(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
19 March 2020 (19.03.2020)

WIPO | PCT

(10) International Publication Number
WO 2020/055726 A1

(51) International Patent Classification:
B25H 3/02 (2006.01) *B65D 43/22* (2006.01)
B65D 25/04 (2006.01) *B65D 45/16* (2006.01)

(21) International Application Number:
PCT/US2019/050168

(22) International Filing Date:
09 September 2019 (09.09.2019)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
62/728,891 10 September 2018 (10.09.2018) US

(71) Applicant: **MILWAUKEE ELECTRIC TOOL CORPORATION** [US/US]; 13135 West Lisbon Road, Brookfield, WI 53005 (US).

(72) Inventors: **HEATH, Peter, R.**; N63W23347 Main Street, Apt. 304D, Sussex, WI 53089 (US). **HYMA, Steven, W.**; 1312 E. Warnimont Avenue, Milwaukee, WI 53207 (US). **JONES, Benjamin, T.**; 1636 E. Eden Place, St. Francis, WI 53235 (US).

(74) Agent: **TRAUTSCHOLD, David, J.** et al.; Michael Best & Friedrich LLp, 100 East Wisconsin Avenue, Suite 3300, Milwaukee, WI 53202-4108 (US).

(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

(54) Title: MODULAR TOOL CONTAINER

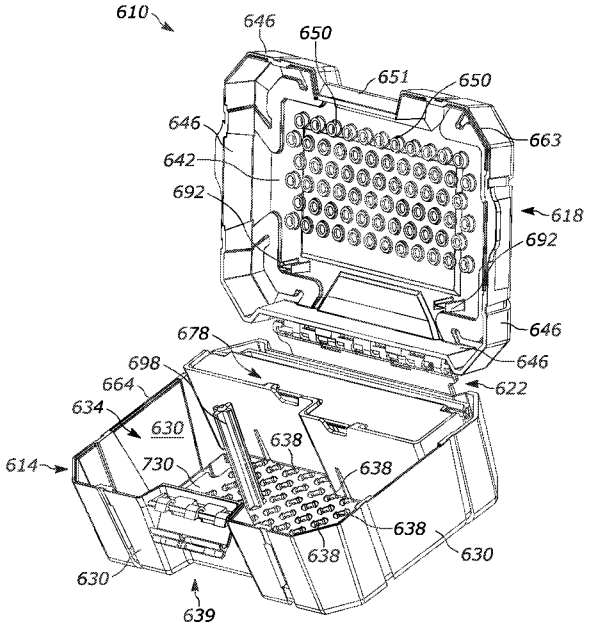

FIG. 16

(57) Abstract: A container includes a base, first recesses, a lid, and an insert. The base includes a lower surface. Base walls extend from the lower surface. The lower surface and the base walls define a cavity. The first recesses are positioned adjacent to the lower surface. The lid is movably coupled to the base to selectively enclose the cavity. The lid includes an upper surface and lid walls extend from the upper surface. The insert is positioned within the cavity and removably coupled to the lower surface of the base. The insert includes a projection received within one of the first recesses. The insert is engaged by the lid when the lid is closed.

WO 2020/055726 A1

[Continued on next page]

Published:
— *with international search report (Art. 21(3))*

MODULAR TOOL CONTAINER

CROSS-REFERENCE TO RELATED APPLICATION

[0001] This application claims priority to U.S. Provisional Patent Application No. 62/728,891, filed September 10, 2018, the entire contents of which are incorporated herein by reference.

FIELD

[0002] The present disclosure relates to a tool container or case, and more specifically, to a tool container or case with modular components allowing for user customization.

SUMMARY

[0003] In one aspect, a container includes a base, first recesses, a lid, and an insert. The base includes a lower surface. Base walls extend from the lower surface. The lower surface and the base walls define a cavity. The first recesses are positioned adjacent to the lower surface. The lid is movably coupled to the base to selectively enclose the cavity. The lid includes an upper surface and lid walls that extend from the upper surface. The insert is positioned within the cavity and removably coupled to the lower surface of the base. The insert includes a projection received within one of the first recesses. The insert is engaged by the lid when the lid is closed.

[0004] In another aspect, a container includes a base with a lower surface and base walls extending from the lower surface, a hinge pivotably coupled to the base, and a lid pivotably coupled to the hinge. The lower surface and the base walls define a cavity. The lid selectively encloses the cavity. The lid includes an upper surface and lid walls extending from the upper surface. The hinge is rotatable relative to the base about a first axis, and the lid is rotatable relative to the hinge about a second axis parallel to and spaced apart from the first axis. The lid is movable between a first position, in which the lid encloses the cavity, and a second position, in which the base rests on the lid.

[0005] In yet another aspect, a container includes a base, first recesses, a hinge, a lid, and an insert. The base includes a lower surface, base walls that extend from the lower surface, and a cavity defined by the lower surface and the base walls. The first recesses are positioned adjacent to the lower surface. The hinge is pivotably coupled to the base. The lid is

pivotably coupled to the hinge to selectively enclose the cavity. The insert is positioned within the cavity. The insert includes a projection received within one of the first recesses. The lid is movable between a first position, in which the lid encloses the cavity, and a second position, in which the base rests on the lid. The lid engages the insert when the lid is in the first position.

[0006] Other aspects of the disclosure will become apparent by consideration of the detailed description and accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] FIG. 1 is a perspective view of a tool container.

[0008] FIG. 2 is an exploded view of the tool container of FIG. 1.

[0009] FIG. 3 is a top view of a base of the tool container of FIG. 1.

[0010] FIG. 4 is a perspective view of the tool container of FIG. 1, with a lid in a closed position.

[0011] FIG. 5 is a side view of the tool container of FIG. 4.

[0012] FIG. 6 is a perspective view of the tool container of FIG. 1, with the lid in an opened position.

[0013] FIG. 7 is a side view of the tool container of FIG. 6, with the lid positioned beneath a base of the tool container.

[0014] FIG. 8 is a perspective view of an insert for the tool container of FIG. 1.

[0015] FIG. 9 is a perspective view of a pin.

[0016] FIG. 10 is a cross-sectional view of the tool container with the lid in the closed position.

[0017] FIG. 11 is a perspective view of a tool container according to another embodiment.

[0018] FIG. 12 is a top view of a base of the tool container of FIG. 11.

[0019] FIG. 13 is a perspective view of a pin of another embodiment.

[0020] FIG. 14 is a perspective view of a tool container according to yet another embodiment.

[0021] FIG. 15 is a perspective view of an insert of the tool container of FIG. 14.

[0022] FIG. 16 is a perspective view of a tool container according to another embodiment.

[0023] FIG. 17 is an exploded view of the tool container of FIG. 16.

[0024] FIG. 18 is a top view of a base of the tool container of FIG. 16.

[0025] FIG. 19 is a perspective view of a pin used with the tool container of FIG. 16.

DETAILED DESCRIPTION

[0026] Before any embodiments of the disclosure are explained in detail, it is to be understood that the disclosure 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 disclosure 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. Use of "including" and "comprising" and variations thereof as used herein is meant to encompass the items listed thereafter and equivalents thereof as well as additional items. Use of "consisting of" and variations thereof as used herein is meant to encompass only the items listed thereafter and equivalents thereof. Unless specified or limited otherwise, the terms “mounted,” “connected,” “supported,” and “coupled” and variations thereof are used broadly and encompass both direct and indirect mountings, connections, supports, and couplings.

[0027] In general, the present disclosure relates to a container for storing tools. Modular components couple to the container and allow a user to store the tools in a variety of positions within the container. The container also includes a lid that is movable from a first position on top of the container, to a second position underneath the container.

[0028] As shown in FIGS. 1 and 2, a tool container or case 10 includes a base 14 coupled to a lid 18 by a hinge 22. The base 14 includes a first or lower surface 26 and walls 30 extending from the lower surface 26 and defining a cavity 34. In some embodiments, a handle (not shown) is coupled to at least one of the walls 30 or to the lid 18. The case 10 also includes recesses 38 positioned adjacent to the lower surface 26. In the illustrated embodiment, the recesses 38 are formed directly on the lower surfaces 26. The recesses 38 are generally circular in shape and each recess 38 includes an inner projection 41 (FIG. 3) that is spaced from the outer boundary of the recess 38. The recesses 38 are arranged in rows along the lower surface 26. In the illustrated embodiment, each row of recesses 38 is offset from adjacent rows of recesses 38.

[0029] The base 14 also includes a first locking member or latch 39 and a first receiving portion 40. In the illustrated embodiment, the latch 39 is disposed on one wall 30, and the first receiving portion 40 is disposed on another wall 30 opposite wall 30 containing the latch 39. The latch 39 is movable (e.g., slidable, pivotable, detachable, etc.) relative to the wall 30. As shown in FIG. 3, the first receiving portion 40 includes a series of openings 43 for coupling to the hinge 22. Centers of the openings are aligned along an axis. In the illustrated embodiment, feet 118 are disposed on either side of the first receiving portion 40. The feet 118 have a triangular profile. The feet 118 inhibit the base 14 from tipping over.

[0030] Returning to FIGS. 1 and 2, the lid 18 includes a first or upper surface 42 and walls 46 extending from the upper surface 42. The upper surface 42 includes recesses 50. In the illustrated embodiment, the recesses 50 are circular in shape and have a smaller diameter than the recesses 38. The recesses 50 are also arranged in rows along the upper surface 42. In the illustrated embodiment, each row of recesses 50 is offset from adjacent rows of recesses 50. When the lid 18 is closed (FIGS. 4 and 10), the recesses 50 of the lid 18 are substantially aligned with the recesses 38 of the base 14. In some embodiments, the recesses 50 also assist in the injection molding process, by eliminating the need for long core pins.

[0031] The lid 18 also includes a second locking member 51 and a second receiving portion 52. In the illustrated embodiment, the second locking member 51 is disposed on one wall 46, and the second receiving portion 52 is disposed on an opposite wall 46 from the second locking member 51. The second locking member 51 includes a projection that is fixed relative to the wall 46. The latch 39 selectively engages the second locking member 51 to secure the lid in a closed position. In the illustrated embodiment, the second receiving

portion 52 includes a series of openings for coupling to the hinge 22. Centers of the openings are aligned along an axis.

[0032] The hinge 22 is an elongated body. In the illustrated embodiment, the hinge 22 is substantially rectangular in shape. A third receiving portion 54 is disposed along a first edge of the hinge 22, and a fourth receiving portion 58 is disposed along a second edge of the hinge 22 opposite the first edge. In the illustrated embodiment, the receiving portions 54, 58 include series of aligned openings. Centers of the openings of the third receiving portion 54 and centers of the openings of the fourth receiving portion 58 are each aligned along respective axes.

[0033] The first receiving portion 40 is aligned with the third receiving portion 54, and the second receiving portion 52 is aligned with the fourth receiving portion 58 (i.e., the centers of the series of openings making up the third and fourth receiving portions 54, 58 are aligned with the centers of the series of openings of the first and second receiving portions 40, 52 respectively). Rods or pins 62 are received in the adjacent receiving portions (e.g., the first and third receiving portions 40, 54 and the second and fourth receiving portions 52, 58). The rods 62 rotatably couple the hinge 22 to the base 14 and the lid 18.

[0034] As shown in FIGS. 4 and 5, the lid 18 is movable relative to the base 14 to a first or closed position. The hinge 22 is pivotable relative to the base 14, and the lid 18 is pivotable relative to the hinge 22. Both the hinge 22 and the lid 18 pivot in a first rotational direction identified by arrow 66 (e.g., counterclockwise in FIG. 5). In the illustrated embodiment, the hinge 22 is pivotable to a substantially vertical position, and the lid 18 is pivotable to a substantially orthogonal position relative to the hinge 22. In the illustrated embodiment, the base 14 includes stops 74 (FIG. 5), which extend from one of the walls 30. The hinge 22 pivots in the first rotational direction 66 toward the stops 74, and may pivot up to contacting the stops 74. The stops 74 prevent the hinge 22 from being acute with respect to the wall 30. In the closed position, the walls 46 of the lid 18 contact the walls 30 of the base 14. The two sets of walls 30, 46 interlock and help secure the case 10 in the event that the case 10 is dropped. In particular, the illustrated wall 46 includes a protrusion or projection 63 formed on a lower edge of the wall 46, while the illustrated wall 30 includes a gap or recess 64 formed in an upper edge of the wall 30. The recess 64 receives the projection 63 to form the interlock between the walls 30, 46. In other embodiments, the locations of the projection 63 and the recess 64 may be reversed, or the walls 30, 46 may

include other features for creating an interlock between the walls 30, 46. In the illustrated embodiment, when the lid 18 is closed, the lower surface 26 faces the upper surface 42, and the recesses 38 are aligned with the recesses 50 (FIG. 1).

[0035] Before the lid 18 is closed, the latch 39 is moved along the wall 30, providing clearance for the second locking member 51. Once the lid is closed 18, the latch 39 is moved back along the wall 30 to engage the second locking member 51, thereby securing the lid 18 to the base 14. In some embodiments, the latch 39 may include a biasing member (e.g., a spring) to bias the latch 39 into engagement with the locking member 51. Additionally or alternatively, in some embodiments, the latch 39 may be pivotable relative to the wall 30 to engage and disengage the locking member 51. In further embodiments, other suitable types of latches may be used. In the illustrated embodiment, the lid 18 completely covers the cavity 34 in the closed position.

[0036] As shown in FIGS. 6 and 7, the lid 18 is also movable relative to the base 14 to a second or fully open position. The hinge 22 and the lid 18 pivot in a second rotational direction identified by arrow 70 (e.g., clockwise in FIG. 7), which is opposite the first rotational direction 66 (FIG. 5). The lid 18 pivots in the second rotational direction 70 and allows the base 14 to rest on top of the lid 18 (i.e., the lower surface 26 faces in an opposite direction as the upper surface 42). In the illustrated embodiment, an outer surface 112 the base 14 opposite the lower surface 26 includes projections or feet 110 disposed proximate corners of the base 14 (FIG. 5). An outer surface 113 of the lid 18 opposite the upper surface 42 includes complementary depressions 114 (FIG. 4). The feet 110 mate with the depressions 114 when the base 14 rests on top of the lid 18, securing (e.g., via an interference fit) the lid 18 to the base 14 until the two are moved (e.g., pulled) apart by a user.

[0037] In the open positon, the cavity 34 is unobstructed (i.e., the lid 18 and the hinge 22 are not blocking the cavity 34). While in this position, a user may access the cavity 34 along any of the walls 30. In other situations (not shown), a user may not need to move the lid 18 to the fully open position, and may pivot the hinge 22 and the lid 18 in the second rotational direction 70 so that the lid 18 is spaced apart from the base 14, but that the base 14 does not rest on top of the lid 18. The fully open position, however, is also useful when displaying the case 10 in, for example, a store. The case 10 may be packaged (e.g., in a clear blister pack) while in the fully open position so that potential purchasers can see into the case prior to buying.

[0038] The case 10 is used to store tools and tool accessories. For example, in the illustrated embodiment, the case 10 may be used to store hole saws and arbors. As shown in FIGS. 1 and 8, one or more first inserts are positioned within the cavity 34. In the illustrated embodiment, the first inset is an arbor box 78. The arbor box 78 includes a base 82 defining a compartment or cavity 86, a cover 90, and posts or pins 94. The cover 90 is movable (e.g., pivotable) relative to the base 82 and selectively covers the cavity 86 (FIG. 8). When the lid 18 is in the closed position (FIG. 4), the cover 90 is unable to open and expose the cavity 86. The lid 18 also includes two lugs 92 (FIG. 1), which engage the cover 90 when the lid 14 is in the closed position. The lugs 92 inhibit the cover 90 from opening in the event the case 10 is dropped. In the illustrated embodiment, the arbor box 78 includes two pins 94. The pins 94 are receivable in any of the recesses 38. A user may reposition the arbor box 78 anywhere within the case 10 by positioning the pins 94 within different recesses. Additional arbor boxes (not shown) may also be positioned within the case 10. The arbor box 78 is configured to store the arbor.

[0039] As shown in FIGS. 1 and 9, one or more second inserts are also positioned within the cavity 34. In the illustrated embodiment, the second inserts are pegs 98. Each of the illustrated pegs 98 has an elongated body with a first end 102 and a second end 106. The first end 102 is larger (e.g., wider) than the second end 106. Each peg 98 is also tapered from the first end 102 to the second end 106 such that the pegs 98 are generally frustoconically-shaped. The first end 102 is positionable in any of the recesses 38 and mates with both the inner projection 41 and an outer diameter of the recess 38. The pegs 98 are configured to hold hole saws. For example, the hole saws slide over the second end 106 and onto one of the pegs 98. In some scenarios, the pegs 98 are configured to hold one or more hole saws with different diameters in stacked configurations. Moving the pegs 98 to different recesses 38 allows a user to store the hole saws in different configurations within the case 10.

[0040] When the lid 18 is in the closed position (FIG. 10), the second end 106 of the peg 98 is received within the recess 50 of the lid 18 that is aligned with the recess 38 of the base 14 in which the peg 98 is positioned. The peg 98 is then coupled to both the base 14 and the lid 18 and is unable to move relative to either. Any hole saws positioned on the pegs 98 are unable to fall off the pegs 98 while the lid 18 is in the closed position. The pegs 98 also would not come loose if the case 10 was dropped because the pegs 98 are coupled to the base 14 and the lid 18 at both ends 102, 106.

[0041] FIGS. 11-13 illustrate a tool case 210 that is substantially similar to tool case 10. Similar features include the same reference number, plus "200". Only some differences and similarities between the tool case 210 and the tool case 10 will be described below.

[0042] As shown in FIGS. 11 and 12, the tool case 210 has a larger volume than the tool case 10, and includes a base 214 and a lid 218 that each have a larger surface area than the base 14 and the lid 18 of the tool case 10. The larger surface areas allow the base 214 and the lid 218 to include more recesses 238, 250 respectively. The recesses 238 are positioned adjacent to a lower surface 226. In the illustrated embodiment, the recesses 238 are formed directly on the lower surface 226.

[0043] The tool case 210 also includes a first locking member or latch (e.g., a toggle latch) 239 with a first movable piece 239a and a second moveable piece 239b. In the illustrated embodiment, the first movable piece 239a is a bar that is pivotable relative to the base 214 and engages the second locking member 251 on the lid 218. The second moveable piece 239b is also pivotable relative to the base 214 between a locked position adjacent a wall 230, and an unlocked position spaced from the wall 230. In the locked position, the first movable piece 239a is unable to engage or disengage the second locking member 251.

[0044] As shown in FIG. 12, each recess 238 on the lower surface 226 of the base 214 includes a bayonet channel 340. In the illustrated embodiment, the bayonet channel 340 extends around a portion of each recess 238. Each bayonet channel 340 may receive a peg 298 (FIG. 13). In the illustrated embodiment, the peg 298 includes a complementary bayonet projection 344 at the first end 302. The bayonet projection 344 engages the bayonet channel 340 to secure the peg 298 to the base 214 in an orthogonal position relative to the lower surface 226. In other embodiments, the pegs 298 may be threaded, and may be received within a threaded recess 238.

[0045] FIGS. 14 and 15 illustrate a tool case 410 that is substantially similar to tool case 10. Similar features include the same reference number, plus "400". Only some differences and similarities between the tool case 410 and the tool case 10 will be described below.

[0046] As shown in FIGS. 14 and 15, each peg 498 is coupled to the base using a fastening member 560 (e.g., a threaded screw). The tool case 410 includes recesses 438 positioned adjacent to a lower surface of the base 414. In the illustrated embodiment, the

base 414 includes a removable panel or insert 564 coupled to the base 414. The insert 564 includes the recesses 438 (i.e., the recesses 438 are not formed directly on the base 414). A user may remove the insert 564 from the base 414 and insert a screw 560 through one of the recesses 238. The user may then couple a peg 498 to the screw 560, which secures the peg 498 in an orthogonal position relative to the insert 564. The peg 498 is thereby secured to the corresponding recess 438 by the screw 560. The user then repositions the insert 564 within the base 514. In other embodiments, at least a portion of the peg 498 may be threaded, and may be received within a threaded recess 438.

[0047] FIGS. 16-19 illustrate a tool case 610 that is substantially similar to tool case 10. Similar features include the same reference number, plus "600". Only some differences and similarities between the tool case 610 and the tool case 10 will be described below.

[0048] As shown in FIGS. 16-18, the tool case 610 includes a base 614 with a first or lower surface 626 and walls 630 extending from the lower surface 626 and defining a cavity 634. The tool case 610 includes recesses 638 positioned adjacent to the lower surface 626. In the illustrated embodiment, a removable panel or insert 730 is coupled to the lower surface 626 of the base 614. The removable insert 730 includes recesses 638 (i.e., the recesses 638 are not formed directly on the lower surface 626). The recesses 638 are arranged in rows along the removable insert 730. In the illustrated embodiment, each row of recesses 638 is offset from adjacent rows of recesses 638. Each recess 638 includes a double bayonet shape (i.e., the recess 638 includes a pair of bayonet channels 740). In other words, the recesses 638 define a partially circular shape, with the pair over bayonet channels 740 defining overhangs that extend toward a center of the respective recess 638.

[0049] As shown in FIG. 19, a peg 698 may be received in any of the recesses 638. The peg 698 includes an elongated body with a first end 702 and a second end 706. The first end 702 includes a bayonet projection 744 that engages a bayonet channel 740 in order to secure the peg 698 to the removable insert 730 in an orthogonal position relative to the removable insert 730. The second end 706 of the peg 698 is received within the recess 650 of the lid 618 that is aligned with the recess 638 of the base 614. In the illustrated embodiment, the second end 706 has a semi-spherical shape and is receivable within a generally circular shaped recess 650. The elongated body of the peg 698 also has an X-shape. Specifically, the peg 698 has an x-shaped cross-section when taken through a horizontal plane (with respect to FIG. 19). The base 682 of the arbor box 678 may include cylindrical pegs (not shown) with a

diameter less than the distance between the bayonet channels 740. In other words, the arbor box 678 is not coupled to the removable insert 730 with a bayonet engagement.

[0050] The embodiment(s) described above and illustrated in the figures are presented by way of example only and are not intended as a limitation upon the concepts and principles of the present disclosure. As such, it will be appreciated that variations and modifications to the elements and their configuration and/or arrangement exist within the spirit and scope of one or more independent aspects as described.

CLAIMS

What is claimed is:

1. A container comprising:

a base including a lower surface, base walls extending from the lower surface, and a cavity defined by the lower surface and the base walls;

first recesses positioned adjacent to the lower surface;

a lid movably coupled to the base to selectively enclose the cavity, the lid including an upper surface and lid walls extending from the upper surface; and

an insert positioned within the cavity and removably coupled to the lower surface of the base, the insert including a projection received within one of the first recesses,

wherein the insert is engaged by the lid when the lid is closed.

2. The container of claim 1, wherein the insert includes a peg configured to hold a hole saw, wherein the peg includes a first end removably receivable within one of the first recesses and a second end opposite the first end, and wherein the second end is engaged by the lid when the lid is closed.

3. The container of claim 2, wherein the upper surface includes second recesses, and wherein the second end of the peg is removably received within one of the second recesses when the lid is closed.

4. The container of claim 3, wherein each first recess is aligned with one respective second recess.

5. The container of claim 4, wherein the first recesses and the second recesses are arranged in offset rows.

6. The container of claim 2, wherein the projection is a bayonet projection, wherein the one of the first recesses includes a bayonet channel, and wherein the peg is removably coupled to the one of the first recesses with a bayonet style coupling.

7. The container of claim 2, wherein the peg has a generally X-shaped body.

8. The container of claim 2, wherein the peg is secured to the one of the first recesses by a fastening member.

9. The container of claim 1, wherein the insert includes an arbor box with a base defining a compartment configured to store an arbor, and a cover selectively enclosing the compartment.

10. The container of claim 9, wherein the projection is a post extending from base of the arbor box and removably received within the one of the first recesses.

11. The container of claim 9, wherein the lid includes a lug extending from the upper surface and engaging the cover when the lid is closed.

12. The container of claim 1, further comprising a panel removably positionable within the cavity, the panel having the first recesses.

13. The container of claim 1, further comprising a hinge coupled between the base and the lid, wherein the hinge is rotatable relative to the base about a first axis, wherein the lid is rotatable relative to the hinge about a second axis parallel to and spaced apart from the first axis, and wherein the lid and the base are moveable independently with respect to the hinge.

14. The container of claim 13, wherein the lid is movable between a first position, in which the lid encloses the cavity, and a second position, in which the base rests on the lid.

15. A container comprising:

a base including a lower surface, base walls extending from the lower surface, and a cavity defined by the lower surface and the base walls;

a hinge pivotably coupled to the base; and

a lid pivotably coupled to the hinge to selectively enclose the cavity, the lid including an upper surface and lid walls extending from the upper surface,

wherein the hinge is rotatable relative to the base about a first axis, and the lid is rotatable relative to the hinge about a second axis parallel to and spaced apart from the first axis, and

wherein the lid is movable between a first position, in which the lid encloses the cavity, and a second position, in which the base rests on the lid.

16. The container of claim 15, wherein

the hinge is pivotable relative to the base in a first rotational direction and in a second rotational direction; and

the lid is pivotable relative to the hinge in the first rotational direction and in the second rotational direction.

17. The container of claim 15, wherein the lid further includes a first locking member and the base further includes a second locking member, the first and second locking members configured to couple to one another while the lid encloses the cavity.

18. The container of claim 15, further comprising:

first recesses positioned adjacent to the first surface; and

an insert positioned within the cavity and removably coupled to the lower surface of the base, the insert including a projection received within one of the first recesses.

19. The container of claim 15, wherein the base includes a foot coupled to a first outer surface of the base opposite the lower surface, wherein the lid includes a depression formed on a second outer surface of the lid opposite the upper surface, and wherein the foot is received in the depression when the lid is in the second position.

20. The container of claim 15, wherein an upper edge of the base walls includes a gap or a protrusion, wherein a lower edge of the lid walls includes another of the gap or the protrusion, and wherein the protrusion is received within the gap when the lid is in the first position.

21. A container comprising:

a base including a lower surface, base walls extending from the lower surface, and a cavity defined by the lower surface and the base walls;

first recesses positioned adjacent to the lower surface;

a hinge pivotably coupled to the base;

a lid pivotably coupled to the hinge to selectively enclose the cavity; and

an insert positioned within the cavity, the insert including a projection received within one of the first recesses,

wherein the lid is movable between a first position, in which the lid encloses the cavity, and a second position, in which the base rests on the lid, and

wherein the lid engages the insert when the lid is in the first position.

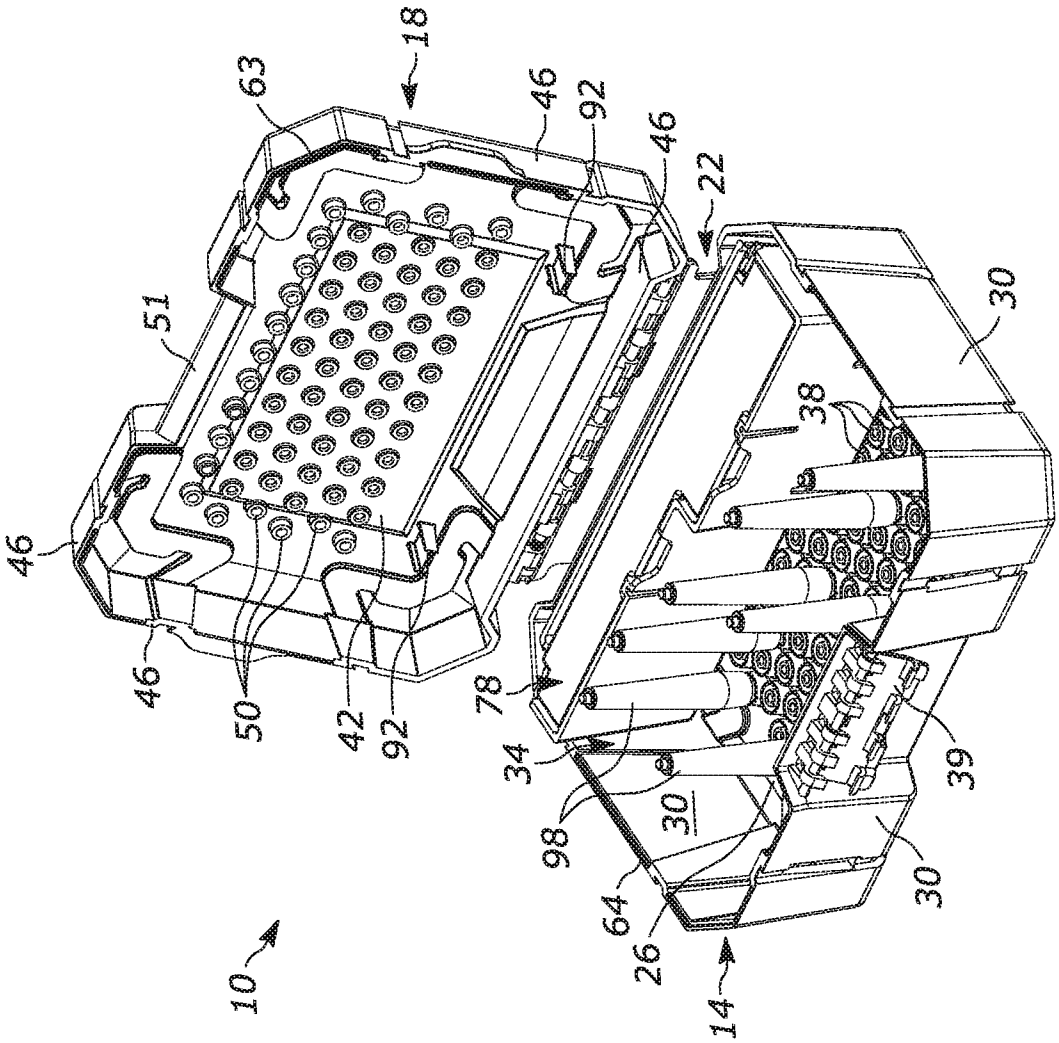

FIG. 1

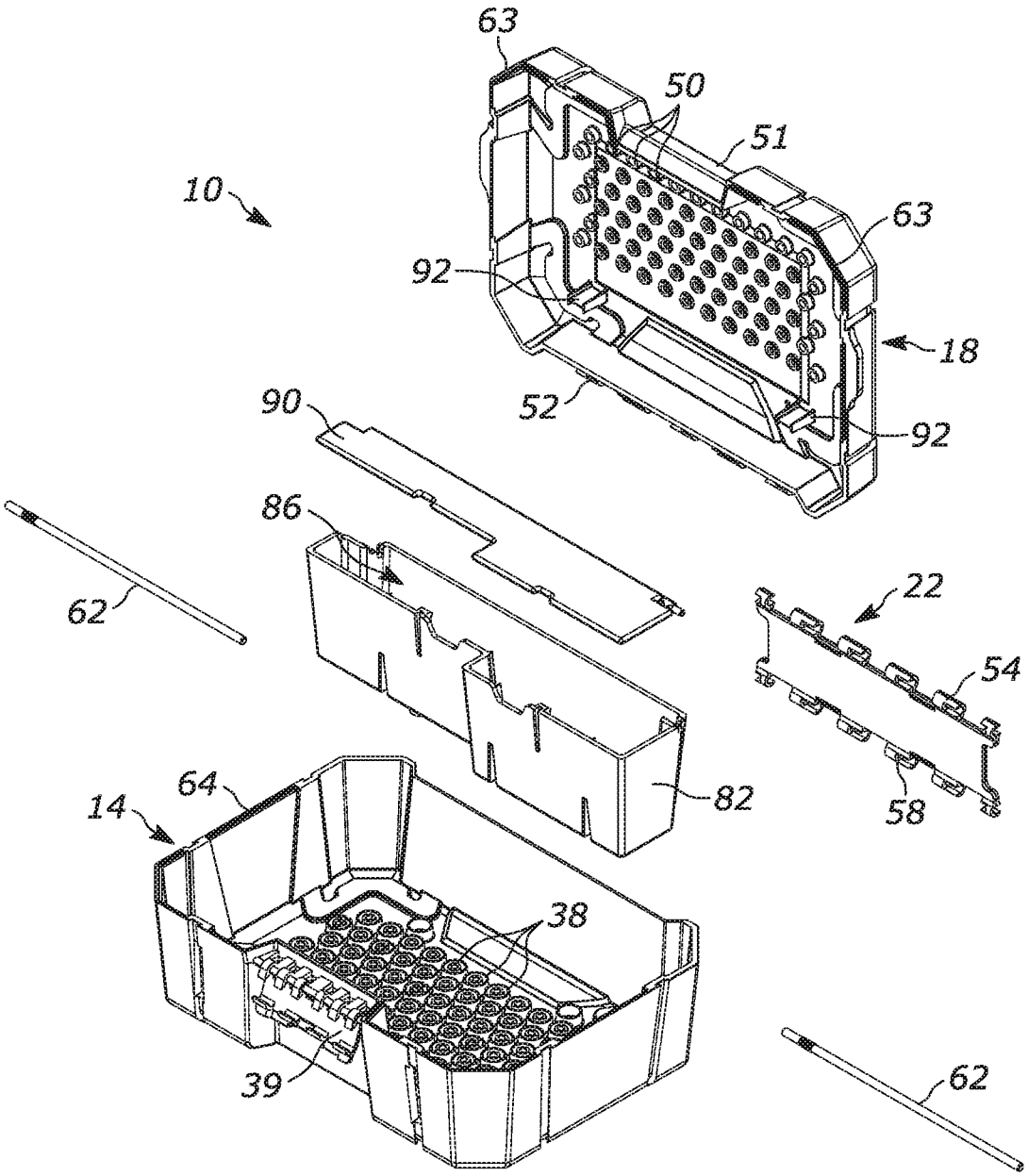

FIG. 2

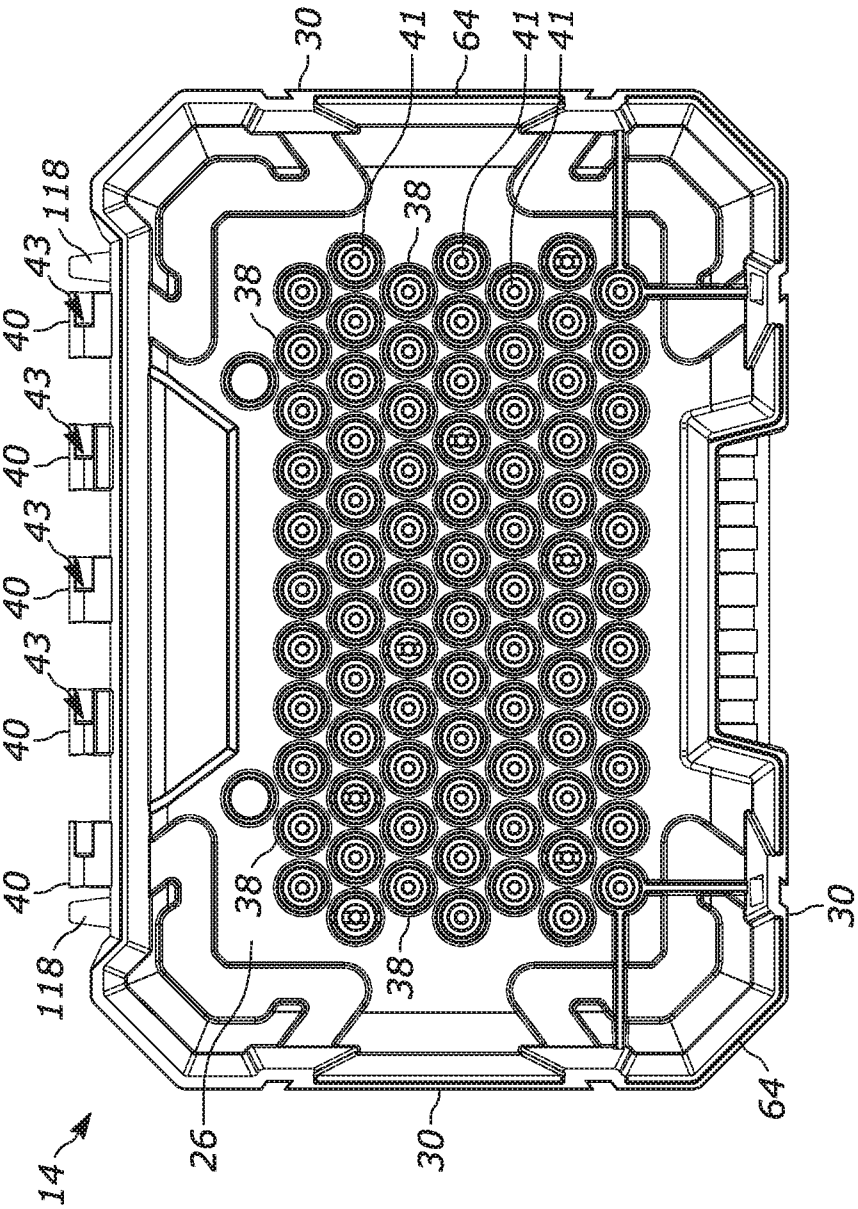
30
41
64
41
41
118
43
40
43
40
43
40
43
40
40
118
38
38
38
38
30
64
26
30
14

FIG. 3

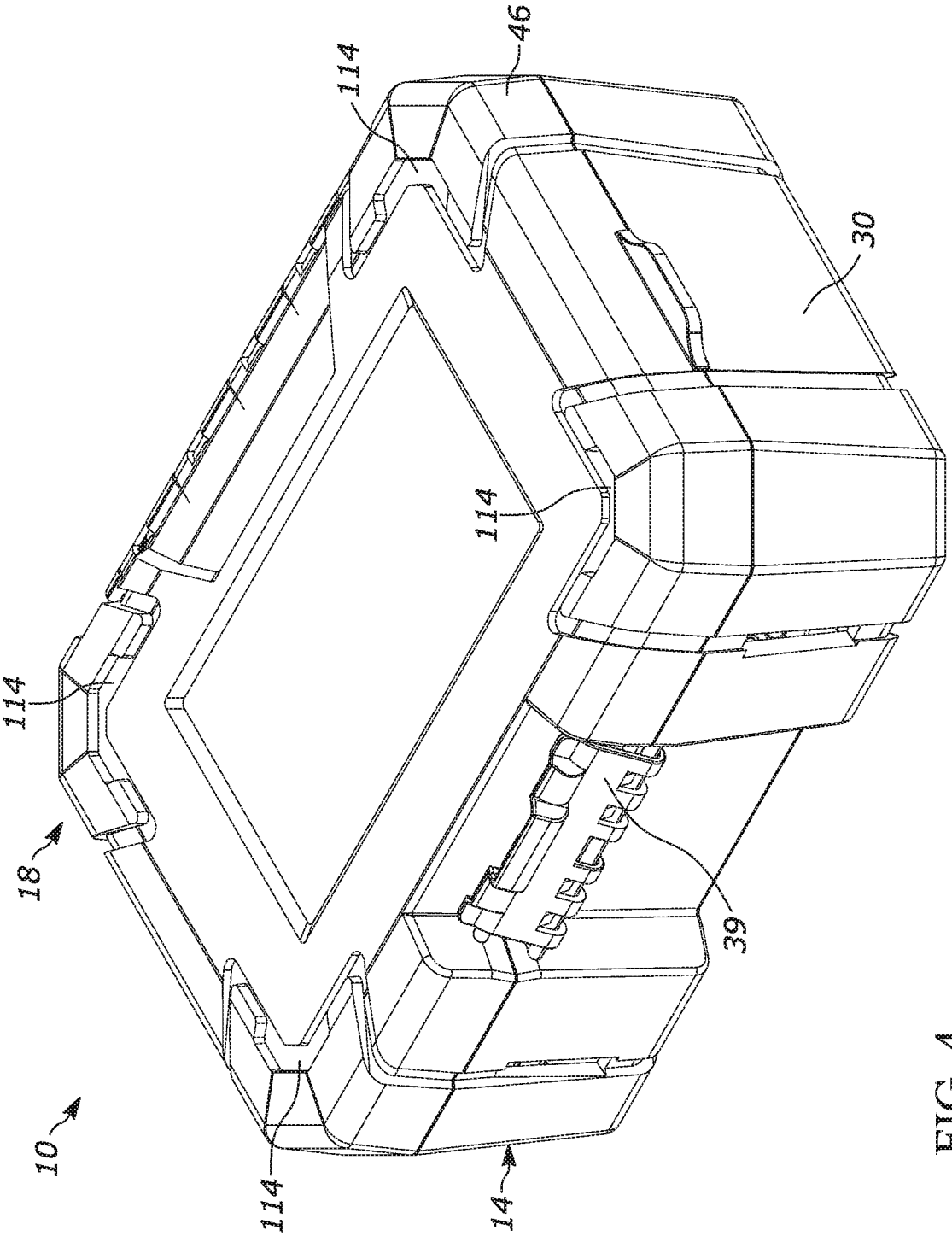

FIG. 4

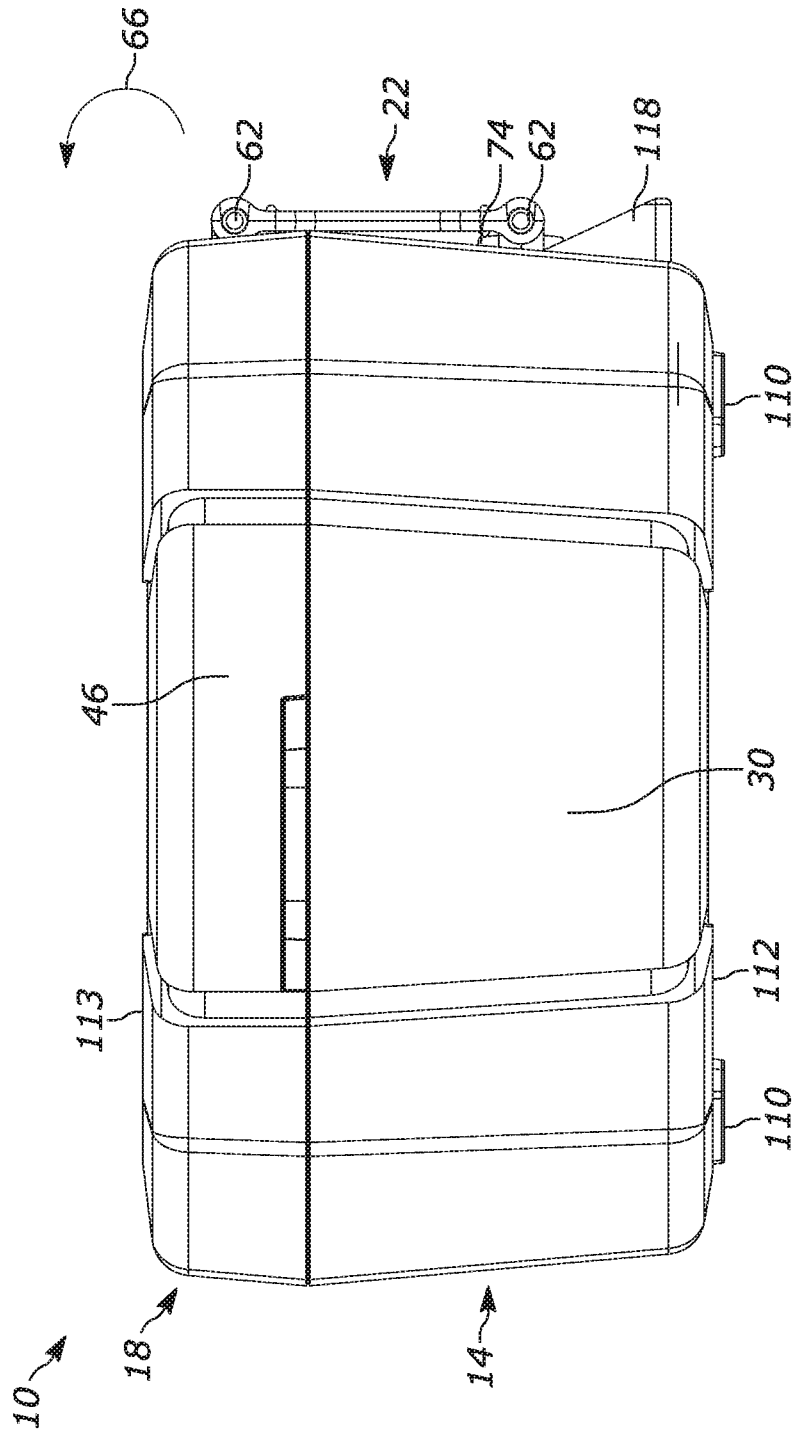

FIG. 5

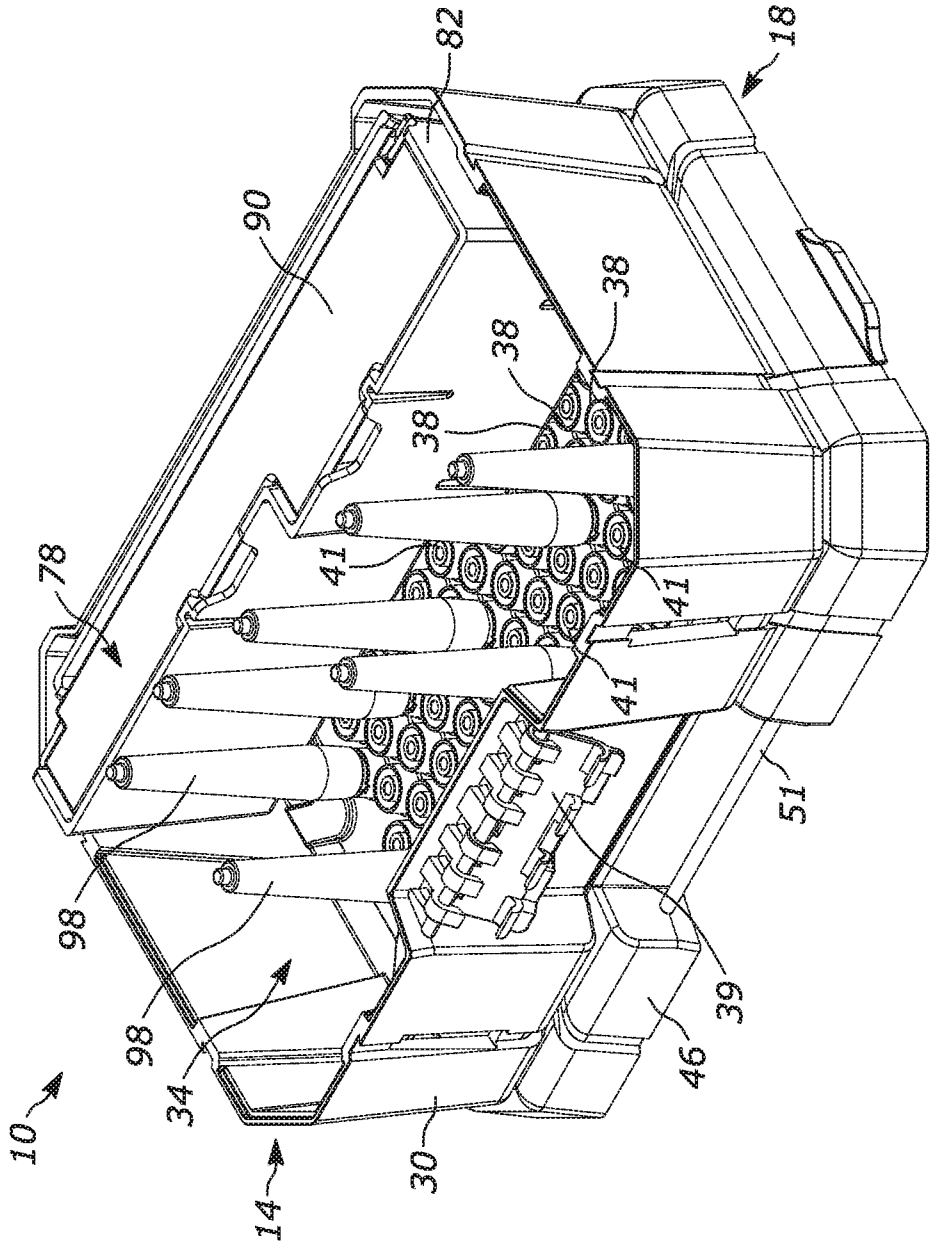

FIG. 6

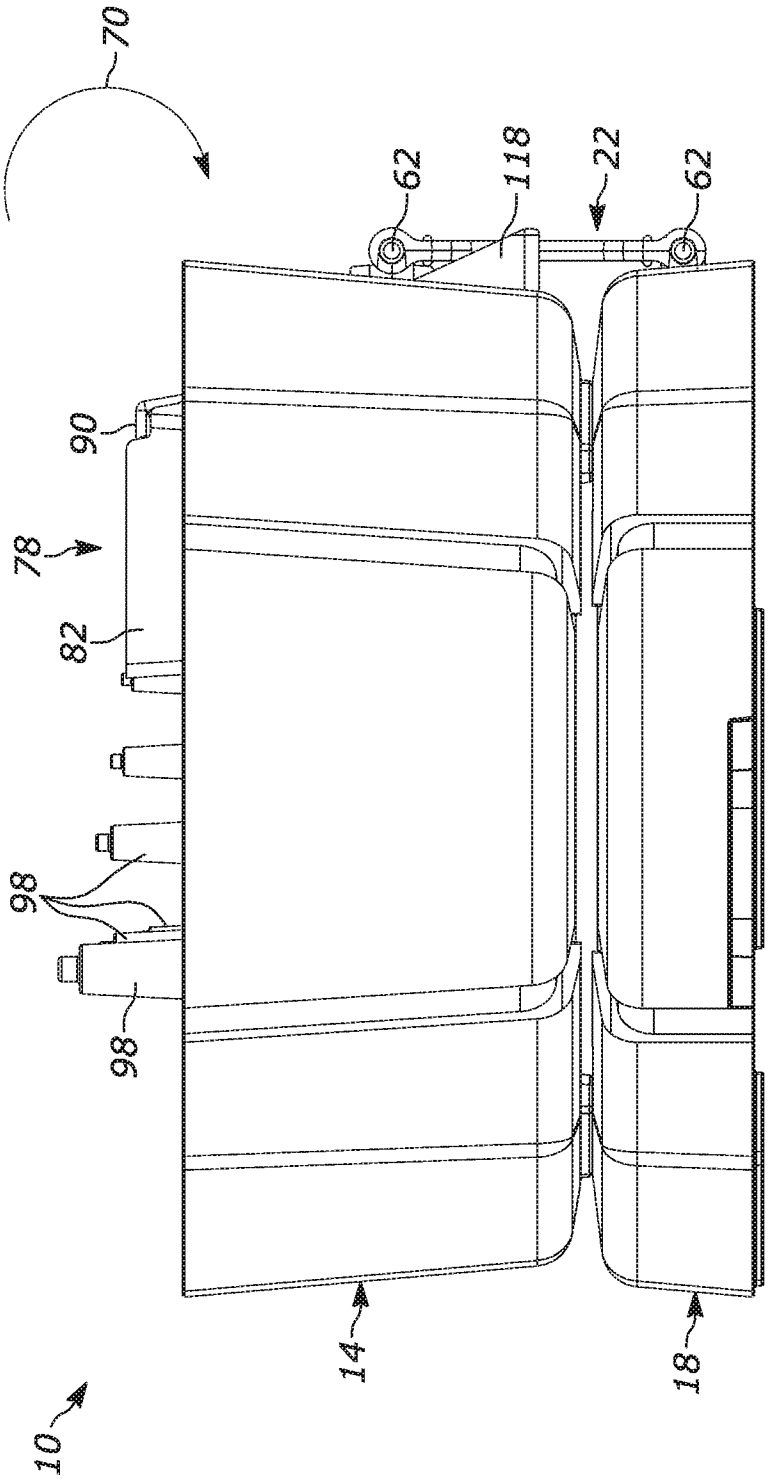

FIG. 7

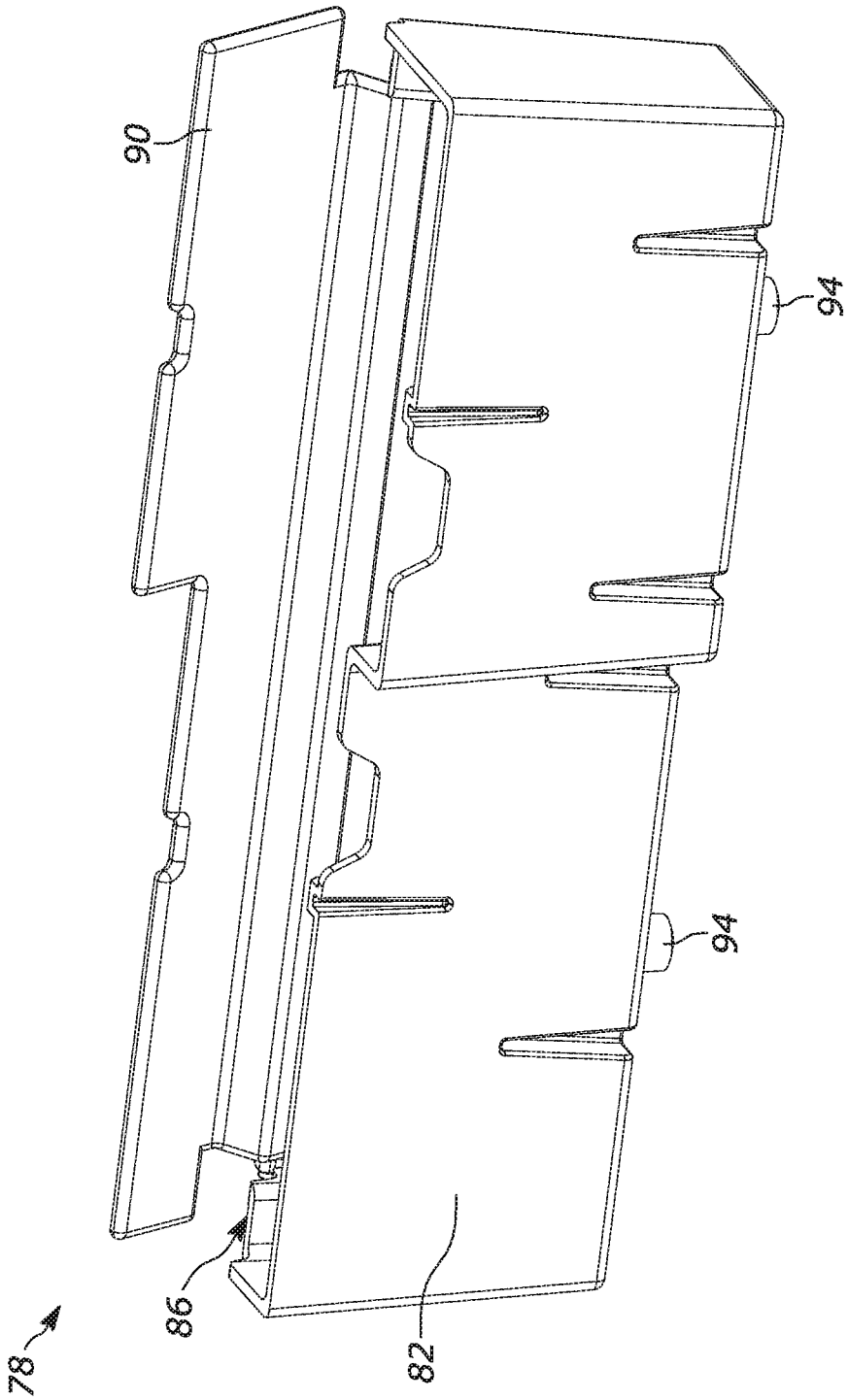

FIG. 8

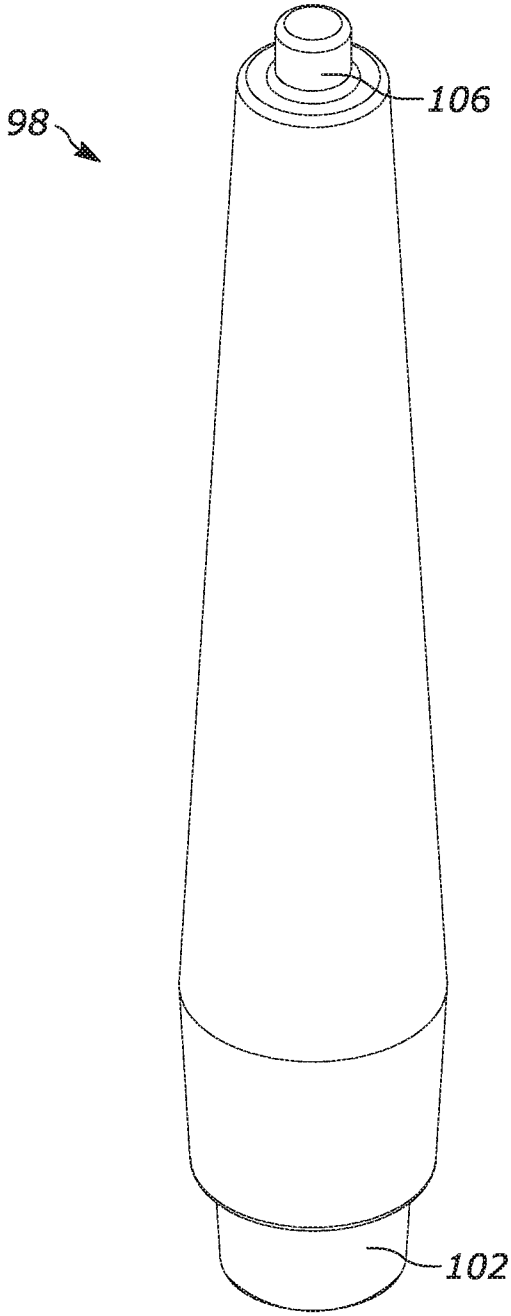

FIG. 9

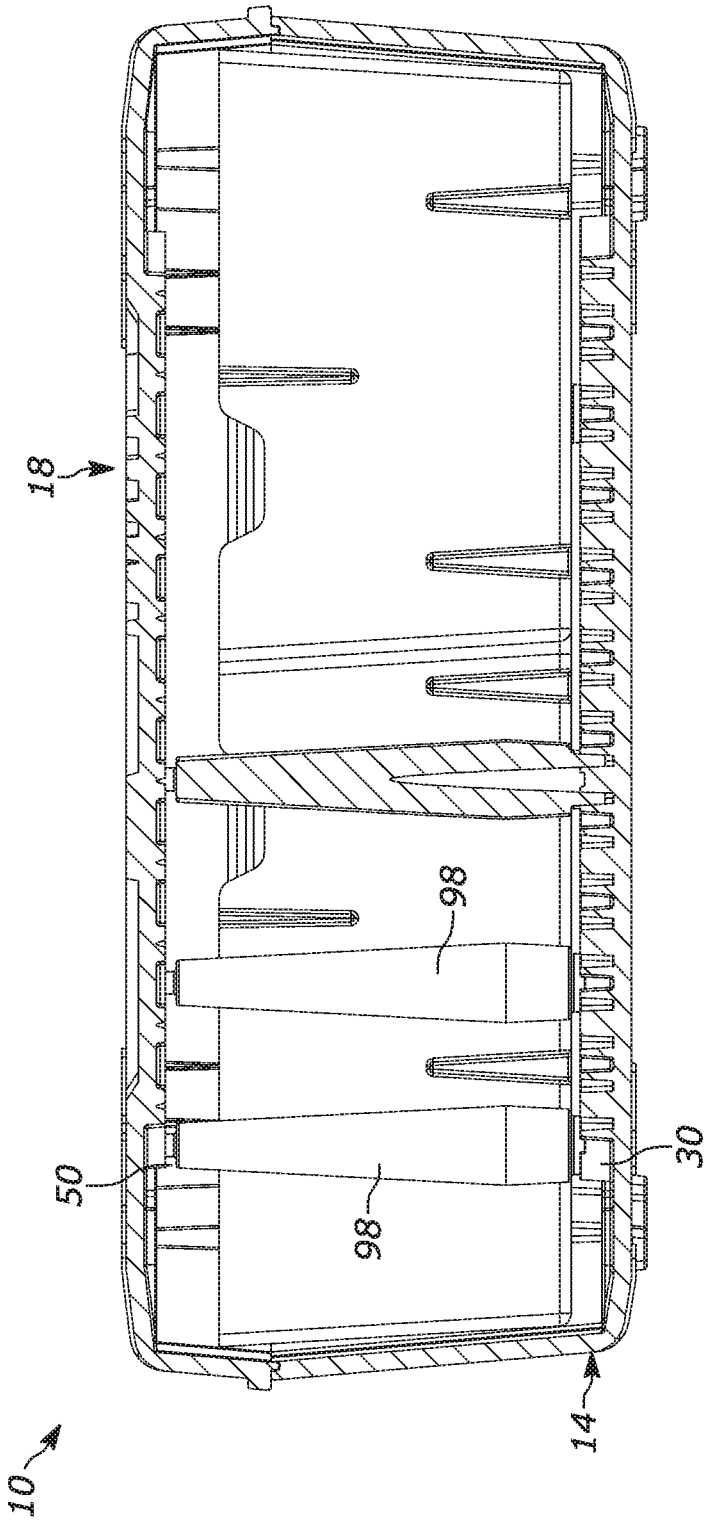

FIG. 10

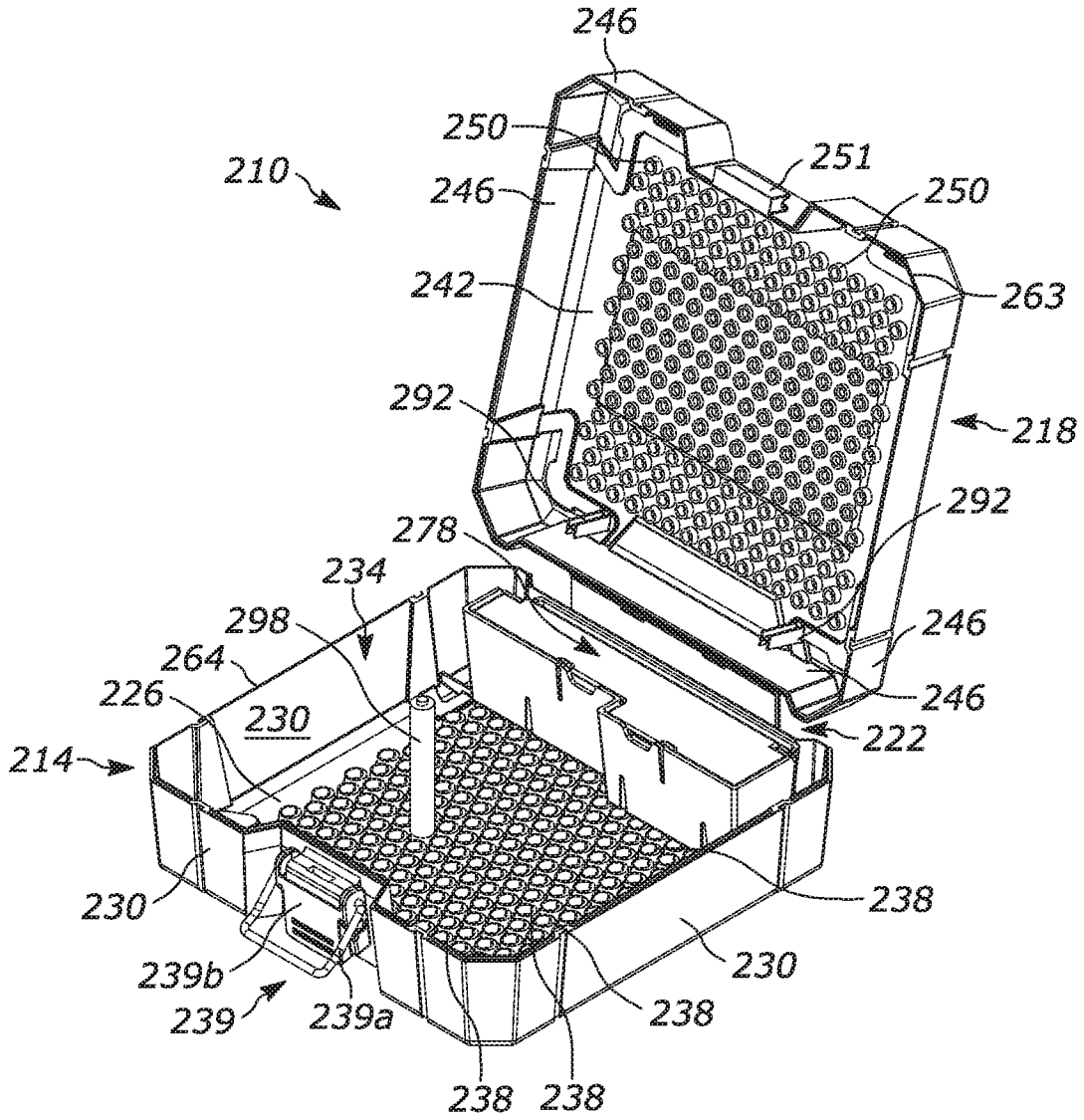
246
250
210
246
251
250
242
263
292
218
292
278
234
298
246
264
246
226
230
222
214
230
238
239b
230
239
239a
238
238
238

FIG. 11

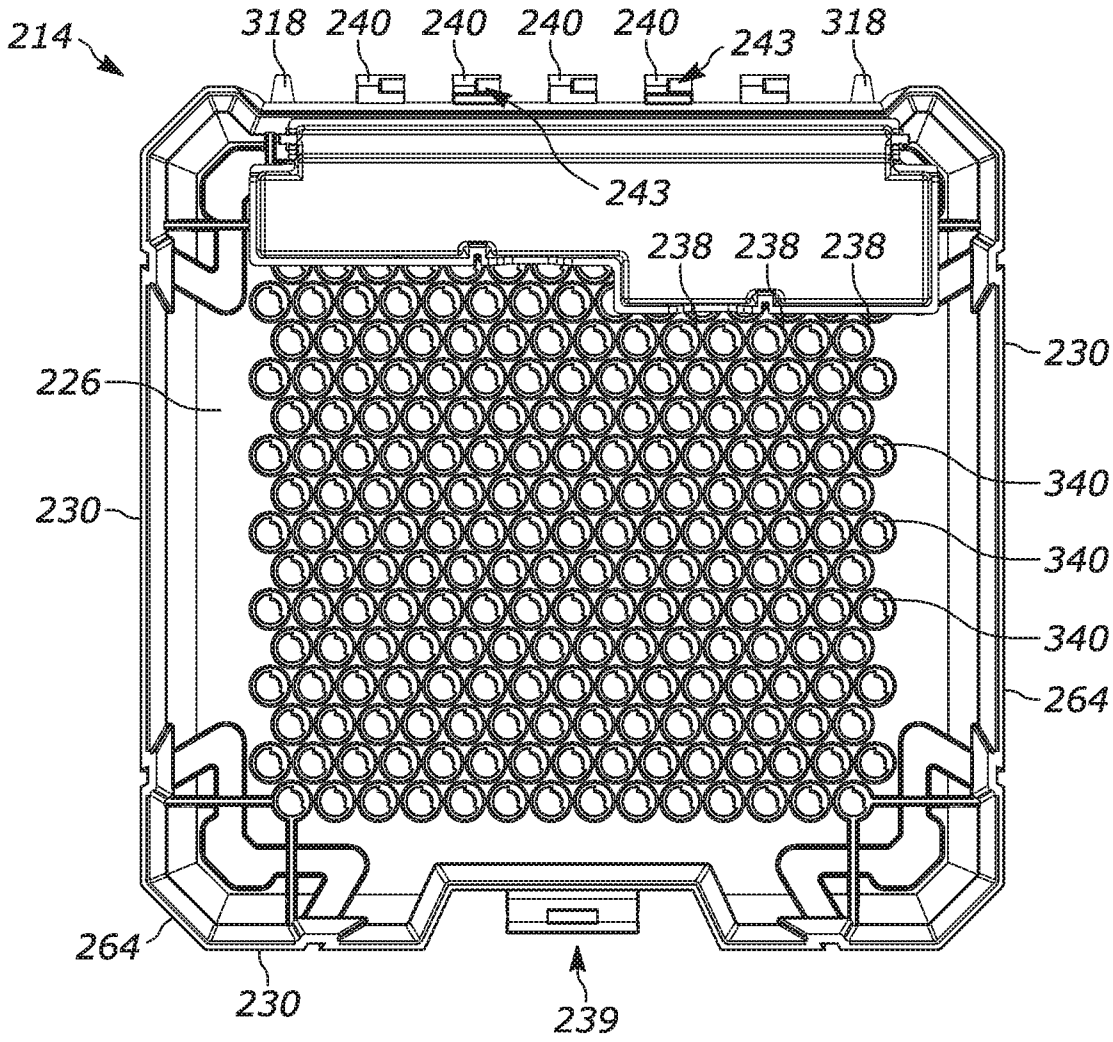
214
318
240
240
240
240
243
318
243
238
238
238
230
226
340
230
340
340
264
264
230
239

FIG. 12

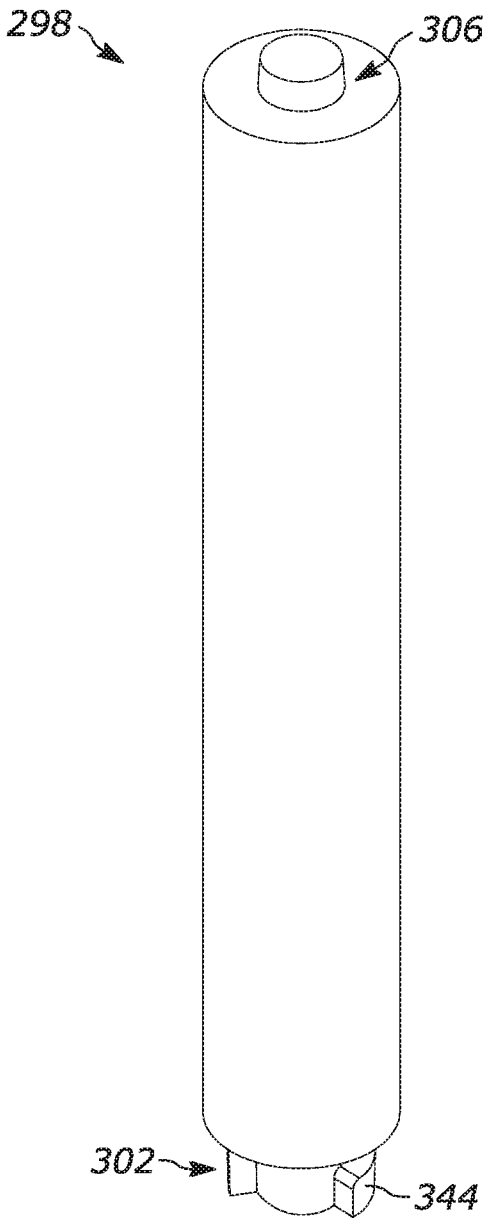

FIG. 13

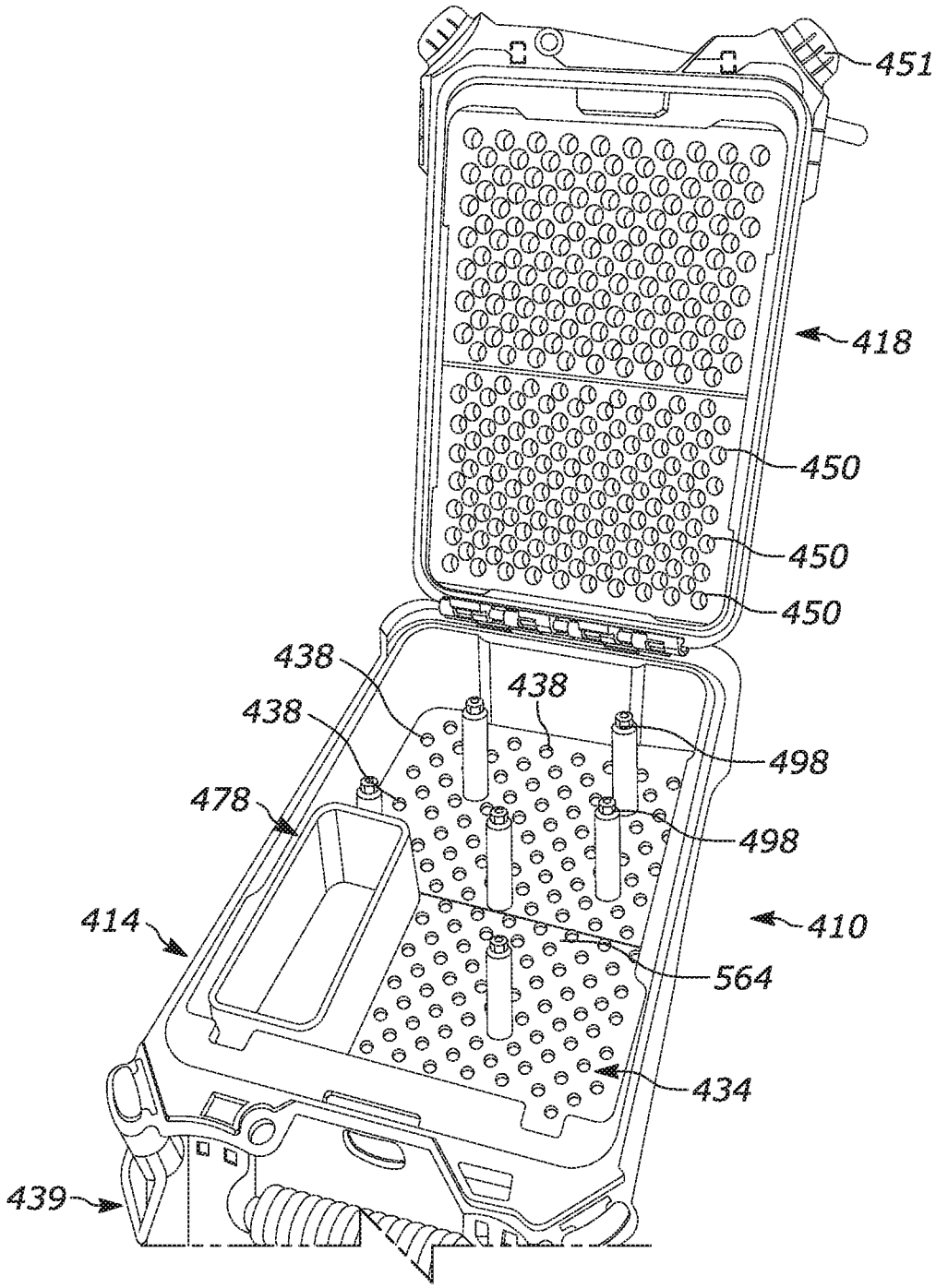

FIG. 14

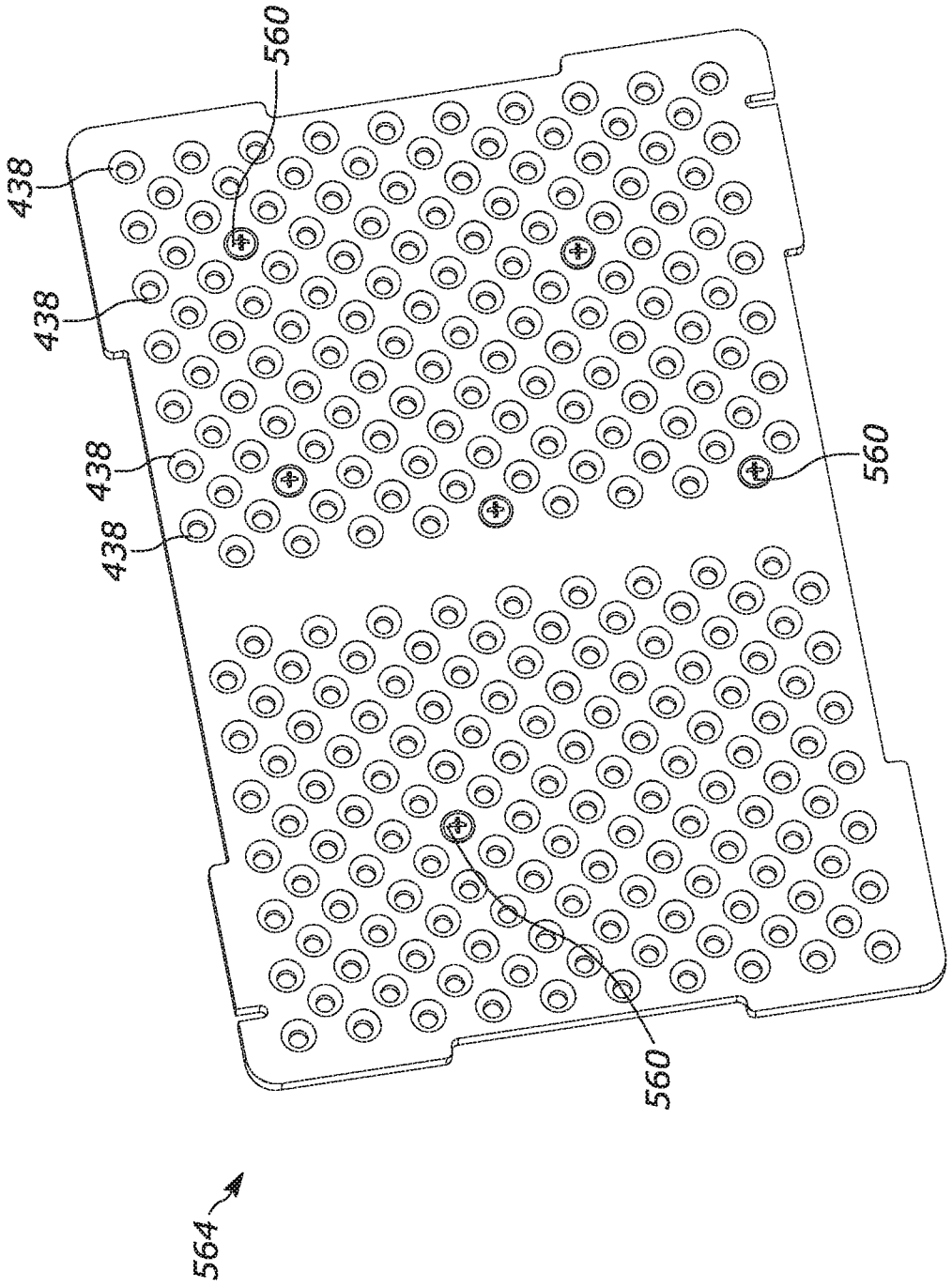

FIG. 15

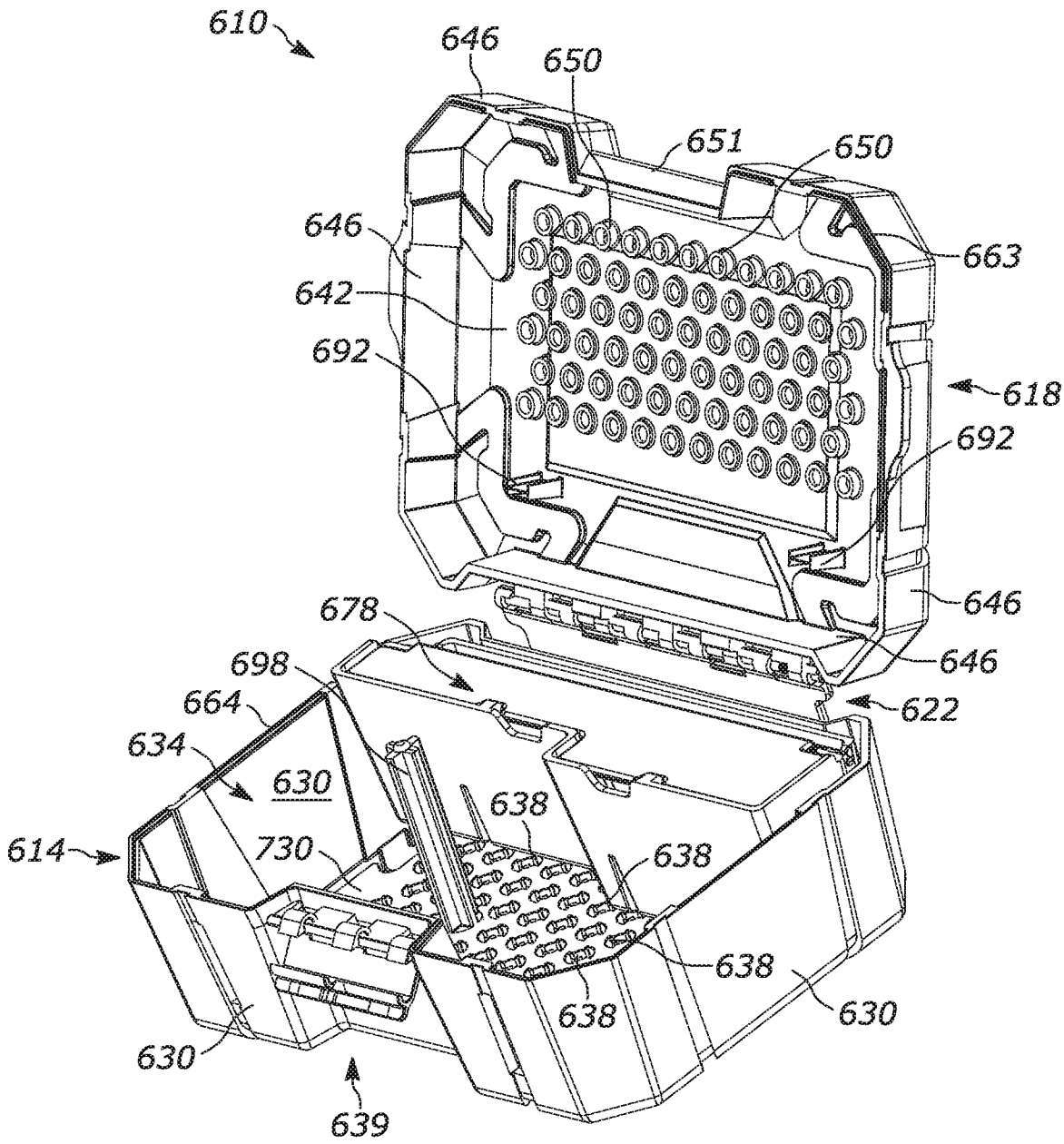
610
646
650
651
650
646
663
642
692
618
692
646
678
646
698
622
664
634
630
638
614
730
638
638
638
630
630
639

FIG. 16

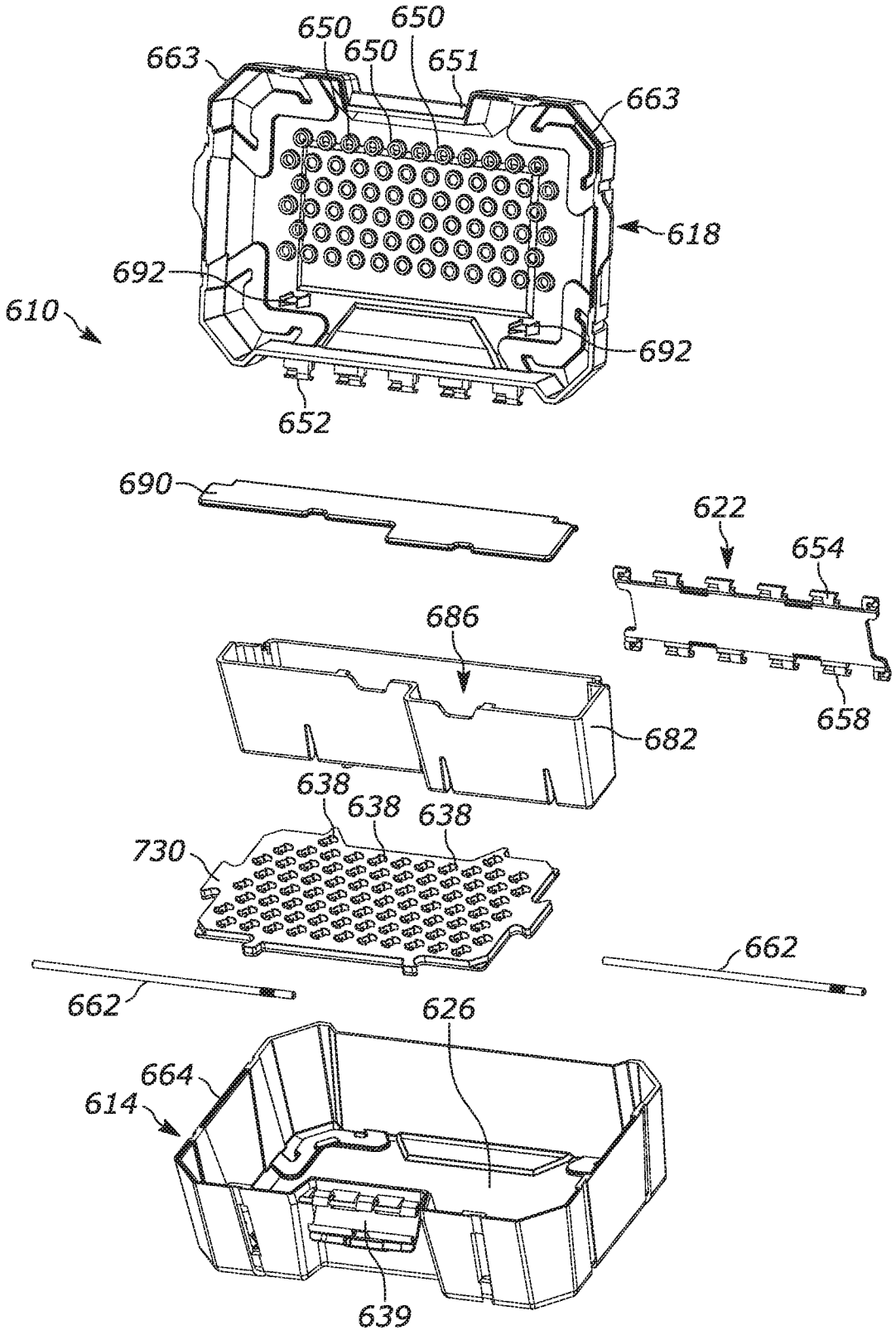
650
650
650
651
663
663
618
692
610
692
652
690
622
654
686
682
658
638
638
638
730
662
662
626
664
614
639

FIG. 17

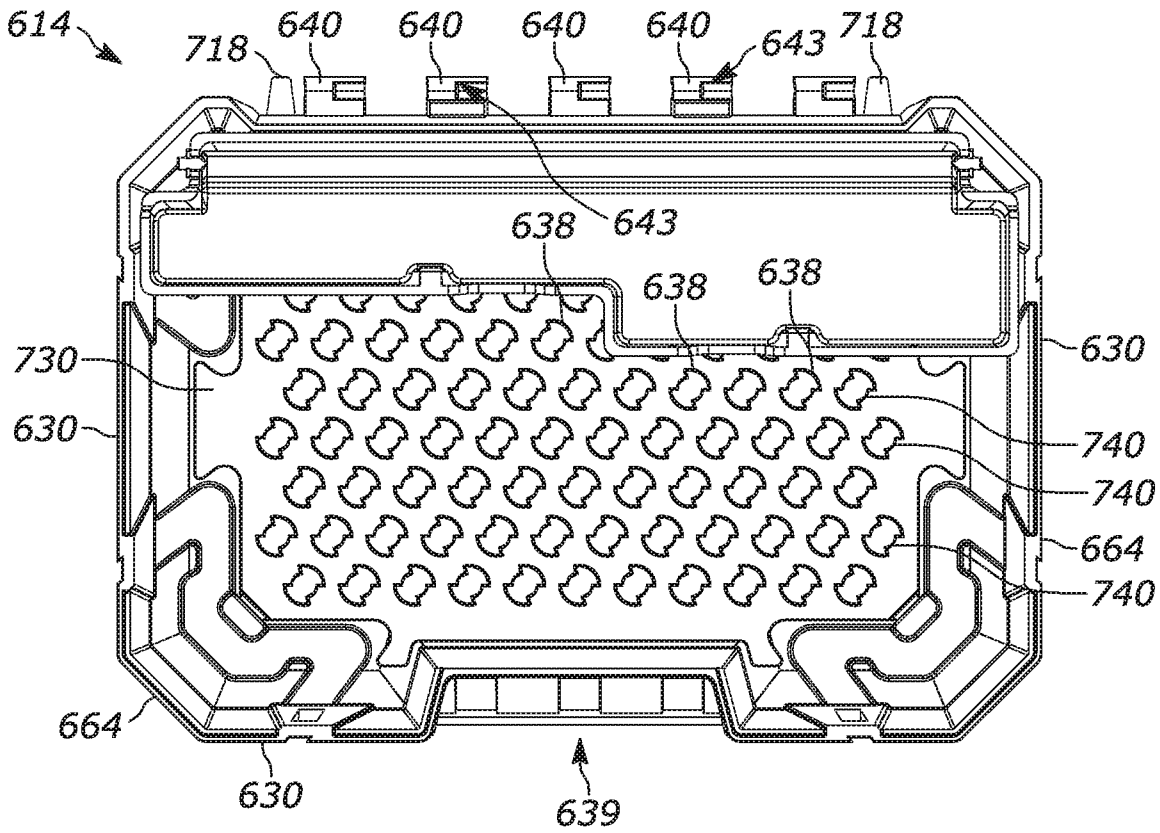
614
718
640
640
640
640
643
718
643
638
638
638
730
630
630
740
740
664
740
664
630
639

FIG. 18

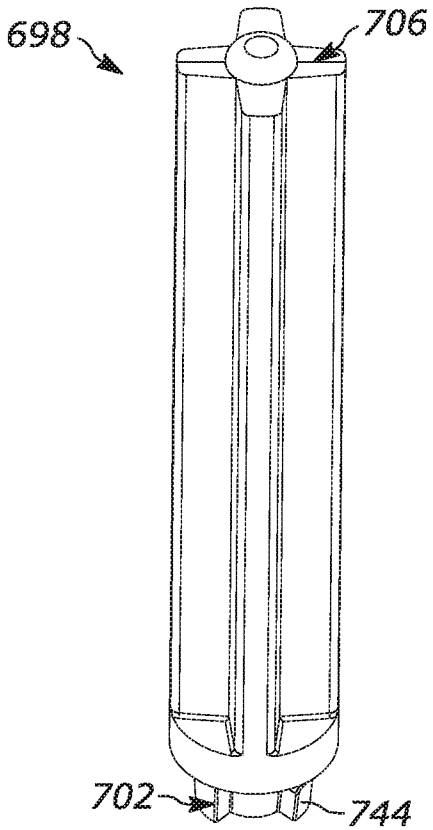

FIG. 19

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2019/050168

A. CLASSIFICATION OF SUBJECT MATTER

B25H 3/02(2006.01)i, B65D 25/04(2006.01)i, B65D 43/22(2006.01)i, B65D 45/16(2006.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
B25H 3/02; B25H 3/00; B65D 25/28; B65D 85/20; B65D 85/28; E05C 19/10; B65D 25/04; B65D 43/22; B65D 45/16

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Korean utility models and applications for utility models
Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
eKOMPASS(KIPO internal) & Keywords: tool container, recesses, insert, lid, base

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2006-0070900 A1 (BRUNSON et al.) 06 April 2006 See paragraphs [0026]-[0038]; claim 1; and figures 1-3, 8.	1-12
Y		13-21
Y	US 2014-0231307 A1 (WEN, HAO) 21 August 2014 See paragraphs [0030]-[0037]; claim 1; and figures 1-3.	13-21
X	US 2017-0165829 A1 (RAACO A/S) 15 June 2017 See paragraphs [0043]-[0058]; and figures 1-3.	1-12
A	WO 00-09421 A1 (BLACK & DECKER INC. et al.) 24 February 2000 See claims 1-10; and figures 1-5.	1-21
A	KR 20-1995-0010112 Y1 (PARK, SEUNG BU) 27 November 1995 See claim 1; and figures 1-4.	1-21

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"D" document cited by the applicant in the international application
"E" earlier application or patent but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents,such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
27 December 2019 (27.12.2019)	**27 December 2019 (27.12.2019)**

Name and mailing address of the ISA/KR
International Application Division
Korean Intellectual Property Office
189 Cheongsa-ro, Seo-gu, Daejeon, 35208, Republic of Korea
Facsimile No. +82-42-481-8578

Authorized officer
HWANG, Chan Yoon
Telephone No. +82-42-481-3347

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2019/050168

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2006-0070900 A1	06/04/2006	AT 536312 T	15/12/2011
		BR PI0517554 A	14/10/2008
		EP 1796970 A2	20/06/2007
		EP 1796970 A4	23/12/2009
		EP 1796970 B1	07/12/2011
		MX 2007004065 A	04/06/2007
		TW 200616768 A	01/06/2006
		US 7246704 B2	24/07/2007
		WO 2006-041766 A2	20/04/2006
		WO 2006-041766 A3	09/11/2006
US 2014-0231307 A1	21/08/2014	AU 2012-325514 A1	27/03/2014
		CA 2850242 A1	25/04/2013
		CN 202292723 U	04/07/2012
		EP 2768634 A1	27/08/2014
		WO 2013-056566 A1	25/04/2013
US 2017-0165829 A1	15/06/2017	CA 2954493 A1	14/01/2016
		CN 106687256 A	17/05/2017
		DK 3166757 T3	06/08/2018
		EP 2965869 A1	13/01/2016
		EP 3166757 A2	17/05/2017
		EP 3166757 B1	16/05/2018
		ES 2679623 T3	29/08/2018
		JP 2017-523098 A	17/08/2017
		PT 3166757 T	30/07/2018
		US D757435 S	31/05/2016
		WO 2016-005506 A2	14/01/2016
		WO 2016-005506 A3	31/03/2016
WO 00-09421 A1	24/02/2000	AU 5773899 A	06/03/2000
		EP 1127017 A1	29/08/2001
		EP 1127017 A4	22/07/2009
		EP 2177459 A2	21/04/2010
		EP 2177459 A3	26/01/2011
		US 2004-0154942 A1	12/08/2004
		US 2008-0035508 A1	14/02/2008
		US 6213296 B1	10/04/2001
		US 6405864 B1	18/06/2002
		US 6755302 B1	29/06/2004
		US 7316309 B2	08/01/2008
		US 9238301 B2	19/01/2016
		WO 00-09421 A8	25/05/2000
KR 20-1995-0010112 Y1	27/11/1995	JP 07-096477 A	11/04/1995
		KR 20-1995-0008380 U	17/04/1995