Office de la Propriété Intellectuelle du Canada
Un organisme d'Industrie Canada

Canadian Intellectual Property Office
An agency of Industry Canada

CA 2843045 A1 2014/08/18

(21) 2 843 045

(12) DEMANDE DE BREVET CANADIEN
CANADIAN PATENT APPLICATION

(13) A1

(22) Date de dépôt/Filing Date: 2014/02/18

(41) Mise à la disp. pub./Open to Public Insp.: 2014/08/18

(30) Priorités/Priorities: 2013/02/18 (US61/766,042);
2013/06/21 (US61/838,221)

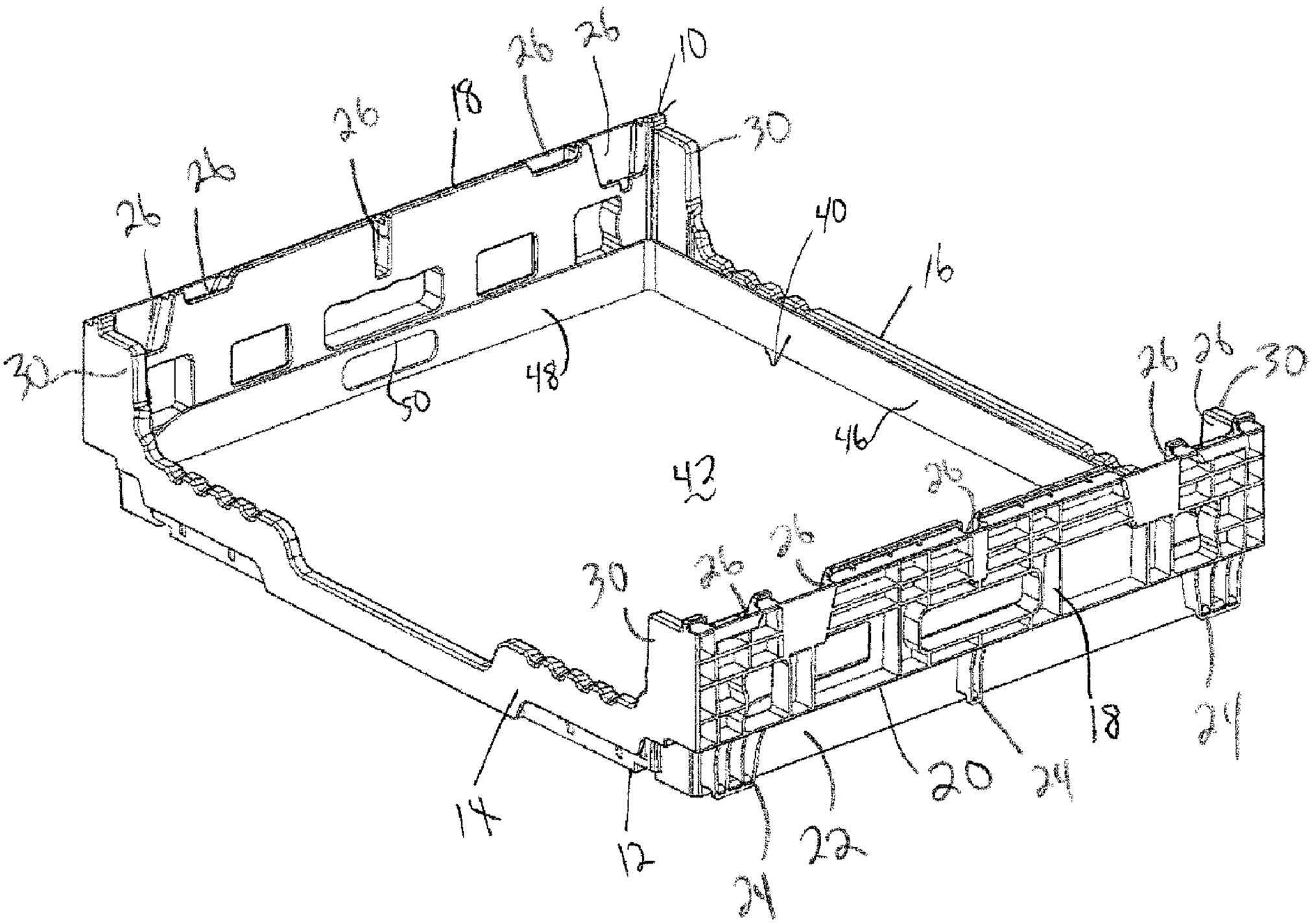
(51) Cl.Int./Int.Cl. *B65D 1/34* (2006.01)

(71) Demandeur/Applicant:
REHRIG PACIFIC COMPANY, US

(72) Inventeurs/Inventors:
HASSELL, JON P., US;
RINDFLEISCH, GLENN, US

(74) Agent: MACRAE & CO.

(54) Titre : SYSTEME DE LIVRAISON ET MISE EN MARCHE DE PRODUITS DE BOULANGERIE
(54) Title: BAKERY DELIVERY AND MERCHANDISING SYSTEM



(57) Abrégé/Abstract:
A tray assembly includes a tray having a base, a pair of opposed side walls extending upward from side edges of the base. Front and rear walls extend upward from front and rear edges of the base. The front and rear walls are substantially shorter than the side walls. A liner has a base wall and a pair of opposed side walls. The liner is removably received within the tray. The product in the tray can be removed all at once along with the liner for more efficient stocking at a store.

ABSTRACT

A tray assembly includes a tray having a base, a pair of opposed side walls extending upward from side edges of the base. Front and rear walls extend upward from front and rear edges of the base. The front and rear walls are substantially shorter than the side walls. A liner has a base wall and a pair of opposed side walls. The liner is removably received within the tray. The product in the tray can be removed all at once along with the liner for more efficient stocking at a store.

BAKERY DELIVERY AND MERCHANDISING SYSTEM

BACKGROUND

The present invention provides a system and its components for delivering and merchandising goods, particularly baked goods, such as bread.

Plastic bakery trays are often used to delivery bakery items, such as bread, buns, etc. from the bakery to stores. At the store, a worker unloads the bakery items from the trays and places the bakery items on shelves for the customers to purchase. The empty bakery trays are returned to the bakery for reuse.

Move the bakery items one at a time from the bakery trays to the store shelves is time consuming, especially since care must be used not to damage the bakery items.

SUMMARY

A tray assembly includes a tray having a base, a pair of opposed side walls extending upward from side edges of the base. Front and rear walls extend upward from front and rear edges of the base. The front and rear walls are substantially shorter than the side walls. A liner has a base wall and a pair of opposed side walls. The liner is removably received within the tray. The product in the tray can be removed all at once along with the liner for more efficient stocking at a store.

BRIEF DESCRIPTION OF THE DRAWINGS

The drawings can be briefly described as follows:

Figure 1 is a perspective view of a bakery tray assembly according to a first embodiment.

Figure 2 is an exploded view of the assembly of Figure 1.

Figure 3 is a perspective view of a drawer.

Figure 4 shows a plurality of the drawers of Figure 3 installed on store shelves.

Figure 5 is a front view of the drawer of Figure 3.

Figure 6 shows the drawer of Figure 5 with product loaded therein.

Figure 7 is a perspective view of a pallet that can be used with the trays disclosed herein.

Figure 8 is a perspective view of a tray according to a second embodiment.

Figure 9 is an exploded view of the tray of Figure 8 with a liner.

Figure 10 is an assembled view of the tray and liner of Figure 9.

Figure 11 shows a plurality of liners as they could be stacked.

Figure 12 is a perspective view of a tray assembly according to another embodiment.

Figure 13 shows the tray assembly of Figure 12 with the upper portions of the liner folded inward.

Figure 14 shows two of the liners of Figure 13 stacked.

Figure 15 shows a tray assembly according to another embodiment.

Figure 16 is an exploded view of the tray assembly of Figure 15.

Figure 17 is a perspective view of the liner of Figure 15

Figure 18 shows three of the liners of Figure 17 stacked.

Figure 19 shows the liners of Figure 18 loaded onto store shelves.

Figure 20 shows two of the liners of Figure 18 on angled shelves.

Figure 21 is a perspective view of a tray according to another embodiment.

Figure 22 is a perspective view of a liner according to another embodiment.

Figure 23 shows the liner of Figure 22 being inserted into the tray of Figure 21.

Figure 24 shows the liner of Figure 22 inserted into the tray of Figure 21.

Figure 25 is a perspective view of a tray according to another embodiment.

DETAILED DESCRIPTION

Referring to Figures 1 and 2, a bakery tray 10 includes a base 12. A front wall 14 having a dropped portion or opening providing access to the tray 10, extends upward from a front edge of the base 12. Side walls 18 extend upward from side edges of the base 12. A rear wall 16 extends upward from a rear edge of the base 12. The side walls 18 are approximately twice the height of the front wall 14 and rear wall 16. As shown, the side walls 18 may be configured to provide a first stacking height when oriented the same as a tray (not shown) on which it is stacked and a second stacking height when oriented 180 degrees relative to the tray (not shown) on which it is stacked. As is commonly known, the entire tray 10 is preferably injection molded as a single-piece of plastic.

The front wall 14 and rear wall 16 are each double walls, or can alternatively be considered to have an interior wall and a lip spaced outward from the interior wall and joined by vertical ribs. This provides stiffness to the front and rear walls 14, 16 despite their significantly

reduced height. Additionally, the front wall 14 can having a dropped portion of even further reduced height to facilitate the removal of product from the tray 10. Optionally, the rear wall 16 can also have a dropped portion.

The side walls 18 each include an upper portion 20 protruding outward from an interior wall 22. Below the upper portion 20, a plurality of feet 24 project outward from the interior wall 22. As is common, the feet 24 align with pockets 26 on the side walls 18 of an identical tray. The pockets 26 on the side walls 18 have different depths and the feet 24 on one side wall 18 are positioned differently than on the other side wall 18, such that the tray 10 will stack at two different heights on an identical tray 10 by rotating the trays 180 degrees relative to one another. Flange portions 30 project inward from the side walls 18 along the front wall 14 and the rear wall 16.

As is shown, the tray 10 accommodates a removable liner 40. The liner 40 includes a base wall 42, a rear wall 46 and side walls 48. The front edge of the liner 40, opposite rear wall 46, may be open as shown. Handle openings 50 may be provided through the side walls 48. As shown in Figure 2, the liner 40 is removable from the tray 10. The liner 40 is formed as a single piece of plastic, such as by thermoforming or injection molding. The base wall 42 of the liner 40 is approximately the same size as the base 12 of the tray 10, such that the liner 40 fits within the interior space of the tray 10 without wasting space and the side walls 48 of the liner 40 abut the side walls 18 of the tray 10 and the rear wall 46 of the liner 40 abuts the rear wall 16 of the tray 10.

In use, a plurality of items, such as loaves of bread, can be placed in the tray 10 on the liner 40. Trays 10 of bread are shipped to a store. The delivery person can lift a plurality of loaves of bread out of the tray 10 at once by lifting the liner 40 out of the tray 10. The loaves can be slid onto a shelf all at once from the front edge of the liner 40. Thus, the delivery person does not have to lift each loaf of bread out of the tray 10 one at a time.

A drawer 60 is shown in Figures 3-6. The drawer 60 is injection molded or thermoformed of a single piece of plastic. The drawer 60 includes a base wall 62. A rear wall 66 and side walls 68 protrude upward from rear and side edges of the base wall 62, respectively. A front lip 64 protrudes downward from the front edge of the base wall 62. Handle openings 70 may be formed in the side walls 68. As shown in Figure 4, drawers 60 may be secured to shelves 80 in a store. The drawers 60 may be secured to rails 82, 84 or track so that the drawers 60 may be

pulled out (the bottom drawer 60 is shown pulled out, the upper drawer 60 is show retracted). In the outward position, the drawer 60 can be more easily loaded with items. As an example, the loaves of bread can be slid from the liner 40 of Figures 1-2 directly into the drawer 60. The drawers 60 are sized to receive the same number of items as the liner 40 and tray 10. The base 62 is approximately the same dimensions as the base 42 of the liner 40 (Figure 2).

Figure 5 is a front view of the drawer 60 when empty. Figure 6 is a front view of the drawer 60 loaded with items, such as loaves 88 of bread, for sale to customers in a store, such as a grocery store.

Figure 7 shows a plastic pallet 90. The pallet 90 may be referred to as a "half-pallet," as it is half the size of a standard size pallet and more than twice as long as it is wide. The pallet 90 includes an upper deck 92 and columns 94 supporting the deck 92. In this pallet 90, the columns 94 are spaced inward from the perimeter of the deck 92, such that forks of a lift may lift the pallet 90 below the deck 92 outward of the columns 94. Pockets 96 are formed in the deck 92 for receiving the columns 94 of an identical pallet 90 to reduce stacking height when the pallets 90 are empty. The pallet 90 is sized to accommodate two stacks of the trays 10 (Figures 1-2). The stacks of trays 10 can be shipped to a store on the pallet 90, unloaded with a lift and wheeled into the store on the lift. The trays 10 (Figure 1) can then be unloaded by emptying the liners 40 into the drawers (Figure 4).

Figure 8 is a second embodiment of a tray 210. Because the tray 210 will be used with a liner, the base 212 can be minimized. In the tray 210 shown, the base 212 includes some more dense rib structured areas 220 along the front wall 214 and rear wall 216 and more dense rib structured areas 222 along the side walls 218. Between these structured areas 220, 222, however, minimal rib structure forms the majority of the base 212, covering less than 15% of the base 212 area. The exact amount of ribs in the base 212 will depend upon the particular application, but it is significantly reduced compared to standard bakery trays. The large openings in the base 12 forming a large majority of the area of the base do not damage the product because the liner will cover them and provide a smooth surface for supporting the product.

Optionally, to further reinforce the tray 210, a reinforcement member 226 may be inserted within the front wall 214 and/or rear wall 216. The reinforcement member 226 could be steel tube or rod, or other metal, or composite material that provides increased stiffness to the

tray 210. The reinforcement members 226 may be insert-molded with the tray 210 or inserted into the walls 214, 216 after the tray 210 is injection molded. The front wall 214 and rear wall 216 are each double walls (i.e. they each include an interior wall and a lip spaced outward of the interior wall and extending downward), so the reinforcement members 226 can be accommodated between them.

Figure 9 shows a liner 240 being inserted into the tray 210. The liner 240 includes a base wall 242, side walls 248 and a rear wall 246. The front of the liner 240 may optionally be open (without a wall) as shown to make it easier to remove product from the liner 240. Handle openings 250 are formed through each side wall 248.

Figure 10 shows the liner 240 within the tray 210. As shown, the liner 240 does not noticeably reduce the volume of the tray 210. The lack of a front wall on the liner 240 leaves the window opening through the front wall 214 completely unobstructed.

As shown in Figure 11, when the liners 240 are removed from their respective trays 210 (not shown) and stacked one upon the other, the upper tray 240 would be stacked on the product (not shown) in the lower tray 240. The surface area of the upper tray 240 protects the product (e.g. baked items) in the lower tray 240 from damage.

In Figure 12, another liner 340 is shown in the tray 210. The liner 340 includes a base wall 342, side walls 348 and a rear wall 346. The side walls 348 are taller than the side walls 218 of the tray 210. The side walls 348 each include an upper portion 350 hingeably (foldably) connected to a lower portion 352. The handle openings may be positioned in the upper portions 350. Again, the liner 340 may be a thermoformed plastic sheet.

As shown in Figure 13 with product (not shown) in the tray 210 and liner 340, the upper portions 350 of the side walls 348 can be folder over the product. This permits the trays 210 to stack on one another for shipping and storage. When removing the liners 340 from the trays 210, the upper portions 350 can be folded upward again, so that they can be lifted by the handles.

Further, as shown in Figure 14, after being removed from the trays 210 for placement on the store shelves, the liners 340 can be stacked on one another with the upper liner 340 stacked on the folded-over upper portions 350 of the side walls 348 to reduce the weight of the upper liner 340 on the product in the lower liner 340. At least some of the weight of the upper tray 210 and product therein is transferred to the side walls 348 of the lower tray 210.

A liner 440 according to another embodiment is shown in Figure 15 in the tray 210. The liner 440 may be plastic, such as by thermoforming or injection molding. The base 442 may have large, easy corrugations or a somewhat low-amplitude, low-frequency sinusoidal patterns in the base 442 forming slight peaks and valleys. This increases the stiffness of the base 442. The liner 440 includes a base 442, side walls 448, rear wall 454 and an open front end. The liner 440 is shown in more detail in Figure 16 and in Figure 17. A flange extends perpendicularly from each side wall 448 partially across the rear wall 454. As shown in Figure 18, the liners 440 can be stacked upon one another on a store shelf with product (not shown) in them for display and sale. Figure 19 shows a plurality of the liners 440 loaded onto store shelves 80. As explained above, this is a very quick and efficient way to load the stores shelves 80 with product (not shown) from the trays 210 (Figure 16).

As shown in Figure 20, the liners 440 could be loaded onto angled shelves 180 with the rear walls 454 at the bottom of the slope to prevent product from sliding off the shelves 180.

Figure 21 shows an alternate tray 310. The tray 310 is generally as described above with respect to trays 10, 110 and 210 except as is otherwise described or shown in the drawings. Again, the base 312 could be minimized because it is used with a liner. In this tray 310, the side walls 318 are double walls having an inner wall 321 and an outer wall 319. There are ribs (not shown) extending vertically between the inner wall 321 and outer wall 319 for strength. The side walls 318 can be molded with projections from the mold extending between the inner wall 321 and outer wall 319. This can leave a smooth exterior surface on the outer wall 319. In this embodiment, the front wall 314 is also minimized such that it is nearly flat with the base 312, but this is optional.

An liner 540 according to another embodiment is shown in Figure 22. The liner 540 is specifically designed for the tray 310 of Figure 21. The liner 540 includes a base 542 (again, could be corrugated), side walls 548 and a front wall 554 which is a double wall (inner wall and outer wall).

In Figure 23, the liner 540 is being removed from the tray 310. As shown, the front wall 554 of the liner 540 supplies much of what is missing from the minimized front wall 314 of the tray 310. Preferably, the front wall 554 interlocks with the front wall 314 to provide additional strength and stiffness to the tray 310. Figure 24 shows the liner 540 in the tray 310. The front wall 314 of the tray 310 is received between the inner and outer walls of the liner 540.

Alternatively, at least the outer wall of the front wall 554 of the liner 540 is outward of the front wall 314 of the tray 310.

As is shown schematically in Figure 25, a pattern can be molded into the (otherwise) smooth exterior surface of the tray 310. In the example shown, a basket weave pattern is molded into the exterior surface of the outer wall of the side walls of the tray 310. The pattern could also be molded into the exterior surfaces of the front and rear walls. The pattern is completely non-structural. The pattern is decorative and includes very shallow recesses and projections to make the pattern (i.e., not structural).

In accordance with the provisions of the patent statutes and jurisprudence, exemplary configurations described above are considered to represent a preferred embodiment of the invention. However, it should be noted that the invention can be practiced otherwise than as specifically illustrated and described without departing from its spirit or scope.

CLAIMS

What is claimed is:

1. A tray assembly comprising:

a tray including a base, a pair of opposed side walls extending upward from side edges of the base, and front and rear walls extending upward from front and rear edges of the base, the front and rear walls substantially shorter than the side walls, wherein the tray is injection molded as a single piece of plastic; and

a liner having a base wall and a pair of opposed side walls, the liner removably received within the tray.

2. The tray assembly of claim 1 wherein the base wall of the liner is approximately the same size as the base of the tray.

3. The tray assembly of claim 1 wherein the liner is a thermoformed sheet of plastic.

4. The tray assembly of claim 1 wherein the liner includes a handle formed in each of the side walls.

5. The tray assembly of claim 1 wherein a front edge of the base wall of the liner is open.

6. The tray assembly of claim 1 wherein the side walls of the tray include a plurality of feet and a plurality of pockets such that the tray can be stacked on an identical tray at two different stacking heights.

7. The tray assembly of claim 1 wherein the base of the tray includes large openings forming a majority of the area of the base.

8. The tray assembly of claim 1 further including a reinforcement member secured to the front wall of the tray.

9. The tray assembly of claim 8 wherein the front wall includes an interior wall and a lip spaced outward from the interior wall and wherein the reinforcement member is disposed between the interior wall and the lip.

10. The tray assembly of claim 9 wherein the reinforcement member is formed of a material different from that of the tray.

11. The tray assembly of claim 1 wherein the side walls of the liner are taller than the side walls of the tray.

12. The tray assembly of claim 11 wherein the side walls of the liner each include an upper portion movable between an upright vertical position and an inward position.

13. The tray assembly of claim 12 wherein the upper portions of the liner each include a handle.

14. The tray assembly of claim 1 wherein the base wall of the liner is corrugated.

15. The tray assembly of claim 1 wherein the base wall of the liner is not flat.

16. The tray assembly of claim 1 wherein the liner includes a front wall received in front of the front wall of the tray.

17. The tray assembly of claim 1 wherein the liner includes a rear wall.

18. The tray assembly of claim 1 wherein the tray includes a decorative pattern molded into an exterior surface thereof.

19. A tray comprising:

a base;

a pair of opposed side walls extending upward from side edges of the base, the side walls tray including a plurality of feet and a plurality of pockets such that the tray can be stacked on an identical tray at two different stacking heights;

front and rear walls extending upward from front and rear edges of the base, the front and rear walls substantially shorter than the side walls; and

a reinforcement member secured to the front wall of the tray.

20. The tray of claim 19 wherein the front wall includes an interior wall and a lip spaced outward from the interior wall and wherein the reinforcement member is disposed between the interior wall and the lip.

21. The tray of claim 19 wherein the tray is injection molded as a single piece of plastic and the reinforcement member is formed of a material different from that of the tray.

22. The tray of claim 19 wherein the base of the tray includes large openings forming a majority of the area of the base.

23. The tray of claim 22 wherein ribs in the base of the tray cover less than 15% of the base.

24. A tray comprising:

a base;

a pair of opposed side walls extending upward from side edges of the base, the side walls tray including a plurality of feet and a plurality of pockets such that the tray can be stacked on an identical tray at two different stacking heights; and

front and rear walls extending upward from front and rear edges of the base, the front and rear walls substantially shorter than the side walls;

wherein an exterior surface of the tray includes a decorative pattern molded therein.

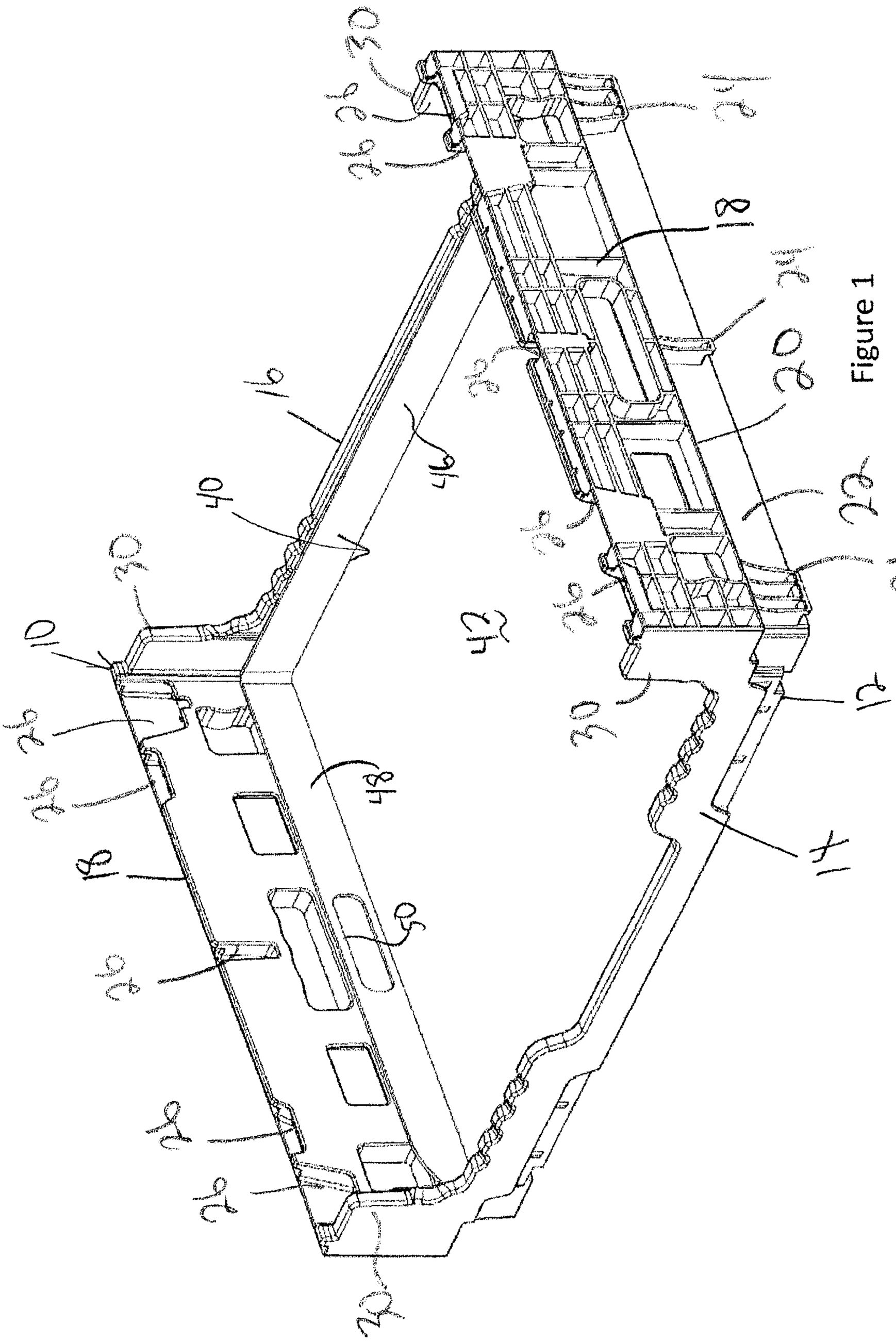


Figure 1

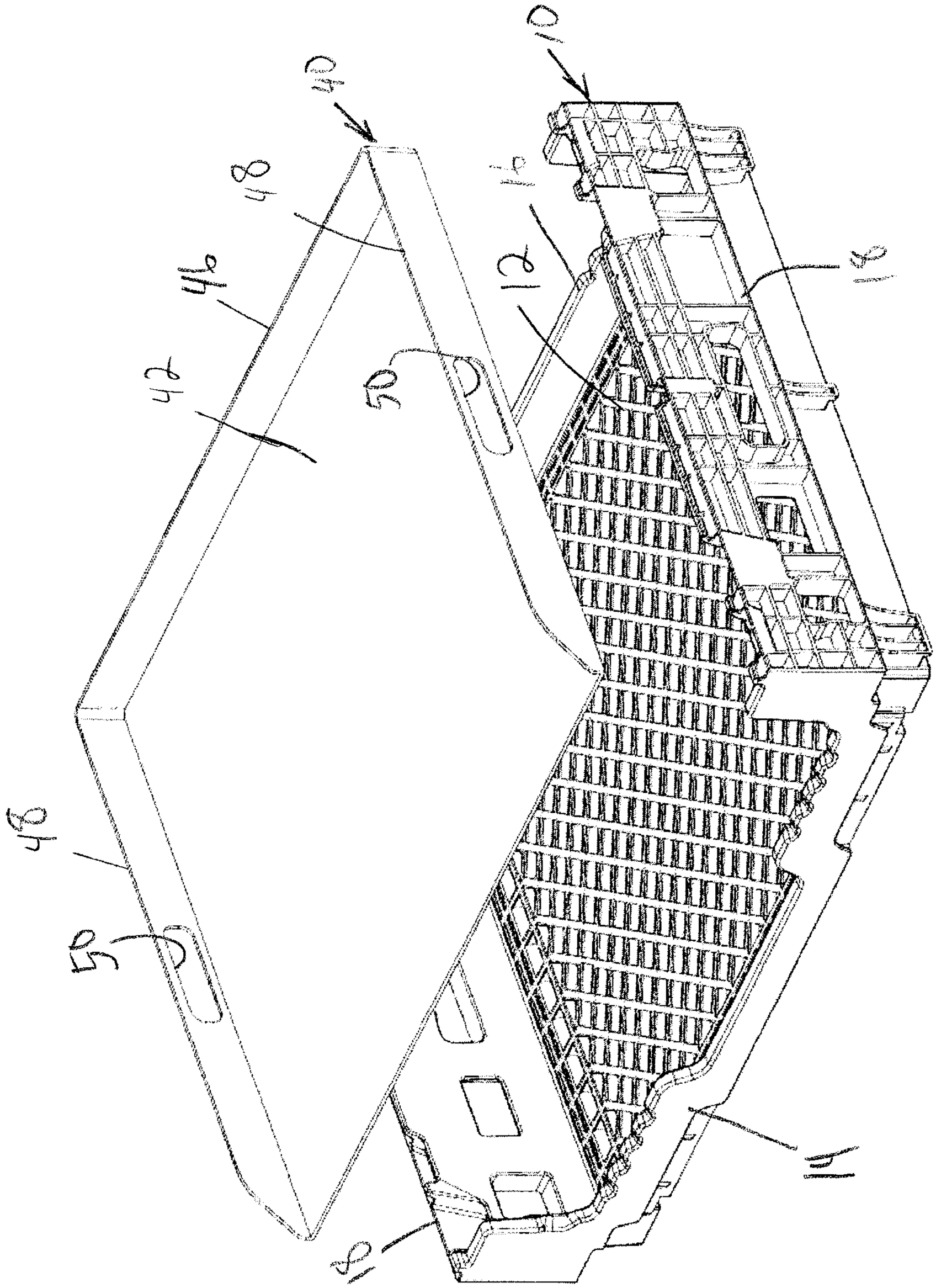


Figure 2

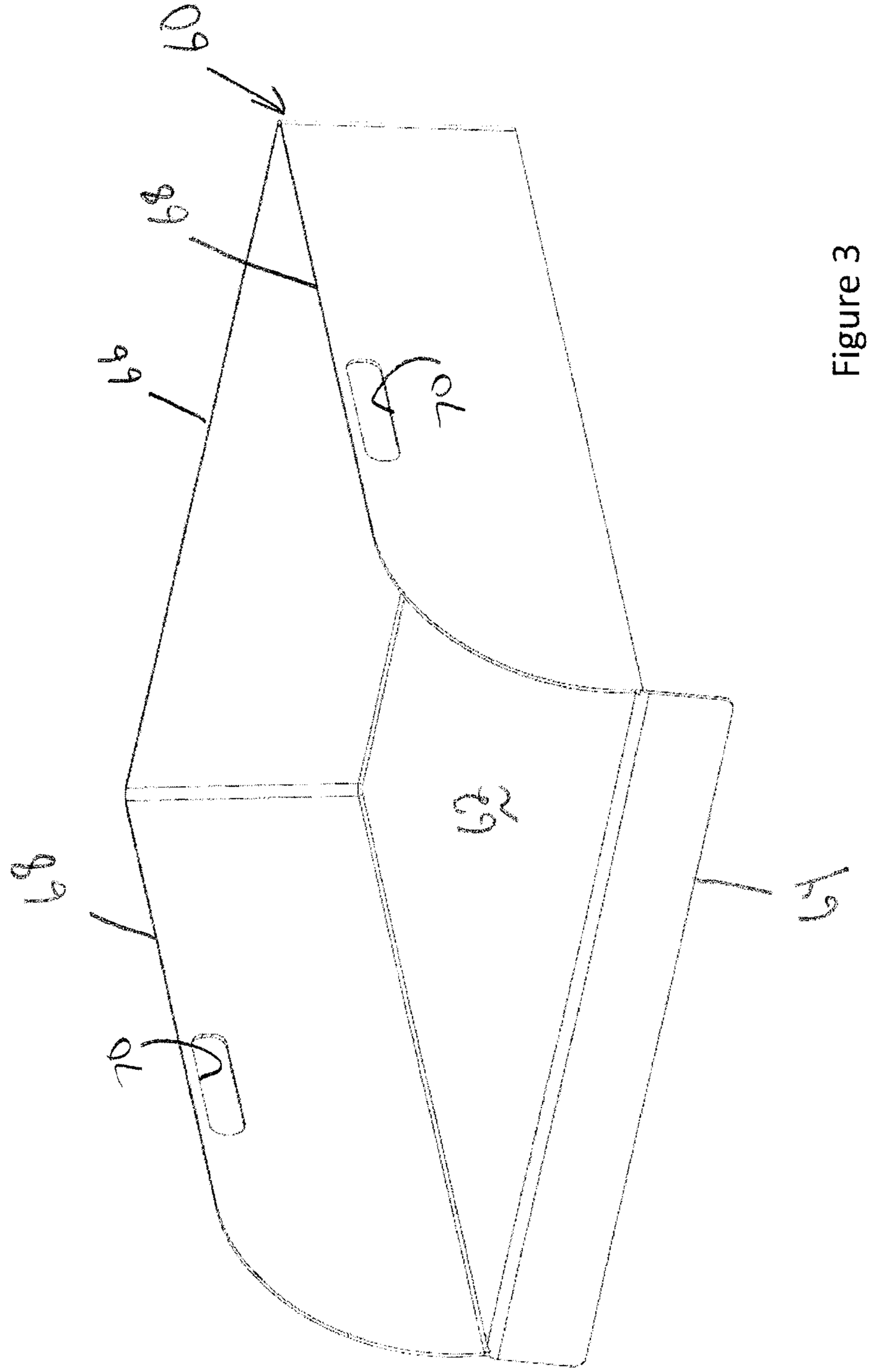


Figure 3

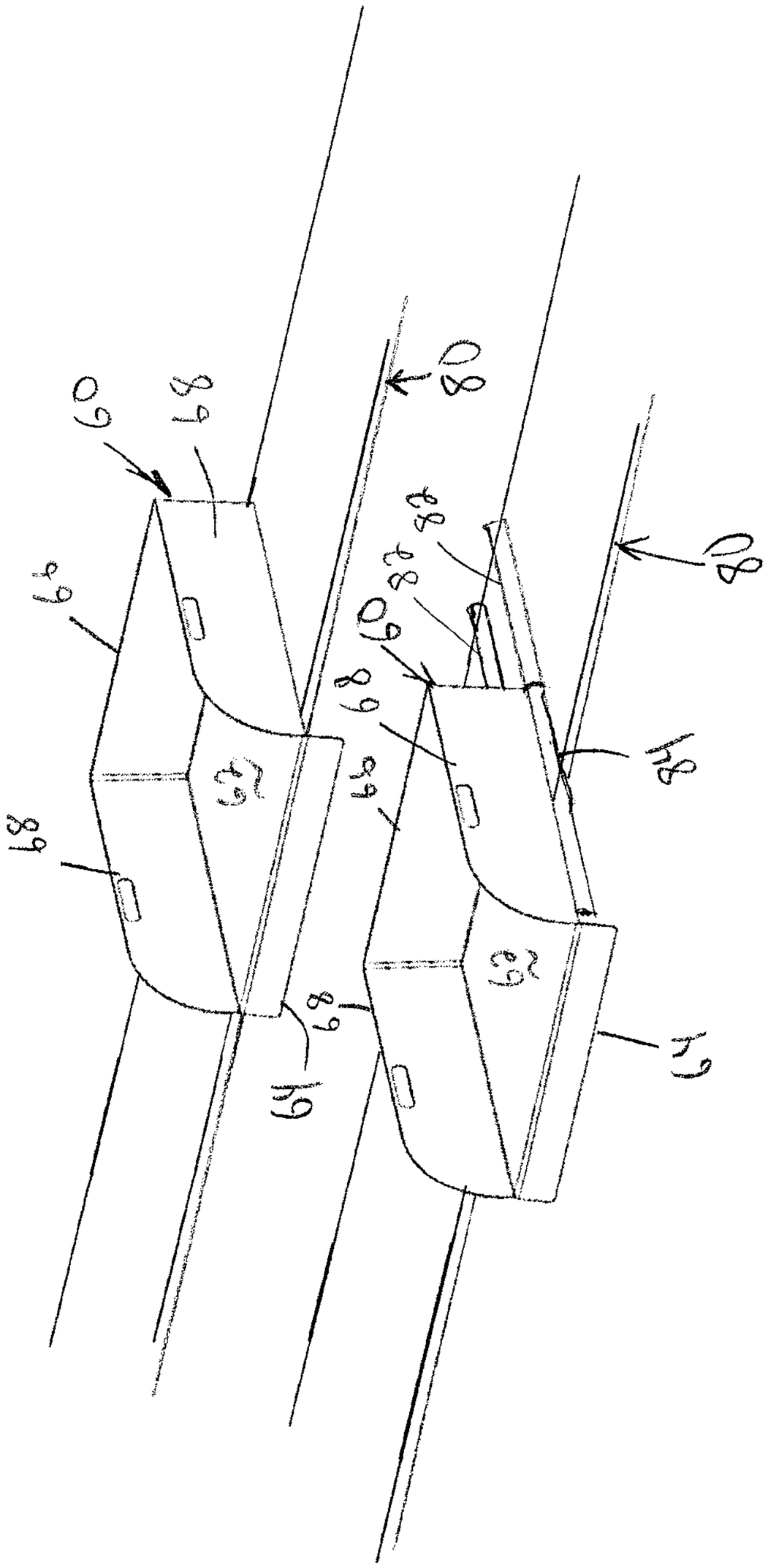


Figure 4

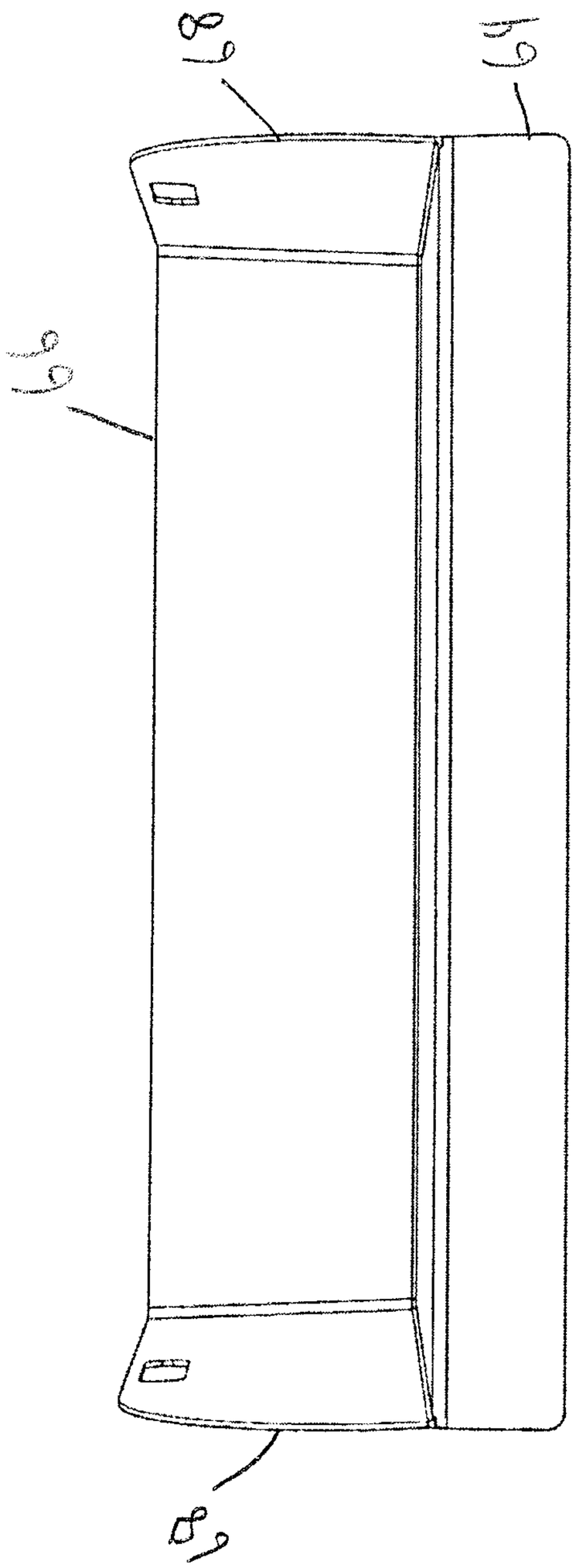


Figure 5

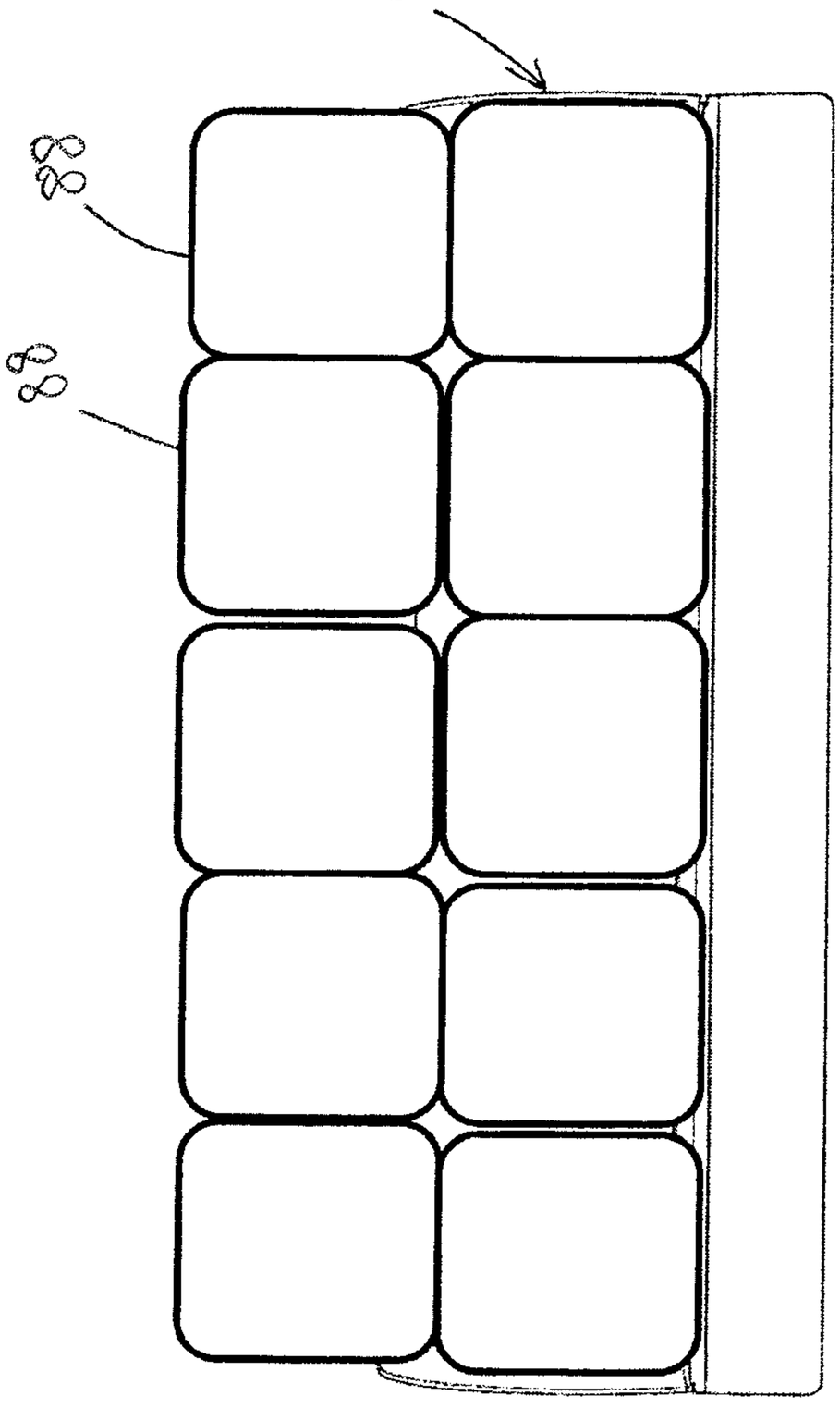


Figure 6

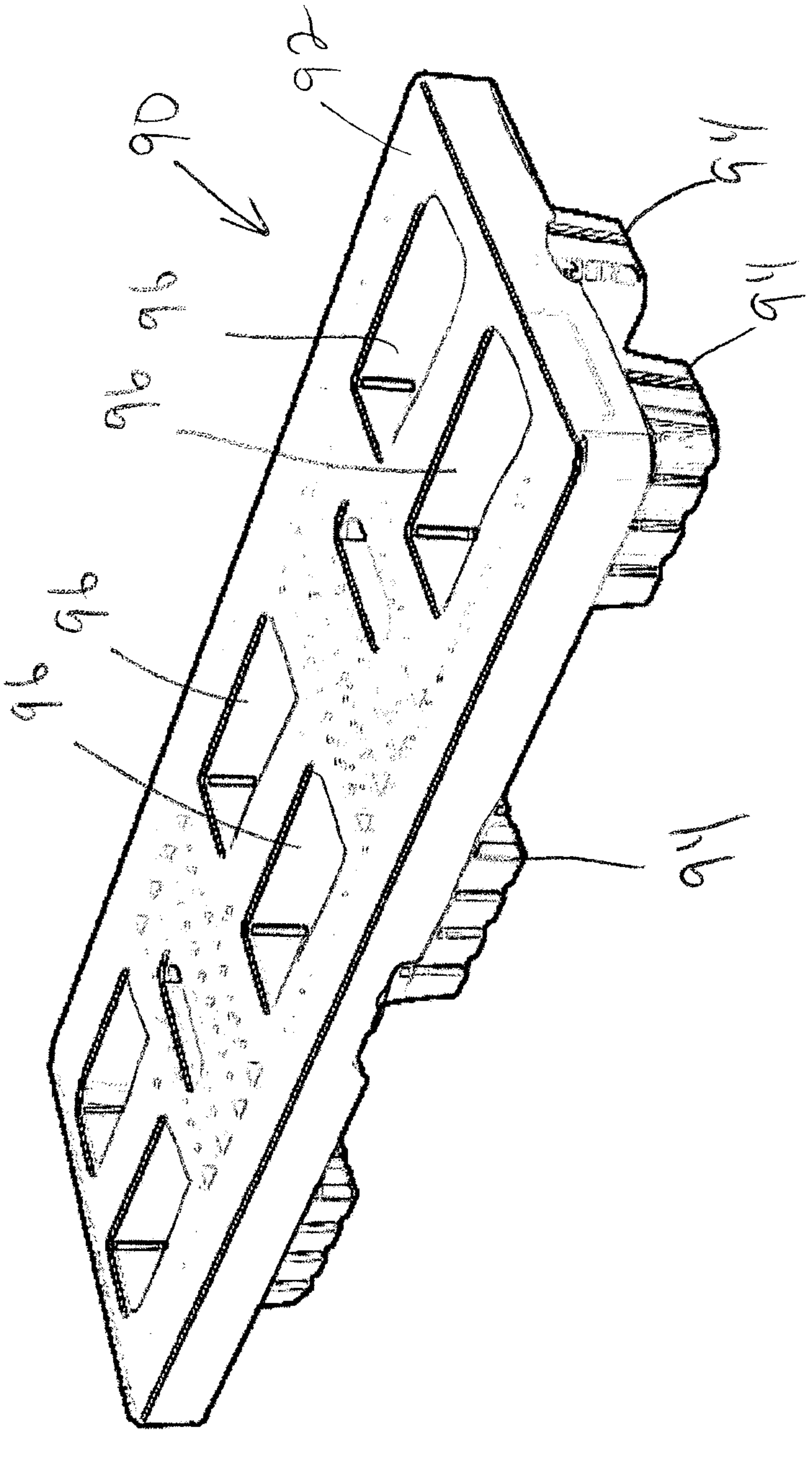


Figure 7

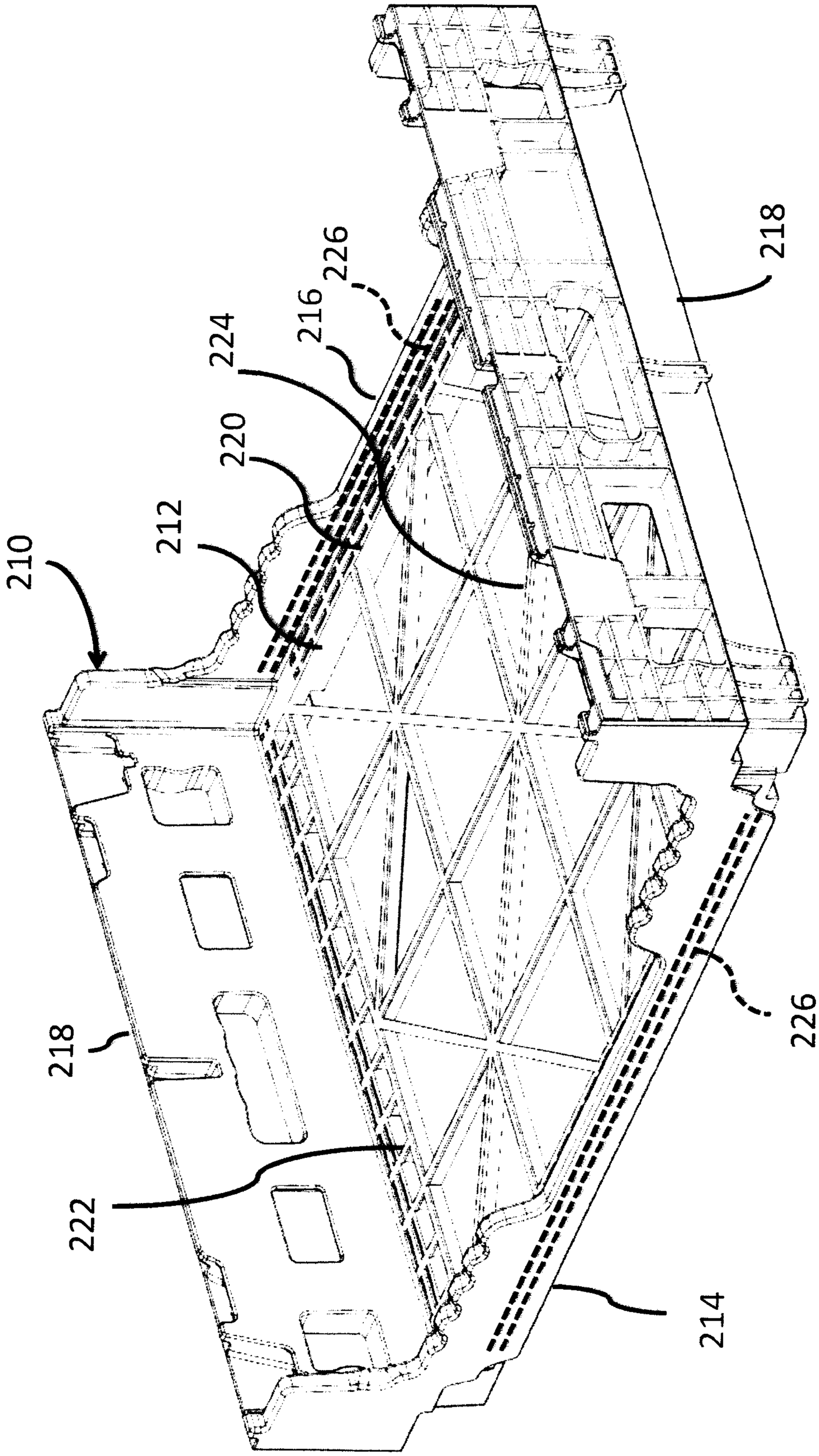


Figure 8

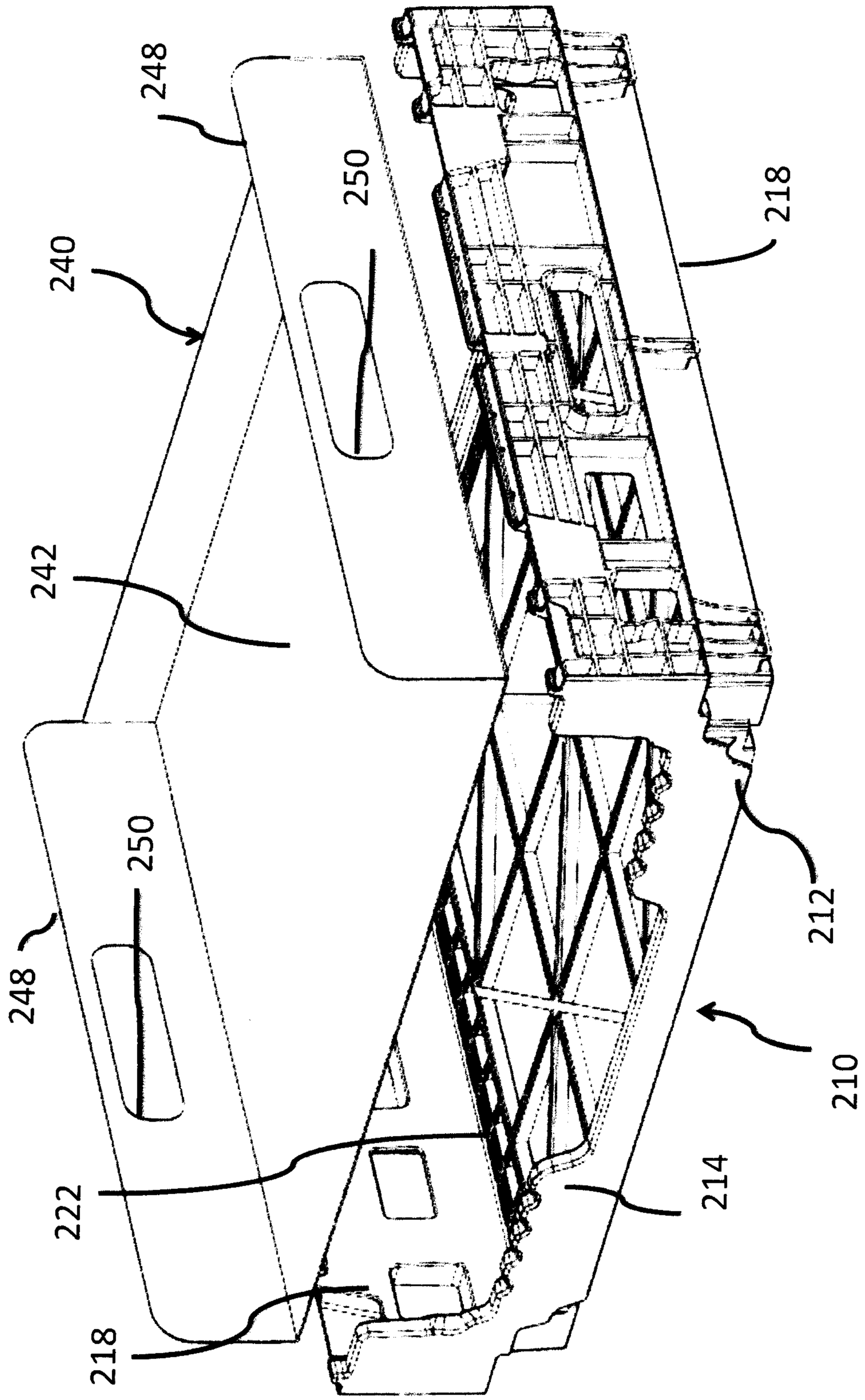


Figure 9

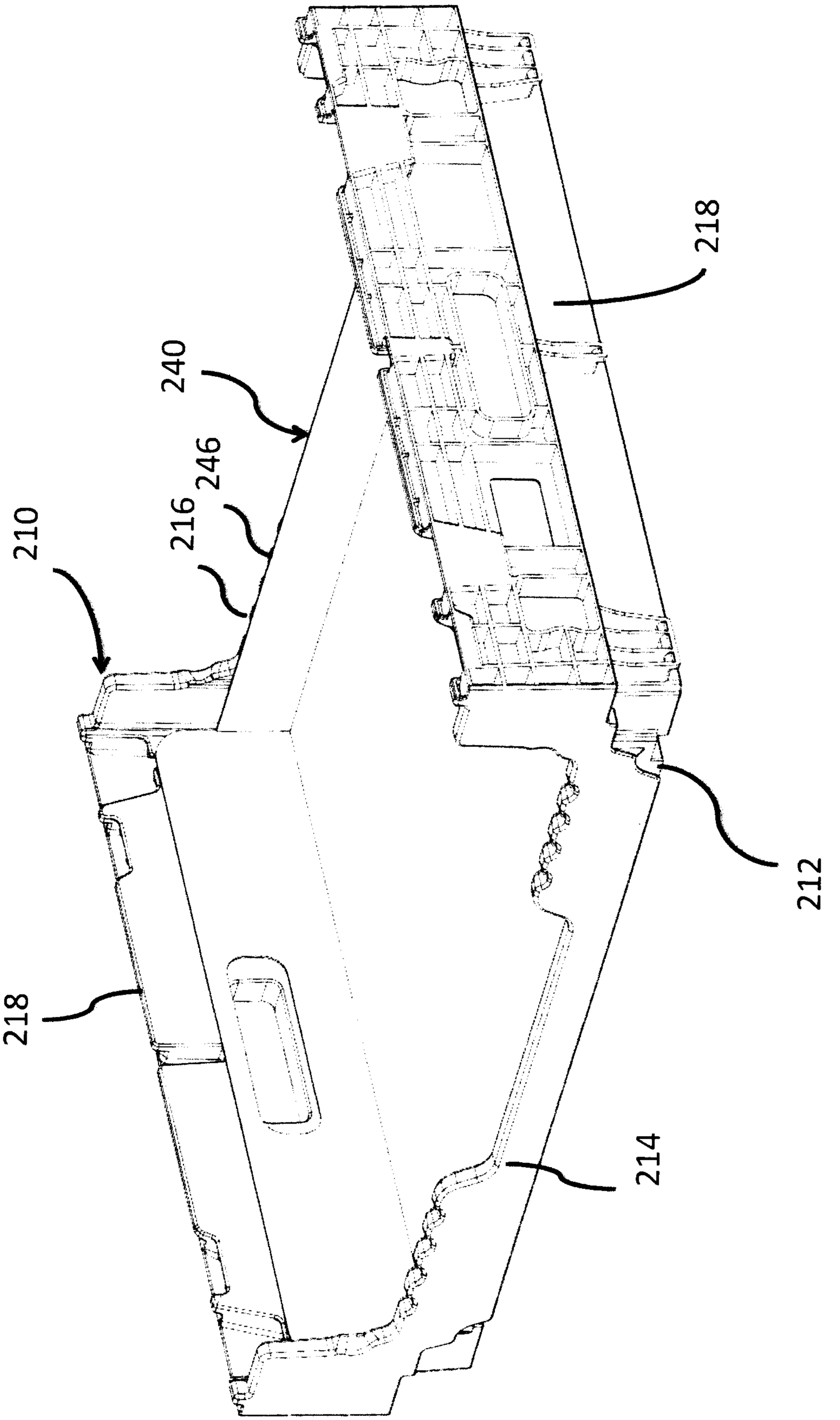


Figure 10

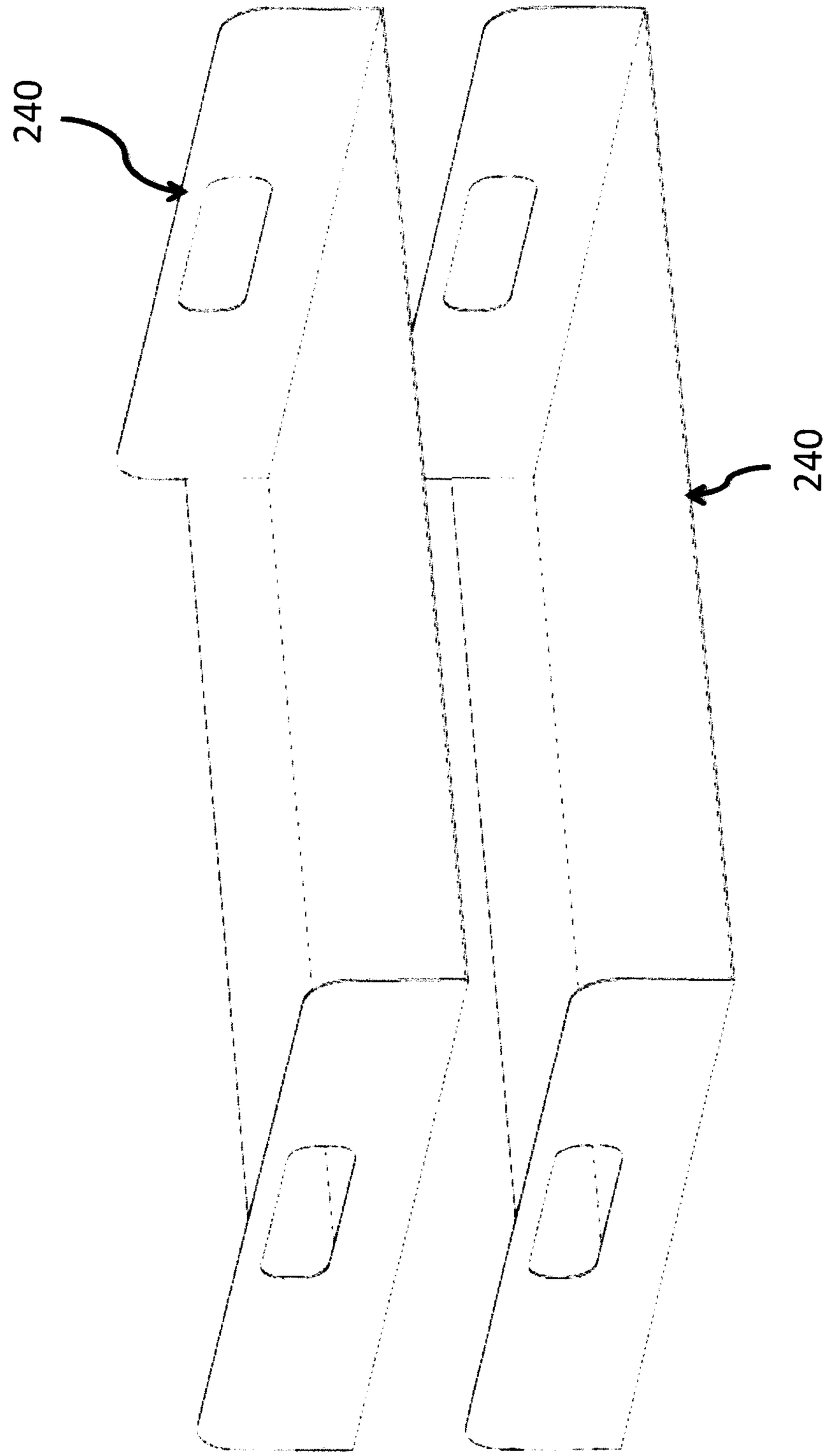


Figure 11

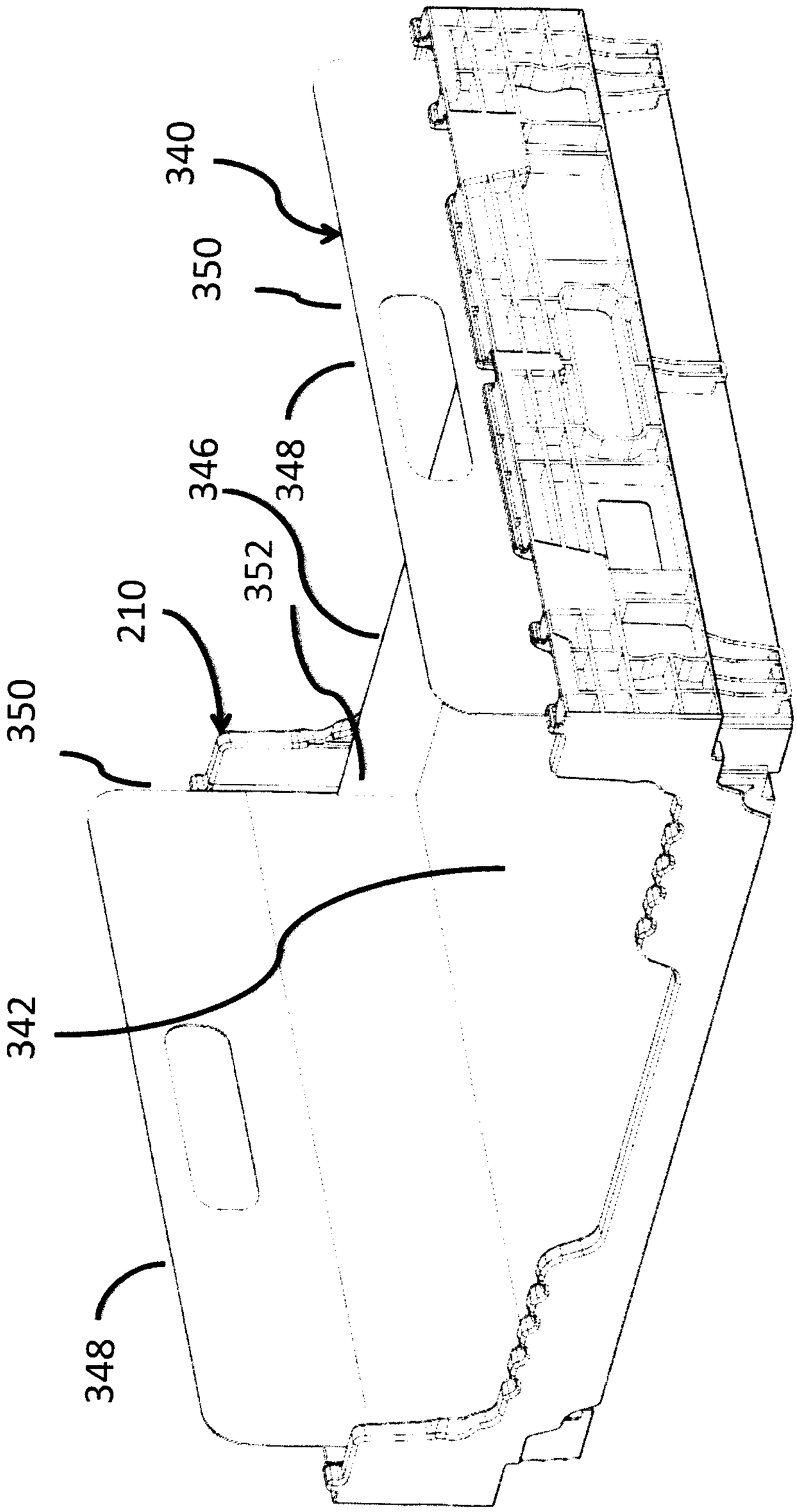


Figure 12

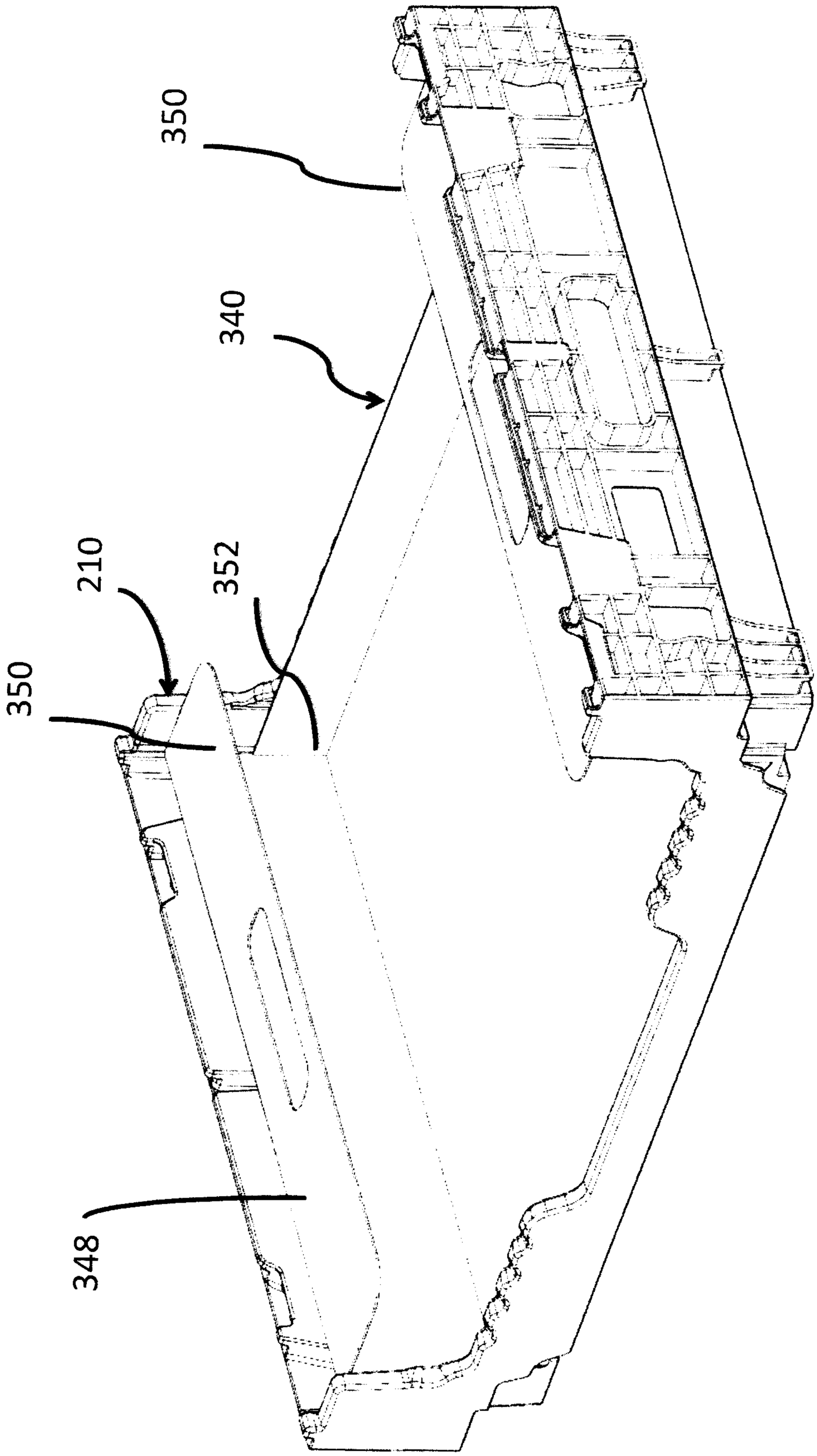


Figure 13

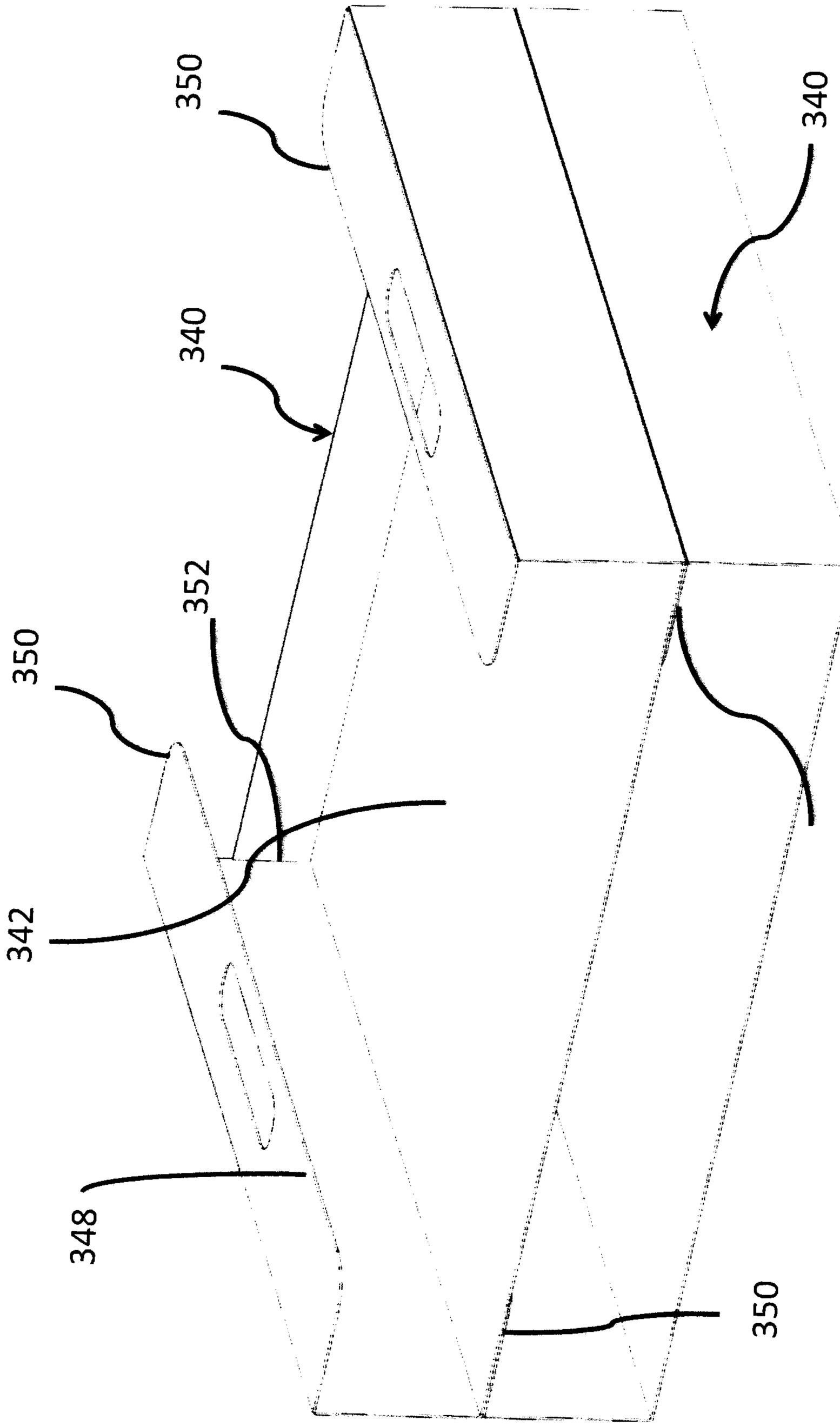


Figure 14

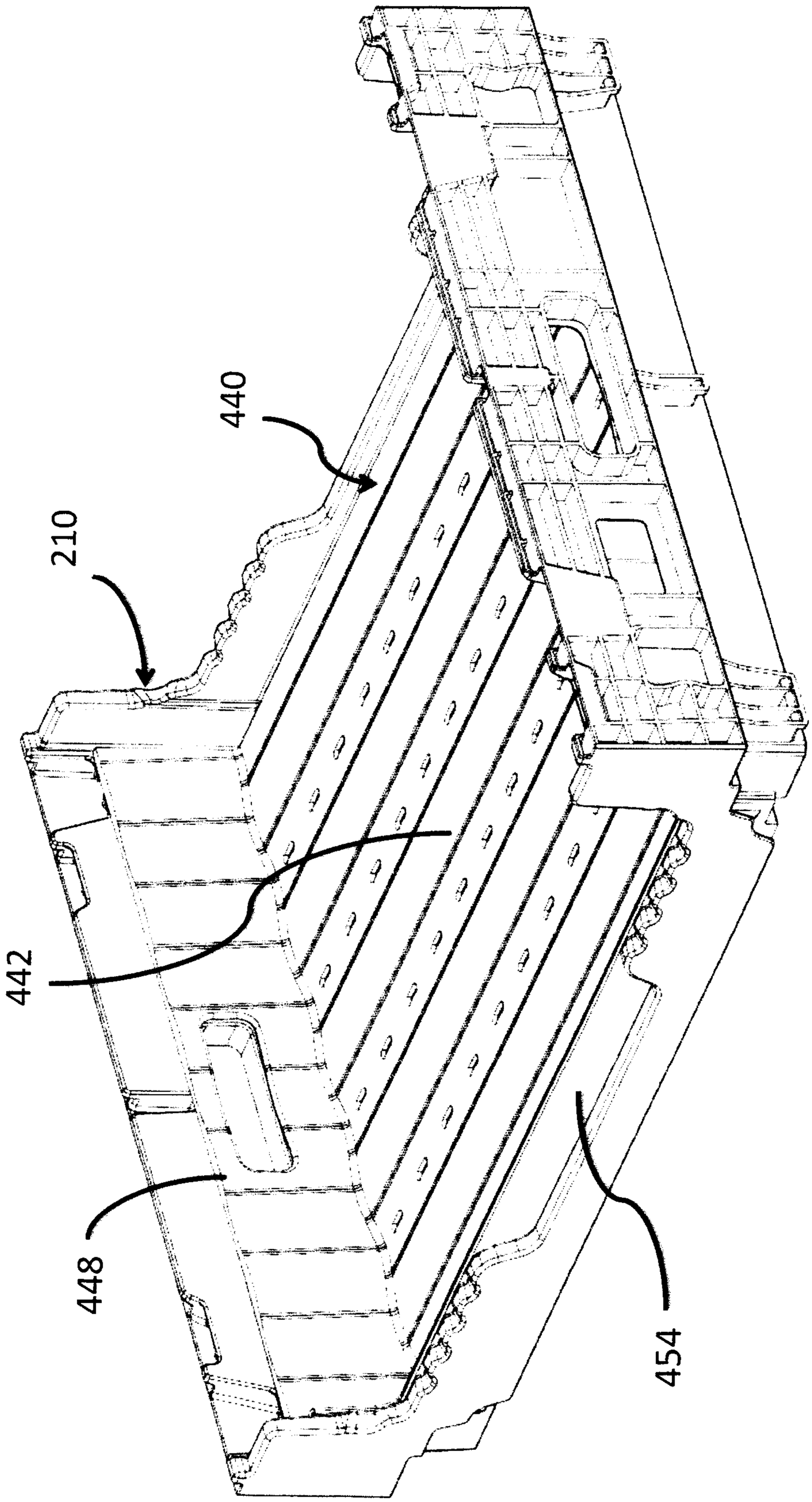


Figure 15

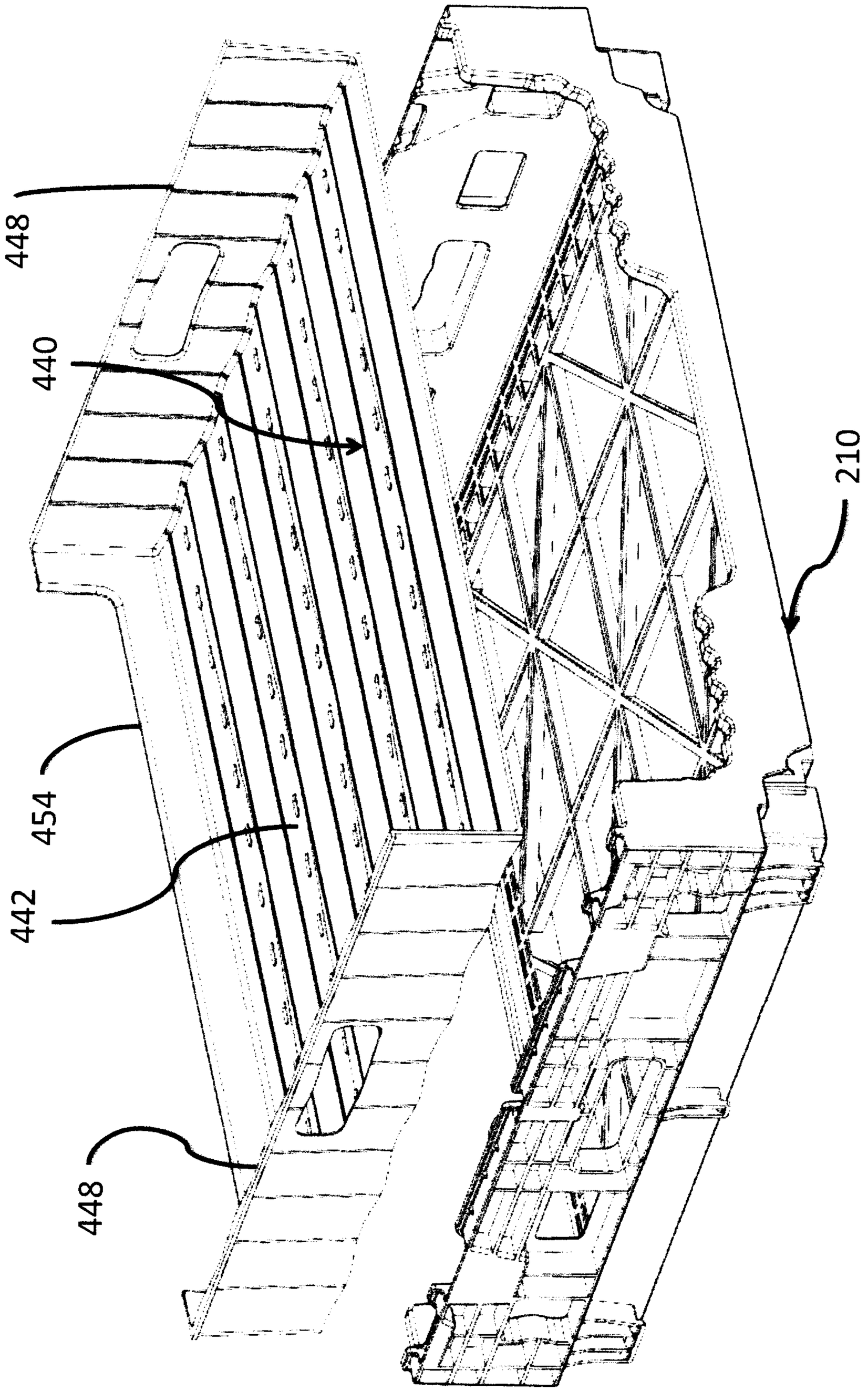


Figure 16

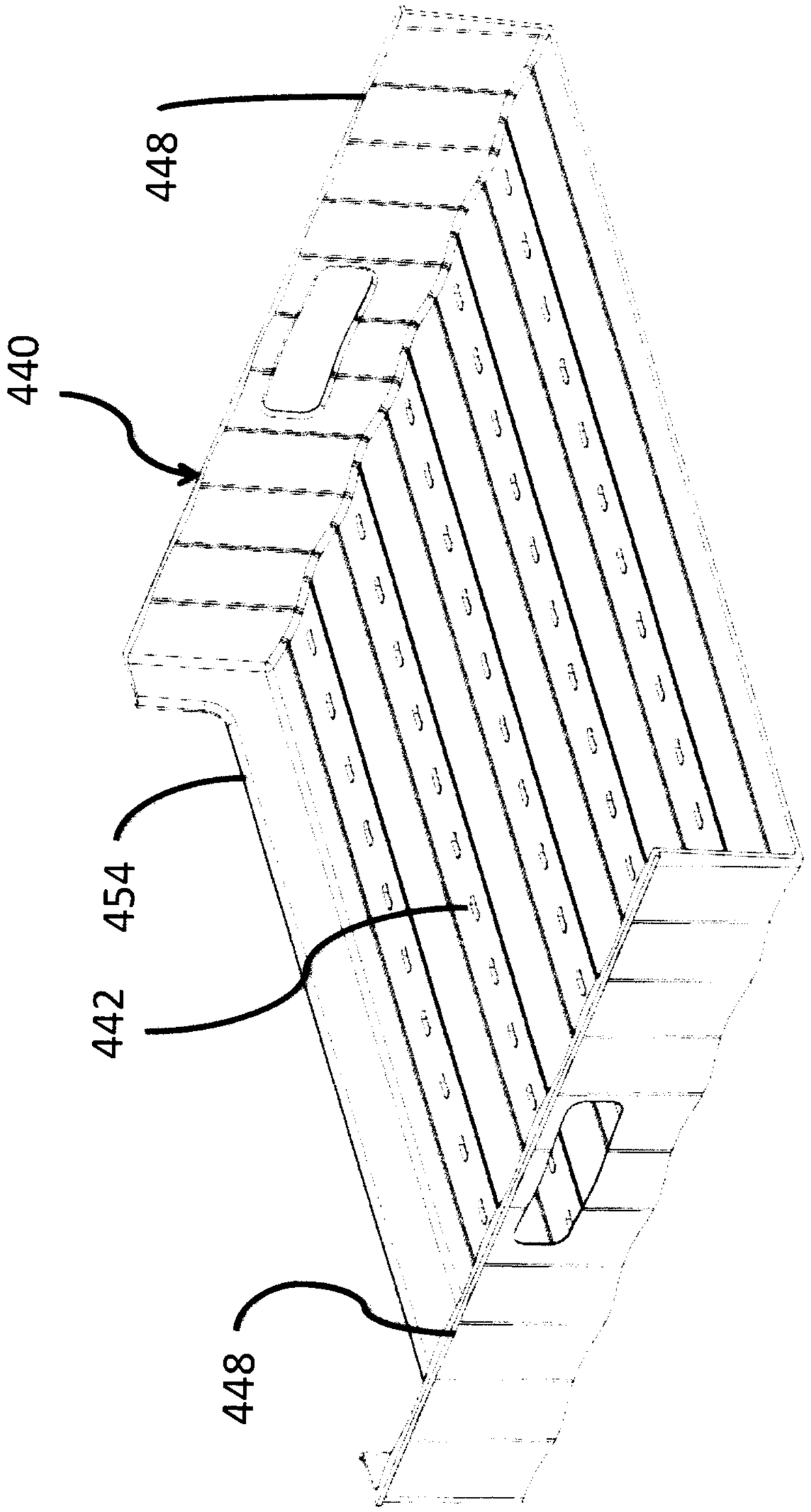


Figure 17

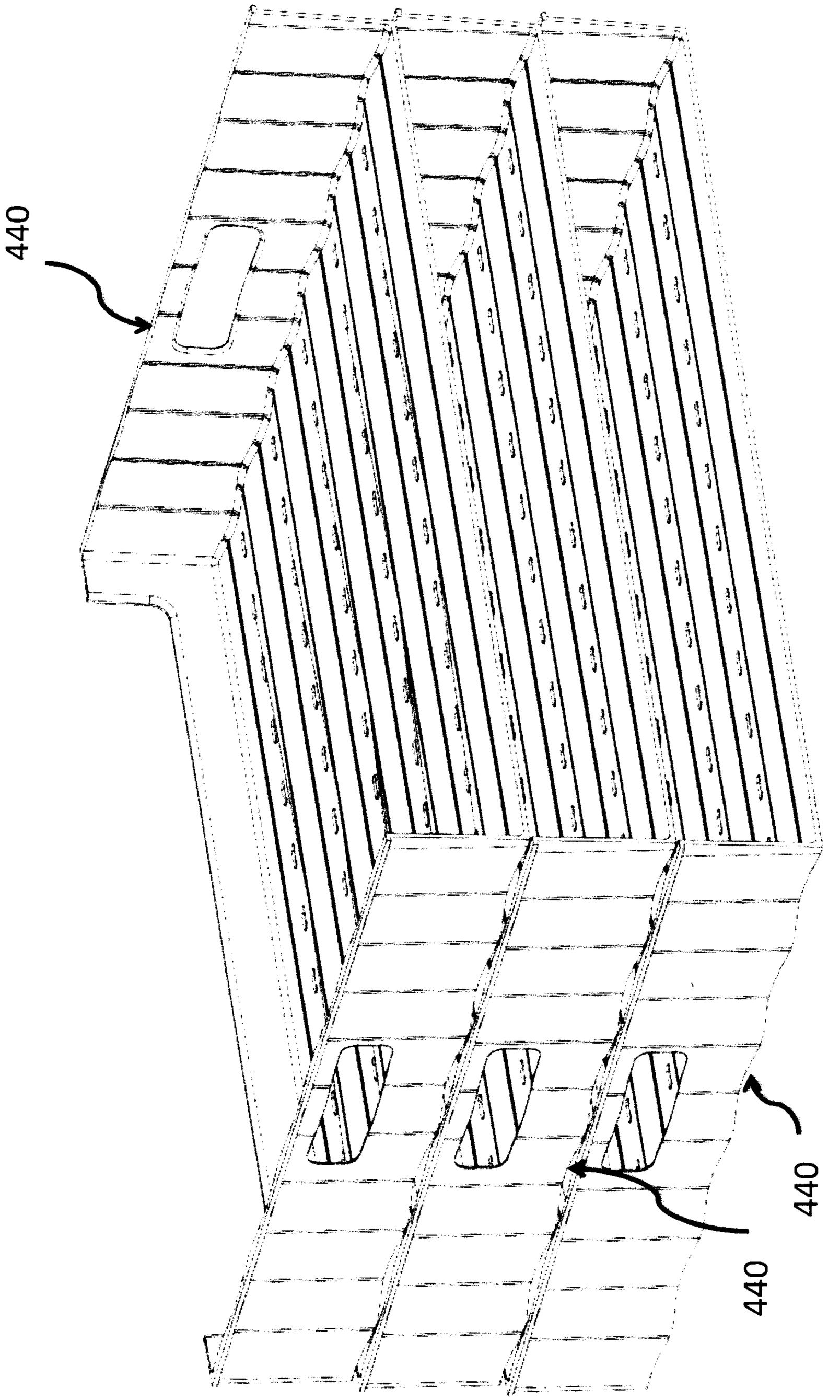


Figure 18

Empty shelves

Reusable Plastic Insert Can Easily Reload

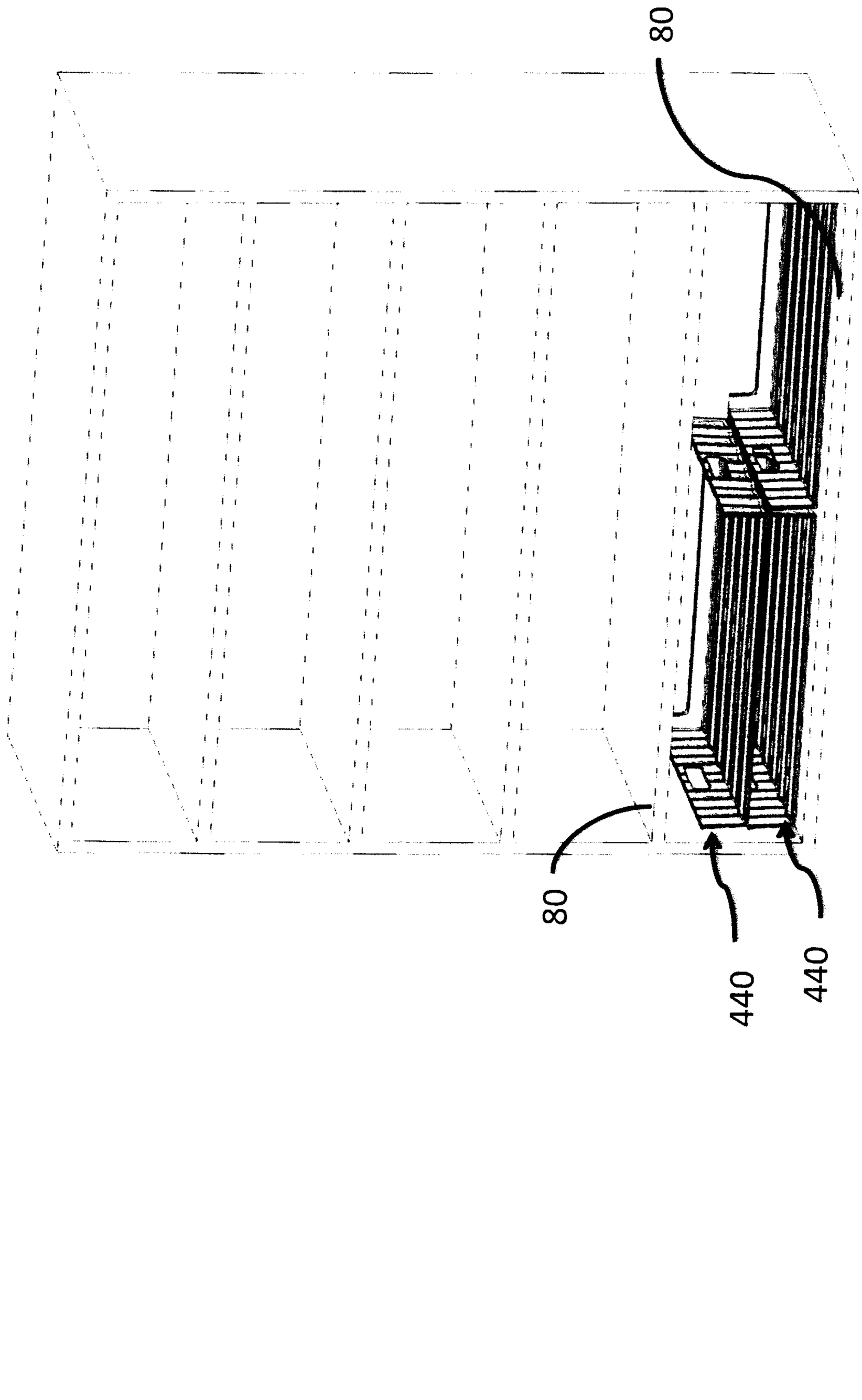


Figure 19

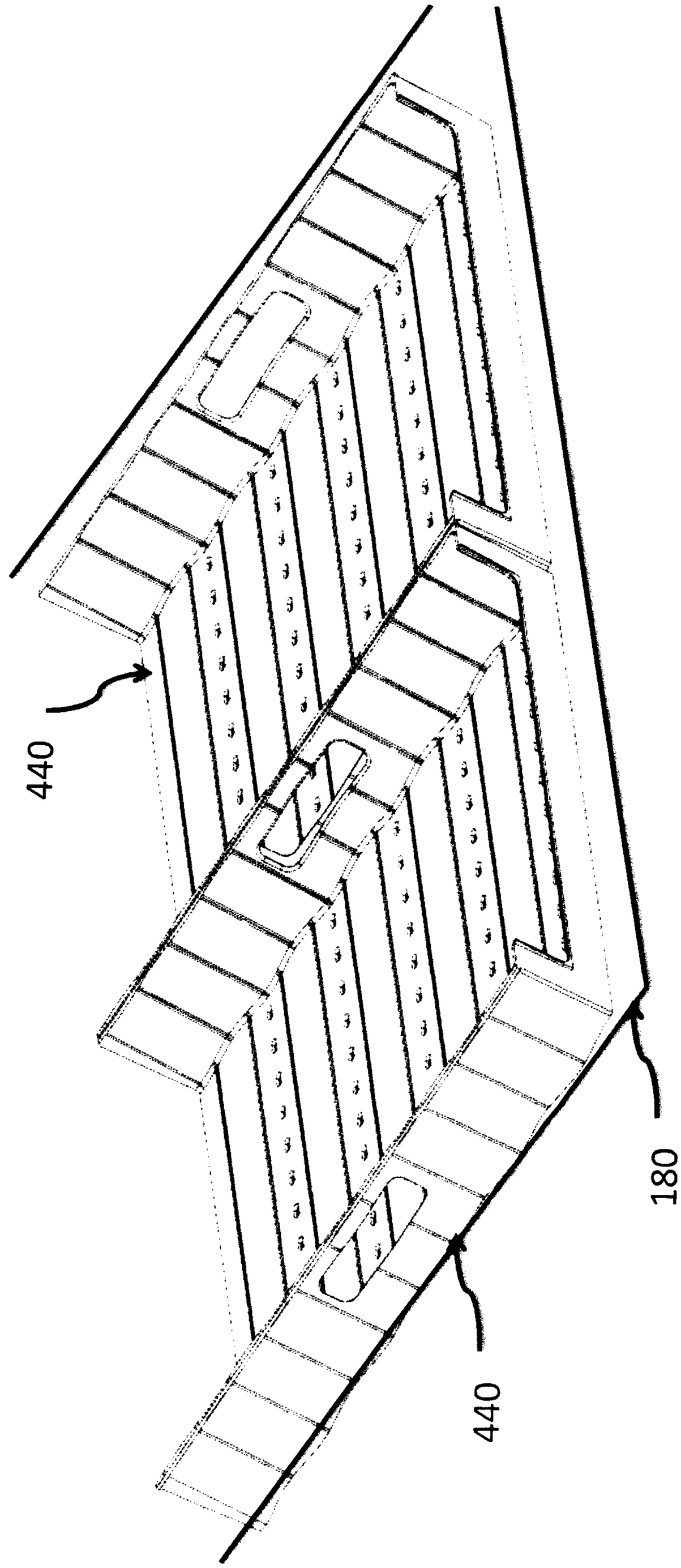


Figure 20

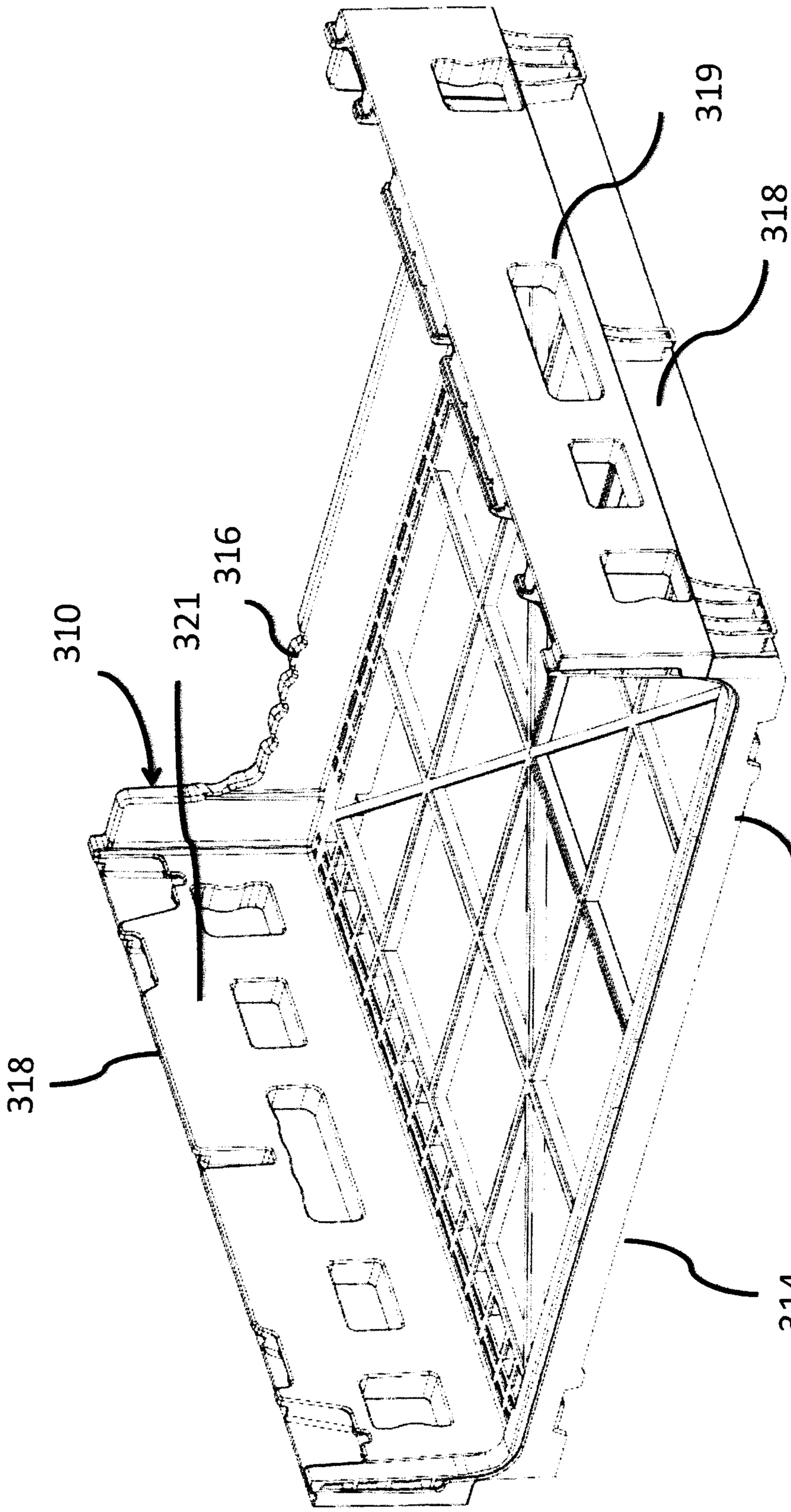


Figure 21

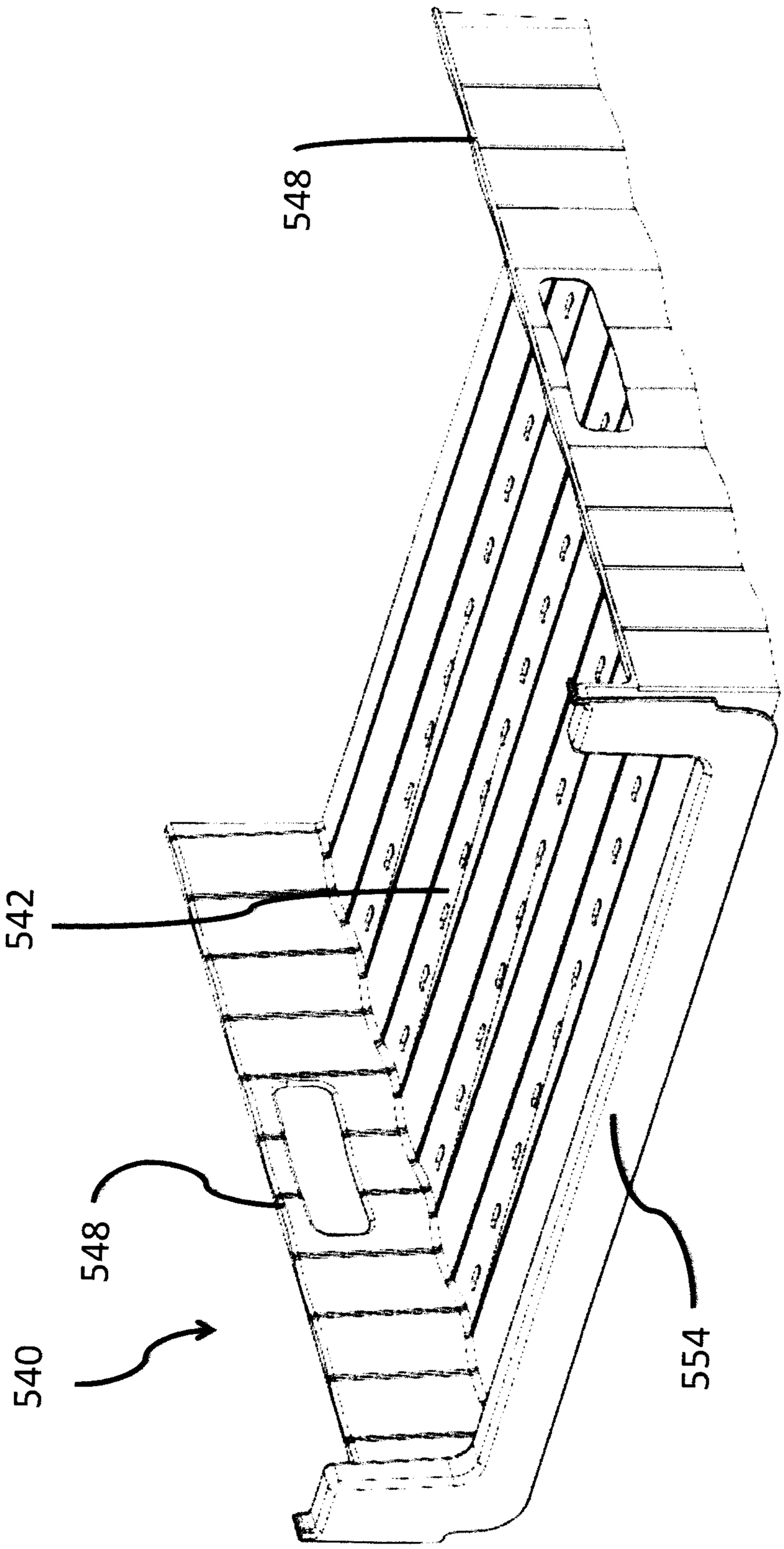


Figure 22

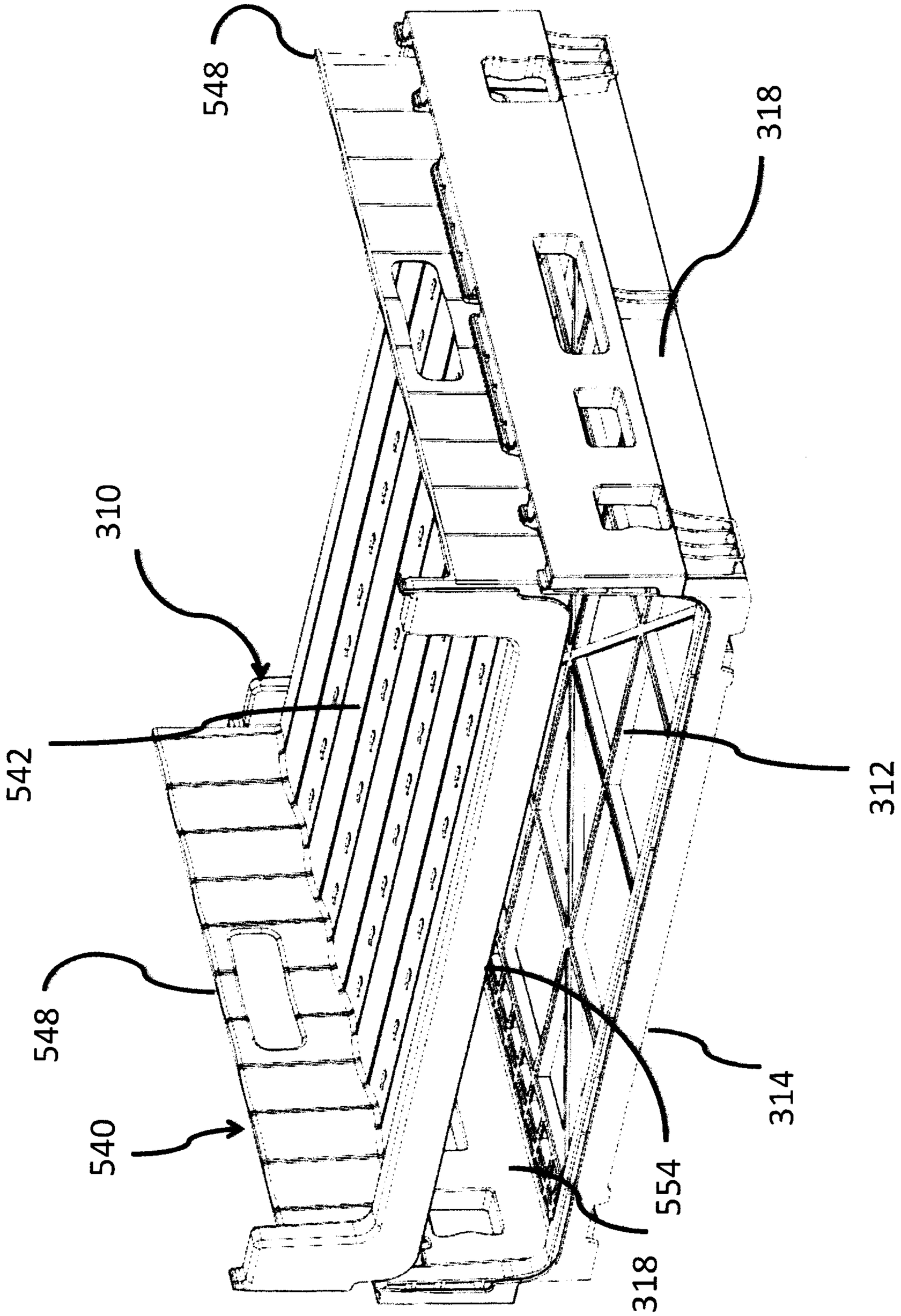


Figure 23

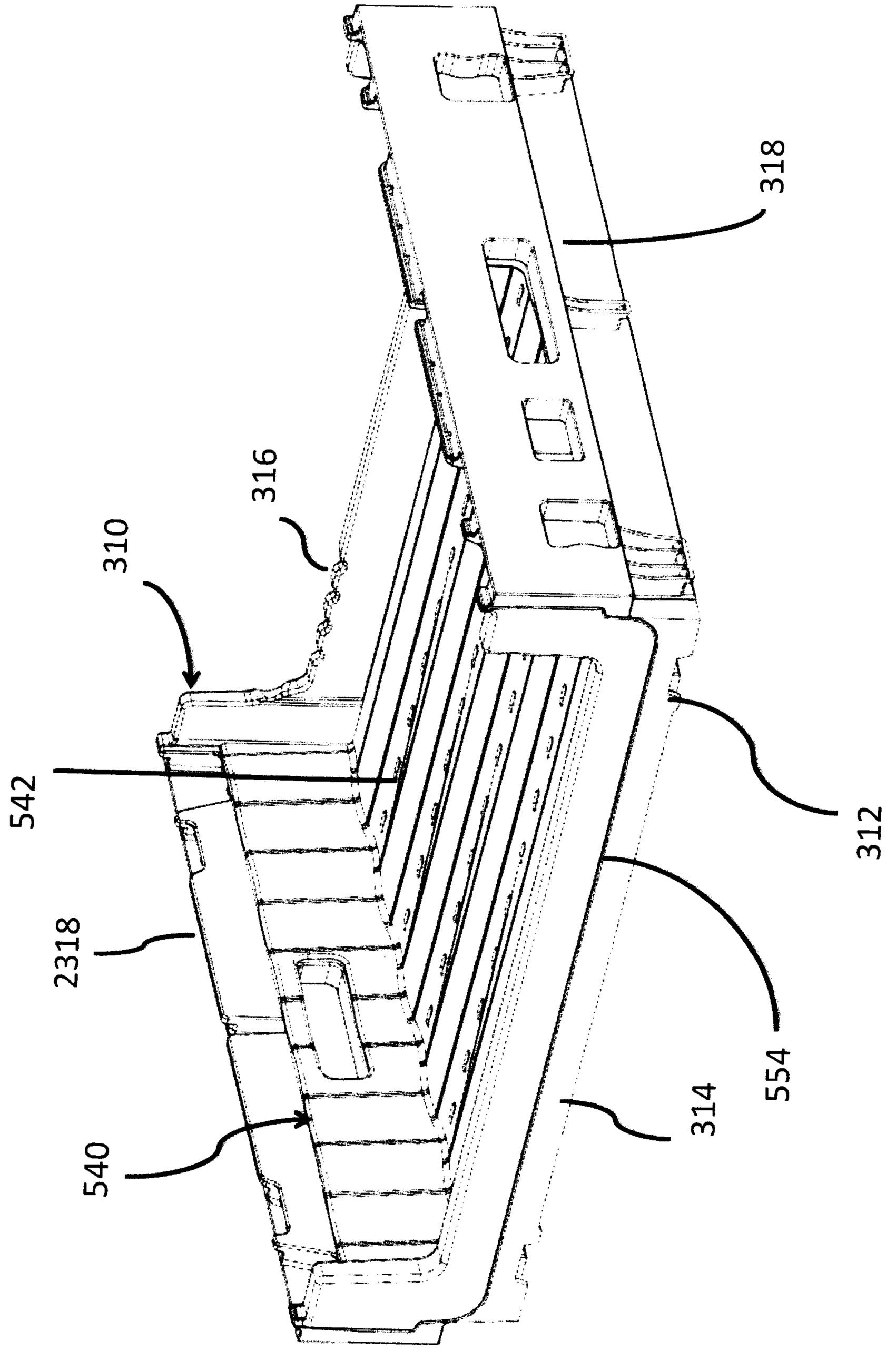


Figure 24

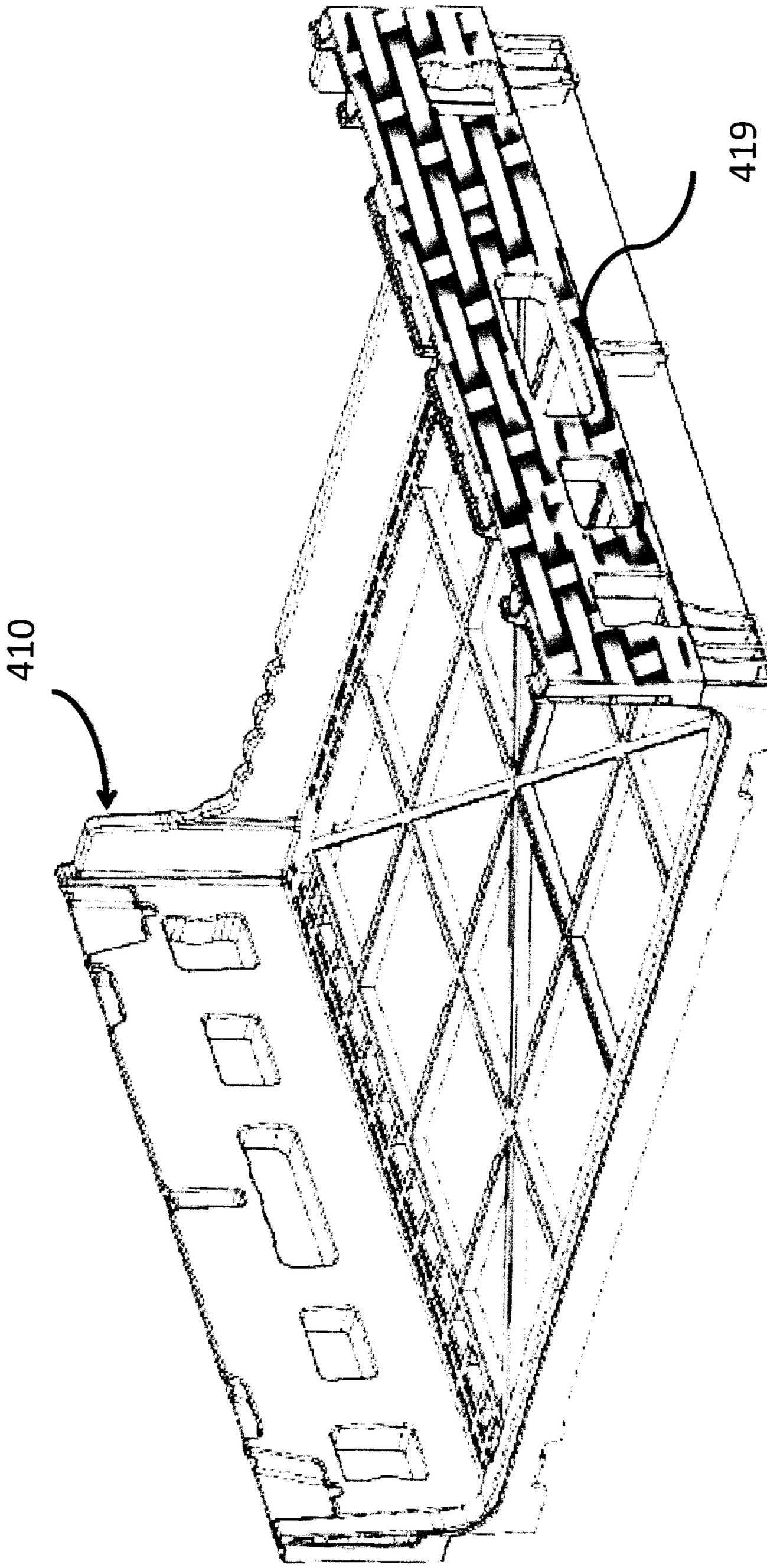
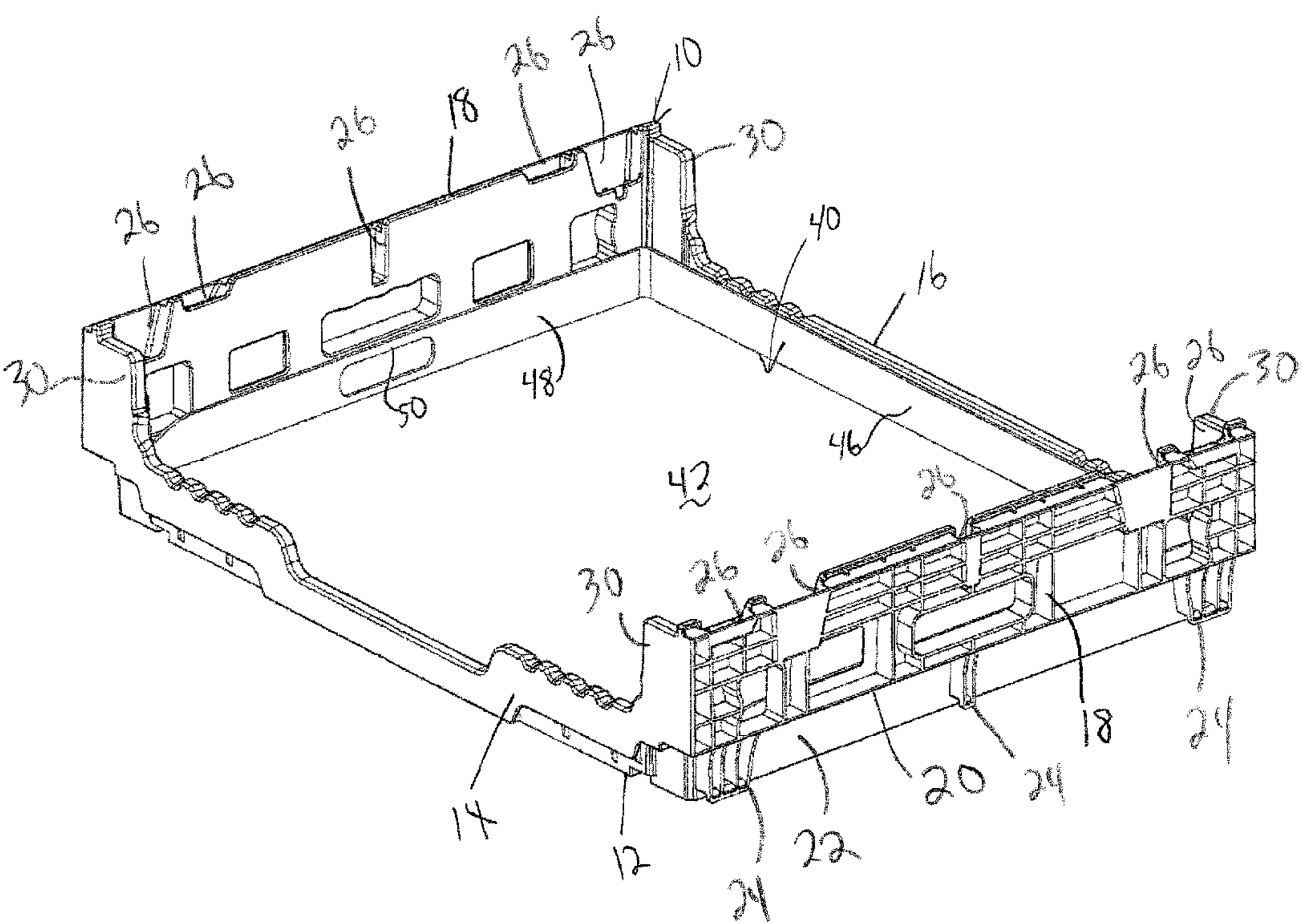


Figure 25


26
26
26
26
18
10
30
26
26
30
40
16
48
50
46
42
26
26
30
30
26
26
18
24
14
12
24
22
20
24