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(19) **United States**(12) **Patent Application Publication**  
**Squiers et al.**(10) **Pub. No.: US 2020/0165036 A1**(43) **Pub. Date: May 28, 2020**(54) **STORAGE DEVICE SYSTEM**(71) Applicant: **Milwaukee Electric Tool Corporation**,  
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**Aaron S. Blumenthal**, Wauwatosa, WI  
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**Samuel A. Gould**, Wauwatosa, WI  
(US); **Steven W. Hyma**, Milwaukee,  
WI (US); **Jason D. Thurner**,  
Menomonee Falls, WI (US); **Yaron**  
**Brunner**, Kibbutz Gvat (IL)62/613,263, filed on Jan. 3, 2018, provisional appli-  
cation No. 62/609,985, filed on Dec. 22, 2017, pro-  
visional application No. 62/608,302, filed on Dec. 20,  
2017, provisional application No. 62/594,292, filed  
on Dec. 4, 2017, provisional application No. 62/538,  
860, filed on Jul. 31, 2017.**Publication Classification**

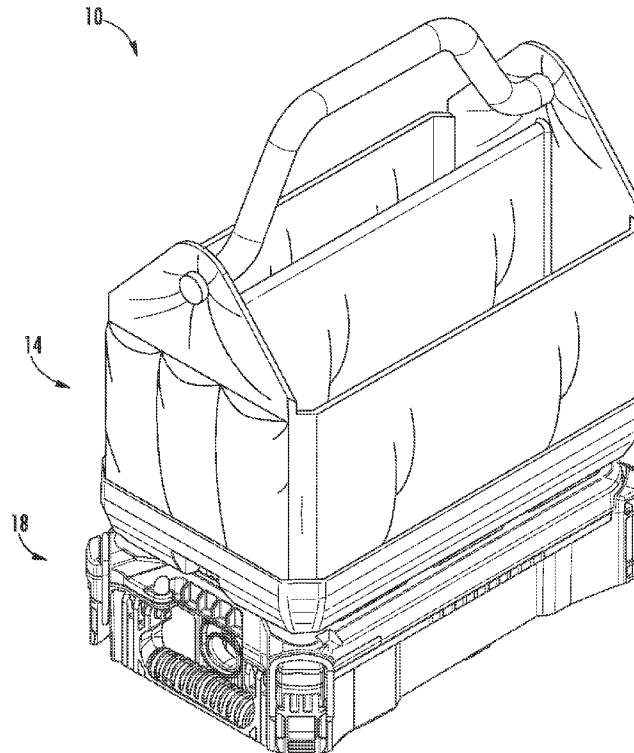
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- Int. Cl.**
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- B65D 25/20**
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- (2006.01)
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- (2006.01)
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- (52)
- U.S. Cl.**
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- 2003/144**
- (2013.01);
- A45F 3/14**
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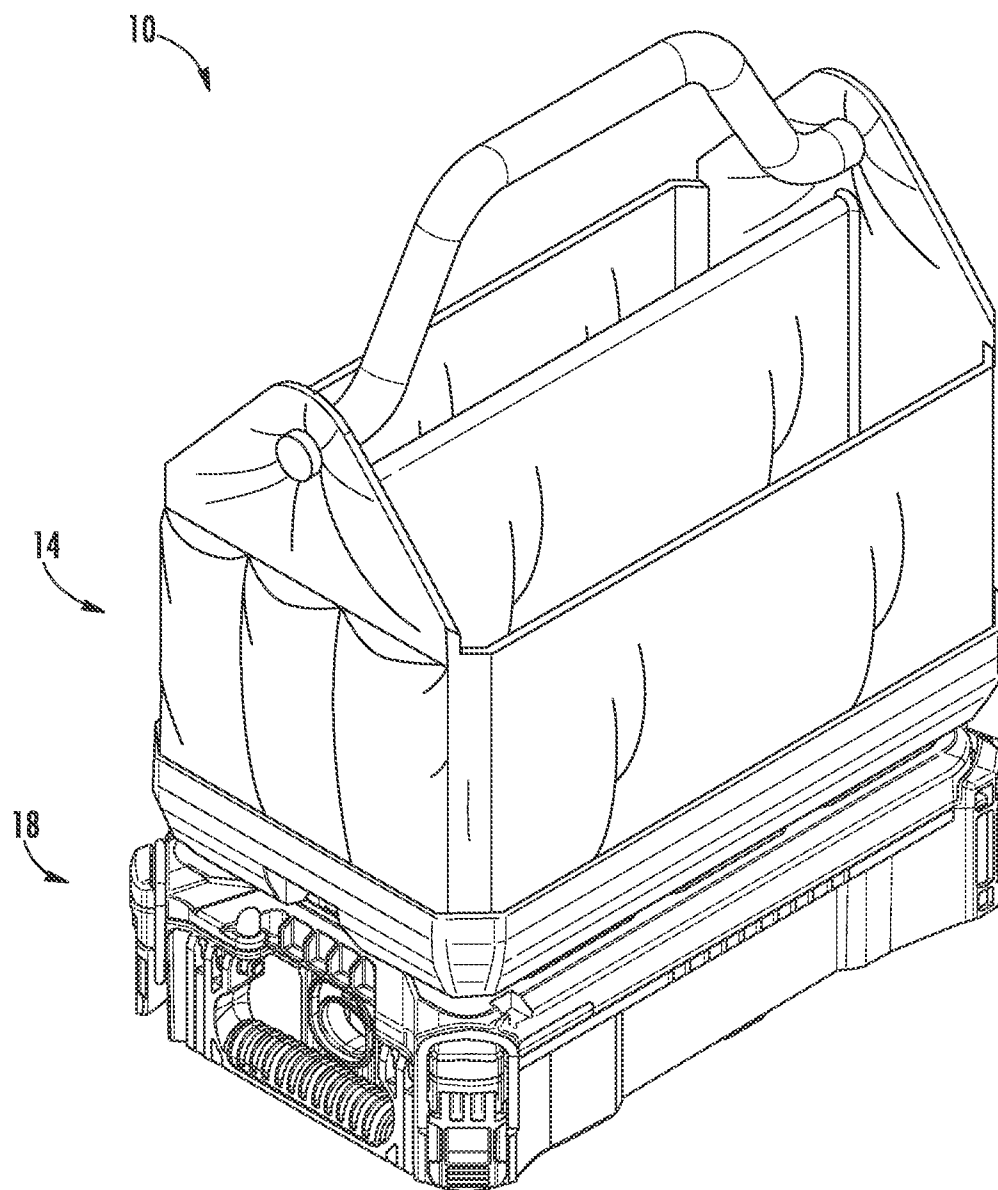
(21) Appl. No.: **16/777,181**(22) Filed: **Jan. 30, 2020****Related U.S. Application Data**

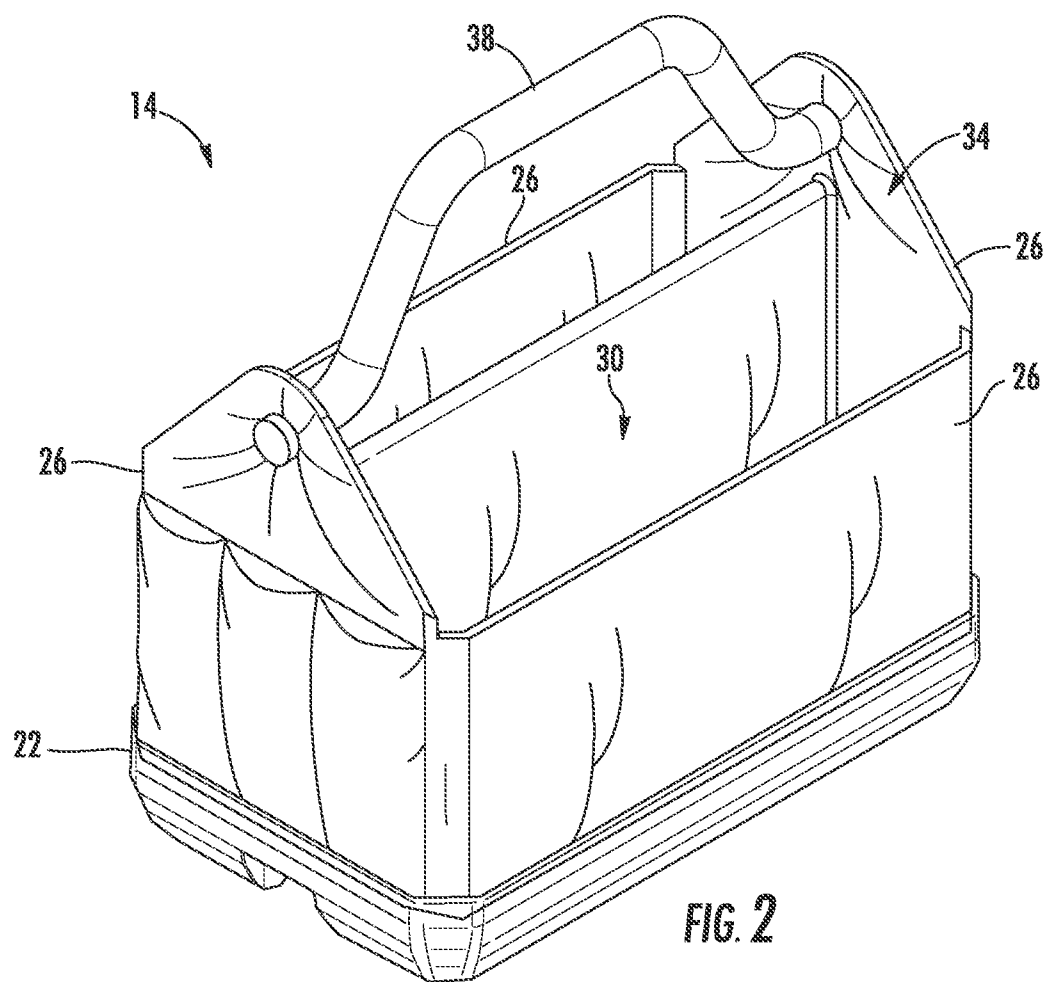
- (63) Continuation of application No. PCT/US2018/
- 
- 044629, filed on Jul. 31, 2018.
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- (60) Provisional application No. 62/634,537, filed on Feb.
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- 23, 2018, provisional application No. 62/621,403,
- 
- filed on Jan. 24, 2018, provisional application No.

(57) **ABSTRACT**

A storage container with various aspects is described herein. The storage container may have cleats or cleat receptacles to interact with other storage containers and/or accessories. The storage container may also include rails for attachment of various accessories. Some versions of the storage container may further include telescopic uprights connected to a handle. Many of the versions of the storage containers may further include wheels for transporting the storage containers and their contents.







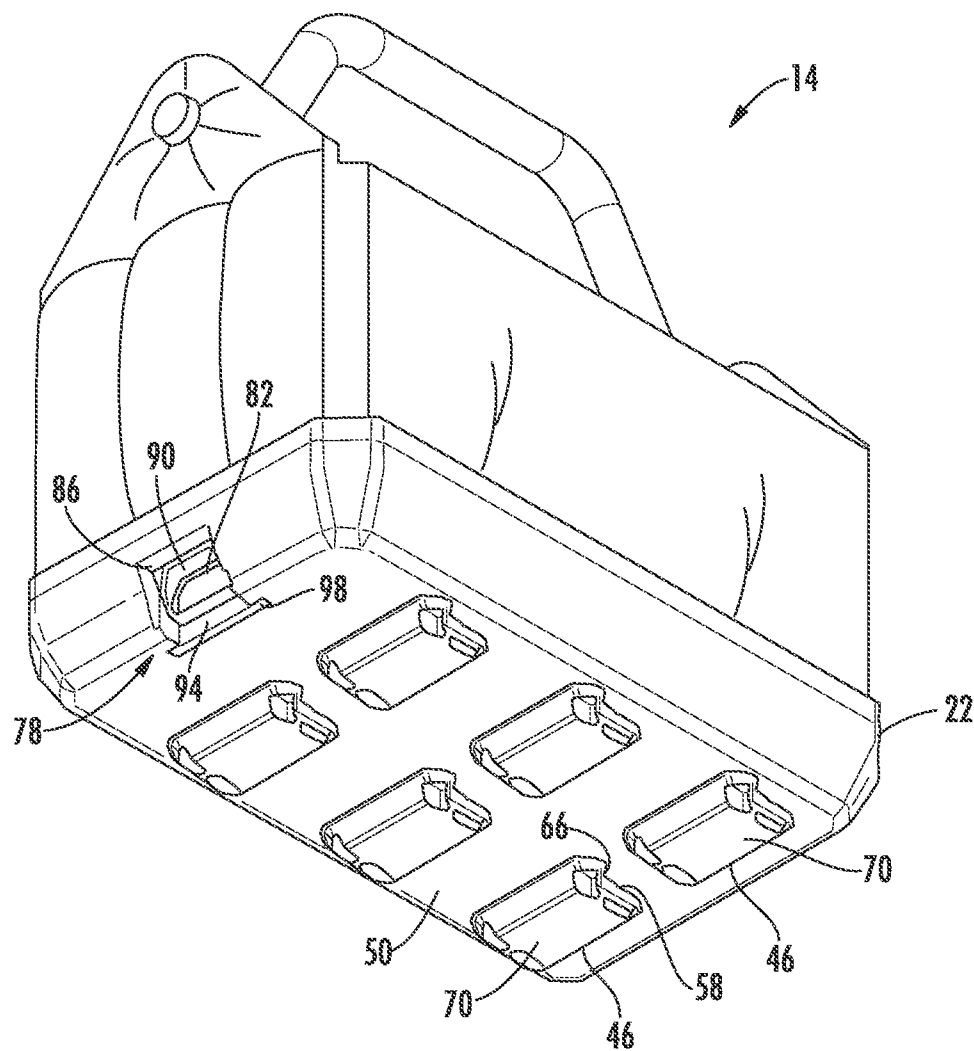


FIG. 3

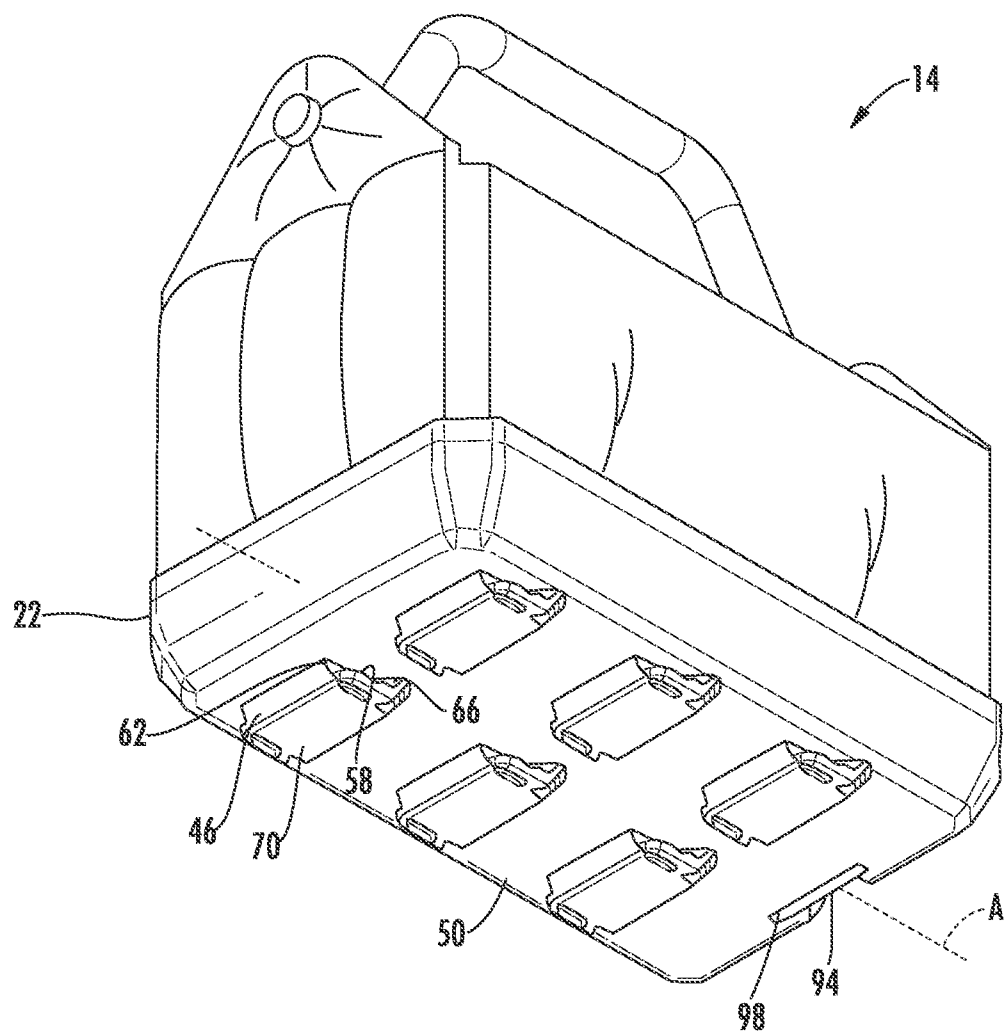
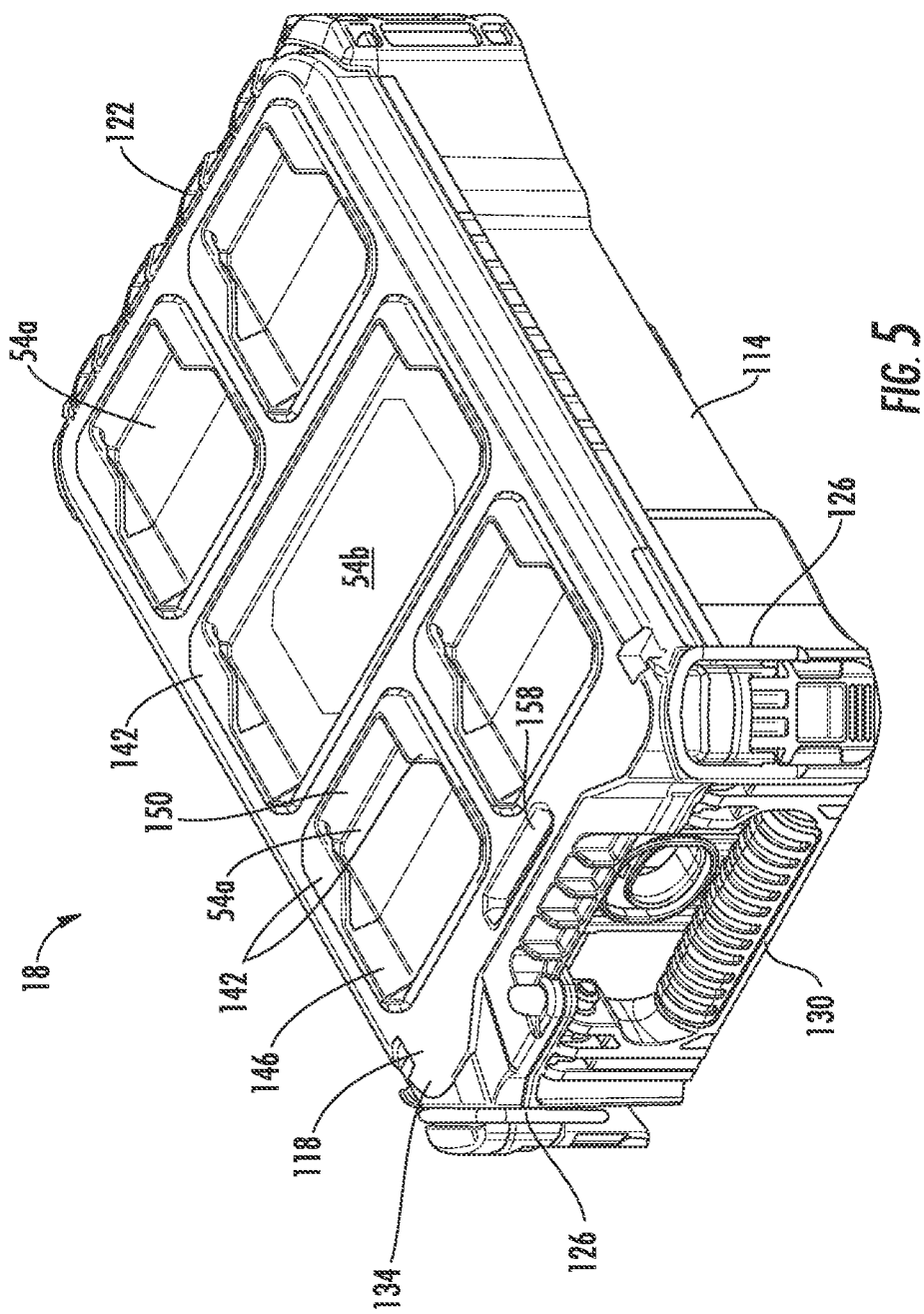
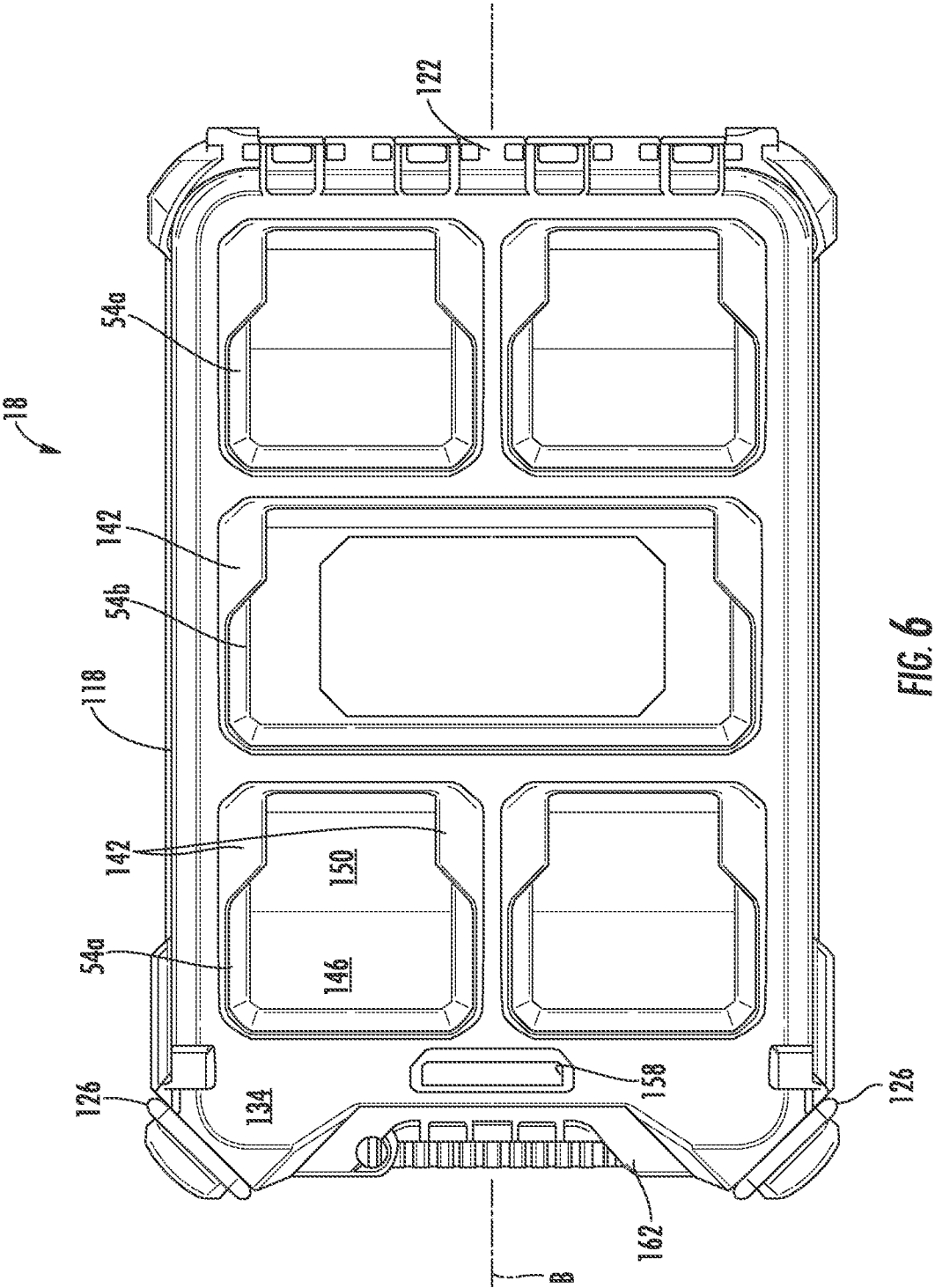


FIG. 4





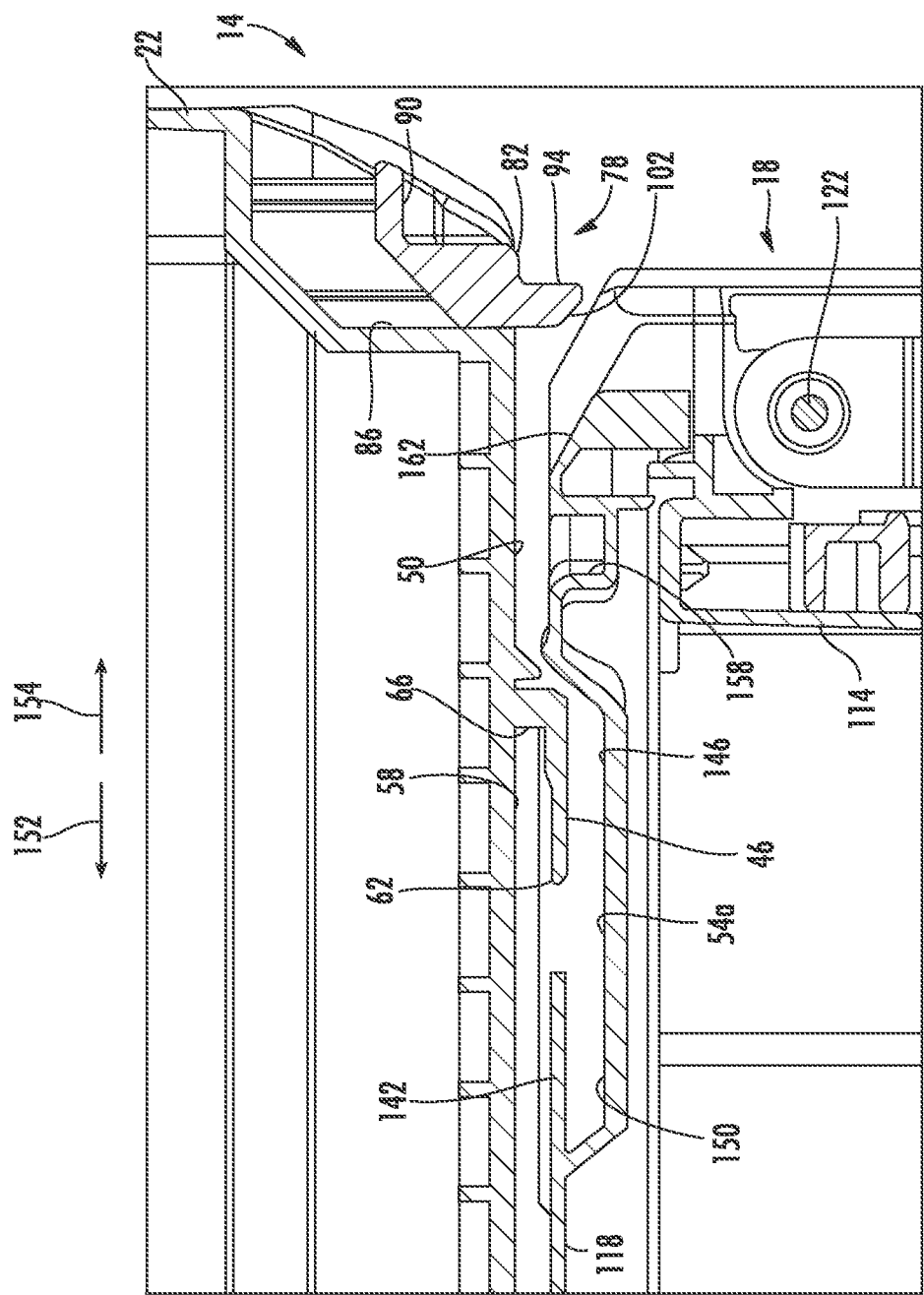
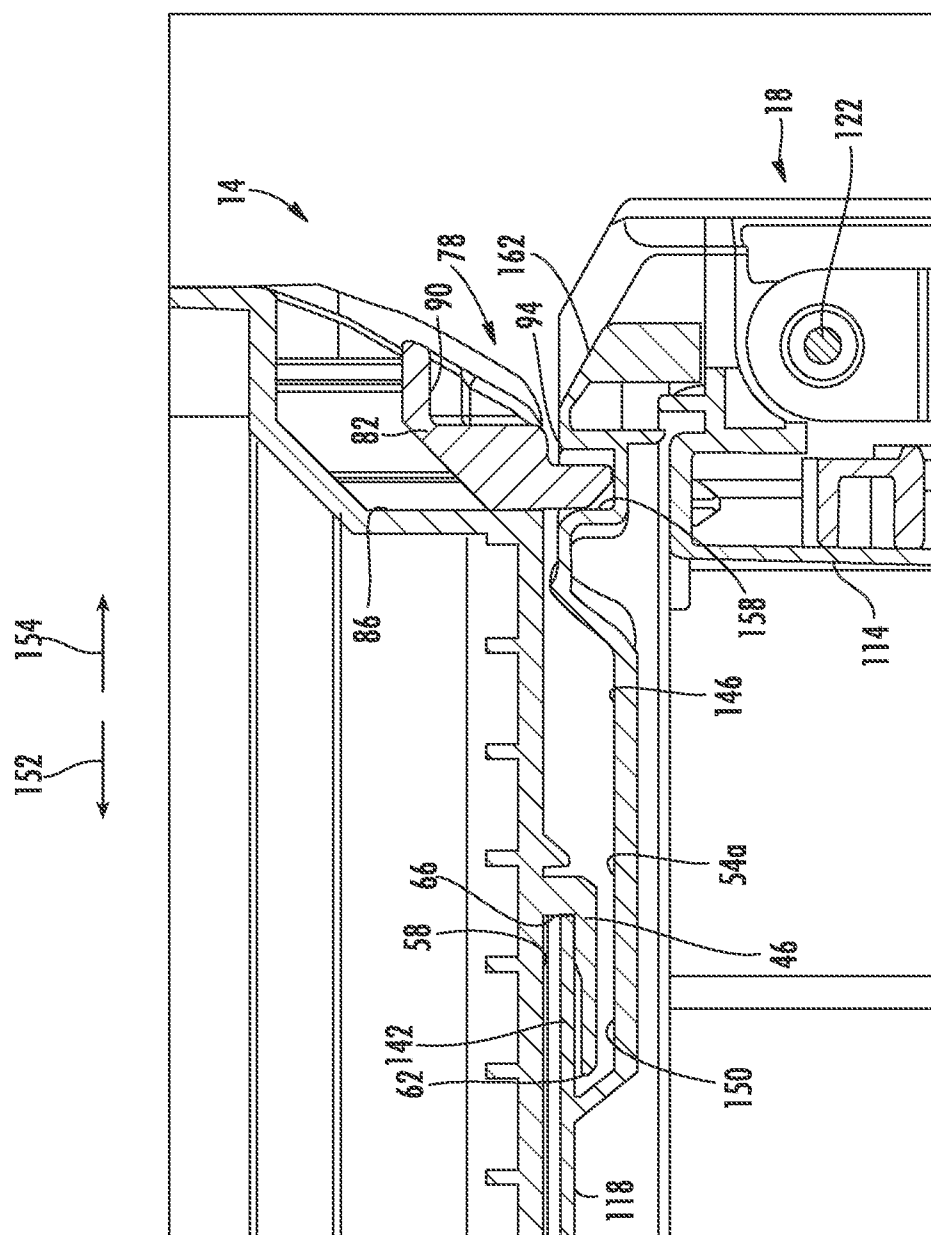


FIG. 7

8  
Fig.

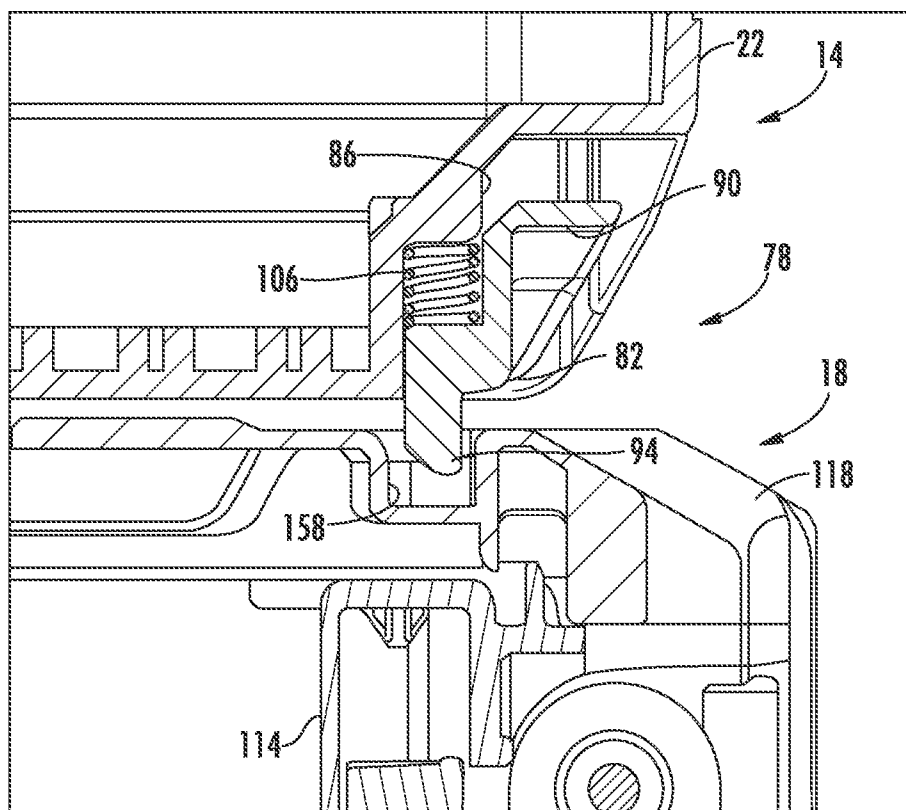


**FIG. 9**

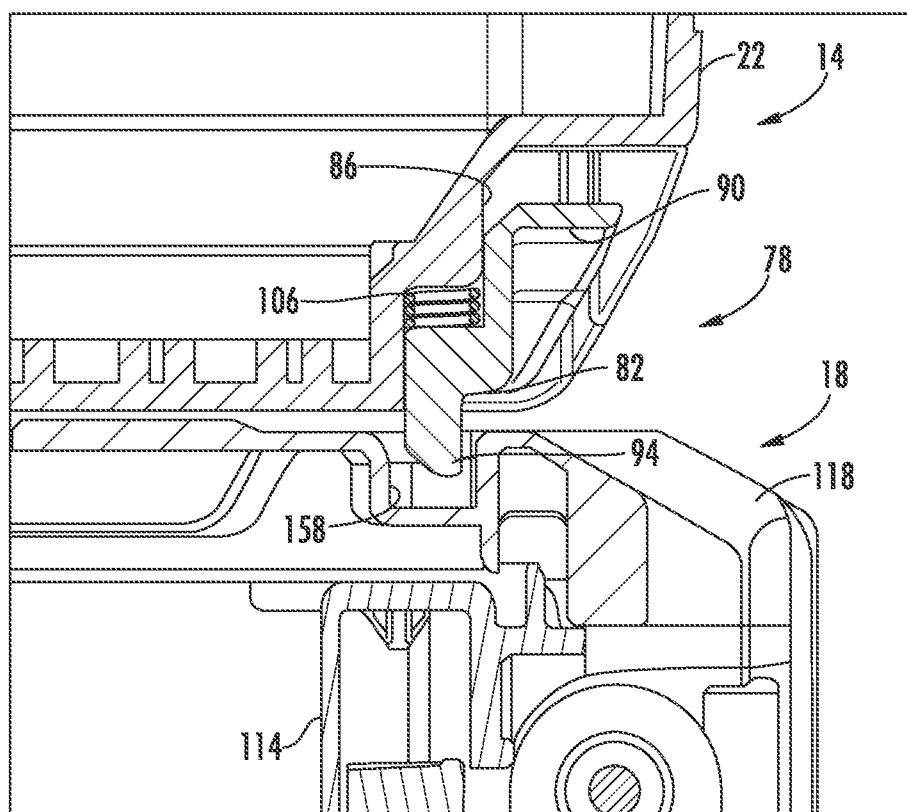


FIG. 10

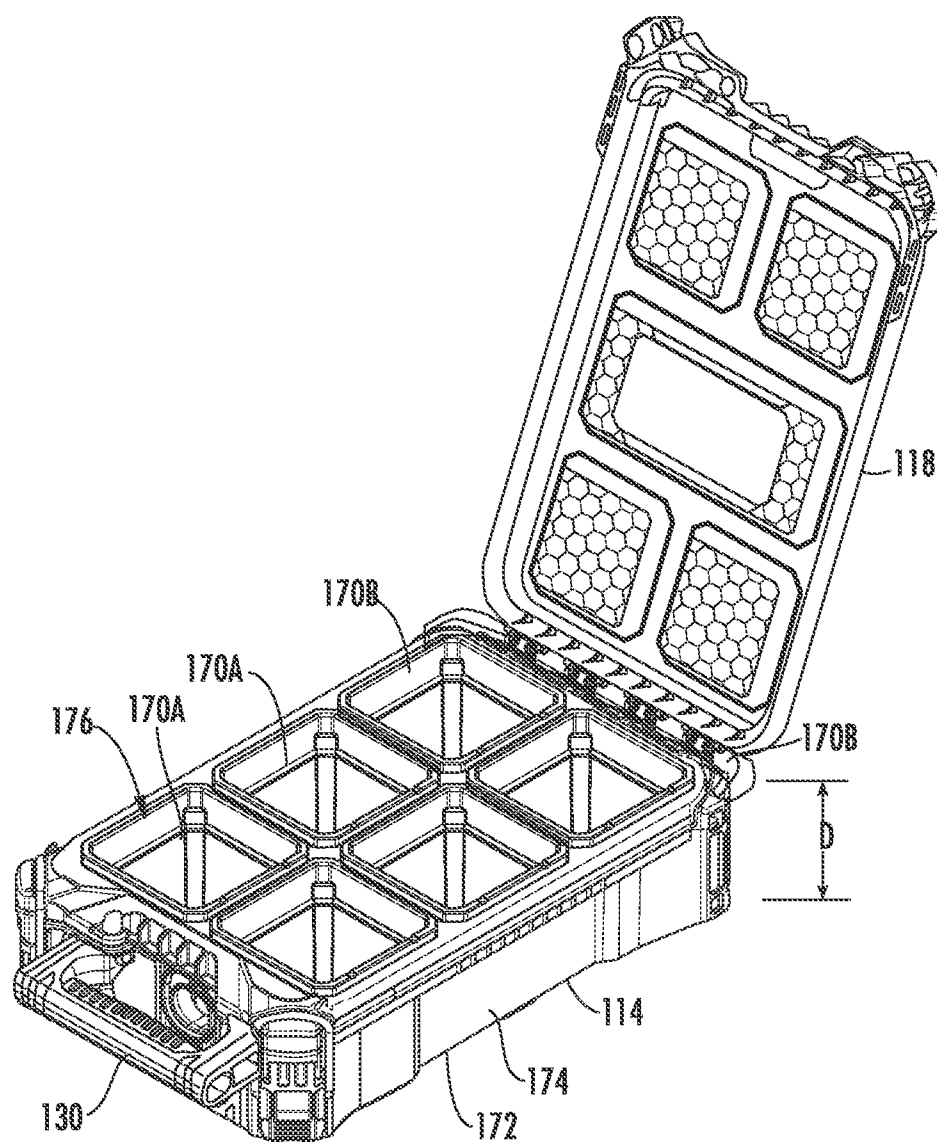


FIG. 17

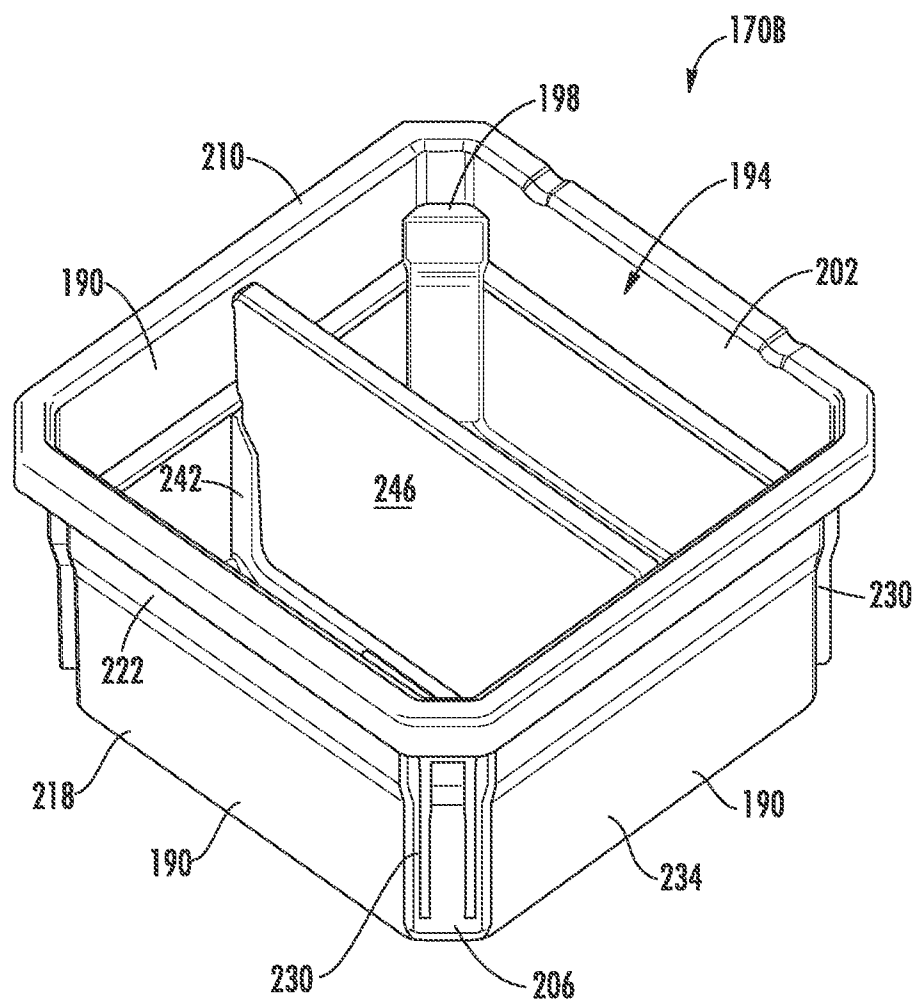


**FIG. 12**

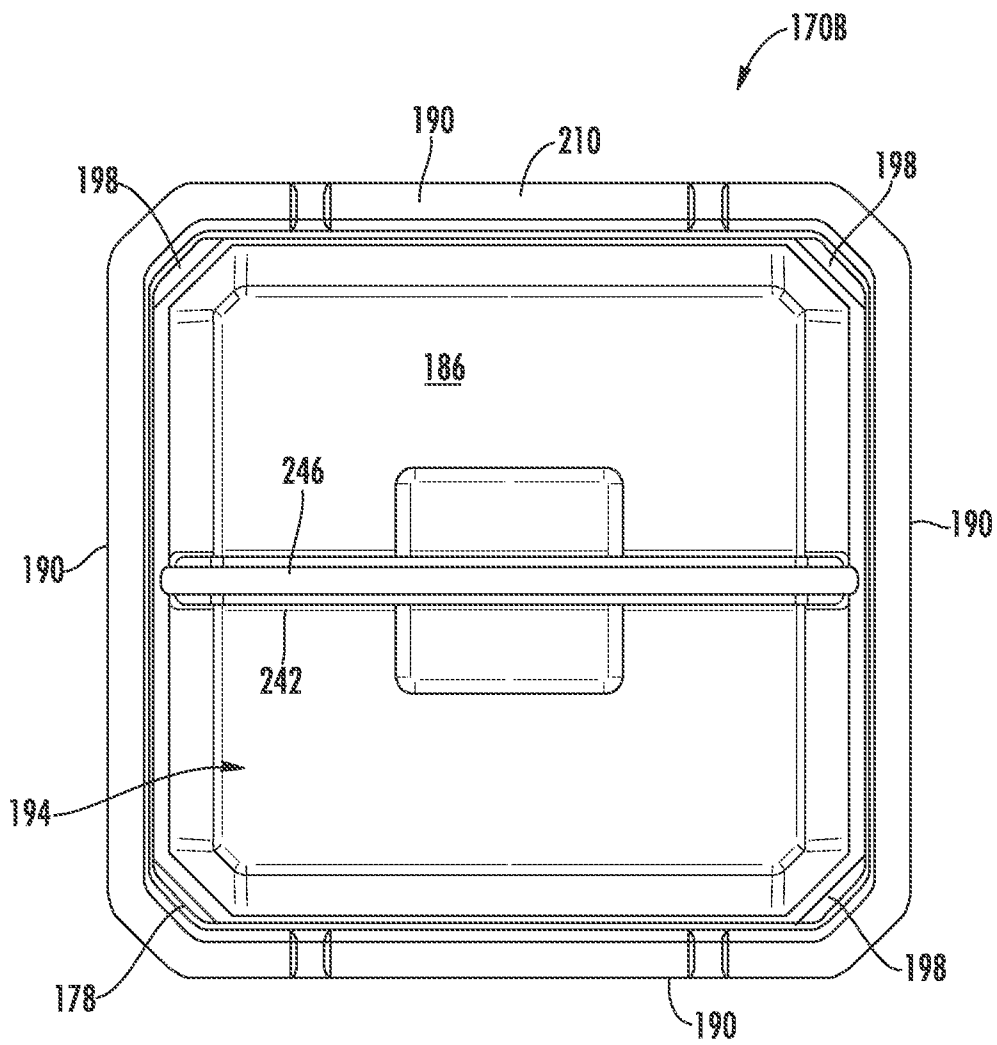


FIG. 13

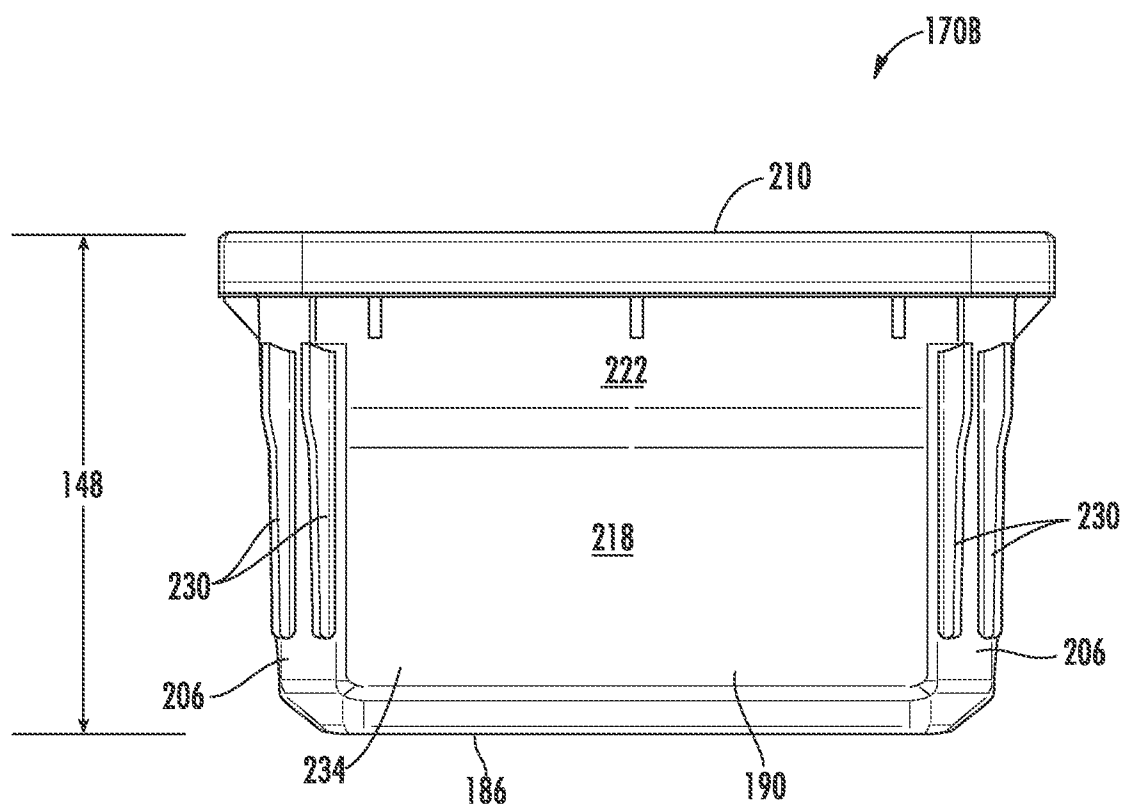


FIG. 14

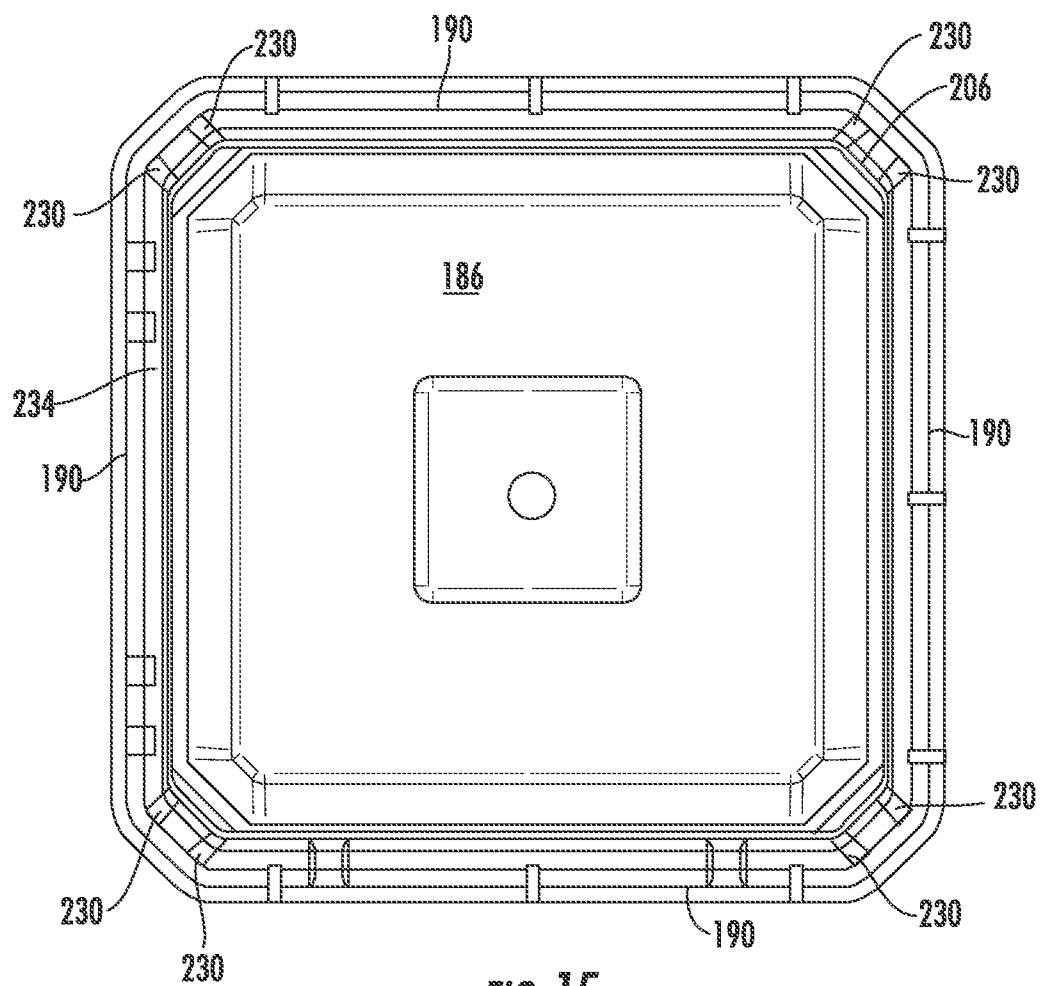


FIG. 15

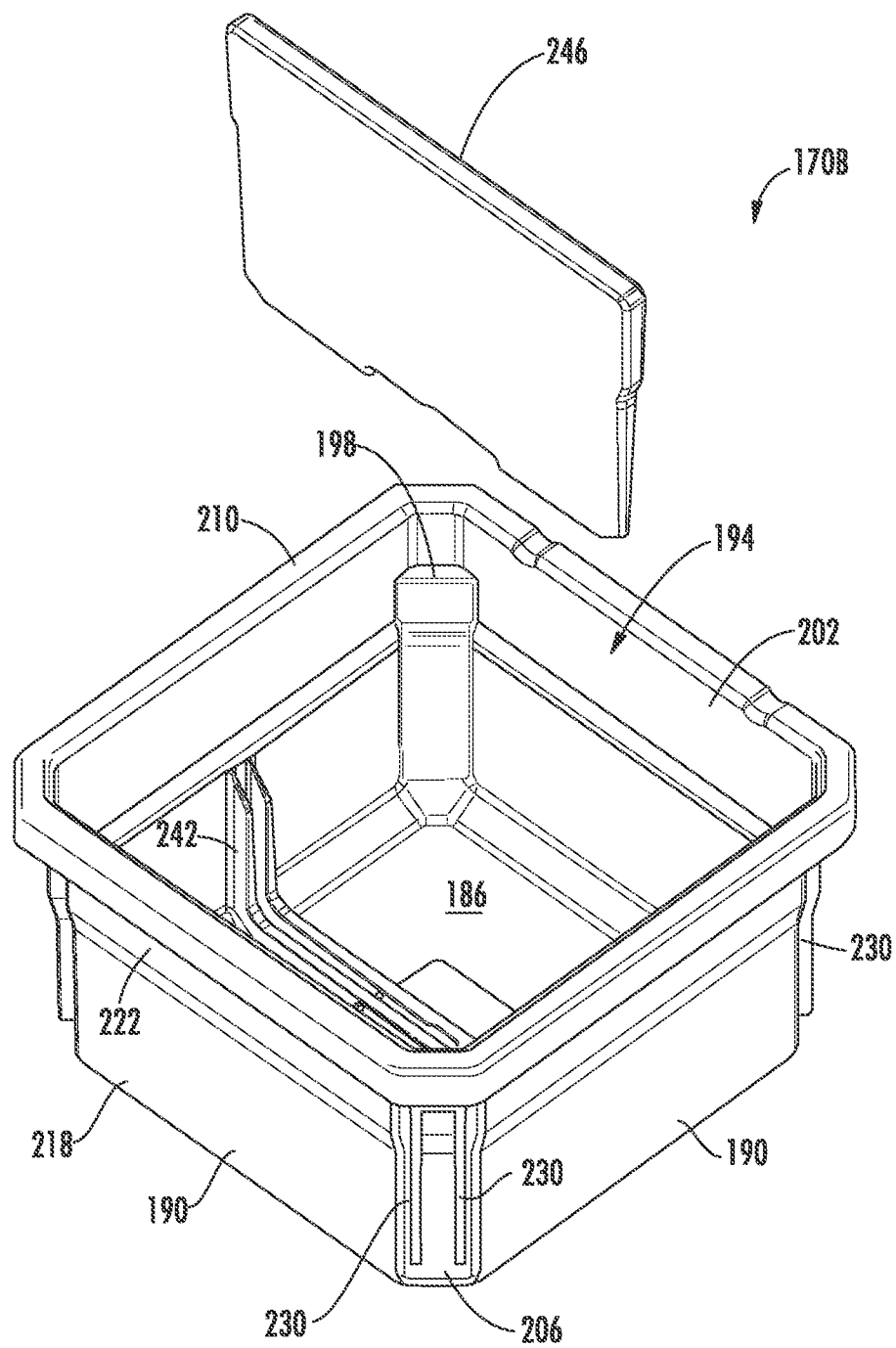


FIG. 16

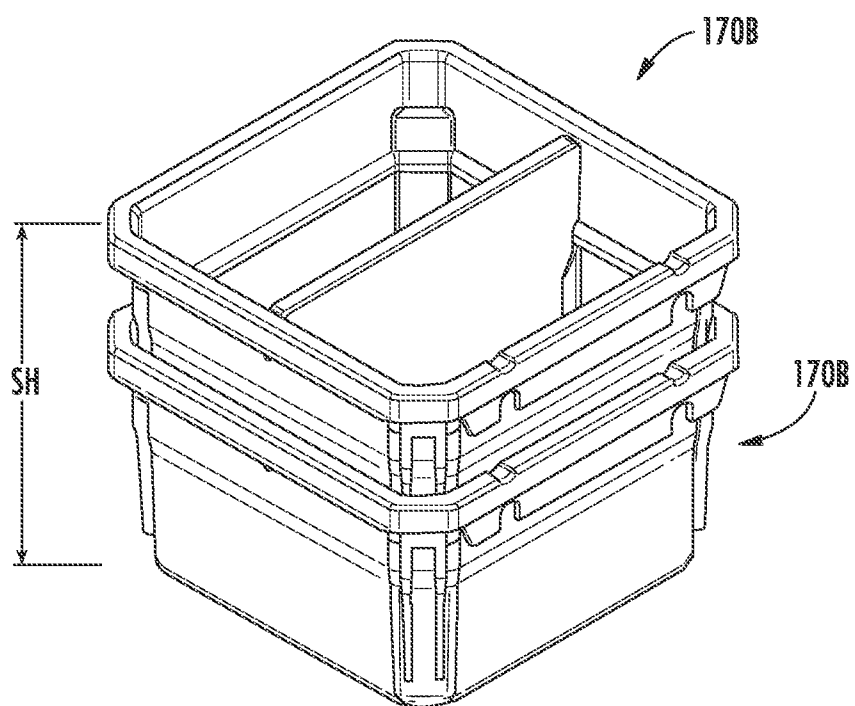


**FIG. 17**

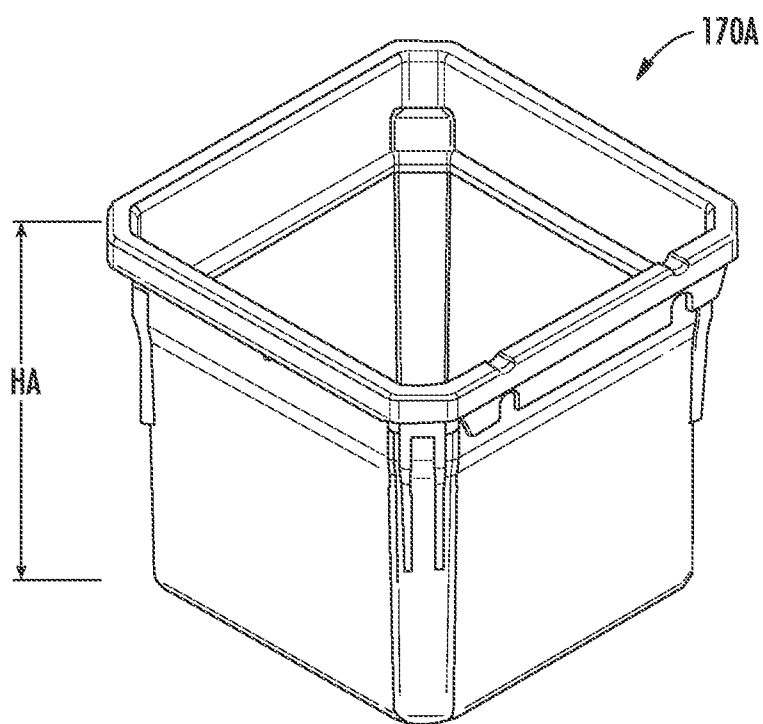


**FIG. 18**

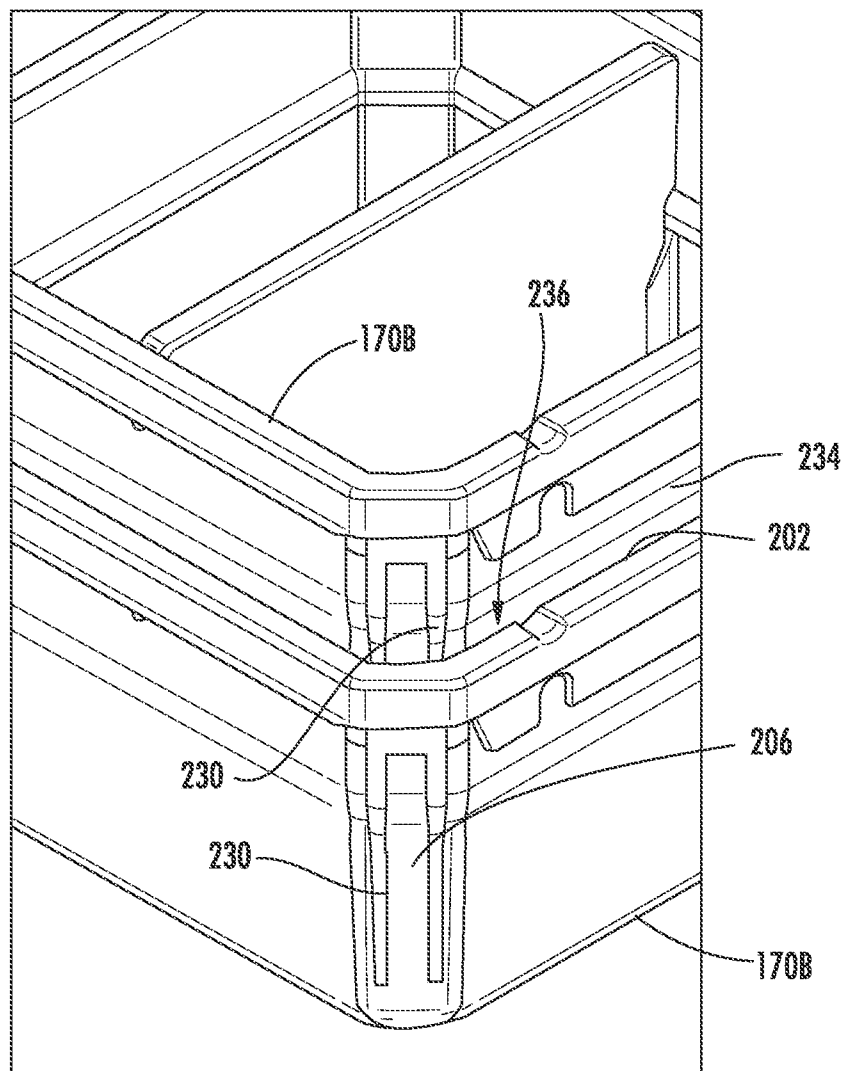


FIG. 19

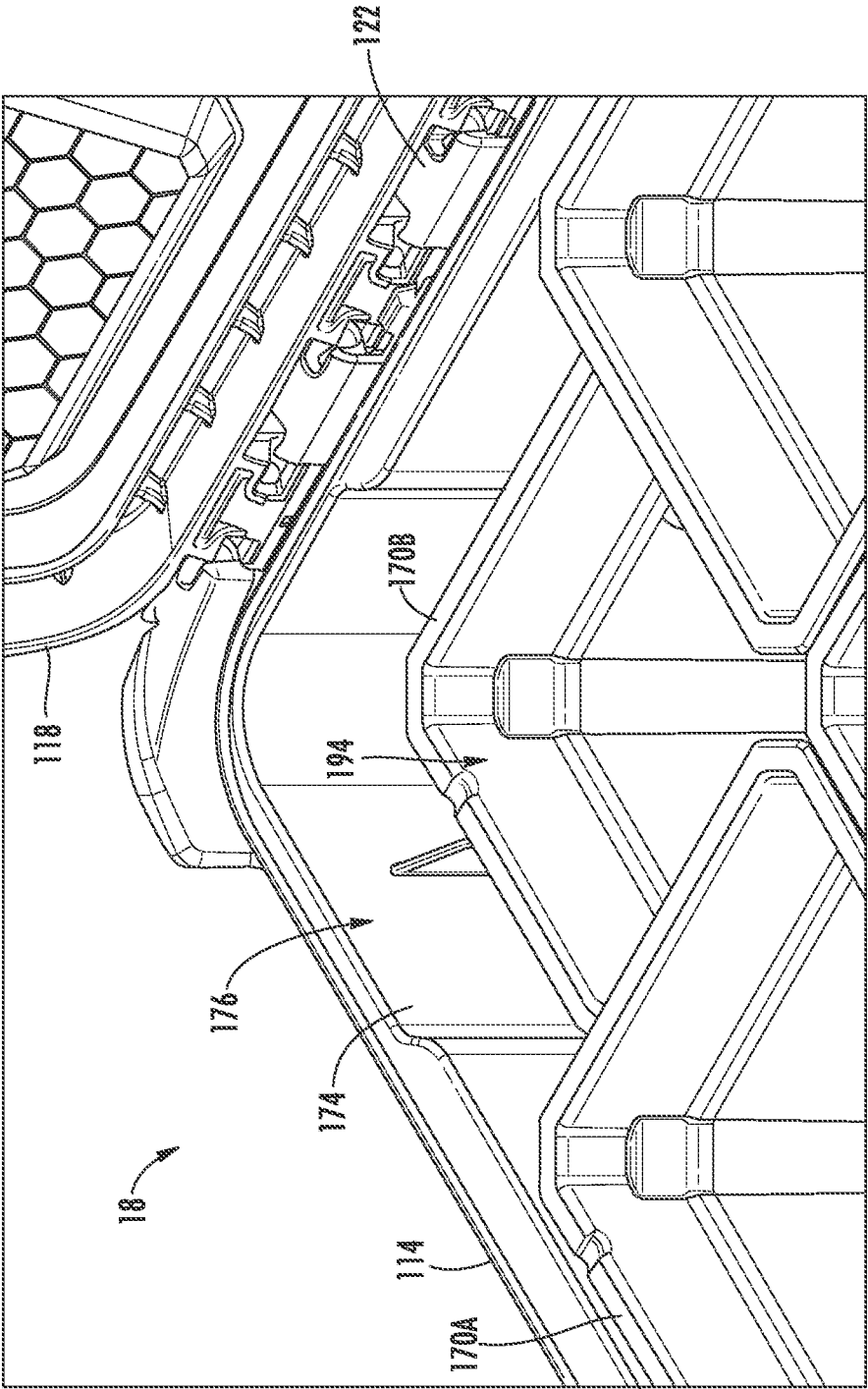
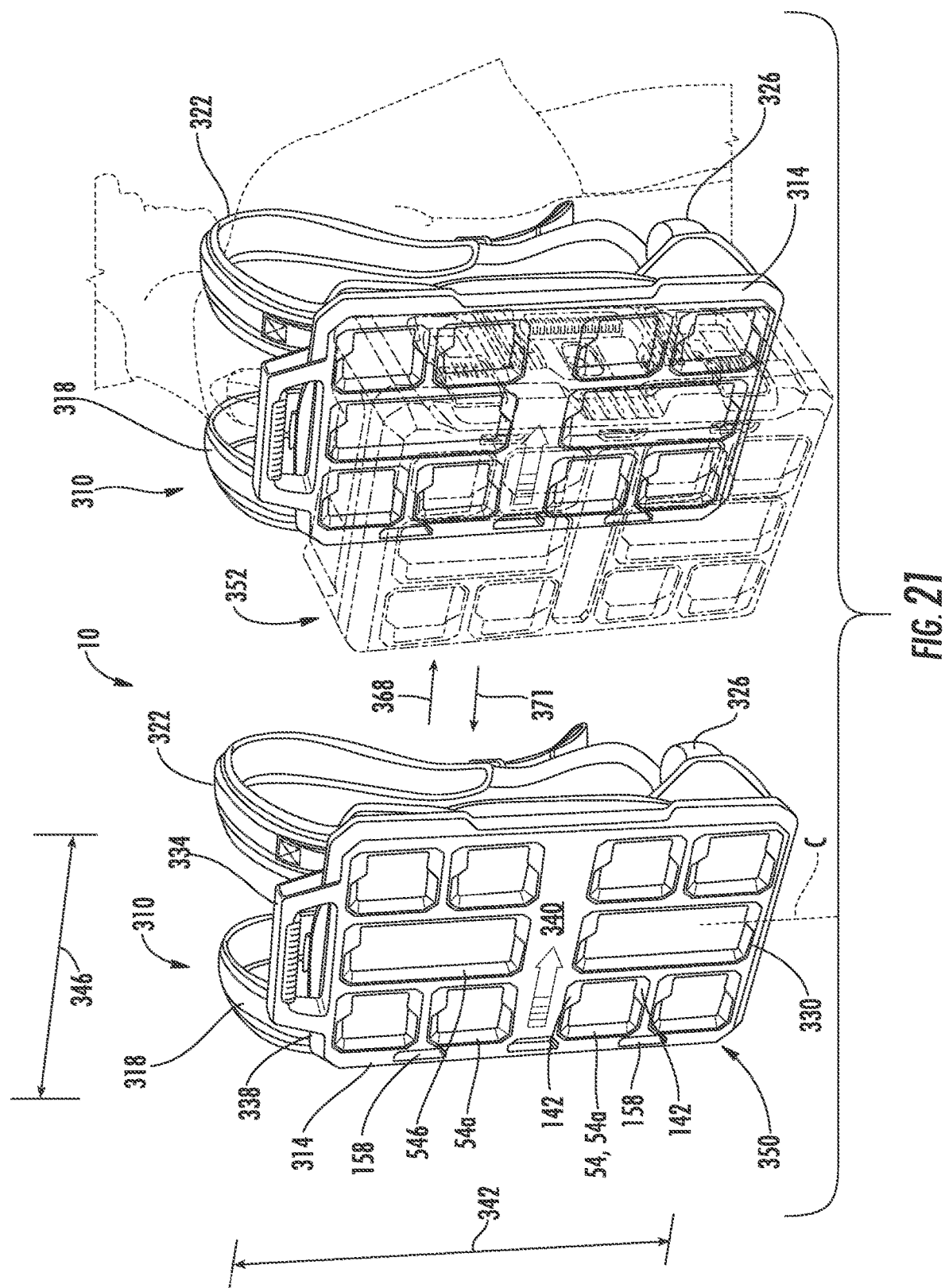


FIG. 20



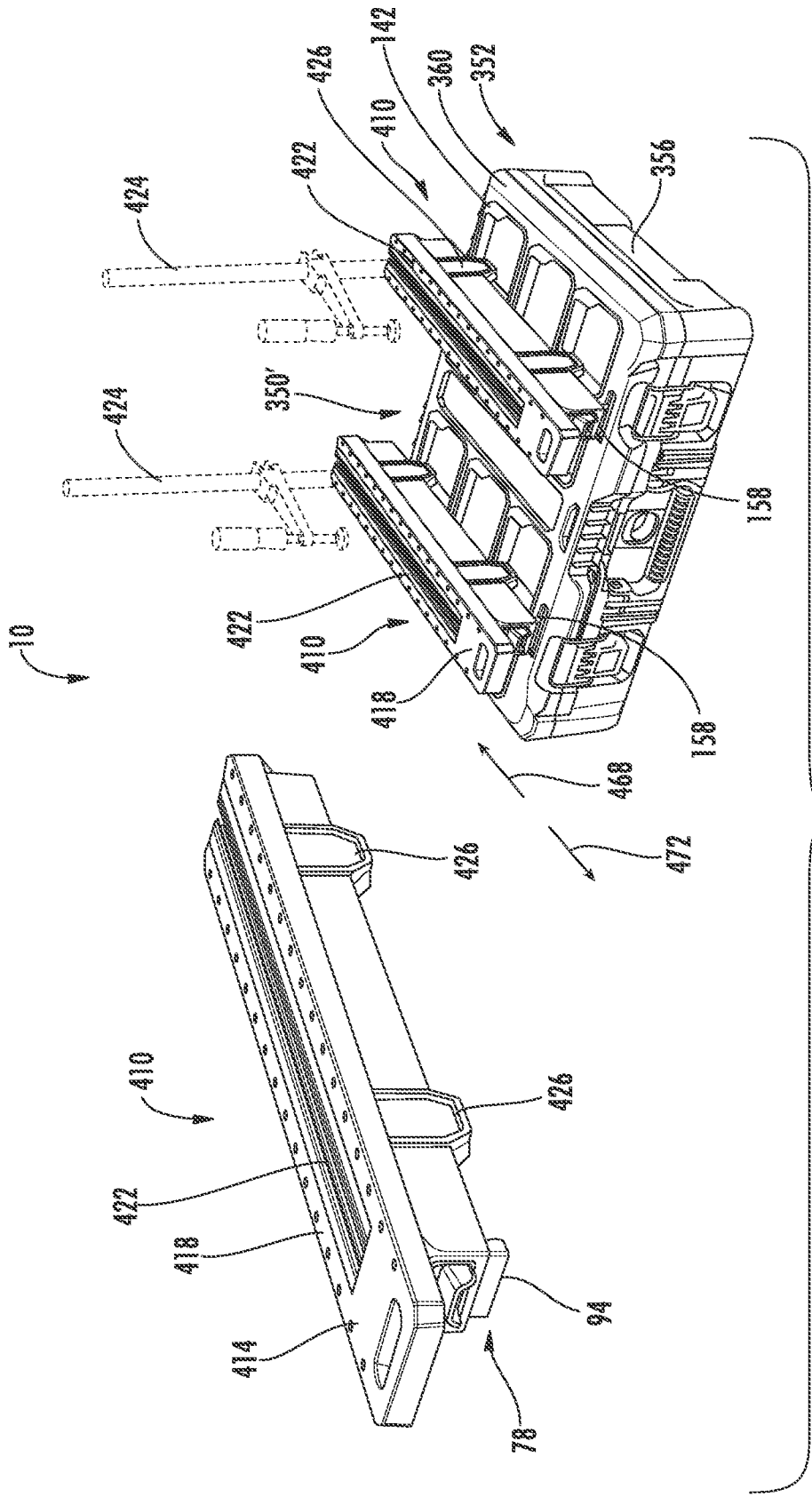


FIG. 22

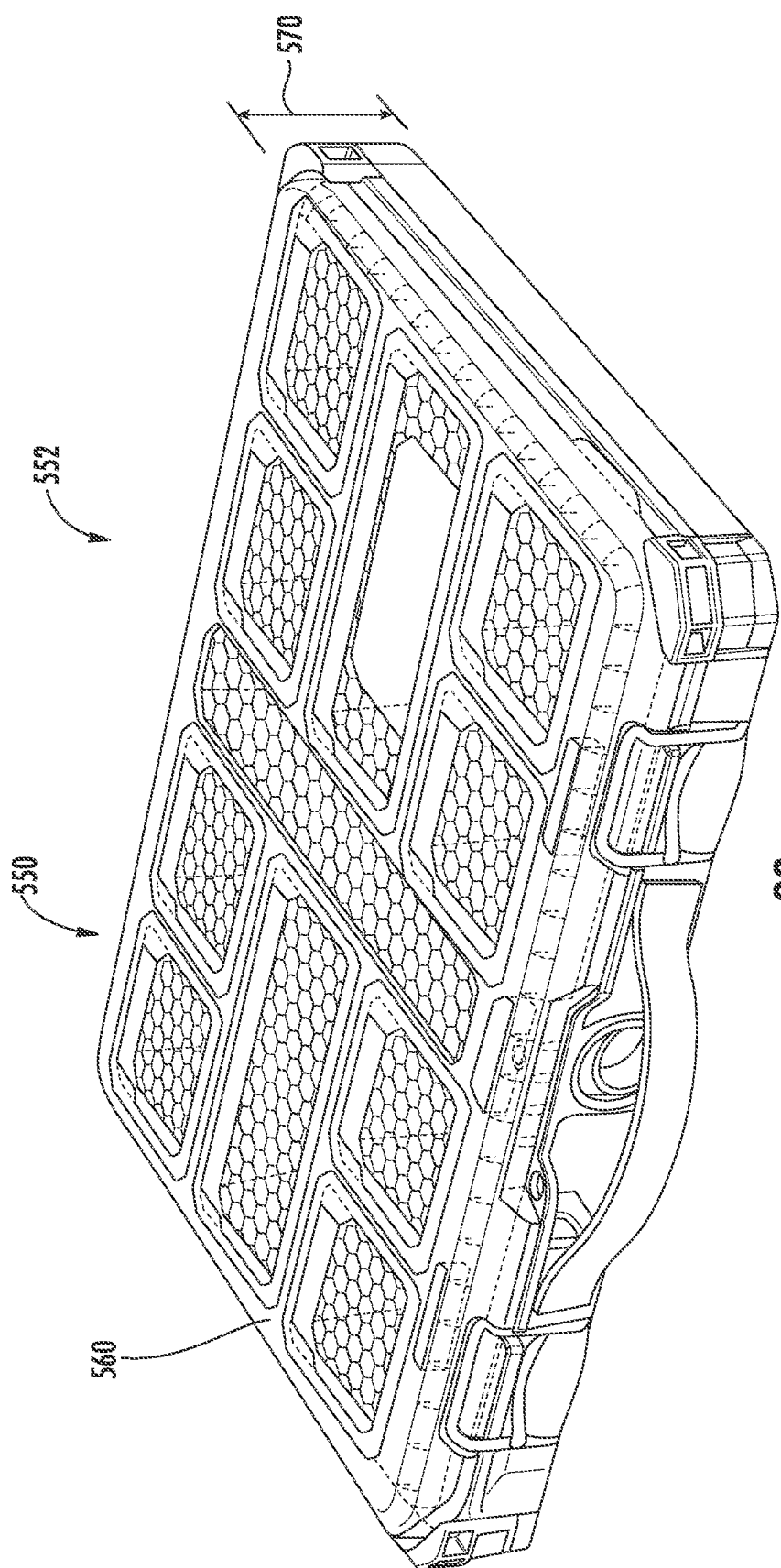
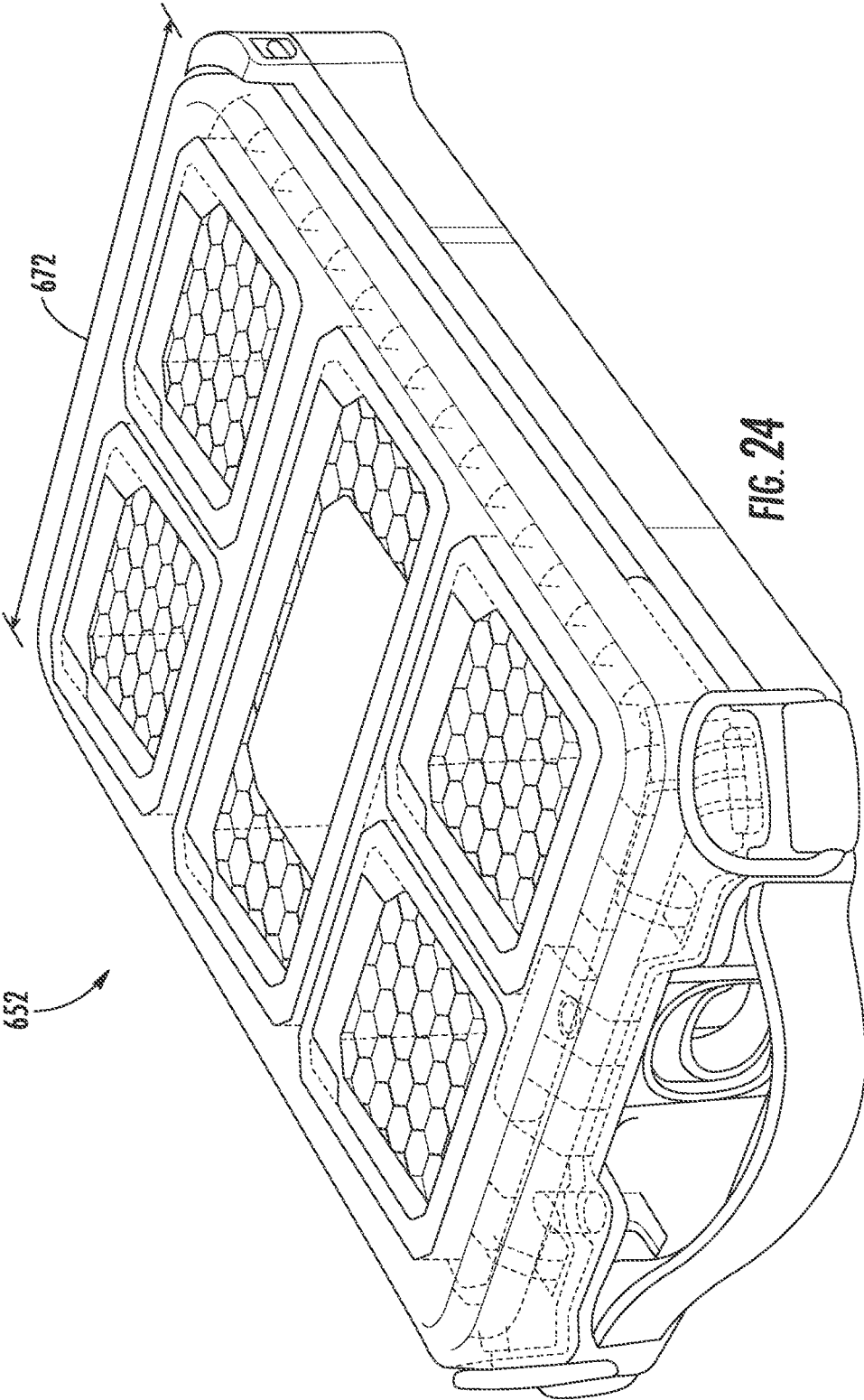


FIG. 23



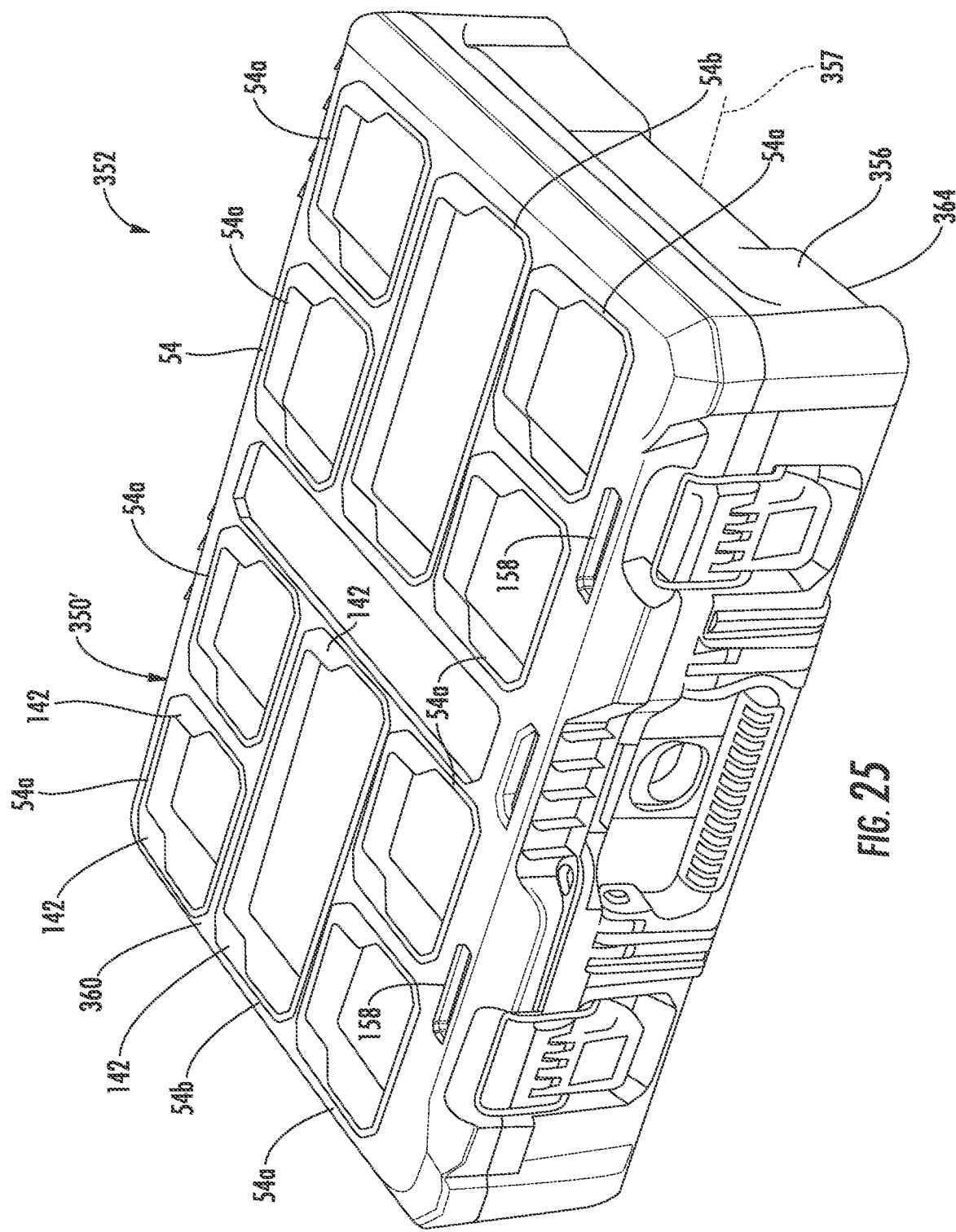


FIG. 25

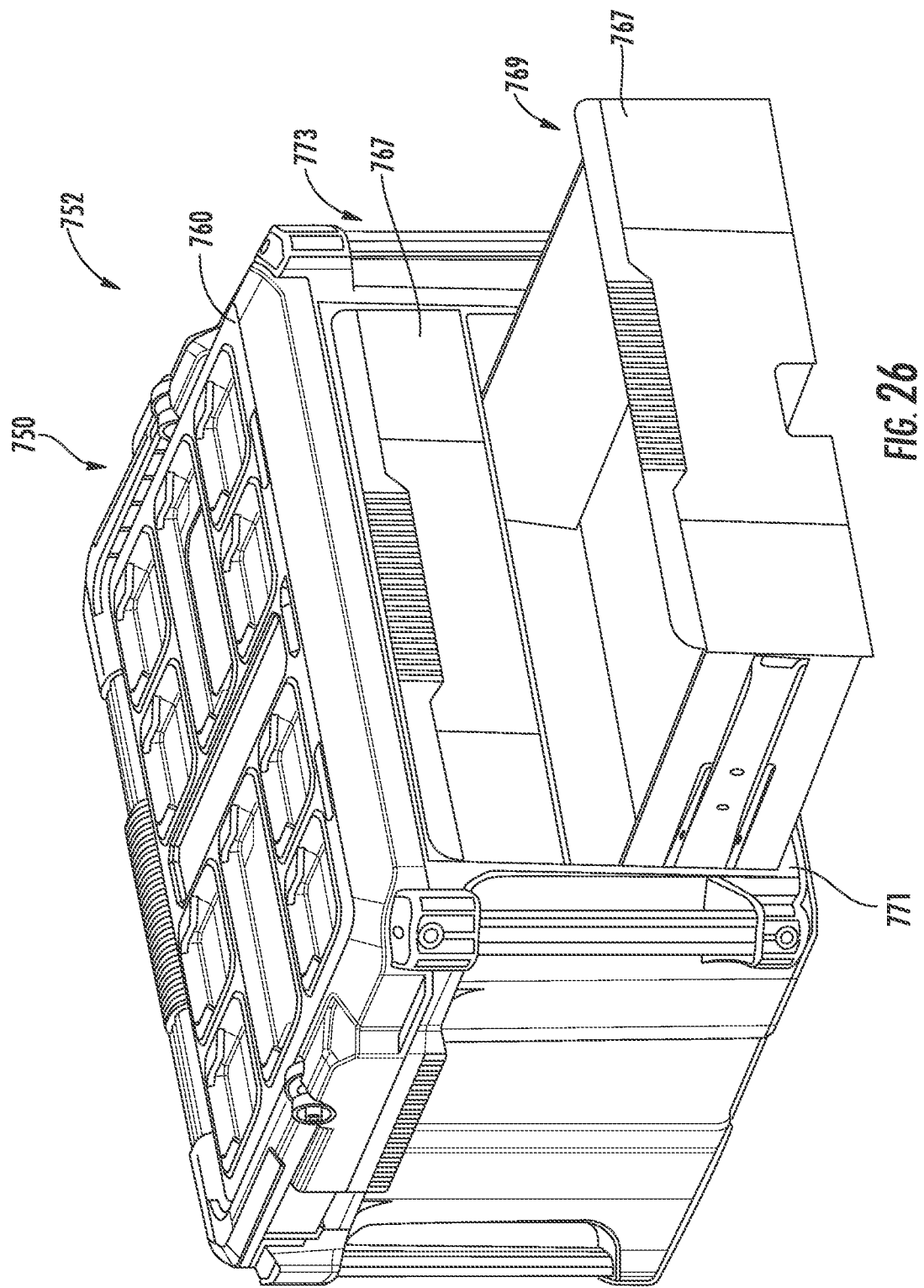


FIG. 26

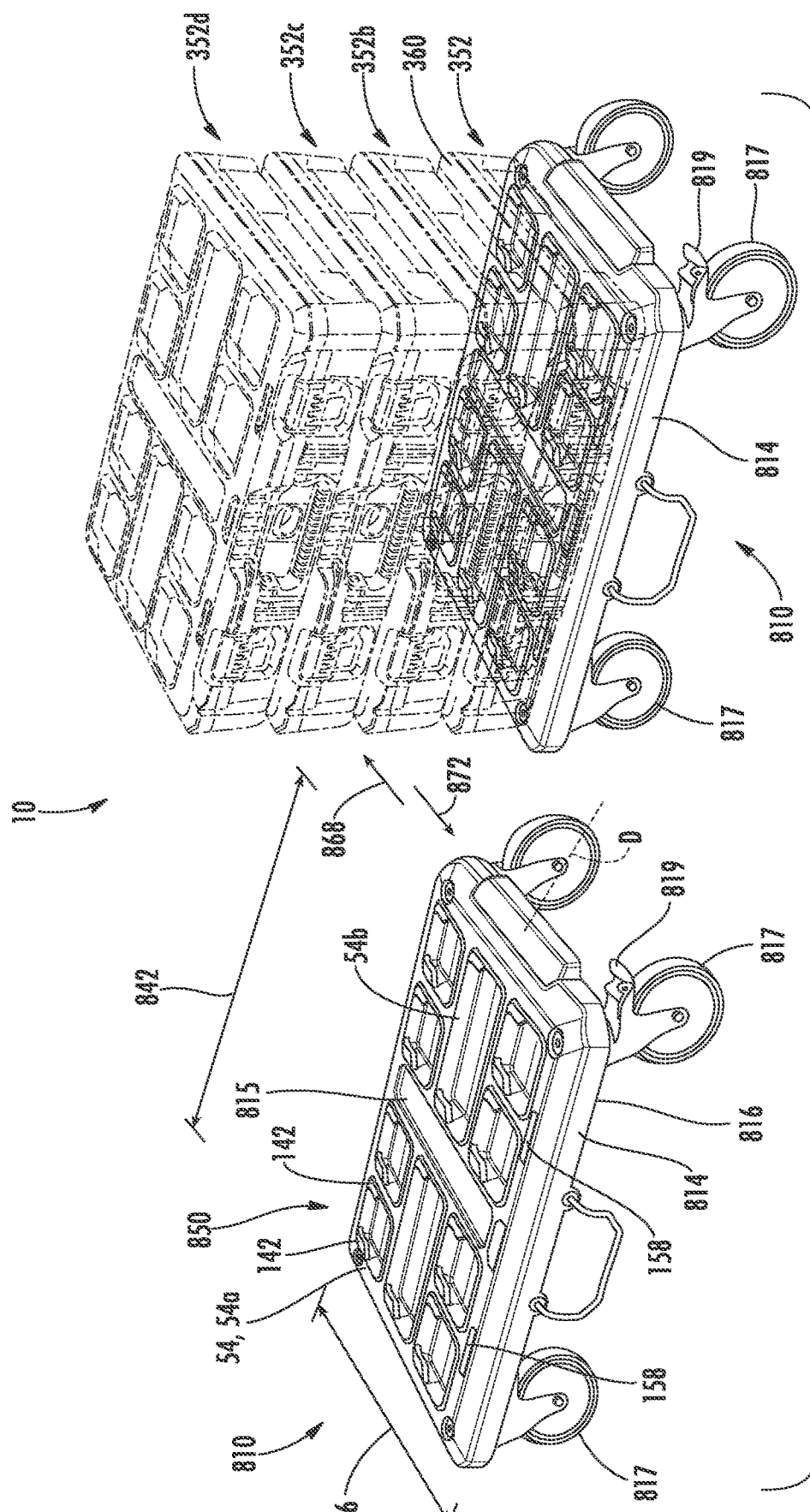
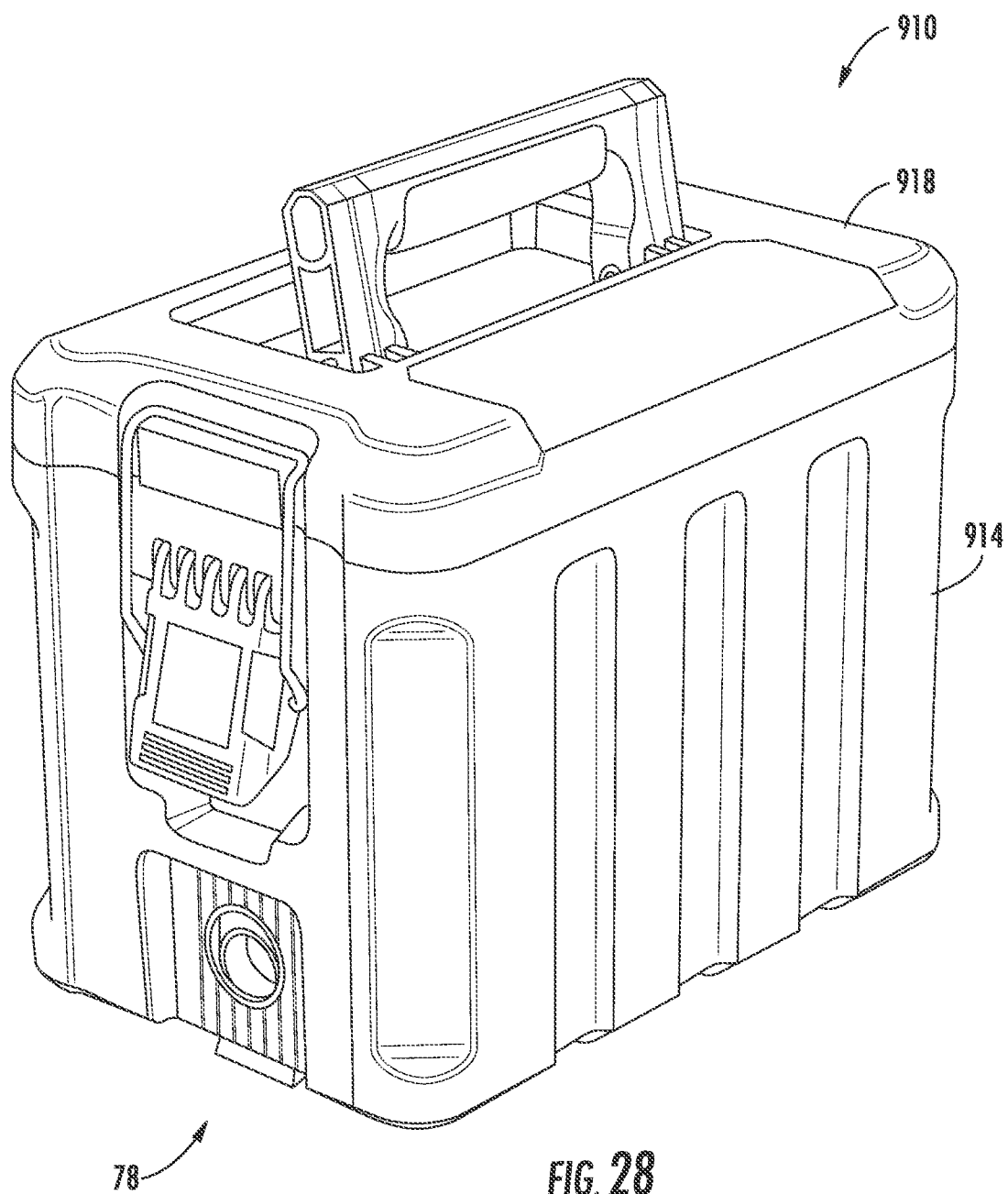
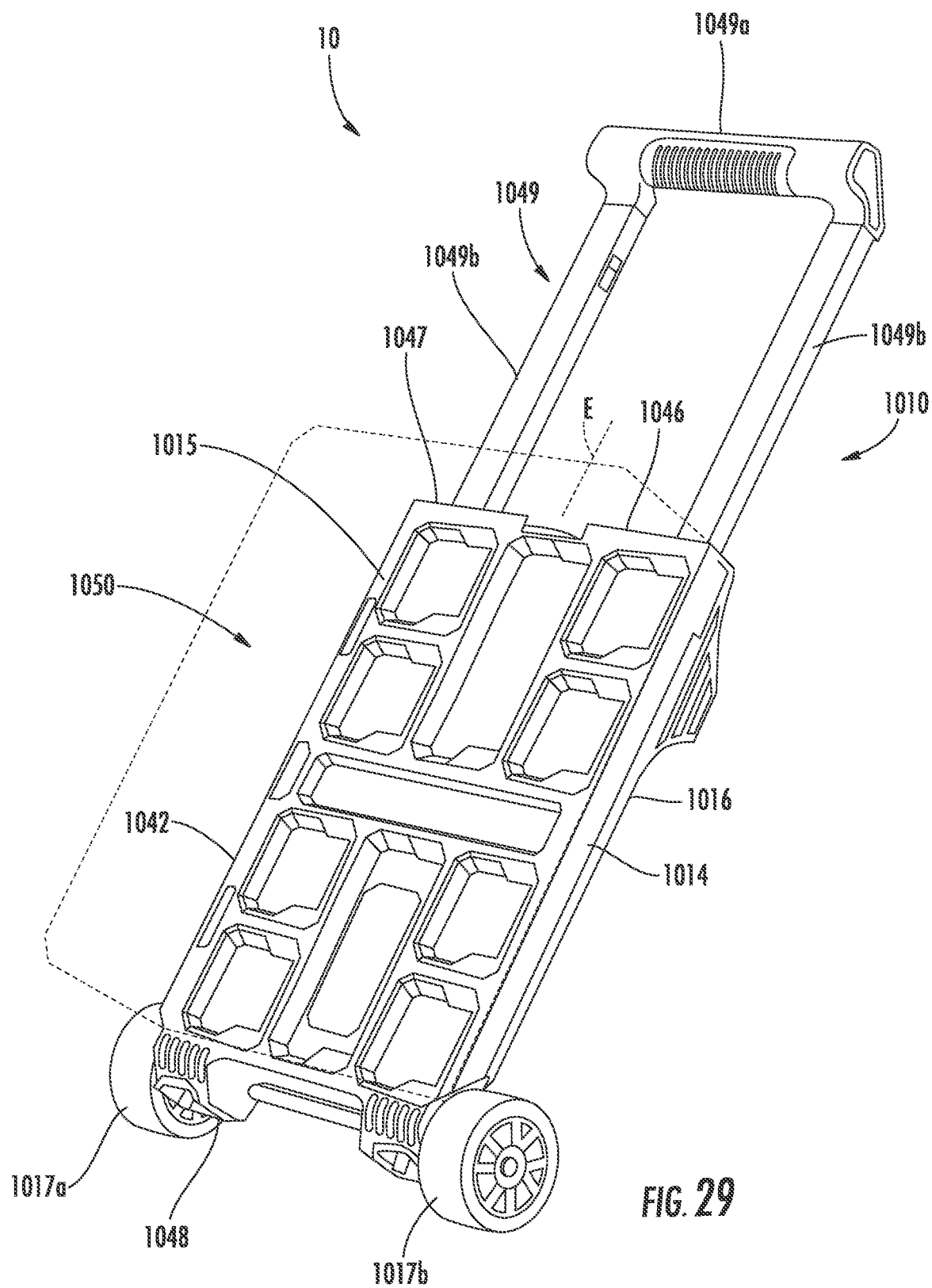


Fig. 27





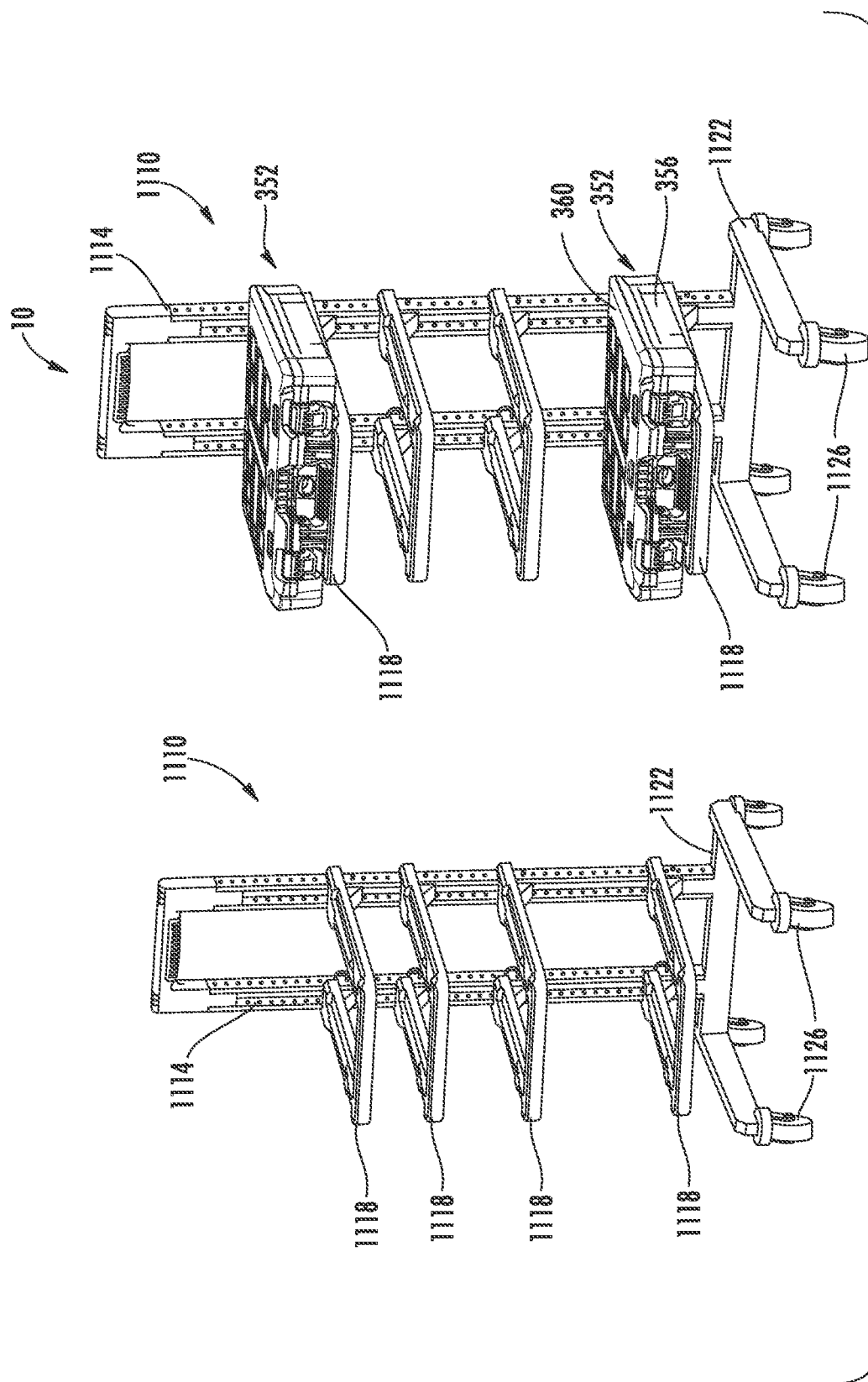


FIG. 30

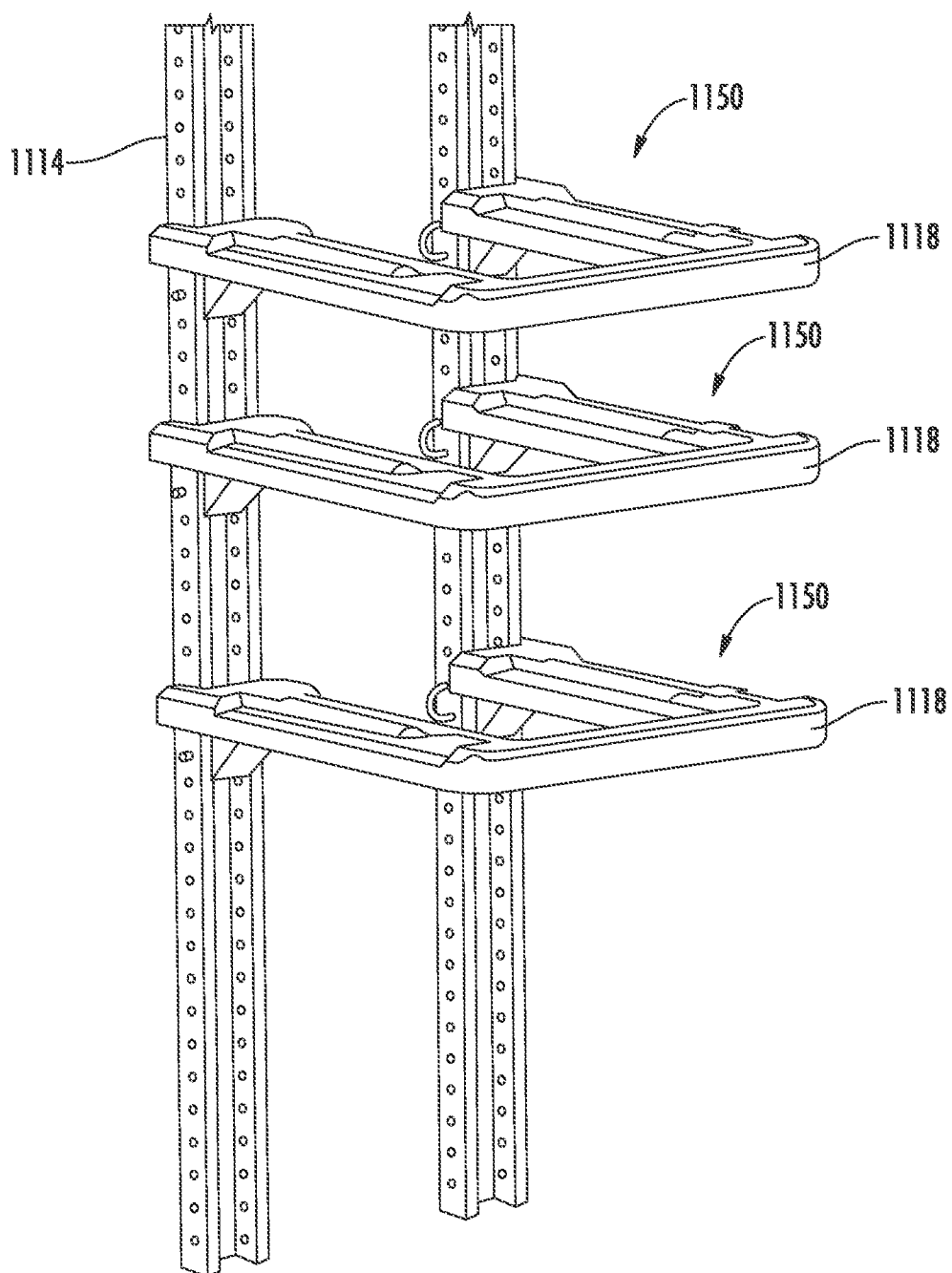
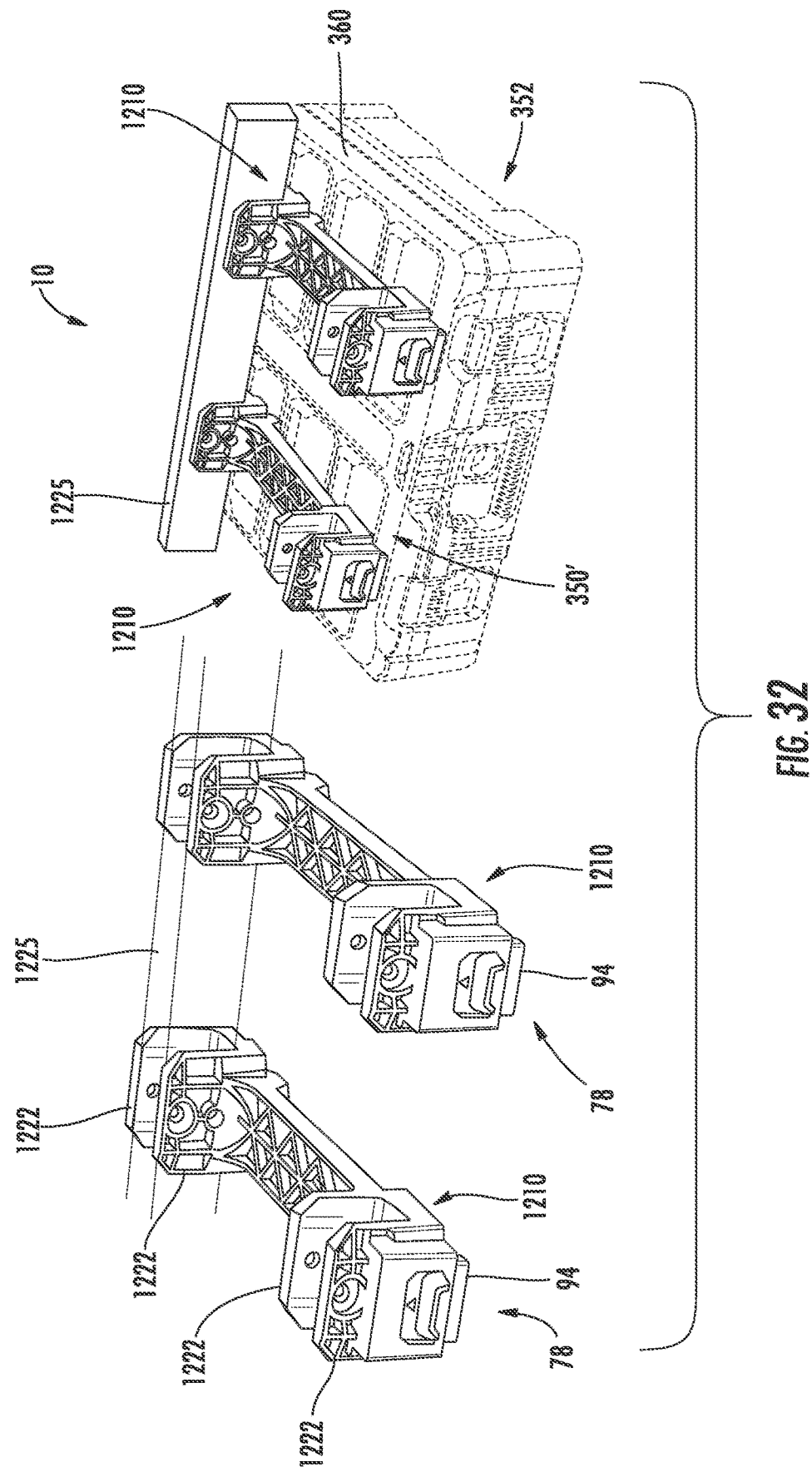


**FIG. 31**



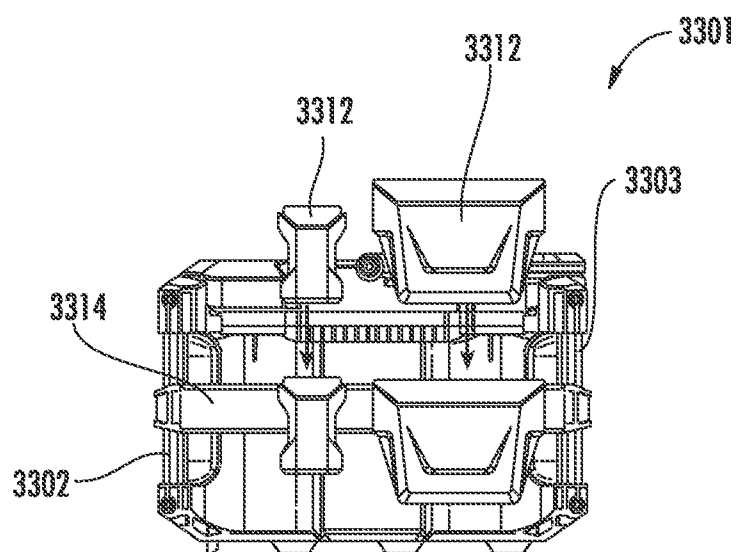


**FIG. 33A**

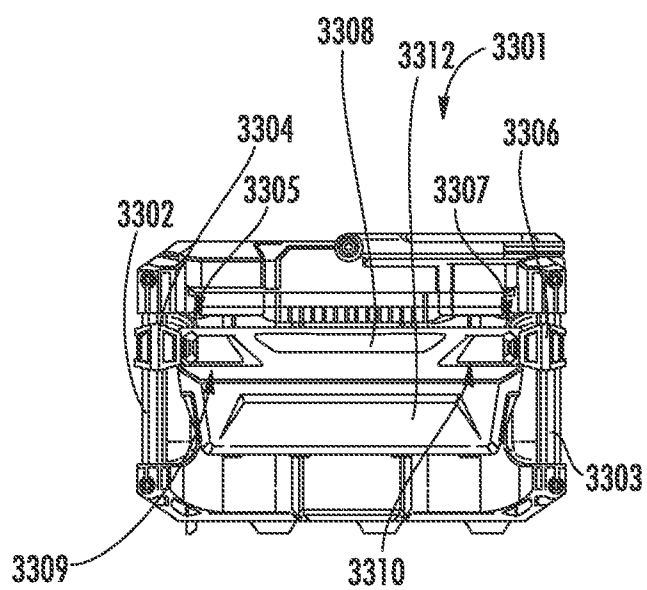


**FIG. 33B**

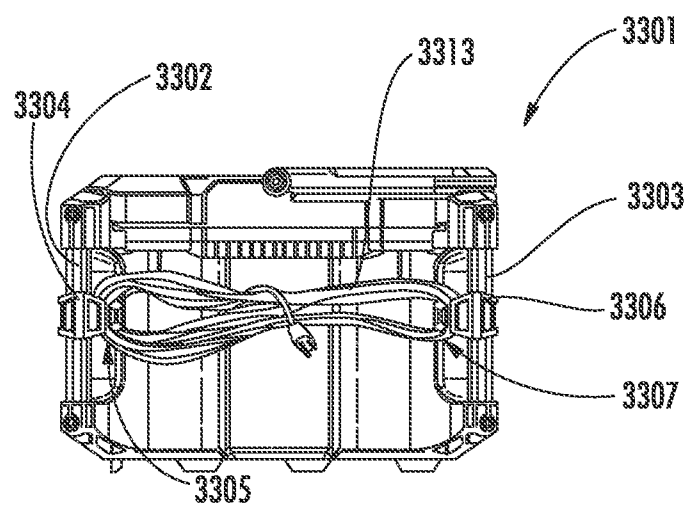


FIG. 33C

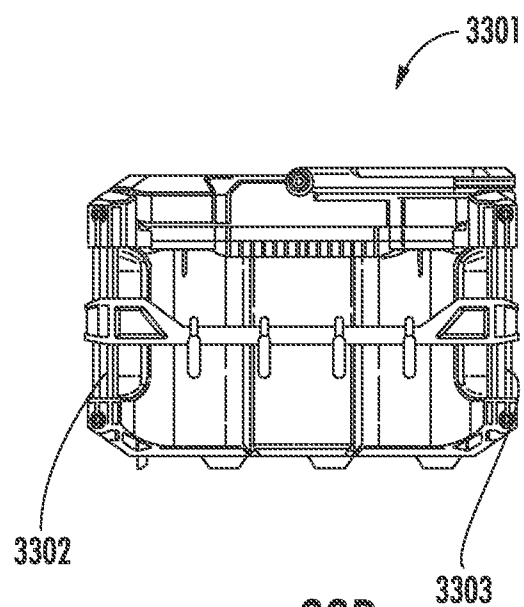


**FIG. 33D**

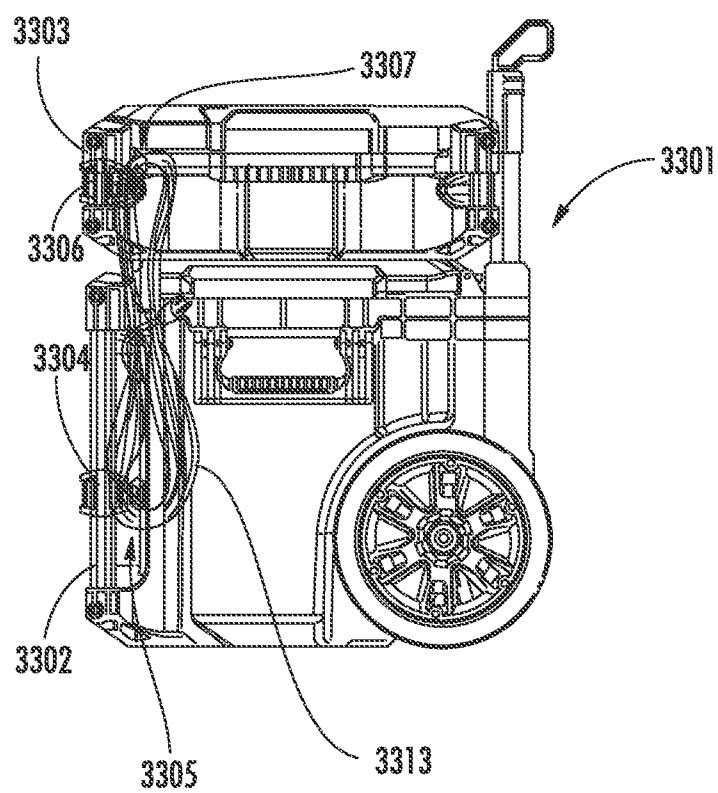


**FIG. 33E**

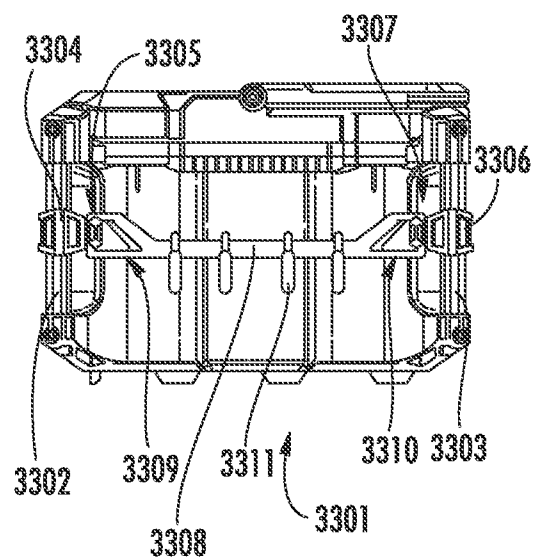


FIG. 33F

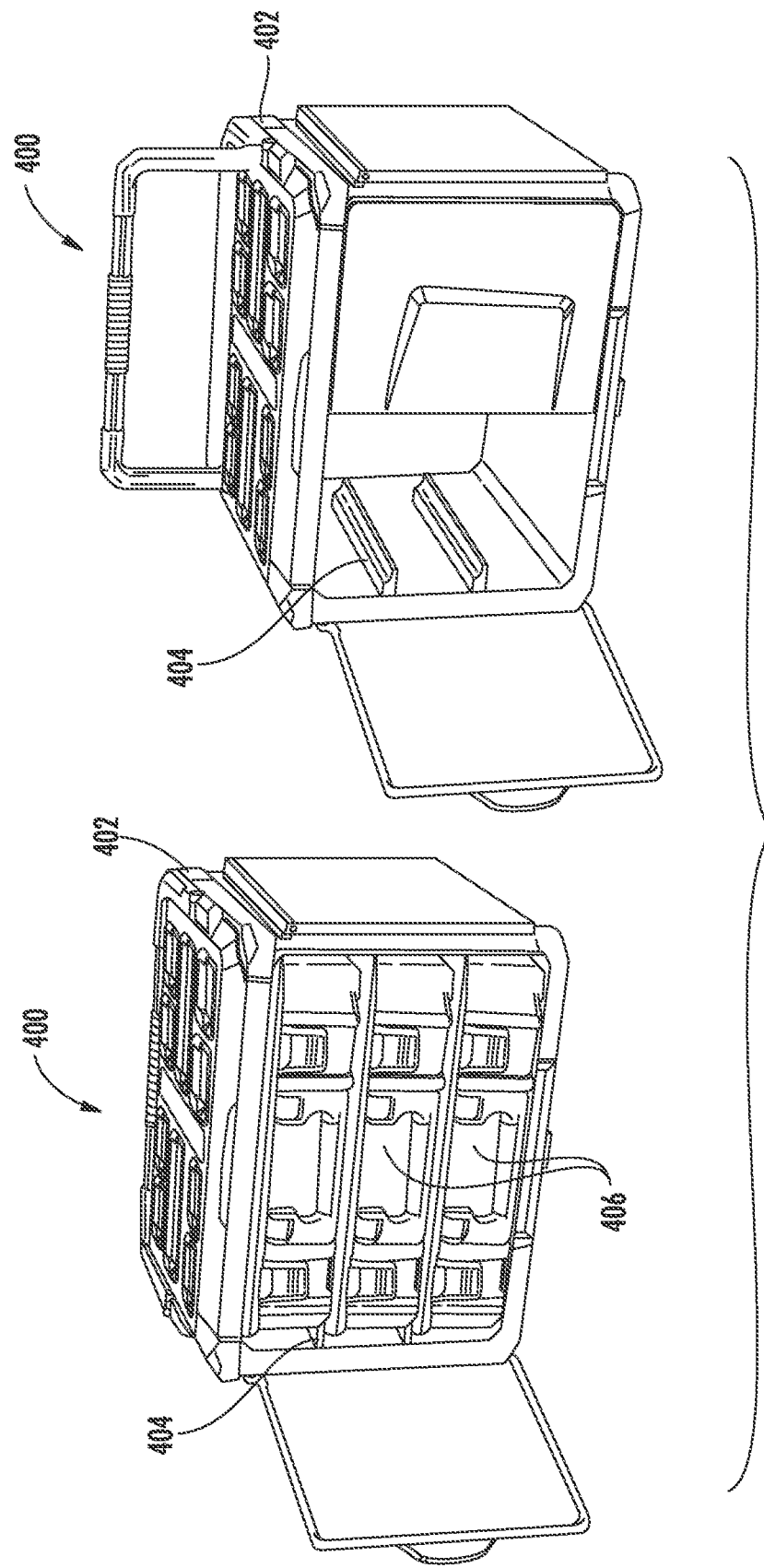


FIG. 34

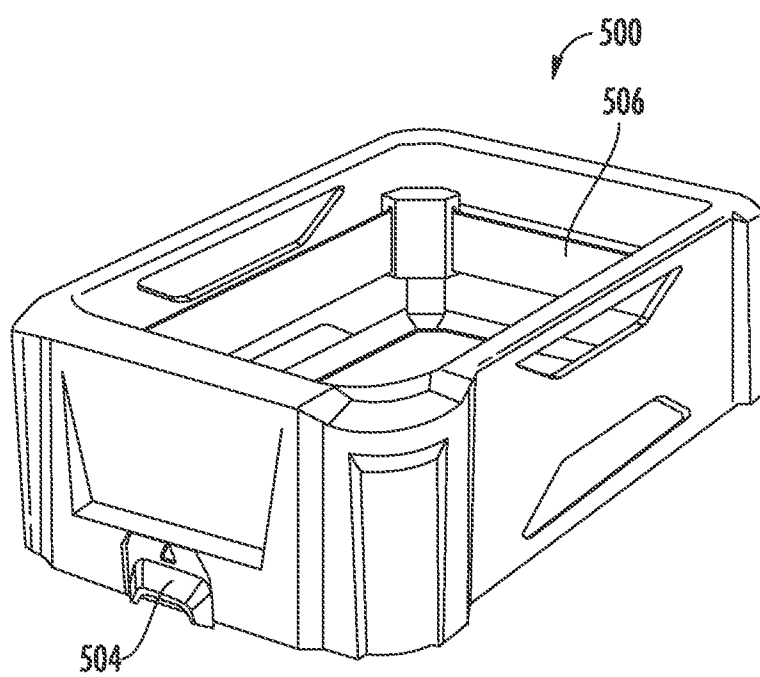


**FIG. 35**

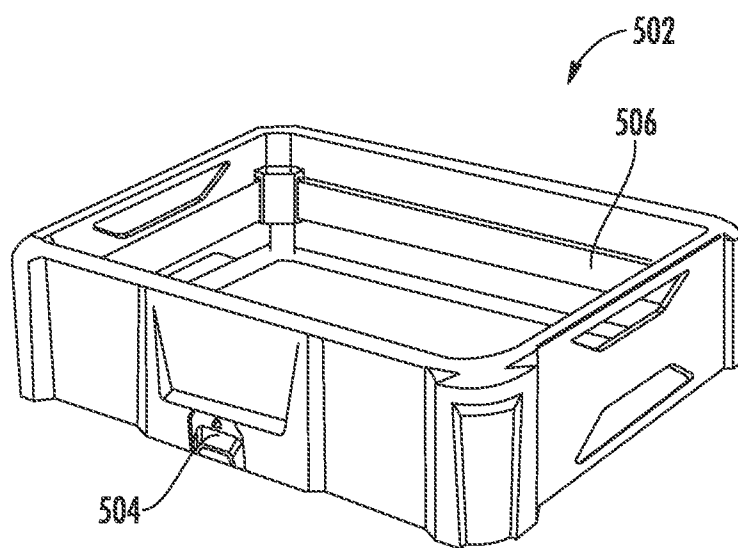


**FIG. 36**

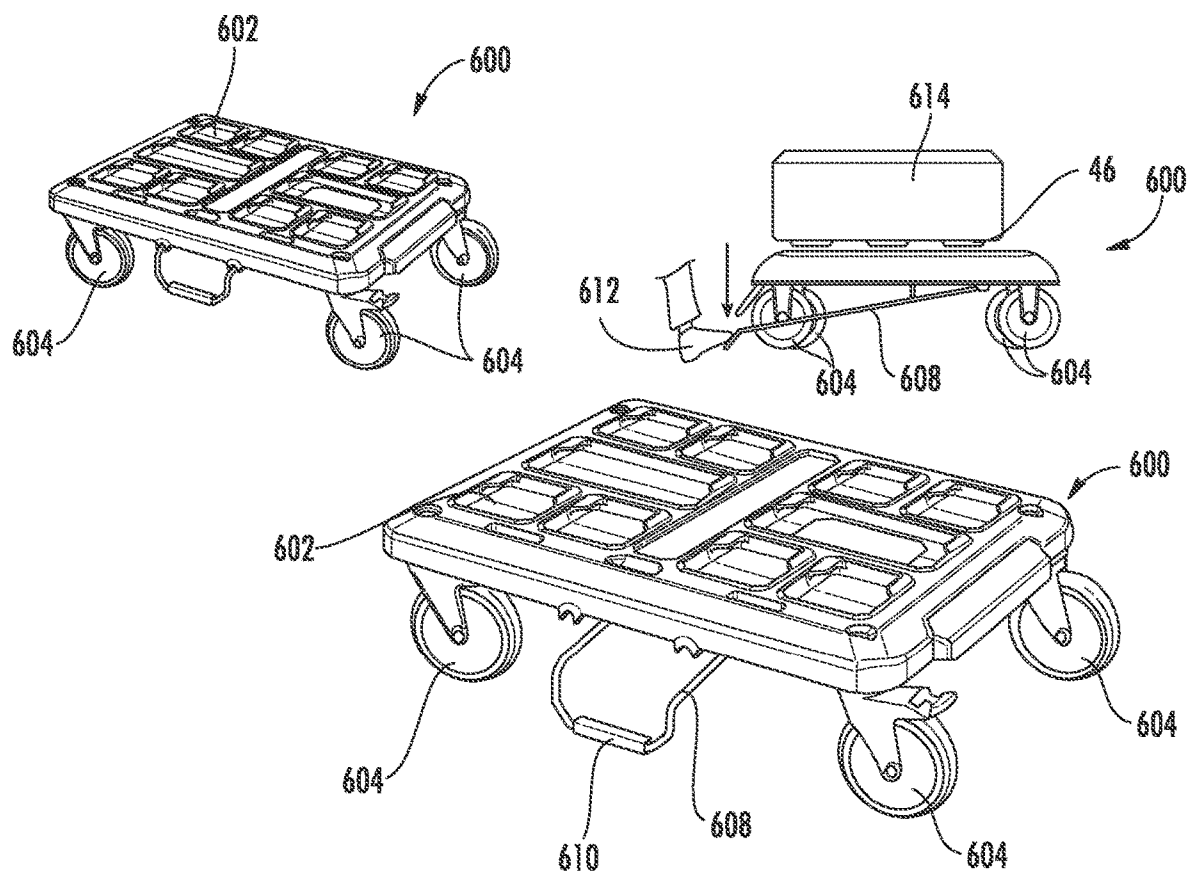
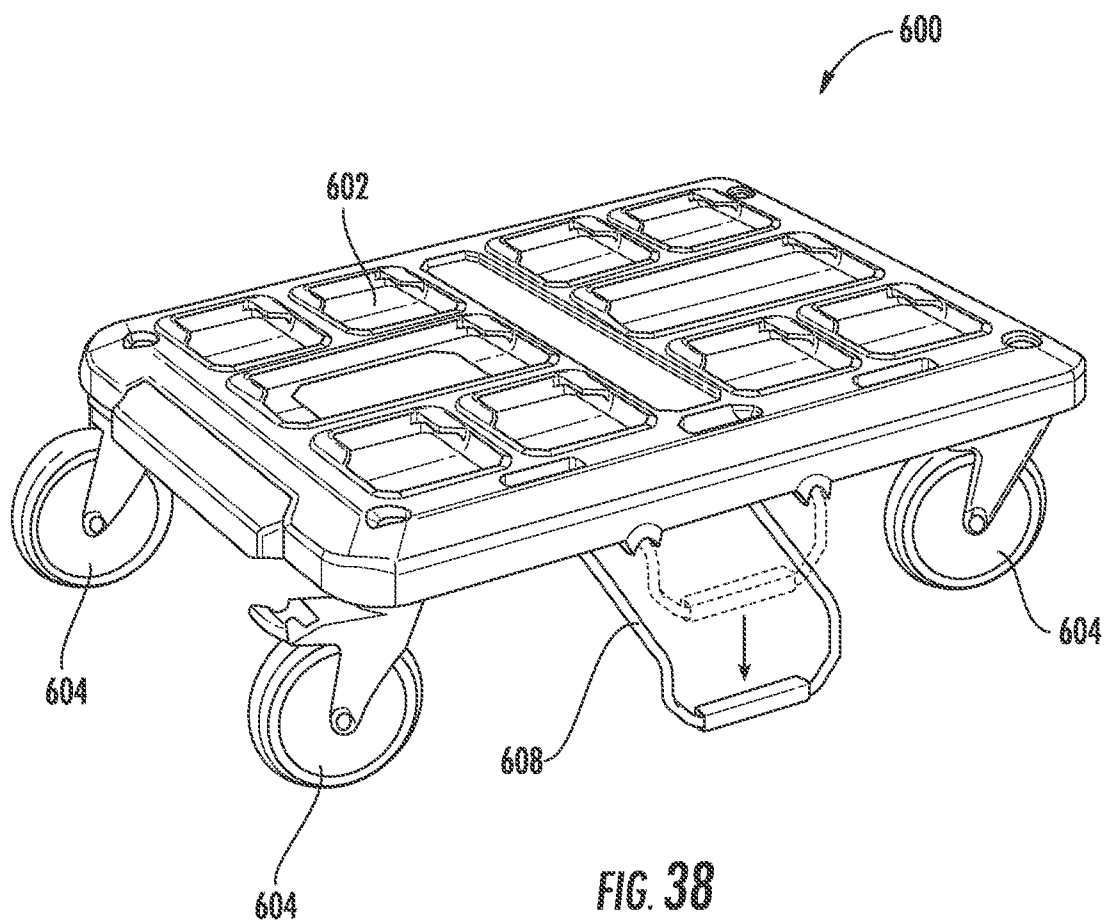
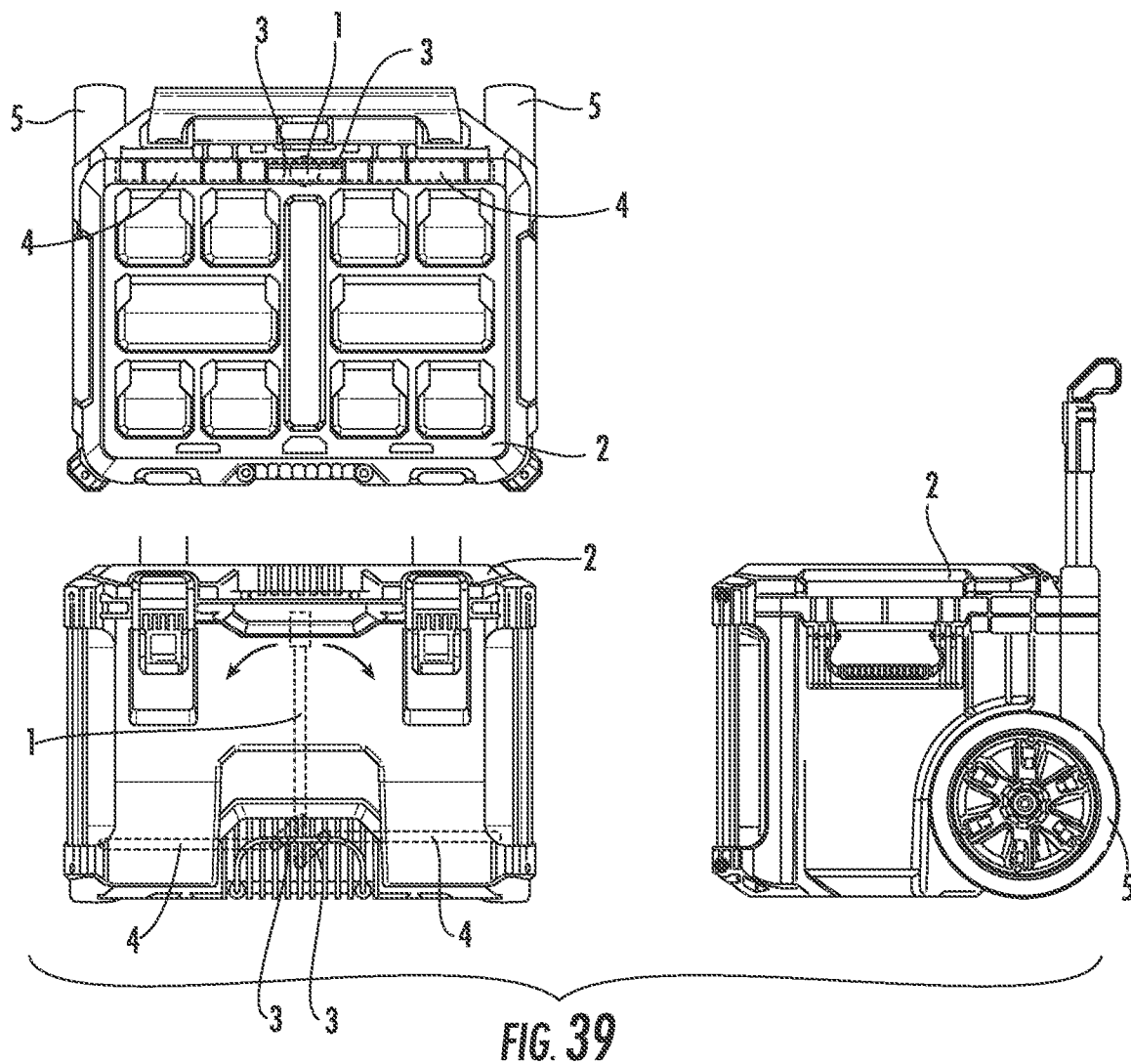


FIG. 37





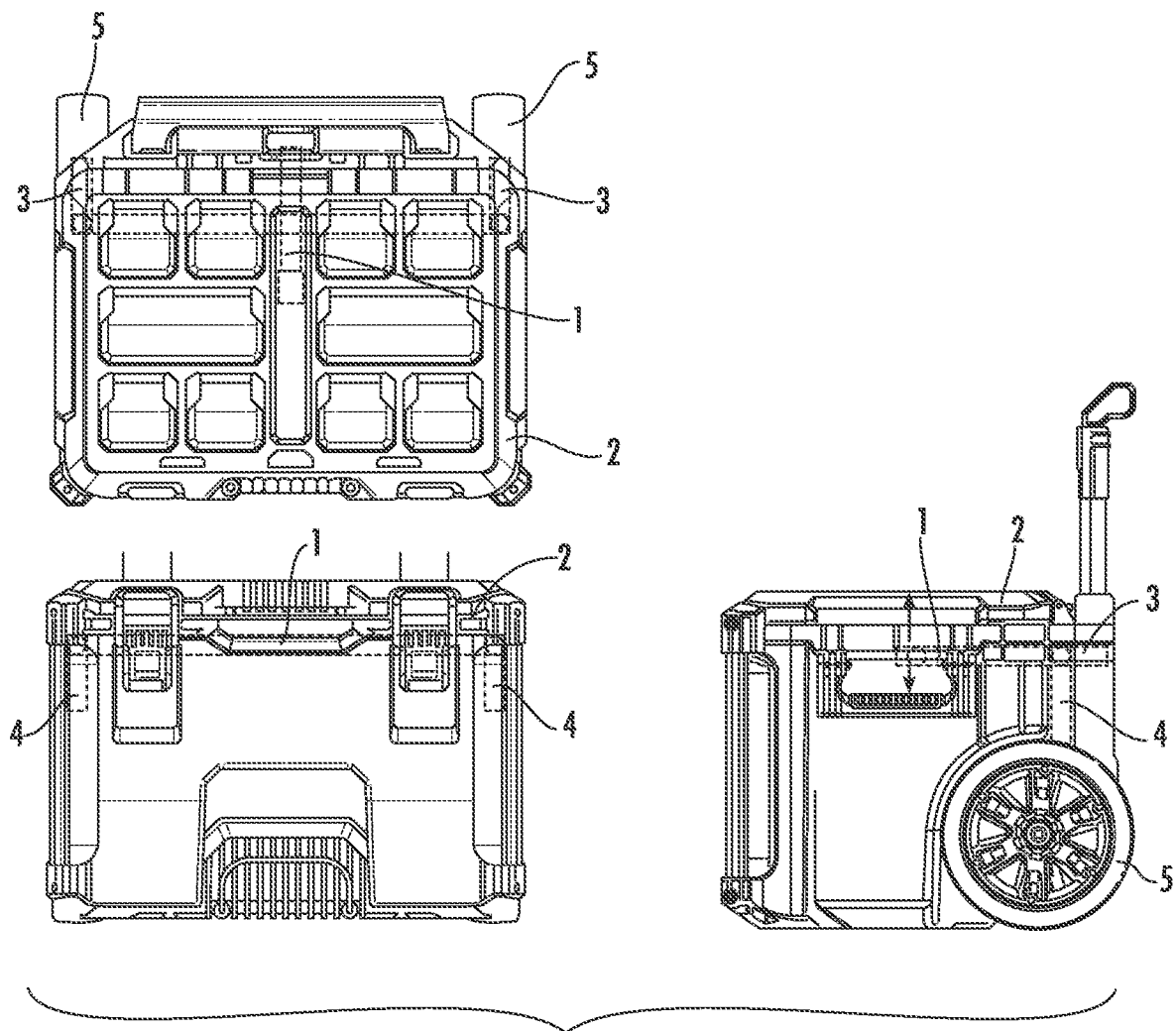


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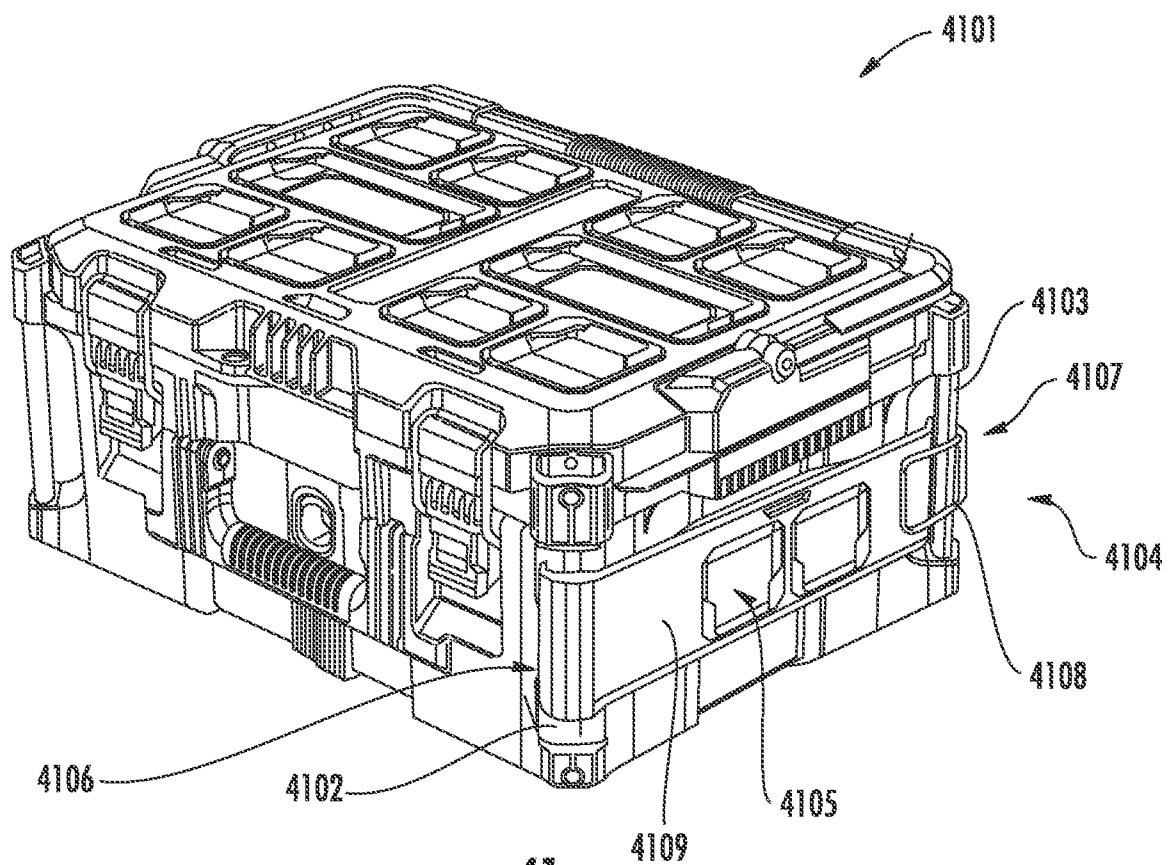


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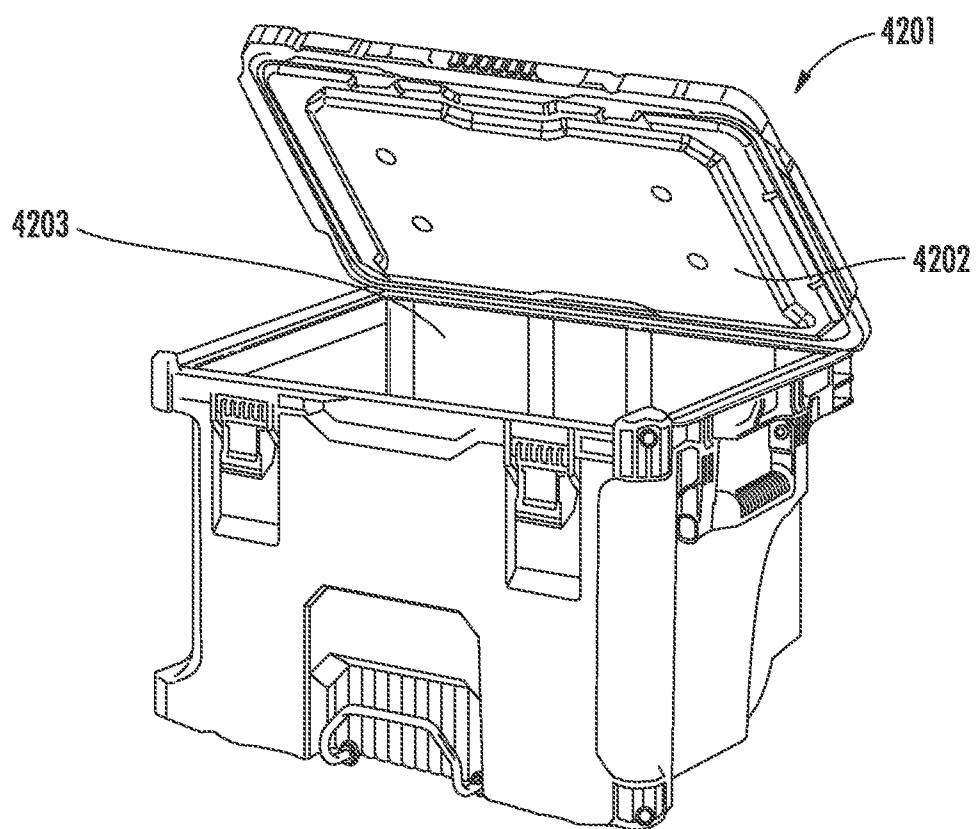
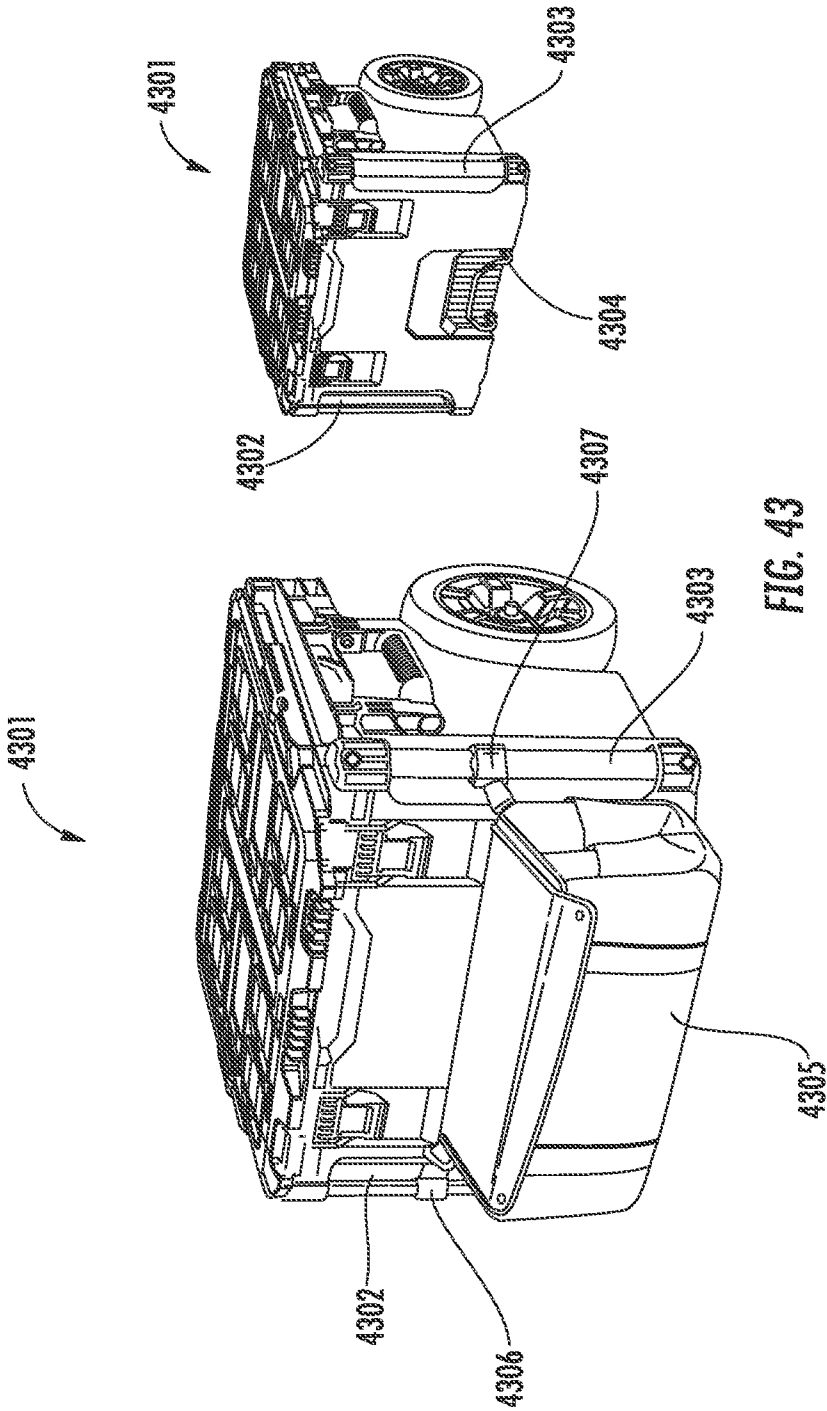
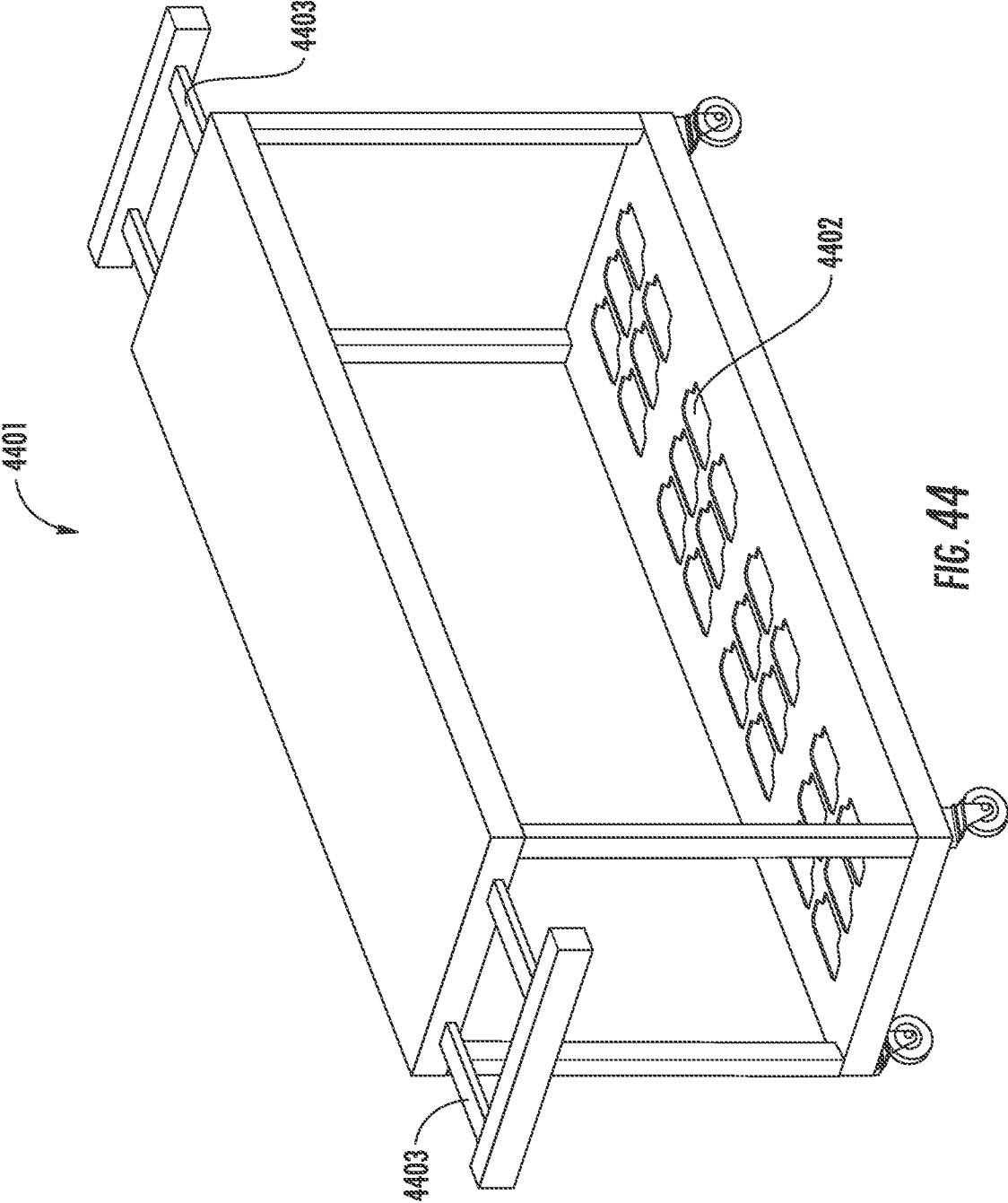


**FIG. 42**





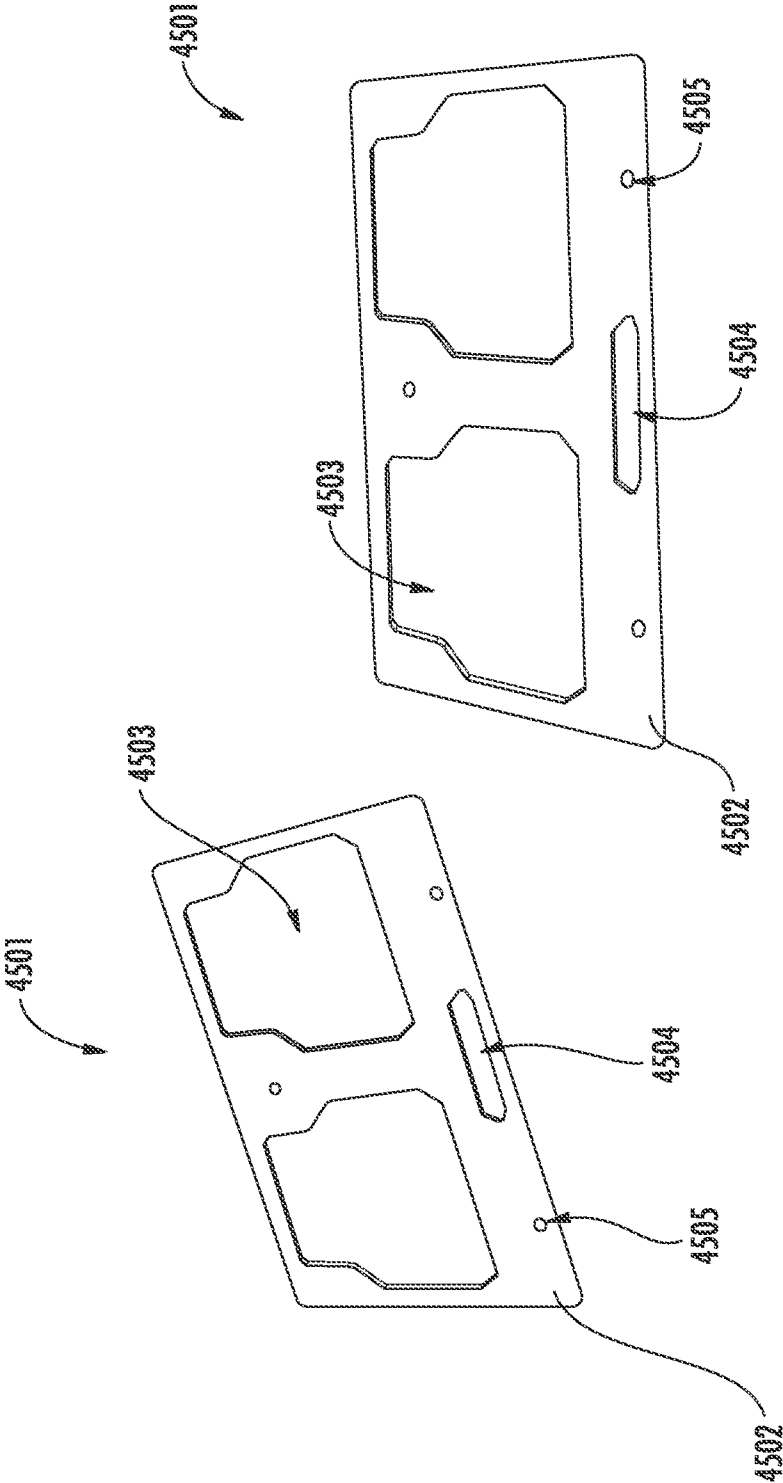


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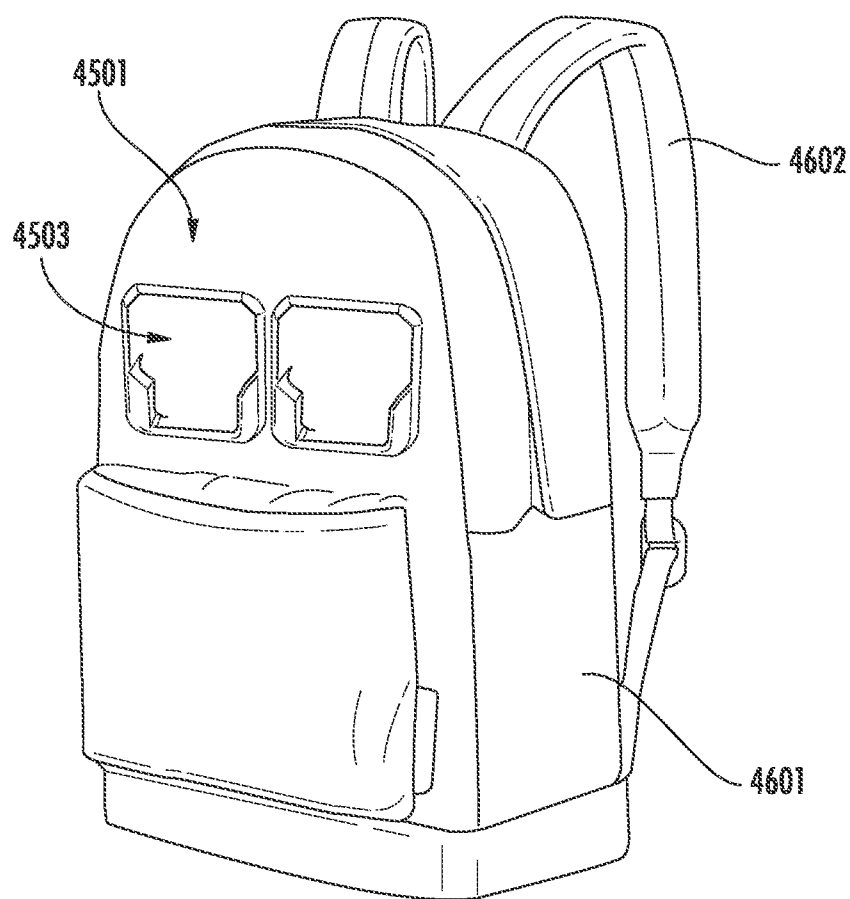
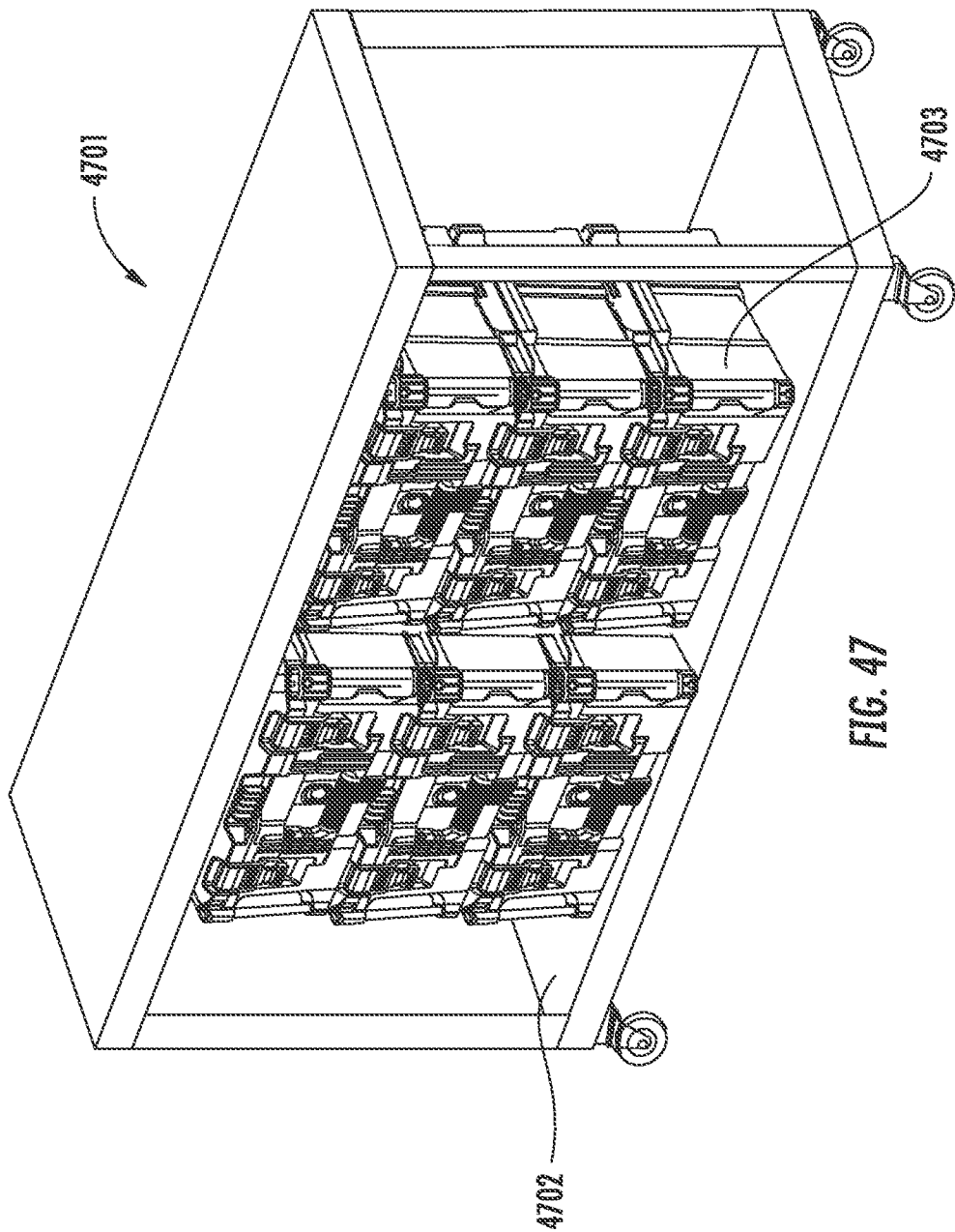


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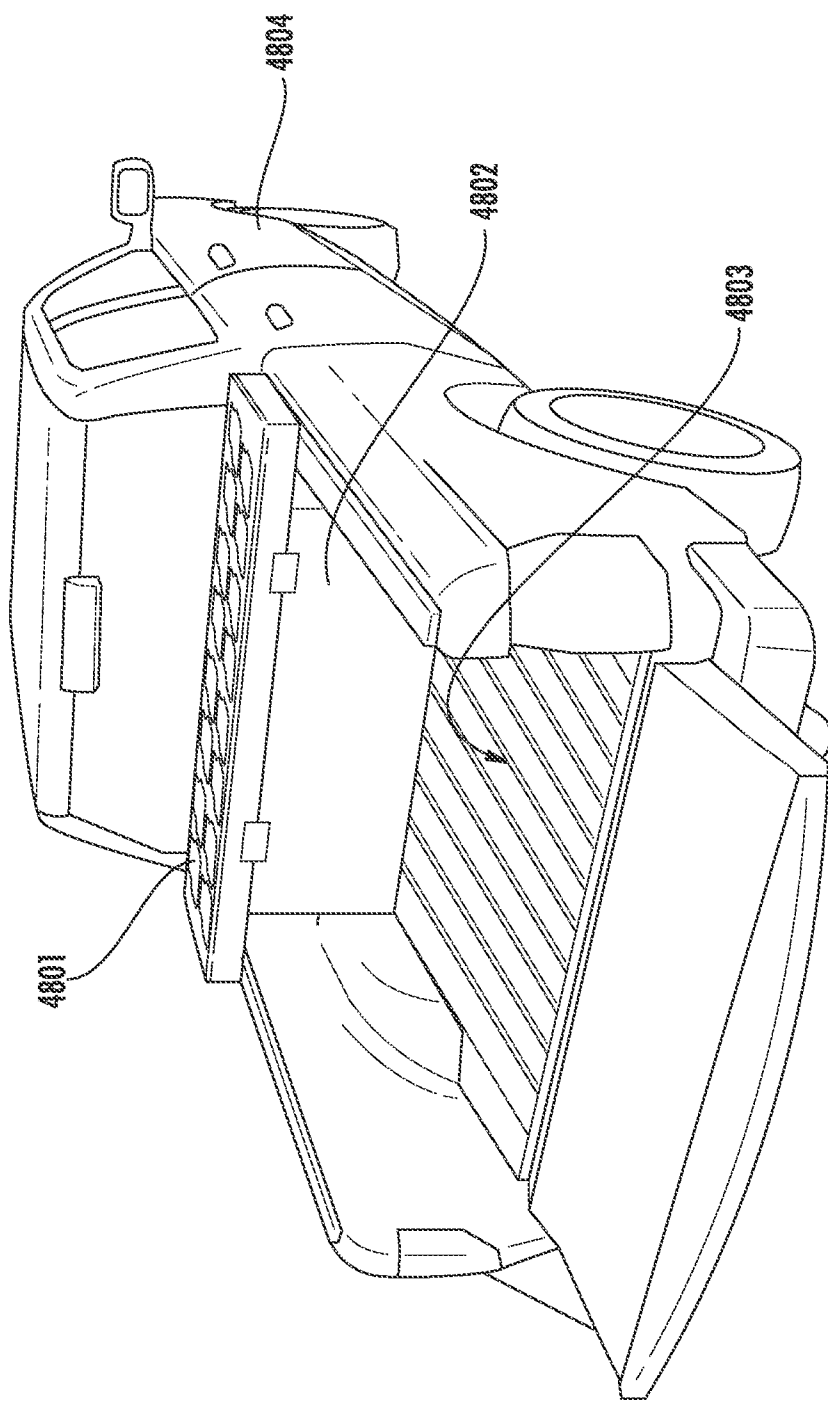


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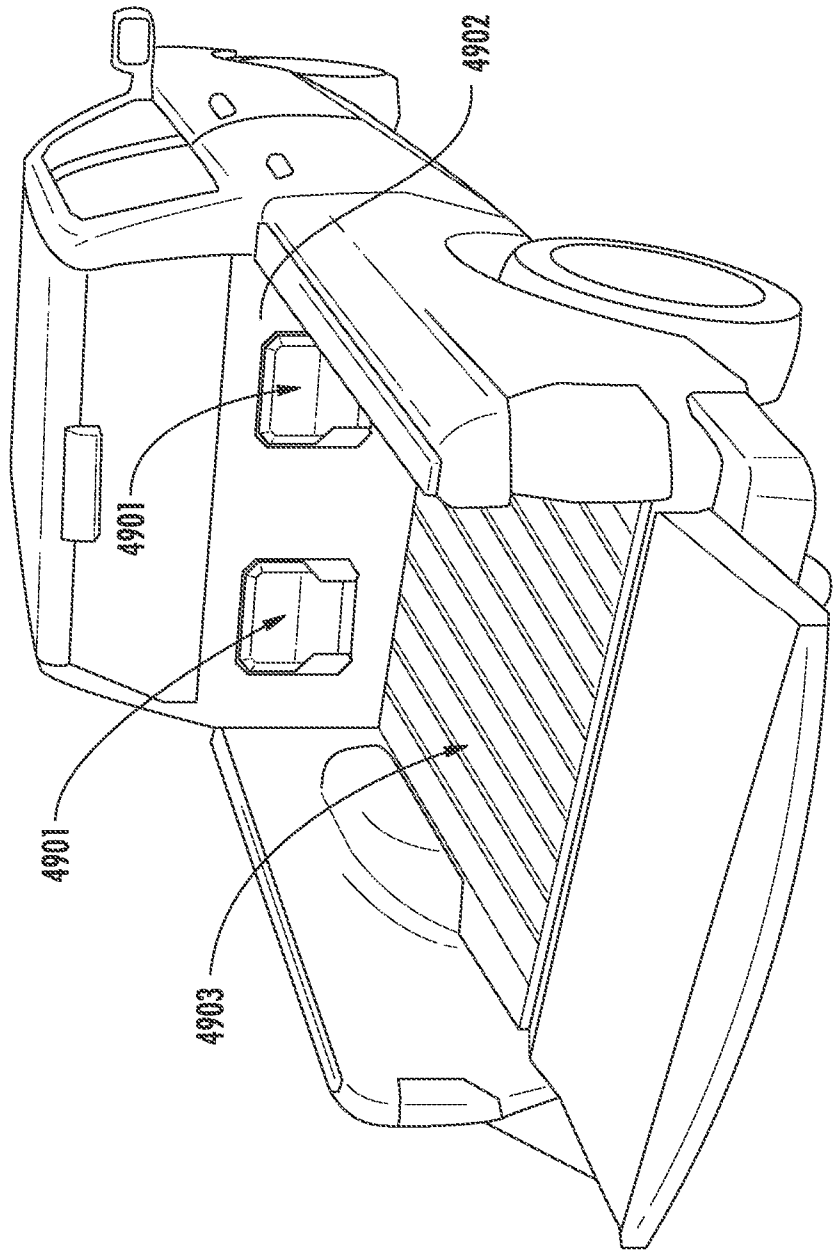
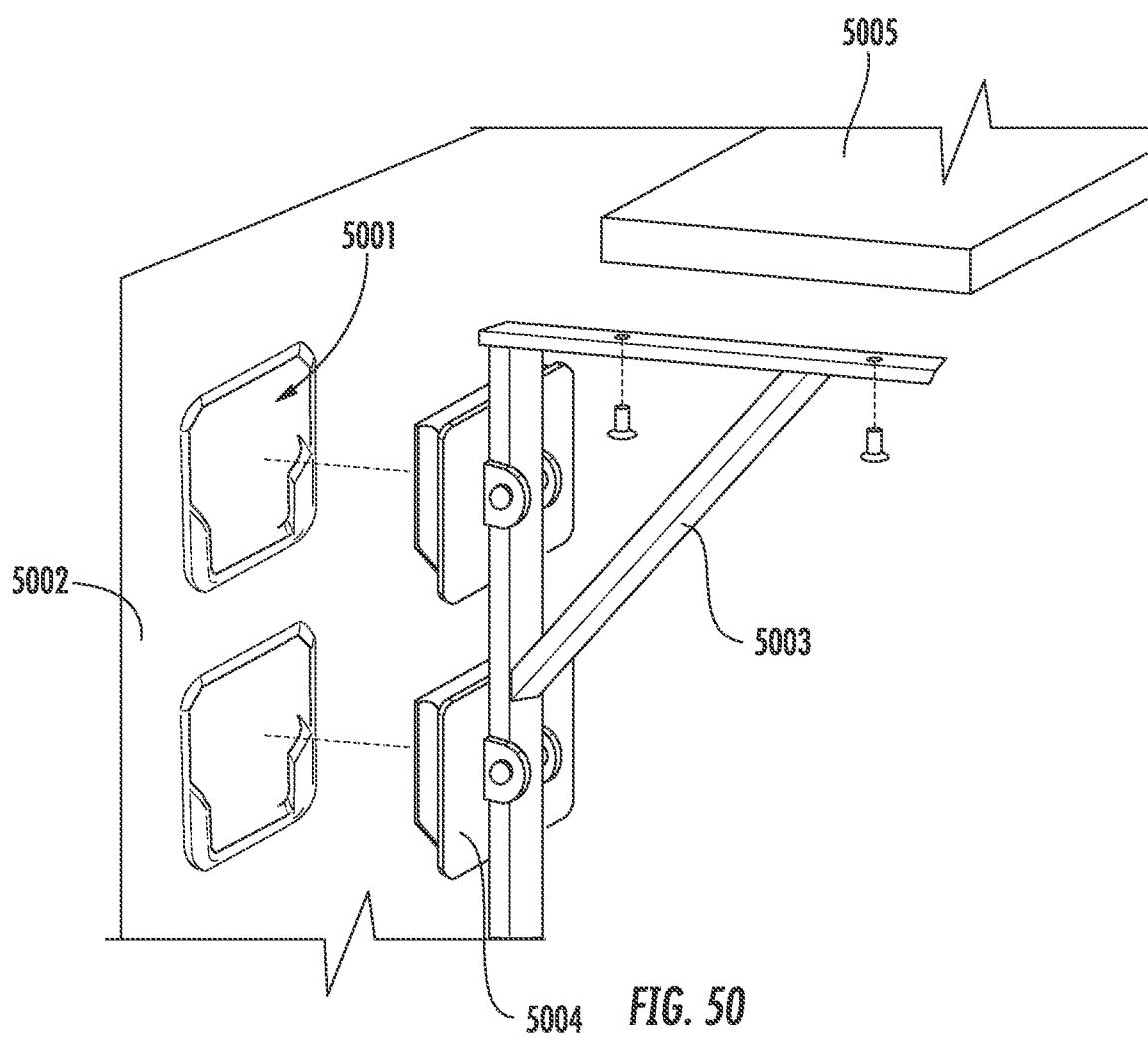


FIG. 49



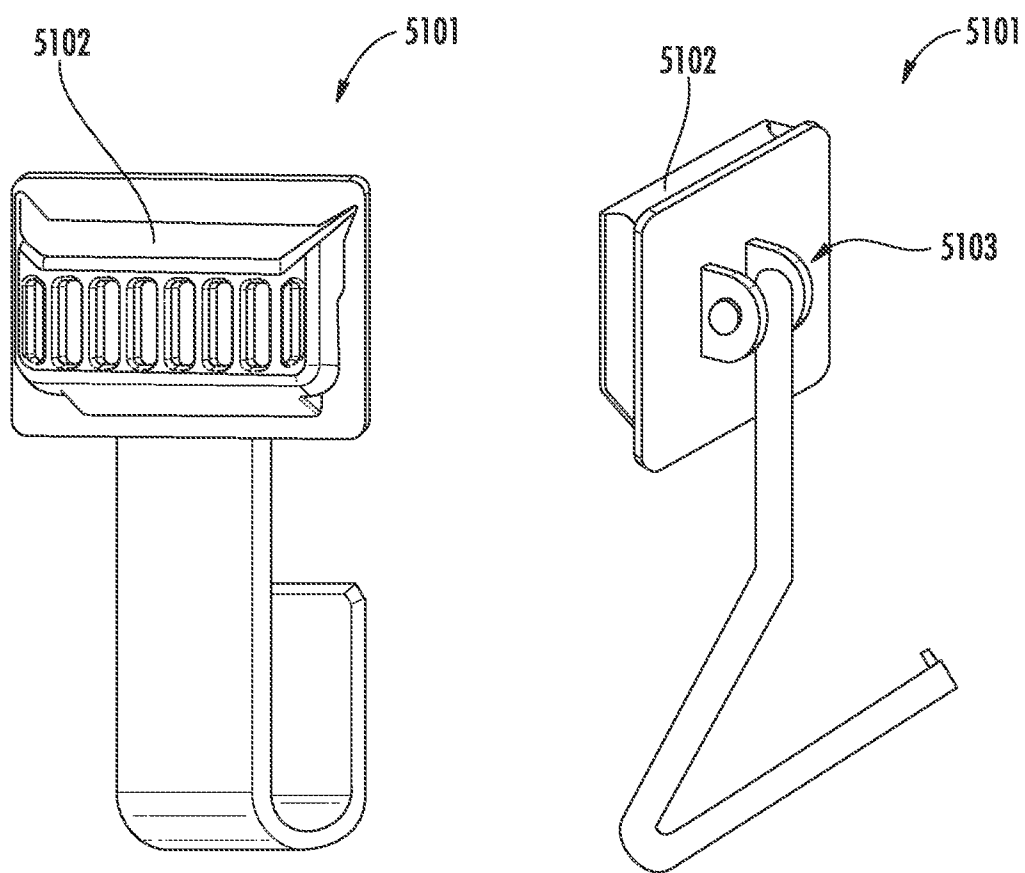


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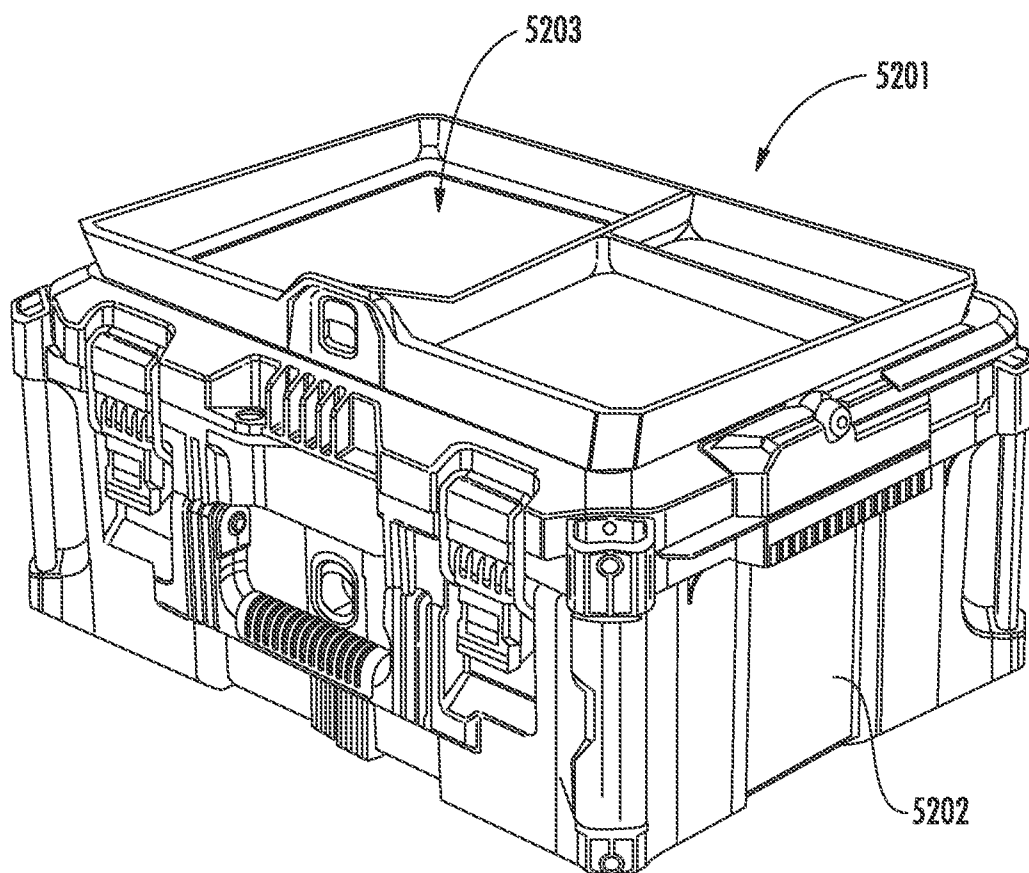
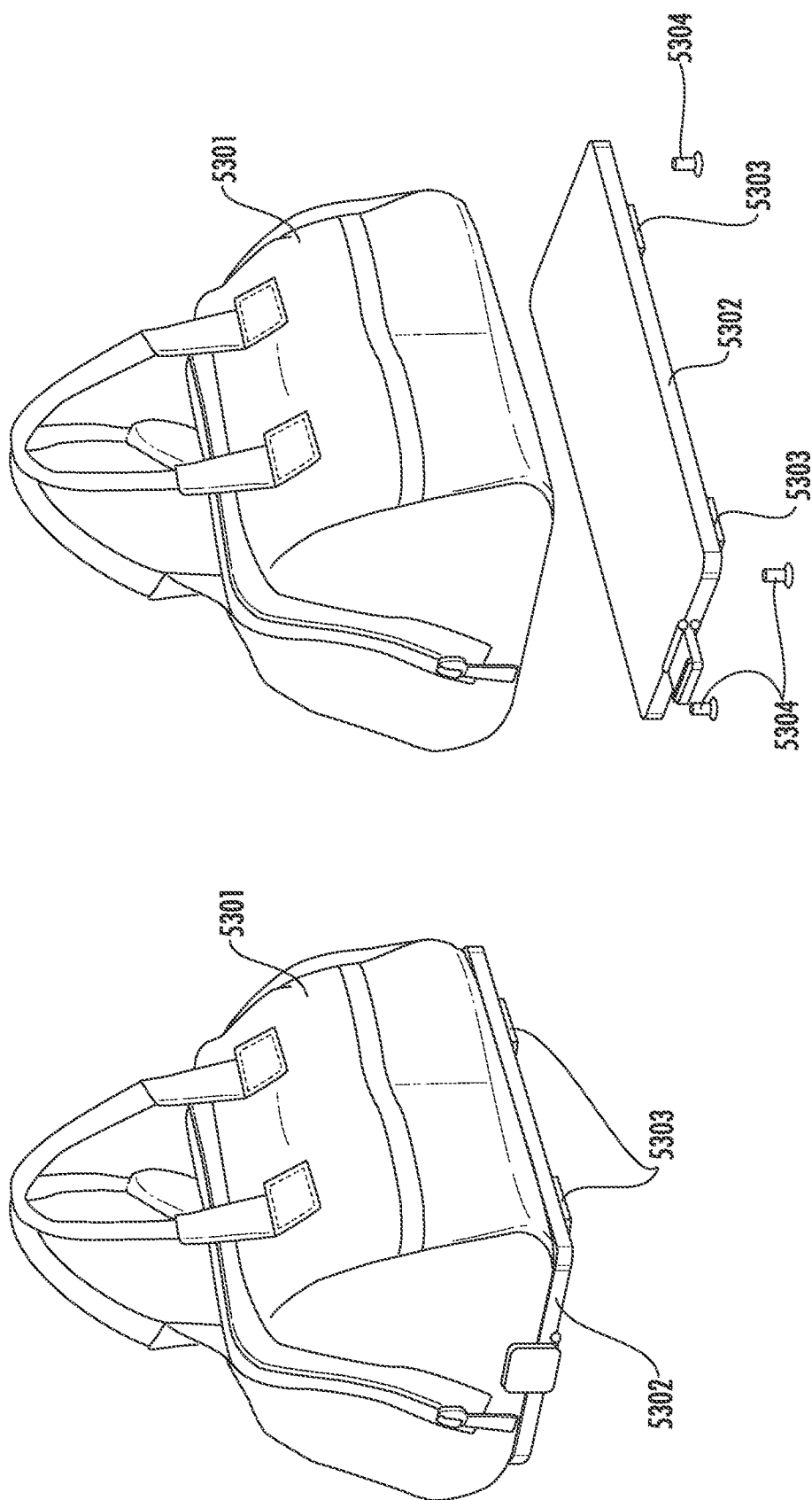
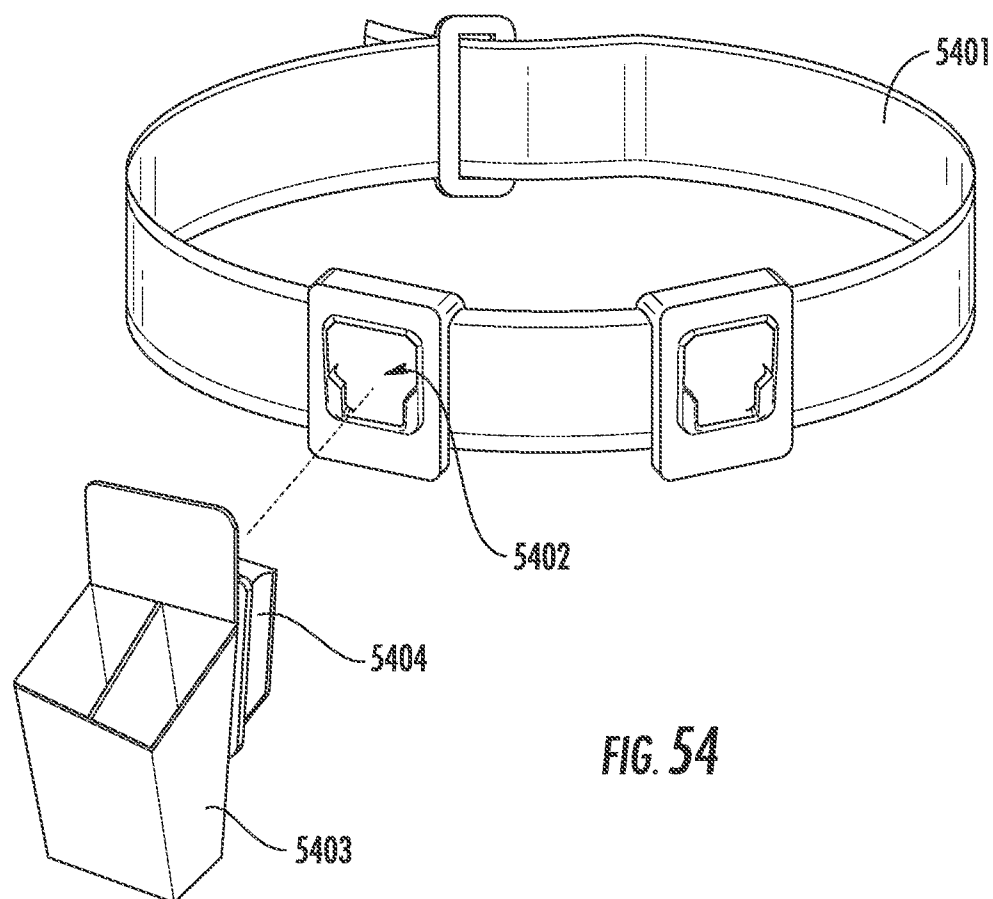


FIG. 52



33



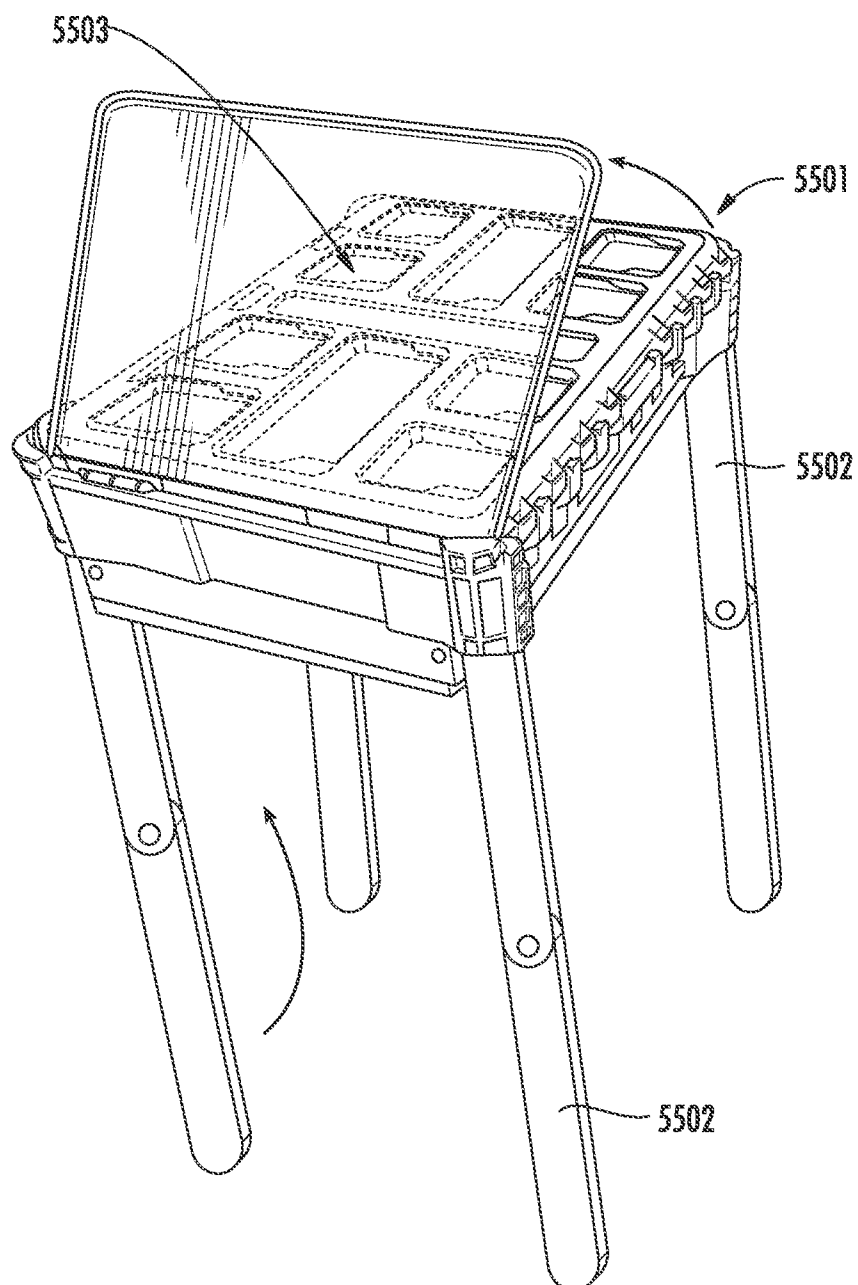


FIG. 55

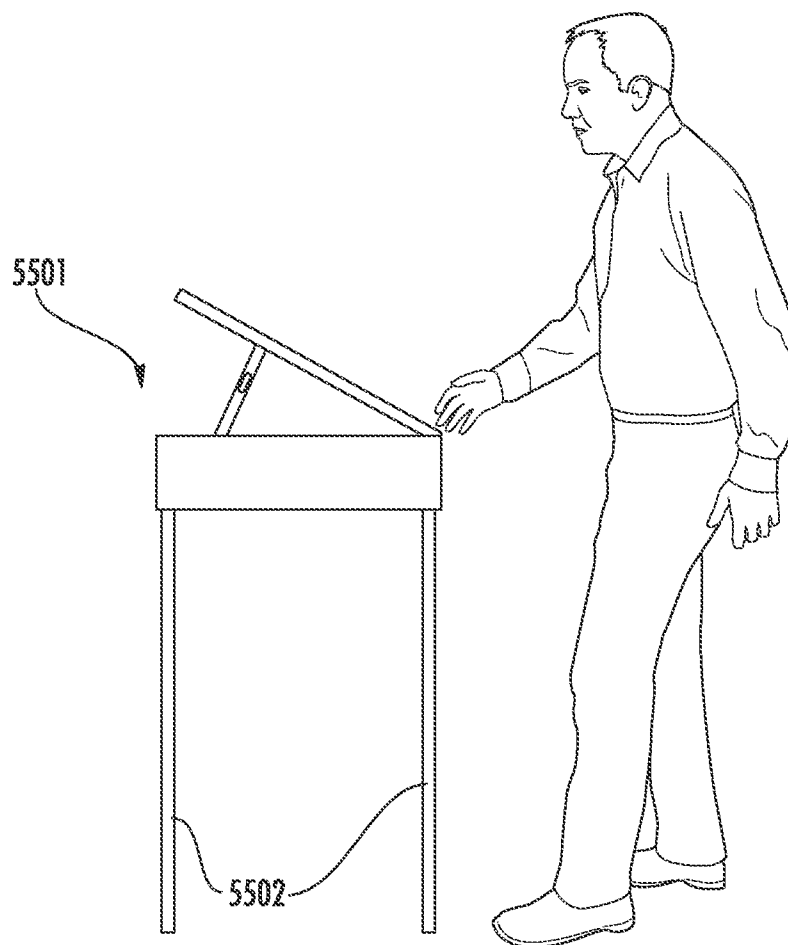


**FIG. 56**

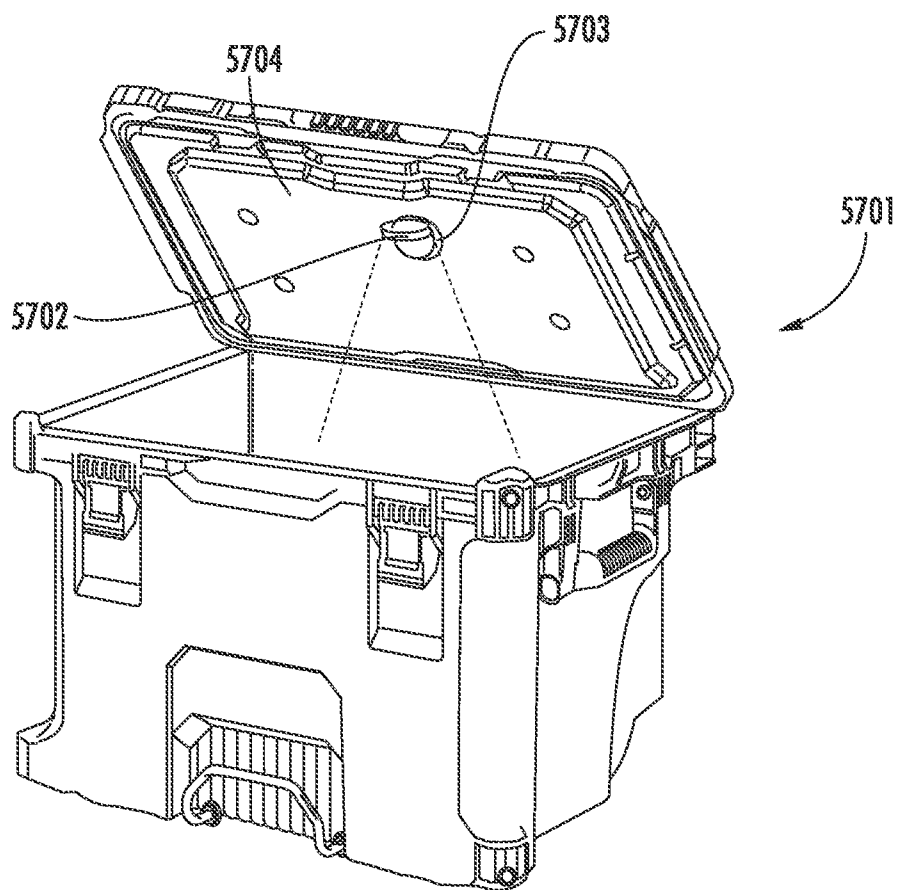
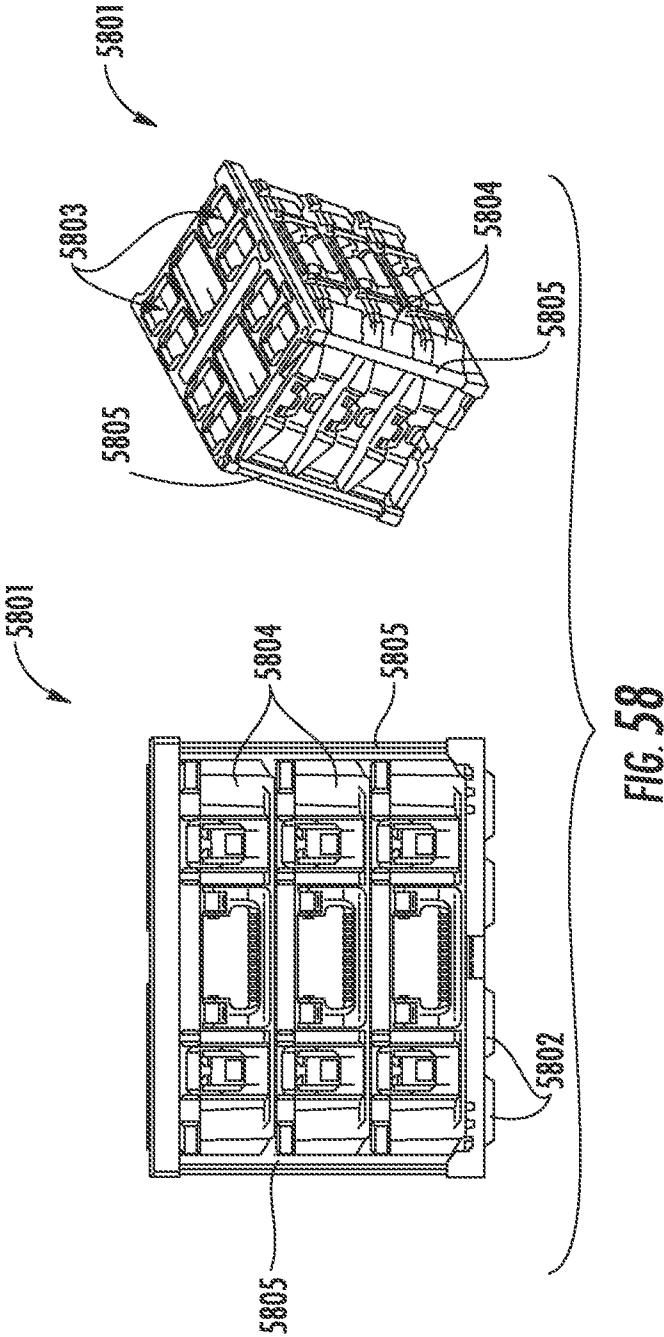


**FIG. 57**



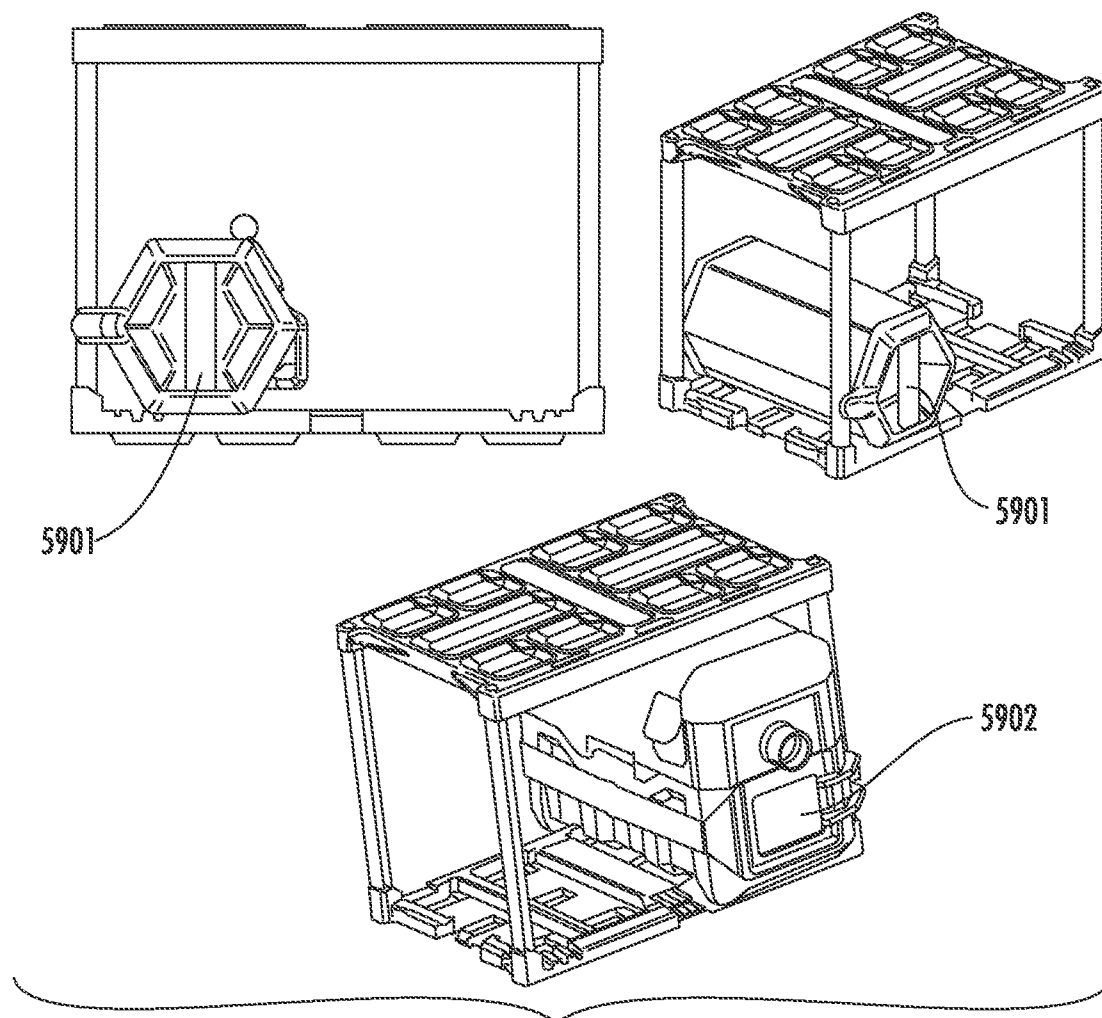


FIG. 59

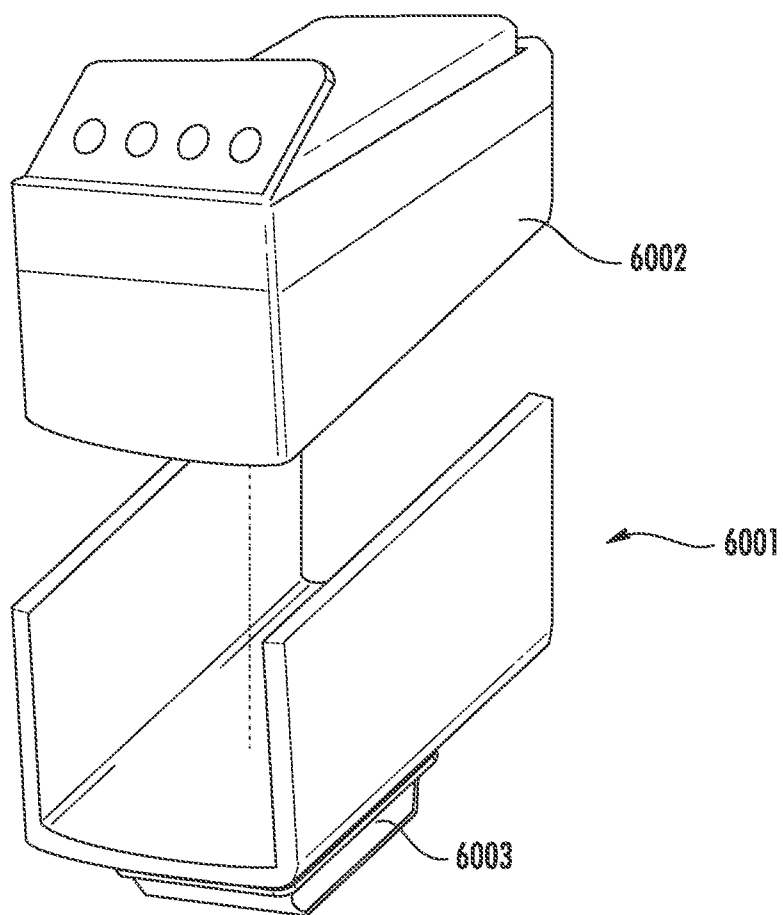


**FIG. 60**

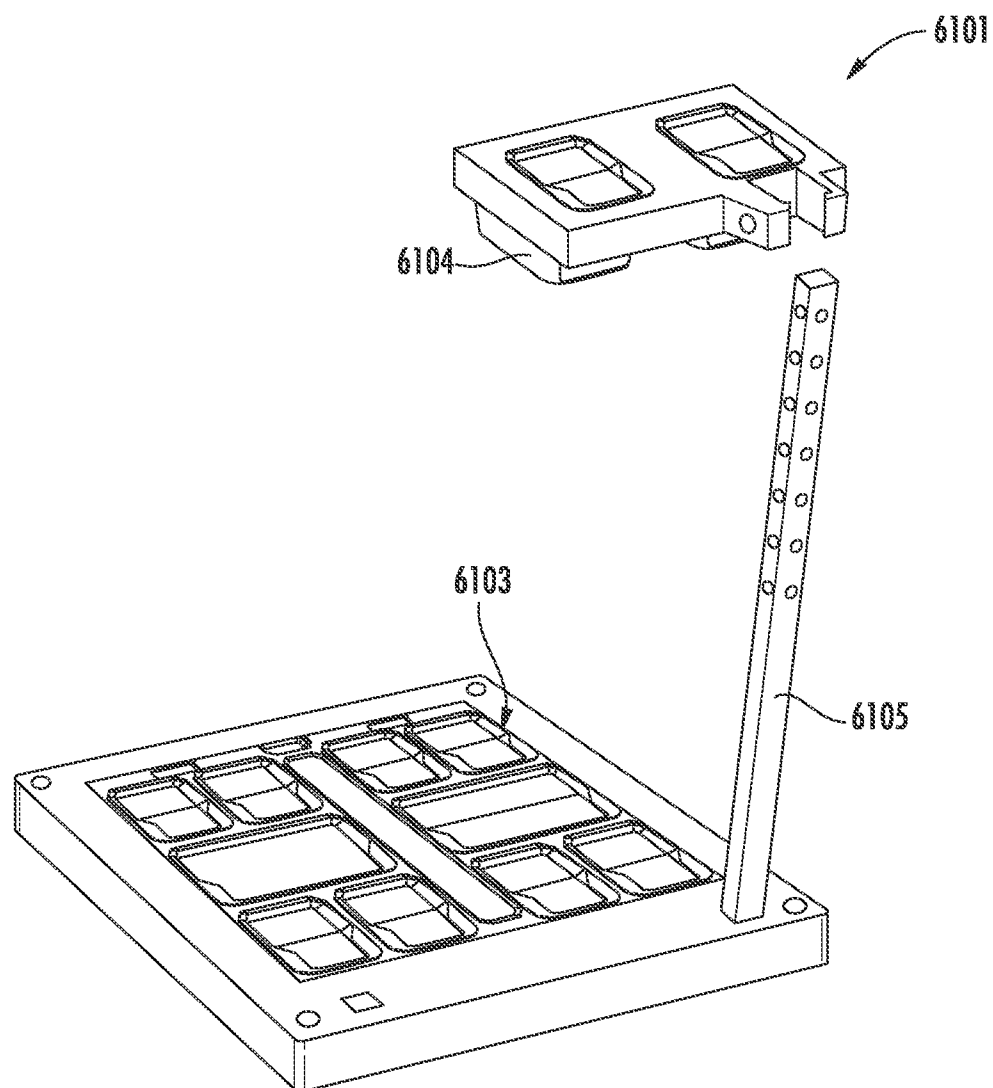


FIG. 61

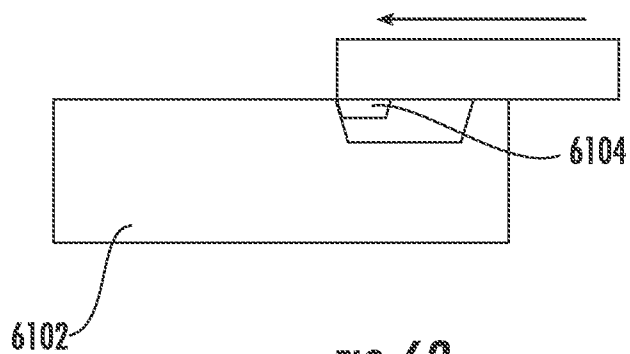


FIG. 62

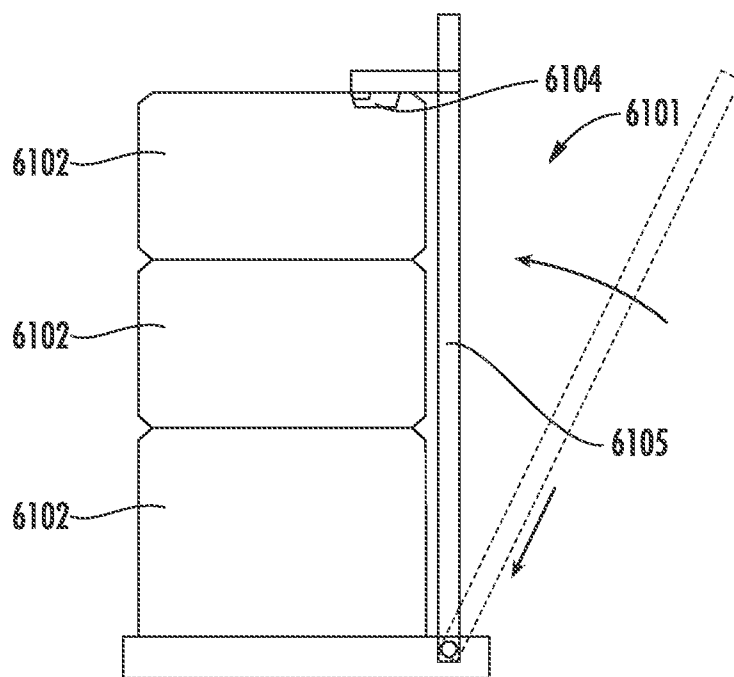


FIG. 63

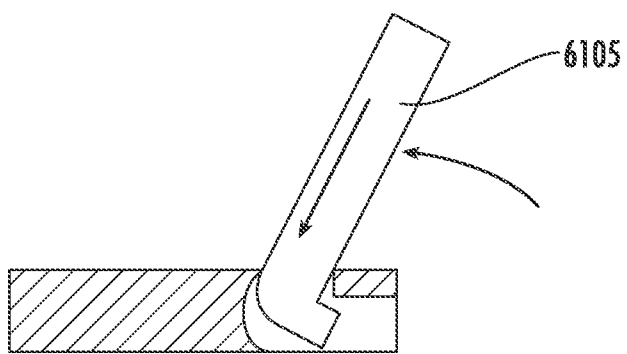


FIG. 64

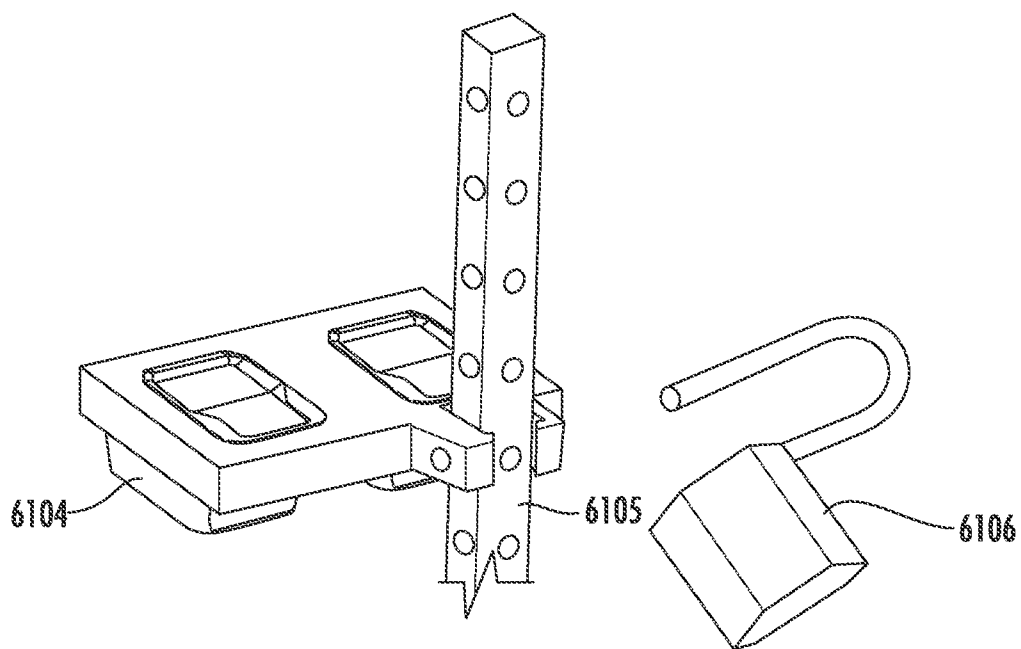


FIG. 65

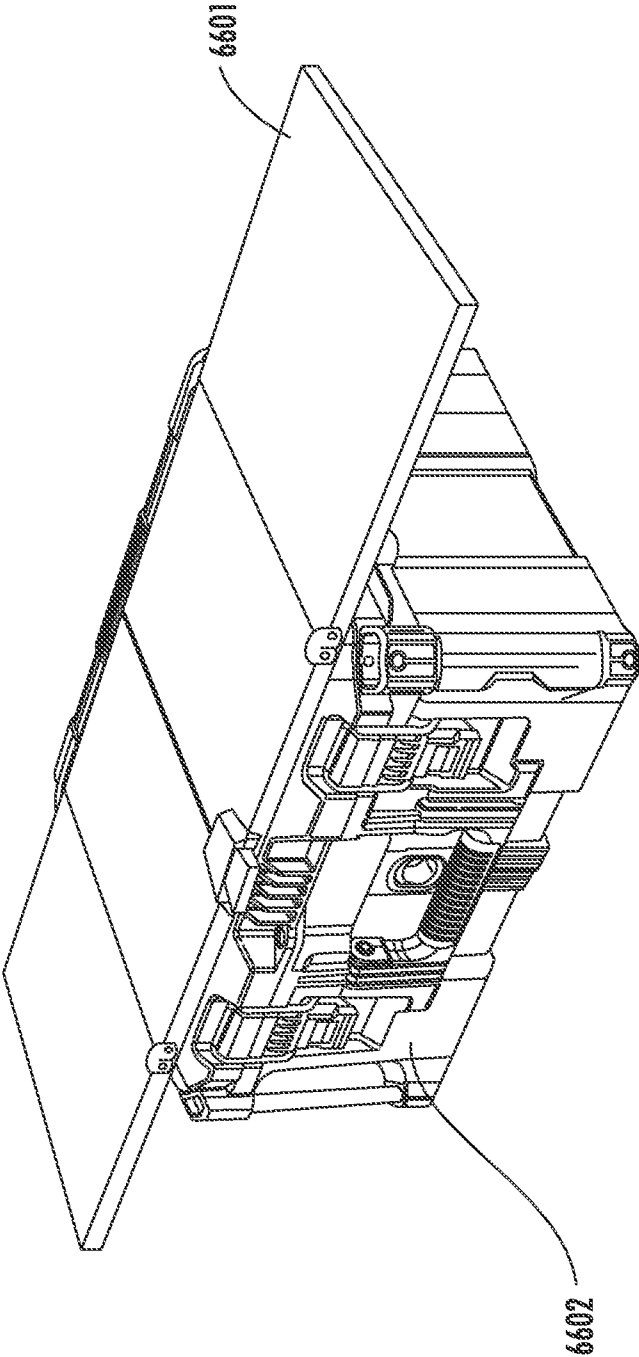
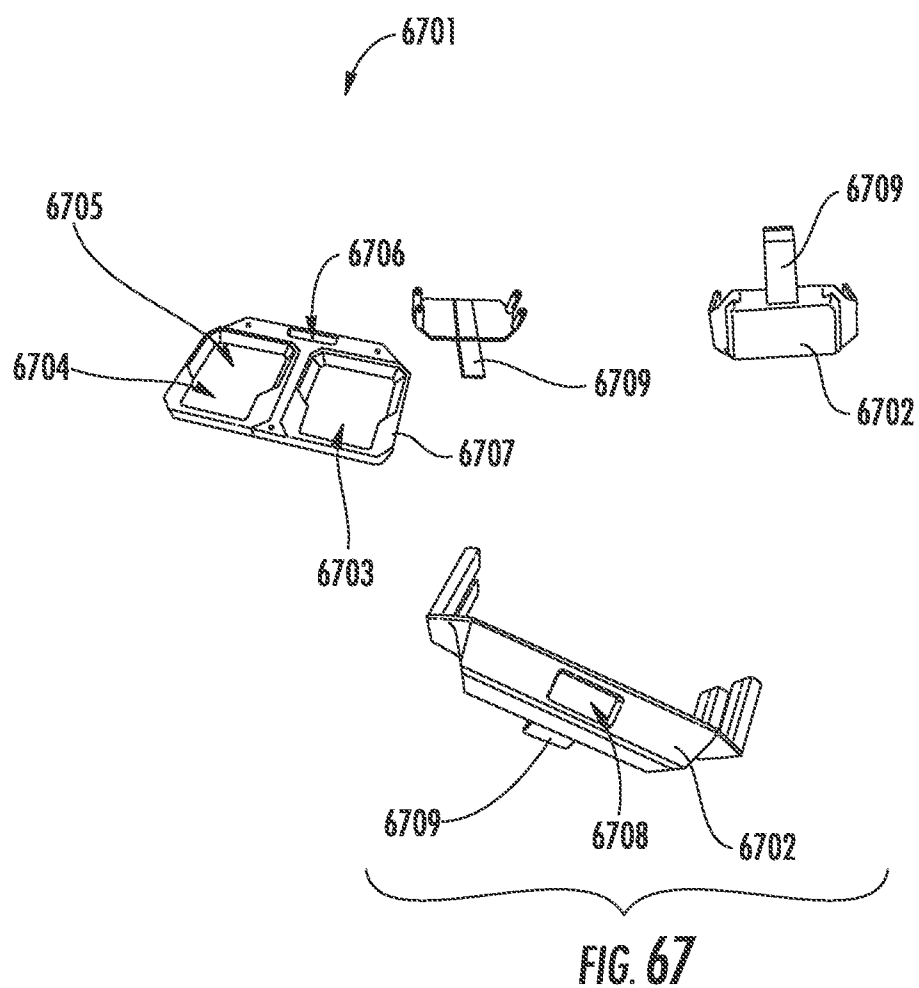


FIG. 66



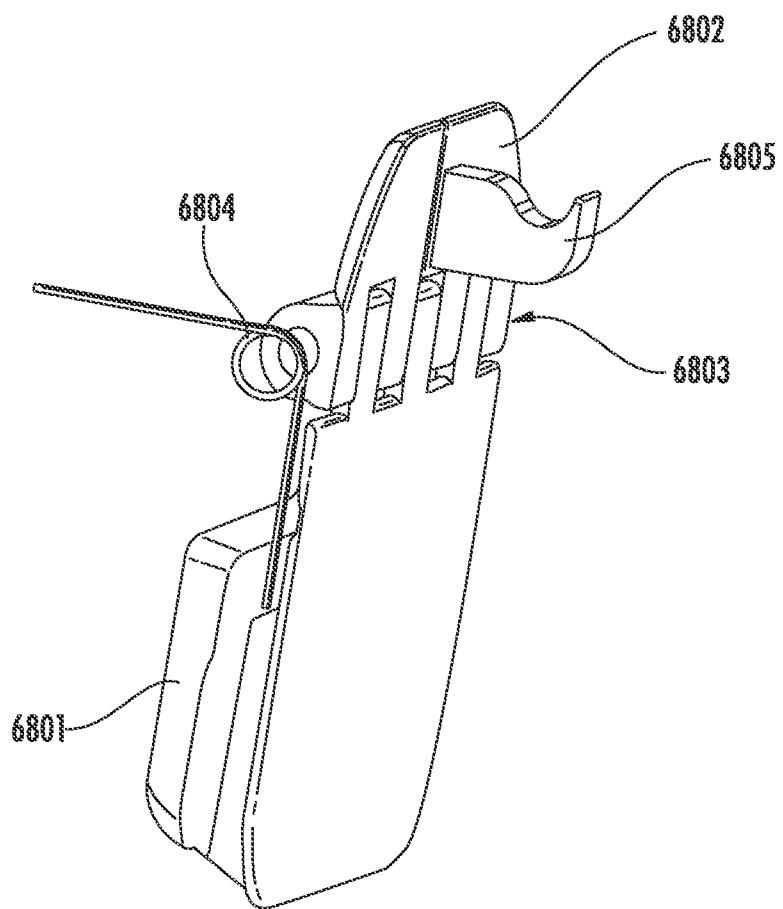


**FIG. 68**

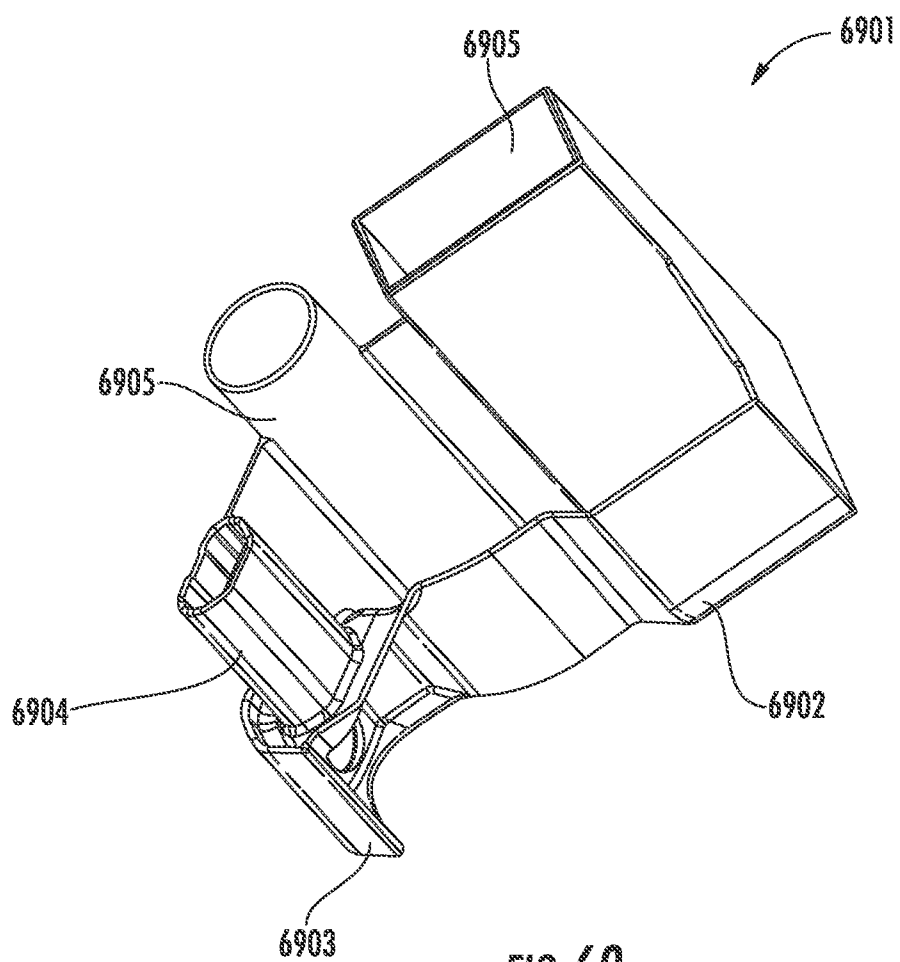


**FIG. 69**

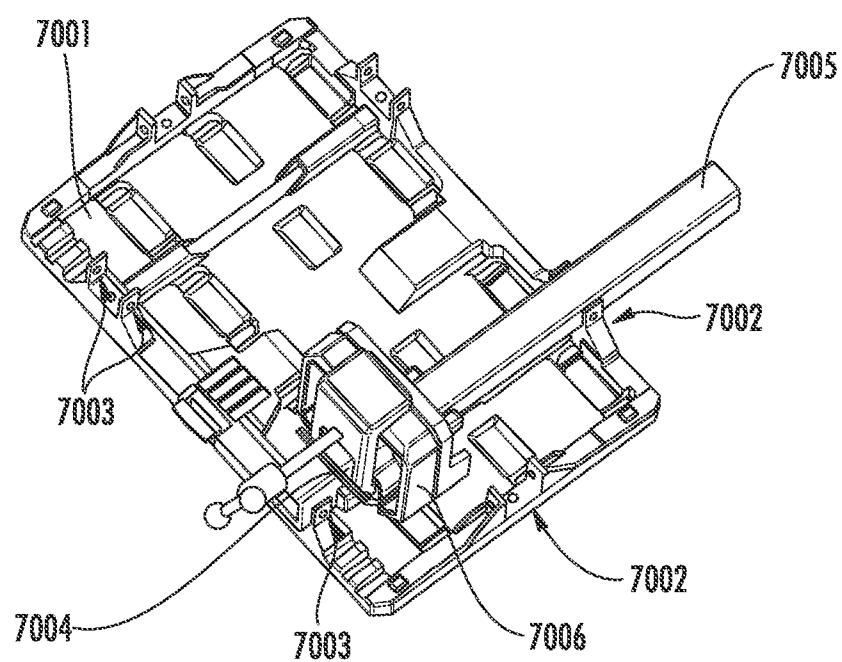
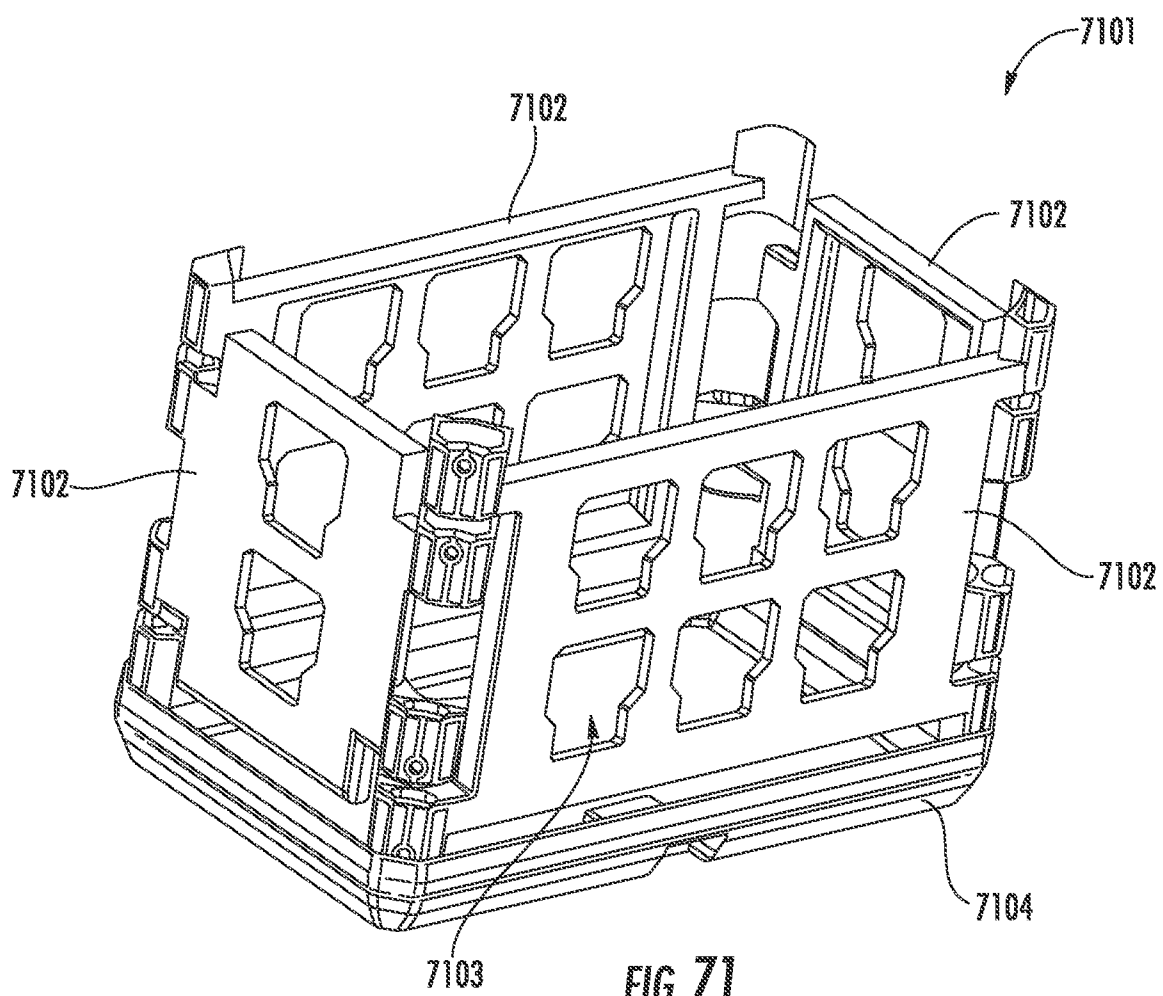


FIG. 70



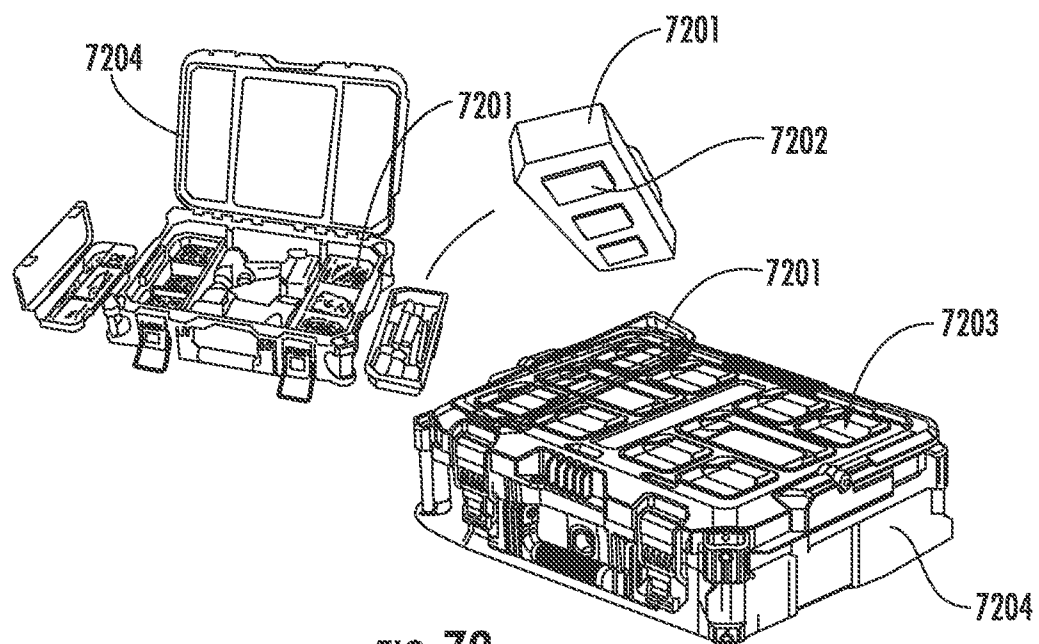


FIG. 72

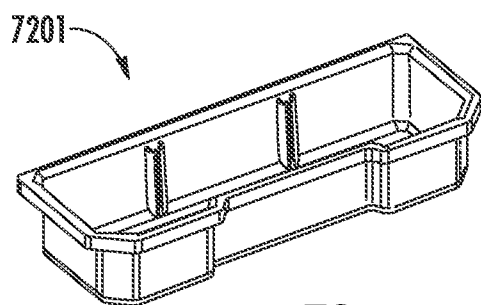


FIG. 73

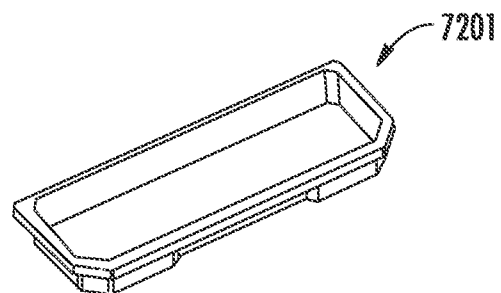
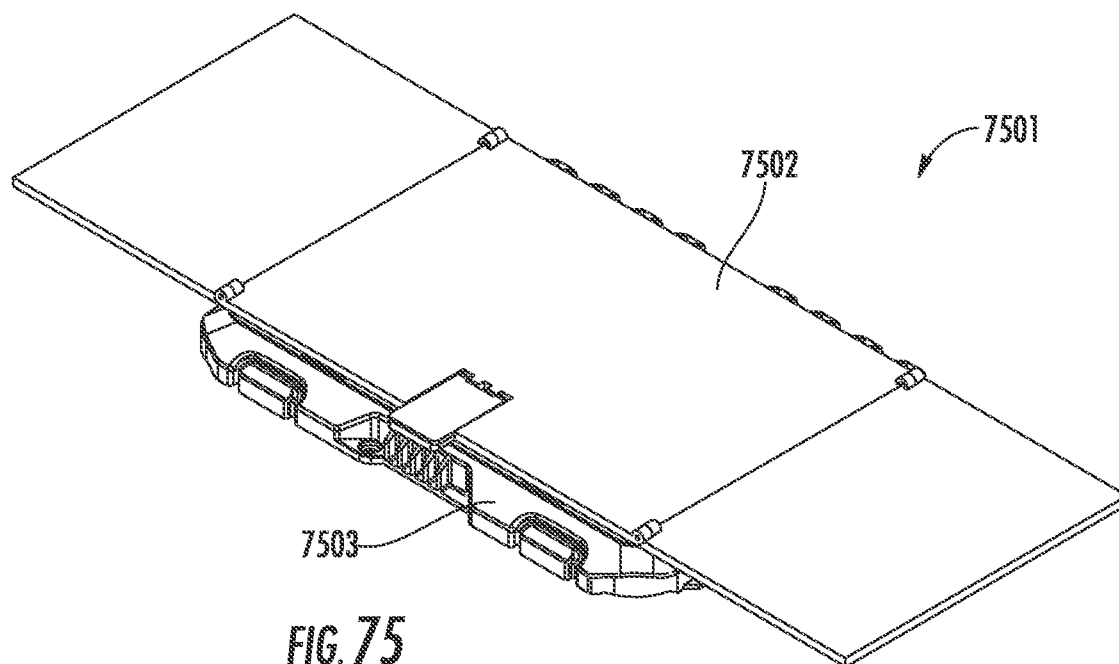
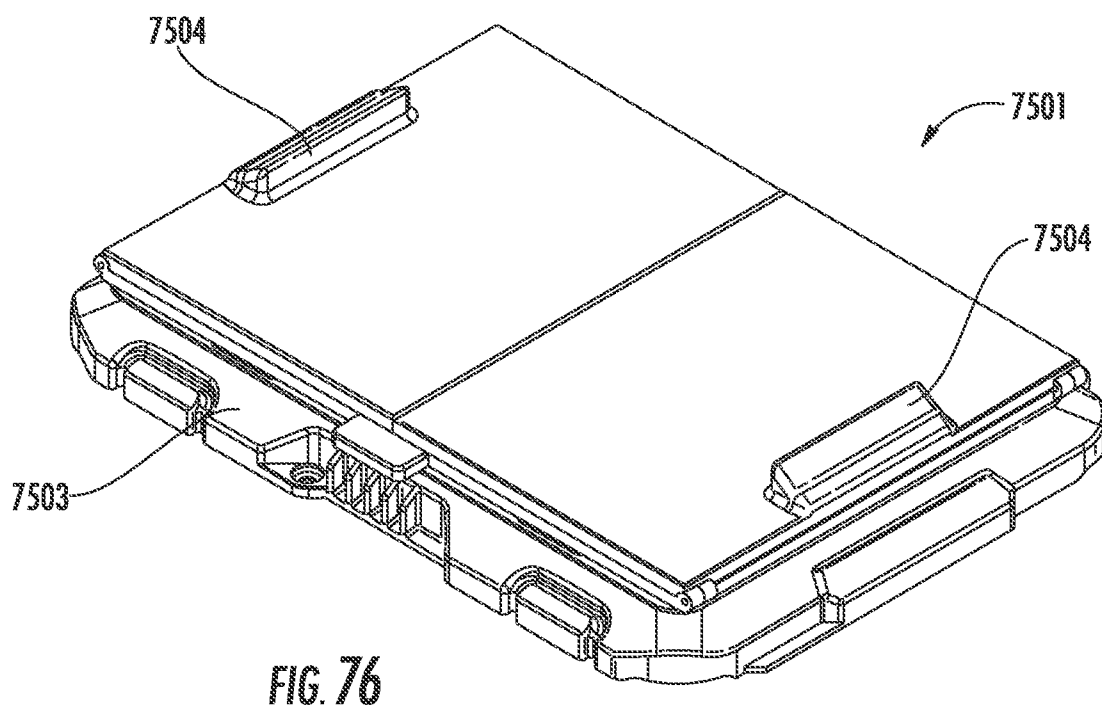
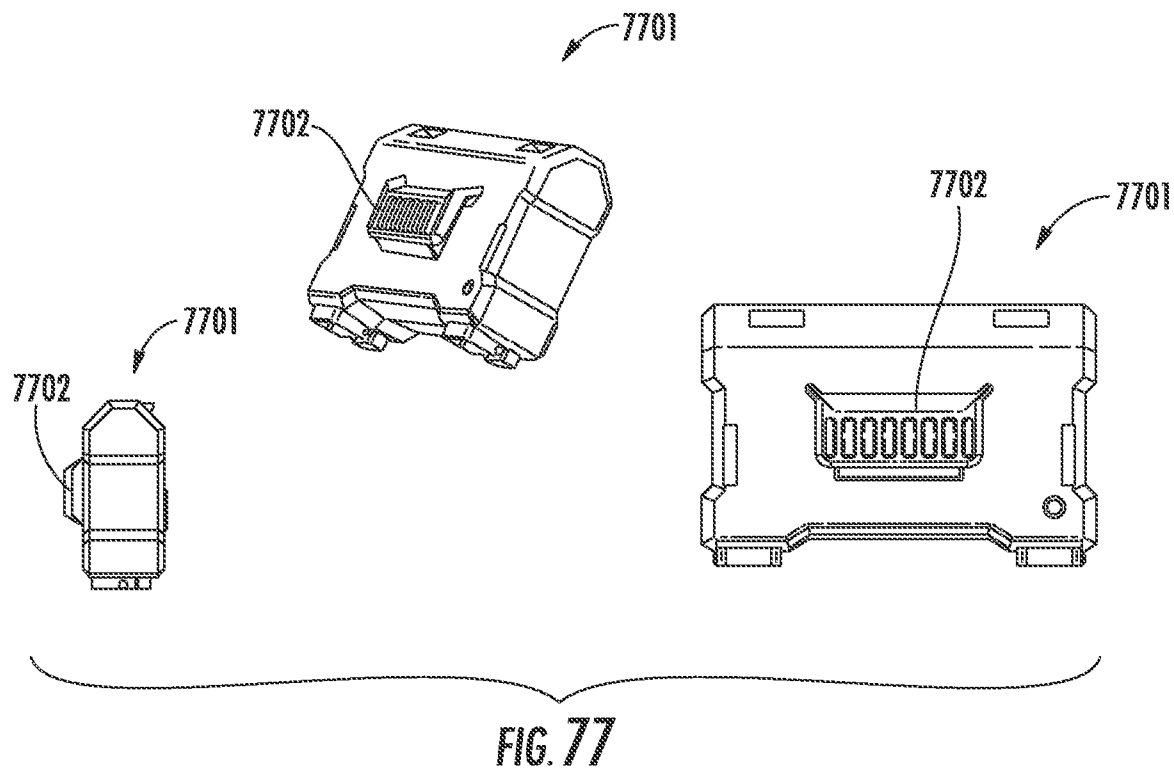
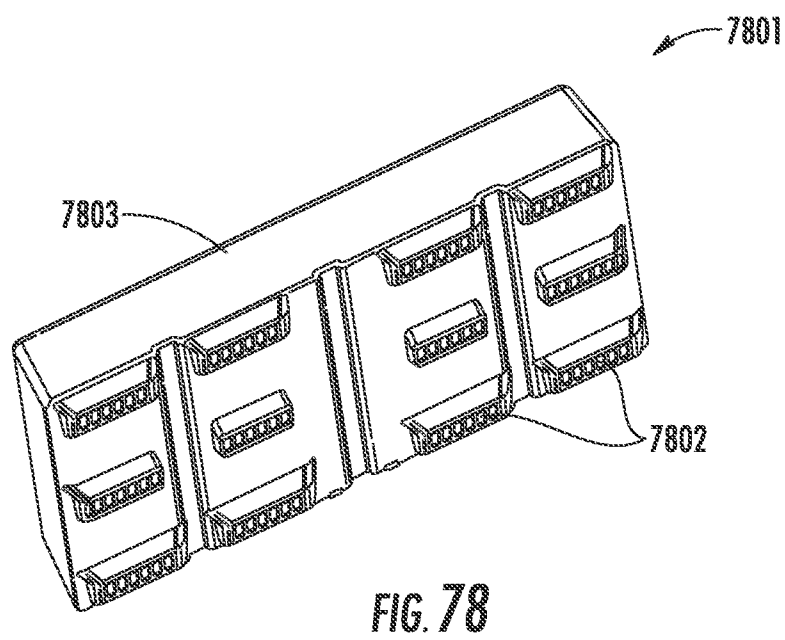
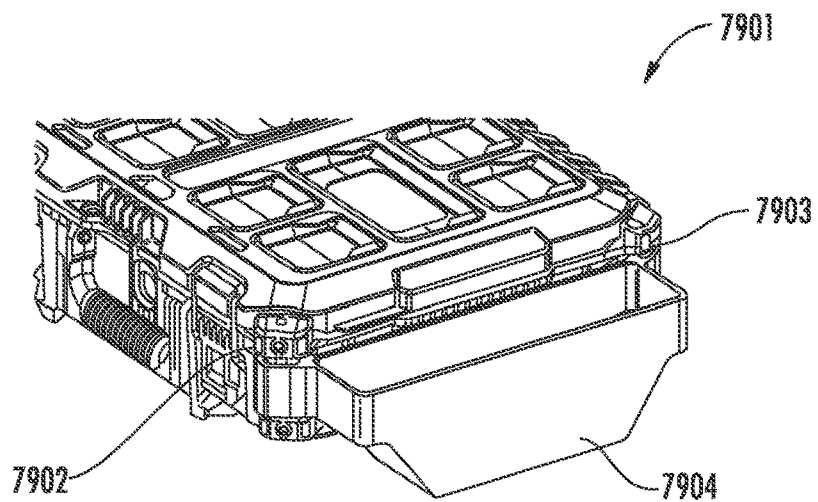
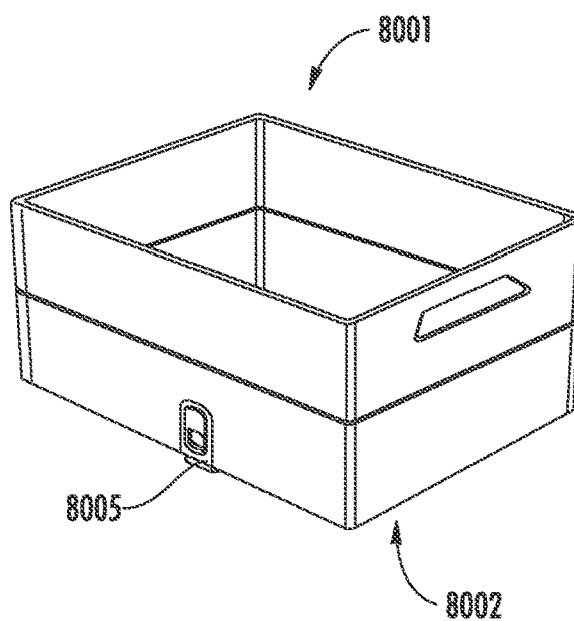
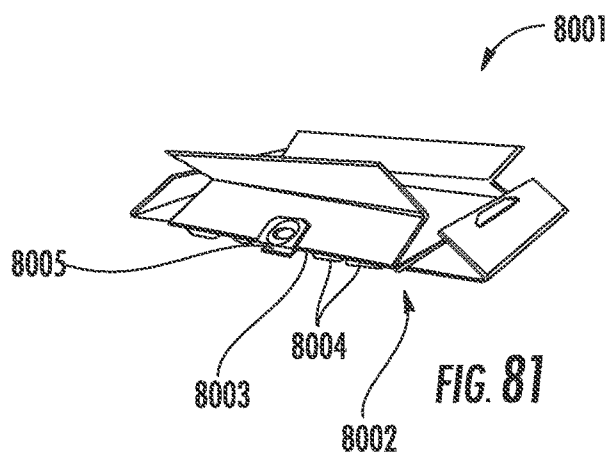


FIG. 74







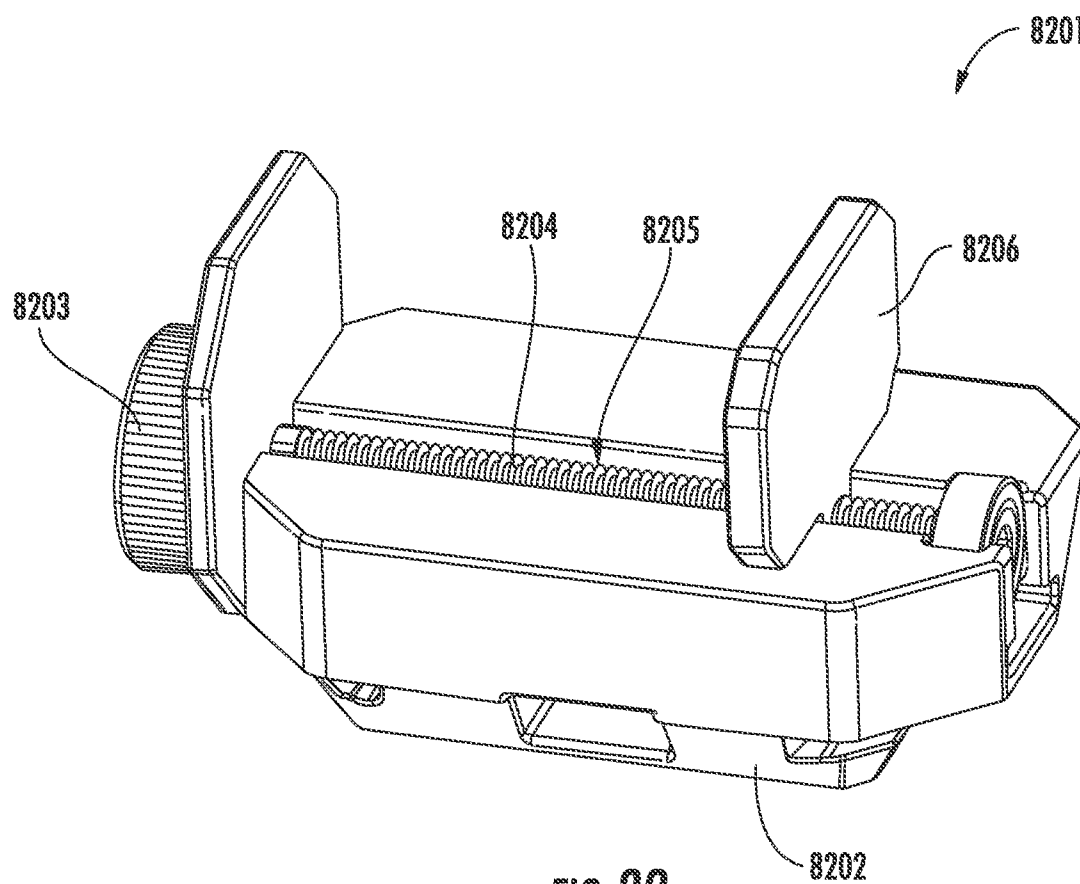


FIG. 82

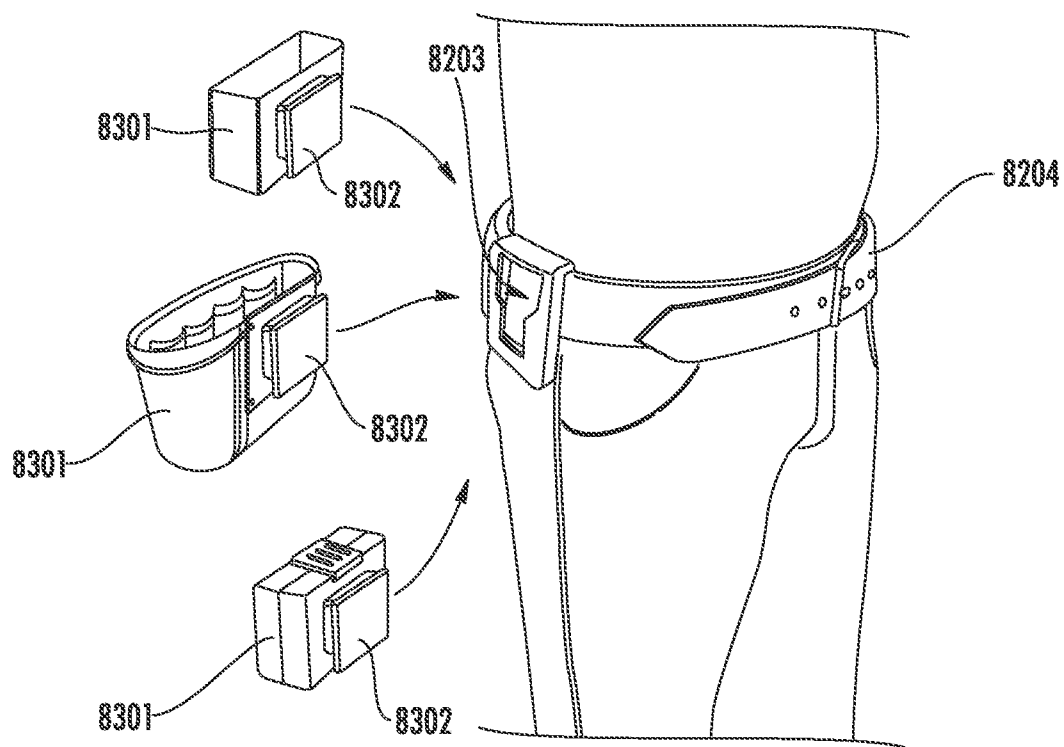


**FIG. 83**

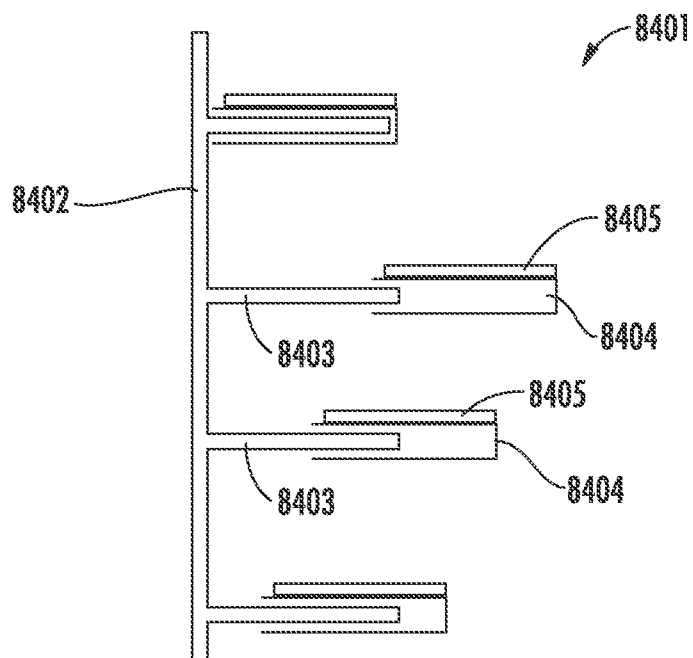


FIG. 84

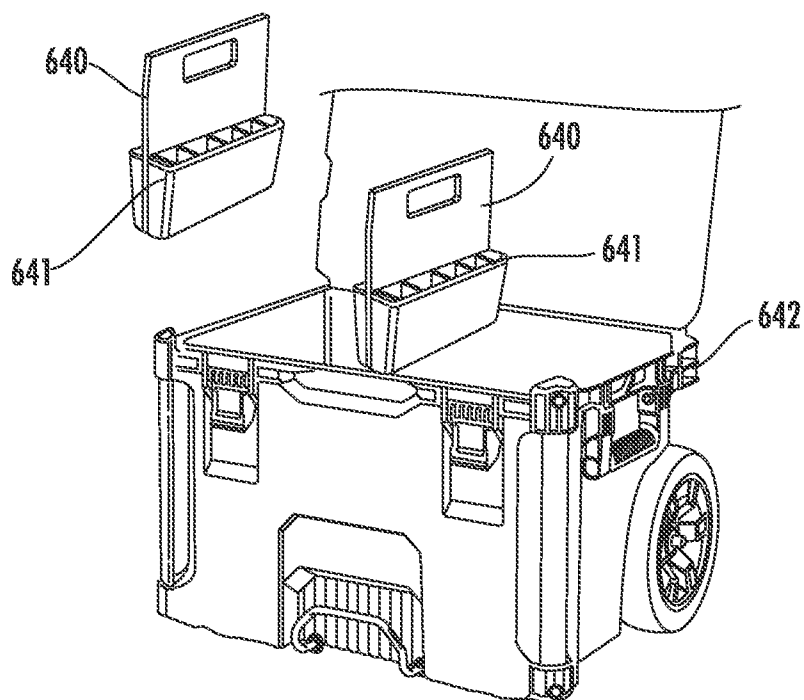


FIG. 85

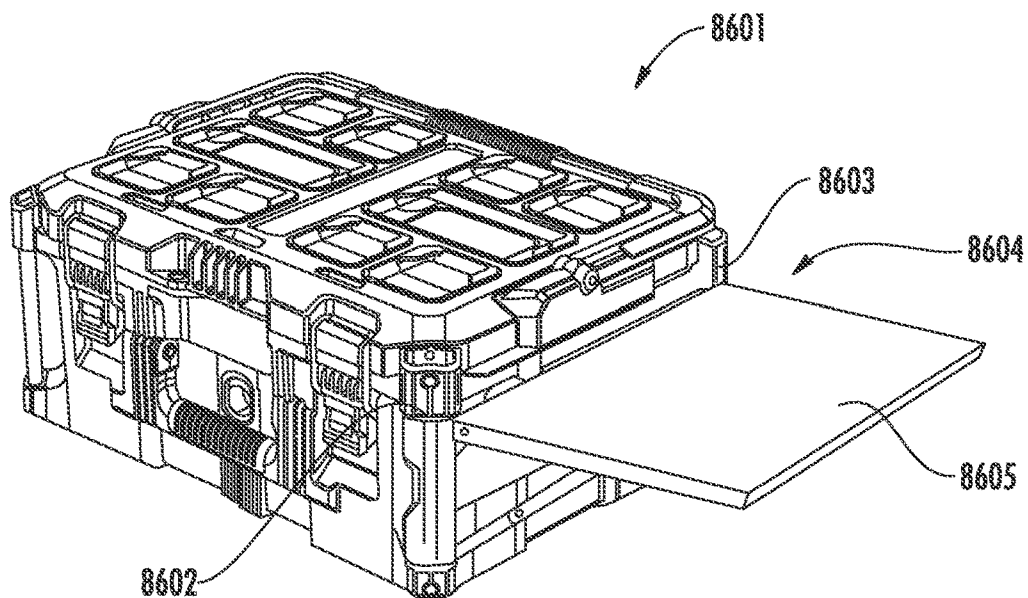


FIG. 86

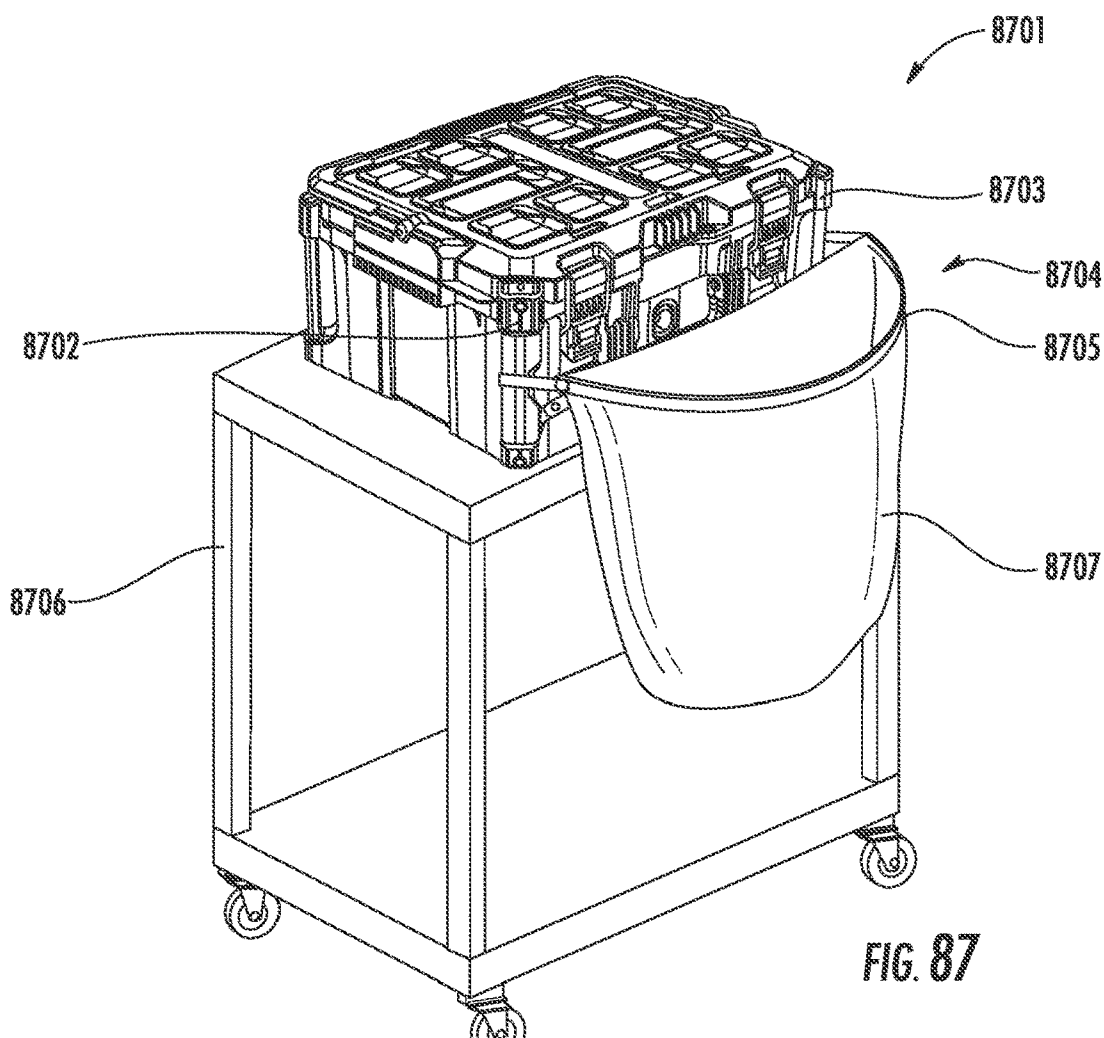
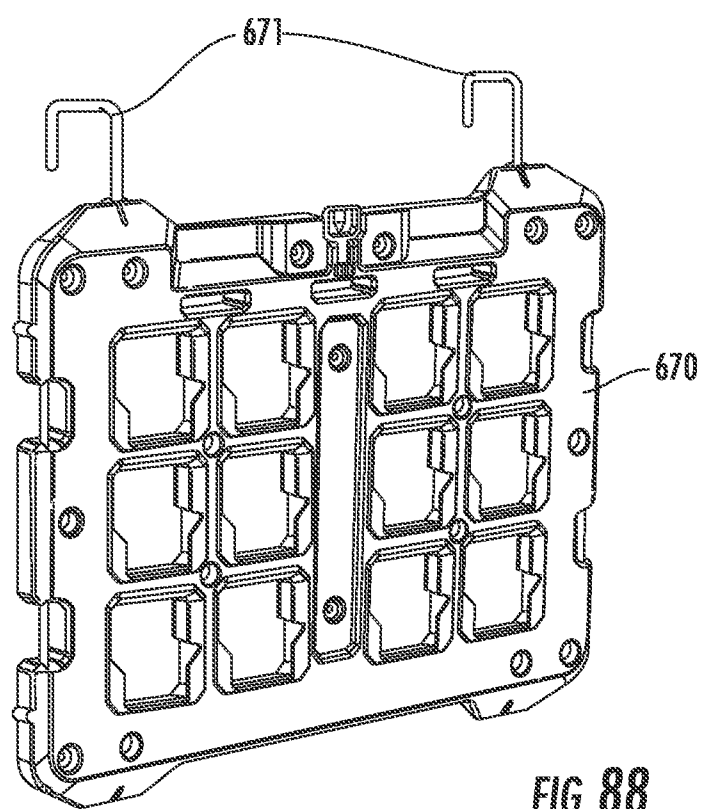


FIG. 87



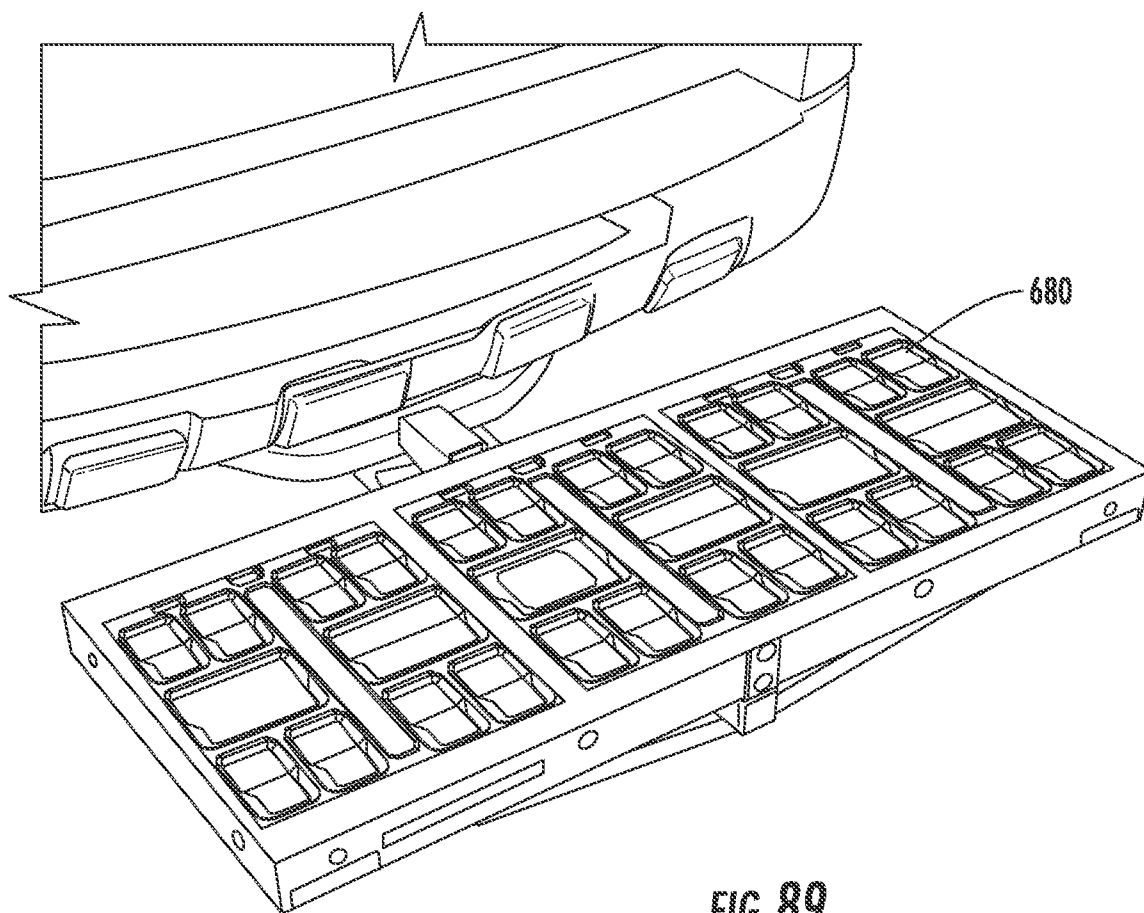


FIG. 89

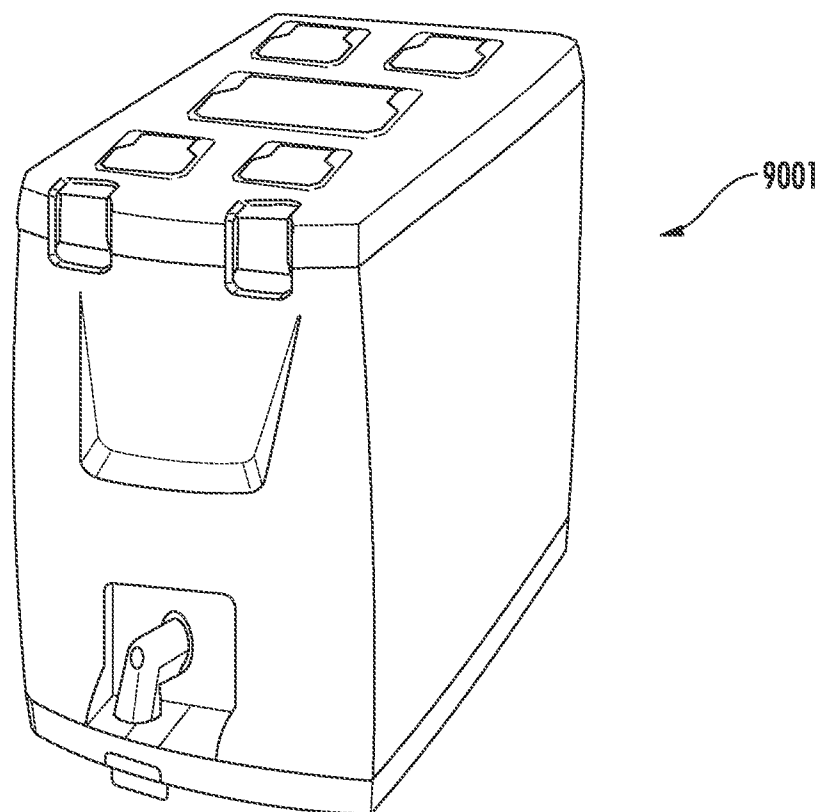


FIG. 90

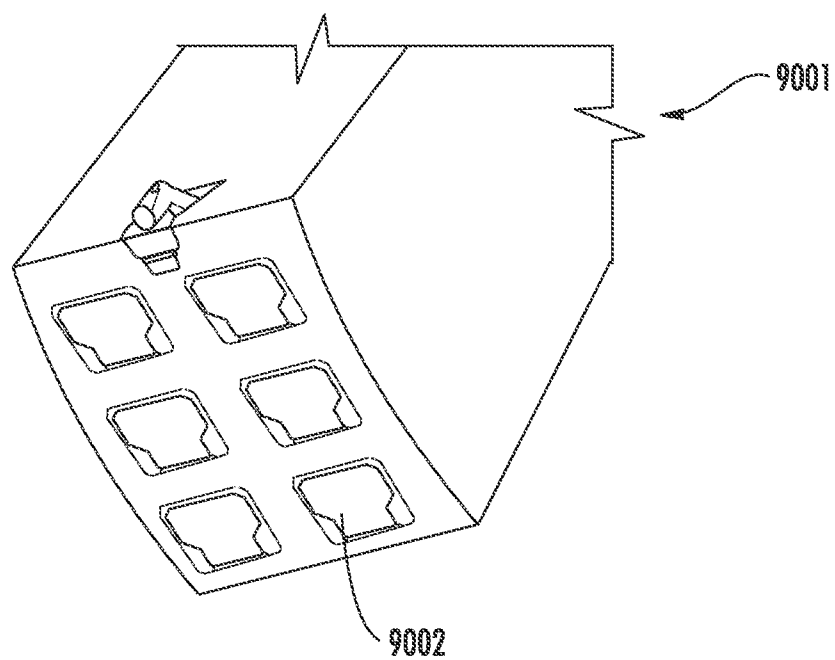


**FIG. 91**

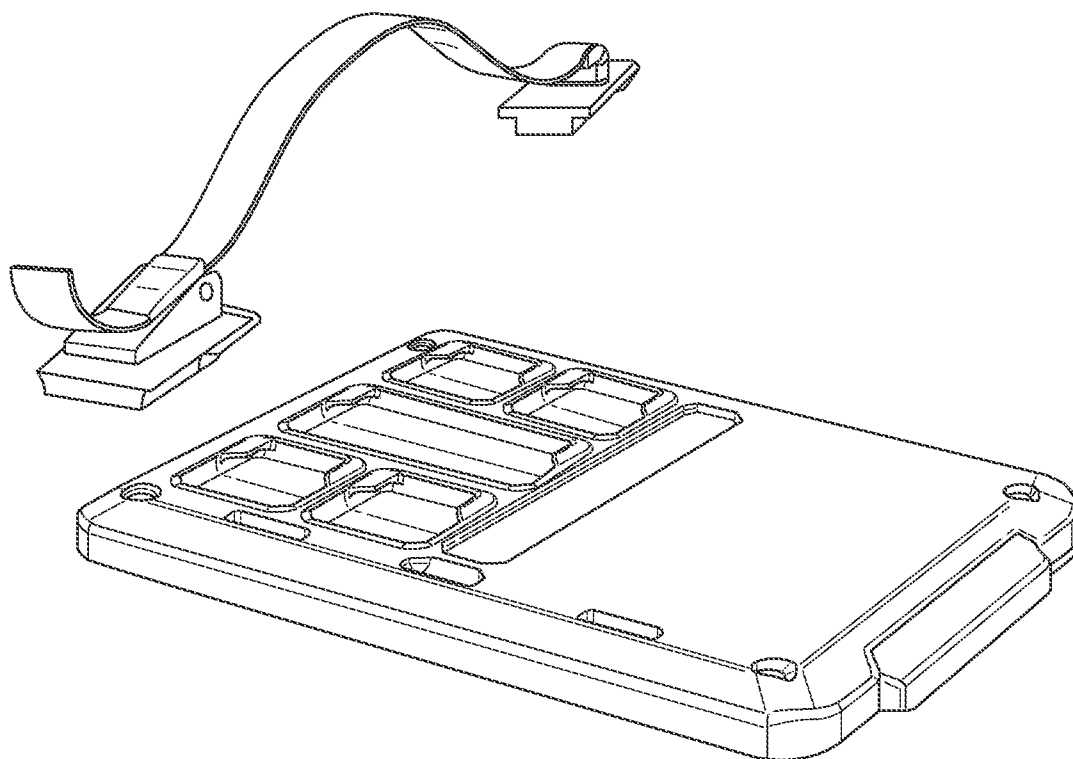


**FIG. 92**

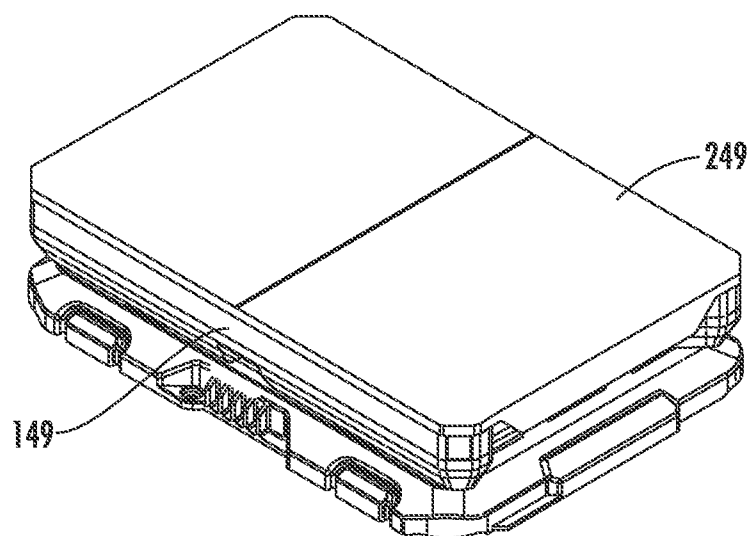


FIG. 93

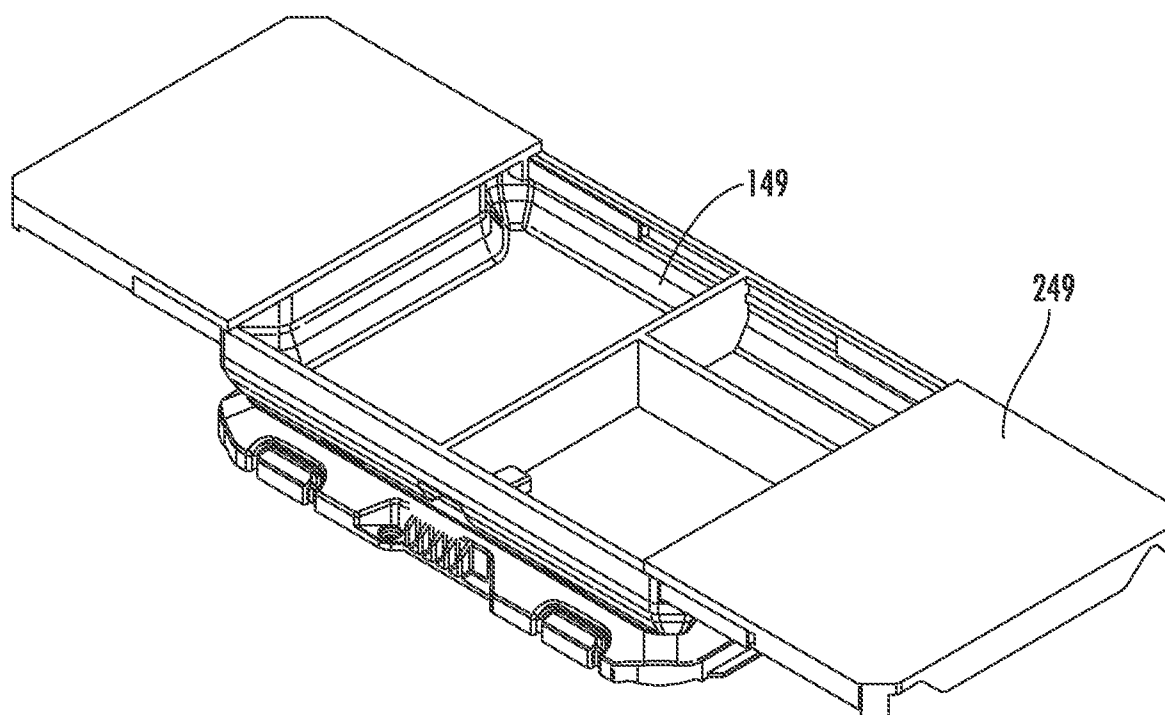


FIG. 94

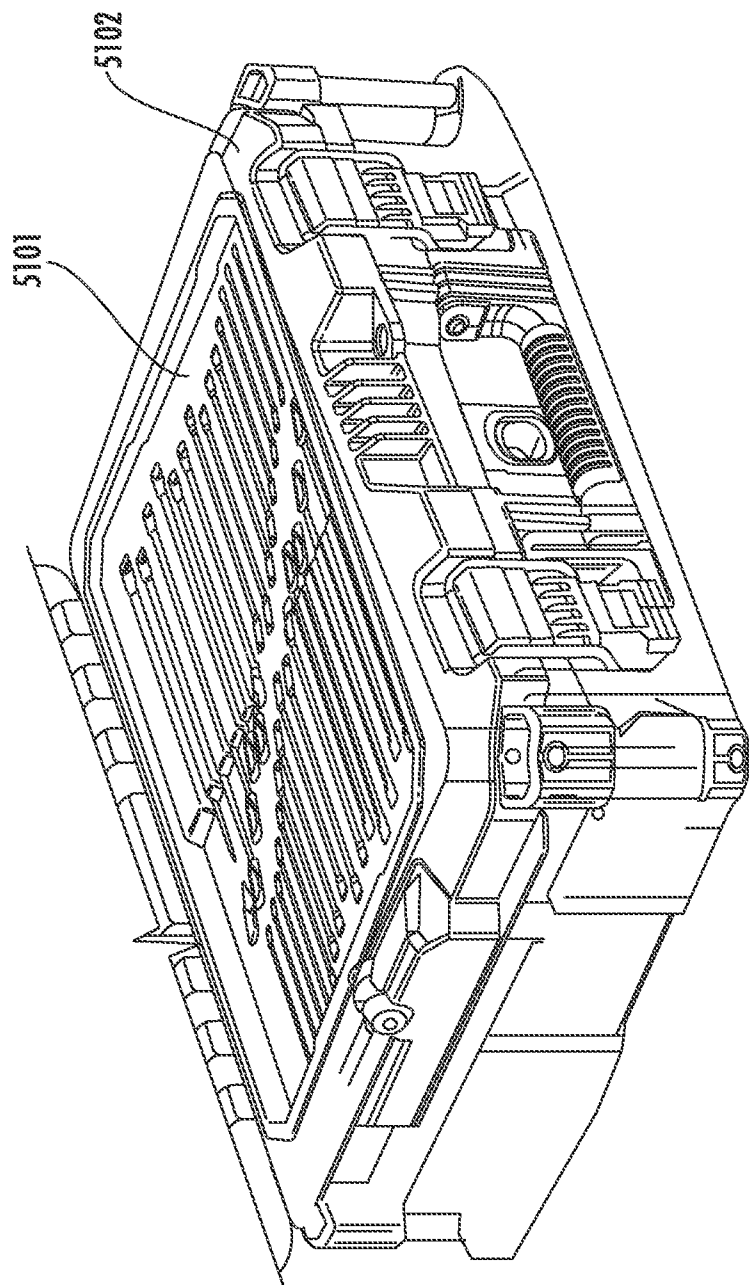
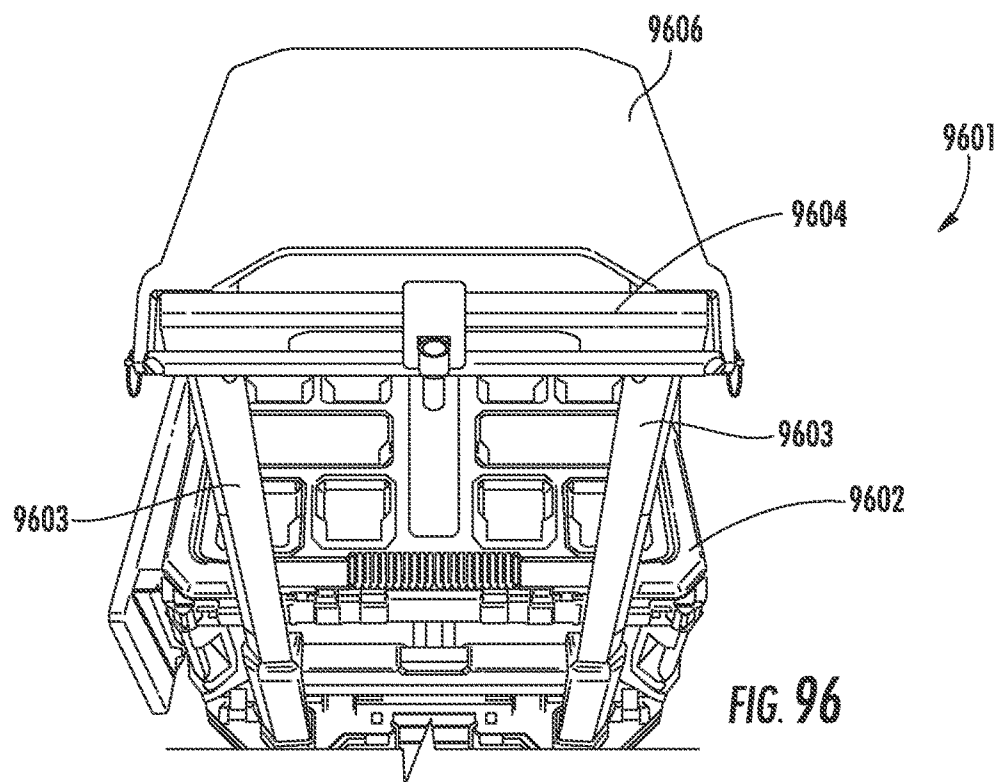
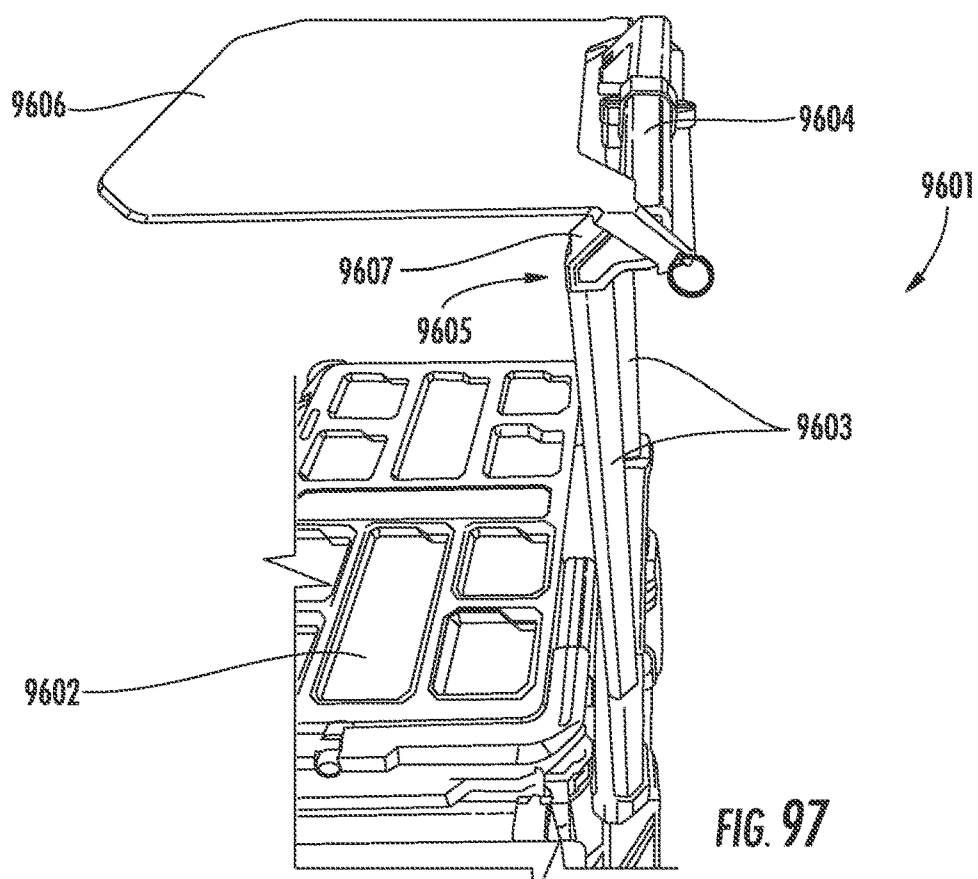
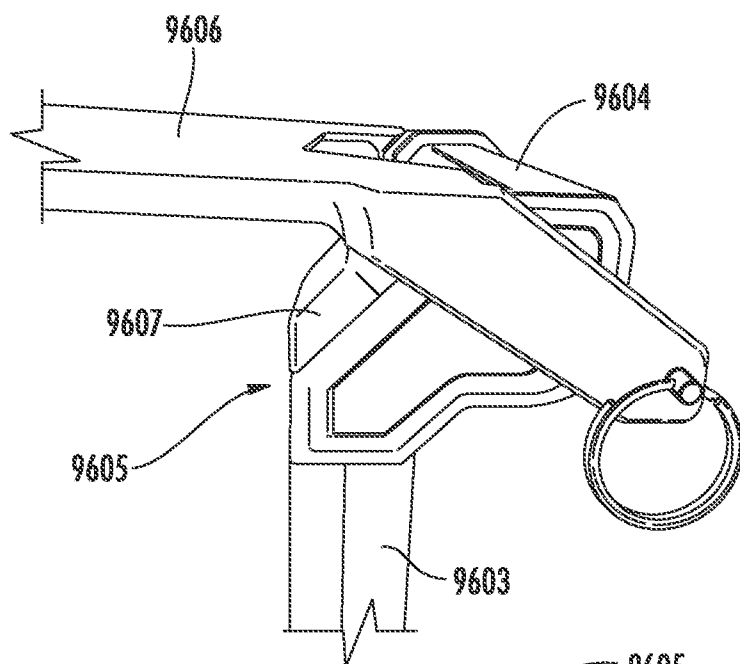
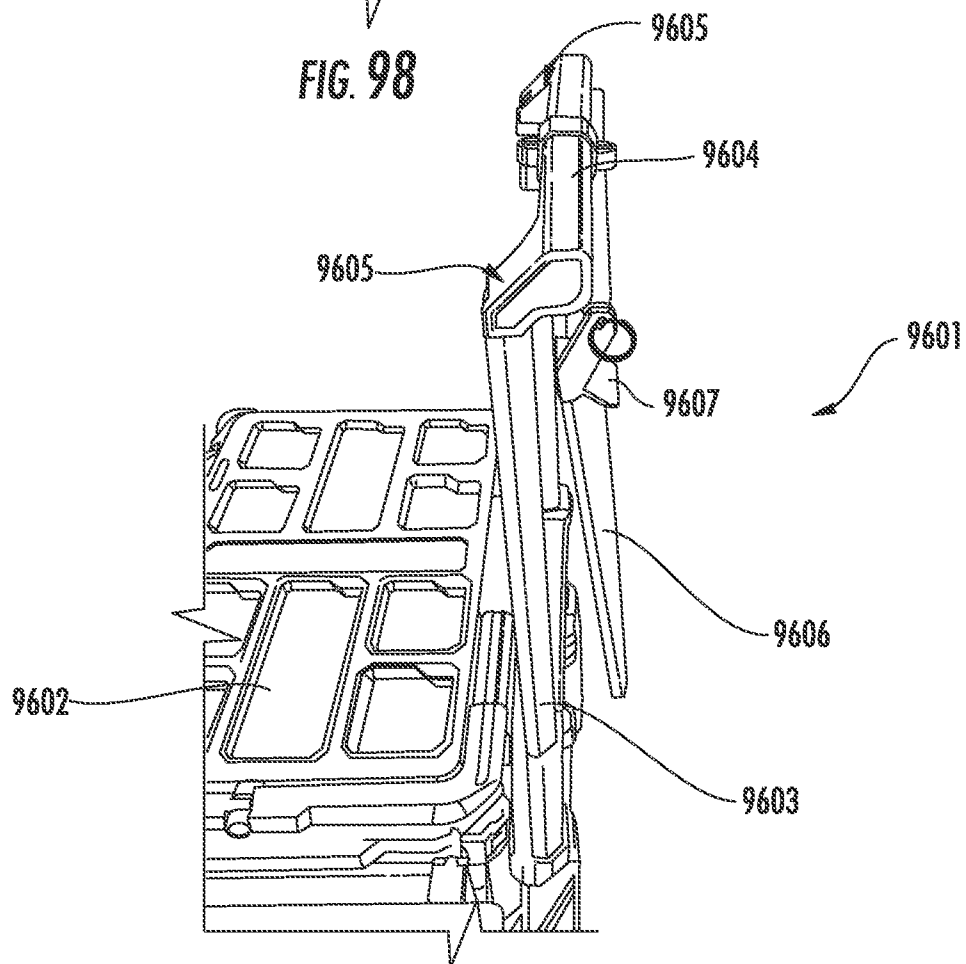


FIG. 95





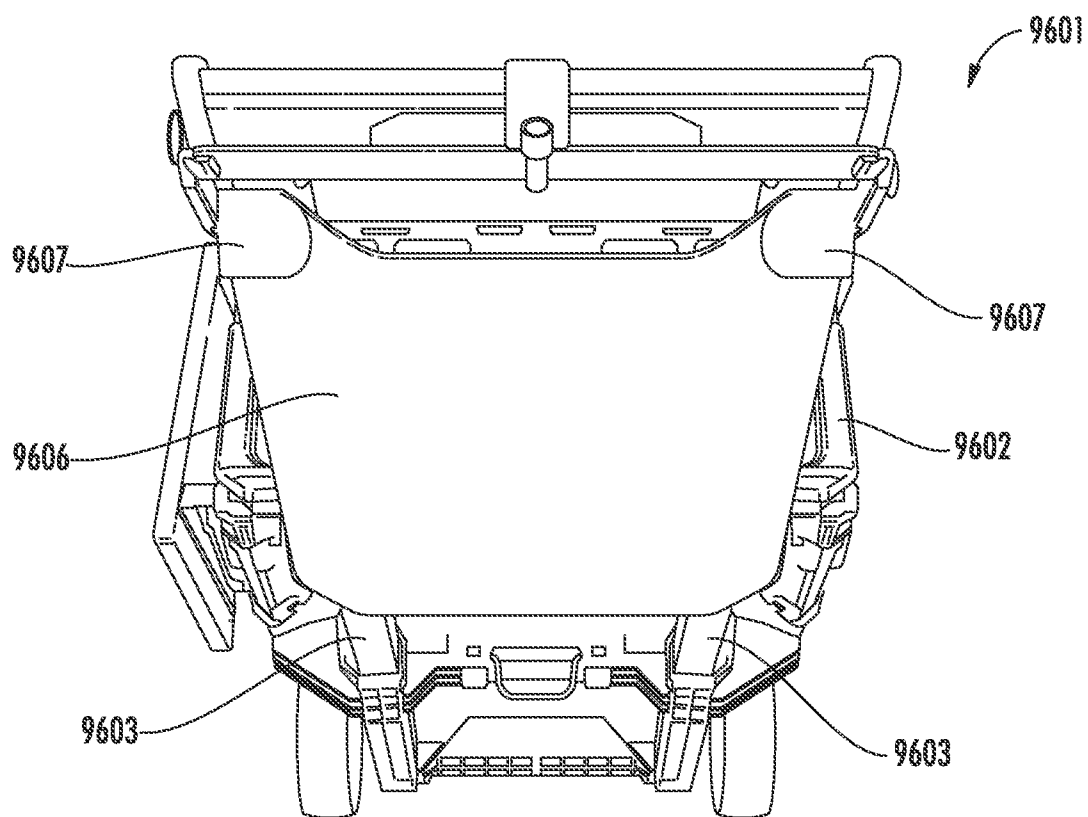


**FIG. 100**

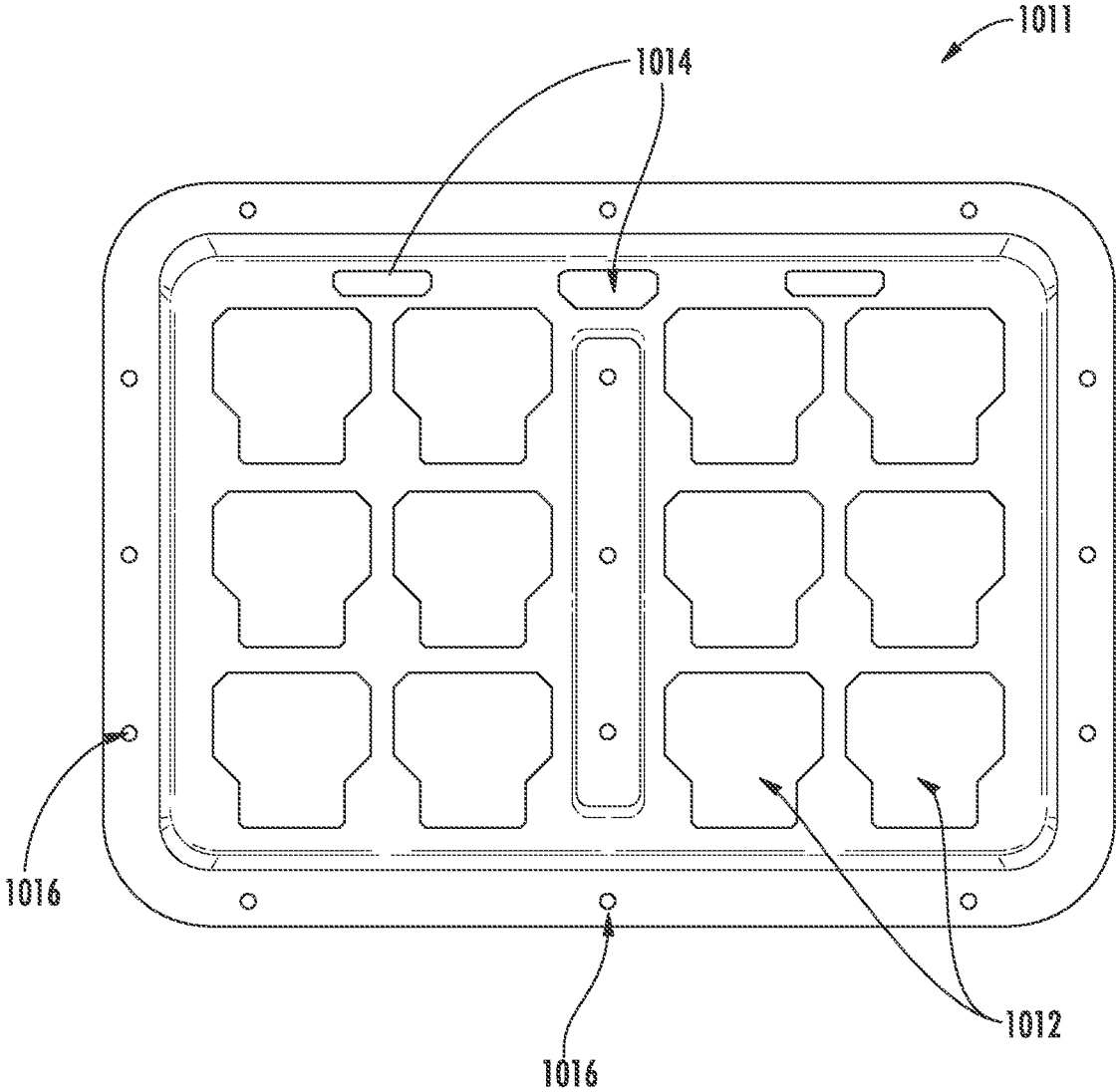


**FIG. 101**



FIG. 102

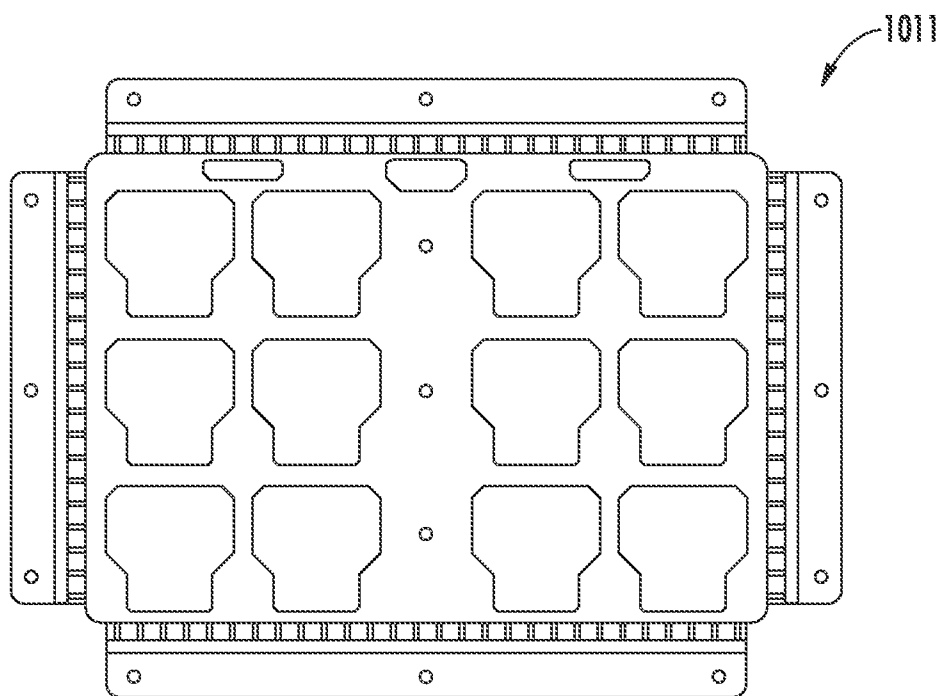
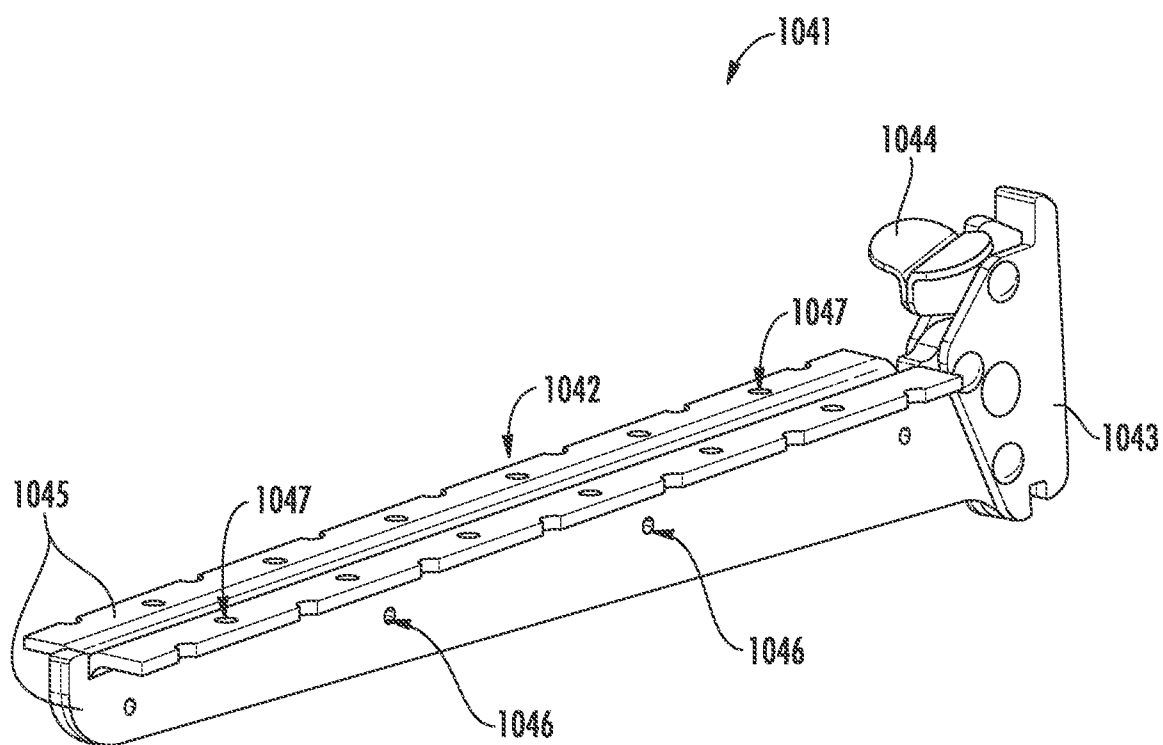


FIG. 103



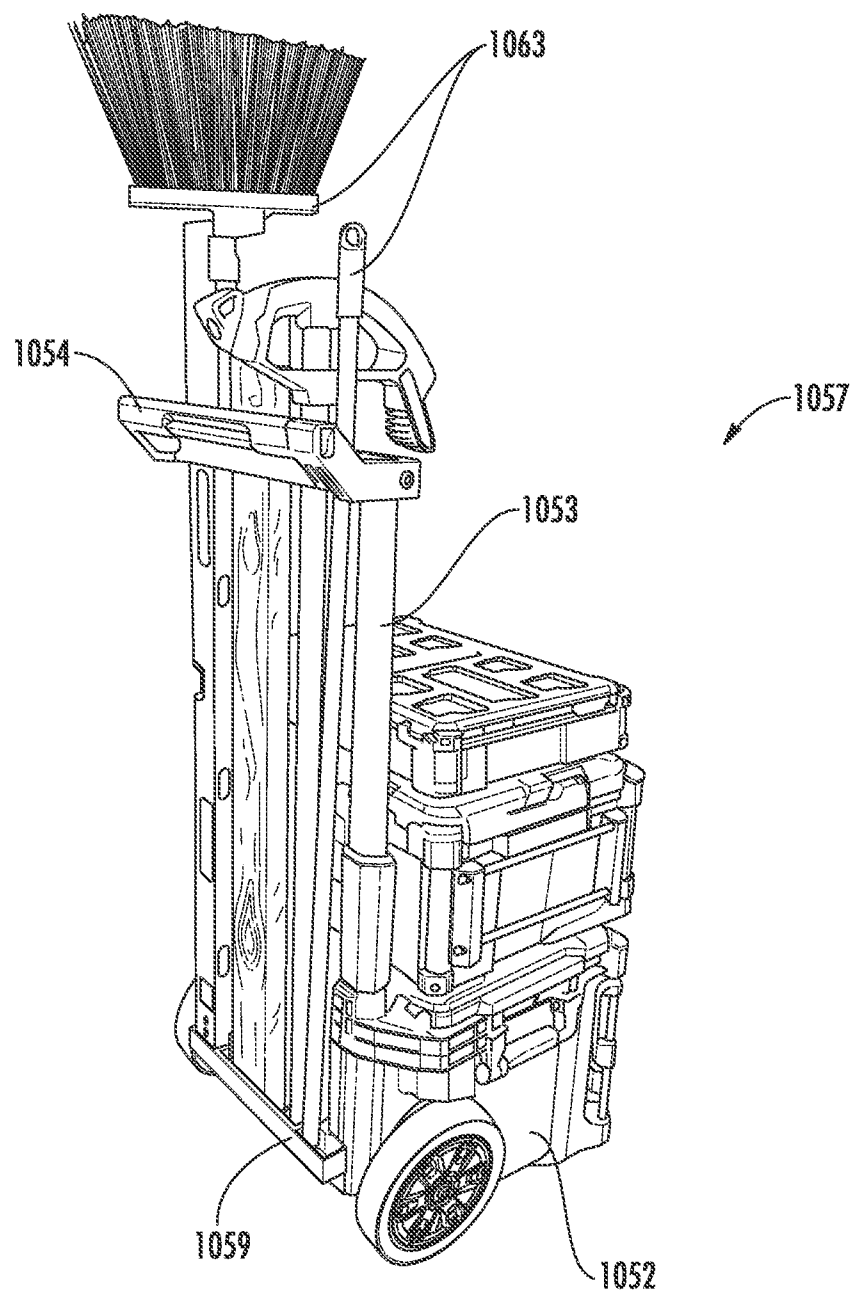


**FIG. 105**

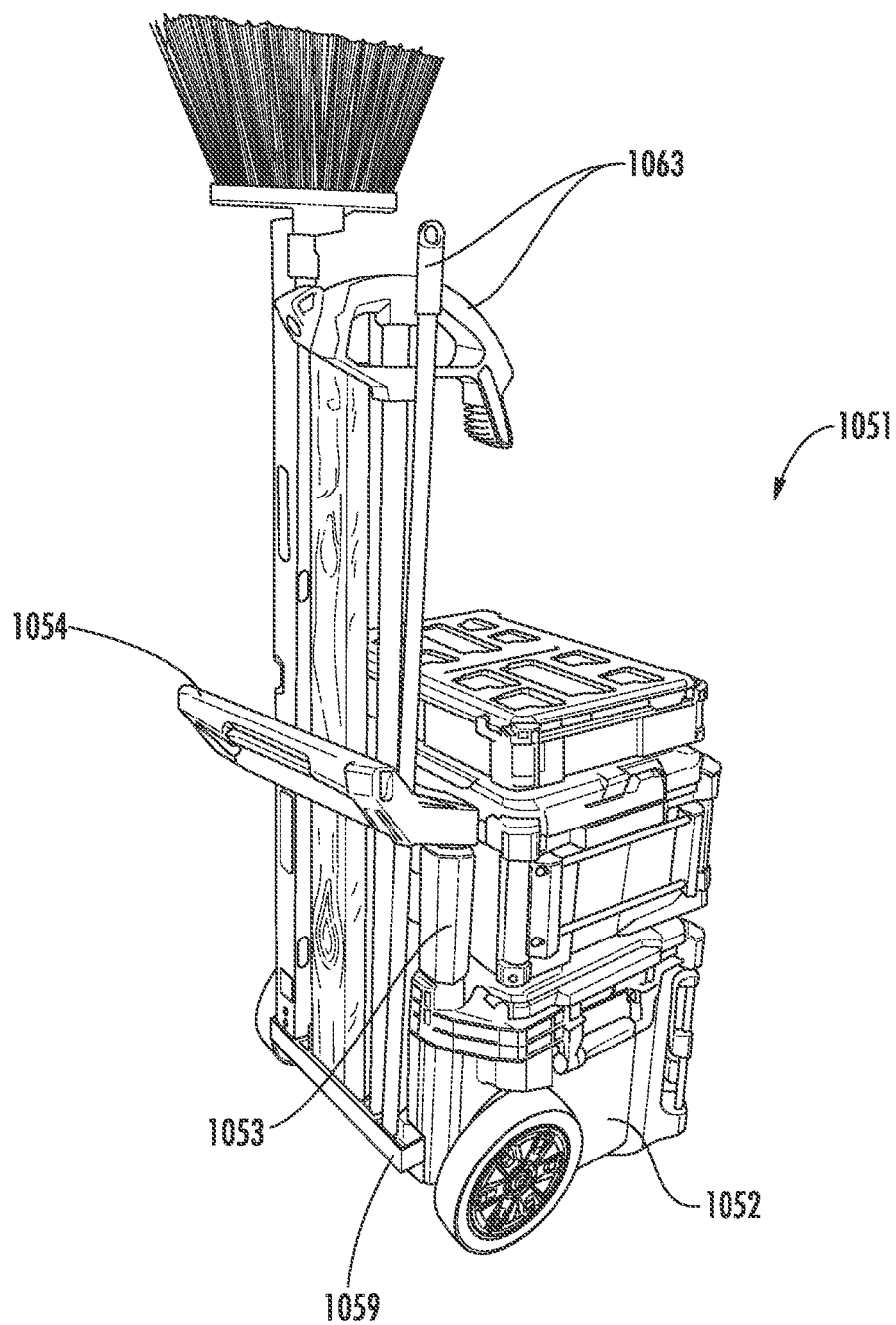


FIG. 106

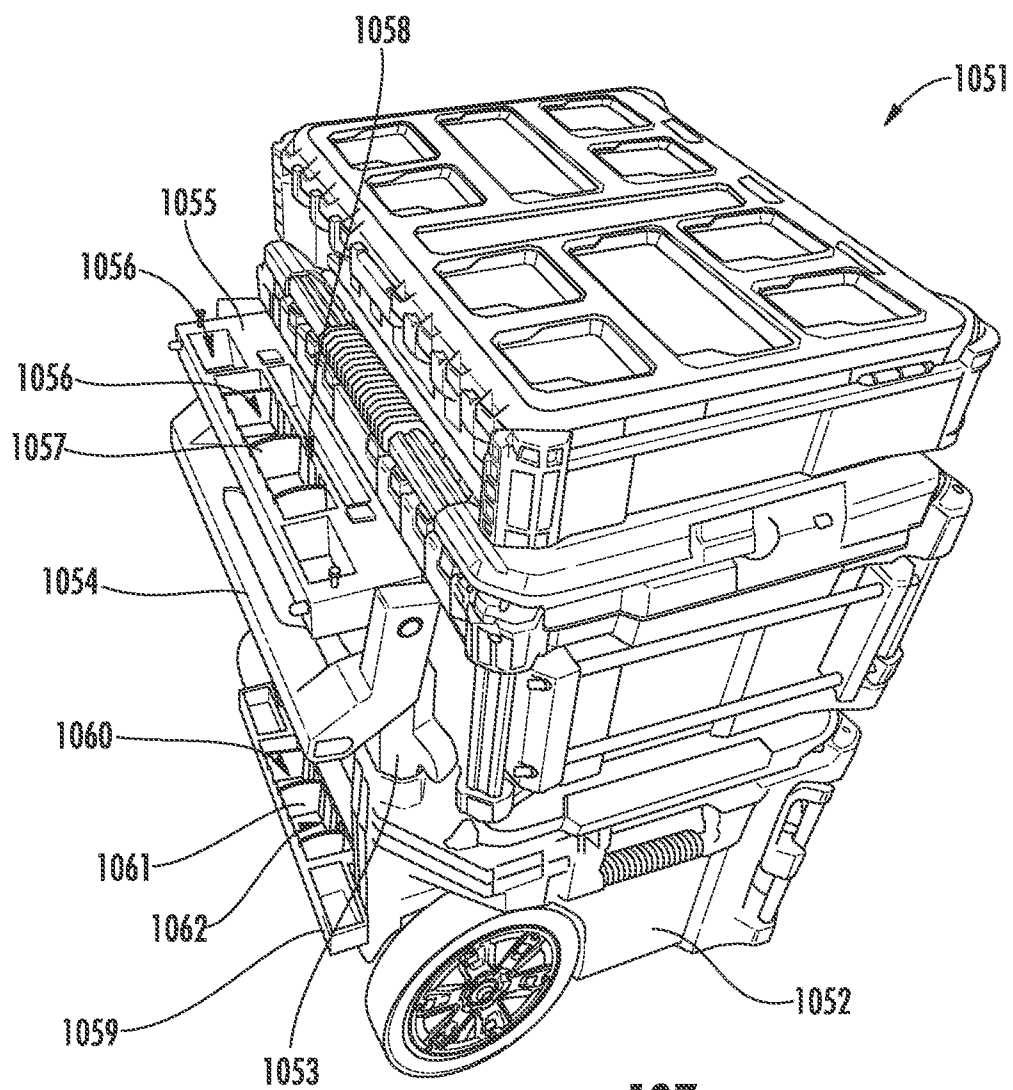
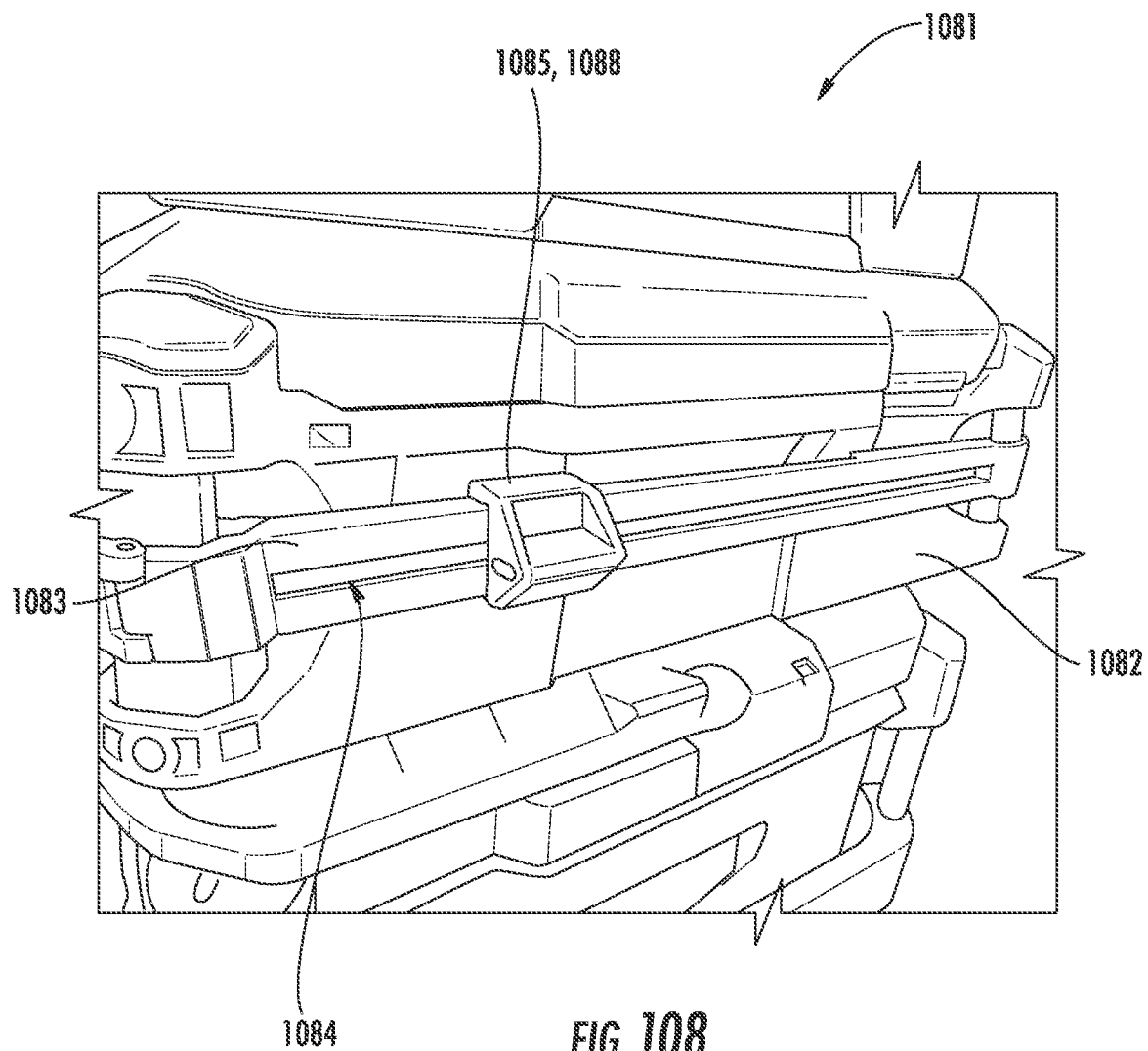


FIG. 107



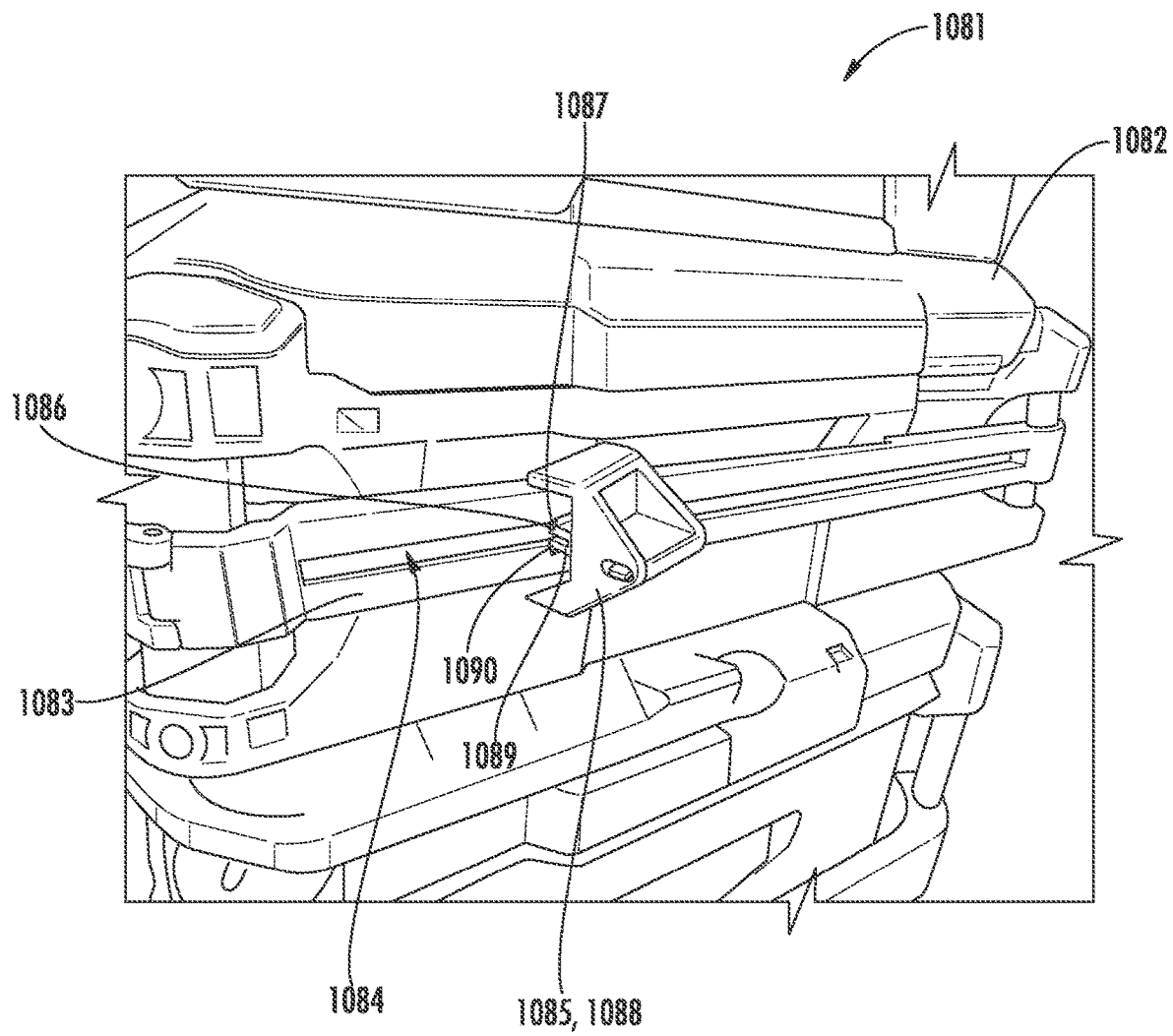


FIG. 109

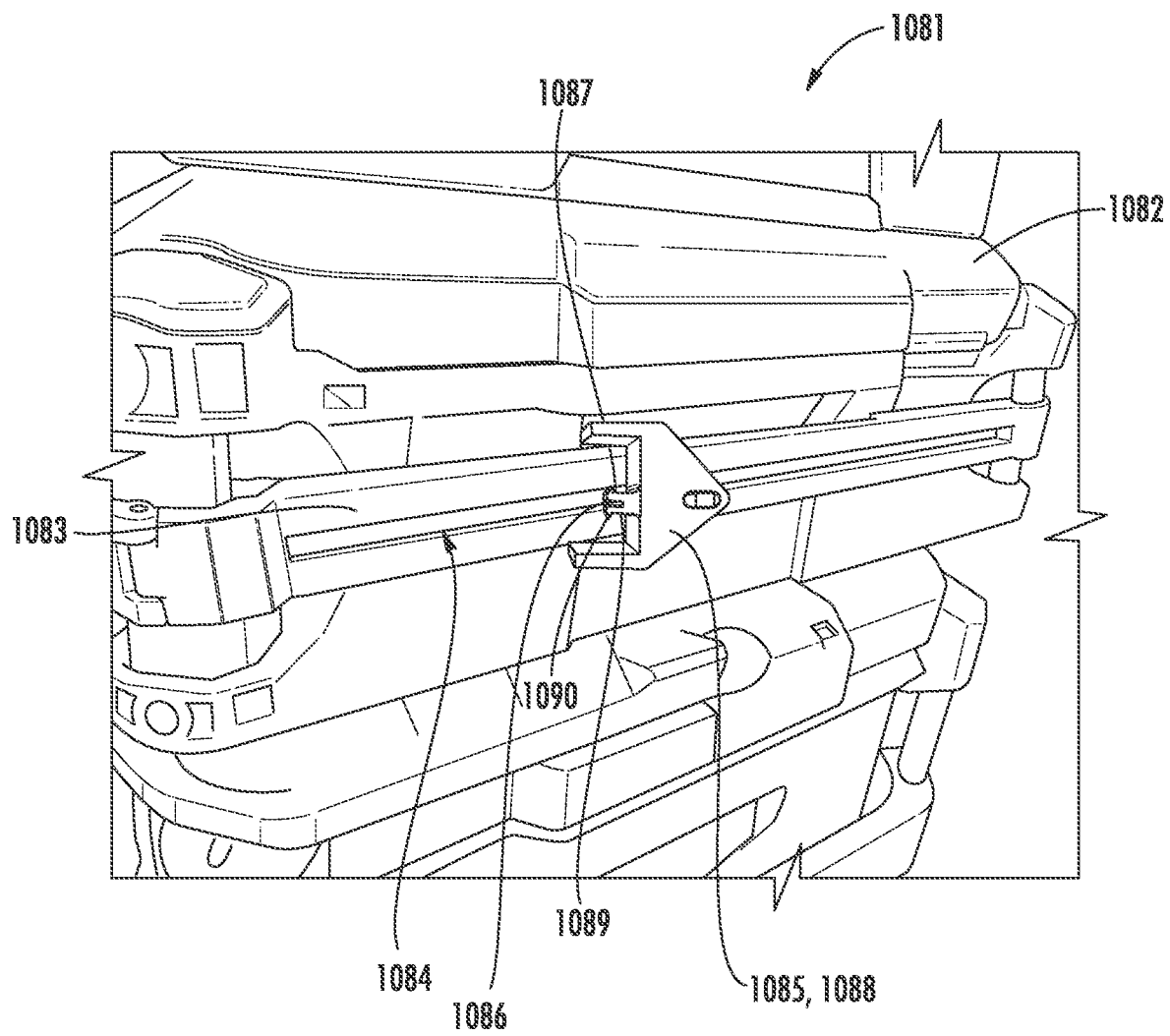


FIG. 110

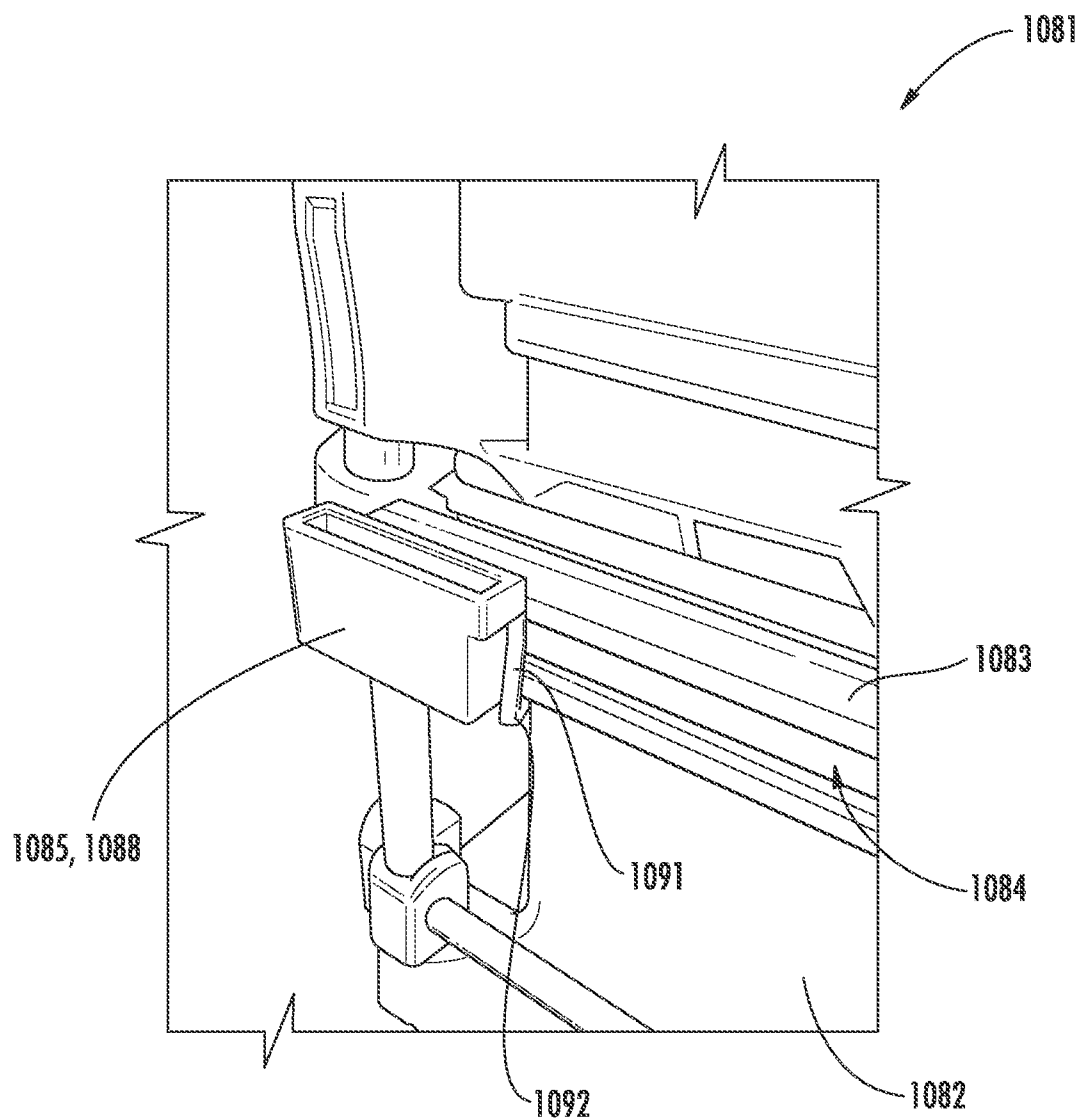


**FIG. 111**

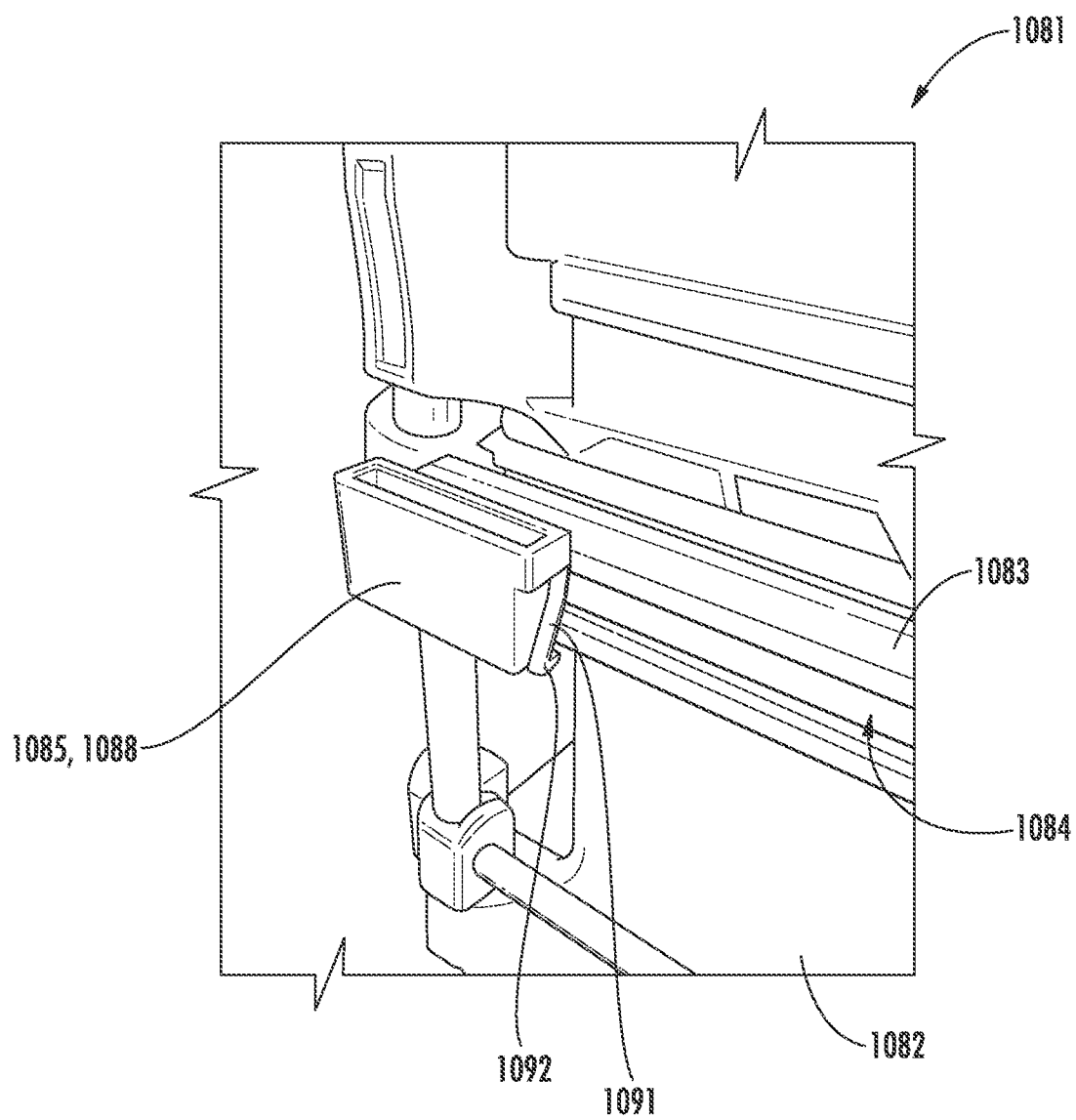


FIG. 112

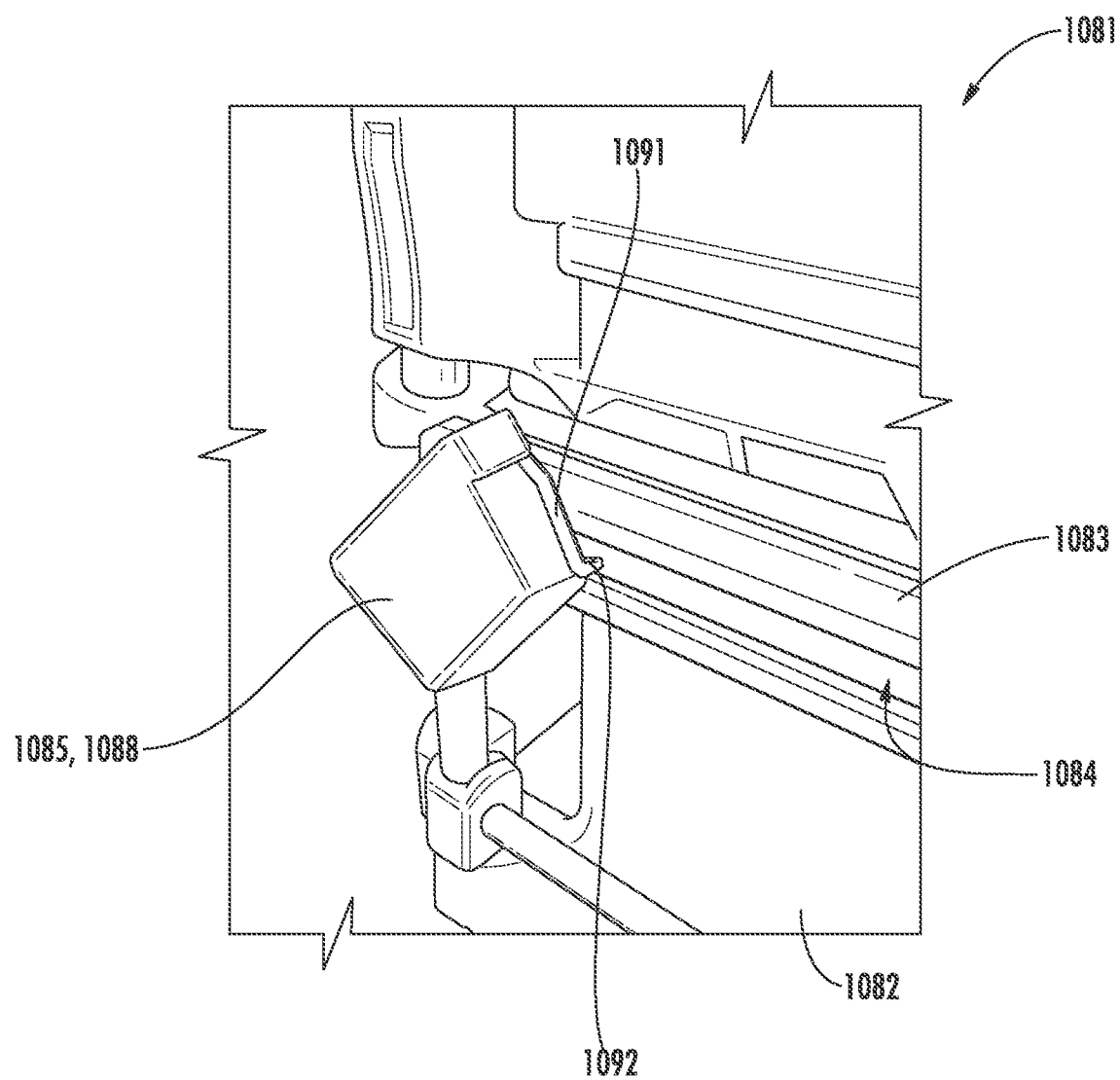


**FIG. 113**

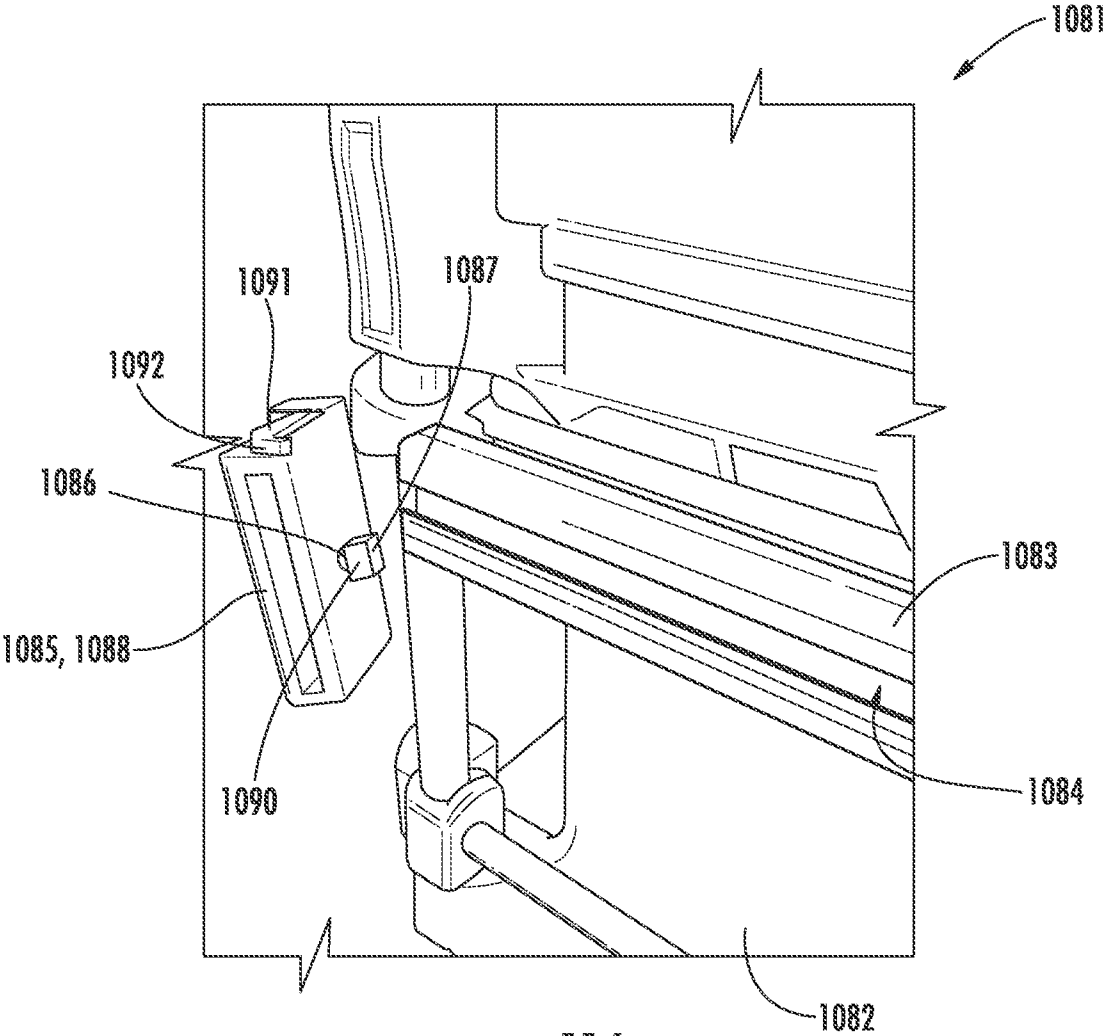


**FIG. 114**

## STORAGE DEVICE SYSTEM

### CROSS-REFERENCE TO RELATED PATENT APPLICATION

**[0001]** This application is a continuation of International Application No. PCT/US2018/044629, filed Jul. 31, 2018, which claims priority to U.S. Provisional Patent Application No. 62/538,860, filed Jul. 31, 2017, and to U.S. Provisional Patent Application No. 62/594,292, filed Dec. 4, 2017, and to U.S. Provisional Patent Application No. 62/608,302, filed Dec. 20, 2017, and to U.S. Provisional Patent Application No. 62/609,985, filed Dec. 22, 2017, and to U.S. Provisional Patent Application No. 62/613,263, filed Jan. 3, 2018, and to U.S. Provisional Patent Application No. 62/621,403, filed Jan. 24, 2018, and to U.S. Provisional Patent Application No. 62/634,537, filed Feb. 23, 2018, the entire contents all of which are hereby incorporated by reference in their entirety.

### BACKGROUND

**[0002]** The present invention relates to storage devices, including bags, storage totes, tool boxes and organizers.

**[0003]** Tool storage devices are often used to transport tools and accessories. Tool storage devices include soft-sided storage devices such as a tool bags, and rigid storage devices such as tool boxes and organizers. Soft-sided storage devices include walls made of flexible material and typically have a bottom made of a rigid material. Rigid storage devices include a rigid base and a rigid cover coupled thereto. The rigid base may include dividers and storage compartments for storing and organizing tools and accessories.

### BRIEF DESCRIPTION OF THE DRAWINGS

**[0004]** FIG. 1 is a perspective view of a storage device system including a soft-sided storage device coupled to a rigid storage device.

**[0005]** FIG. 2 is a perspective view of the soft-sided storage device of FIG. 1.

**[0006]** FIG. 3 is a bottom perspective view of the soft-sided storage device of FIG. 2.

**[0007]** FIG. 4 is another bottom perspective view of the soft-sided storage device of FIG. 2.

**[0008]** FIG. 5 is a top perspective view of the rigid storage device of FIG. 1.

**[0009]** FIG. 6 is a top view of the rigid storage device of FIG. 5.

**[0010]** FIG. 7 is an enlarged cross-sectional view of a portion of the storage device system of FIG. 1, illustrating a bottom of the soft-sided storage device disengaged from a top of the rigid storage device.

**[0011]** FIG. 8 is an enlarged cross-sectional view of the portion of the storage device system shown in FIG. 7, illustrating the bottom of the soft-sided storage device engaged with the top of the rigid storage device.

**[0012]** FIG. 9 is an enlarged cross-sectional view of a portion of the storage device system of FIG. 1, illustrating a latch assembly in a locking position.

**[0013]** FIG. 10 is an enlarged cross-sectional view of the portion of the storage device system shown in FIG. 9, illustrating the latch assembly in an unlocking position.

**[0014]** FIG. 11 is a perspective view of the rigid storage device of FIG. 5, illustrating a cover in an open position.

**[0015]** FIG. 12 is a top perspective view of a bin for use with the storage case.

**[0016]** FIG. 13 is a top view of the bin of FIG. 12.

**[0017]** FIG. 14 is a side view of the bin of FIG. 12.

**[0018]** FIG. 15 is a bottom view of the bin of FIG. 12.

**[0019]** FIG. 16 is an exploded perspective view of the bin of FIG. 12.

**[0020]** FIG. 17 illustrates two relatively short bins stacked on top of one another.

**[0021]** FIG. 18 illustrates a relatively tall bin.

**[0022]** FIG. 19 is an enlarged view of portions of the two relatively short bins of FIG. 17 stacked together.

**[0023]** FIG. 20 is an enlarged view of a portion of the storage case in the open position.

**[0024]** FIG. 21 is a perspective view of a backpack of the storage device system.

**[0025]** FIG. 22 illustrates an accessory rail usable with the storage device system.

**[0026]** FIG. 23 is a perspective view of a tool storage container according to another embodiment.

**[0027]** FIG. 24 is a perspective view of a tool storage container according to another embodiment.

**[0028]** FIG. 25 is a perspective view of a tool storage container according to another embodiment.

**[0029]** FIG. 26 is a perspective view of a tool storage container according to another embodiment.

**[0030]** FIG. 27 is a perspective view of a tool cart of the storage device system.

**[0031]** FIG. 28 is a perspective view of a cooler according to one embodiment.

**[0032]** FIG. 29 is a perspective view of a tool cart of the storage device system according to another embodiment.

**[0033]** FIG. 30 is a perspective view of a shelf unit of the storage device system.

**[0034]** FIG. 31 is an enlarged perspective view of a portion of the shelf unit of FIG. 30.

**[0035]** FIG. 32 illustrates a clamping rail usable with the storage device system.

**[0036]** FIGS. 33A-33F illustrate a tool storage container according to another embodiment.

**[0037]** FIG. 34 illustrates a tool storage container according to another embodiment.

**[0038]** FIG. 35 illustrates a tool storage container according to another embodiment.

**[0039]** FIG. 36 illustrates a tool storage container according to another embodiment.

**[0040]** FIG. 37 illustrates a cart for use with tool storage containers.

**[0041]** FIG. 38 is an alternative view of the cart of FIG. 37.

**[0042]** FIG. 39 illustrates an embodiment of a tool storage container having a wheel lock.

**[0043]** FIG. 40 illustrates an alternative embodiment of a tool storage container having a wheel lock.

**[0044]** FIG. 41 illustrates a side mounted cleat for a modular storage box.

**[0045]** FIG. 42 illustrates toolbox or tool storage container that can be converted to a cooler.

**[0046]** FIG. 43 illustrates a soft sided back that can be mounted to a side (e.g., front side) of a storage box or tool storage container.

**[0047]** FIG. 44 illustrates a workstation for use with tool storage devices.

**[0048]** FIG. 45 illustrates a plate that includes cleat receptacles and a latch receptacle.

[0049] FIG. 46 illustrates the plate of FIG. 45 attached to a backpack.

[0050] FIG. 47 illustrates a storage cart/work space that includes plates having cleat receptacles, similar to the cleat receptacles of the plate in FIG. 45.

[0051] FIG. 48 illustrates the cleat receptacles of FIG. 45 integrated with a truck tool box.

[0052] FIG. 49 illustrates the cleat receptacles of FIG. 45 mounted on a wall of the truck bed.

[0053] FIG. 50 illustrates the cleat receptacles of the cleat plate of FIG. 45 mounted to a floor or wall.

[0054] FIG. 51 illustrates a hook having a cleat.

[0055] FIG. 52 illustrates an organizing tray attached to a modular storage box.

[0056] FIG. 53 illustrates soft storage bags (e.g., totes or tool bags) having a hard (plastic) plate on the bottom that allows the soft bag to be secured to the systems described above.

[0057] FIG. 54 illustrates a belt with a cleat receptacle that can receive any tool or bag that has a cleat, such as the cleats discussed above.

[0058] FIG. 55 illustrates that in another embodiment, a surface with retractable/foldable legs has cleat receptacles that can be used to snap a tool box having a cleat to.

[0059] FIG. 56 illustrates the surface of FIG. 55 in a side elevation view.

[0060] FIG. 57 illustrates a modular storage box having a light (e.g., LED) that is mounted to a boss in the lid of the modular storage box.

[0061] FIG. 58 illustrates an adaptor shelf having cleats and cleat receptacles that can be used with storage boxes that do not have cleats and/or cleat receptacles compatible with those discussed above.

[0062] FIG. 59 illustrates the adaptor shelf of FIG. 58 with various items other than storage boxes.

[0063] FIG. 60 illustrates a battery clamp can be used and can compress along the sides of a battery.

[0064] FIG. 61 illustrates a stack lock.

[0065] FIG. 62 illustrates an upper connection portion of the stack lock of FIG. 61.

[0066] FIG. 63 illustrates the stack lock of FIG. 61 with storage boxes disposed thereon.

[0067] FIG. 64 illustrates a lower joint of the stack lock of FIG. 61.

[0068] FIG. 65 illustrates an upper joint of the stack lock of FIG. 61.

[0069] FIG. 66 illustrates a fold-out or slide out work surface has cleats that can be secured to the top of a box having cleat receptacles (e.g., box of FIG. 41) to create a mobile work station.

[0070] FIG. 67 illustrates a device that is used to lock devices with a cleat received in a cleat receptacle in place.

[0071] FIG. 68 illustrates a single cleat that can be used similar to the embodiment of FIG. 67.

[0072] FIG. 69 illustrates an accessory holder that can be mounted to a box, such as the box of FIG. 41.

[0073] FIG. 70 illustrates a plate that includes cleats on the bottom surface (not shown) that mount to the top surface of a box having cleat receptacles (e.g., box of FIG. 41).

[0074] FIG. 71 illustrates a 5-piece crate that can be assembled by the user.

[0075] FIG. 72 illustrates trays including cleats on the bottom of the trays that interact with cleat receptacles on a top or lid of a tool box.

[0076] FIG. 73 illustrates an example tray of FIG. 72.

[0077] FIG. 74 illustrates another example tray of FIG. 72.

[0078] FIG. 75 illustrates the foldable table in the open position.

[0079] FIG. 76 illustrates the foldable table in the closed position.

[0080] FIG. 77 illustrates an accessory case that secures to the system via a single cleat.

[0081] FIG. 78 illustrates a piece that can convert the top of a tool box to be a seat.

[0082] FIG. 79 illustrates a bin that mounts to the side of a tool box and may attach to the extruded metal supports located at the corners of the box.

[0083] FIG. 80 illustrates a folding crate in the assembled position.

[0084] FIG. 81 illustrates the folding crate of FIG. 80 in the folded position.

[0085] FIG. 82 illustrates a clamp that includes a cleat.

[0086] FIG. 83 illustrates a bag/box/item having a cleat that may be hinged or swiveled to a cleat receptacle on a user's belt such that the item remains upright even when the user bends over.

[0087] FIG. 84 is a side view of a shelving unit.

[0088] FIG. 85 illustrates a separator with pockets that may be used to separate the inside contents of a box.

[0089] FIG. 86 illustrates a table that may be mounted to the side of a modular box and be hinged so that the table may flip up for use or down for storage.

[0090] FIG. 87 illustrates a garbage bag holder that may be mounted to the side of a box and swung down when not in use.

[0091] FIG. 88 illustrates a modular receptacle plate that includes hangers that allow the plate to be hung from the side of a truck, the side of a bucket (e.g., on a bucket lift truck), on a horizontal rail or 2x4, etc.

[0092] FIG. 89 illustrates one or more modular receptacle plates having cleats that may be mounted to a frame that includes a hitch for securing to a hitch receptacle of a truck.

[0093] FIG. 90 illustrates a water cooler (or water bottle) having cleats on the bottom to be secured to a mobile tool box.

[0094] FIG. 91 illustrates a partial bottom perspective view of the water cooler of FIG. 90.

[0095] FIG. 92 illustrates two strap mounting portions (e.g., one with a fixed end, one with a lockable end; two lockable ends) may have cleats that slide into the cleat receptacles.

[0096] FIG. 93 shows a tray closed.

[0097] FIG. 94 shows the tray of FIG. 93 open.

[0098] FIG. 95 illustrates an insert for a box that is configured to hold a combination wrench set (e.g., either fixed or ratcheting).

[0099] FIG. 96 illustrates a top perspective view of a working platform that is attached to the handle of the rolling toolbox (e.g., tool box of FIG. 39).

[0100] FIG. 97 illustrates a side perspective view of the working platform of FIG. 96.

[0101] FIG. 98 illustrates a detailed side perspective view of the working platform of FIG. 96.

[0102] FIG. 99 illustrates a side perspective view of the working platform of FIG. 96 in the storage position.

[0103] FIG. 100 illustrates a top perspective view of the working platform of FIG. 96 in the storage position.

[0104] FIG. 101 illustrates a plate that can be secured in place.

[0105] FIG. 102 illustrates a side elevation view of an alternative embodiment of the plate of FIG. 101.

[0106] FIG. 103 illustrates a top plan view of the plate of FIG. 102.

[0107] FIG. 104 illustrates a modular connection system for a tool storage container to a shelving use.

[0108] FIG. 105 illustrates a top perspective view of a storage container with the telescopic member extended.

[0109] FIG. 106 illustrates a top perspective view of the storage container of FIG. 105 with the telescopic member retracted.

[0110] FIG. 107 illustrates a top perspective view of the storage container of FIG. 105 with the telescopic member retracted and the handle pivoted to the storage position.

[0111] FIG. 108 illustrates a storage container with the accessory attachment insert connected thereto.

[0112] FIG. 109 illustrates the storage container of FIG. 108 with the accessory attachment insert partially removed.

[0113] FIG. 110 illustrates the storage container of FIG. 108 with the accessory attachment insert fully removed.

[0114] FIG. 111 illustrates a storage container with another embodiment of an accessory attachment insert connected thereto.

[0115] FIG. 112 illustrates the storage container of FIG. 111 with a lock lever bent partially away from the storage container.

[0116] FIG. 113 illustrates the storage container of FIG. 111 with the accessory attachment insert twisted in a removal process.

[0117] FIG. 114 illustrates the storage container of FIG. 111 with the accessory attachment insert fully removed.

[0118] Before any embodiments of the invention are explained in detail, it is to be understood that the invention is not limited in its application to the details of construction and the arrangement of components set forth in the following description or illustrated in the following drawings. The invention is capable of other embodiments and of being practiced or of being carried out in various ways. Also, it is to be understood that the phraseology and terminology used herein is for the purpose of description and should not be regarded as limiting.

#### DETAILED DESCRIPTION OF EMBODIMENTS

[0119] FIG. 1 illustrates a storage device system 10 including a soft-sided storage device 14, such as soft-sided bag, removably coupled to a hard-sided or rigid storage device 18, such as a rigid storage case (e.g., a rigid tool box or organizer).

[0120] With reference to FIGS. 2-4, the bag 14 includes a rigid or hard bottom member 22 (e.g., thermoform plastic, injection molded, etc.) and flexible sidewalls 26 cooperating to define a storage compartment 30. The sidewalls 26 define an open top 34 for access to the storage compartment 30. A handle 38 is connected between opposite sidewalls 26 and is engageable by a user to carry the bag 14.

[0121] One or more interface or connection projections 46 are provided on the bottom member 22. In the illustrated embodiment, each projection 46 extends from a bottom surface 50 of the bottom member 22 and is configured to cooperate with a connection recess 54 (FIGS. 5-6) on the storage case 18 to interface and connect the bag 14 to the storage case 18. In the illustrated embodiment, each projec-

tion 46 is formed integrally with the bottom member 22, for example, in a thermoforming process. Each projection 46 has a channel 58 on each side of the projection 46 extending parallel to a longitudinal axis A of the bottom member 22, as best shown in FIG. 4. Each channel 58 has a front, open end 62 and a back, closed end 66 along the axis A. Each projection 46 has a planar surface 70 with a generally rectangular shape. In other embodiments, the planar surface 70 may be another shape, e.g., circular, triangular, etc. In the illustrated embodiment, there are six projections 46 arranged in three rows of two along the axis A. In other embodiments, the bag 14 may include fewer or more projections 46, and/or the projections 46 may be arranged in different patterns. The projections 46 are arranged such that the bag 14 can be supported on a surface by the projections 46 through contact with the planar surfaces 70.

[0122] The bag 14 further includes a latch assembly 78 including a latch member 82, as shown in FIG. 3. The latch assembly 78 is supported by the bottom member 22 within a latch passage 86 defined in the bottom member 22. The latch member 82 includes a grip portion 90 and an interference portion 94. The latch member 82 is slidably movable along an axis perpendicular to the longitudinal axis A of the bottom member 22 within the latch passage 86. The interference portion 94 selectively protrudes from the latch passage 86 through a slot 98 defined in the bottom surface 50 of the bottom member 22. The interference portion 94 has a tapered surface 102 (FIG. 7) at a distal end thereof. The latch member 82 is movable between a first or locking position (FIG. 9) in which the interference portion 94 extends through the slot 98, and a second or unlocking position (FIG. 10) in which the interference portion 94 is retracted into the latch passage 86 and does not extend through the slot 98. The latch assembly 78 further includes a biasing member 106 (e.g., a compression spring) arranged to bias the latch member 82 into the locking position (FIG. 9). The latch member 82 may be urged against the biasing member 106 to the unlocking position (FIG. 10) by pushing on the grip portion 90. In the locking position, the interference portion 94 does not extend beyond the planar surfaces 70 of the projections 46.

[0123] With reference to FIGS. 5 and 6, the storage case 18 includes a base 114 and a top or cover 118. The cover 118 is movably coupled to the base 114 between a closed position (FIG. 5) and an open position (FIG. 11). In the illustrated embodiment, the cover 118 is pivotally coupled to the base 114 by a hinge 122. The cover 118 includes cover latches 126 to releasably secure the cover 118 in the closed position. The storage case 18 also includes a side handle 130 to facilitate independently carrying the storage case 18.

[0124] With continued reference to FIGS. 5 and 6, a top surface 134 of the cover 118 defines the connection recesses 54 that receive and cooperate with the projections 46. In the illustrated embodiment, the connection recesses 54 include two rows of two small recesses 54a corresponding to two rows of two projections 46 and one large recess 54b corresponding to a row of two projections 46. In other embodiments, the cover 118 may include different numbers of patterns of recesses 54, depending on the arrangement of the projections 46 on the bag 14. When the projections 46 are received in the connection recesses 54, the bottom surface 50 of the bottom member 22 is arranged to contact and be supported by the top surface 134 of the cover 118.

[0125] An interference projection or wing 142 extends into each connection recess 54 parallel to a longitudinal axis B of the cover 118 on opposite sides of the connection recess 54 from one end of the connection recess 54. Each of the wings 142 corresponds to and is configured to cooperate with a corresponding one of the channels 58 of the projection 46 received by the respective connection recess 54. Each of the wings 142 has a length that extends approximately half the connection recess 54 to define a first portion 146 of the connection recess 54 and a second portion 150 opposite the wings 142, which remains open. In some embodiments, each of the wings 142 has a length that extends less than half the connection recess 54. The second portion 150 of each connection recess 54 is sized to receive one of the projections 46 generally perpendicular to the longitudinal axis B into a first, disconnected position (FIG. 7). In the disconnected position, the projections 46 are oriented within the connection recesses 54 such that the open ends 62 of the channels 58 are nearer to the wings 142 than the closed ends 66. Once in the disconnected position, the bottom member 22 may be slid relative to the cover 118 parallel the longitudinal axes A, B in a first direction 152 toward the wings 142 such that the wings 142 are received within the channels 58 in a second, interfaced or connected position (FIG. 8). The wings 142 and the projections 46 engage within the connection recesses 54 to interface and connect the bottom member 22 with the cover 118 and prevent disconnection of the bottom member 22 from the cover 118, except in a second direction 154 opposite the first direction 152 and generally parallel to the longitudinal axes A, B. The wings 142 and the channels 58 engage one another perpendicular to the longitudinal axes A, B (i.e., perpendicular to the top surface 134 of the cover 118 and the bottom surface 50 of the bottom member 22) when carrying the bag 14 and the storage case 18 as a single unit via the handle 38 of the bag 14 (see FIG. 1).

[0126] With continued reference to FIGS. 5 and 6, the top surface 134 of the cover 118 further defines an interference or locking aperture 158. In the illustrated embodiment, the locking aperture 158 is located at one end of the cover 118. The end of the cover 118 has a sloped surface 162 adjacent the locking aperture 158. The locking aperture 158 is elongate and extends transverse to the longitudinal axis B of the cover 118 parallel to a short side of the cover 118. The locking aperture 158 is located such that when the bottom member 22 and the cover 118 are in the connected position, the locking aperture 158 is aligned with the interference portion 94 of the latch member 82. The locking aperture 158 is sized to receive and engage the interference portion 94 when the latch member 82 is in the locking position (FIG. 9). When the interference portion 94 is engaged with the locking aperture 158 in the locking position, the latch member 82 obstructs movement of the bottom member 22 relative to the cover 118 from the connected position to the disconnected position in the second direction 154, thereby inhibiting disconnection of the bag 14 from the storage case 18. In particular, the interference portion 94 interferes with the cover 118 within the locking aperture 158 such that the wings 142 cannot be removed from the channels 58 of the projections 46 in the second direction 154.

[0127] A user may couple the soft-sided bag 14 to the rigid storage case 18 to carry as a coupled unit by first, inserting the connection projections 46 of the bottom member 22 in a direction perpendicular to the cover 118 and into the second

portion 150 of the connection recesses 54 of the cover 118 such that the cover 118 supports the bag 14 in the disconnected position (FIG. 7). The bottom member 22 and the cover 118 are oriented such their longitudinal axes A, B are parallel, and the latch assembly 78 is nearest the end of the cover 118 defining the locking aperture 158. The bag 14 (i.e., the bottom member 22) is then manually slid in the first direction 152 such that the wings 142 are received in the channels 58 through the open end 62 of the channels 58 until the wings 142 abut the closed end 66 of the channels 58 in the connected position (FIG. 8). As the bottom member 22 slides relative to the cover 118 from the disconnected position to the connected position, the latch member 82, which is biased into the locking position (FIGS. 7 and 9) by the biasing member 106, is urged into the unlocking position (FIG. 8) by the sloped surface 162 of the cover 118 until aligned with the locking aperture 158 when in the connected position. The biasing member 106 then automatically biases the latch member 82 back into the locking position (FIG. 9) in which the interference portion 94 is received in and engages the locking aperture 158. Alternatively, a user may urge the latch member 82 into the unlocking position (FIG. 10) by pushing on the grip portion 90 upwardly against the biasing force of the biasing member 106. The user holds the latch member 82 in the unlocking position while sliding the bag 14 in the first direction 152 from the disconnected position to the connected position. Once in the connected position (FIG. 10), the user may release the latch member 82, thereby allowing the latch member 82 to be biased into the locking position where the interference portion 94 is received in and engages the locking aperture 158. The interference portion 94 of the latch member 82 extends into the locking aperture, thereby inhibiting relative movement of the bag 14 and the storage case 18 in the second direction 154 parallel to the longitudinal axes A, B. Accordingly, the latch assembly 78 and the locking aperture 158 cooperate to secure the soft-sided bag 14 and the rigid storage case 18 in the connected position as a unit to be carried by the handle 38 of the bag 14. The handle 38 is positioned such that when the bag 14 and the storage case 18 are coupled as a unit, the handle 38 is above a center of gravity of the coupled unit.

[0128] When the soft-sided bag 14 and the rigid storage case 18 are coupled together, the user may quickly decouple them to carry or access each of the storage devices 14, 18 separately. The user first urges the latch member 82 into the unlocking position (FIG. 10) by pushing on the grip portion 90 upwardly against the biasing force of the biasing member 106. While holding the latch member 82 in the unlocking position, the user then slides the bag 14 relative to the cover 118 in the second direction 154 along the longitudinal axes A, B from the connected position (FIG. 8) to the disconnected position (FIG. 7). The wings 142 disengage from the channels 58 and the projections 46 are moved into the second portion 150 of the connection recesses 54, allowing the bag 14 to be disconnected in a direction away from and perpendicular to the top surface 134 of the cover 118.

[0129] The latch assembly 78 is dimensioned and constructed to be movable between the locking and unlocking positions to couple the bag 14 to the cover 118. The latch assembly 78 does not interfere with opening the storage case 18 so that the storage case 18 on the bottom will still be able to be opened with the soft-sided bag 14 attached to the cover 118.

[0130] It should be understood that, in other constructions, multiple latch assemblies 78 and corresponding locking apertures 158 may be provided on the bag 14 and the storage case 18. Such an arrangement may, for example, provide an increased connection between the storage devices 14, 18, balance or reduce the load on a given latch assembly, etc.

[0131] It should also be understood that, in other constructions, the latch assembly 78 and the locking aperture 158 may be reversed (e.g., the movable latch member 82 and the biasing member 106 may be supported on the cover 118 or the base 114 of the storage case 18, and the locking aperture 158 may be defined by the bottom member 22 of the bag 14). Additionally or alternatively, the relative locations of the projections 46 and the recesses 54 may be reversed (e.g., the projections 46 may extend from the cover 118 of the storage case 18, and the recesses 54 may be formed in the bottom member 22 of the soft-sided bag 14).

[0132] As shown in FIG. 1, the storage devices 14, 18 have approximately the same perimeter dimensions. There is one pair of latch assembly 78 and locking aperture 158 at one end of the storage devices 14, 18. However, in alternate embodiments, the storage devices 14, 18 may have different perimeter dimensions (e.g., the bag 14 is shorter than the storage case 18). In such embodiments, the bag 14 may have fewer projections 46 arranged such that the bag 14 may be connected to the storage case 18 in substantially the same manner as described above, except where one or more of the connection recesses 54 in the cover 118 does not receive a projection 46. Additionally or alternatively, in some embodiments multiple soft-sided bags 14 having smaller dimensions than the storage case 18 may be simultaneously connected to the storage case 18.

[0133] As shown in FIG. 11, a plurality of bins 170A, 170B, or inserts, are positioned within the base 114. The base 114 includes a bottom wall 172 and sidewalls 174 extending from the bottom wall defining an interior 176 with a depth D. The bins 170A, 170B are independently removable from the storage case 18 when the storage case 18 is open (i.e., the cover 118 is in the open position), as shown in FIG. 11. The bins 170A, 170B include relatively tall, or deep, bins 170A (FIG. 18) and relatively short, or shallow, bins 170B (FIGS. 12-17). The illustrated bins 170A, 170B are generally composed of plastic, but may alternatively be made of other materials. Each of the illustrated bins 170A, 170B is generally square in shape when viewed from above (FIG. 13). In other embodiments, the bins 170A, 170B may have other shapes (e.g., triangular, octagonal, circular, etc.). In the illustrated embodiment, the bins 170A, 170B are arranged within the base 114 as a grid of six (i.e., three rows of two). In other embodiments, the base 114 may be shaped and sized to receive a larger or smaller number of bins, and/or the bins 170A, 170B may be arranged within the base 114 in other patterns.

[0134] FIGS. 12-16 illustrate one of the relatively short bins 170B in detail. The bin 170B includes a bottom wall 186 and four sidewalls 190 extending generally perpendicularly from the bottom wall 186. The bottom wall 186 and the sidewalls 190 define a storage recess or space 194. Each of the relatively short bins 170B has a height HB (FIG. 14).

[0135] The bin 170B also includes ledges 198 formed on an inner surface 202 of the bin 170B at each corner 206 between adjacent sidewalls 190. The ledges 198 are positioned at a depth below a top edge 210 of the sidewalls 190 and a height above the bottom wall 186. In the illustrated

embodiment, the ledges 198 are located at a depth that is approximately a quarter of the height HB below the top edge 210. In some embodiments the ledge 198 may extend around the perimeter of the sidewalls 190. The ledges 198 are configured to engage and support another bin when, for example, two relatively short bins 170B are stacked together, as best shown in FIG. 17. The bottom wall 186 at each corner 206 of the upper bin 170B is supported on each ledge 198 of the lower bin 170B. Each of the sidewalls 190 includes a lower, first portion 218 and an upper, second portion 222 that are stepped such that the first portion 218 has a smaller outer dimension than the second portion 222. As such, the sidewalls 190 of the upper bin 170B are partially received in the storage space 194 of the lower bin 170B up to the ledges 198 of the lower bin 170B. When stacked, the two relatively short bins 170B have a stacked height SH (FIG. 17). In other embodiments, more than two bins 170B may be stacked. Due to the top bin 170B being partially received in the bottom bin 170B, the stacked height SH is less than the total height of the two bins 170B (i.e., two times the height HB of the bins 170B).

[0136] The bin 170B further includes ribs 230 formed on an outer surface 234 of the bin 170B at the corners 206 between adjacent sidewalls 190. Each of the ribs 230 protrudes outwardly from the outer surface 234 and extends down from the top edge 210 toward the bottom wall 186. In the illustrated embodiment, each of the corners 206 has two ribs 230. In some embodiments, ribs may be formed on the sidewalls 190 between the corners 206 in addition to or in place of the ribs 230 formed at the corners 206.

[0137] As best shown in FIG. 19, when two or more bins 170B are stacked, the ribs 230 protrude from the outer surface 234 of the upper bin 170B to contact and engage the inner surface 202 of the lower bin 170B to space apart the sidewalls 190 of the stacked bins 170B. Accordingly, the ribs 230 help maintain a space or gap 238 between the stacked bins 170B for airflow, thereby inhibiting the stacked bins 170B from getting stuck together due to vacuum effects. In other words, the gap 238 provides fluid communication between a cavity formed between the inner surface 202 of the lower bin 170B and the outer surface 234 of the bin 170B below the ledge 198 of the lower bin 170B and atmosphere, thereby inhibiting a vacuum from forming when the bins 170B are stacked.

[0138] In some embodiments, such as the illustrated embodiment, the bin 170B includes a track 242 formed on the inner surface 202 of the bin 170B, as best shown in FIG. 16. The track 242 extends partially along two opposing sidewalls 190 and along the bottom wall 186. The track 242 is configured to removably receive a dividing wall 246, or partition, for dividing the storage space 194 into separate compartments. The illustrated dividing wall 246 splits the storage space 194 in half. In other embodiments, the track 242 and the dividing wall 246 may be positioned to split the storage space 194 into unequally sized compartments, or the bin 170B may include multiple tracks for receiving multiple dividing walls. In some embodiments, the track 242 and the dividing wall 246 may be omitted. In the illustrated embodiment, the height of the dividing wall 246 inhibits a bin 170B from being stacked on a bin 170B with a dividing wall 246. In other embodiments, the dividing wall 246 may have a height that does not interfere with stacking the bins 170B.

[0139] FIG. 18 illustrates one of the relatively tall bins 170A. The relatively tall bin 170A is substantially similar to

the relatively short bins 170B. However, the relatively tall bin 170A has a height  $H_A$  greater than the height  $H_B$  of the relatively short bin 170B. The stacked height  $SH$  of two relatively short bins 170B, when stacked together, is generally equal to the height  $H_A$  of the relatively tall bin 170A. In addition, the height  $H_B$  of the one relatively tall bin 170A and the stacked height  $SH$  of two relatively short bins 170B stacked together are each generally equal to the height or depth  $D$  of the base 114 of the storage device 18.

[0140] As best shown in FIG. 20, a user may remove an upper bin of two stacked relatively short bins 170B within the base 114 of the storage case 18 to allow access to the storage space 194 of the lower bin 170B. Accordingly, the stacked bins 170B within the storage device 18 provide additional storage and organizing space that can be easily reconfigured and arranged as necessary.

[0141] Referring to FIG. 21, in some embodiments, the storage device system 10 further includes a backpack 310 with a rigid base 314 and first and second flexible shoulder straps 318, 322 coupled to the base 314. The base 310 is configured to extend along a user's back when the shoulder straps 318, 322 extend over the user's shoulders. The length of each shoulder strap 318, 322 is preferably adjustable to allow the user to position the base 314 in a comfortable position along the user's back. In the illustrated embodiment, the backpack 310 also includes waist belt 326 coupled to the base 314 proximate a bottom end 330 of the base 314 and a handle 334 extending from a top end 338 of the base 314.

[0142] With continued reference to FIG. 21, a generally planar face 340 defines a rear surface of the base 314 that is oriented rearward when the backpack 310 is worn by the user. The base 314 defines a longitudinal axis  $C$  extending centrally through the top and bottom ends 338, 330. The illustrated base 314 is rectangular and includes a length 342 measured parallel to the longitudinal axis  $C$  and a width 346 measured perpendicular to the axis  $C$ . The length 342 is longer than the width 346 so as to generally correspond with the shape of the user's back.

[0143] The base 314 further includes an attachment interface 350 for receiving and removably coupling a tool storage container 352 to the base 314. Referring to FIG. 25, the illustrated tool storage container 352 includes a rigid body 356 defining a longitudinal axis 356 and a rigid lid 360 pivotally coupled to the body 356 (e.g., by a hinge). The illustrated attachment interface 350 also allows other tool storage containers of the storage device system 10 to be removably and interchangeably coupled to the base 314. For example, the bag 14 and the storage case 18 may be coupled to the base 314. The configuration of the base 314 advantageously allows the backpack 310 to be used to interchangeably carry a variety of different tool storage containers in a hands-free manner.

[0144] The attachment interface 350 on the base 314 includes a plurality of connection recesses 54—including small connection recesses 54a and large connection recesses 54b—like those on the cover 118 of the storage case 18 described above with reference to FIGS. 5 and 6. An interference projection or wing 142 extends into each connection recess 54 parallel to a longitudinal axis  $C$  of the base 314 on opposite sides of the connection recess 54 at one end of the connection recess 54. The attachment interface 350 further includes a plurality of locking apertures 158. In the

illustrated embodiment, the attachment interface 350 includes two locking apertures 158 spaced in the length direction of the base 314.

[0145] The tool storage container 352 includes projections on a bottom surface 364 (FIG. 25) of the body 356, which are like the projections 46 described above with reference to FIGS. 3 and 4. The projections on the tool storage container 352 are receivable within the connection recesses 54 on the base 314, and each of the wings 142 corresponds to and is configured to cooperate with a channel 58 (FIG. 4) of the projection 46 received by the respective connection recess 54. The tool storage container 352 also includes a latch assembly like the latch assembly 78 described above with reference to FIGS. 7-10, with one or more interference portion(s) 94 that are receivable within the locking aperture(s) 158 on the base 314. In the illustrated embodiment, the lid 360 of the tool storage container 352 includes an attachment interface 350' that is substantially identical to the attachment interface 350 on the base 314 (FIG. 25). As such, one or more additional tool storage containers (not shown) can be coupled to the lid 360, such that the one or more additional tool storage containers can also be carried using the backpack 310.

[0146] In use, to couple the tool storage container 352 to the backpack 310, the user positions the bottom surface 364 of the tool storage container 352 adjacent the rear surface 340 of the base 314 and aligns the projections 46 (FIG. 4) with the recesses 54 (FIG. 21) on the base 314. The user then slides the tool storage container 352 relative to the base 314 in a first direction 368, which is perpendicular to the longitudinal axis  $C$  and parallel with the width 346, to attach the tool storage container 352 to the base 314 generally in the manner described above for attaching the bag 14 to the case 18. Likewise, to decouple and remove the tool storage container 352 from the backpack 310, the user disengages the latch assembly 78 by moving the interference portion(s) 94 to the unlocking position in the manner described above. The user then slides the tool storage container 352 relative to the base 314 in a second direction 372 opposite the first direction 368. Once the projections 46 clear the recesses 54, the tool storage container 352 can be freely removed from the backpack 310.

[0147] Referring to FIG. 22, in some embodiments, the storage device system 10 further includes an accessory rail 410 configured for attachment to the attachment interface 350' on the lid 360 of the tool storage container 352 (or any other tool storage container of the system 10 that includes a similar attachment interface). The accessory rail 410 includes a latch assembly 78 with an interference portion 94 that is engageable with any of the locking apertures 158 on the tool storage container 352.

[0148] The accessory rail 410 includes a top side 414 defining a planar clamping surface 418 and a longitudinally-extending slot 422. A variety of different accessories can be coupled to the slot 422. For example, in the illustrated embodiment, a bar clamp 424 is coupled to the slot 422. The bar clamp 424 can thus be used to clamp a workpiece against the clamping surface 418 of the accessory rail 410. A pair of mounting brackets 426 extends downward from the bottom of the accessory rail 410. Each of the mounting brackets 426 is configured to receive one of the wings 142 on the attachment interface 350' when the accessory rail 410 is coupled to the lid 360.

[0149] In use, to couple the accessory rail 410 to the lid 360 of the tool storage container 352, the user aligns the mounting brackets 426 with the wings 142. The user then slides the accessory rail 410 relative to the base lid 360 in a first direction 468 and engages the interference portion 94 with one of the locking apertures 158. Likewise, to decouple and remove the accessory rail 410 from the lid 360, the user disengages the latch assembly 78 by moving the interference portion 94 to the unlocking position. The user then slides the accessory rail 410 relative to the lid 360 in a second direction 472 opposite the first direction 468. Once the mounting brackets 426 clear the wings 142, the rail 410 can be freely removed from the lid 410. The attachment interface 350' allows multiple accessory rails 410 to be attached to the lid 360 at the same time. The tool storage container 352 and accessory rails 410 can thus provide a portable workpiece support system.

[0150] FIG. 23 illustrates a tool storage container 552 according to another embodiment and that is usable with the storage device system 10. Like the tool storage container 352 described above, the tool storage container 552 includes a lid 560 provided with an attachment interface 550. The tool storage container 552 is thinner than the tool storage container 352. In some embodiments, for example, the tool storage container 552 is approximately half the thickness of the tool storage container 352. In some embodiments, the tool storage container 552 defines an overall thickness 570 between about 60 mm and about 70 mm.

[0151] FIG. 24 illustrates a tool storage container 652 according to another embodiment and that is usable with the storage device system 10. The tool storage container 652 is similar to the tool storage container 552 but is approximately half the width of the tool storage container 552. In some embodiments, the tool storage container 652 defines an overall width 672 between about 200 mm and about 300 mm.

[0152] FIG. 26 illustrates a tool storage container 752 according to another embodiment and that is usable with the storage device system 10. Like the tool storage container 352 described above, the tool storage container includes a lid 760 provided with an attachment interface 750. The tool storage container 752 further includes a plurality of drawers 767 that are slidable between an open position 769 projecting from a front side 771 of the storage container 752 and a closed position 773 in which the drawers 767 are generally flush with the front side 771 of the storage container 752. The drawers 767 provide convenient access to the contents of the tool storage container 752, even while other components of the storage device system 10 (e.g., an accessory rail 410, one or more other tool storage containers, etc.) are coupled to the attachment interface 750.

[0153] Referring to FIG. 27, in some embodiments, the storage device system 10 further includes a tool cart 810 with a rigid base 814 having a top side 815 and a bottom side 816 opposite the top side 815. The base 814 is supported on a plurality of wheels 817 adjacent the bottom side 816. The illustrated wheels 817 are rotatable casters coupled to the base 814 proximate each of the four corners of the base 814. A brake 819 is coupled to one of the wheels 817 to secure the tool cart 810 in a desired position. In some embodiments, multiple brakes 819 may be provided for additional security. In addition, other types of wheels 817 may be used, and the wheels 817 may be arranged in any configuration suitable for supporting the base 814 in a stable manner.

[0154] The illustrated base 814 includes a length 842 and a width 846 measured perpendicular to the length 842. The base 814 defines a longitudinal axis D extending centrally through the base 814 in the length direction. The length 842 is longer than the width 846 such that the base 814 has a rectangular shape. The base 814 further includes an attachment interface 850 for receiving and removably coupling a tool storage container (e.g., the tool storage container 352) to the base 814. The illustrated attachment interface 850 also allows other tool storage containers of the storage device system 10 to be removably and interchangeably coupled to the base 814. The configuration of the base 814 advantageously allows the cart 810 to be used to interchangeably support and transport a variety of different tool storage containers.

[0155] The attachment interface 850 includes a plurality of connection recesses 54—including small connection recesses 54a and large connection recesses 54b—like those on the cover 118 of the storage case 18 described above with reference to FIGS. 5 and 6. An interference projection or wing 142 extends into each connection recess 54 parallel to the longitudinal axis D of the base 814 on opposite sides of the connection recess 54 at one end of the connection recess 54. The attachment interface 850 further includes a plurality of locking apertures 158. In the illustrated embodiment, the attachment interface 850 includes two locking apertures 158 spaced in the length direction of the base 814. As described above, the projections on the bottom surface 364 (FIG. 25) of the tool storage container 352 and latch assembly 78 cooperate with the attachment interface 850 to removably couple the tool storage container 352 to the base 814.

[0156] In use, to couple the tool storage container 352 to the tool cart 810, the user first engages the brake 819 to secure the cart 810. Next, the user positions the bottom surface 364 the tool storage container 352 adjacent the top side 815 of the base 814 and aligns the projections 46 (FIG. 4) with the recesses 54 (FIG. 27) on the base 814. The user then slides the tool storage container 352 relative to the base 814 in a first direction 868, which is perpendicular to the longitudinal axis D and generally parallel to the top side 815, to attach the tool storage container 352 to the base 814 generally in the manner described above for attaching the bag 14 to the case 18. The brake 819 inhibits the tool cart 810 from rolling under the force of the user attaching the container 352 to the base 814. Once the container 352 is attached, the user disengages the brake 819 and can then transport the tool storage container 352 by rolling the tool cart 810 along a surface (e.g., the ground).

[0157] Likewise, to decouple and remove the tool storage container 352 from the tool cart 810, the user engages the brake 819, then disengages the latch assembly 78 by moving the interference portion(s) 94 to the unlocking position in the manner described above. The user then slides the tool storage container 352 relative to the base 814 in a second direction 872 opposite the first direction 868. Once the projections 46 clear the recesses 54, the tool storage container 352 can be freely removed from the tool cart 810.

[0158] The cart 810 may be a particularly convenient means for transporting multiple storage containers at the same time. In the illustrated embodiment, a second tool storage container 352b can be coupled to the lid 360 of the tool storage container 352 in the same manner as described above. In particular, the second tool storage container 352b can be slid in the first direction 868 relative to the tool

storage container 352 to attach the second tool storage container 352b to the lid 360 of the tool storage container 352, and the second tool storage container 352b can be slid in the second direction 872 relative to the tool storage container 352 to remove the second tool storage container 352b. Additional tool storage containers 352c, 352d can be further stacked in this manner and securely transported together on the tool cart 810.

[0159] FIG. 28 illustrates a cooler 910 according that is usable with the storage device system 10. The cooler includes a rigid body 914 and a rigid lid 918 coupled to the body 914. The body 914 and the lid 918 are insulated or are made of an insulating material. The lid 918 may be pivotally coupled to the body 914 in some embodiments or alternatively may be removably coupled to the body 914. The cooler 910 includes a plurality of projections (not shown) like the projections 46 described above that allow the cooler 910 to be removably coupled to other components of the storage device system 10. Likewise, the cooler 910 also includes a latch assembly 78.

[0160] Referring to FIG. 29, in some embodiments, the storage device system 10 further includes a tool cart 1010 with a rigid base 1014 having a top side 1015 and a bottom side 1016 opposite the top side 1015. The illustrated base 1014 includes a length 1042 and a width 1046 measured perpendicular to the length 1042. The length 1042 is longer than the width 1046 such that the base 1014 has a rectangular shape. A first end 1047 of the base 1014 extends between the top side 1015 and the bottom side 1016 in the width direction, and a second end 1048 of the base 1014 extends between the top side 1015 and the bottom side 1016 opposite the first end 1047. The base 1014 defines a longitudinal axis E extending centrally through the base 1014 in the length direction, through the first and second ends 1047, 1048.

[0161] In the illustrated embodiment, the base 1014 is supported on first and second wheels 1017a, 1017b adjacent the second end 1048. The cart 1010 includes a handle 1049 extending from the first end 1047. The illustrated handle 1049 is generally U-shaped and includes a grip portion 1049a spanning between two leg portions 1049b. The handle 1049 may be slidable relative to the base 1014 in order to extend or retract the handle 1049.

[0162] The base 1014 further includes an attachment interface 1050 for receiving and removably coupling a tool storage container (e.g., the tool storage container 352) or multiple tool storage containers to the base 1014 generally in the same manner as described above with respect to the tool cart 810 illustrated in FIG. 27.

[0163] Referring to FIG. 30, in some embodiments, the storage device system 10 further includes an adjustable shelf unit 1110. The adjustable shelf unit 1110 includes a frame 1114 and a plurality of shelves 1118 movably coupled to the frame 1114. The shelves 1118 can thus be positioned on the frame 1114 at a variety of different spacings. In the illustrated embodiment, the frame 1114 includes a bottom portion 1122 with a plurality of wheels 1126 (e.g., casters) that support the frame 1114. As such, the frame 1114 is mobile and can be conveniently moved about a job site. In other embodiments, the frame 1114 may be secured to a wall, the interior of a vehicle, or other fixed structures, for example.

[0164] Referring to FIG. 31, each of the shelves 1118 includes an attachment interface 1150 that is compatible with any of the storage containers of the storage device

system 10. Thus, as illustrated in FIG. 30, the tool storage container 352 or any other tool storage container of the system 10 can be removably coupled to any of the shelves 1118. In addition, the shelves 1118 can be spaced such that the lid 360 of the container 352 is openable even while the body 356 of the container 352 remains coupled to the shelf 1118.

[0165] Referring to FIG. 32, in some embodiments, the storage device system 10 further includes two clamp rails 1210 configured for attachment to the attachment interface 350' on the lid 360 of the tool storage container 352 (or any other tool storage container of the system 10 that includes a similar attachment interface). Each clamp rail 1210 includes a latch assembly 78 with an interference portion 94 that is engageable with any of the locking apertures 158 (FIG. 25) on the tool storage container 352.

[0166] Each clamp rail 1210 includes first and second pairs of clamping jaws 1222 located at opposite ends of the clamp rail 410. Each set of clamping jaws 1222 may be adjustable to vary a distance between the individual jaws 1222, or the individual jaws 1222 may be spaced at a fixed spacing. In some embodiments, the individual jaws 1222 may be resiliently deformable to apply a resilient clamping force on a workpiece 1225 (e.g., a 2×4). The clamping jaws 1222 are configured to support the workpiece 1225 above the lid 360 of the container 352. The tool storage container 352 and clamping rails 1210 can thus provide a portable workpiece support system.

[0167] FIGS. 33A-33F illustrate a tool storage container system 3301. The tool storage container system 3301 may include a first mounting rail 3302 and a second mounting rail 3303. In some embodiments, the mounting rails 3302, 3303 may be on a single storage container. In other embodiments, the mounting rails 3302, 3303 may be on separate storage containers. The second mounting rail 3303 may be spaced apart from the first mounting rail 3302. A first clip 3304 may be removably mounted to the first mounting rail 3302. The first clip 3304 may include a first accessory hook 3305. A second clip 3306 may be removably mounted to the second mounting rail 3303. The second clip 3306 may include a second accessory hook 3307. The first and second accessory hooks 3305, 3307 may be facing outwardly from the storage container 3301 to receive an accessory 3308. The accessory 3308 may include a first loop 3309 and a second loop 3310. In such embodiments, the first accessory hook 3305 may be received in the first loop 3309, and the second accessory hook 3307 may be received in the second loop 3310. Some embodiments include the accessory 3308 having a plurality of hooks 3311 for hanging items. The hooks 3311 may be disposed between the mounting rails 3302, 3303 and may also be integrally formed with the loops 3309, 3310 of the accessory 3308. Other embodiments include the accessory 3308 having a storage bin 3312. The storage bin 3312 may be disposed between the mounting rails 3302, 3303 and may also be integrally formed with the loops 3309, 3310 of the accessory 3308. In many embodiments, the first clip 3304 may be resiliently snapped onto the first mounting rail 3302, and the second clip 3306 may be resiliently snapped onto the second mounting rail 3303. The clips 3304, 3306 can be used to attach an extension cord, power cord, or some other length of cord 3313 to the container 3301. The rails can be used to attach other organizers to the tool storage system. The tool storage container system 3301 may include, in some embodiments, a mount 3314 resiliently snapped onto

the first and second mounting rails **3302**, **3303**. In such embodiments, the bin **3312** may be slidably and removably disposed on the mount **3314**.

[0168] FIG. **34** illustrates a tool storage container **400**. The container **400** includes a cabinet **402** that functions as a bulk storage compartment. The cabinet **402** has small shelves or ledges **404** on the side walls will allow users to stack in other organizers **406**. The small shelves/ledges **404** will allow users to add their own full width shelving as needed.

[0169] FIGS. **35** and **36** illustrate open cases **500** and **502** that are attachable to the top of the container **300** (FIGS. **33A-33F**) via clips **504** and allow users bulk storage. An interior ring of elastic or stretchy material **506** allows users to secure items inside of the open case **500**, **502**.

[0170] FIGS. **37** and **38** illustrate a rolling trolley or cart **600** that interact and connect to modular storage system described above. For example, the cart **600** includes recesses **602** that are sized to receive projects **46** (described above) so that the tool storage device **614** is held in position on the cart **600**. The cart includes wheels **604** and a brake **608** that is on a lever. The brake **608** includes a rubber like substance **610** that grips the floor. When the user steps on the brake **608** with their foot **612**, the trolley **600** is prevented from moving so that the tool storage device **614** can be pushed into place.

[0171] FIG. **39** illustrates a tool storage container having a wheel lock. The wheel lock includes a lever **1** that is only accessible when a housing lid **2** is open. The housing lid **2** may include a lock that inhibits access within the housing without a key, key pad entry or the like. Lateral movement of lever **1** causes linkages **3** to move bolt(s) **4** horizontally along their major axis. When lever **1** is laterally moved to one extreme bolt(s) **4** are fully retracted and wheels **5** are free to rotate. When lever **1** is laterally moved to the other extreme bolt(s) **4** are fully extended and engage wheel(s) **5** preventing them from rotating. Preventing the wheel(s) **5** from rotating may provide theft protection and a workplace safety enhancement.

[0172] FIG. **40** illustrates an alternative embodiment of a tool storage container having a wheel lock. In the embodiment of FIG. **40**, the Lever **1** is only accessible when housing lid **2** is open. Vertical movement of lever **1** causes linkages **3** to move bolt(s) **4** vertically along their major axis. When lever **1** is moved vertically to one extreme bolt(s) **4** are fully retracted and wheels **5** are free to rotate. When lever **1** is moved vertically to the other extreme bolt(s) **4** are fully extended and engage wheel(s) **5** preventing them from rotating. Preventing the wheel(s) **5** from rotating may provide theft protection and a workplace safety enhancement. In other embodiments, the activation mechanism (e.g., lever **1**) is placed in other locations within the housing, or allow external access to lever **1**, or functionally similar device, can be envisioned and are included in this disclosure.

[0173] FIG. **41** illustrates a side mounted cleat for a modular storage box. The side mounted cleat includes cleat receptacles and detachable mounts. The detachable mounts removably couple the cleat to mounting rails of the storage box. The cleat receptacles received corresponding feet or cleats to couple compatible items to the side mounted clean and the storage box. The detachable mount can be a clip, a strap, a snap, snapped on, etc. The side mounted cleats allow items compatible with the modular storage to be mounted onto the sides of boxes. The storage container **4101** may include a first mounting rail **4102** and a second mounting rail **4103**. The second mounting rail may be spaced apart from

the first mounting rail. A mount **4104** may be detachably connected to the first mounting rail and the second mounting rail. The mount may include at least one cleat receptacle **4105** defined therein. In some embodiments, the first and second mounting rails **4102**, **4103** may be located at respective corners of the storage container **4101**. In such embodiments, the mount **4104** may span across an entire side of the storage container. The mount may include a first mount end **4106** and a second mount end **4107**. At least one of the first and second mount ends **4106**, **4107** may include a closure latch **4108**. In some embodiments, the mount **4104** may be configured to resiliently snap on and off of the first and second mounting rails **4102**, **4103**. In many embodiments, the cleat receptacle **4105** may be defined in a rigid plate member **4109** of the mount **4104**.

[0174] FIG. **42** illustrates toolbox **4201** or tool storage container that can be converted to a cooler. An insulated lid insert **4202** may be removable such that the insulated lid insert is used when the toolbox is to be used as a cooler, but removed when the toolbox is to be used for storage of tools. The cooler insert **4203** is molded to fit securely inside the tool box and is insulated (e.g., with foam) to convert the toolbox into a cooler. The cooler insert may be removed.

[0175] FIG. **43** illustrates a soft sided bag that can be mounted to a side (e.g., front side) of a storage box or tool storage container. A soft-sided bag (or other storage device) is mounted to the front of the modular storage box via mounting clips that mount to the mounting rails. Any suitable fastener can be used such as snaps, clips, hook-and-loop fasteners, etc. The back of the soft bag includes a receiving sleeve that slips over the tiedown rail on the modular storage box. This allows the soft bag (or other storage device) to be securely but removably mounted to the front of the storage box to add functionality and modularity to the storage box. The storage container **4301** may include a first mounting rail **4302** and a second mounting rail **4303** spaced apart from the first mounting rail. A tiedown rail **4304** may be disposed between the first and second mounting rails **4302**, **4303**. An auxiliary storage container **4305** may be mounted to the first and second mounting rails **4302**, **4303**. The auxiliary storage container **4305** may include a receiving sleeve, and the tiedown rail **4304** may be disposed in the receiving sleeve. In many embodiments, the auxiliary storage container **4305** may include a soft-sided bag. The auxiliary storage container **4305** may be removably connected to each of the first mounting rail **4302**, the second mounting rail **4303**, and the tiedown rail **4304**. To attach to the first and second mounting rails **4302**, **4303**, many embodiments include the auxiliary storage container **4305** having a first resilient mounting clip **4306** removably connected to the first mounting rail and a second resilient mounting clip **4307** removably connected to the second mounting rail.

[0176] FIG. **44** illustrates a workstation **4401** for use with tool storage devices. The workstation (e.g., a cart, a wheeled work bench, a stationary bench), etc. includes modular attachment cleats **4402** that the pieces of the modular storage system secures to. The attachment cleats may be similar to the cleat receptacles illustrated in FIG. **41**. The work station may include extendable table arms **4403**.

[0177] FIG. **45** illustrates a modular attachment plate **4501** that includes a plate body **4502**, at least one cleat receptacle opening **4503** defined in the plate body, and a latch receptacle **4504** defined in the plate body. The plate includes a

receptacle for a cleat of a tool storage device. In this embodiment, there are two cleat receptacles and one latch receptacle. In alternative embodiments, only one cleat receptacle may be used, the latch receptacle may not be used, and/or more than two cleat receptacles may be used. The plate may be mounted such that a cleat inserted into the cleat receptacle has space behind the plate to move into. In many embodiments including a storage container connected to the modular attachment plate **4501**, the storage container may include a recess disposed adjacent the at least one cleat receptacle opening **4503**. In some embodiments, such as in soft storage bags (e.g., a backpack), the plate may be mounted to a storage container including a fabric or flexible material (e.g., neoprene) that allows the cleat to be inserted into the cleat receptacle. The flexible material may be connected to the plate body **4502** of the modular attachment plate **4501** and the flexible material may flex away from the at least one cleat receptacle opening **4503** to form a recess. In one embodiment, the flexible material is mounted to the back of the plate body **4502**. For example, the flexible material may be in a plane parallel to a plane of the plate body **4502**. In such an example, when a cleat is inserted into one or more of the cleat receptacle openings **4503**, the flexible material deforms to allow the cleat to pass through and rest behind the plate body **4502**. The modular attachment plate **4051** may further include one or more attachment openings **4505** defined in the plate body **4502** to receive fasteners such as rivets, bolts, screws, thread, etc. to connect the modular attachment plate to a surface.

[0178] FIG. **46** illustrates the plate of FIG. **45** attached to a storage container **4601**. In some embodiments, the storage container **4601** may include a backpack. The backpack **4601** may include at least one carrying strap **4602**.

[0179] FIG. **47** illustrates a storage cart/work space **4701** that includes plates having cleat receptacles, similar to the cleat receptacles of the plate in FIG. **45**. Container compatibility can be incorporated into steel storage (e.g., mobile work stations, steel tool boxes, etc.). In the embodiment above, a shelf **4702** includes the cleat receptacles of FIG. **45** that allow compatible tool storage boxes **4703** or devices to be secured in place on the steel storage. The shelf may be on a roller device that allows the shelf to be pulled out.

[0180] FIG. **48** illustrates the cleat receptacles **4801** of FIG. **45** integrated with a truck tool box **4802**. A tool box is mounted in the bed **4803** of the truck **4804** and includes cleat receptacles on a top surface of the lid (or on a side wall surface). The cleat receptacles allow compatible tool storage boxes or devices to be secured in place.

[0181] FIG. **49** illustrates the cleat receptacles **4901** of FIG. **45** mounted on a wall **4902** of the truck bed **4903**. The cleat receptacles allow compatible tool storage boxes or devices to be secured in place.

[0182] FIG. **50** illustrates the cleat receptacles **5001** of the cleat plate of FIG. **45** mounted to a floor or wall **5002**. A bracket **5003** with the cleats **5004** is received in the cleat receptacles to mount the bracket to the floor or wall. A shelf **5005** is attached to the bracket to mount the shelf to the floor or wall.

[0183] FIG. **51** illustrates a hook **5101** having a cleat **5102**. The cleat can be attached to the cleat receptacles described above to attach the hook to a device having the cleat receptacles. In one embodiment the hook can include a pivot **5103**.

[0184] FIG. **52** illustrates an organizing tray **5201** attached to a modular storage box **5202**. The tray includes a magnetic tray portion **5203**. The tray includes cleats on the bottom of the tray that clips into the cleat receptacles (see FIG. **41**) on the top of a modular storage box. At least a portion of the tray can be magnetic to prevent spillage of magnetic items such as bolts, tools, screws, etc.

[0185] FIG. **53** illustrates soft storage bags **5301** (e.g., totes or tool bags) having a hard (plastic) plate **5302** on the bottom that allows the soft bag to be secured to the systems described above. That is the plate includes cleats **5303** that can be received in cleat receptacles. The bottom plate may be removable or attached to existing bags with, for example, fasteners **5304** to retrofit the bags to be compatible with the storage system described above.

[0186] FIG. **54** illustrates a belt **5401** with a cleat receptacle **5402** that can receive any tool or bag **5403** that has a cleat **5404**, such as the cleats discussed above. The tools/bags may be on a swivel such that when the wearer of the belt bends forward, the bag stays upright. For example, the user can strap various bags to his/her belt to transport tools/supplies from a truck to a work location and unload the tools/supplies at the work location.

[0187] FIGS. **55** and **56** illustrate that in another embodiment, a surface **5501** with retractable/foldable legs **5502** has cleat receptacles **5503** that can be used to snap a tool box having a cleat to. In an alternative embodiment, the foldable legs can be mounted directly to the bottom of a box, such as the box of FIG. **41**.

[0188] FIG. **57** illustrates a modular storage box **5701** having a light **5702** (e.g., LED) that is mounted to a boss **5703** in the lid **5704** of the modular storage box. The light can be adjustable to provide light to a desired portion of the box.

[0189] FIG. **58** illustrates an adaptor shelf **5801** having cleats **5802** and cleat receptacles **5803** that can be used with storage boxes **5804** that do not have cleats and/or cleat receptacles compatible with those discussed above. The shelving unit includes a bottom plate and a top plate. The bottom surface of the bottom plate includes cleats to be attached to a receptacle surface having cleats. The top surface of the bottom plate is adapted to interact with a non-modular storage system (e.g., storage boxes without cleats and/or cleat receptacles). The top surface of the top plate can have the cleat receptacles such that the shelving unit can be loaded on top of and beneath boxes having the cleats and cleat receptacles (e.g., box of FIG. **41**). Also, the rails **5805** that support the top and bottom plates to one another can be adjustable such that any suitable height of the shelving unit can be used.

[0190] Referring to FIG. **59**, similar to FIG. **58**, other tools can be adapted to be mounted between the top and bottom plates. For example, a speaker **5901** or vacuum **5902** having a cleat can be mounted to the bottom plate.

[0191] FIG. **60** illustrates a battery clamp **6001** that can be used and can compress along the sides of a battery **6002**. The bottom of the clamp includes a cleat **6003** to secure the battery and clamp to a cleat receptacle.

[0192] FIG. **61** illustrates a stack lock assembly **6101**. A stack of modular boxes **6102** (e.g., box of FIG. **41**) can be locked together with the stack lock assembly **6101**. A base cleat **6103** can be secured to the bottom surface of a bottom box (e.g., the base cleat can receive a cleat on the bottom of the bottom box). The top cleat, or adjustable cleat **6104**, can

be secured to the top surface of a top box (e.g., be slid into a cleat receptacle on the top of the top box). The base cleat **6103** may be permanently or removably connected to a rail **6105**. The top cleat can slide along the rail **6105** into position. Stated another way, the adjustable cleat **6104** may be translatably disposed on the rail **6105**. Once in position, the adjustable cleat can be locked into place with a lock mechanism, for instance, a padlock **6106** to prevent uncoupling of the top and bottom boxes (or others in between) and prevent opening of the boxes.

[0193] FIG. 66 illustrates a fold-out or slide out work surface **6601** has cleats that can be secured to the top of a box **6602** having cleat receptacles (e.g., box of FIG. 41) to create a mobile work station.

[0194] FIG. 67 illustrates a cleat assembly **6701** that is used to lock devices with a cleat **6702** received in a cleat receptacle **6703** defined in a receiver body **6707**. The cleat receptacle **6703** may include a wide portion **6705** and a narrow portion **6704**. In some embodiments, to lock the items in place, after sliding the cleat **6702** into the narrow portion **6704** of the cleat receptacle **6703**, a latch may be inserted into a latch receptacle **6706**. In other embodiments, however, this single cleat **6702** can lock an item into place without use of the latch or latch receptacle **6706**. The body of the cleat **6702** includes a through hole **6708** that receives a slide **6709**. The slide **6709** may include detents that interact with a spring loaded bearing. The slide **6709** may slide within the through hole **6708** and may be as long as the cleat receptacle **6703** (i.e., presses against the front and rear faces of the cleat receptacle). The cleat **6702** is inserted first into the wide portion **6705** and then slid toward the rear in a direction toward the narrow portion **6704** of the cleat receptacle **6703**. During the insertion and sliding of the cleat **6702**, the slide **6709** may stay in place with respect to the cleat receptacle **6703**. The detent and spring loaded bearing may then secure the cleat **6702** along the slide **6709** and in the rearward position within the cleat receptacle **6703**. In some embodiments, the slide **6709** may be freely translatable relative to the cleat **6702** in a first direction but not freely translatable in a second direction (opposite the first direction). In some embodiments, the slide **6709** interacts with walls of the cleat receptacle **6703**, but in other embodiments, the slide may also interact with the latch.

[0195] FIG. 68 illustrates a single cleat **6801** can be used similar to the embodiment of FIG. 67. The cleat **6801** may be connected to a lock portion **6802** via a hinge **6803**. The lock portion **6802** may be biased in a first rotational direction (e.g.,—with a spring **6804**). The lock portion rotates up (i.e., clockwise in FIG. 68) to move out of the way when the body is pressed into the opening/wide portion of the cleat receptacle and springs back into place (in the position as shown in FIG. 68) once the body is slid into the narrow portion of the cleat receptacle. To remove the cleat, the lock portion is rotated back toward the cleat (i.e., clockwise) to allow the cleat to be slid toward the wide portion of the cleat receptacle. The lock portion **6802** may include a hook **6805** that may engage the receiver body to prevent movement of the cleat **6801** when the cleat occupies the narrow portion of the cleat receptacle.

[0196] FIG. 69 illustrates an accessory holder **6901** that can be mounted to a box, such as the box of FIG. 41. The accessory holder **6901** may include a holder body **6902** including a mounting bracket portion **6903**. An accessory attachment rail **6904** may be connected to the holder body

**6902** adjacent the mounting bracket portion **6903**. At least one tubular passage **6905** may extend from the holder body **6902**. In many embodiments, the at least one tubular passage **6905** is configured to removably receive an elongate accessory. The side rail of this piece can replace the side rail of the modular storage box of FIG. 41. This holder may include a tubular passage **6905** with a circular cross-section to function as a handle holder (e.g., for holding a broom handle, a conduit bender handle, etc.) and may also include a tubular passage with a rectangular cross-section as a level holder. Alternative embodiments can be used to hold any accessory.

[0197] FIG. 70 illustrates a plate **7001** that includes cleats on the bottom surface (not shown) that mount to the top surface of a box having cleat receptacles (e.g., box of FIG. 3). Along the perimeter of the top surface are square tube holders **7002**. The square tube includes pin holes **7003** that receive a pin **7004** to secure the square tube **7005** in place when in the square tube holder. In the illustrated embodiment, a vice **7006** is mounted and slides along the square tube to hold a workpiece. Any other suitable accessory can be mounted to the square tube.

[0198] FIG. 71 illustrates a 5-piece crate **7101** that can be assembled by the user. The four sides **7102** include cut-outs **7103** that accept the cleat discussed above. The bottom piece **7104** includes cleats and latches to lock onto the top of other tool storage containers described above.

[0199] FIGS. 72-74 illustrate trays **7201** below including cleats **7202** on the bottom of the trays that interact with the cleat receptacles **7203** on a top or lid of tool box **7204**. The outside shape of the trays also conforms to the inside surface of the toolbox. Thus, a user can travel with the trays secured inside the box and then secure the trays on the top of the box when being used.

[0200] FIGS. 75 and 76 illustrate a foldable table **7501** in the open (FIG. 75) and closed (FIG. 76) positions. The center section **7502** of the table includes cleats and a locking mechanism that secures the table to the top **7503** of a tool box. As shown in FIG. 76 (in the closed position), the bottom surface of the open table includes supports **7504** that engage the top surface of the tool box and limit travel of the table sides such that, in the open position, the three pieces are level to one another. In alternative embodiments, additional or different supports may be used, such as arms that engage with the side of the tool box, or other supporting means.

[0201] FIG. 77 illustrates an accessory case **7701** that secures to the system via a single cleat **7702**. The small size of the case may be ideal for smaller items such as drill bits. Multiple individual cases may be stored on the top surface of a tool box.

[0202] FIG. 78 illustrates a piece **7801** that can cover the top of a tool box to be a seat. The bottom of the piece includes cleats **7802**, and the top piece can be a cushion **7803** that is comfortable for sitting. Additional pieces may include a backrest that attaches to the handles of the rolling box.

[0203] FIG. 79 illustrates a storage container **7901**. The storage container **7901** may include a first mounting rail **7902** and a second mounting rail **7903** spaced apart from the first mounting rail. The storage container **7901** may further include a bin **7904** connected to the first and second mounting rails **7902**, **7903**. Stated another way, the bin **7904** may mount to the side of a tool box **7901** and may attach to the extruded metal supports **7902**, **7903** located at the corners of the box. The bin may be removably attached or may

surround the extruded metal to be permanently secured. Any size or shape bin can be used. In many embodiments, the bin **7904** may be configured to resiliently snap on and off of the respective first and second mounting rails **7902**, **7903**.

[0204] FIGS. **80** and **81** illustrate a folding crate in the assembled and folded positions, respectively. The folding crate may also be called a collapsible storage crate **8001**. The crate **8001** may include a crate bottom **8002** having a crate exterior surface **8003**. The bottom **8002** of the crate **8001** may include at least one cleat **8004** (discussed above) to attach the crate to a corresponding cleat receptacle located on a receptacle surface (such as on a lid of a tool box with the cleats being received in cleat receptacles). The bottom surface of the crate (or a 5-piece flat pack/self-assembled crate) includes cleats that can be received in the cleat receptacles described above to secure the crate to a surface to which the cleat plate (e.g., plate of FIG. **45**) is attached. To connect the crate **8001** to a receptacle surface, the at least one cleat **8004** is inserted into a corresponding cleat receptacle, and the crate is translated relative to the cleat receptacle, thereby locking the cleat in the corresponding cleat receptacle. The crate may further include a latch **8005** to attach the crate to a receptacle surface such as a lid of a tool box as discussed above. Although not shown, in some embodiments, the top half (portion) of the front and back sides may have cleat receptacles such that, when the crate is folded flat, another modular device may be attached to the top of the folded crate. Put another way, the inside surface of the assembled crate of FIG. **80** may include cleat receptacles such that the top surface of the folded crate of FIG. **81** can receive the cleats of another modular device (e.g., another folded crate). In some instances, the cleat receptacles may be cutouts in the sides of the crate (e.g., as in FIG. **71**). In such embodiments, the cleat receptacles of one side of the assembled crate of FIG. **80** are rotated 180° from the cleat receptacles of the opposite side. Also, in some embodiments, the bottom half of the sides of the crate may have cleat receptacles corresponding to the respective top half such that each side can receive a modular device when the crate is assembled. In alternative embodiments, the bottom halves of the sides do not have cleats but rather have cutouts that provide adequate space for the cleat receptacles of the top halves to receive a cleat when the crate is in the folded position.

[0205] FIG. **82** illustrates a clamp **8201** that includes a cleat **8202**. The single cleat can be used to clamp any suitable item (i.e., not just batteries). In the embodiment illustrated, a knob **8203** is attached to a threaded rod **8204** that rides in a slot **8205** in the cleat. The wall **8206** is threaded onto the threaded rod and moves along the rod as the knob is spun.

[0206] FIG. **83** illustrates a bag/box/item **8301** having a cleat **8302** may be hinged or swiveled to a cleat receptacle **8303** on a user's belt **8304** such that the item remains upright even when the user bends over.

[0207] FIG. **84** is a side view of a shelving unit **8401**. The vertical mounting rail **8402** may be fixed between the floor and the ceiling or fixed to a wall. The horizontal rails **8403** may be mounted along the vertical mount (e.g., using e-track or other means for selectively securing the horizontal rails along the vertical mount). The horizontal rails include a sliding rail **8404** that slides along the horizontal rail. Attached to the top of the (or in between two) sliding rails is a modular mounting plate **8405** that has receptacles for

receiving the cleats. Once a box with the cleats is attached, the box may be pushed against the wall (as in the top mounting plate). To access the contents of the box with a lid that flips up, the box can be slid outward away from the wall, thereby giving the lid enough room to open without hitting the horizontal rails or box of the one above.

[0208] FIG. **85** illustrates a separator **640** with pockets **641** that may be used to separate the inside contents of a box. The separator may slide into corresponding grooves on the inside of the box **642**.

[0209] FIG. **86** illustrates a storage container **8601**. The storage container **8601** may include a first mounting rail **8602** and a second mounting rail **8603**. The second mounting rail **8603** may be spaced apart from the first mounting rail **8602**. A table assembly **8604** may be connected to the first and second mounting rails **8602**, **8603**. Stated another way, the table assembly **8604** may be mounted to the side of a modular box **8601**. The table assembly **8604** may include a platform **8605**, and the platform may be rotatable relative to the first and second mounting rails **8602**, **8603**. Stated another way, the platform **8605** may be hinged so that the platform may flip up for use or down for storage. In many embodiments, the table assembly **8604** is configured to resiliently snap on and off of the respective first and second mounting rails **8602**, **8603**.

[0210] FIG. **87** illustrates another embodiment of a storage container **8701**. The storage container **8701** may include a first mounting rail **8702** and a second mounting rail **8703**. The second mounting rail **8703** may be spaced apart from the first mounting rail **8702**. A bag holder assembly **8704** may be connected to the first and second mounting rails **8702**, **8703**. Stated another way, the bag holder assembly **8704** (which may include a garbage bag holder holding a disposable garbage bag **8707**) may be mounted to the side of a box. The bag holder assembly **8704** may include a bag receiving rod **8705**. The bag receiving rod **8705** may span across an entire side of the storage container **8701** in some embodiments. The bag receiving rod **8705** may span in any appropriate way, but some embodiments include the bag receiving rod formed into a semi-circle as it spans from the first mounting rail **8702** to the second mounting rail **8703**. The bag receiving rod **8705** may be swung down when not in use. In many embodiments, the bag holder assembly **8704** may be configured to resiliently snap on and off of the respective first and second mounting rails **8702**, **8703**. In still further embodiments, the storage container **8701** may further include a wheeled cart **8706** supporting the storage container.

[0211] FIG. **88** illustrates a modular receptacle plate **670** that includes hangers **671** that allow the plate to be hung from the side of a truck, the side of a bucket (e.g., on a bucket lift truck), on a horizontal rail or 2×4, etc.

[0212] FIG. **89** illustrates one or more modular receptacle plates having cleats **680** may be mounted to a frame that includes a hitch for securing to a hitch receptacle of a truck.

[0213] FIGS. **90** and **91** illustrate a water cooler **9001** (or water bottle) having cleats **9002** on the bottom to be secured to a mobile tool box.

[0214] FIG. **92** illustrates two strap mounting portions (e.g., one with a fixed end, one with a lockable end; two lockable ends) may have cleats that slide into the cleat receptacles. A webbing strap may be secured to the strap mounting portions and selectively tightened to secure an item between the two strap mounting portions.

[0215] FIG. 93 shows a tray 149 closed and FIG. 94 shows the tray 149 open. The tabletop 249 can slide (or fold) away to reveal the tray and its contents. When closed (or when open) the table top pieces can be used as a work station. The bottom of the tool tray/tabletop combo includes can interact with a compatible tool storages boxes such as the lid to the rolling box of FIG. 39.

[0216] FIG. 95 illustrates an insert 5101 for a box 5102 that is configured to hold a combination wrench set (e.g., either fixed or ratcheting). The insert may be easily removed from the box for convenience of the user.

[0217] FIGS. 96-100 illustrate a storage container 9601. The storage container 9601 may include a container body 9602. An upright member 9603 may extend upwardly from the container body 9602. A handle 9604 may be connected to the upright member 9603. The handle 9604 may include an angled portion 9605. A platform 9606 may be attached to the handle 9604 of the rolling toolbox (e.g., tool box of FIG. 39). In many embodiments, the platform 9606 is rotatably attached to the handle 9604. The platform can be placed in a use position and may also be folded away to a storage position when not in use. In the deployed state (FIGS. 96-98), a support arm 9607 may extend from the platform 9606 and rest on the angled portion 9605 of the handle 9604 (shown in FIG. 98). When in the undeployed state (FIGS. 99 and 100), the platform 9606 folds away to allow the user to use the handle 9604. A detent mechanism or a clip may be used to hold the platform 9606 in place (i.e., prevent the platform from flapping around).

[0218] FIG. 101 illustrates a plate 1011 that can be secured in place. For example, the plate includes holes or receptacles 1012 for locking feet of a tool storage container e.g., PACKOUT system by Milwaukee Electric Tool) and latch receptacles 1014 that interact with a modular storage system. The plate includes screw holes (or other fastening mechanisms) 1016 that can be used to secure the plate to, for example, a floor, a wall, the bed of a truck, the wall of a van, etc. The plate is made of metal (e.g., stamped steel) whereas the storage boxes (or other suitable compatible products) are typically made of plastic. Making the plate of metal increases the resilience to bumps, kicks, rattles, vibrations, etc. (such as in a vehicle or truck) compared to plastic. Stamping the steel to make the product also is likely to reduce manufacturing and materials cost.

[0219] FIGS. 102 and 103 illustrate an alternative embodiment of the plate 1011 of FIG. 101. The plate of FIGS. 102 and 103 may be less expensive and easier to manufacture in some embodiments than the plate of FIG. 101.

[0220] FIG. 104 illustrates a modular connection system 1041 for a tool storage container to a shelving use. E tracks or X tracks are typically mounted to a wall and brackets are used to secure hooks, brackets, latches, loops, etc. to the e-tracks. FIG. 104 illustrates an E-track compatible arm 1042 that can be used to support tool storage containers and the like. While the illustrated arm is configured for use with an E-track, in other embodiments, the arm can be configured to attach to other wall mount devices (e.g., Unistrut, slatwall, pegboard, or the like). In yet other embodiments, the arm may attached directly to a wall, such as by fasteners.

[0221] The arm 1042 includes engaging feet 1043 that are compatible with e-track and a locking mechanism (latch) 1044 for securing the arm in place along the e-track (or x track). Extending from the e-track engaging portion is a two-piece arm 1045 that is held together via rivets through

the rivet holes 1046 (or other attachment means such as welding, screws, bolts, clips, etc.). In alternative embodiments, the two-piece arm can be made of a single piece of metal that is bent at the bottom portion of the arm.

[0222] The top side of the arm 1042 includes attachment holes 1047 that are used to attach the arm to a piece compatible with a tool storage modular attachment system (e.g., PACKOUT system by Milwaukee Electric Tool). For example, a single row of securing feet receptacles from the plate discussed and shown above can be used. The e-track arm can be made of metal, plastic, a combination of metal and plastic, or other suitable materials.

[0223] This shelving concept allows a user to adapt a wall to accept compatible products (tool boxes, storage boxes, work stations, etc.) using e-track, which is commonly used in vans, trucks, shop walls, etc. The user can place the e-track in any suitable location along the wall, and then move the arms along the e-track whenever he/she sees fit. This concept allows the modular securing system to be adapted to the e-track modular securing system.

[0224] FIG. 105-107 illustrate a storage container 1051. The storage container 1051 includes a container body 1052. At least one telescopic upright member 1053 extends upwardly from the container body 1052. A handle 1054 may be pivotable relative to the upright member 1053 from a storage position (shown in FIG. 107) to a use position (shown in FIG. 106). The handle 1054 may be disposed closer to the container body 1052 in the storage position than in the use position. The storage container 1051 may further include an upper chassis 1055 connected to the upright member 1053. In such embodiments, the handle 1054 may be pivotably connected to the upper chassis 1055. The upper chassis 1055 may include at least one upper aperture 1056 defined therein. In some embodiments, the upper chassis 1055 may further include an upper adjustable partition 1057 disposed in the upper aperture 1056 to divide the aperture into variable sized openings. In such embodiments, the upper adjustable partition 1057 may be a removable card and the upper chassis 1055 may include a series of spaced upper slots 1058 configured to receive the card. A detent mechanism may be disposed between the upper chassis 1055 and the handle 1054 to lock the handle in the use position. The storage container 1051 may further include a lower chassis 1059. The lower chassis 1059 may be connected to the container body 1052, and the lower chassis may be generally aligned with the upper chassis 1055. The lower chassis 1059 may include at least one lower aperture 1060 defined therein. In many embodiments, the lower aperture 1060 may be a recess and not a through hole in the lower chassis 1059. the lower chassis 1059 may also include a lower adjustable partition 1061 disposed in the lower aperture 1060. The lower adjustable partition 1061 may also be a removable card insertable in a series of lower slots 1062. With this configuration, various tools and other items 1063 are able to be contained by the upper and lower chassis 1055, 1059.

[0225] FIGS. 108-110 illustrate a storage container 1081. The storage container 1081 includes a container body 1082. An elongate member 1083 may be connected to the container body 1082. The elongate member 1083 may include a longitudinal slot 1084 defined therein. In many embodiments, this longitudinal slot 1084 may be a T-slot. An accessory attachment insert 1085 may be removably attached to the elongate member 1083. The accessory attach-

ment insert **1085** may include a first insert finger **1086** having a first laterally extending ridge **1087**. The first insert finger **1086** may be removably disposed in the longitudinal slot **1084**. The accessory attachment insert **1085** further includes an insert body **1088** connected to the insert finger **1086**. The insert finger **1086** may be flexible relative to the insert body **1088**. The accessory attachment insert **1085** may further include a second insert finger **1089** connected to the insert body **1088** and spaced apart from the first insert finger **1086**. The second insert finger **1089** may include a second laterally extending ridge **1090**. The first and second insert fingers **1086**, **1089** may be flexed inward toward each other to remove the accessory attachment insert **1085** from the elongate member **1083**. In many embodiments, the laterally extending ridges **1087**, **1090** may be tapered such that the accessory attachment insert **1085** may be forced onto the elongate member **1083** to insert the fingers **1086**, **1089** without flexing them toward each other.

[0226] With reference to FIGS. **111-114**, the first insert finger **1086** may include both the first laterally extending ridge **1087** and the second laterally extending ridge **1090**. The second laterally extending ridge **1090** may be disposed on the first insert finger **1086** opposite the first laterally extending ridge **1087**. In such embodiments, the accessory attachment insert **1085** may be rotated to lock the accessory attachment insert to the elongate member **1083** by occupying the T-shaped cross section of the longitudinal slot **1084** with the laterally extending ridges **1086**, **1090**. Similarly, the accessory attachment insert **1085** may be rotated to unlock the accessory attachment insert from the elongate member **1083**. The accessory attachment insert **1085** may further include a lock lever **1091** connected to the insert body **1088**. The lock lever **1091** may include a catch **1092** configured to engage the elongate member **1083** to prevent rotation of the accessory attachment insert **1085**. The lock lever **1091** may be flexible relative to the insert body **1088** such that the lock lever may be flexed away from the elongate member **1083** to allow rotation of the accessory attachment insert **1085**. To remove the accessory attachment insert **1085** from the elongate member **1083**, a user may manually flex the lock lever **1091** away from the elongate member. To install the accessory attachment insert **1085** on the elongate member **1083**, the rigidity of the elongate member relative to the flexible lock lever **1091** may force the lock lever out of the elongate member's way while the user rotates the accessory attachment insert. In such embodiments, the catch **1092** may be tapered to allow for smooth flexing in one rotational direction of the accessory attachment insert **1085** but not in the opposite rotational direction.

[0227] Although the invention has been described in detail with reference to certain preferred embodiments, variations and modifications exist within the scope and spirit of one or more independent aspects of the invention as described.

[0228] It should be understood that the figures illustrate the exemplary embodiments in detail, and it should be understood that the present application is not limited to the details or methodology set forth in the description or illustrated in the figures. It should also be understood that the terminology is for description purposes only and should not be regarded as limiting.

[0229] Further modifications and alternative embodiments of various aspects of the invention will be apparent to those skilled in the art in view of this description. Accordingly, this description is to be construed as illustrative only. The

construction and arrangements, shown in the various exemplary embodiments, are illustrative only. Although only a few embodiments have been described in detail in this disclosure, many modifications are possible (e.g., variations in sizes, dimensions, structures, shapes and proportions of the various elements, values of parameters, mounting arrangements, use of materials, colors, orientations, etc.) without materially departing from the novel teachings and advantages of the subject matter described herein. Some elements shown as integrally formed may be constructed of multiple parts or elements, the position of elements may be reversed or otherwise varied, and the nature or number of discrete elements or positions may be altered or varied. The order or sequence of any process, logical algorithm, or method steps may be varied or re-sequenced according to alternative embodiments. Other substitutions, modifications, changes and omissions may also be made in the design, operating conditions and arrangement of the various exemplary embodiments without departing from the scope of the present invention.

[0230] Unless otherwise expressly stated, it is in no way intended that any method set forth herein be construed as requiring that its steps be performed in a specific order. Accordingly, where a method claim does not actually recite an order to be followed by its steps or it is not otherwise specifically stated in the claims or descriptions that the steps are to be limited to a specific order, it is in no way intended that any particular order be inferred. In addition, as used herein, the article "a" is intended to include one or more component or element, and is not intended to be construed as meaning only one. As used herein, "rigidly coupled" refers to two components being coupled in a manner such that the components move together in a fixed positional relationship when acted upon by a force.

[0231] Various embodiments of the invention relate to any combination of any of the features, and any such combination of features may be claimed in this or future applications. Any of the features, elements or components of any of the exemplary embodiments discussed above may be utilized alone or in combination with any of the features, elements or components of any of the other embodiments discussed above.

What is claimed is:

1. A storage container comprising:

a first mounting rail and a second mounting rail spaced apart from the first mounting rail; and

a mount detachably connected to the first mounting rail and the second mounting rail, the mount including at least one cleat receptacle defined therein.

2. The storage container of claim 1, wherein the first mounting rail and the second mounting rail are disposed at respective corners of the storage container.

3. The storage container of claim 2, wherein the mount spans across an entire side of the storage container.

4. The storage container of claim 1, wherein:

the mount includes a first mount end and a second mount end; and

at least one of the first and second mount end includes a closure latch.

5. The storage container of claim 1, wherein the mount is configured to resiliently snap on and off of the respective first and second mounting rails.

6. The storage container of claim 1, further comprising: a cleat slidably received in the cleat receptacle; and an attachment accessory connected to the cleat.
7. The storage container of claim 1, wherein: the mount includes a rigid plate member; and the at least one cleat receptacle is defined in the rigid plate member.
8. A modular attachment plate comprising: a plate body; at least one cleat receptacle opening defined in the plate body; and a latch receptacle opening defined in the plate body.
9. The modular attachment plate of claim 8, further comprising: a storage container connected to the modular attachment plate, the storage container including a recess disposed adjacent the at least one cleat receptacle opening of the modular attachment plate.
10. The modular attachment plate of claim 8, further comprising: a storage container including a flexible material, the flexible material of the storage container connected to the plate body of the modular attachment plate; and wherein the flexible material flexes away from the at least one cleat receptacle opening to form a recess.
11. The modular attachment plate of claim 10, wherein the storage container includes a backpack having at least one carrying strap.
12. A collapsible storage crate comprising: a crate bottom having a crate exterior surface; and at least one cleat connected to the crate exterior surface of the crate bottom, the at least one cleat configured to removably attach the crate to a corresponding cleat receptacle.
13. The collapsible storage crate of claim 12, wherein the cleat is inserted in the cleat receptacle and the crate is translated relative to the cleat receptacle, thereby locking the cleat in the cleat receptacle.
14. The collapsible storage crate of claim 13, further comprising a latch connected to the crate bottom and inserted in a corresponding latch receptacle.

15. The collapsible storage crate of claim 14, wherein the cleat receptacle and the latch receptacle are defined in a lid of a tool box.

16. The collapsible storage crate of claim 12, further comprising:

a crate sidewall connected to the crate bottom; and at least one cleat receptacle defined in the crate sidewall.

17. The collapsible storage crate of claim 16, wherein: the crate sidewall includes a crate interior side; and the at least one cleat receptacle is defined in the crate sidewall on the crate interior side.

18. The collapsible storage crate of claim 17, wherein, in a collapsed mode, the at least one cleat receptacle is facing a first direction and the at least one cleat is facing a second direction opposite the first direction.

19. The collapsible storage crate of claim 18, further comprising a second collapsible storage crate having second at least one cleat received in the at least one cleat receptacle of the collapsible storage crate when the collapsible storage crate is in the collapsed mode.

20. The collapsible storage crate of claim 19, wherein the second collapsible storage crate is also in a collapsed mode.

21. The collapsible storage crate of claim 16, wherein the at least one cleat receptacle is a through hole in the crate sidewall.

22. The collapsible storage crate of claim 21, wherein: the crate sidewall includes a sidewall top section and a sidewall bottom section;

a first cleat receptacle of the at least one cleat receptacle is defined as a through hole in the sidewall top section; a second cleat receptacle of the at least one cleat receptacle is defined as a through hole in the sidewall bottom section; and

the first cleat receptacle and the second cleat receptacle align when the collapsible storage crate is in a collapsed mode.

23. The collapsible storage crate of claim 16, wherein: the crate sidewall includes a sidewall exterior side; and the at least one cleat receptacle is defined in the crate sidewall on the sidewall exterior side.

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