supported thereon (plus the cover sections such as the cover section 767 positioned in between the rows of panel sections), suspension chains 790 that are coupled between the underside of the deck 222 of the suspension bridge 100 and the pairs of wire tendons 230 at various locations along the lengths of the wire tendons. The suspension chains 790 can be periodically spaced along the lengths of each of the pairs of the wire tendons 230, and the number of such suspension chains can vary depending upon the circumstances or embodiment. FIG. 12 shows particularly two of the suspension chains that have been positioned along at least the fourth pair of wire tendons 304, upon which are supported the third and fourth rows of the panel sections 753 and 754 that are fully complete in that each of those rows (unlike the other rows 751, 755, 756, 757, and 758) include panel sections 750 that have been implemented along the entire length of the fourth pair of wire tendons 304.

[00152] It should be appreciated that, although not clearly apparent from FIG. 12, one or more of the suspension chains 790 are provided in relation to each of the pairs of wire tendons 230 (e.g., in relation to each of the wire tendon pairs 301, 302, 303, 304, 305, 306, 307, 308, and 309 in the example of FIG. 7). Each of the suspension chains 790 along a particular pair of the wire tendons 230 is installed typically only when a sufficient number of the panel sections 750 have been installed onto that pair of wire tendons so as to allow work personnel to walk out to the respective location at which the respective suspension chain is to be attached. Although the number of the suspension chains 790 along each of the pairs of wire tendons 230 can be the same and the relative spacing of the suspension chains 790 along each of the pairs of wire tendons are identical in the present embodiment, this need not be the case in all embodiments. For example, in another alternate embodiment, it is possible that suspension chains 790 will be provided with a first spacing frequency along the length of one pair of the wire tendons and

provided with a different spacing frequency along the length of another pair of the wire tendons.

[00153] Further as shown, in order to couple the suspension chains 790 to the pairs of wire tendons 230, in the present embodiment, suspender structures 800 are employed, one of which is shown in each of FIGS. 7A and 7B and others of which are shown in FIG. 12. Referring further to FIGS. 13A and 13B in this regard, an exploded perspective side view of one of the suspender structures 800 and a top plan view of the suspender structures 800 are shown, respectively, to illustrate particular features of the suspender structures 800. As shown, the suspender structures 800 includes a top planar (or substantially planar) surface 802 that extends between side edges 804 and further includes downwardly extending bracket extensions 806 positioned at each of first and second ends 808 of the suspender structure 800. Similar to the wire tendon support extensions 770 of the panel sections 750, the bracket extensions 806 each include a respective pair of indentations 810 that are intended to cover over and receive wire tendons of a given pair of the wire tendons 230 so that the structure 800 is positioned into place relative to the pair of wire tendons, for example as shown in FIG. 7B. Additionally, the top planar surface 802 has a width between the side edges 804 that is substantially equal to that of the additional cover structures 767 that, as discussed above, can be provided to extend between neighboring panel sections 750 of the rows of panel sections. Thus, the top planar surfaces 802 of the suspender structures 800 can serve a similar purpose of filling in the gaps between neighboring panel sections of neighboring rows of panel sections, particularly at the locations along the pairs of wire tendons 230 at which the suspender structures are positioned.

[00154] Further as shown, the suspender structure 800 includes a main body 801 having a top handle portion 812 that includes a planar portion 814 that overlays the top planar surface 802 along much of that surface and further includes two upwardly extending handle portions 816 that extend upward from the planar portion 814 diagonally upwards, that is, both upwards away from the top planar surface 802 and generally outwards toward the respective side edges 804 of the suspender structure 800. Each of the handle portions 816 includes a respective slot 818 by which work personnel implementing the suspender structure 800 can grasp the suspender structure. Further as

shown, the top planar surface 802 as well as the planar portion 814 include three additional holes or orifices, namely, first and second end orifices 820 that are circular and an intermediate orifice 822 that is oblong. The end orifices 820 are respectively positioned proximate opposite ends of the intermediate orifice 822, in between those respective opposite ends of the intermediate orifice 822 and outer end tips 824 of the planar portion 814. Further, additional orifices 826 that are also circular and of smaller diameter than the orifices 820 are positioned proximate the bracket extensions 806 of the top planar surface 802. Each of the additional orifices 826 is positioned generally to the side of a respective one of the outer end tips 824 of the planar portion 814.

[00155] The intermediate orifice 822 as shown includes a central region 821, end slot regions 823, and intermediate transverse slot regions 825 that allow the intermediate orifice to serve as an attachment feature by which one (or potentially more than one) of the suspension chains 790 can be attached to the suspender structure 800. Although not shown in detail in FIGS. 13A and 13B, it should be understood that one of the suspension chains 790 can be attached by inserting a free end of the suspension chain through the central region 821 of the intermediate orifice 822 and then sliding the suspension chain over and into one of the end slot regions 823. Once the suspension chain 790 is placed within one of the end slot regions 823, a suspension chain retainer pin (not shown) is placed in that one of the transverse slot regions 825 that is adjacent that end slot region so that the suspension chain 790 is kept retained in that end slot region. The suspension chain 790 and intermediate orifice 822 (and particularly the end slot regions 823) are sized and configured so that, upon proper placement of the retainer pin within the appropriate transverse slot region, the suspension chain is effectively locked to the main body 801 of the suspender structure 800 and is unable to slip, vertically or horizontally, from its position in the end slot region 823. This locking system effectively fixes the suspender structure 800 to the suspension chain 790. Additionally, in some embodiments, an additional "zip tie" or other tag type structure can be placed between a hole in the retainer pin and an adjacent portion of the suspension chain 790 to provide a visual aid to the installer to ensure that the retainer pin has been installed.

[00156] In contrast to the intermediate orifice 822, the orifices 820 and 826 allow for assembly of first and second grasping portions (or clasp portions) 830 to the main

body 801 of the suspender structure 800 in a manner that allows the suspender structure to grasp the wire tendons of a pair of the wire tendons 230 and lock the suspender structure in relation to those wire tendons such that tension force provided by the suspension chain 790 can be applied to the wire tendons and hold those wire tendons in place relative to the deck 222. More particularly as shown, each of the grasping portions 830 includes a central post 832 that extends upward from a central location 836 along a horizontally extending portion 834 that extends outward in opposite directions from that central location. Further as illustrated, each of the grasping portions 830 also includes an additional post 838 that is offset radially from the central location 836 and central post 832 and that has a smaller diameter than the central post. More particularly as shown, the location of the additional post 838 is still relatively close to the central post 832 by comparison with how close ends 840 of the horizontally extending portion 834 are located relative to the central post 832, but also is offset from a central axis 842 (that is, shifted to the side of that central axis 842) extending between the ends 840.

[00157] Implementation of the suspender structure 800 in relation to a pair of the wire tendons 230 proceeds by first inserting the respective central posts 832 of the two respective grasping portions 830 into the respective end orifices 820 of the main body 801 from underneath the main body, with both of the grasping portions rotated so as to be axially aligned with the central axis 842, such that the grasping portions are in starting orientations 843 as shown in FIG. 13B. Once the central posts 832 are inserted through the end orifices 820, the central posts 832 are coupled to the main body 801 by way of nuts 844 so as to retain the grasping portions 830 in relation to the main body 801. With the grasping portions 830 oriented in this manner, it is then possible to install the suspender structure 800 (to which a suspension chain 790 can already have been coupled as discussed above) onto the pair of wire tendons 230, so that the wire tendons 230 proceed into the indentations 810. Alignment of both of the grasping portions 830 in the starting orientations 843 aligned with the central axis 842 allows for the grasping portions to be slipped initially in between the wire tendons of the given pair of wire tendons.

[00158] Once the suspender structure 800 is in position relative to the pair of wire tendons 230 as discussed above, then the grasping portions 830 are further rotated ninety degrees (90°), in the present example in a clockwise manner as indicated by arrows 846,

until the additional posts 838 (and particularly tips/heads thereof) become aligned with the additional orifices 826. This rotation can be accomplished by way of torque bolts. Once this has occurred, the nuts 844 can be further tightened so as to cause the grasping portions 830 to move upward towards the main body 801 and grasp fixedly the pair of wire tendons 230 extending between the grasping portions and the main body. Indentations 848 formed along upper side edges of the horizontally extending section 840 of each of the grasping portions 830 further enables the wire tendons to be grasped in this manner. In view of the installation procedure of suspender structure 800, and its functions of grasping tendons and securing a suspension chain(s), suspender structure 800 can, in some embodiments, be referred to as a suspender clamp.

[00159] As will be appreciated, the suspension chains 790 by virtue of the suspender structures 800 serve to provide extra support to the further implemented suspended subsystem 720 at locations in between the portions 132 and 134 of the support subsystem 130 (e.g., the two portions located respectively at the two towers 140) to which the ends of the further implemented suspended subsystem 720 and wire tendons 230 thereof are coupled. Such extra support helps to keep the support subsystem 130 flat (or substantially flat) along its length, and to eliminate or reduce undulation occurring along its length. Additionally it should be appreciated, particularly with reference to FIG. 7B, that the suspender structures 800 with the grasping portions 830 (and horizontally extending portions 834 thereof) also serve to help retain panel sections 750. As is evident from FIG. 7B, when implemented in relation to one of the suspender structures 800, the panel sections 750 extend beneath the side edges 804 of the top planar surface 802 of the suspender structure. Also as shown in FIG. 7B, in addition to the panel sections 750 extending beneath the side edges 804 of the suspender structure 800, the grasping portions 830 (and horizontally extending portions 834 thereof) of the suspender structure 800 when rotated into position also are positioned so that the panel sections 750 (and particularly the end struts 764 thereof) are situated in between the ends 840 of the horizontally extending portions 834 and the side edges 804. Thus, the horizontally extending portions 834 further serve to assist with retaining in place the panel sections 750.

[00160] FIGS. 14A and 14B illustrate an alternative embodiment of suspender structure 1400. As described in further detail below, it is to be understood that the different modifications of alternative suspender structure 1400 can be used independently with suspender structure 800 of FIGS. 13A and 13B. For example, in some embodiments of suspended subsystem 880, tendons 230 are configured lower in relation to panel sections 750. In such embodiments, a suspender structure 1400 as illustrated in FIG. 14A having elongated bracket extensions 806' to account for tendons 230 at a lower position can be used. Additional changes to various surfaces (i.e., 834', 840') can also be required to account for lowered tendons.

[00161] FIG. 14A also shows alternative structures for tightening grasping portions 830' to engage tendons 230. In the embodiment shown, instead of using central posts 832 that project upward from grasping portions 830 and secure to main body 801 with nuts 844, suspension structure 1400 uses bolts 832' that extend downward through main body 801'. Nuts 844' are secured to bolts 832' below grasping portions 830'.

[00162] As shown in FIGS. 14A and 14B, bolts 832' contain an unthreaded portion 832a', which allows grasping portions 830' to slide easily on bolts 832' as the nuts 844' are rotated around threaded portion 832b' of bolts 832'. As nuts 844' are tightened onto bolts 832', grasping portions 830' are forced upward to secure tendons 230. As nuts 844' are loosened from bolts 832', grasping portions 830' are released downward to release tendons 230. Once nuts 844' are loosened completely, nuts 844' are disposed about a second unthreaded portion 832c' of bolt 832'.

[00163] Bolts 832' also include lower washer 837b', connected to bolts 832' by roll pin 837a', which prevents nut 844' from disengaging bolt 832' completely. In the embodiment shown, spring 839' is disposed between washer 837b' and nut 844'. Spring 839' keeps nut 844' pushed up against threaded portion 832b' of bolt 832', making it easier to re-engage threaded portion 832b'. Spring 839' can, however, be omitted in other exemplary embodiments, and lower washer 837b' can be secured to bolts 832' using additional or alternative structures.

[00164] It should be appreciated that grasping portions 830' are not removable from main body 801' of suspender structure 1400 in the embodiment shown in FIGS. 14A and 14B. This allows for easier assembly of the work platform assembly and

prevents lost parts. The design of suspender structure 1400 also allows for attachment of the suspender structure 1400 to tendons 230 from above the work platform assembly.

[00165] Referring now to FIGS. 21-25, in some embodiments of the work platform system shown in FIGS. 1, 3, 7, etc., additional components, such as toe boards and railings, can be incorporated with the work platform system and panel sections 750. For example, FIG. 21 illustrates a panel section 750 with an exemplary rail post 2000 and toe board frame 2500 with toe board 2700 ready for installation of toe board frame 2500.

FIG. 22 illustrates the toe board frame 2500 in more detail.

[00166] FIG. 21 illustrates an exemplary rail post 2000, which in the embodiment shown, is a squared hollow post containing two rail system securing structures 2002, which in the embodiment shown are looped structures. In further embodiments, rail post 2000 can have any shape, and rail system securing structures 2002 can be any structure designed to secure a rail system. For example, chains, rope or other material can be strung through looped structures 2002 to create a rail system.

[00167] FIG. 21 shows toe board 2700 ready to install on toe board frame 2500. Toe board 2700 is contoured to correspond to the shape of toe board frame 2500 and has a securing aperture 2701 which corresponds to the aperture 2406 of rail post mount 2400. Bolt 2702 is used to secure toe board 2700 to toe board frame 2500 by engaging apertures 2701 and 2406. However, in further exemplary embodiments, it is understood that different securing mechanisms and structures can be used.

[00168] As illustrated in FIGS. 21 and 22A, toe board frame 2500 is a bent frame 2502 made of squared tubular material with two panel engaging extensions 2505 configured to insert into struts 760 of panel section 750 (see FIGS. 8, 9, and 10) and rail post supporting member 2520. Central brace 2510 includes securing flange 2515 for attaching a toe board and/or rail 2000, and securing flange 2515 includes a cage nut (not shown) installed on the bottom of flange 2515. Toe board frame 2500 also includes apertures 2504, which corresponds to aperture 2503 on tendon extension 770 of panel section 750. Additional securing components (i.e., zip ties, bolts, etc.) can be optionally used to further secure toe board frame 2500 to panel section 750.

[00169] FIG. 22B shows an alternate embodiment of a toe board frame 2500'. In the embodiment shown in FIG. 22B, toe board frame 2500' includes two buttons 2580 in

place of apertures 2504. Buttons 2580 are made from bent portions of flexible metal 2584 having a single protuberance 2582 on each end. Buttons 2580 are inserted within horizontal extensions 2505 such that the protuberances 2582 extend out of holes in horizontal extensions 2505. Buttons 2580 engage apertures 2503 on tendon extensions 770 of panel section 750.

[00170] While in the embodiment described above, buttons 2580 are specifically described as a bent portion of flexible metal containing a protuberance at each end, it is to be understood that different materials and structures can be used to provide movable protuberances which extend outward from the horizontal extensions 2505 of toe board frame 2500'. For example, other structures such as spring loaded pins, ball locks, friction fit components, and other structures and devices known in the art.

[00171] FIG. 23 illustrates an exemplary rail post mount 2400 for use with toe board frame 2500. Rail post mount 2400 includes a front plate 2402, first side plate 2412 and second side plate 2422. Side plates 2412, 2422 are separated by a distance to form a rear channel 2450, having interior dimension corresponding to the exterior dimensions of rail post 2000. To secure rail post 2000 to rail post mount 2400, side plates 2412, 2422 include a plurality of apertures and/or contours which correspond to apertures/contours on rail post 2000. Rail post 2000 can then be secured in channel 2450 using bolts, ties, or any other structure or device known in the art.

[00172] In some embodiments, such as illustrated in FIG. 24, rail post 2000 includes one or more spring-loaded pins 2005, and channel 2450 includes a plurality of apertures corresponding to different placements of rail post 2000 within channel 2450. Using a spring-loaded pin allows rail post 2000 to be easily moved up or down within channel 2450 by simply depressing the pin to disengage the pin from a corresponding aperture and sliding the rail post 2000 up or down until the pin re-engages an aperture. In further embodiments, rail post 2000 can secure to rail post mount 2400 using one or more carriage bolts 2008 either in addition to a spring-loaded pin 2005 or other securing mechanism, or as a sole securing mechanism.

[00173] Front plate 2402 includes bottom portion 2403 with apertures 2406 and vertical surface 2407. Bottom portion 2403 transitions into vertical plate 2404, which then transitions into hook 2405. Vertical plate 2404 forms a third wall of channel 2450

so that channel 2450 becomes closed on three sides, with the top, bottom and one side of the channel being open.

[00174] As illustrated in FIG. 21, when rail post mount 2400 is secured on toe board frame 2500, vertical surface 2407 contacts central brace 2510 such that apertures 2406 align with apertures 2516 of securing flange 2515 and hook 2405 secures over top member 2502 of toe board frame 2500. Rail post mount 2400 and toe board frame 2500 is then further secured at apertures 2406, 2516 using bolts, ties or any other structure or device known in the art. In some exemplary embodiments, toe board frame 2500 can include a cage nut on central brace 2510 below flange 2515. When rail post mount 2400 is secured to toe board frame 2500, vertical surface 2407 contacts central brace 2510 below flange 2515 and above the cage nut. To secure rail post mount 2400 to toe board frame 2500, a nut passes first through an aperture 2516 of flange 2515, then through an aperture 2406 on bottom portion 2403 of rail post mount 2400, and ultimately engages the cage nut.

[00175] In further embodiments, bottom portion 2403 includes an aperture 2406 and a spring-loaded pin 2409. When rail post mount 2400 is connected to toe board frame 2500, spring-loaded pin 2409 is depressed while vertical surface 2407 is slide under flange 2515. Once spring-loaded pin 2409 is aligned with the corresponding aperture 2516 on flange 2515, spring-loaded pin 2409 engages the aperture 2516 and helps to secure rail post mount 2400 to and align rail post mount 2400 with toe board frame 2500.

[00176] FIG. 25 illustrates an exemplary work platform system with panel sections 750 installed with additional cover structures 1300 in place. Toe boards 2600 are secured to toe board frames 2500. In the exemplary embodiment shown, rail posts 2000 are also included at every fourth toe board 2600. However, in further embodiments, more or fewer rail posts 2000 can be used, and, as described above, rail posts 2000 can be positioned at a point interior from toe boards 2600.

[00177] FIG. 25 also shows suspender structures 800 located at approximately every sixth toe board 2600. However, it should be appreciated that more or fewer suspender structures 800 can be used, and suspender structures 800 can be positioned at any frequency along toe boards. As described in more detail with respect to FIGS. 13A

and 13B, suspender structures 800 have a width such that, when installed between panel sections 750, suspender structures 800 act to fill the gap between panel sections 750 and are stabilized in location by side edges 804 of suspender structures 800 resting on panel sections 750. When used at an exterior panel section 750, there is only a single panel section 750 to stabilize suspender structures 800. In place of the second panel section 750, suspender structure uses central brace 2510 of toe board frame 2500.

[00178] FIGS. 26-29 show alternative additional components, such as toe boards and railing systems. For example, FIG. 26 illustrates an alternative toe board frame 2500'' with securing flange 2515'' and rail post mount 2400''. As shown, toe board frame 2500'' is a bent frame 2502'' made of squared tubular material with two panel engaging extensions 2505'' configured to insert into struts 760/760' of panel sections 750 and rail post support member 2520''. Unlike toe board frames 2500 and 2500', toe board frame 2500'' does not contain an upward vertical bend. Central brace 2510'' includes securing flange 2515'' with aperture 2406'' for securing a toe board and rail post mount 2400'' for securing a rail post. Toe board frame also includes apertures 2504'' and/or buttons 2580'' which correspond to apertures 2503'' on panel sections 750, as described with reference to FIGS. 22A and 22B, above.

[00179] As shown in FIG. 26, rail post mount 2400'' is a rounded tubular structure with an inner diameter slightly larger than the outer diameter of rail post 2000'' (FIG. 28A). Rail post mount 2400'' contains apertures 2410'' which correspond to apertures and/or buttons on rail post 2000'' to secure rail post 2000'' in rail post mount 2400''. It is to be appreciated that there is not bottom surface to rail post mount 2400'' to allow adjustable vertical positioning of a rail post 2000''.

[00180] As further shown in FIG. 29, securing flange 2515'' also includes rail system securing apertures 2512'' for use with flexible rail systems, such as chains.

[00181] FIG. 27 illustrates an exemplary toe board 2702'' for use with toe board frame 2500''. Where toe board frame 2700 is specifically contoured to correspond to toe board frames 2500 and 2500', toe board frame 2700'' is similarly contoured to correspond to toe board frame 2500''. As shown, toe board 2700'' also includes aperture 2701'' which correspond to aperture 2406'' on securing flange 2515'' of toe board frame 2500'' to secure toe board 2700'' using a bolt (not shown).

[00182] FIGS. 28A and 28B show rail post 2000" in detail. As illustrated, rail post 2000" is a tubular post containing a plurality of apertures and/or buttons 2001". It is to be understood that apertures and/or buttons occur in corresponding pairs such that a second set of apertures/buttons is disposed directly opposite the apertures/buttons shown. When securing rail post 2000" to rail post mount 2400", a corresponding pair of apertures/buttons are aligned with apertures 2410" in rail post mount 2400", and rail post 2000" is secured in position. By providing a plurality of aperture/button pairs on rail post 2000", rail post is vertically adjustable within rail post mount 2400"

[00183] Rail post 2000" also includes rail system securing structures 2002", which are specifically designed for use with chain rail systems (see FIG. 29). Rail system securing structure 2002" is shown in more detail in FIG. 28B. Rail system securing structure 2002" includes body 2002a" which is secured to rail post 2000" and contains two corresponding pairs of chain slots 2002d"/2002e". Gravity latch 2002b" is pivotally connected to body 2002a" at the end away from rail post 2000". To secure chain rails to rail post 2000", chains (or string or other flexible rail system) are pushed downward on gravity latch 2002b" over the desired chain slot 2002d" or 2002e". Side extensions 2002f" of gravity latch 2002" are rotated downward while latch body 2002g" is forced upward. Gravity latch 2002" pivots around pivot point 2002c". Once the chain or other rail material clears the side extensions 2002f", gravity latch 2002" causes latch body 2002g" (containing a majority of the mass of gravity latch 2002") to fall back into position, forcing extensions 2002f" upward and thereby closing chain slots 2002d"/2002e".

[00184] FIG. 29 illustrates an exemplary work platform system similar to FIG. 25, except the alternative toe board frame 2500", rail post 2000" and toe boards 2700" are used and a rail system 2800" of flexible chain is installed. In the exemplary embodiment shown, the flexible chain rail system 2800" uses both chain slots 2002d" and 2002e" of a top rail securing structure 2002", with flexible chains extending from one rail post 2000" to the next rail post 2000" and diagonally from the securing structure 2002" of a first rail post 2000" to the securing apertures 2512" (FIG. 26) of flange 2515" (FIG. 26). A second lower rail securing structure 2002" on each rail post 2000" is left available for a second rail system.

[00185] It should be noted that, although the embodiment of work platform system shown in FIGS. 1, 3, 7, etc. is a system in which the suspended subsystem is intended to extend not only generally horizontally between the portions 132, 134 of the support subsystem 130 but also generally linearly due to the fact that the suspension bridge 100 itself is a linear structure, it is envisioned that other embodiments of the work platform system can or will need for a suspended subsystem to be implemented in manners that are nonlinear, for example, in a curving manner as illustrated schematically by a suspended subsystem 995 shown in FIG. 30. Nonlinear implementations of this type can raise special implementation concerns because, as illustrated in FIG. 30 for example, although panel sections from different rows may at certain locations be aligned or "in phase", for example, as shown at a location 997, at other locations such as a location 999 the panel sections may no longer be aligned or be "in phase". Although this in and of itself may not always pose a difficulty, difficulties can arise particularly when out of phase panel sections make it difficult to fit in desired suspender structures 800 to allow for desired suspension chains 790 to be installed. Nevertheless, such difficulties can be alleviated through the use of panel sections of differing sizes that allow for reestablishment of alignment among the panel sections of different rows. For example, realignment between the rows of panel sections at the location 997 of FIG. 30 can be achieved by introducing a row panel in one of the rows that is half of the length of the standard-size row panel being utilized otherwise.

[00186] From the above discussion, it should be appreciated that the further implemented suspended system 720 of FIGS. 7 and 12, as with respect to the suspended system 120 of FIGS. 1 and 3, is in a partially completed form. That is, although some of the panels sections 750, suspension chains 790, suspender structures 800, and cover sections 767 are shown to be implemented in relation to FIGS. 7 and 12, there nevertheless remain regions along the pairs of wire tendons 230 at which panel sections and other components mentioned above are not yet installed. More particularly, even though FIG. 7 suggests that the rows of panel sections 753 and 754 may be fully complete rows of the panel sections 750 that extend the full length of the pair of wire tendons 304 in between those rows of panel sections, as shown the other rows of panels

751, 752, 755, 756, 757, and 758 still require the installation of additional panel sections 750.

[00187] Nevertheless from the above description, it can be appreciated from FIGS. 7 and 12 that, upon the addition of further ones of the panel sections 750, cover sections 767, suspension chains 790, and suspender structures 800 along the entire lengths of all of the pairs of wire tendons 230, the further implemented suspended subsystem 720 will eventually be modified to attain a fully implemented state. More particularly, as shown in FIG. 15, completion of this process will result in a fully implemented work platform system 860 provided on suspension bridge 100 as shown, where the fully implemented work platform system not only includes the two portions 132 and 134 of the support subsystem 130 that are mounted on the two towers 140 of the suspension bridge (as already discussed with reference to FIG. 7), but also includes a fully implemented suspended subsystem 120 extending between those two portions of that support subsystem, where the fully implemented suspended subsystem 120 includes multiple ones of the suspension chains 790 along its length that are coupled to the deck 222 of the suspension bridge.

[00188] More particularly in this regard, it should be evident from the discussion provided in relation to FIGS. 7, 7A, 7B, and 12 that the further implemented suspended subsystem 720 can be modified to attain the fully implemented suspended subsystem 880 particularly by (a) positioning additional ones of the panel sections 750 along the entire lengths of the pairs of wire tendons 230 so that each of the rows 751, 752, 753, 754, 755, 756, 757, and 758 includes a full set of the panel sections extending all or substantially all of the distance between the two portions 132 and 134 of the support subsystem 130 mounted on the two towers 140, (b) coupling sufficient or appropriate numbers of the suspension chains 790 between the deck 222 of the suspension bridge 100 and the wire tendons 230 by way of associated ones of the suspender structures 800, which also serve to retain in place the panel sections 750 relative to the wire tendons 230, and (c) providing additional cover structures 767 between the rows of panel sections 751, 752, 753, 754, 755, 756, 757, and 758 to eliminate any gaps existing between those rows that exist notwithstanding the presence of the suspender structures 800.

[00189] To further illustrate steps of implementation/installation/erection of the fully implemented work platform system 860 of FIG. 15, a flowchart 900 is further provided in FIG. 16, the flowchart illustrating such steps in accordance with exemplary embodiments of the present disclosure. It will be understood that the steps of the flowchart 900 generally correspond to the description already provided above relating to FIGS. 1-15 and 16-26.

[00190] As shown, upon the process commencing at a start step 902, the process first involves a step 904 of assembling/installing a support subsystem such as the support subsystem 130. The step 904 includes performing of a first substep 906 that involves assembling and securing a first portion of the support subsystem (e.g., the first portion 132) at one end of the structure, and another substep 908 that involves assembling and securing a second portion of the support subsystem (e.g., the second portion 134) at another end of the structure. In the substeps 906 and 908, it will be understood that installation and securing of the respective portions of the support subsystem includes the implementation of any appropriate suspension, anchoring, and/or bracing structures as needed and, additionally, that such installation and securing occurs at a desired elevation or height (e.g., a desired distance above ground level).

[00191] In accordance with at least some embodiments, a substep 910 is also performed that includes providing and installing structures, such as adaptor brackets (not shown) to each of the support subsystem portions (for example, at leading edges of the support subsystem portions), with this substep serving to ready or configure the respective support subsystem portions to be connected to flexible elements such as the pairs of wire tendons 230 discussed above. Next, in a step 912, the flexible elements (again, e.g., the pairs of wire tendons 230) are secured to the respective portions of the support subsystem, such as by way of the adapter brackets previously mentioned. Attachment of these flexible elements typically will also establish multiple rows between the flexible elements (e.g., between the different pairs of wire tendons). Attachment of the flexible elements begins the installation of the suspended subsystem as discussed above, which ultimately results in the implementation of a fully implemented suspended subsystem such as the fully implemented suspended subsystem 120 and thus, viewed in combination with the support subsystem 130, implementation of a fully implemented

work platform system such as the fully implemented work platform system 110 mentioned above.

[00192] Upon the flexible elements being attached, then the process advances to a step 914 that involves installing panel sections such as the panel sections 750. The step 914 includes several substeps 916, 918, 920, 922, and 924 as shown. The substep 916 is initially performed as one starts installation of the panel sections at one end of structure, e.g., at the first portion 132 discussed above. This substep involves placing a plurality of the panel sections on a plurality of the flexible elements and securing the panel sections to a portion of the support subsystem 130 (again, e.g., the first portion 132) and can involve the implementation of specialized panel structures or other structures that allow for a smooth transition (e.g., a smooth floor surface) to be maintained as one proceeds from the support subsystem to the suspended subsystem.

[00193] Next, at the substep 918, the process includes placing subsequent or additional ones of the panel sections 750 on a plurality of the flexible elements and securing such subsequent or additional panel sections to the respective previous panel sections using handle support extensions such as the handle support extensions 780 discussed above. This step is typically performed with respect to each of the rows of the suspended subsystem as established by the different flexible elements. Further, this step of placing and securing the panel sections 750 in at least some embodiments can involve positioning and lowering of panel sections in a particular manner. For example, positioning and lowering of a panel section can be performed entirely by hand by work personnel, or by way of machinery, and/or involve an extension connector such as a lanyard. In the case where a lanyard or similar ropelike connector was utilized, such connector would be attached to the handle support extensions tending to rotate away from the work personnel during installation of the panel section (e.g., the handle support extensions that would be at the top of the additional panel section 791 if it was shown in FIG. 11A) and, by way of holding the unattached end of the lanyard, the work personnel could lower the panel section in a controlled manner. Substep 918 can also include activating one or more gravity latches.

[00194] Further, at the substep 920, tendon retainer structures 769 are installed in relation to the flexible elements, typically at desired, predetermined and/or specified

locations along the flexible elements. Although shown as occurring sequentially after the substep 918, it is contemplated that the substep 920 can take place generally as the panel sections 750 are placed on the plurality of flexible elements in accordance with the substep 918. In some embodiments, substep 918 can be omitted entirely. Additionally, at the step 922, the additional cover structures 767 are installed and secured to the tendon retainer structures using retaining or connecting structures (e.g., bolts such as the bolt 982). This substep 922 also can take place generally as the panel sections 750 are placed on the plurality of flexible elements. Finally, as indicated by the substep 924, in some embodiments a guard railing system also is installed with respect to the panel sections 750 and it is contemplated that this substep too can take place generally as panel sections 750 are placed on the plurality of flexible elements. The guard railing system can be implemented by attachment of guard rail structures to a variety of other structures including, for example, retainer brackets such as the bracket 980 or features such as the orifices 781 associated with the panel sections.

[00195] Next, as represented by a step 926, installing of platform suspension structures takes place, and this includes substeps 928, 930, and 932 as shown. Although shown in the flowchart 900 of FIG. 16 as occurring subsequent to the installing of the panel sections in accordance with the step and substeps 914, 916, 918, 920, 922, and 924, in other embodiments the step 926 and associated substeps 928, 930, and 932 can occur substantially contemporaneously with the step and substeps 914, 916, 918, 920, 922, and 924. As indicated, the substep 928 involves installing and securing suspender bracket structures, such as the suspender structures 800, to the flexible elements (again, e.g., the wire tendons 230) at desired, predetermined and/or specified locations. Next, the substep 930 is performed, which includes installing and securing suspension structures (e.g., the suspension chains 790) to beam clamps or other portions/members of the structure in relation to which the work platform system is being implemented (e.g. to locations along the deck 222 of the suspension bridge 100) at desired, predetermined and/or specified locations along the structure.

[00196] Then, at the further substep 932, adjustment (e.g., raising or lowering) of the elevation of the panel sections 750 (connected to the flexible elements) and additionally securing (for example, using a chain retaining structure as previously

described) of the suspension structures to the suspender bracket structures are performed. For example, one or more of the suspension wires 790 can be attached to the suspender structures 800 by way of the intermediate orifice(s) 822 thereof such that tension is applied to the structures 800 and thus to the flexible elements. It should be noted that tools, such as a suspender adjustment tool, can be used to adjust or accomplish elevation adjustment. Additionally, it should also be noted that the process of installing the suspender bracket structures such as the suspender structures 800 at the substep 928 can particularly involve positioning the suspender structures 800 onto the flexible elements and then rotating and tightening the grasping portions 830 so as to affix the suspender structure(s) to the flexible elements (and also so that the ends of panel sections 750 are locked in place between the grasping portions 830 and the top planar surfaces 802 of the suspender structures). Depending upon the embodiment, the suspension wire(s) can alternatively be coupled to the structures 800 prior to the grasping portion(s) 830 being rotated and locked in place relative to the flexible elements.

[00197] If at the step 936 it is determined that the installation of panel sections 750 is not complete with respect to any one or more of the rows of panel sections, the steps and substeps associated with installation of the panel sections 750 and platform suspension structures continues are repeated, by returning to step 914. It should be noted that, in this circumstance, upon repeating the substeps associated with the step 914 in particular, the substep 916 typically would no longer be applicable and would be skipped (since implementation of the panel sections would typically no longer be occurring right at the junction between the support subsystem and the flexible elements). Accordingly, the steps and substeps 914-936 are generally repeated until the other end of the structure (e.g., the second portion 134) is reached. That said, upon it being determined at the step 936 that the installation of panel sections 750 is complete with respect to all of the rows, the panel sections will be finally secured (e.g., using an adaptor bracket structure), at step 938, at the second portion of the support subsystem (e.g., the portion 134), and then the process concludes at the step 940. It should be appreciated that, although the flowchart 900 envisions that installation is complete when a far end of the suspended subsystem (e.g., at the portion 134) has been reached, completion also could be achieved, in other

embodiments, by reaching some other location or attaining some other level of implementation.

[00198] In further, embodiments, the flowchart 900 can include additional steps or substeps depending on the particular use of a suspended subsystem and/or the use of any optional components. For example, flowchart 900 can include the further steps or substeps of installing a toe board frame, installing a toe board, installing a rail post mount, installing a rail post and/or forming a rail system. Flow chart 900 can also include further substeps for the installation of additional cover portions, as described with reference to FIGS. 18I-18N. It should be appreciated that the additional steps or substeps are not limited to those above, and the above- recited steps or substeps can include further substeps.

[00199] It should be appreciated that the work platform assembly, subsystems, and components thereof, and methods of implementation/installation and utilization relating thereto that are described above are advantageous in one or more respects depending upon the embodiment. For example, the intermeshing handle or grasping portions 830 allow not only for supporting the panel sections 750 but also act as support extensions and allow adjacent panel sections to be linked to one another and to provide support for and self-brace one another (e.g., the grasping portions 830 of one panel section extending beneath the side strut of an adjacent panel section help to provide further support for that adjacent panel section). Indeed, the grasping portions/support extensions 830 facilitate keeping the top panel surfaces of adjacent ones of the panel sections substantially aligned with minimal changes in elevation of the top panel surfaces of neighboring panel sections relative to one another. The panel sections 750 also are easy for stacking and shipping.

[00200] Also, through the use of appropriately-positioned ones of the tendons 230, the overall working surface (e.g., the surface on which work personnel walk) provided by the work platform system is substantially flat. Further, through the use of pairs of tendons, rather than single tendons, extending between the support subsystem (platforms) and supporting the panel sections, significant redundancy is built into the work platform system. Additionally, numerous components of the work platform system are modular

and/or interchangeable, and/or can be reused again and again in relation to the implementation of new work platform systems in relation to additional structures.

[00201] It should also be appreciated that the work platform assembly, subsystems, and components thereof, and methods of implementation/installation and utilization relating thereto that are described above are only intended as examples, and the present disclosure is intended to encompass numerous variations of the above-described concepts. For example, a variety of panel sections of different sizes and shapes can be employed depending upon the embodiment and, indeed, in some embodiments, panel sections of different sizes and shapes are implemented together in a single work platform system. The use of panel sections of different widths and/or lengths can also be appropriate depending upon the circumstance. For example, in some embodiments or circumstances, panel sections having different sizes in terms of the width dimension discussed above (e.g., the width dimension 759 of FIG. 8) extending between different pairs of the wire tendons can be appropriate for different rows, to accommodate variable spacing of the wire tendons of different pairs of those wire tendons. This can be appropriate, further for example, to accommodate variable spacing between different ones of the hubs of 310 of the support system to which the wire tendons at their ends are attached.

[00202] Also, in some embodiments or circumstances, panel sections having different sizes in terms of the length dimension discussed above (e.g., the length dimension 761 of FIG. 8) can be provided. The use of panel sections having different lengths allows for the overall work platform system to be advantageously implemented as necessary in view of the environment and other circumstances. For example, the use of panel sections of different lengths allows the panel sections to more closely be fit to obstacles (e.g., a pipe sticking from a bridge structure), curve platform fit contoured structures, or provide an ability to space wire tendon support extensions (which also can be referred to as tendon hooks) 770 in a manner that facilitates the installation of suspender structures 800. Further, in some embodiments, any of a variety of different numbers and types of handle support extensions (or simply interlocking handles) can be employed for interlocking or linking any two or more of the panel sections, and the

handle support extensions need not be identical in number, size, or shape to the handle support extensions 780 shown in FIG. 8.

[00203] The use of handle support extensions can provide numerous functions including, for example: (a) securing panel sections together during assembly so that the panel sections do not slide apart from one another; (b) improving of the ease of platform assembly, insofar as the handle support extensions provide guidance and support for panel sections during assembly and disassembly; (c) increasing panel section stiffness by virtue of allowing for the transfer of loads from one panel section to another panel section; (d) minimizing the degree to which neighboring panel sections have surfaces that are not aligned (e.g., eliminating steps between neighboring panels and enhancing the degree to which the various neighboring panel sections form an overall surface that is substantially flat); (e) facilitating the assembly of panel sections in applications where the work platform system is extending downhill, by preventing panel sections from sliding away before the panel sections can be secured to wire tendons/cables; and/or (f) facilitating the handling, packing and securement of panel sections prior to delivery of the panel sections to a jobsite.

[00204] As already indicated above, the particular number, size, shape, and arrangement of handle support extensions associated with a given panel section can vary depending upon the embodiment or circumstance. Although in some work platform systems all of the panel sections will have identical handle support extensions, in other embodiments, one or more panel sections can have first arrangement of one or more handle support extensions even while one or more other panels sections have another arrangement of one or more handle support extensions. Among the various possible arrangements of handle support extensions that are possible are the following, for example: (a) a first arrangement in which there is only a single handle support extension on one side of a panel section; (b) a second arrangement in which there are two or more handles on only one side of a panel section (but no handle support extensions on the other side of the panel section); (c) a third arrangement in which there is a single handle support extension (but not more than one such extension) on each side of the panel section; and (d) a fourth arrangement in which there is more than one handle support extension on both of the sides of the panel section.

[00205] It should further recognized that the present disclosure is intended to encompass handle support extensions that have any of a variety of different shapes, as well as panel sections that include not only one or more handle support extensions but also one or more other features that serve one or more of the purposes of the handle support extensions as well. For example, in some embodiments, a panel section can include a flat U shaped handle support extension that serves to support adjacent panel section (such a handle support extension would be positioned so as to extend under a side strut of a neighboring panel section). Alternatively for example, in some embodiments, a panel section can include a flat U shaped handle support extension that serves to support an adjacent panel section and that also serves to receive or accept an interlocking device from the adjacent panel section.

[00206] Further for example, in some embodiments, a panel section can include a flat U shaped handle support extension that serves to support an adjacent panel section and the panel section can further include an additional feature that is configured to interlock with the adjacent panel section (or configured to receive an interlocking feature of the adjacent panel section). Additionally for example, in some embodiments, the panel section can include a U shaped handle with a 90 degree bend on one side only to secure adjacent panel sections together, as already discussed with reference to FIG. 8. And numerous other possible arrangements of handle support extensions are possible an encompassed herein as well. Also, it should be appreciated that in some alternate embodiments the support extensions referred to herein as handle support extensions need not at all be directed to (or need not primarily be directed to) serving as handles by which work personnel (or machinery) can grasp or lift or move the panel sections on which those support extensions are formed. That is, in at least some alternate embodiments, the panel sections can include one or more support extensions that are configured to allow a given panel section to provide support for and/or to be positioned in relation to (or be attached to) an adjacent panel section in a given row of panel sections (or in another arrangement of neighboring panel sections) even though such support extensions are not configured as, or employed as (or configured primarily as, or employed primarily as) handles.

[00207] Although the embodiments discussed above employ pairs of wire tendons (or other flexible linkages or elements) such as the pairs of wire tendons 301, 302, 303, 304, 305, 306, 307, 308, and 309 and employs wire tendon support extensions (or tendon hooks) such as the extensions 770 that are suited for such pairs of wire tendons insofar as the extensions have dual indentations (or notches) 772 that can be used to locate and support the panel sections on the pairs of wire tendons, it should be appreciated that such wire tendon support extensions can also be used in embodiments where only single tendons are situated adjacent to the panel sections (e.g., in embodiments where rows of the panel sections are situated between single wire tendons. Indeed, although it is envisioned that the use of pairs of wire tendons can be advantageous in that it can provide redundancy and greater system strength and robustness, and can facilitate balanced clamping of other structures to the wire tendons (e.g., balanced clamping of the tendons by the suspender structures 800 or tendon retainer structures), nevertheless it should be appreciated that all or substantially all of the components of the fully implemented work platform system (including, for example, the suspender structures 800) also can be employed in a work platform system that only employs single tendons running in between adjacent rows of panel sections (or running adjacent to a row of panel sections).

[00208] Additionally, numerous subcomponents of the fully implemented work platform system 860 have particular features that offer a variety of capabilities and advantages. For example, with respect to the suspender structures 800, the handle portions 816 facilitate easy handling/grasping of the suspender structure while also providing the necessary section required for strength and stiffness of the suspender structure so that the structure can bear suspender loads. Also for example, the tendon retainer structures (or rotating cable structures) 769 facilitate fast and simple installation and securement of the tendon retainer structure (or bracket) to single or dual tendon arrangements. Further, in some embodiments, one or more of the suspender structures or tendon retainer structures includes an indicating pin providing a visual indicator indicating whether proper assembly or implementation (e.g., proper clamping onto one or more tendons) of the suspender structure or tendon retainer structure has been achieved. Also, in some embodiments, a visual indicator associated with the suspension structure

can facilitate fast, simple and visually verifiable securement of a suspension chain to the suspender structure.

[00209] Further for example, it should be appreciated that each of the intermediate orifices 822 of the suspender structures 800, due to the presence of the pairs of end slot regions 823 and intermediate transverse slot regions 825, serves as a dual chain slot by which the suspender structure 800 can be attached not merely to one but rather to more than one (e.g., two) of the suspension chains 790 or other linkages or extensions or connectors. Also, each of the intermediate orifices 822 facilitates use of a suspender adjustor to install the suspender structure 800. Further, in some embodiments or circumstances, the intermediate orifices 822 can be employed to allow for the installation of wind bracing chains in relation to the suspender structures 800. Additionally, it should be appreciated with respect to the tendon retainer structures 769 that these structures not only can provide connective structures by which the additional cover structures (or gap fillers) 767 can be affixed to the wire tendons, where the additional cover structures then further serve to prevent movement of the panel structures 750 away from the wire tendons (e.g., to prevent uplifting of the panel structures), but also the tendon retainer structures also provide connection structures by which retainer bracket can be secured in relation to the wire tendons, where the containment brackets are secured to the tendon retainer structures (at locations above the additional cover structures) and can further receive and support vertical and horizontal containment wire ropes.

[00210] It should further be appreciated that, although in at least some embodiments the work platform systems encompassed herein include both a suspended subsystem and a support subsystem, where the support subsystem includes components (such as the hubs 310 and joists 330) corresponding to the QuikDeck™ suspended access system mentioned above, this need not be the case in all embodiments. Use of a support subsystem that includes components corresponding to the QuikDeck™ suspended access system can be advantageous for any of a number of reasons including, for example, that implementation of platforms in accordance with the QuikDeck™ suspended access system can serve to provide robust anchorages at multiple locations for securing the wire tendons (e.g., the pairs of wire tendons 230) of the suspended subsystem. Indeed, such

platforms provide a robust and stable surface that facilitates installation of the wire tendons.

[00211] However, notwithstanding these advantages of implementing a suspended subsystem in relation to support subsystems (platforms) in accordance with the QuikDeck™ suspended access system, the present disclosure nevertheless is also intended to encompass embodiments that utilize other types of support subsystems, and nothing herein should be interpreted as indicating any requirement that the QuikDeck™ suspended access system or any of the particular support subsystem components or variations described herein be employed. Indeed, the present disclosure is intended to encompass work platform systems that only include one or more suspended subsystem components or that only include what can be considered a suspended subsystem, with that suspended subsystem being directly coupled to structures of interest such as the suspension bridge 100 without there being present any support subsystem whatsoever.

[00212] Additionally, regardless of the particular suspended subsystem or support subsystem components that are used, numerous other variations are intended to be encompassed herein as well. For example, although the fully implemented work platform system 860 only includes a single platform level, in other embodiments there can be multiple levels of platform structures. Further, in some embodiments other types of components can be also included in the work platform system. For example, in some embodiments, a railing system can be attached to one or more portions of the work platform system (e.g., one or more portions of the support and/or suspended subsystems of the work platform system). Railings of such systems can be manufactured from a variety of materials, such as chain, cable (e.g., galvanized aircraft cable), line, and the like, among other things and, in still additional embodiments, railing standards can also be used to erect a work enclosure system. For example, tarps, sheeting, or the like can be attached to railing standards to enclose work area(s) for various purposes.

[00213] The materials out of which the work platform system 860 or other work platform systems in other embodiments can be formed can vary depending upon the embodiment. For example, suitable materials for components of such work platform systems can include metal (e.g., steel, aluminum, etc.), wood, plastic, composite, or other suitable materials. Also, such components can be made of items that are solid,

corrugated, grated, smooth, or of other suitable configurations. For example, panel portions of such work platform assemblies can be made of wood sheeting, plywood, roof decking material, metal on a frame, grating, steel sheeting, and the like, among other things.

[00214] Further for example, each of the suspension chains of the suspended subsystem (e.g., the suspension chains 790) and support chains of the support subsystem (e.g., the support chains 220) can take the form of any of a variety of types of chains, including toothed chains, suspension wires or wire tendons, belts, or other support components depending upon the embodiment. Also, the wire tendons of the suspended system (e.g., the wire tendons of the pairs of wire tendons 230) can additionally take on any of a variety of forms of wires, cables, and similar flexible extending structures. Indeed, it should be appreciated that, depending upon the embodiment or circumstance, any of a variety of types of bendable or flexible linkages or extensions or flexible machine elements (or simply flexible elements) can be employed in the roles of each and every one of the suspension chains 790, support chains 220, and wire tendons 230, such as wire, wire rope, chain (or toothed chain), belt, or similar types of extensions or linkages or connectors.

[00215] Further in this regard, it should be noted that typically the extensions or linkages or connectors will be structures that are flexible and that have lengths along linear dimensions that are substantially greater than the widths and depths of those structures, where the widths and depths are themselves both small relative to the lengths and the widths and depths are themselves similar in size. Nevertheless, in some alternate embodiments, it is possible that the extensions or linkages or connectors can be structures having other characteristics including, for example, structures that have lengths that are substantially greater than their widths, as well as widths that are substantially greater than their depths (e.g., structures taking the form of ribbons). Also, it is possible in some cases that one or more of the extensions or linkages or connectors used as (or in place of) the suspension chains 790, support chains 220, and/or wire tendons 230 can be rigid rather than flexible.

[00216] In at least some embodiments, portions of the work platform system described herein can interface with, connect with, or interoperate with portions of

conventional work platform systems. Also, in at least some embodiments, work personnel can extend, relocate, or remove components of the work platform system using only hand tools, and no mechanical tools, hoists, cranes, or other equipment is required to add to, or subtract from, existing components of the work platform system. In at least some embodiments, installation of the work platform system can be done, essentially, “in the air”. That is, the work platform system can be erected and connected together “in the air”, in a piece-by-piece order via the use of multiple pieces of lifting, or hoisting, equipment. That said, in alternate embodiments, it is possible also that one or more of the subsystems, portions, or components will be preassembled on the ground, or at a remote location, and then moved and hoisted as a pre-assembled module into the desired location.

[00217] It should also be understood that, in addition to the processes of implementation/installation and use described herein, the present disclosure is also intended to encompass other processes such as disassembly processes. For example, to the extent that a process for installing panel sections 750 is discussed above, and can involve a worker lowering one of the panels by of a lanyard or similar ropelike structure, disassembly can similarly involve tugging on a lanyard to raise up a previously-installed panel. In such circumstance, the lanyard would be attached to the handle support extension(s) of the panel section being removed that extend from the side strut of that panel section opposite the location of the work personnel pulling on the lanyard.

[00218] Therefore, although certain embodiments of the present disclosure have been shown and described in detail above, it should be understood that numerous changes and modifications can be made without departing from the scope of the appended claims. For example, the above described work platform systems may include various embodiments and combination of embodiments of the various components described herein. Nonlimiting examples of embodiments of the present disclosure are provided below.

[00219] In an embodiment, E1, a work platform system for implementation in relation to a structure, the work platform system comprising: a first flexible element and a second flexible element, wherein a respective first end of each of the flexible elements is coupled at least indirectly to a first support component and a respective second end of

each of the flexible elements is coupled at least indirectly to a second support component; and a plurality of panel structures supported upon the flexible elements and substantially extending between the first flexible element and the second flexible element, wherein the panel structures are positioned in succession with one another so as to form a row of the panel structures extending along the flexible elements; wherein each of the panel structures includes a first pair of opposed edges each extending substantially parallel to the flexible elements and a second pair of opposed edges each extending between the first pair of opposed edges, wherein a first of the panel structures includes a first support extension extending outward away from a first one of the respective second pair of opposed edges of the first panel structure, and wherein the first support extension of the first panel structure includes a first formation into which a second one of the respective second pair of opposed edges of a second of the panel structures is positioned, the first formation serving to at least partly limit movement of the second panel structure relative to the first panel structure. E2. The work platform system of E1 wherein the first support extension is configured as a handle structure. E3 The work platform system of E1, wherein the second panel structure includes a second support extension extending outward away from the second one of the respective second pair of opposed edges, and wherein the second support extension includes a second formation into which the first one of the respective second pair of opposed edges of the first panel structure is positioned, the second formation serving to at least partly limit movement of the second panel structure relative to the first panel structure. E4. The work platform system of E3, wherein the first panel structure additionally includes a third support extension extending outward away from the first one of the respective second pair of opposed edges of the first panel structure, wherein the first support extension is at a first position that is closer to a first one of the respective first pair of opposed edges of the first panel structure than a second position at which the third support extension is located, wherein the second panel structure additionally includes a fourth support extension extending outward away from the second one of the respective second pair of opposed edges of the second panel structure, wherein the second support extension is at a third position that is closer to a second one of the respective first pair of opposed edges of the second panel structure than a fourth position at which the fourth support extension is located, and wherein the first,

fourth, second, and third positions occur in succession in between the first and the second flexible elements.

[00220] E5. The work platform system of E1, wherein each of the panel structures includes at least one support extension extending outward away from each of the respective second pair of opposed edges of the respective panel structure, wherein the at least one support extension of the first panel structure includes the first support extension, and wherein the at least one support extension extending outward away from a first one of the respective second pair of opposed edges of each respective panel structure is positioned in a complementary shifted manner relative to the at least one support extension extending outward away from the second one of the respective second pair of opposed edges of the respective panel structure.

[00221] E6. The work platform system of E1, wherein the first support extension is a U-shaped structure that includes an outwardly-extending segment extending outward away from the first one of the respective second pair of opposed edges in a direction substantially parallel to a panel structure surface of the first panel structure, an upwardly-extending segment extending from the outwardly-extending segment upward toward a plane of the panel structure surface, a longitudinally-extending segment extending longitudinally toward a further plane of a first one of the first pair of opposed edges, a downwardly-extending segment extending downwardly away from the plane of the panel structure surface, and an inwardly-extending segment extending inwardly to the first one of the respective second pair of opposed edges, and wherein the first formation includes at least the upwardly-extending, longitudinally-extending, and downwardly-extending segments. E7. The work platform system of E6, wherein the outwardly-extending and inwardly-extending segments include hook-shaped outer portions that are included in the first formation, and wherein each of the opposed edges of the first and second pairs of the first panel structure is formed by a respective tubular support strut extending underneath the panel structure surface. E8. The work platform system of E6, wherein the first support extension serves to assist in supporting the second panel structure relative to the first and second flexible elements.

[00222] E9. The work platform system of E1, wherein each of the panel structures includes at least two support extensions extending outward from each of the first pair of

the opposed edges, and each of the support extensions includes a respective at least one indentation configured to receive either the first flexible element or the second flexible element when the panel structure is supported upon the flexible elements. E10. The work platform system of E1, further comprising a third flexible element, wherein a respective first end of the third flexible element is also coupled at least indirectly to the first support component and a respective second end of the third flexible element is coupled at least indirectly to the second support component; and an additional plurality of panel structures supported upon the second flexible element and the third flexible element, wherein the panel structures of the additional plurality of panel structures are positioned in succession with one another so as to form an additional row of the panel structures extending along the third flexible element. E11. The work platform system of E10, further comprising at least one cover section positioned in between at least one of the first plurality of panel structures and at least one of the additional plurality of panel structures, so as to cover over a portion of the second flexible element.

[00223] E12. The work platform system of E1, further comprising a suspension component and a suspender structure to which the suspension chain is attached, wherein the suspender structure is coupled to the first flexible element or the second flexible element so that the respective flexible element is supported by the suspension component. E13. The work platform system of E12, wherein the suspender structure includes at least a primary surface formation and a clasp component that is rotatably attached to the primary surface formation but locked in place relative to the primary surface formation. E14. The work platform system of E13, wherein the clasp component is configured to rotate from a first position in which the clasp component is unlocked to a second position in which the clasp component is locked in place relative to the primary surface formation by way of a post of the clasp component fitting into an orifice of the primary surface formation. E15. The work platform system of E13 wherein the suspender structure includes an additional clasp component that is also rotatably attached to the primary surface formation but locked in place relative to the primary surface formation. E16. The work platform system of E13, wherein the suspender structure is structured to permit at least one of securing and adjustment of a suspension component. E17. The work

platform system of E16, wherein the suspension component is a chain that is configured to be secured or adjusted by way of a chain slot in the suspender structure.

[00224] E18. The work platform system of E1, further comprising the first and second support components, which are respectively mounted on first and second portions of the structure.

[00225] In an embodiment, E19, a work platform system for implementation in relation to a structure, the work platform system comprising: a first pair of flexible elements and a second pair of flexible elements, wherein a respective first end of each of the flexible elements is coupled at least indirectly to a first support component and a respective second end of each of the flexible elements is coupled at least indirectly to a second support component; a plurality of panel structures supported upon the flexible elements; a suspension component; and a suspender structure coupled to at least one of the first pair of flexible elements and the second pair of flexible elements so that the at least one of the first pair of flexible elements and the second pair of flexible elements is or are supported by the suspension component, wherein the suspender structure includes at least a primary surface formation and a clasp component that is rotatably attached to the primary surface formation but locked in place relative to the primary surface formation.

[00226] E20. The work platform system of E19, wherein the clasp component is configured so that, when rotated to a first position, the clasp component fits between the flexible elements of the at least one of the first pair and the second pair and, when rotated to a second position the clasp component is locked in place relative to the primary surface formation by way of a post of the clasp component fitting into an orifice of the primary surface formation. E21. The work platform system of E19, wherein the clasp component of the suspender structure further supports an end or end portion of at least a respective one of the panel structures. E22. The work platform system of E19 wherein each of the panel structures includes first extensions that are supported by the flexible elements and second extensions that serve to allow for an adjacent one of the panel structures to be implemented and secured in relation to the respective panel structure. E23. The work platform system of E19, further comprising the first and second support components, which are respectively mounted on first and second portions of the structure.

[00227] E24. The work platform system of E19, wherein: each of the plurality of panel structures includes a first pair of opposed edges each extending substantially parallel to the flexible elements and a second pair of opposed edges each extending between the first pair of opposed edges, a first of the plurality of panel structures includes a first support extension extending outward away from a first one of the respective second pair of opposed edges of the first panel structure, the first support extension of the first panel structure including a first formation into which a second one of the respective second pair of opposed edges of a second of the panel structures is positioned, the first formation serving to at least partly limit movement of the second panel structure relative to the first panel structure, wherein the second panel structure includes a second support extension extending outward away from the second one of the respective second pair of opposed edges, and wherein the second support extension includes a second formation into which the first one of the respective second pair of opposed edges of the first panel structure is positioned, the second formation serving to at least partly limit movement of the second panel structure relative to the first panel structure; wherein the first panel structure additionally includes a third support extension extending outward away from the first one of the respective second pair of opposed edges of the first panel structure, wherein the first support extension is at a first position that is closer to a first one of the respective first pair of opposed edges of the first panel structure than a second position at which the third support extension is located, wherein the second panel structure additionally includes a fourth support extension extending outward away from the second one of the respective second pair of opposed edges of the second panel structure, wherein the second support extension is at a third position that is closer to a second one of the respective first pair of opposed edges of the second panel structure than a fourth position at which the fourth support extension is located, and wherein each of the first support extension, the second support extension, the third support extension, and the fourth support extension is configured to function as a handle structure.

[00228] In an embodiment, E25, a work platform system for implementation in relation to a structure, the work platform system comprising: a first pair of flexible elements and a second pair of flexible elements, wherein a respective first end of each of the flexible elements is coupled at least indirectly to a first support component and a

respective second end of each of the flexible elements is coupled at least indirectly to a second support component; and a plurality of panel structures supported upon the flexible elements and substantially extending between the first pair of flexible elements and the second pair of flexible elements, the panel structures positioned in succession with one another so as to form a row of the panel structures extending along the flexible elements, and each of the panel structures includes a first pair of opposed edges each extending substantially parallel to the flexible elements and a second pair of opposed edges each extending between the first pair of opposed edges; and a first support extension extending outward away from a first one of the respective second pair of opposed edges of the first panel structure, the first support extension of the first panel structure including a first formation into which a second one of the respective second pair of opposed edges of a second of the panel structures is positioned, the first formation serving to at least partly limit movement of the second panel structure relative to the first panel structure.

[00229] E26. The work platform system of E25, wherein the first support extension is structure to function as a handle structure. E27. The work platform system of E25, further comprising a suspender structure configured to be coupled to a suspension component, the suspender structure coupled to at least one of the first pair of flexible elements and the second pair of flexible elements so that the at least one of the first pair of flexible elements and the second pair of flexible elements is or are supported by the suspension component. E28. The work platform system of E27, the suspender structure includes at least a primary surface formation and a clasp component that is rotatably attached to the primary surface formation but locked in place relative to the primary surface formation; and wherein the clasp component is configured so that, when rotated to a first position, the clasp component fits between the flexible elements of the at least one of the first pair and the second pair and, when rotated to a second position the clasp component is locked in place relative to the primary surface formation by way of a post of the clasp component fitting into an orifice of the primary surface formation. E29. The work platform system of E28, wherein the suspender structure is structured to permit securing and adjustment of a suspension component, such as a chain, by way of an opening, such as a chain slot.

[00230] E30. The work platform system of E25 wherein each of the panel structures includes first extensions that are supported by the flexible elements and second extensions that serve as supports and additionally serve to allow for an adjacent one of the panel structures to be implemented in relation to the respective panel structure. E31. The work platform system of E25, further comprising the first and second support components, which are respectively mounted on first and second portions of the structure.

[00231] E32. The work platform system of E25, further comprising a second support extension extending outward away from the second one of the respective second pair of opposed edges of the second panel structure, and wherein the second support extension includes a second formation into which the first one of the respective second pair of opposed edges of the first panel structure is positioned, the second formation serving to at least partly limit movement of the second panel structure relative to the first panel structure. E33. The work platform system of E32, further comprising: (i) a third support extension extending outward away from the first one of the respective second pair of opposed edges of the first panel structure, wherein the first support extension is at a first position that is closer to a first one of the respective first pair of opposed edges of the first panel structure than a second position at which the third support extension is located, and (ii) a fourth support extension extending outward away from the second one of the respective second pair of opposed edges of the second panel structure, wherein the second support extension is at a third position that is closer to a second one of the respective first pair of opposed edges of the second panel structure than a fourth position at which the fourth support extension is located, and the first, fourth, second, and third positions occur in succession in between the first flexible elements and the second flexible elements.

[00232] E34. The work platform system of E25, wherein each of the panel structures includes at least one support extension extending outward away from each of the respective second pair of opposed edges of the respective panel structure, wherein the at least one support extension of the first panel structure includes the first support extension, and wherein the at least one support extension extending outward away from a first one of the respective second pair of opposed edges of each respective panel structure is positioned in a complementary shifted manner relative to the at least one support

extension extending outward away from the second one of the respective second pair of opposed edges of the respective panel structure.

[00233] E35. The work platform system of E25, wherein the first support extension is a U-shaped structure that includes an outwardly-extending segment extending outward away from the first one of the respective second pair of opposed edges in a direction substantially parallel to a panel structure surface of the first panel structure, an upwardly-extending segment extending from the outwardly-extending segment upward toward a plane of the panel structure surface, a longitudinally-extending segment extending longitudinally toward a further plane of a first one of the first pair of opposed edges, a downwardly-extending segment extending downwardly away from the plane of the panel structure surface, and an inwardly-extending segment extending inwardly to the first one of the respective second pair of opposed edges, and wherein the first formation includes at least the upwardly-extending, longitudinally-extending, and downwardly-extending segments. E36. The work platform system of E35, wherein the outwardly-extending and inwardly-extending segments include hook-shaped outer portions that are included in the first formation, and wherein each of the opposed edges of the first and second pairs of the first panel structure is formed by a respective support strut extending underneath the panel structure surface. E37. The work platform system of E36, wherein the first support extension serves to assist in supporting the second panel structure relative to the first and second pairs of flexible elements.

[00234] E38. The work platform system of E25, wherein each of the panel structures includes at least two support extensions extending outward from each of the first pair of the opposed edges, and each of the support extensions includes a respective pair of indentations configured to receive either the first pair of flexible elements or the second pair of flexible elements when the panel structure is supported upon the flexible elements.

[00235] E39. The work platform system of E25, further comprising a third pair of flexible elements, wherein a respective first end of each of the flexible elements of the third pair is also coupled at least indirectly to the first support component and a respective second end of each of the flexible elements of the third pair is coupled at least indirectly to the second support component; and an additional plurality of panel structures

supported upon the second pair of flexible elements and the third pair of flexible elements, wherein the panel structures of the additional plurality of panel structures are positioned in succession with one another so as to form an additional row of the panel structures extending along the third pair of flexible elements. E40. The work platform system of E39, further comprising at least one cover section positioned in between at least one of the first plurality of panel structures and at least one of the additional plurality of panel structures, so as to cover over portions of the second pair of flexible elements. E41. The work platform system of E39, further comprising a suspension component and a suspender structure to which the suspension component is attached, wherein the suspender structure is coupled to at least one of the first pair of flexible elements and the second pair of flexible elements so that the at least one of the first pair of flexible elements and the second pair of flexible elements is or are supported by the suspension component. E42. The work platform system of E41, wherein the suspender structure includes at least a primary surface formation and a clasp component that is rotatably attached to the primary surface formation but locked in place relative to the primary surface formation. E43. The work platform system of E42, wherein the clasp component is configured so that, when rotated to a first position, the clasp component fits between the flexible elements of the at least one of the first pair and the second pair and, when rotated to a second position the clasp component is locked in place relative to the primary surface formation by way of a post of the clasp component fitting into an orifice of the primary surface formation.

[00236] E44. The work platform system of E42, wherein the suspender structure includes an additional clasp component that is also rotatably attached to the primary surface formation but locked in place relative to the primary surface formation. E45. The work platform system of E44, wherein the clasp component of the suspender structure further supports an end or end portion of at least a respective one of the panel structures.

[00237] E46. The work platform system of E25, further comprising the first and second support components, which are respectively mounted on first and second portions of the structure. E47. The work platform system of E25, further comprising at least one cover section, wherein at least one of the panel sections is held at least substantially in

place at least partly by way of the cover section. E48. The work platform system of E47, wherein the cover section comprises a gap filler that is fixedly attached to a tendon retainer structure. E49. The work platform system of E48, wherein the tendon retainer structure includes: a main outer shell having a roof and first and second side walls, respectively, extending downwards from each of two sides of the roof, respectively, a flat internal compression structure that includes two ear extensions that respectively fit into two complementary slots formed near the bottom edges of each of the two side walls. E50. The work platform system of E49, wherein the tendon retainer structure includes indentations for receiving at least one of the first and second pairs of flexible elements, respectively. E51. The work platform system of E50, further comprising a containment bracket that is secured, at least indirectly, to the tendon retainer structure.

[00238] In an embodiment, E52, a method of implementing a work platform system in relation to a structure, the method comprising: attaching a first pair of flexible elements and a second pair of flexible elements at least indirectly to a first support and a second support, respectively; installing a first panel section onto the first and second pairs of flexible elements; installing a second panel section onto the first and second pairs of flexible elements, wherein the installing of the second panel section includes placement of a second side edge of the second panel section into at least one support component extending outward from a first side edge of the first panel section and rotating the second panel section until the second panel is supported on the first and second pairs of flexible elements; and determining whether at least one suspension component should be installed in relation to at least one of the first and second pairs of flexible elements and, if so, installing at least one suspender structure onto the at least one of the first and second pairs of flexible elements and coupling the at least one suspension component to the at least one suspender structure.

[00239] E53. The method of E52, wherein the at least one support component is configured as a handle structure and the method further includes moving, by way of the handle structure, the first panel section. E54. The method of E52, wherein at least one of the first and second supports, respectively, includes an elongate structural member and an interconnection structure connected to the elongate member in a manner that permits articulation of the interconnection structure with respect to the elongate member, and

wherein the attaching includes connecting at least one of the flexible elements at least indirectly to the at least one interconnection structure.

[00240] E55. A work platform system for implementation in relation to a structure, the work platform system comprising a first flexible element and a second flexible element, wherein a respective first end of each of the flexible elements is coupled at least indirectly to a first support component and a respective second end of each of the flexible elements is coupled at least indirectly to a second support component; and a plurality of panel structures supported upon the flexible elements and substantially extending between the first flexible element and the second flexible element, wherein the panel structures are positioned in succession with one another so as to form a row of the panel structures extending along the flexible elements; wherein each of the panel structures includes a first pair of opposed edges each extending substantially parallel to the flexible elements and a second pair of opposed edges each extending between the first pair of opposed edges, wherein a first of the panel structures includes a first support extension extending outward away from a first one of the respective second pair of opposed edges of the first panel structure, and wherein the first support extension of the first panel structure includes a first formation into which a second one of the respective second pair of opposed edges of a second of the panel structures is positioned, the first formation serving to at least partly limit movement of the second panel structure relative to the first panel structure.

[00241] E56. The work platform system of E55, wherein each of the panel structures includes at least two support extensions extending outward from each of the first pair of the opposed edges, and each of the support extensions includes a respective at least one indentation configured to receive either the first flexible element or the second flexible element when the panel structure is supported upon the flexible elements. E57. The work platform system of E56, further comprising a latch pivotally connected to at least one of the at least two support extensions of the first pair of the opposed edges. E58. The work platform system of E57, wherein the latch is a gravity latch. E59. The work platform system of E57, wherein the latch includes an indentation configured to correspond with the at least one indentation of the support extension and receive the first or second flexible element when in a down position. E60. The work platform system of

E57, further comprising a latch pivotally connected to at least one support extension on each of the first pair of opposed edges.

[00242] E61. The work platform system of E55, further comprising a third flexible element, wherein a respective first end of the third flexible element is also coupled at least indirectly to the first support component and a respective second end of the third flexible element is coupled at least indirectly to the second support component; and an additional plurality of panel structures supported upon the second flexible element and the third flexible element, wherein the panel structures of the additional plurality of panel structures are positioned in succession with one another so as to form an additional row of the panel structures extending along the third flexible element. E62. The work platform system of E61, further comprising at least one cover section positioned in between at least one of the first plurality of panel structures and at least one of the additional plurality of panel structures, so as to cover over a portion of the second flexible element. E63. The work platform system of E62, wherein the at least one cover section comprises at least a first end with a vertical side wall configured to at least indirectly engage the second and third flexible elements. E64. The work platform system of E63, wherein the vertical side wall comprises two legs, each leg having an indentation, wherein each indentation is configured to receive one of the second and third flexible elements. E65. The work platform system of E62, further comprising at least a first cover section and a second cover section positioned adjacent one another and each cover section positioned between at least one of the first plurality of panel structures and at least one of the additional plurality of panel structures so as to cover over a portion of the second flexible element. E66. The work platform system of E65, wherein the cover sections comprise a first end with a receiving aperture and a vertical side wall configured to at least indirectly engage the second and third flexible elements; and a second end with a Z-shaped protuberance. E67. The work platform system of E66, wherein the Z-shaped protuberance of the first cover section is configured to at least indirectly engage the receiving aperture of the second cover section serving to at least partly limit movement of the first cover section relative to the second cover section.

[00243] E68. The work platform system of E55, further comprising a suspension component and a suspender structure to which the suspension component is attached,

wherein the suspender structure is coupled to the first flexible element or the second flexible element so that the respective flexible element is supported by the suspension component. E69. The work platform system of E55, wherein the plurality of panel structures comprise a top panel surface mounted on struts, wherein a first pair of opposed tubular struts corresponds to the first pair of opposed edges and a second pair of opposed tubular struts corresponds to the second pair of opposed edges. E70. The work platform system of E69, further comprising a toe board frame at least indirectly secured the first panel structure at a first edge of the first pair of opposed edges. E71. The work platform system of E70, wherein the toe board frame comprises a tubular frame with two horizontal extensions, each horizontal extension corresponding to one of the first pair of opposed tubular struts of the first panel structure such that the toe board frame secures to the first panel structure by insertion of the horizontal extensions into the corresponding tubular struts. E72. The work platform system of E70, further comprising at least one rail post mount comprising a front plate, first side plate and second side plate, wherein the first and second side plate are separated at a distance by the front plate to form a channel. E73. The work platform system of E72, wherein the rail post mount further comprises at least one hook configured to at least indirectly engage the toe board frame. E74. The work platform system of E71, further comprising a rail post configured to secure within the channel of the rail post mount.

[00244] E75. A work platform system for implementation in relation to a structure, the work platform system comprising: a first pair of flexible elements and a second pair of flexible elements, wherein a respective first end of each of the flexible elements is coupled at least indirectly to a first support component and a respective second end of each of the flexible elements is coupled at least indirectly to a second support component; a plurality of panel structures supported upon the flexible elements, each panel structure comprising a first pair of opposed edges extending between the first pair and second pair of flexible elements, at least two support extensions extending outward from each of the respective first pair of opposed edges, wherein each support extension includes a respective at least one indentation configured to receive either the first pair of flexible elements or second pair of flexible elements, and a gravity hook pivotably attached to at least one support extension of the respective first pair of opposed

edges; a suspension component; and a suspender structure coupled to at least one of the first pair of flexible elements and the second pair of flexible elements and configured to engage the suspension component so that the at least one of the first pair of flexible elements and the second pair of flexible elements is or are supported by the suspension component, wherein the suspender structure includes at least a primary surface formation and a clasp component that is rotatably attached to the primary surface formation but locked in place relative to the primary surface formation.

[00245] E76. The work platform system of E75, wherein the clasp component is configured so that, when rotated to a first position, the clasp component fits between the flexible elements of the at least one of the first pair and the second pair and, when rotated to a second position the clasp component is locked in place relative to the primary surface formation by way of a post of the clasp component fitting into an orifice of the primary surface formation. E77. The work platform system of E75, further comprising a toe board frame secured at least indirectly to an end or end portion of at least one panel structure, wherein the clasp component of the suspender structure further supports the end or end portion of the at least one panel structure.

[00246] E78. A work platform system for implementation in relation to a structure, the work platform system comprising: a first pair of flexible elements and a second pair of flexible elements, wherein a respective first end of each of the flexible elements is coupled at least indirectly to a first support component and a respective second end of each of the flexible elements is coupled at least indirectly to a second support component; and a plurality of panel structures supported upon the flexible elements and substantially extending between the first pair of flexible elements and the second pair of flexible elements, the panel structures positioned in succession with one another so as to form a row of the panel structures extending along the flexible elements, and each of the panel structures includes a first pair of opposed edges each extending substantially parallel to the flexible elements and a second pair of opposed edges each extending between the first pair of opposed edges; a first pair of support extensions, each support extension extending outward away from one of the respective first pair of opposed edges of the panel structures, the first support extensions including an indentation configured to receive either the first pair of flexible elements or the second

pair of flexible elements and serving to at least partly limit movement of the panel structure relative to the first and second pairs of flexible elements; and a second pair of support extensions, each support extension extending outward away from one of the respective second pair of opposed edges of the panel structures, the second support extensions including a formation into which one of the respective second pair of opposed edges of another of the panel structures is positioned, the formation serving to at least partly limit movement of the second panel structure relative to the first panel structure.

[00247] E78. The work platform system of E75, further comprising a third pair of flexible elements, wherein a respective first end of each of the flexible elements of the third pair is also coupled at least indirectly to the first support component and a respective second end of each of the flexible elements of the third pair is coupled at least indirectly to the second support component; an additional plurality of panel structures supported upon the second pair of flexible elements and the third pair of flexible elements, wherein the panel structures of the additional plurality of panel structures are positioned in succession with one another so as to form an additional row of the panel structures extending along the third pair of flexible elements; and a plurality of cover sections positioned in between the first plurality of panel structures and the additional plurality of panel structures, so as to cover over portions of the second pair of flexible elements.

[00248] E80. The work platform system of E79, wherein the cover sections comprise at least a first end with a vertical side wall configured to at least indirectly engage the second and third flexible elements. E81. The work platform system of E80, wherein the vertical side wall comprises two legs, each leg having an indentation, wherein each indentation is configured to receive one of the second and third flexible elements. E82. The work platform system of E78, further comprising at least two toe board frames, each at least indirectly secured a panel structure at a first edge of the first pair of opposed edges. E83. The work platform system of E82, wherein the plurality of panel structures comprise a top panel surface mounted on tubular struts, wherein a first pair of opposed tubular struts corresponds to the first pair of opposed edges and a second pair of opposed tubular struts corresponds to the second pair of opposed edges. E84. The work platform system of E83, wherein the toe board frame comprises a tubular frame

with two horizontal extensions, each horizontal extension corresponding to one of the first pair of opposed tubular struts of the first panel structure such that the toe board frame secures to the first panel structure by insertion of the horizontal extensions into the corresponding tubular struts.

[00249] E85. The work platform system of E78, further comprising at least two rail post mounts, each rail post mount comprising a front plate, first side plate and second side plate, wherein the first and second side plate are separated at a distance by the front plate to form a channel. E86. The work platform system of E85, further comprising a rail post configured to secure within the channel of the rail post mount. E87. The work platform system of E82, further comprising at least two rail post mounts, each rail post mount comprising at least one hook configured to at least indirectly engage the toe board frames.

[00250] E88. A method of implementing a work platform system in relation to a structure, the method comprising: attaching a first pair of flexible elements and a second pair of flexible elements at least indirectly to a first support and a second support, respectively; installing a first panel section onto the first and second pairs of flexible elements; installing a second panel section onto the first and second pairs of flexible elements, wherein the installing of the second panel section includes placement of a second side edge of the second panel section into at least one support component extending outward from a first side edge of the first panel section and rotating the second panel section until the second panel is supported on the first and second pairs of flexible elements; and determining whether at least one suspension component should be installed in relation to at least one of the first and second pairs of flexible elements and, if so, installing at least one suspender structure onto the at least one of the first and second pairs of flexible elements and coupling the at least one suspension component to the at least one suspender structure. E89. The method of E88, wherein the installing a first panel section onto the first and second pairs of flexible elements includes activating a gravity latch. E90. The method of E88, further comprising: attaching a third pair of flexible elements at least indirectly to a first support and a second support, respectively; and installing a third panel section onto the second a third pairs of flexible elements, wherein the third panel is adjacent one of the first and second panels. E91. The method

of E90, further comprising: installing a cover section between the third panel and the at least one of the first and second panels. E92. The method of E88, further comprising: installing at least one toe board frame to at least one of the first or second panel sections. E93. The method of E92, further comprising at least one step selected from the group consisting of: (a) installing at least one toe board on the toe board frame; (b) installing at least one rail post mount configured to engage the toe board frame, wherein the rail post mount is configured to receive at least one rail post; and (c) both (a) and (b).

[00251] Among other things, it should be appreciated that the scope of the present disclosure is not limited to the number of constituting components, the materials thereof, the shapes thereof, the relative arrangement thereof, etc., as described above, but rather the above disclosures are simply provided as example embodiments.

[00252] Thus, it is specifically intended that the present invention not be limited to the embodiments and illustrations contained herein, but include modified forms of those embodiments including portions of the embodiments and combinations of elements of different embodiments as come within the scope of the following claims.

CLAIMS:

1. A work platform system for implementation in relation to a structure, the work platform system comprising:

a first flexible element and a second flexible element, wherein a respective first end of each of the flexible element is coupled at least indirectly to a first support component and a respective second end of each flexible element is coupled at least indirectly to a second support component; and

a plurality of panel structures supported upon the flexible elements and substantially extending between the first and second flexible elements, wherein the panel structures are positioned in succession with one another so as to form a row of the panel structures extending along the flexible elements;

wherein each of the panel structures includes a respective first pair of opposed edges each extending substantially parallel to the flexible elements and a respective second pair of opposed edges each extending between the respective first pair of opposed edges,

wherein a first of the panel structures includes a first support extension extending outward away from a first one of the respective second pair of opposed edges of the first panel structure in a direction parallel or substantially parallel to the first pair of opposed edges of the first panel structure,

wherein the first support extension of the first panel structure includes a first formation into which a second one of the respective second pair of opposed edges of a second of the panel structures is positioned, the first formation serving to at least partly limit movement of the second panel structure relative to the first panel structure,

wherein the second panel structure includes a second support extension extending outward away from the second one of the respective second pair of opposed edges, and wherein the second support extension includes a second formation into which the first one of the respective second pair of opposed edges of the first panel structure is positioned, the second formation serving to at least partly limit movement of the second panel structure relative to the first panel structure.

2. The work platform system of claim 1, wherein the first panel structure additionally includes a third support extension extending outwardly away from the first one of the respective second pair of opposed edge of the first panel structure in a direction parallel or substantially parallel to the first pair of opposed edges of the first panel structure, wherein the first support extension is at a first position that is closer to a first one of the respective first pair of opposed edges of the first panel structure than a second position at which the third support extension is located,

wherein the second panel structure additionally includes a fourth support extension extending outward away from the second one of the respective second pair of opposed edges of the second panel structure in a direction parallel or substantially parallel to the first pair of opposed edges of the second panel structure, wherein the second support extension is at a third position that is closer to a second one of the respective first pair of opposed edges of the second panel structure than a fourth position at which the fourth support extension is located, and

wherein each of the first support extension, second support extension, third support extension and fourth support extension is configured to function as a handle structure.

3. The work platform system of claim 1, wherein at least the first panel structure includes at least two support extension extending outward from each of the first pair of the opposed edges, and each of the support extensions includes a respective at least one indentation configured to receive either the first flexible element or the second flexible element when the panel structure is supported upon the flexible elements.

4. The work platform system of claim 3 further comprising a latch, pivotally connected to at least one of the at least two support extensions of the first pair of the opposed edges.

5. The work platform system of claim 4 wherein the latch is a gravity latch.

6. The work platform system of claim 1 wherein the first and second flexible element each comprise a pair of flexible elements.

7. The work platform system of claim 6 further comprising a third pair of flexible elements, wherein a respective first end of the third pair of flexible elements is also coupled at least indirectly to the first support component and a respective second end of the third pair of flexible elements is coupled at least indirectly to the second support component; and an additional plurality of panel structures supported upon the second pair of flexible elements and the third pair of flexible elements, wherein the panel structures of the additional plurality of panel structures are positioned in succession with one another so as to form an additional row of the panel structures extending along the second and third pairs of flexible elements.

8. The work platform system of claim 7, further comprising at least one cover section assembly positioned between at least one panel structure of the first plurality of panel structures and at least one panel structure of the additional plurality of panel structures so as to cover a portion of the second pair of flexible elements, wherein the cover section assembly comprises a cover structure and a clip configured to engage the cover structure, the clip comprising two flexible element-engaging portions, each portion comprising two legs which together form an opening in each flexible element-engaging portion configured to receive at least a portion of the second pair of flexible elements.

9. The work platform system of claim 1 further comprising a suspension component and a suspender structure to which the suspension component is attached, wherein the suspender structure is coupled to the first or second flexible element so that the respective flexible element is supported by the suspension component.

10. The work platform system of claim 8, wherein each of the panel structures of the additional plurality of panel structures includes a respective first pair of opposed edges each extending substantially parallel to the pairs of flexible elements and a respective second pair of opposed edges each extending between the respective first pair of opposed edges, wherein each of the panel structures of the additional plurality of panel structures includes a first support extension extending outward away from a first one of the respective second pair of opposed edges and a second support extension extending outward away

from a second one of the respective second pair of opposed edges, wherein each of the first and second support extensions is configured to function as a handle,

wherein each of the panel structures of the additional plurality of panel structures further includes a third support extension extending outward away from a first one of the respective first pair of opposed edges and a fourth support extension extending outward away from a second one of the respective first pair of opposed edges,

wherein each of the third and fourth support extensions includes a respective at least one indentation configured to receive at least one flexible element of the pairs of flexible elements when the panel structure is supported upon the flexible elements and a latch pivotally connected to the support extensions configured to at least, indirectly secure the panel structure to the flexible elements when the panel structure is supported upon the flexible elements,

wherein at least one of the latches pivotally connected to the third and fourth support extensions of each of the panel structures of the additional plurality of panel structures is a gravity hook pivotally attached to the at least one of the third and fourth support extensions.

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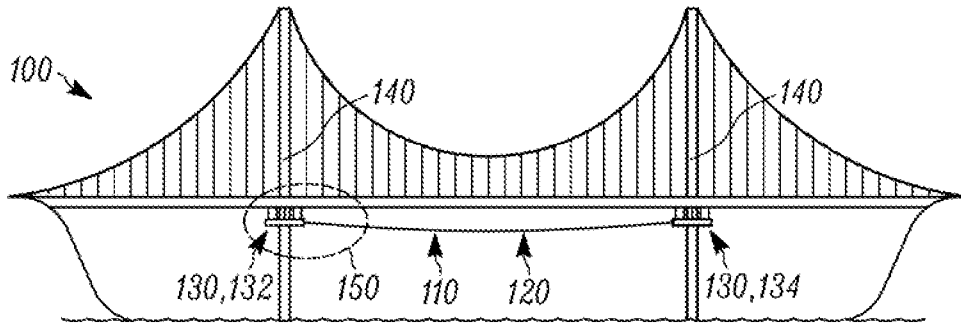


FIG. 1

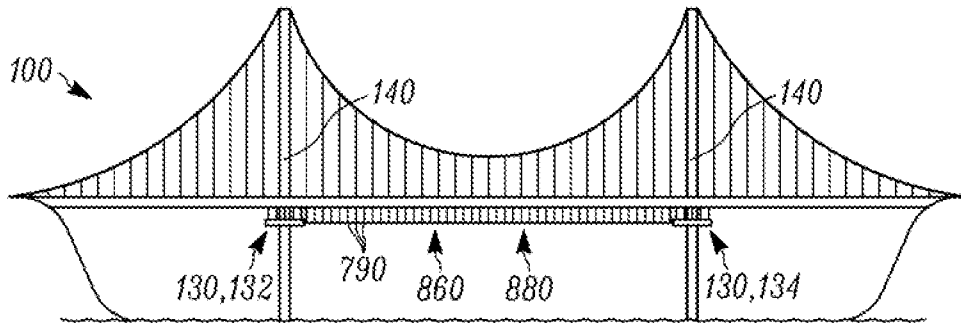


FIG. 15

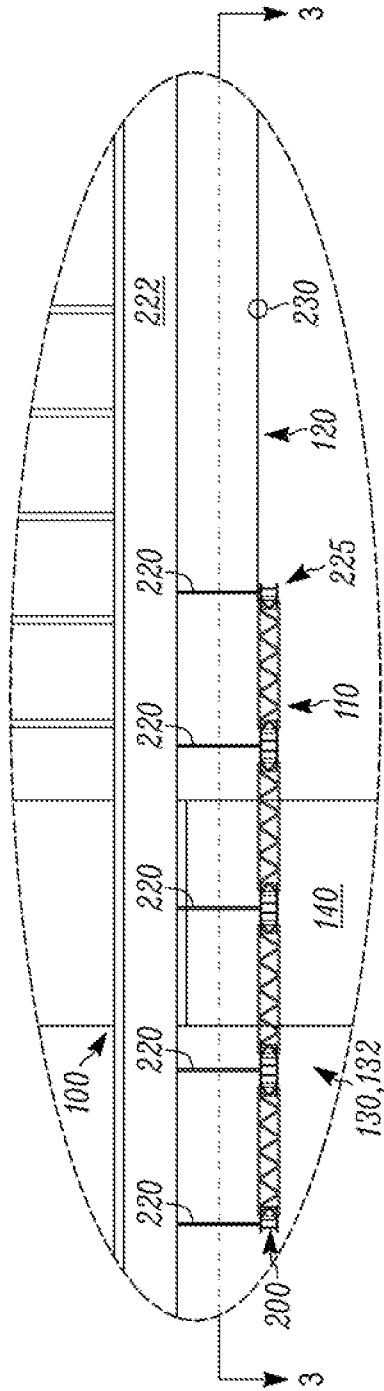


FIG. 2

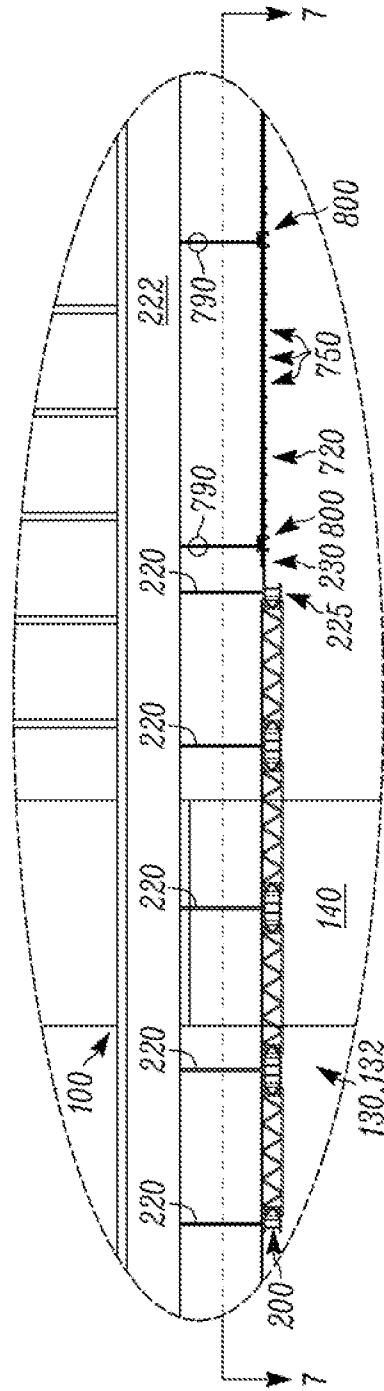


FIG. 12

FIG. 3

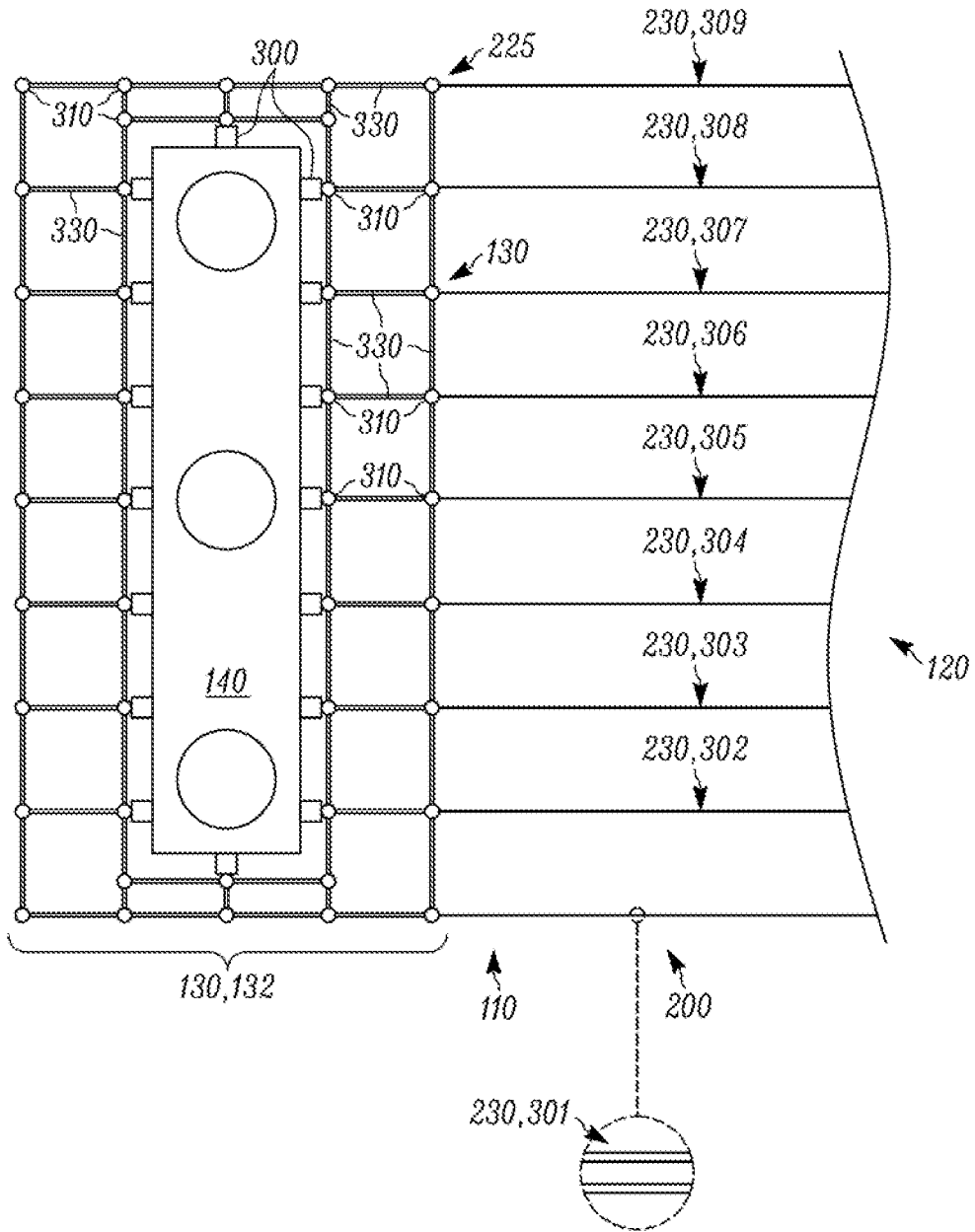


FIG. 3A

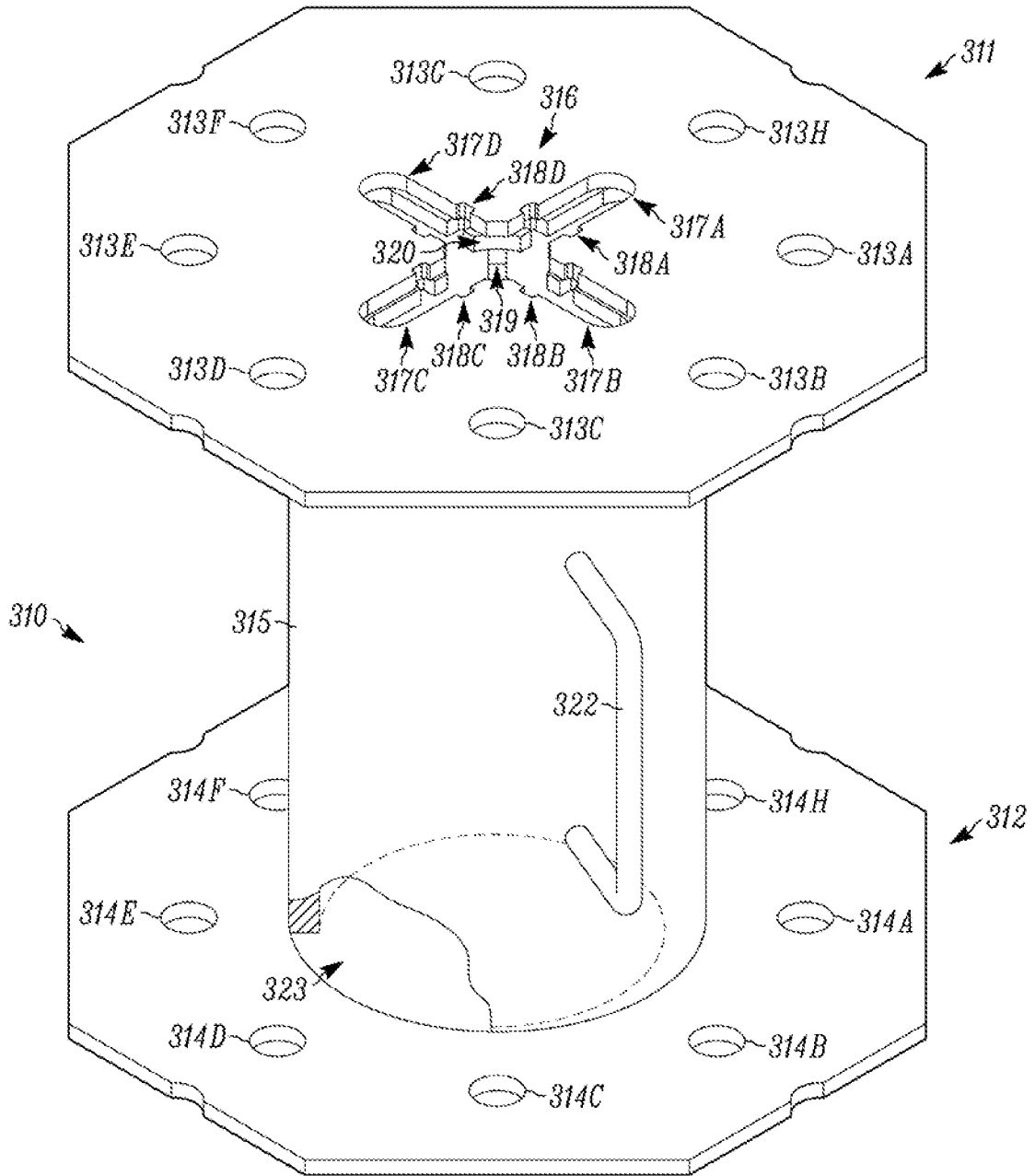


FIG. 4

FIG. 7

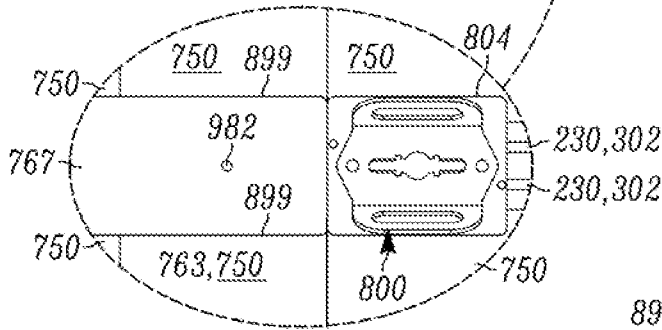
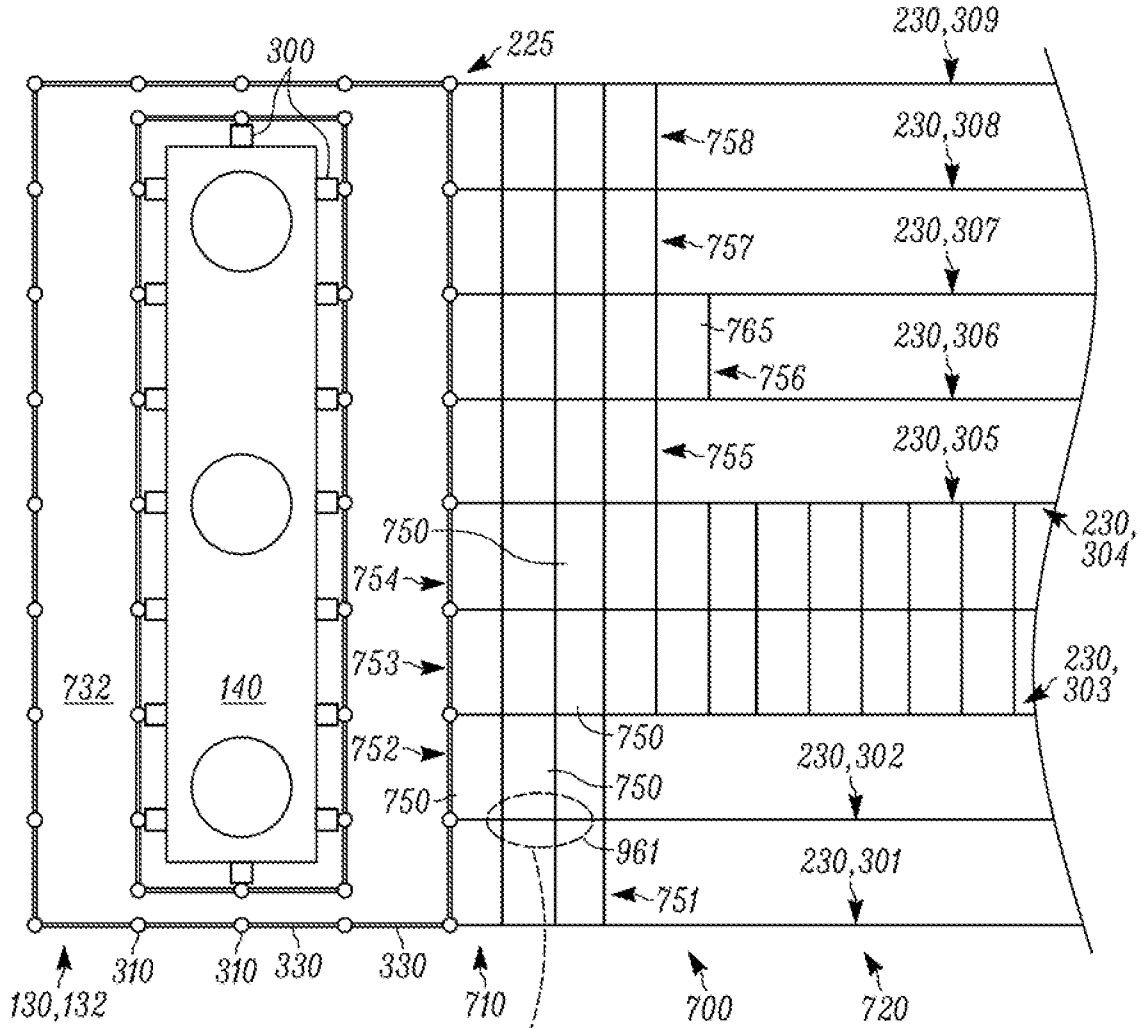


FIG. 7A

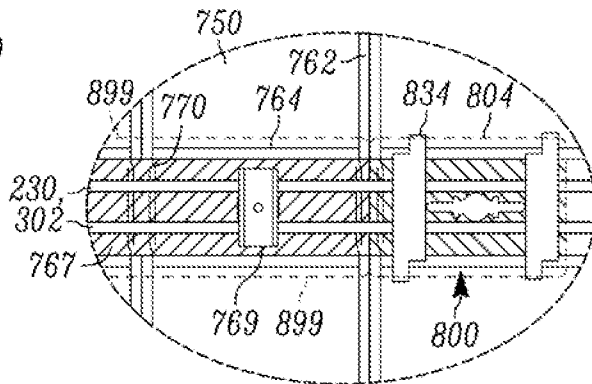


FIG. 7B

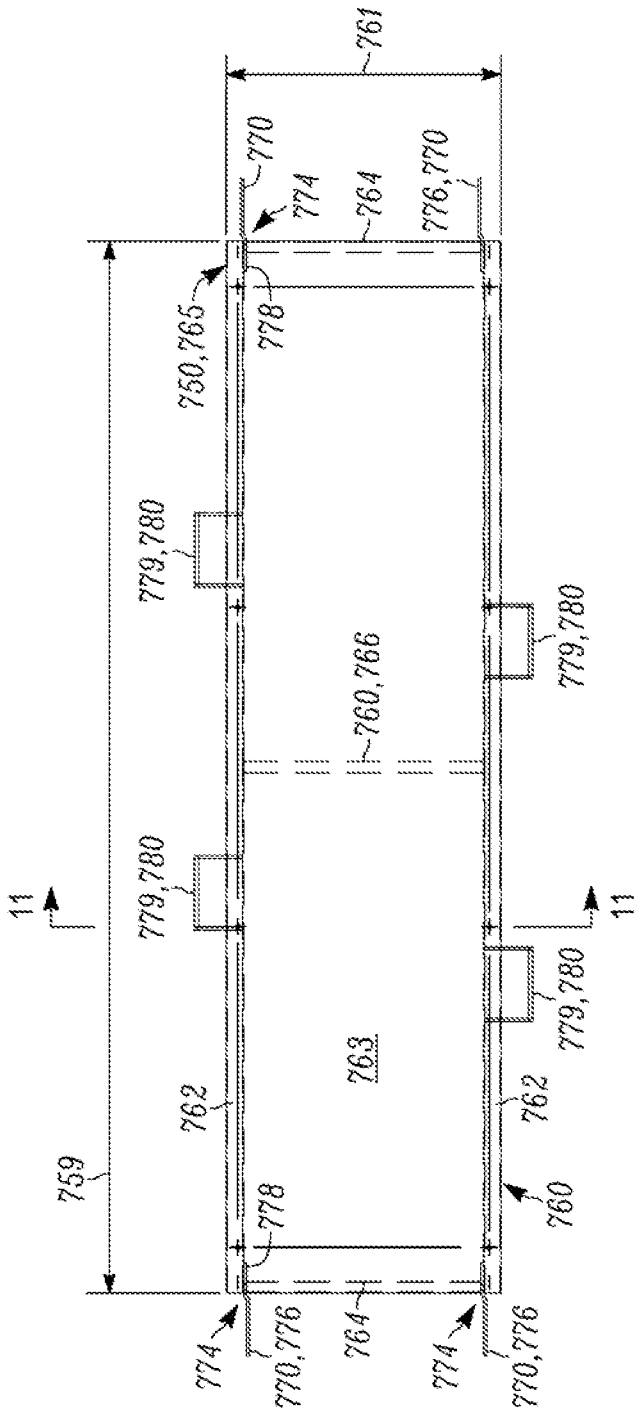


FIG. 8A

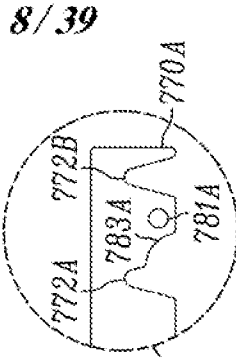


FIG. 9A

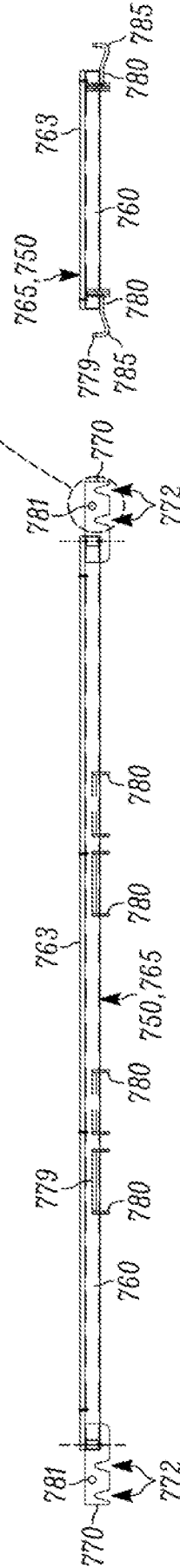


FIG. 9

FIG. 10

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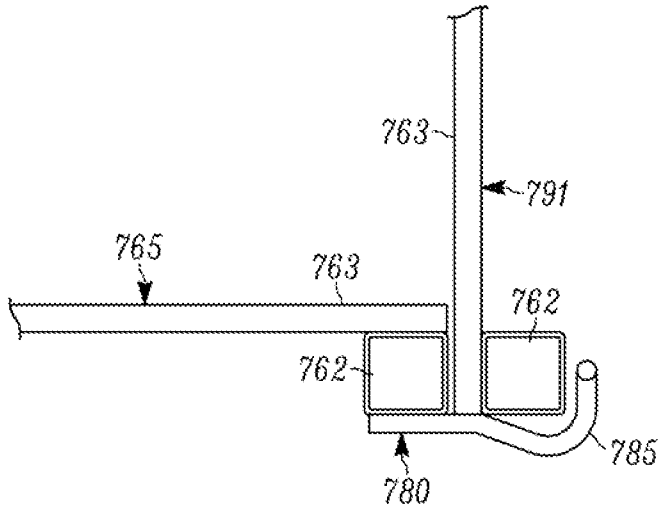


FIG. 11A

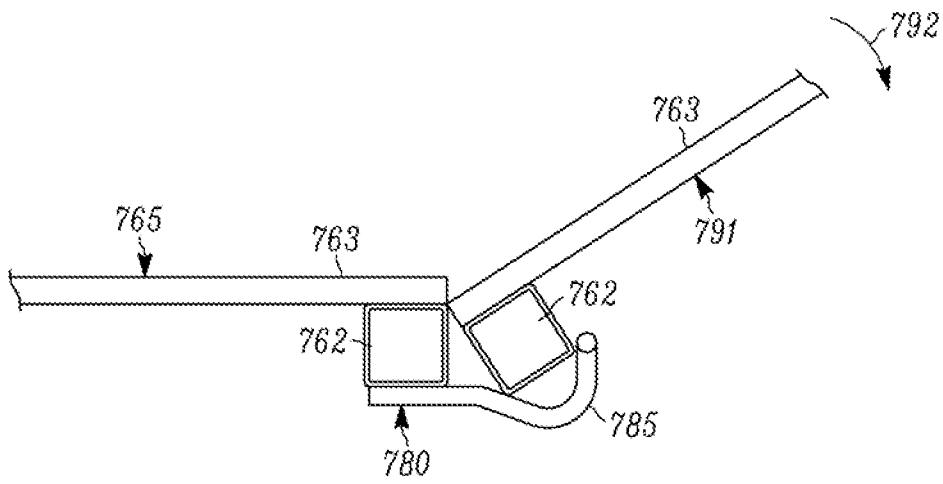


FIG. 11B

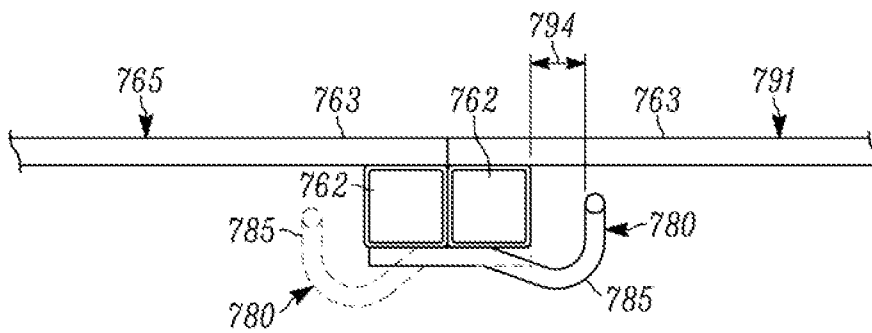


FIG. 11C

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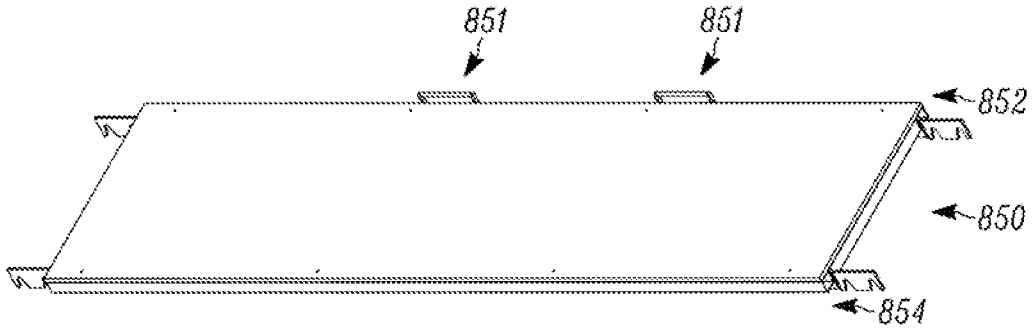


FIG. 11D

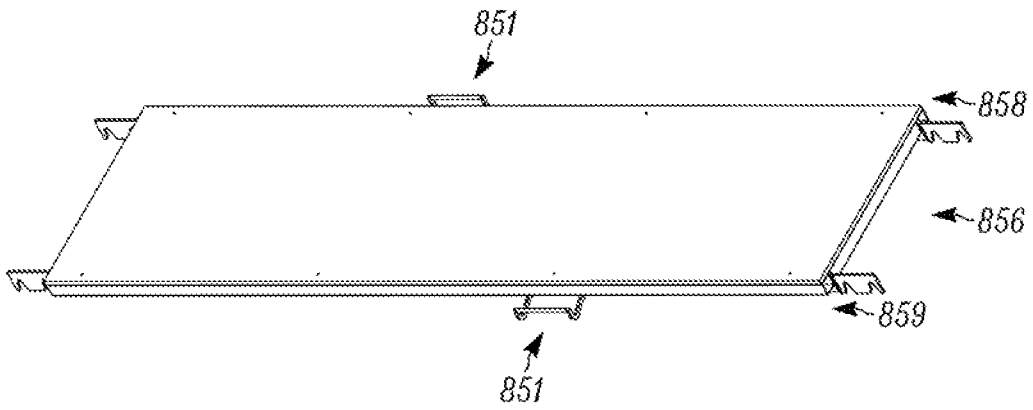


FIG. 11E

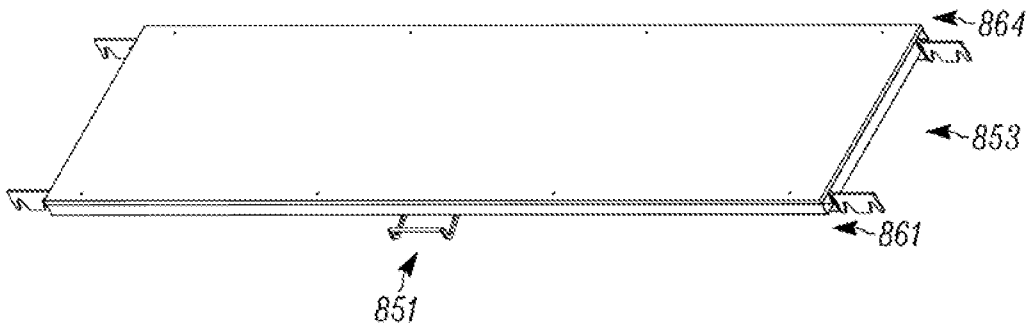


FIG. 11F

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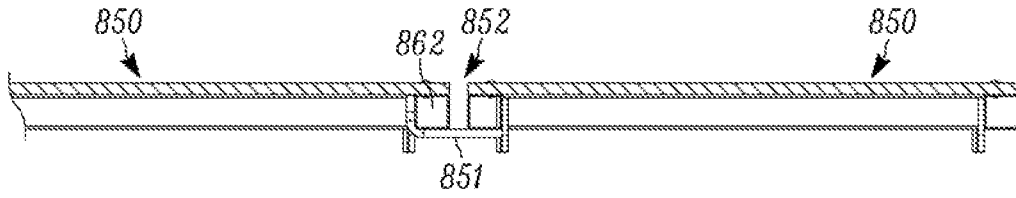


FIG. 11G

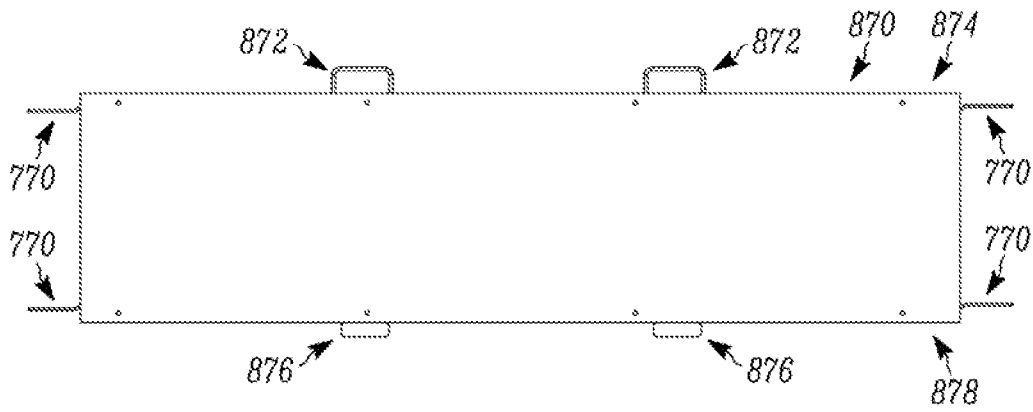


FIG. 11H

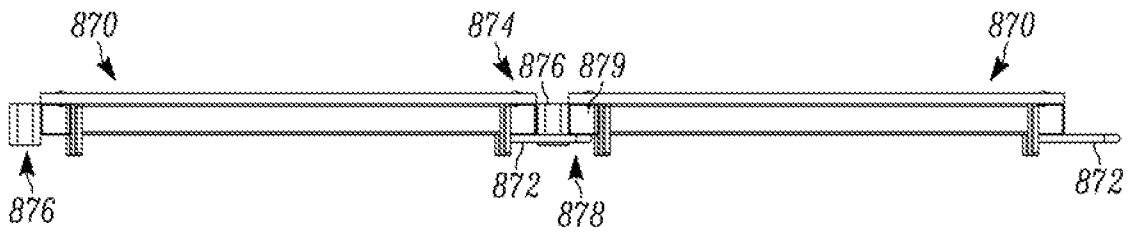


FIG. 11I

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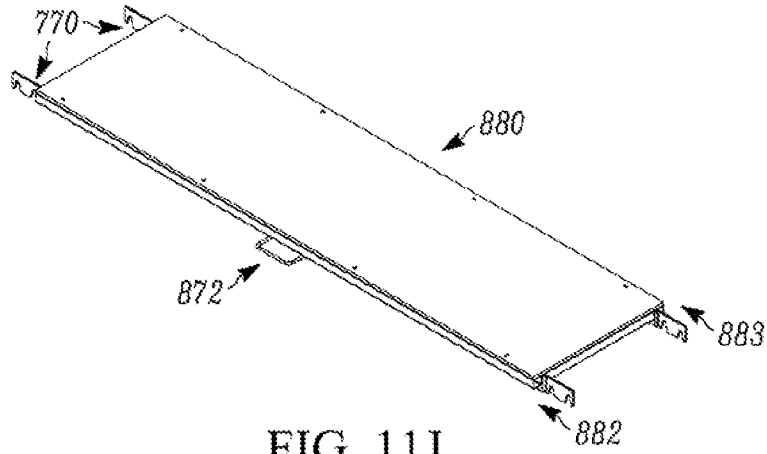


FIG. 11J

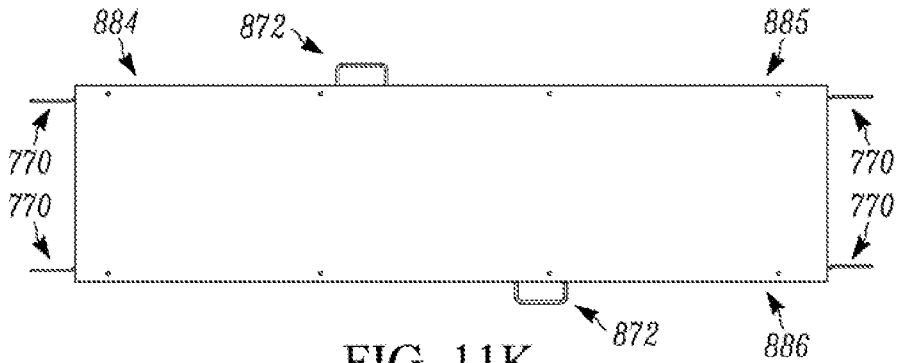


FIG. 11K

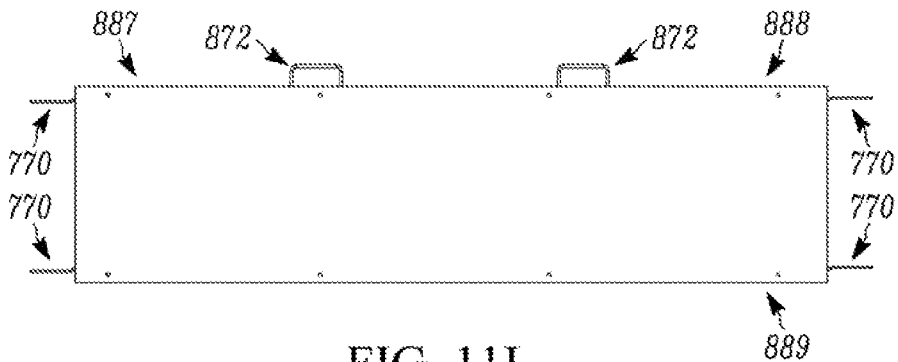


FIG. 11L

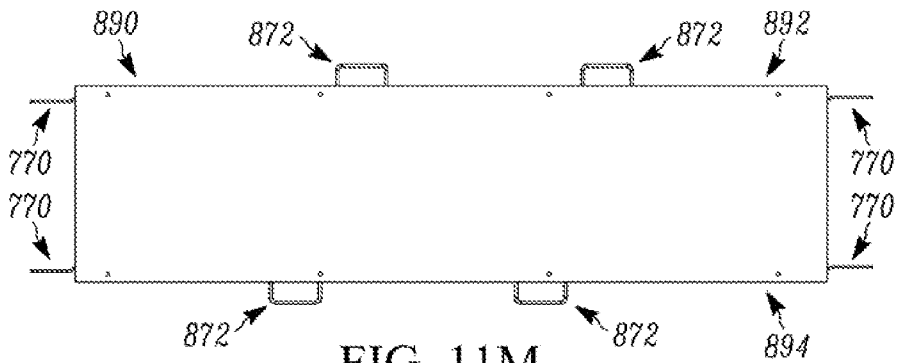


FIG. 11M

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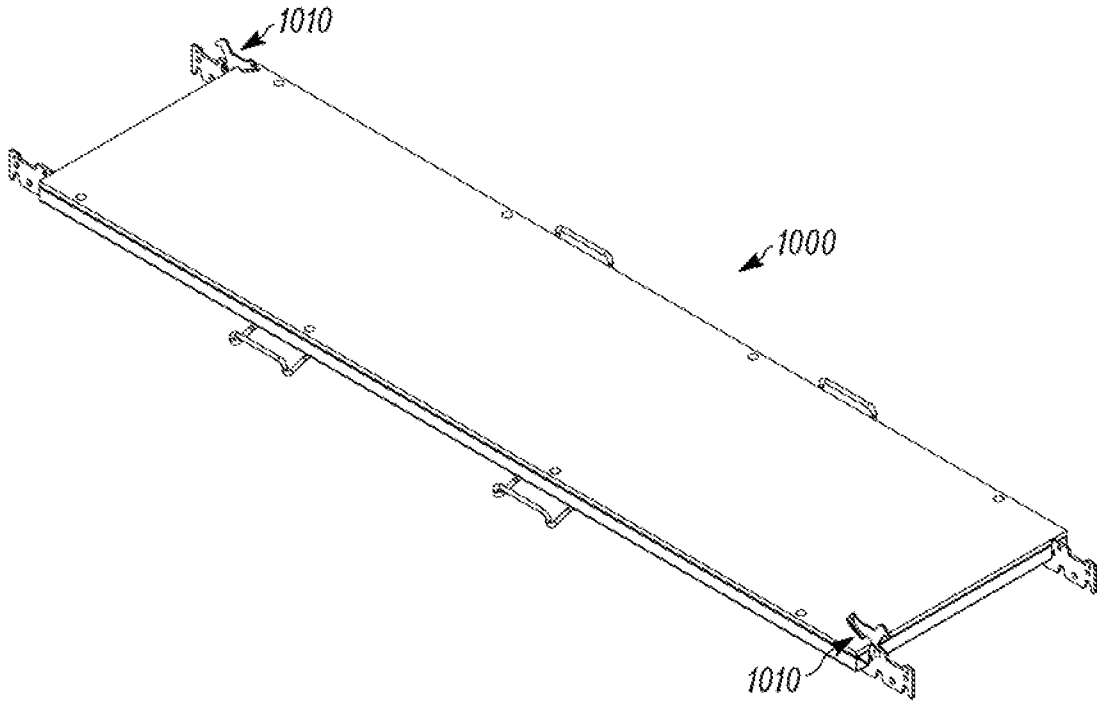


FIG. 11N

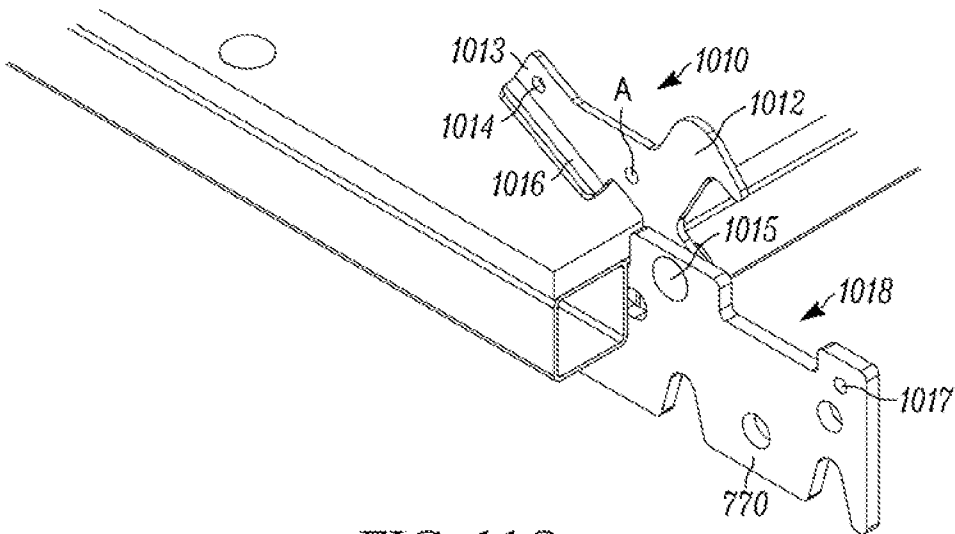


FIG. 11O

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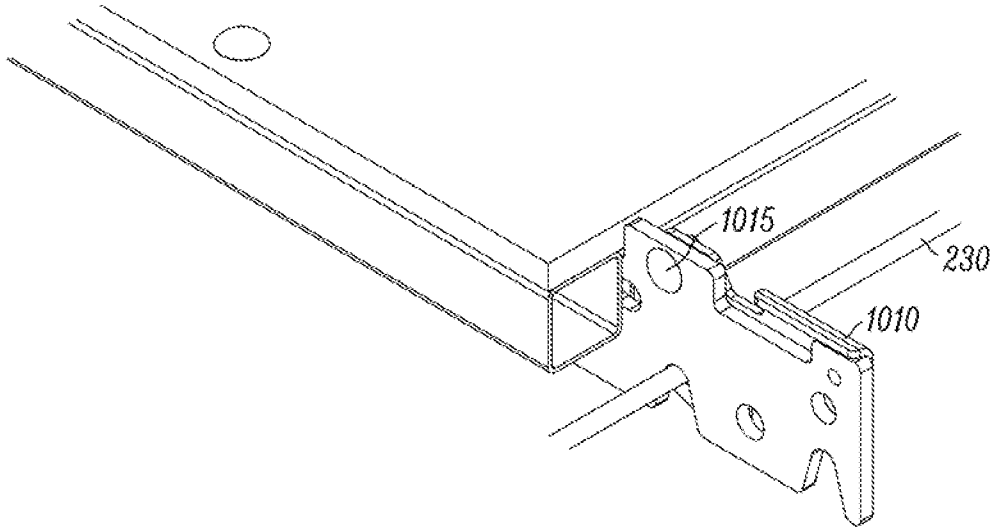


FIG. 11P

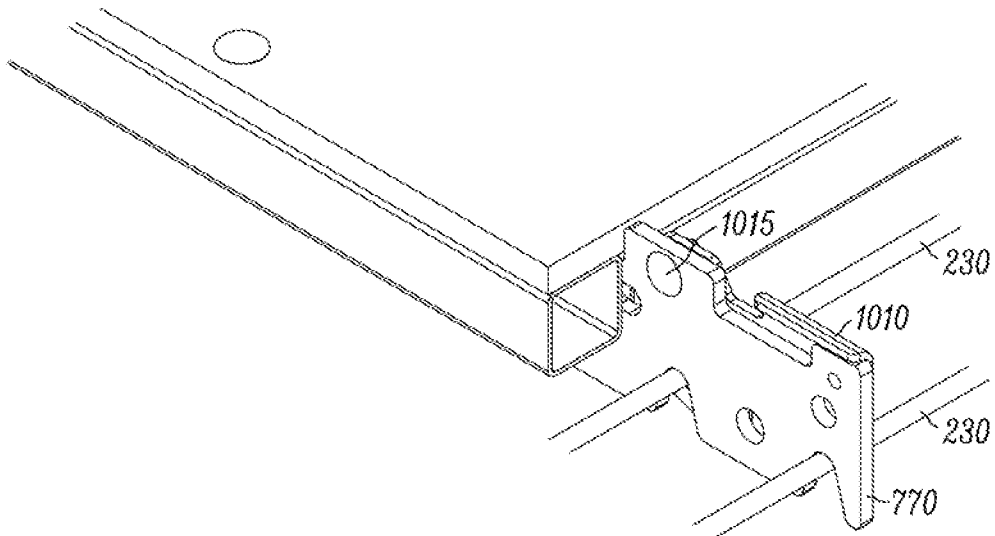


FIG. 11Q

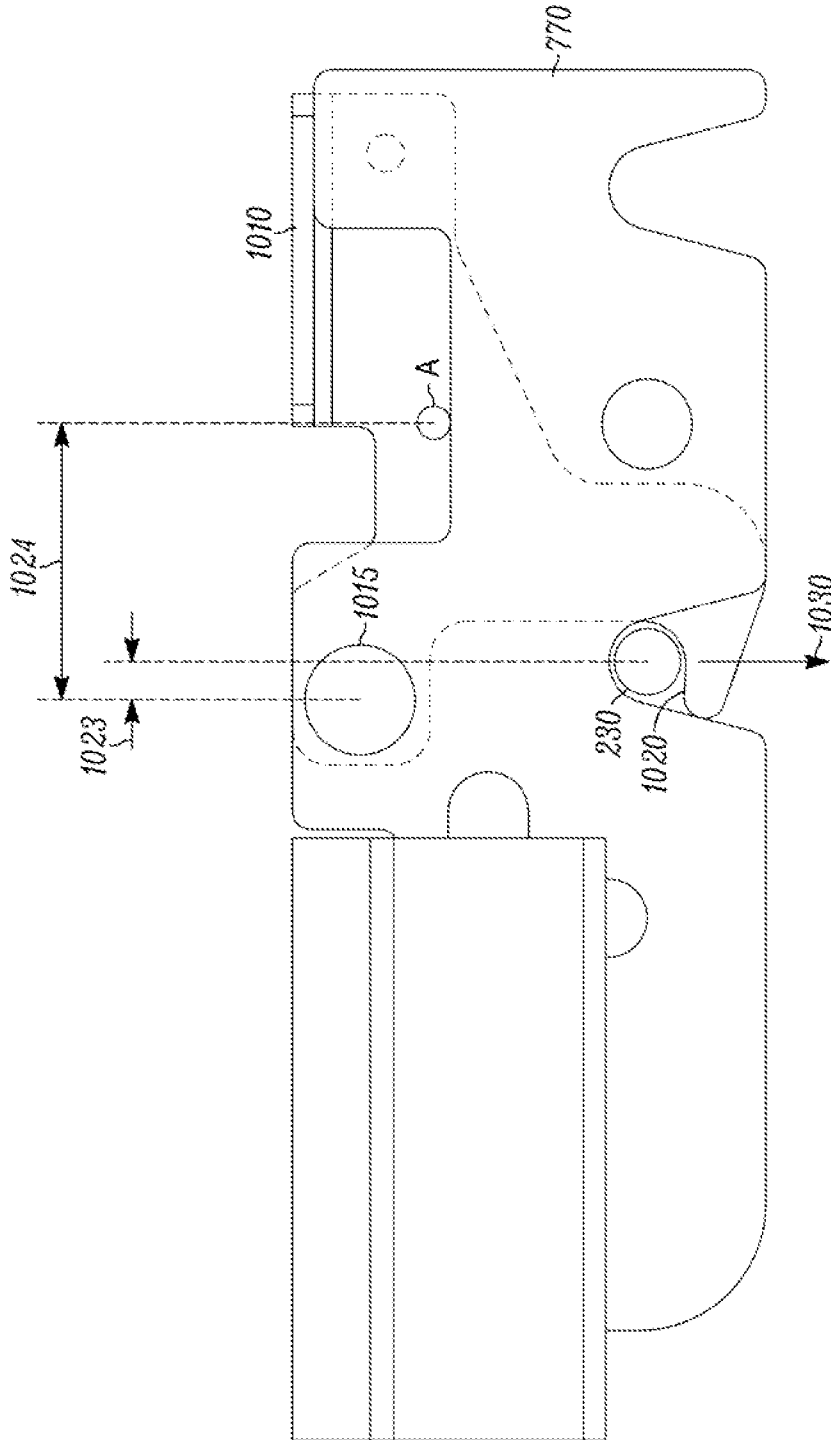


FIG. 11R

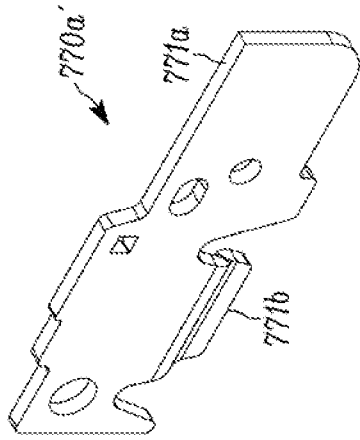


FIG. 11T

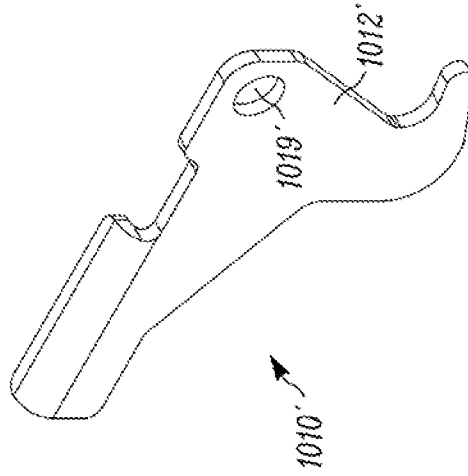


FIG. 11U

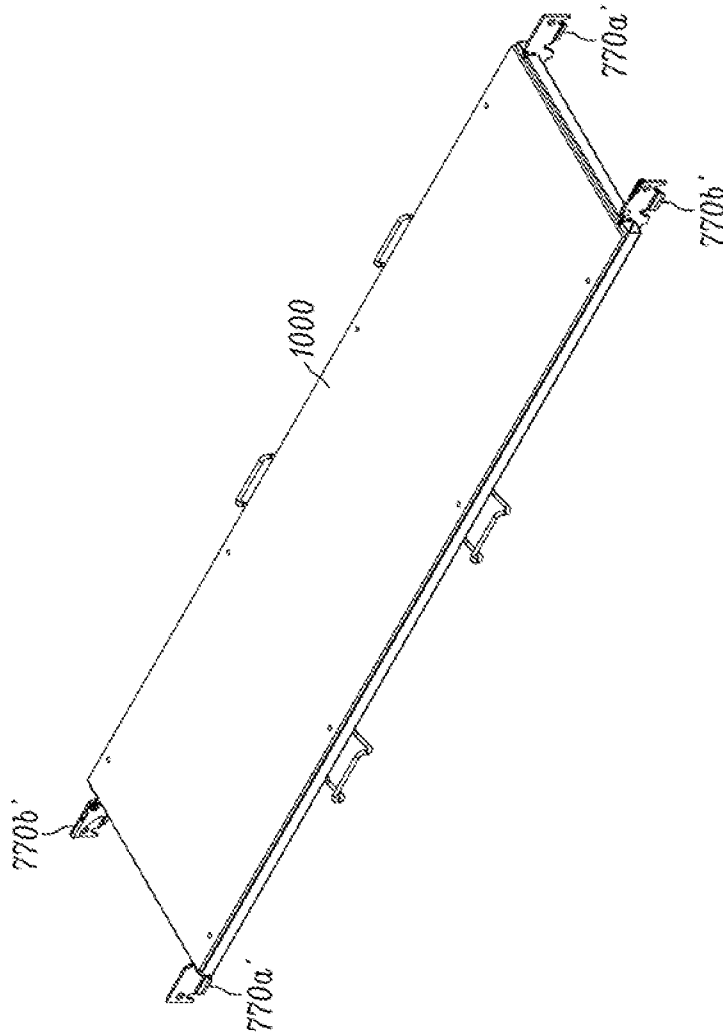


FIG. 11S

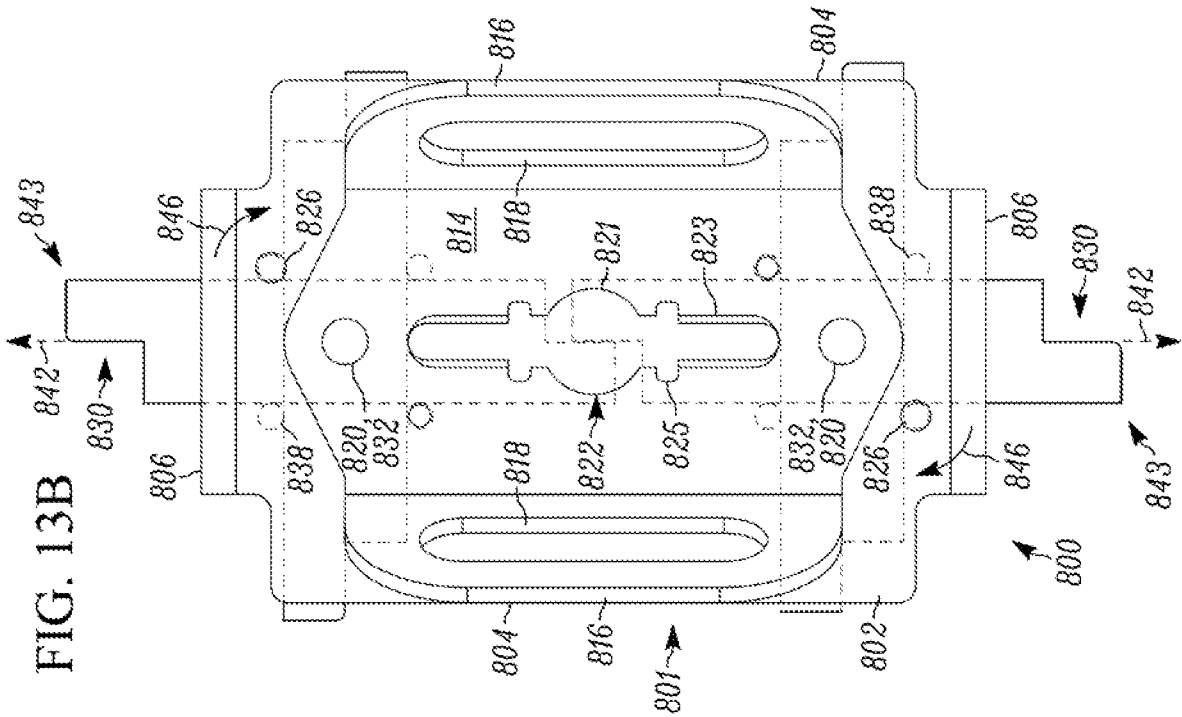


FIG. 13B

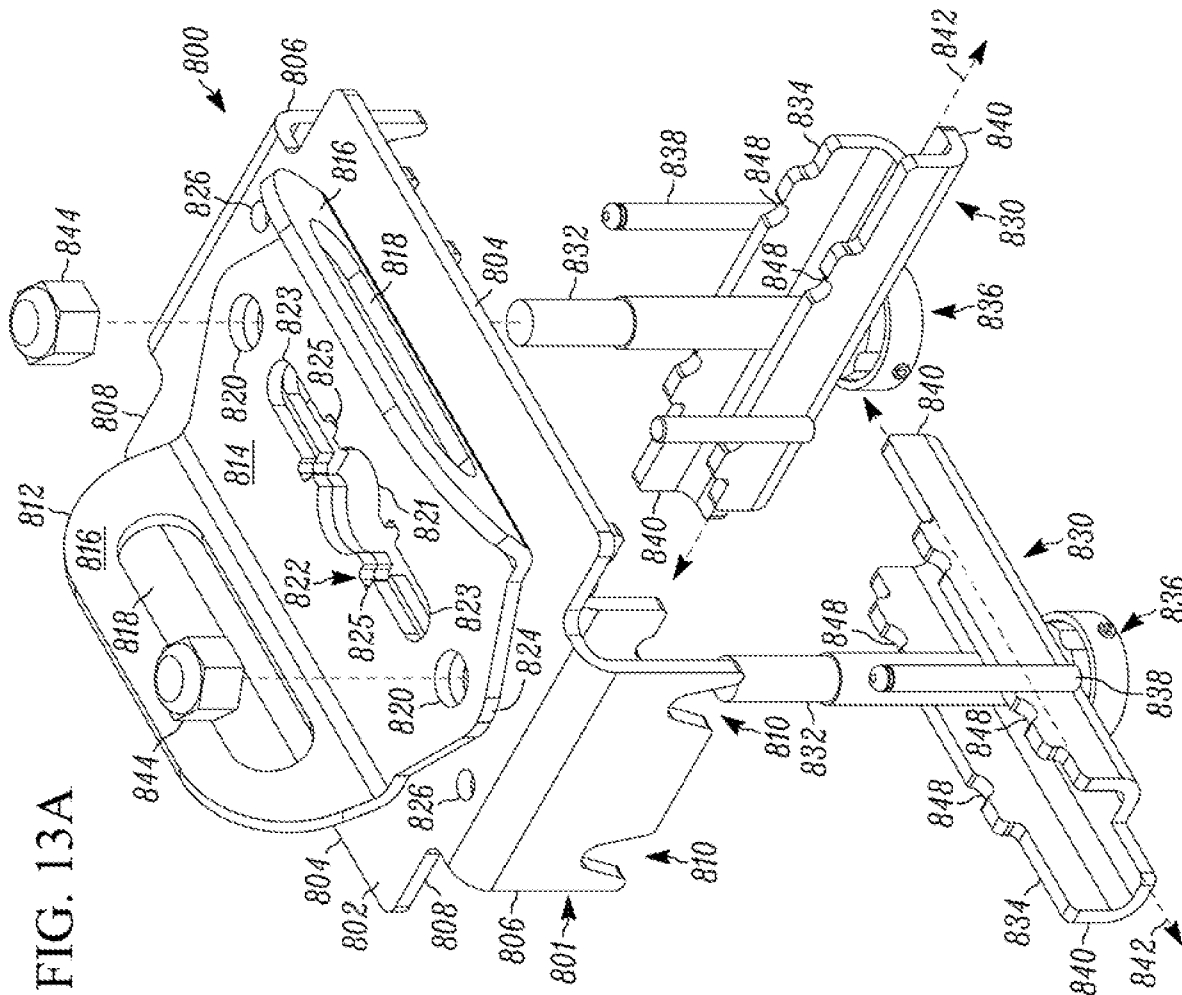


FIG. 13A

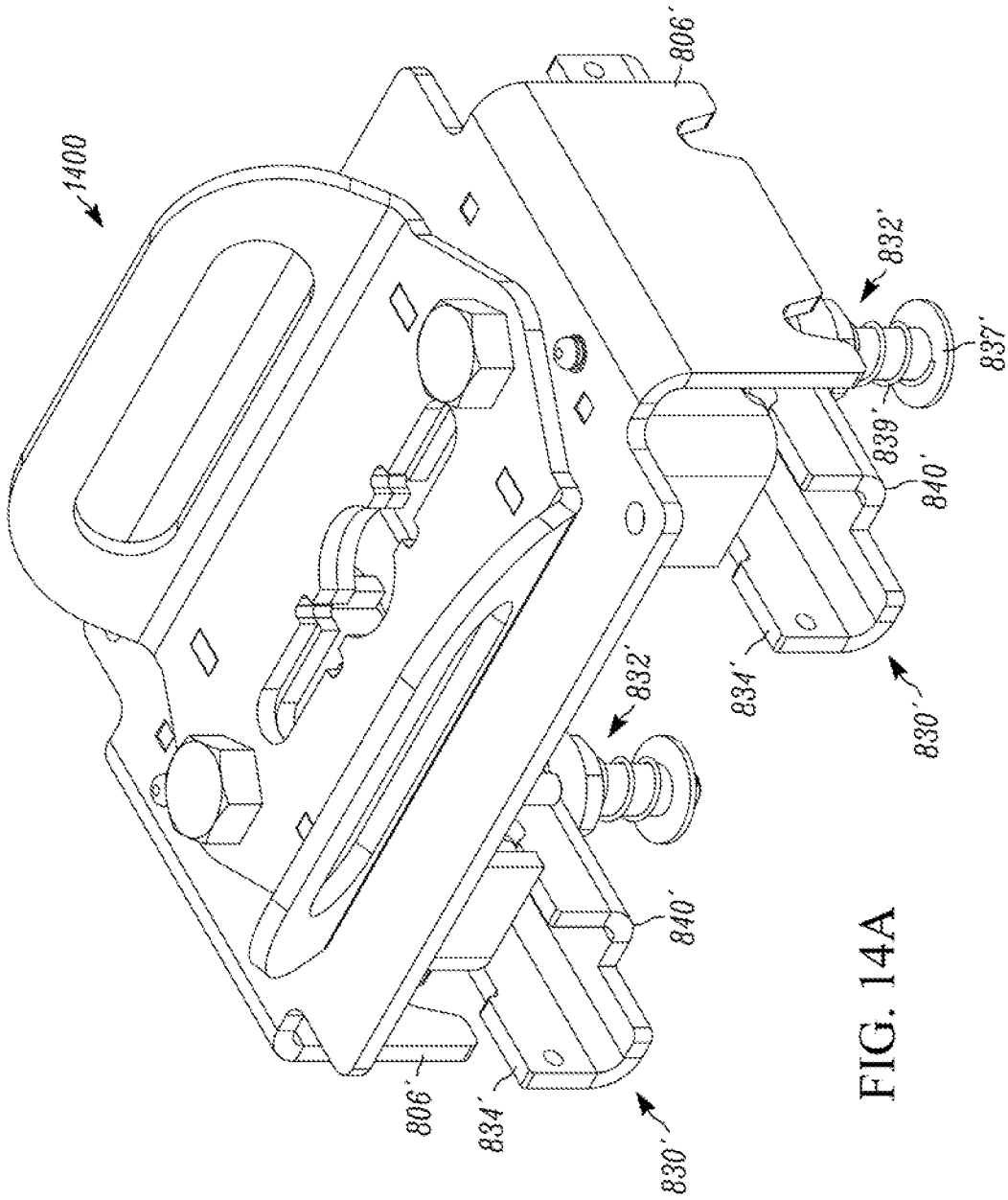


FIG. 14A

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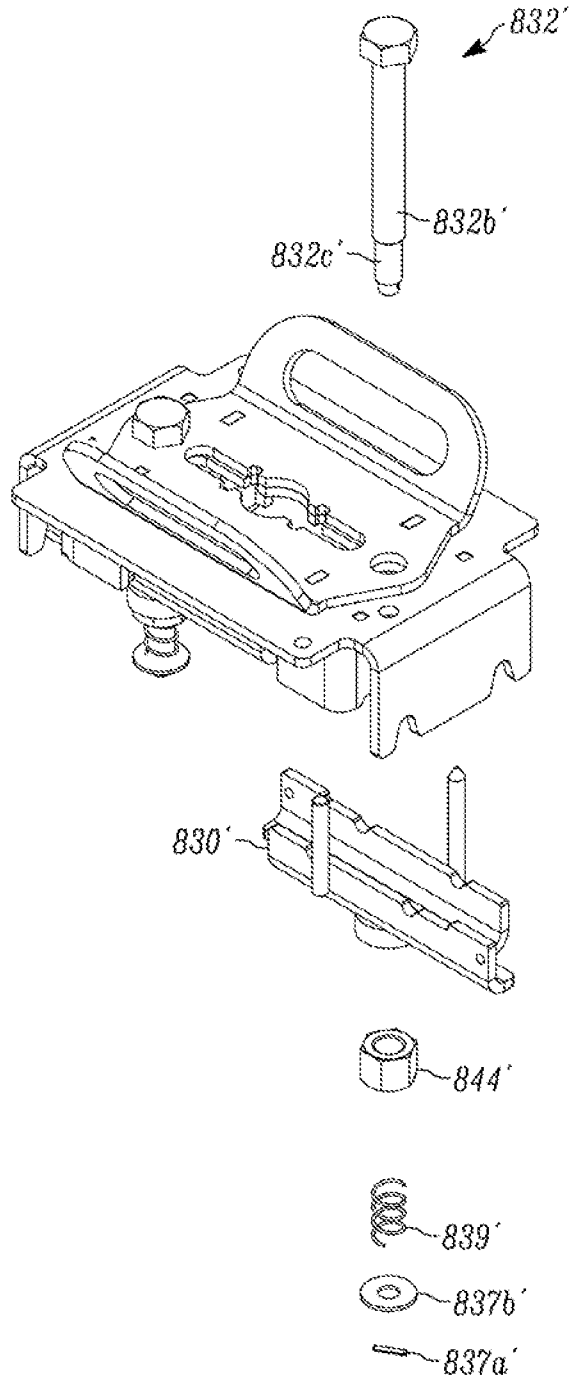
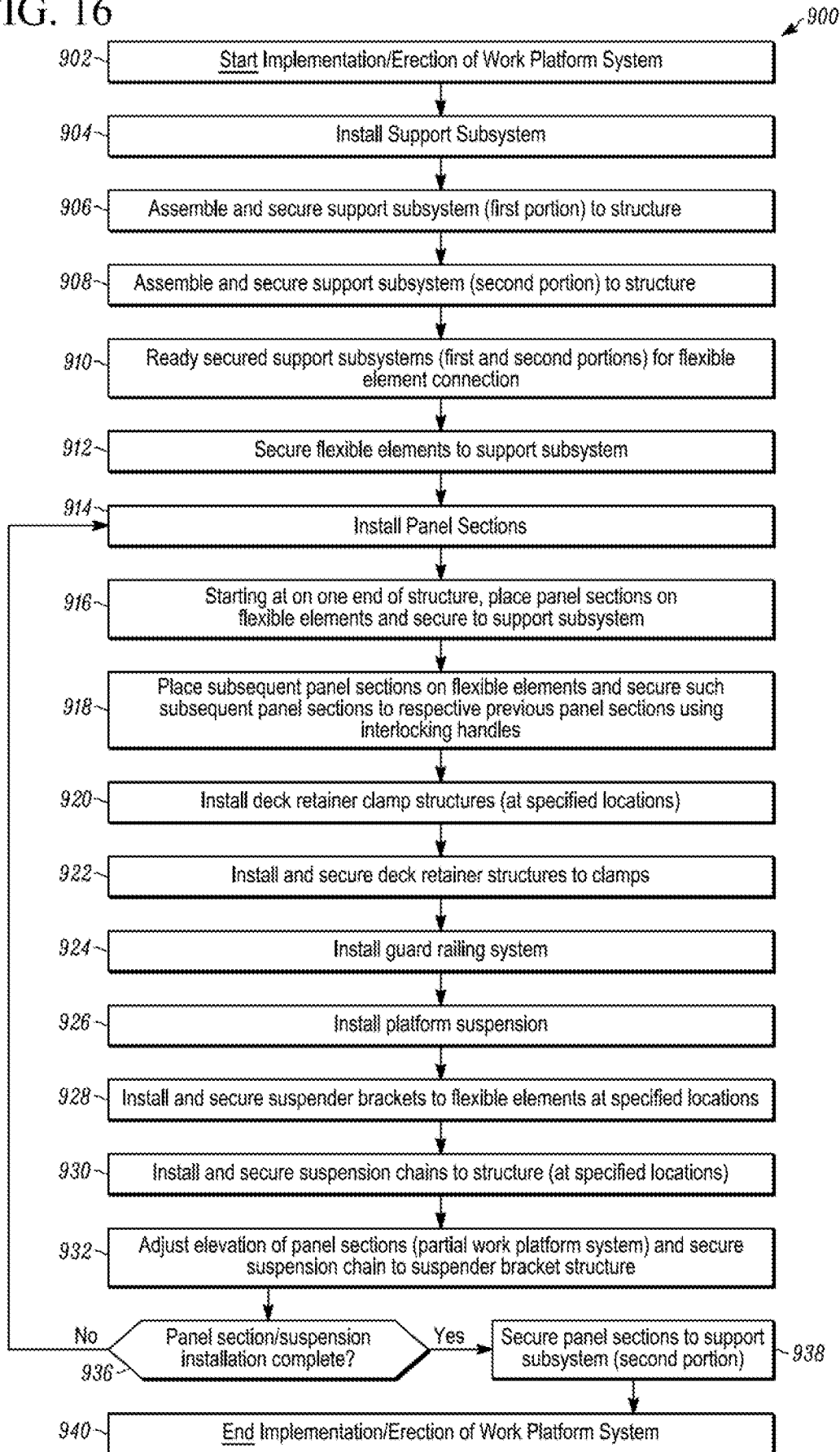


FIG. 14B

FIG. 16



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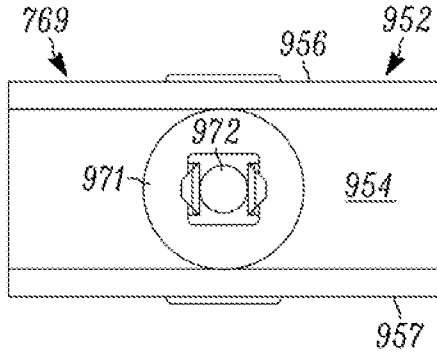


FIG. 17B

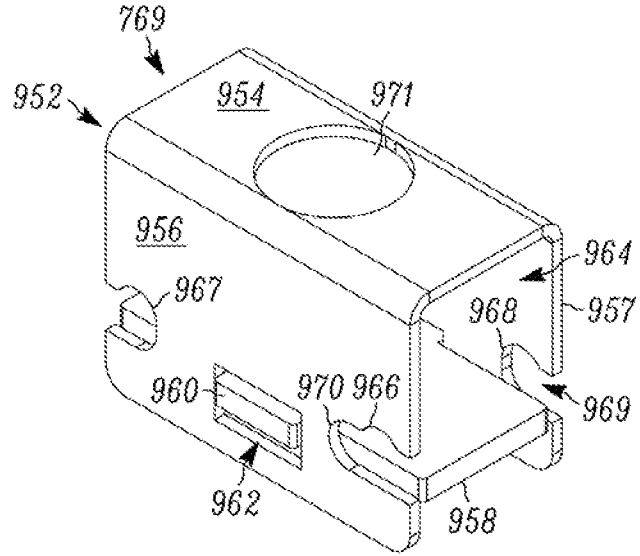


FIG. 17A

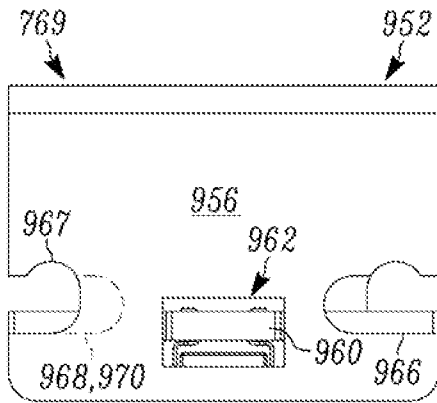


FIG. 17C

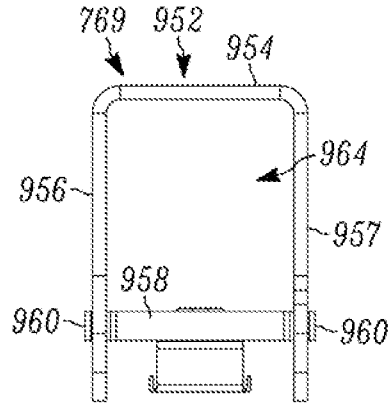


FIG. 17D

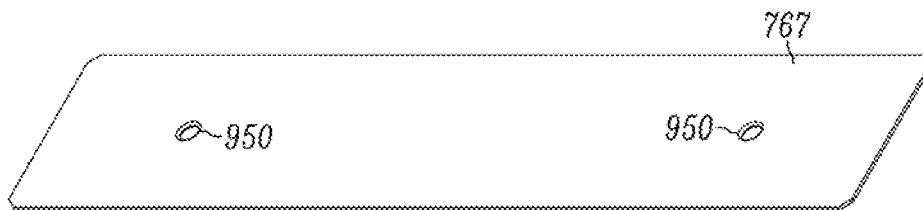


FIG. 18A

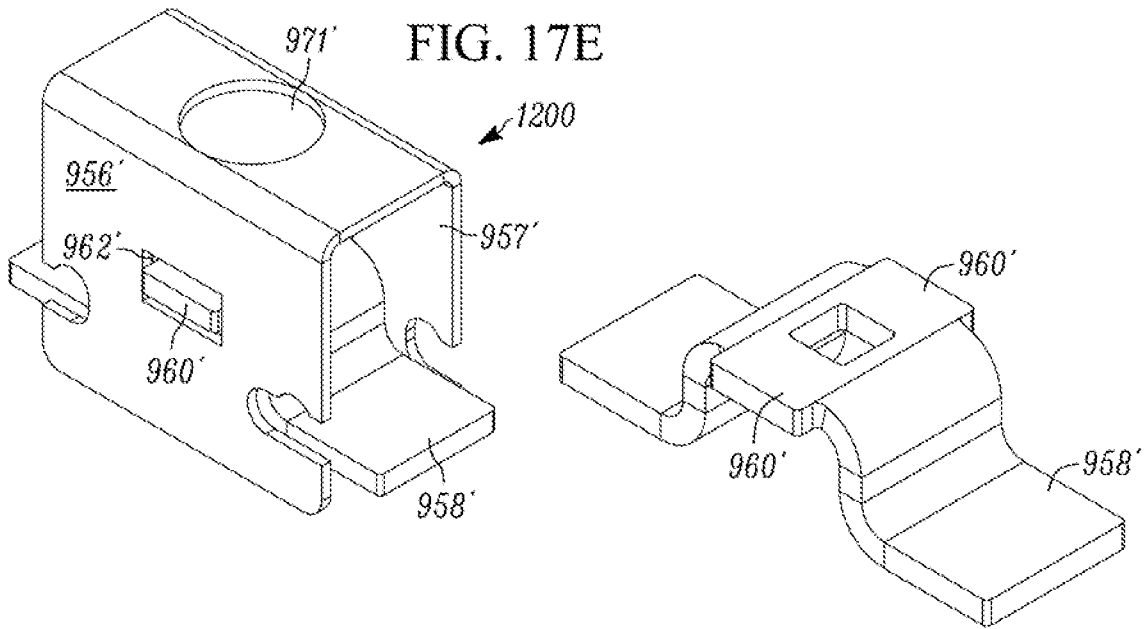


FIG. 17E

FIG. 17F

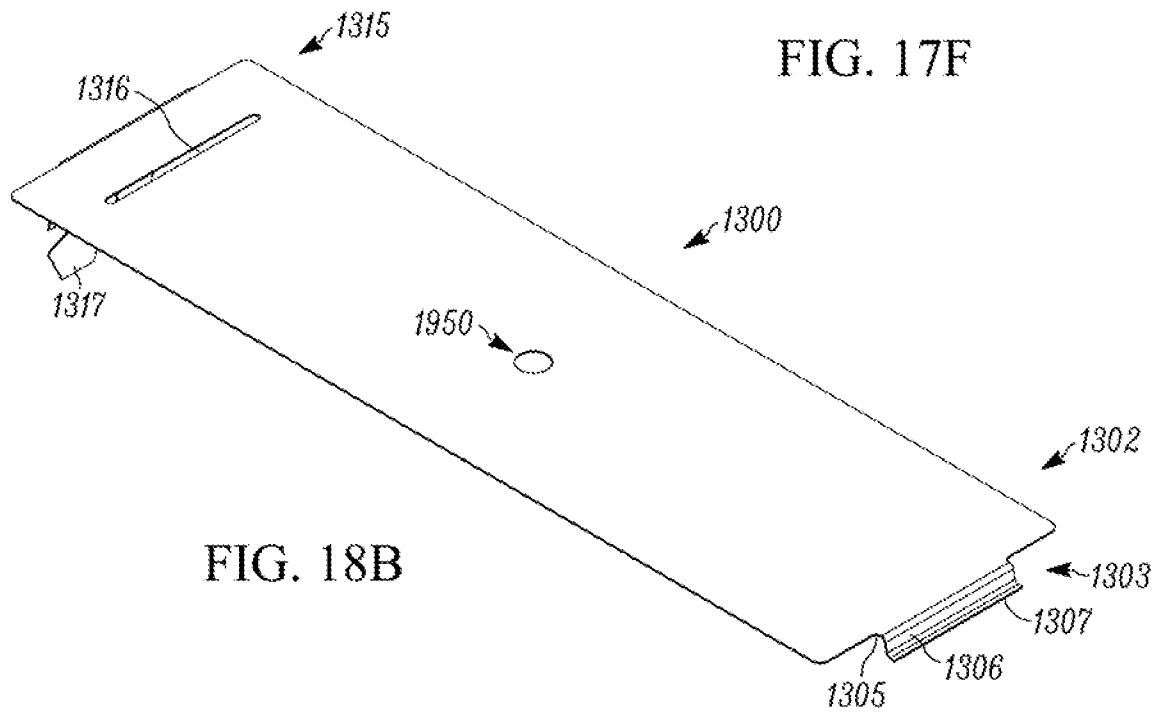


FIG. 18B

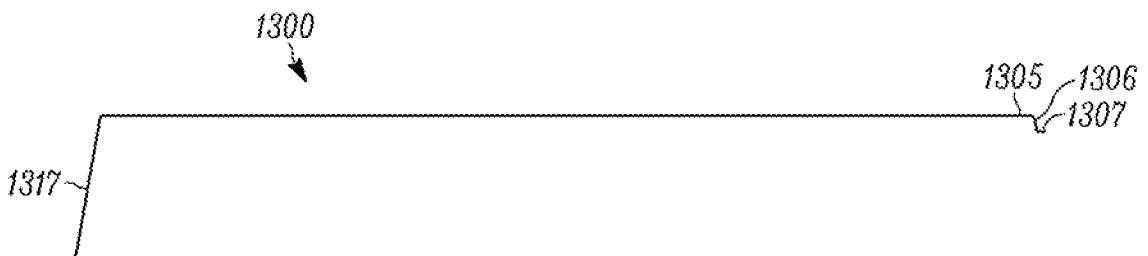


FIG. 18C

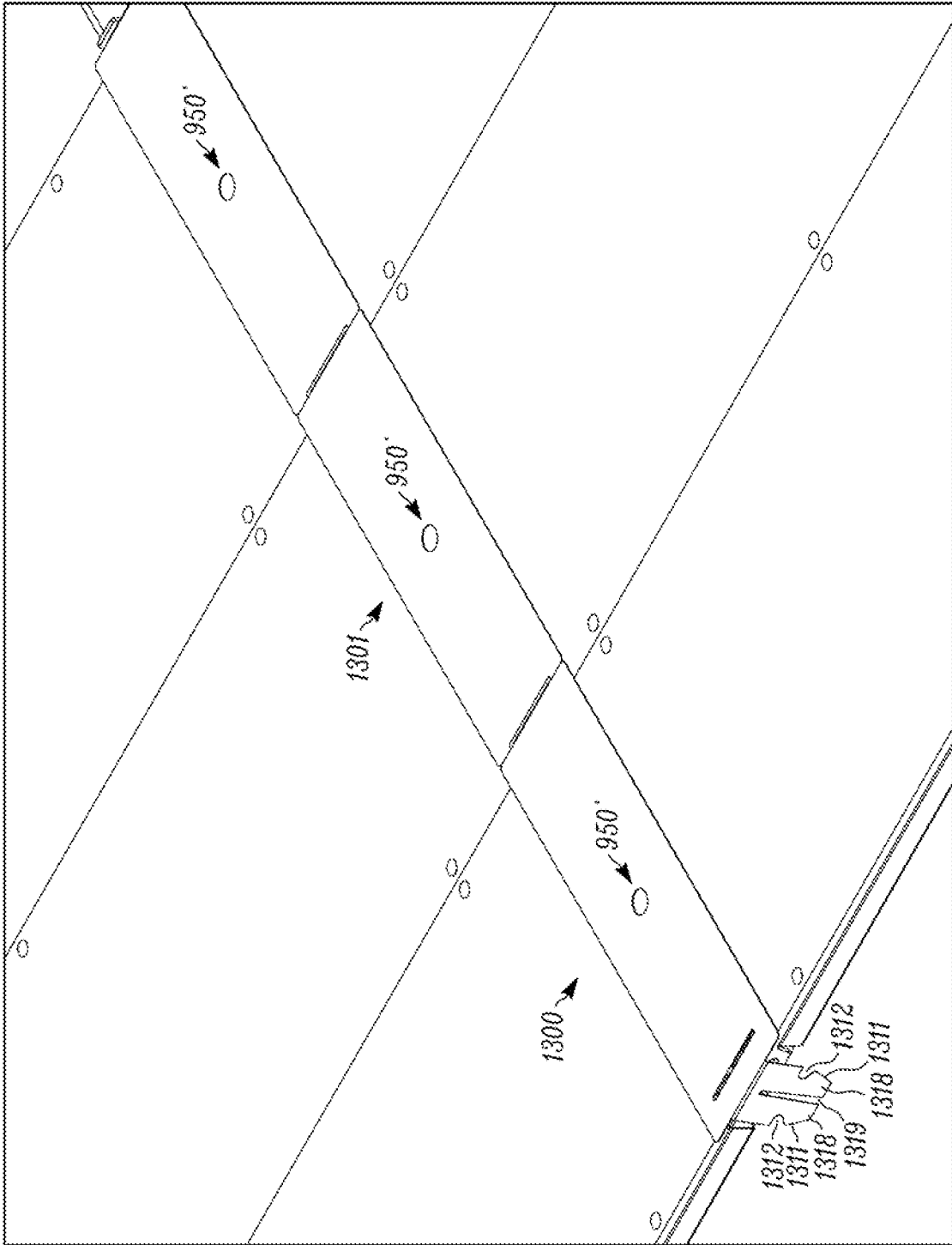
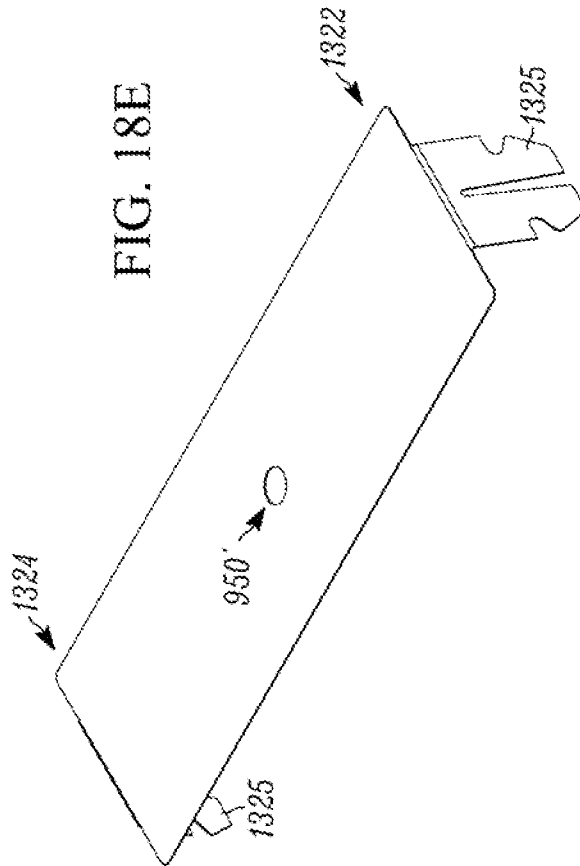
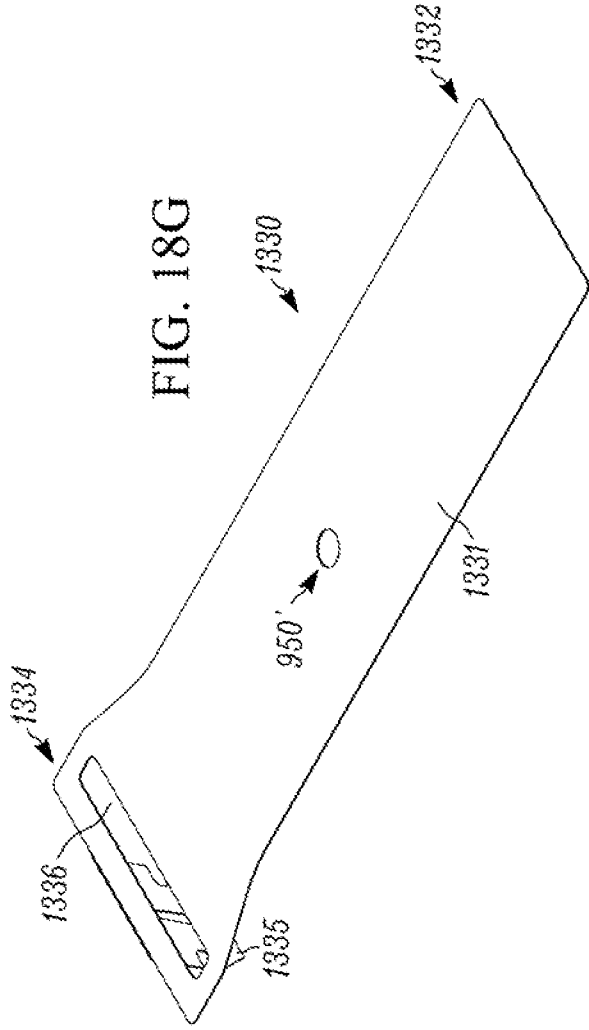


FIG. 18D



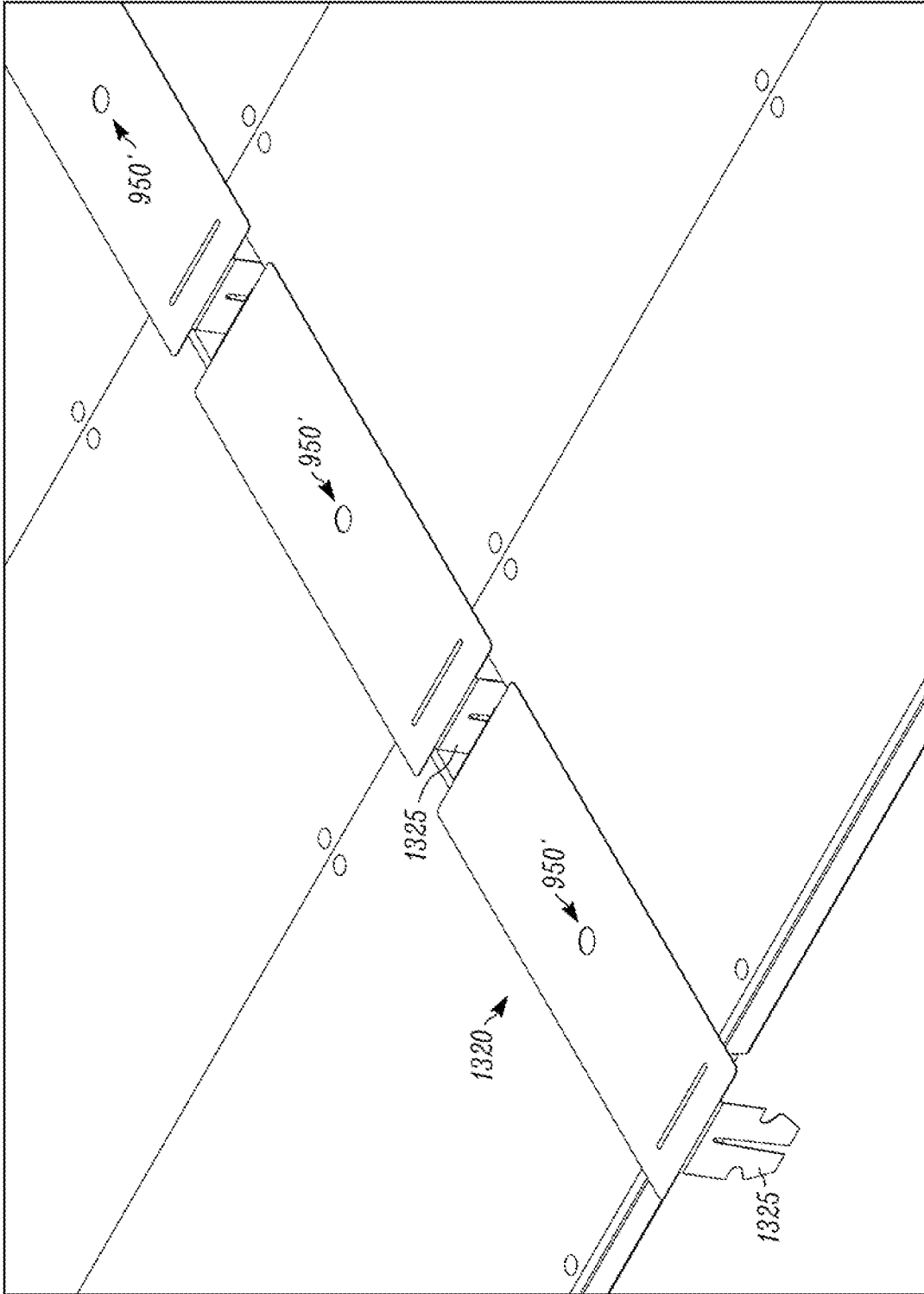


FIG. 18F

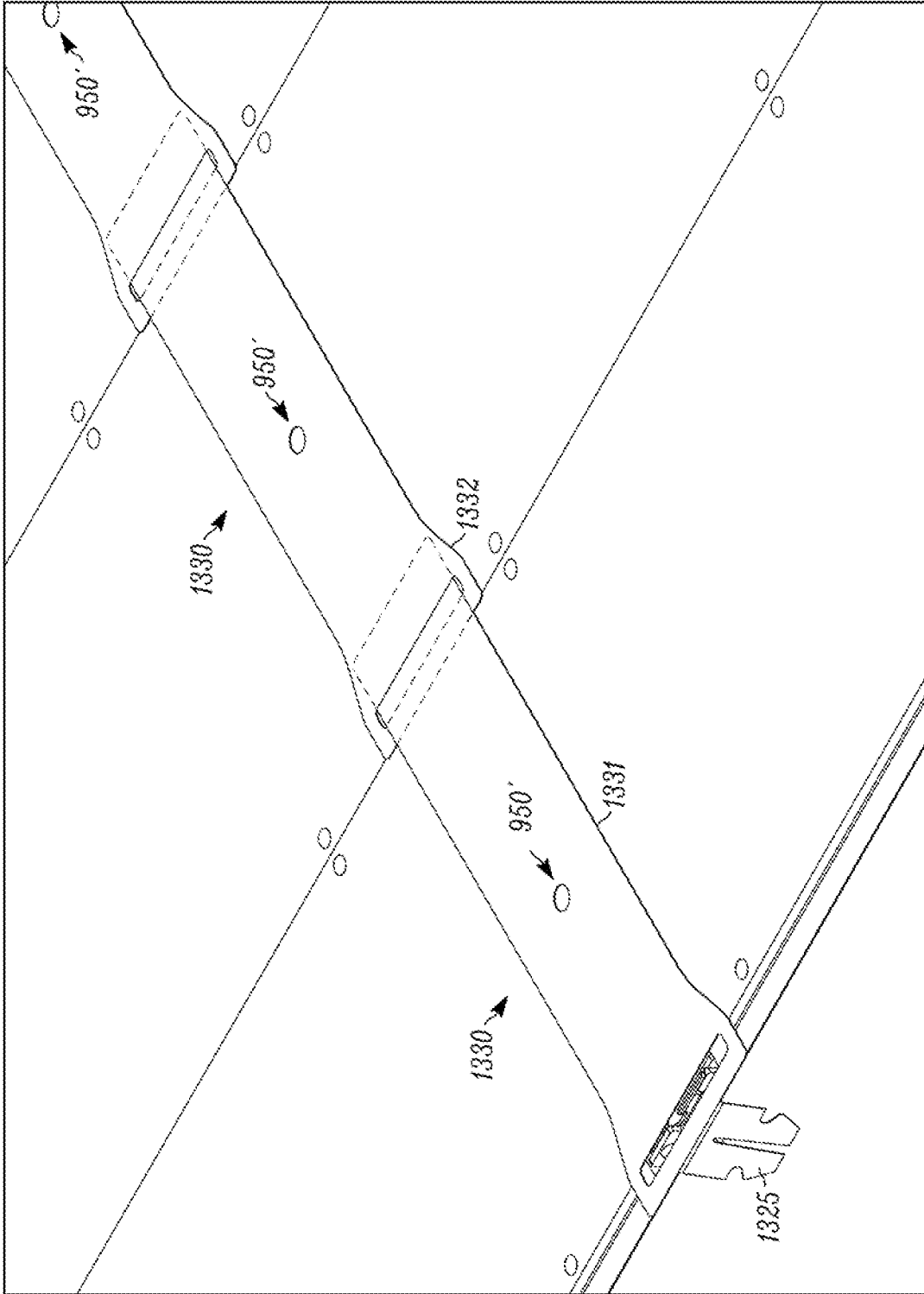
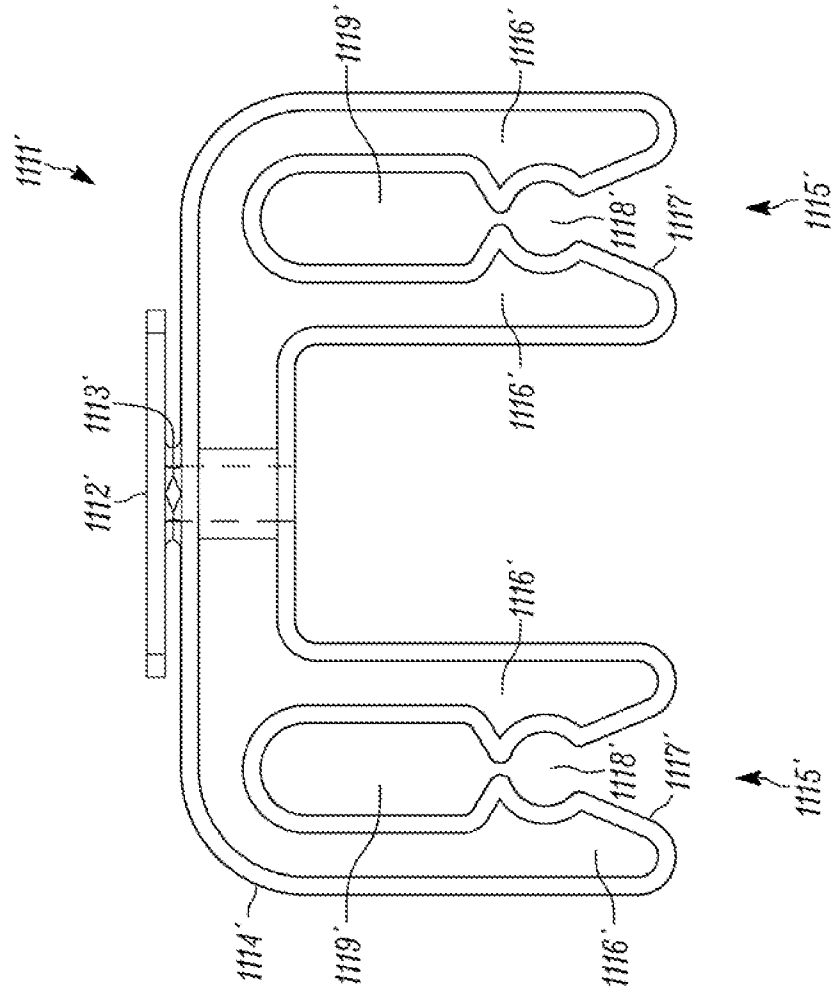
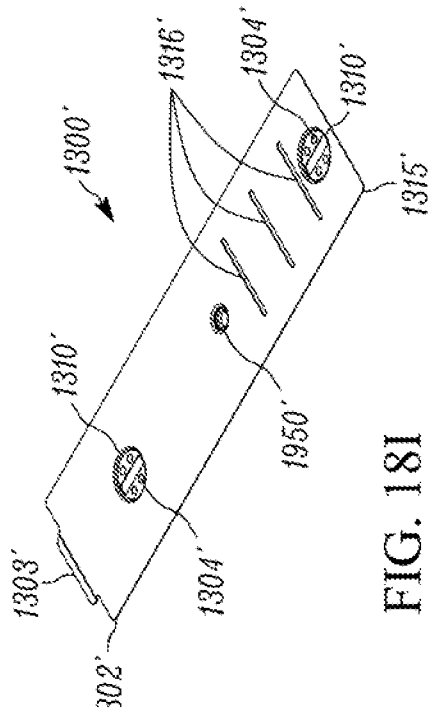


FIG. 18H



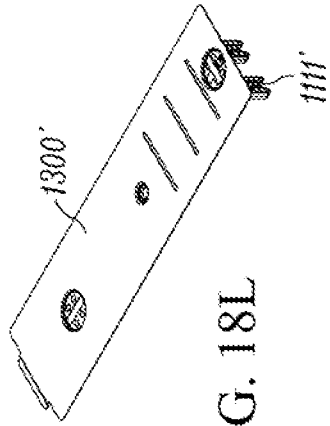


FIG. 18L

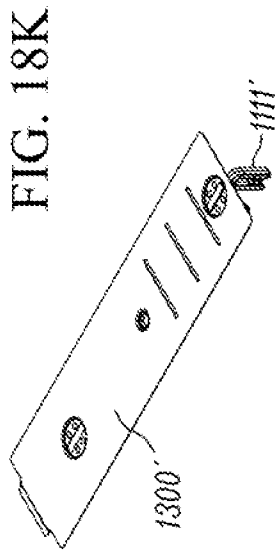


FIG. 18K

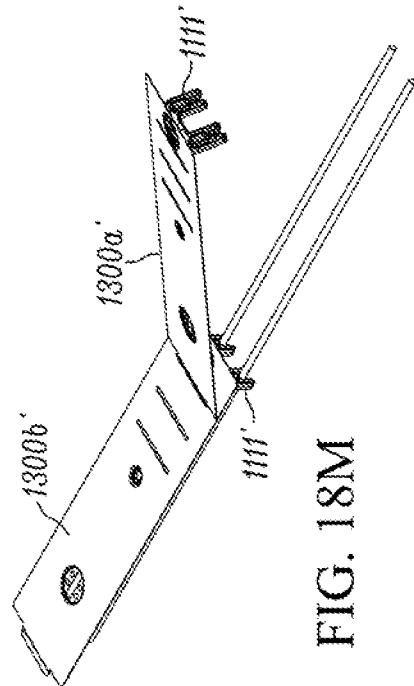


FIG. 18M

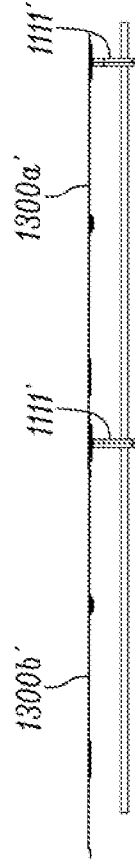


FIG. 18N

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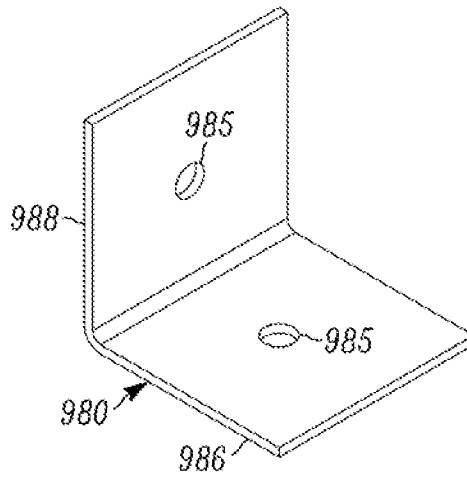


FIG. 19

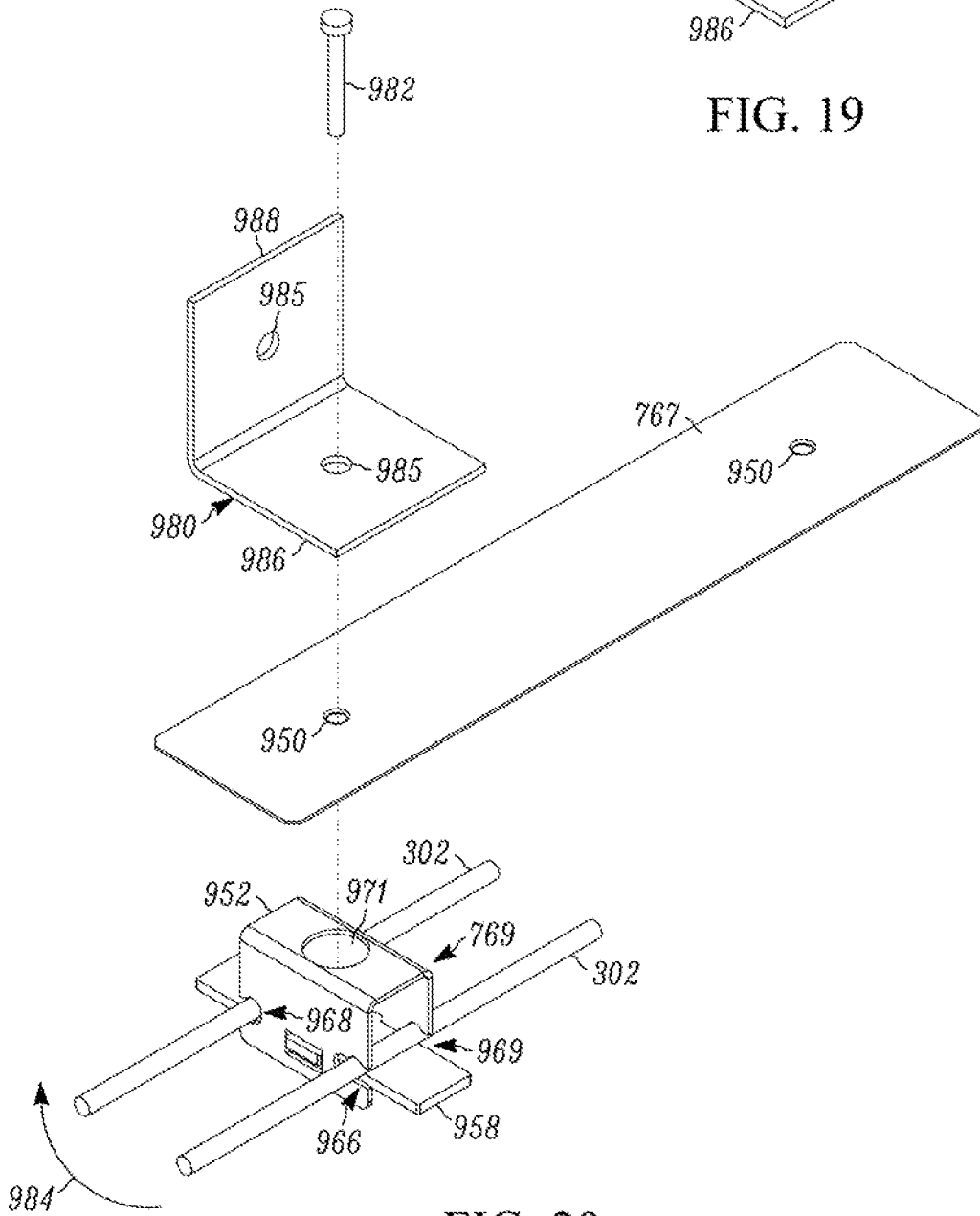


FIG. 20

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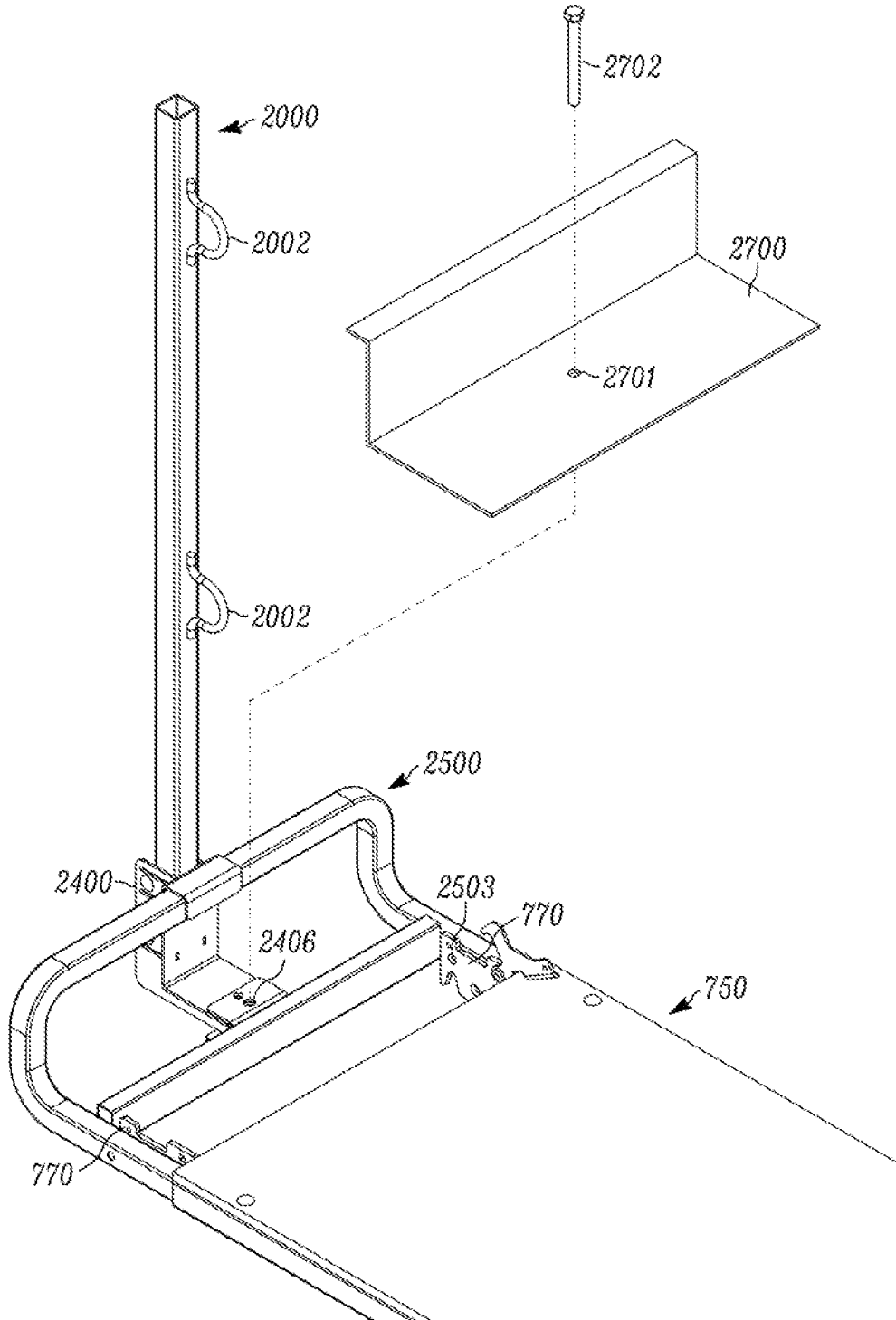


FIG. 21

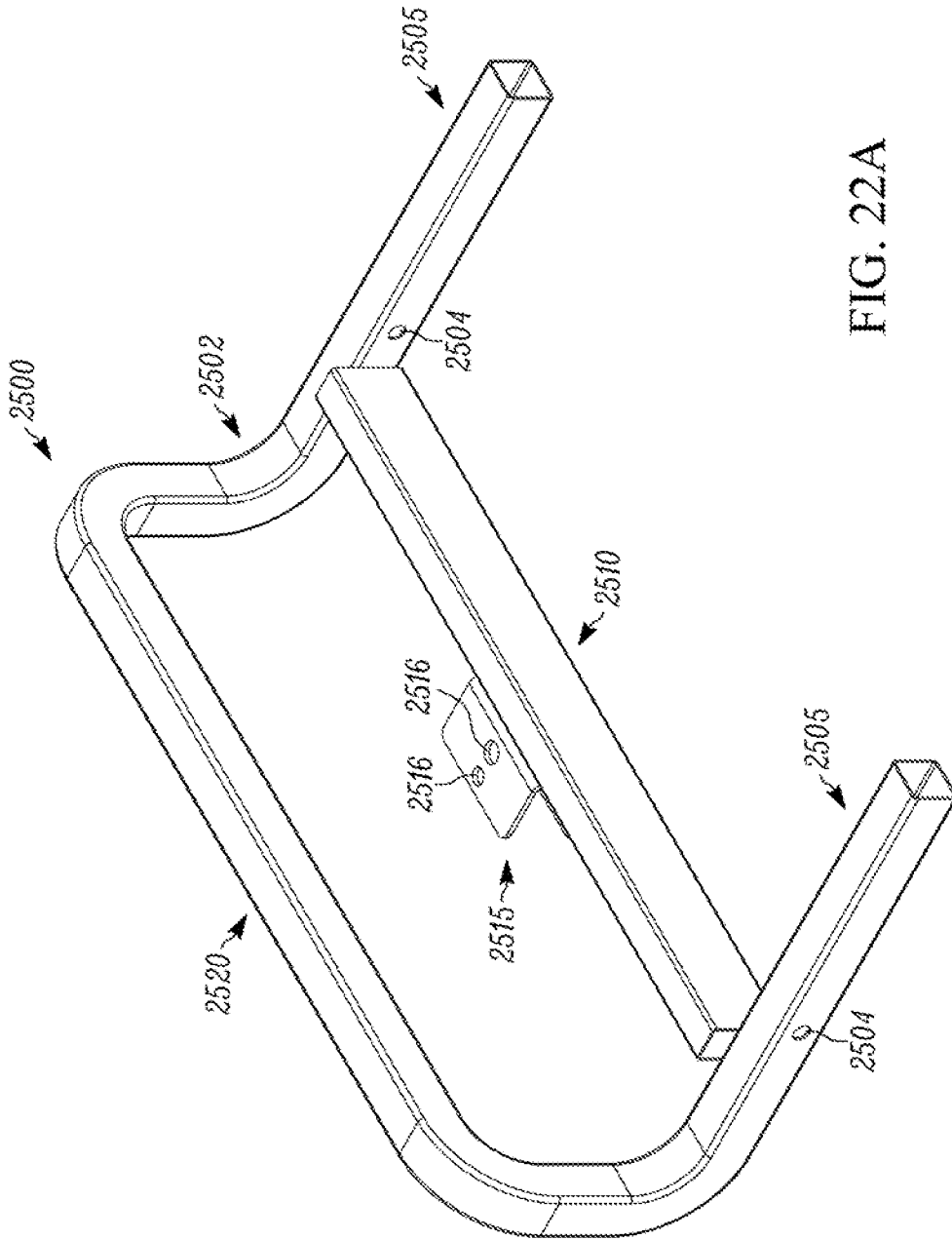
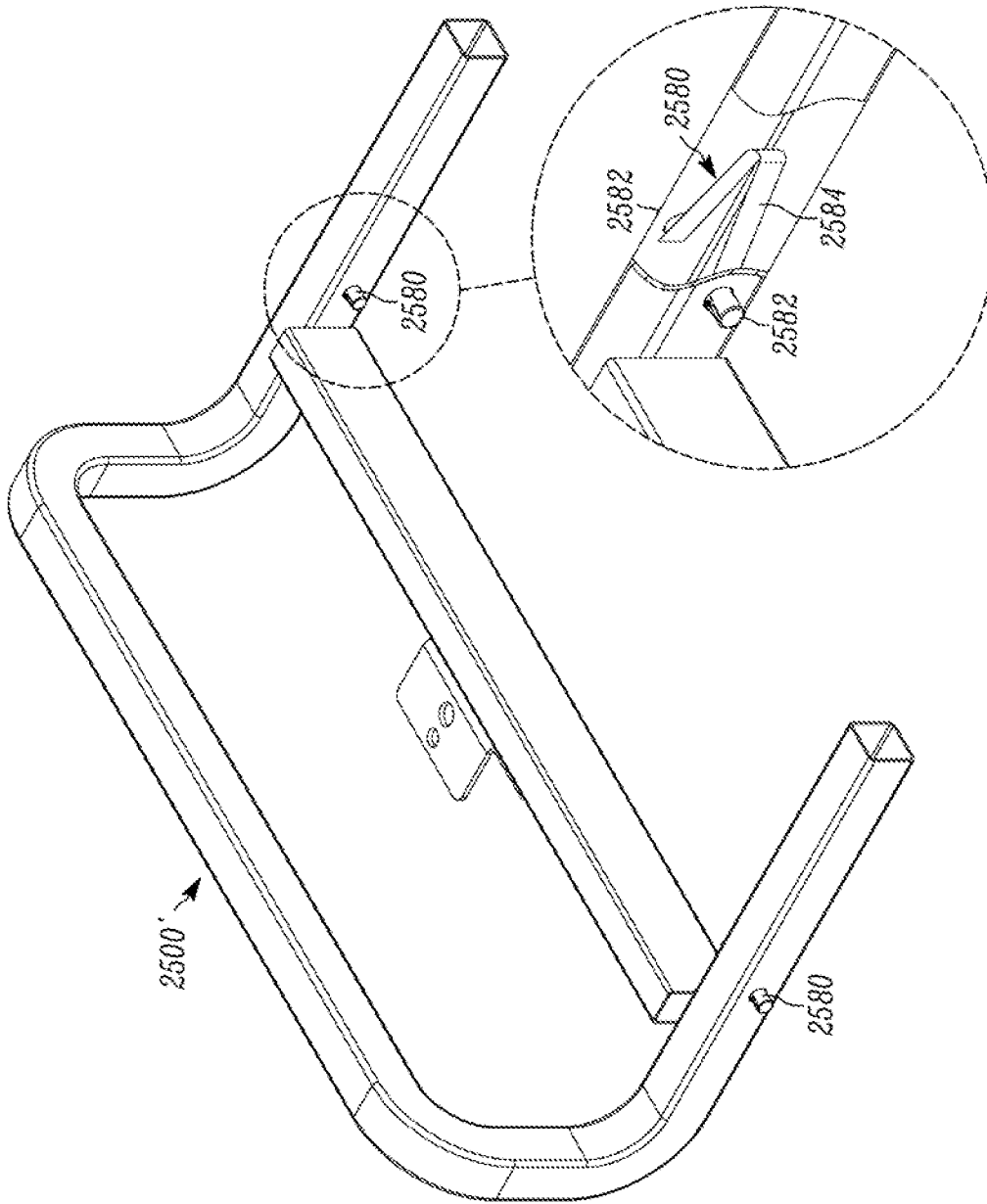


FIG. 22A

FIG. 22B



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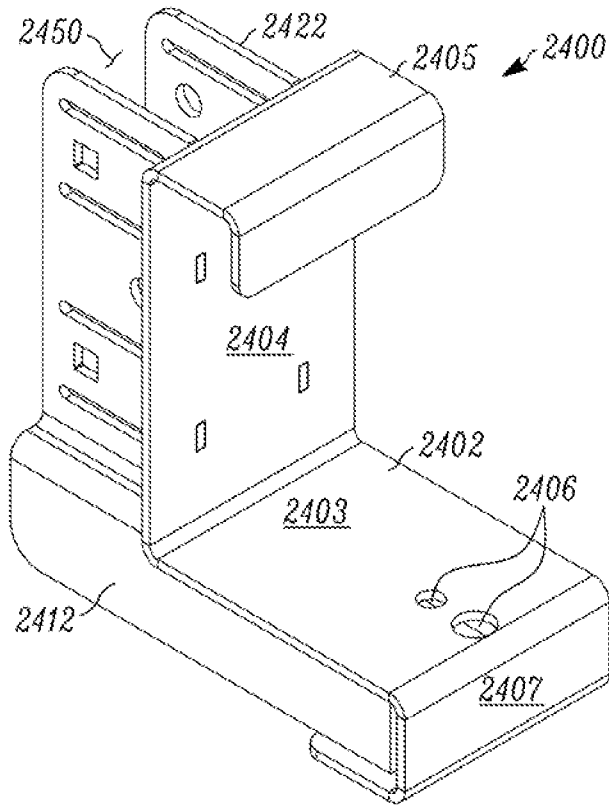


FIG. 23

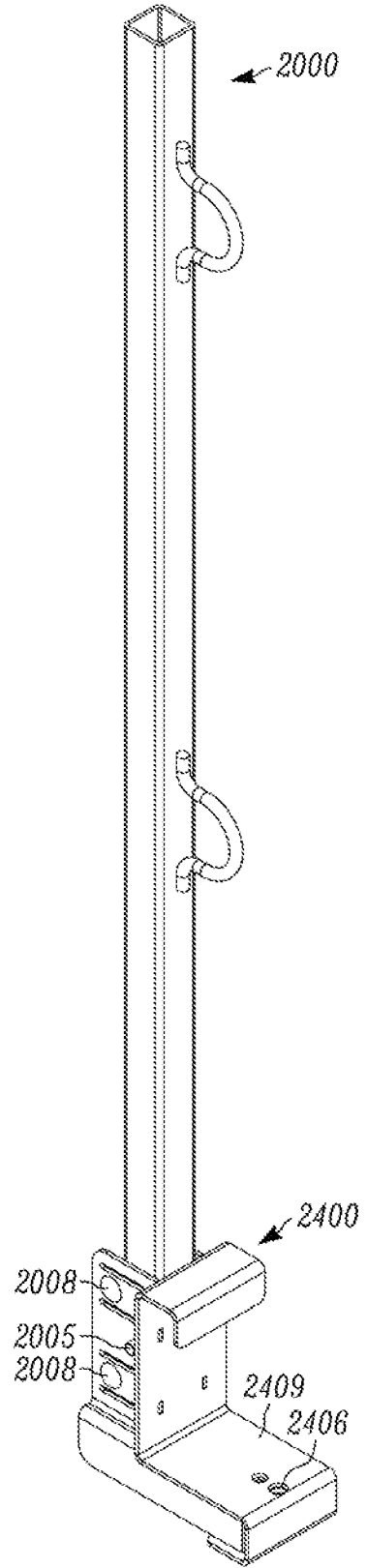


FIG. 24

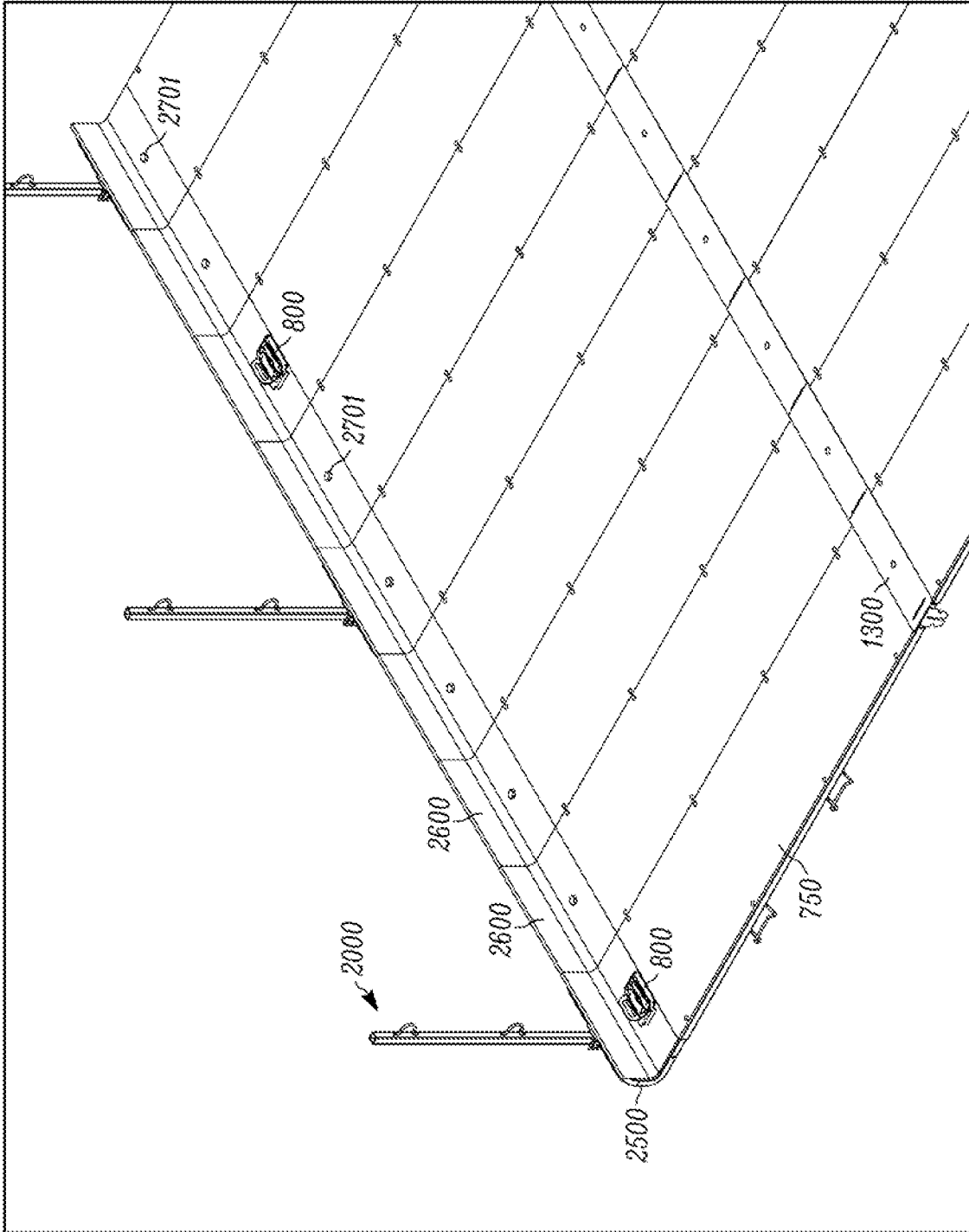


FIG. 25

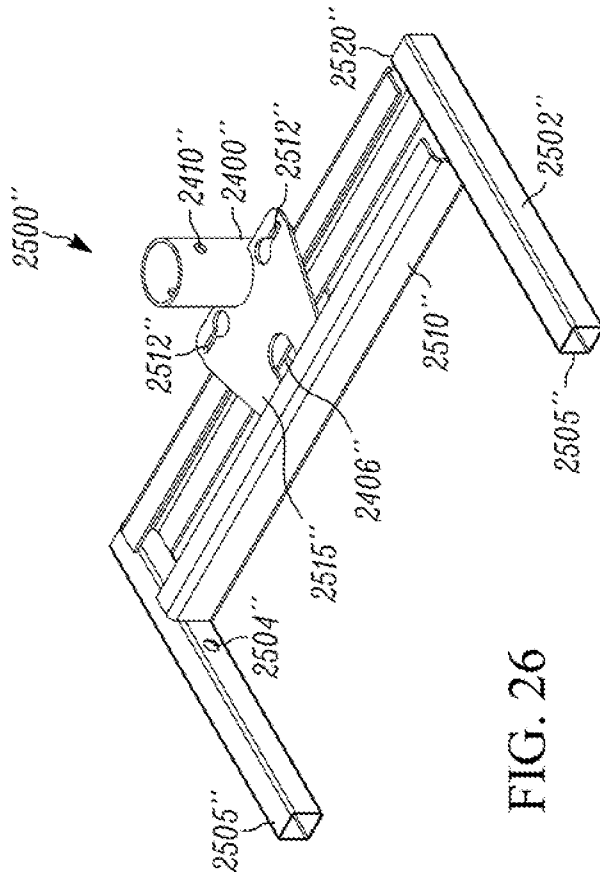


FIG. 26

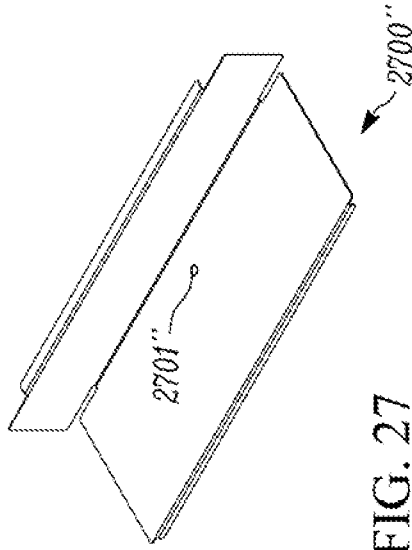


FIG. 27

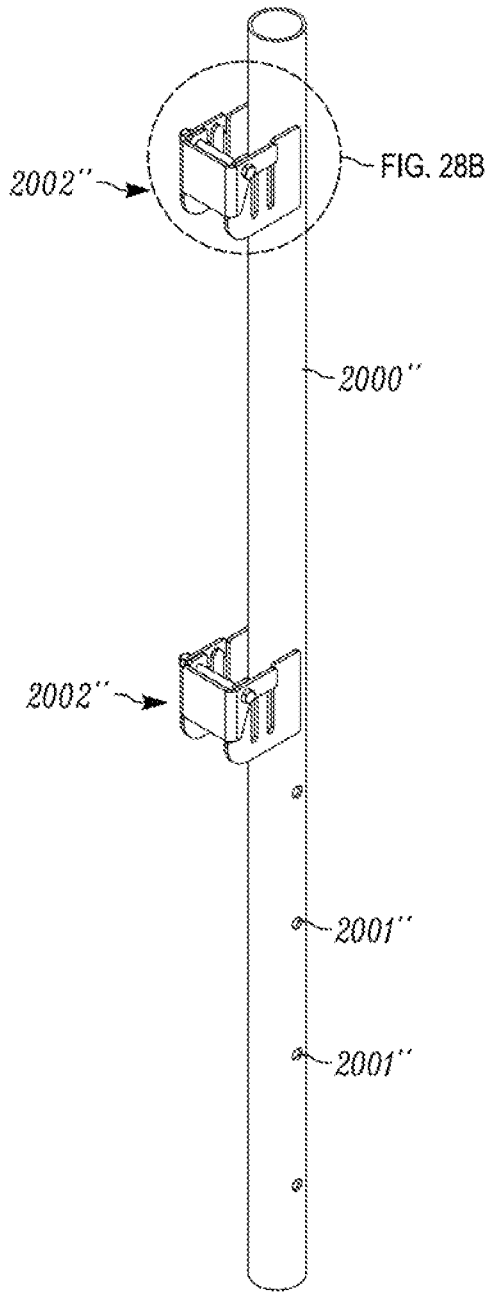


FIG. 28A

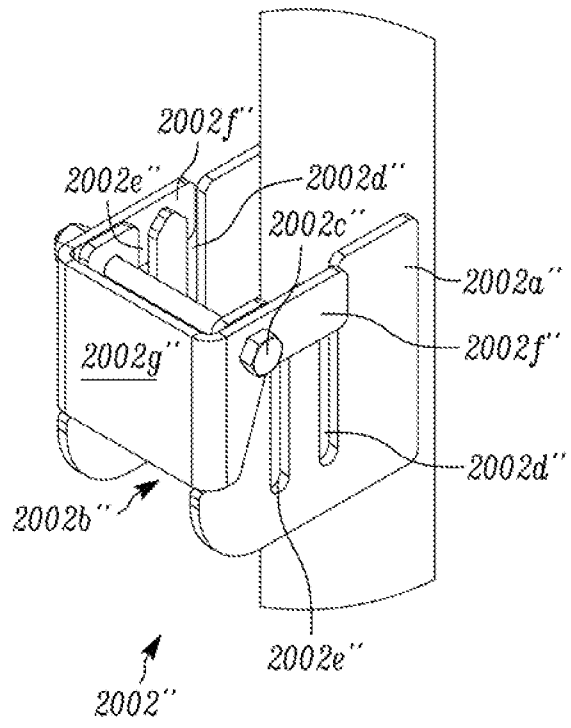


FIG. 28B

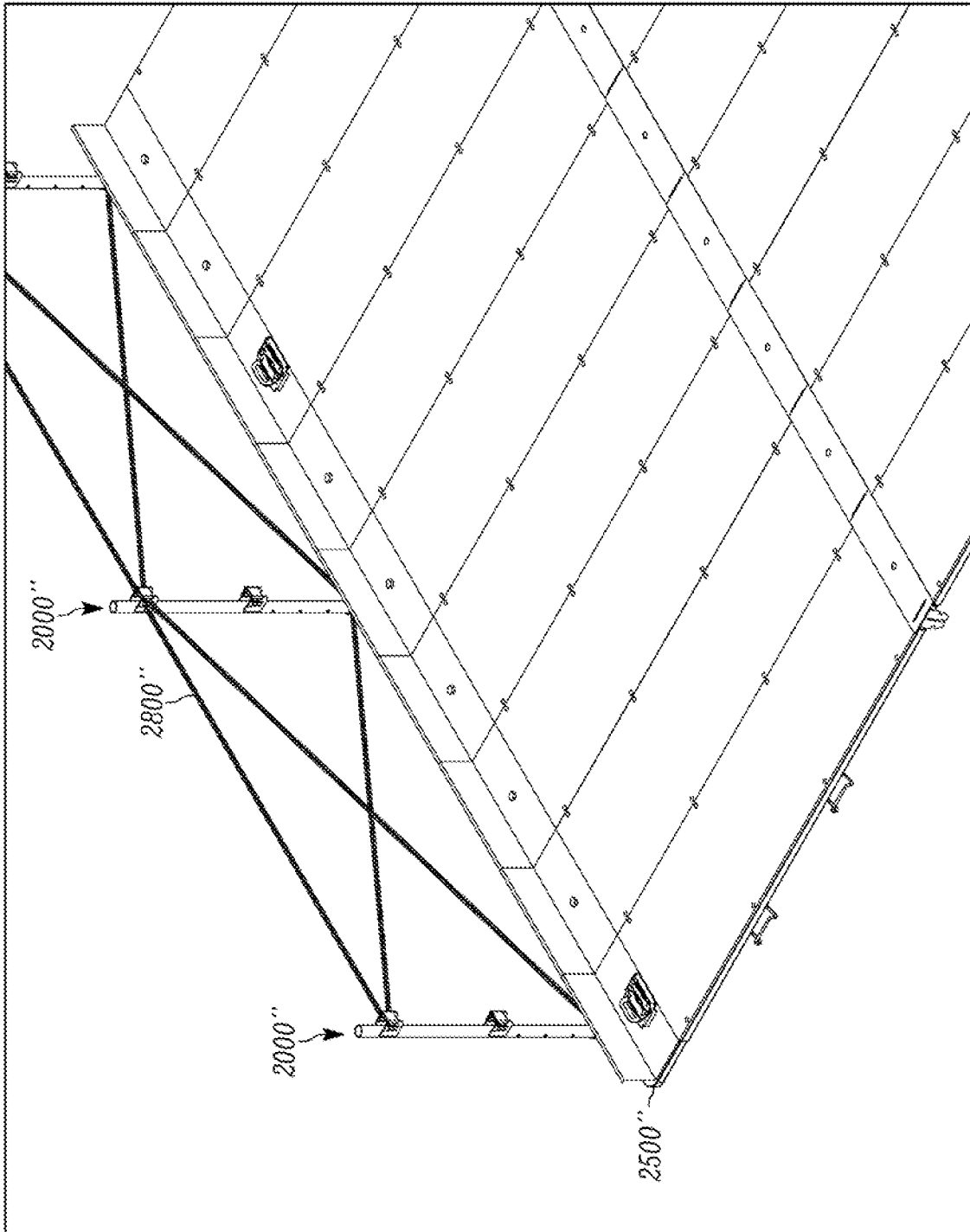


FIG. 29

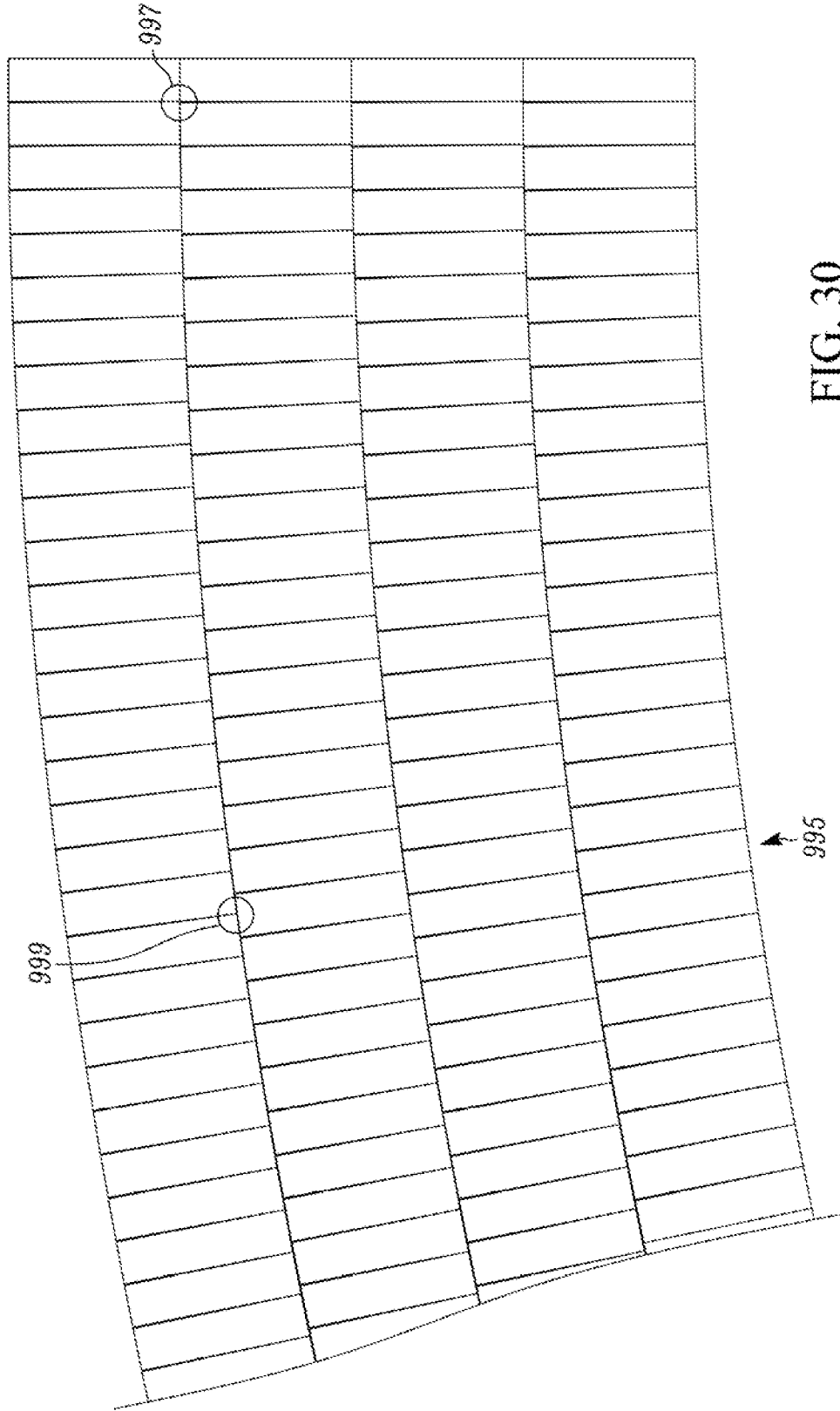


FIG. 30

