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(54) Titre : CASIER A BOUTEILLES A MULTIPLES DIMENSIONS DE CAPSULE
(54) Title: MULTIPLE CAP SIZE BOTTLE CRATE

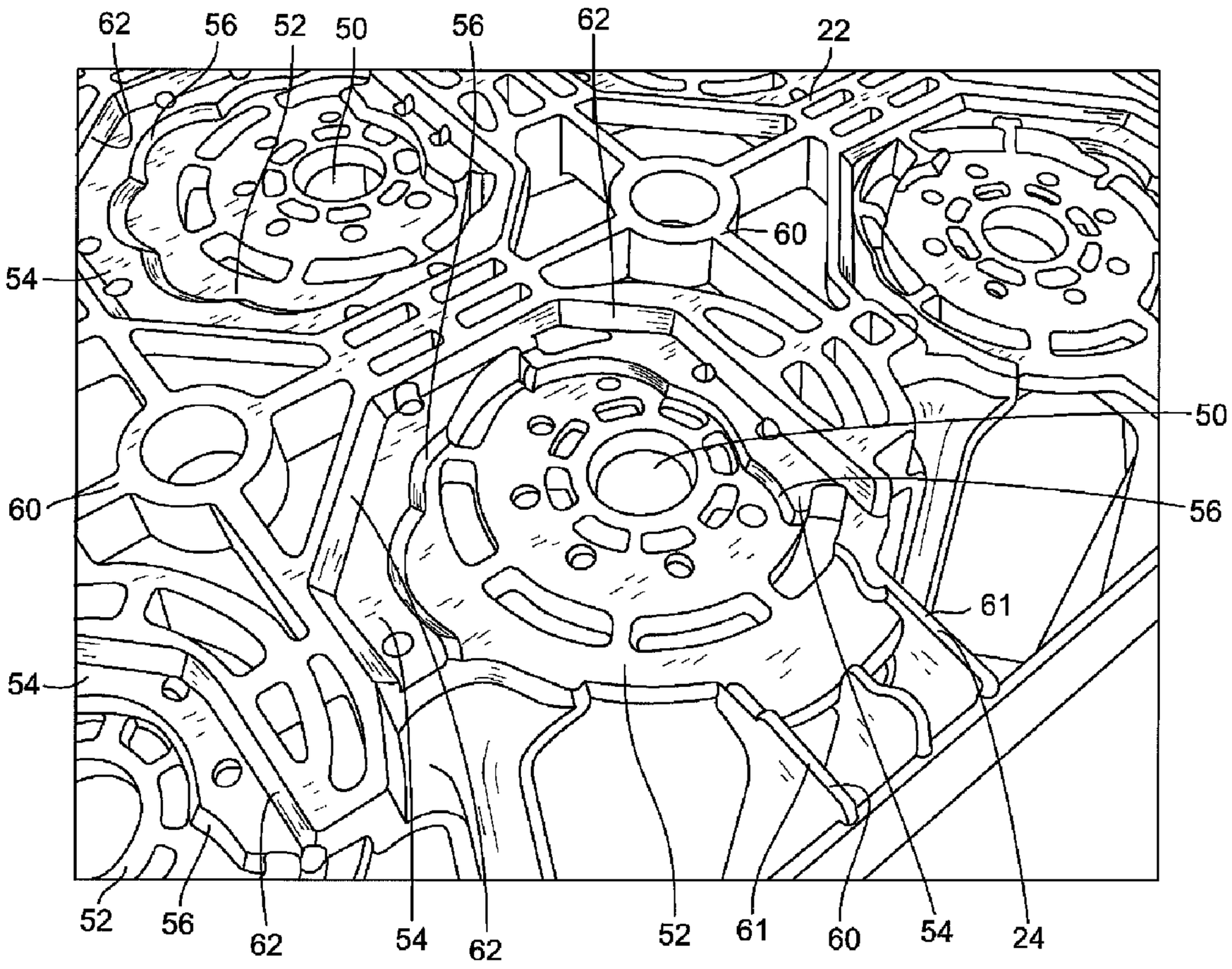

FIG. 7

(57) Abrégé/Abstract:
A beverage crate having a bottom wall, a first side wall, a second side wall, a first end wall and a second end wall. The bottom wall includes a lower surface having structure to allow the beverage crate to securely stack on a plurality of bottles having a first cap size or a plurality of bottles having a second cap size. The lower surface of the bottom wall including a plurality of bottle receiving portions where each bottle receiving portion includes a first cap size wall portion and a second cap size wall portion.

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(54) Title: MULTIPLE CAP SIZE BOTTLE CRATE

(57) Abstract: A beverage crate having a bottom wall, a first side wall, a second side wall, a first end wall and a second end wall. The bottom wall includes a lower surface having structure to allow the beverage crate to securely stack on a plurality of bottles having a first cap size or a plurality of bottles having a second cap size. The lower surface of the bottom wall including a plurality of bottle receiving portions where each bottle receiving portion includes a first cap size wall portion and a second cap size wall portion.

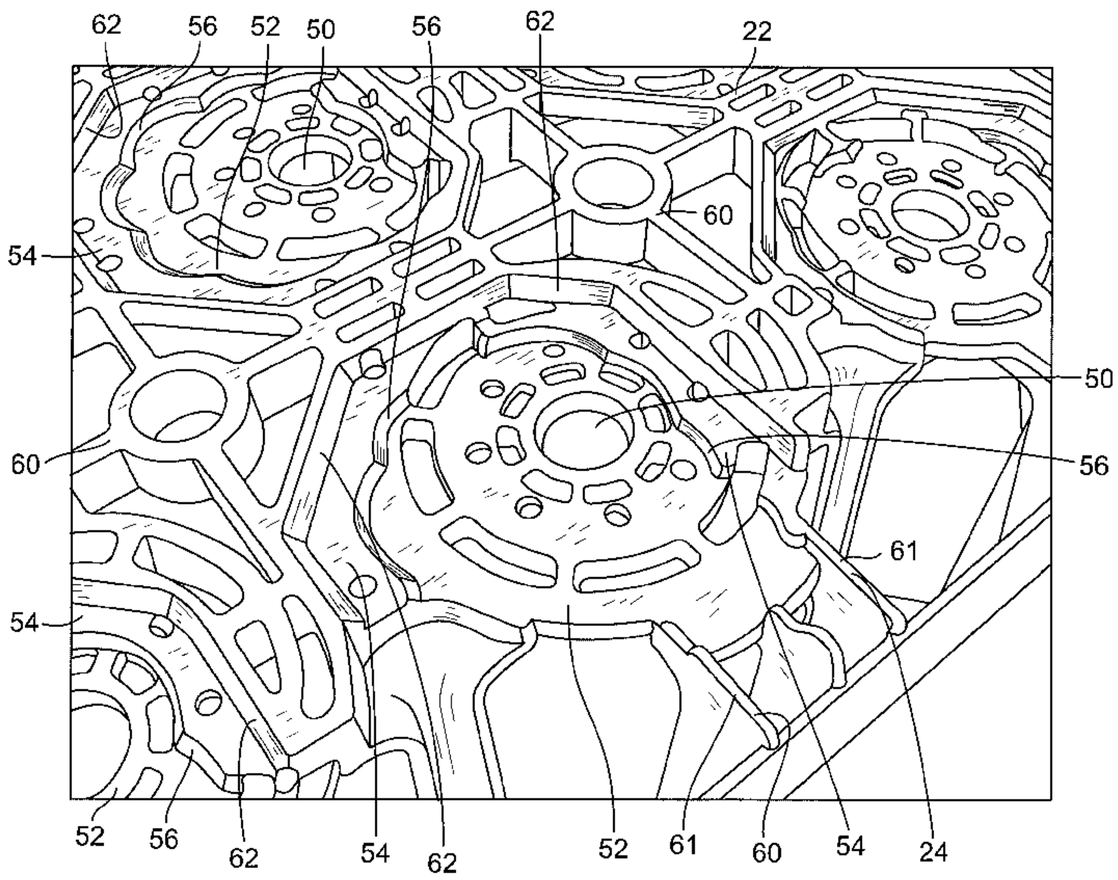

FIG. 7

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MULTIPLE CAP SIZE BOTTLE CRATE

DESCRIPTION

TECHNICAL FIELD

[0001] The invention generally relates to a beverage crate for transporting bottles containing a beverage having multiple cap sizes; and more particularly to a beverage crate having a bottom surface configured to securely stack on top of bottles having either a first cap size or a second cap size different than the first cap size.

BACKGROUND OF THE INVENTION

[0002] Plastic beverage crates are used to store and transport a plurality of bottles of a beverage. For example, such crates can hold a number of liter sized plastic bottles of popular soft drinks or other similar beverages. The beverage containing bottles are typically taller than the beverage crate. That is, the beverage crate includes side walls and end walls that extend upward from a bottom wall of the crate only a portion of the height of the bottles. The low walls provide savings in materials. Additionally, when empty smaller beverage crates can be transported more cost effectively than larger crates.

[0003] Transporting loaded beverage crates typically requires one or more crates to be stacked on top of each other. Because the side walls are lower than the height of the bottles, when stacking one or more loaded crates upon each other, the bottom surface of one stacked beverage crate (other than the lowermost crate) will contact and be support by the tops of the bottles of the crate below it rather than on the side or end walls of that crate.

[0004] The top of a beverage bottle includes a plastic cap or closure having a horizontal, circular top surface with a specified diameter. Different sized caps will have different diameters. The cap is sized to enclose the open mouth or spout of the beverage bottle.

[0005] To provide a stable stacked configuration, the bottom surface of the bottom wall of a beverage crate is sometimes provided with structure that cooperates with a particular size

bottle cap. However, such crates lose the benefit of this structure and can be unstable if stacked on bottles having a different sized cap.

[0006] One well known beverage company is currently selling its product in bottles having a larger than normal (for the industry) open mouth and corresponding cap. However, the company may move to an industry standard cap size in the future. With present crate technology, this company would need to stop using beverage crates with a bottom structure sized for the larger caps and acquire a second set of beverage crates with a bottom structure sized to accommodate the standard cap size. Given the large number of beverage containing bottles shipped a year, acquiring a second set of crates would require a substantial investment.

[0007] The present invention is provided to solve the problems discussed above and other problems, and to provide advantages and features not provided by prior beverage crates. A full discussion of the features and advantages of the present invention is deferred to the following detailed description, which proceeds with reference to the accompanying drawings.

SUMMARY OF THE INVENTION

[0008] The present invention provides a beverage crate that includes a bottom surface that can be stacked on top of bottles having either a first cap size or a second cap size different than the first cap size. Accordingly, a single beverage crate can be used for storing and transporting either cap size bottle. The present invention eliminates the need to acquire a second set of beverage crates for the second cap size bottles.

[0009] In accordance with one aspect of the invention, a beverage crate having a bottom surface configured to allow secure stacking of the beverage crate on bottles having a first cap size or bottles having a second cap size different than the first cap size is provided. The beverage crate comprises a bottom wall for supporting a plurality of beverage bottles. The bottom wall of the crate includes a first side, an opposing second side, a first end, and a second. The beverage crate further includes a first side wall connected to the bottom wall along the first side, a second side wall connected to the bottom wall along the second side. The bottom wall includes an upper surface for supporting bottles in the beverage crate and a lower surface shaped to contact tops of bottles contained in a lower beverage crate. The

bottom surface is configured to securely stack on either a plurality of bottles having a first cap size or a plurality of bottles having a second cap size different than the first cap size.

[0010] The bottom surface of the beverage crate includes a plurality of first wall portions at a first depth configured to contact the plurality of bottles having a first cap size, and a plurality of second wall portions at a second depth different than the first depth configured to contact the plurality of bottles having a second cap size. The depth of the respective wall portions is measured from a lowermost surface of the beverage crate (i.e., the lowermost surface is the surface of the crate that the crate would rest on when it is placed on a flat horizontal surface, such as the floor or a pallet). The beverage crate further includes a third wall portion having the lowermost surface of the beverage crate. Preferably, the second depth is closer to the lowermost surface than the first depth.

[0011] A plurality of substantially vertical wall segments connects each of the plurality of first wall portions to the plurality of second wall portions. Each wall connecting each of the plurality of first wall portions to the plurality of second wall portions preferably has a plurality of arc shaped segments. The arc shaped segments are sized to have a radius of curvature corresponding to a radius of curvature of the first cap size.

[0012] The bottom surface can include a plurality of bottle cap receiving portions. Each receiving portion includes a first wall portion and a second wall portion.

[0013] The beverage crate further comprises a first handle portion connected to the first and second side walls at the first end, and a second handle portion connected to the first and second side wall at the second end. The handle portions can be connected to portions of the side walls that wrap around the ends of the bottom wall. Additionally, each of the side walls can include a plurality of columns. The columns are designed to be shorter than the bottles supported in the beverage crate so that the tops of the bottles extend above the columns.

[0014] Preferably, the beverage crate is designed to stack on bottles having a first cap size with a radius of 28 millimeters. Additionally, the crate is designed to also stack on bottles having a second cap size with a radius of 38 millimeters.

[0015] In accordance with another aspect of the invention, a plastic beverage crate having a bottom surface configured to stack on bottles having multiple sized caps is provided. The beverage crate comprises a bottom wall having a generally planar upper surface for supporting a plurality of beverage bottles, a first side wall extending upward from a first side

of the bottom wall and an opposing second side wall extending upward from a second side of the bottom wall. The bottom wall includes a lower surface having a plurality of first wall portions at a first depth configured to contact a bottle cap having a first cap size, a plurality of second wall portions at a second depth configured to contact a bottle cap having a second cap size different than the first cap size, and a plurality of wall portions defining a lowermost surface of the beverage crate configured to support the beverage crate on a flat surface.

[0016] The beverage crate can further comprise a plurality of substantially vertical walls connecting each of the plurality of first wall portions to a corresponding plurality of second wall portions. Each of the plurality of vertical walls includes a plurality of arc shaped segments having a radius of curvature designed to match the outside circumferential shape of the first cap size.

[0017] Additionally, at least portions of the plurality of wall portions defining a lowermost surface of the beverage crate are formed from a plurality of rib segments.

[0018] Other features and advantages of the invention will be apparent from the following specification taken in conjunction with the following drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0019] To understand the present invention, it will now be described by way of example, with reference to the accompanying drawings in which:

FIG. 1 is a top plan view of a beverage crate which can be stacked either on bottles having a first cap size or a second cap size different than the first cap size in accordance with the present invention;

FIG. 2 is a bottom plan view of the beverage crate of FIG. 1;

FIG. 3 is a top perspective view of the beverage crate of FIG. 1;

FIG. 4 is a bottom perspective view of the beverage crate of FIG. 1;

FIG. 5 is a side plan view of the beverage crate of FIG. 1, the opposing side being substantially the same;

FIG. 6 is an end plan view of the beverage crate of FIG. 1, the opposing end being substantially the same; and,

FIG. 7 is an enlarged perspective view of a portion of the bottom surface of the beverage crate of FIG. 1.

DETAILED DESCRIPTION

[0020] While this invention is susceptible of embodiments in many different forms, there is shown in the drawings and will herein be described in detail preferred embodiments of the invention with the understanding that the present disclosure is to be considered as an exemplification of the principles of the invention and is not intended to limit the broad aspect of the invention to the embodiments illustrated.

[0021] The present invention is a beverage crate that is configured to stack on bottles having a first cap size, as well as bottles having a second cap size different than the first cap size. Specifically, the beverage crate of the present invention includes a bottom surface having structure preferably designed to allow the beverage crate to securely stack on bottles with 38 mm caps, or 28 mm caps. The cap size is a measure of the diameter of the cap. The beverage crate will not require replacement as one industry beverage manufacturer phases out of the 38 mm cap design and into the 28 mm cap.

[0022] Referring to Figure 1, a top plan view of a beverage crate 10 is shown. From this view, the beverage crate 10 is generally rectangular having a first side 12, an opposing second side 14, a first end 16, and an opposing second end 18. A web-like bottom wall 20 spans between the first and second sides 12, 14, and first and second ends 16, 18 of the beverage crate 10. The bottom wall 20 of the beverage crate 10 is designed to support a plurality of beverage bottles, such as plastic, liter-sized soft drink bottles. The plurality of openings in the bottom wall 20 reduces the amount of material used in the crate, and prevents fluids from accumulating in the crate.

[0023] Figure 2 is a bottom plan view of the beverage container 10. As shown in Figure 2, the bottom wall 20 includes a non-uniform bottom surface 22 having bottom wall portions at varying depths. As discussed in more detail below, the bottom surface 22 is divided into a plurality of bottle top receiving portions or areas 24. In the embodiment of Figures 1-7, the bottom surface 22 includes fifteen bottle top receiving areas 24. Each of these areas 24 are

configured to securely stack on a bottle top having a first cap size (e.g., 38 mm) or a second cap size different than the first cap size (e.g., 28 mm).

[0024] Referring generally to Figure 3, the beverage crate 10 includes a first side wall 26 extending upward from the bottom wall 20 along the first side 12, and a second side wall 28 extending upward from the bottom wall 20 along the second side 14. Additionally, the beverage crate includes a first partial end wall 32 extending upward from the bottom wall 20 along the first end 16, and a second partial end wall 34 extending upward from the bottom wall 20 along the second end 18. Each partial end wall 32, 34 includes a first segment integral with the first side wall 26 and a second segment integral with the second side wall 28. The first and second end walls 32, 34, include a first handle 36 and a second handle 38, respectively, spanning a central gap between each of the two segments of the respective end walls 32, 34.

[0025] As shown in Figures 3 and 5, the side walls 26, 28 include a plurality of columns 40 extending upward from a top portion of the side walls 26, 28. Gaps 41 are formed between the columns 40. Providing gaps between the columns allows for viewing labels or other indicia on bottles supported in the beverage crate 10. It also reduces the amount of material used to create the beverage crate 10. Although the columns 40 extend upward beyond the lower, generally solid portion of the side walls 26, 28, they do not extend above the tops of the bottles.

[0026] The handles 36, 38 on the end walls 32, 34 are designed to extend upward up to the same height as the columns 40. This allows the crates 10 to stack evenly when empty.

[0027] One end wall and handle is shown in Figure 6. The handle includes a first support 44 and a second support 46 which extends from the handle to the upper or top surface 48 of the bottom wall 20.

[0028] The beverage crate 10 is designed to transport a plurality of bottles containing a beverage supported on the top surface 48 of the bottom wall 20. During transportation, one or more filled beverage crates 10 (e.g., having fifteen bottles) are stacked one on top of another. In this arrangement, a first beverage crate is placed directly on the floor (or upper surface of a transport mechanism, such as a pallet), and a second beverage crate is placed on top of the bottles in the first beverage crate 10. Subsequent beverage crates 10 are placed on the lower two in the same manner.

[0029] When the second beverage crate 10 is placed on the first (lower) beverage crate 10, it is supported by the bottles in the first beverage crate 10. In this regard, the lower surface 22 of the bottom wall 20 of the second beverage crate 10 contacts and rests on the tops of the bottles in the first lower beverage crate 10.

[0030] Referring to Figures 4 and 7, the lower surface 22 of the bottom wall 20 is provided with structure to securely stack with bottles having either a first cap size, or a second cap size different than the first cap size. Additionally, the bottom surface 22 also includes structure to allow the beverage crate to rest on a smooth floor or transport mechanism.

[0031] As noted above, the bottom surface 22 of the beverage crate 10 is divided into fifteen bottle top receiving portions 24. Each receiving portion 24 is generally a square shaped area which includes a circular, centrally located opening 50. The opening 50 is formed in a first cap size bottom wall portion 52 of the bottle top receiving portion 24, and is positioned at a first depth (measured from the lowermost surface of the bottom wall 20 as discussed below). The first cap size bottom wall portion 52 is configured to contact and allow the beverage crate 10 to stack on a bottle having a top with a cap having a first cap size.

[0032] Each of the bottle top receiving portions 24 also include a second cap size bottom wall portion 54 having a second depth less than the first depth (again as measured from the lowermost surface of the bottom wall 20 – the second depth is thus closer to the lowermost surface). The second cap size bottom wall portion is positioned about at least a portion of the periphery of the first cap size bottom wall portion 52 in each of the bottle top receiving portions 24. The second cap size bottom wall portion 52 is configured to contact and allow the beverage crate 10 to stack on a bottle having a top with a cap having a second cap size different than the first cap size.

[0033] A scalloped, substantially vertical wall 56, having a plurality of circular arc segments 58, connects the first cap size wall portion 52 to the second cap size wall portion 54. The arc segments 58 are predominantly sized to match the outer circumference of caps of bottles having a first cap size.

[0034] The bottom surface 22 of the bottom wall 20 also includes a floor engaging bottom wall portion 60. The floor engaging wall portion 60 forms the lowermost surface of the beverage crate 10. The floor engaging bottom wall portion 60 contacts the floor or

transport mechanism when the beverage crate 10 is not stacked on top of another loaded beverage crate 10. This surface (at least along the outer periphery) would also contact the upper surface of another beverage crate 10 (e.g., the top surface of the columns 40 or handles 36, 38) when empty crates are stacked on each other. The floor engaging bottom wall portions 60 can be formed at least in part by rib segments 61.

[0035] Referring to Figures 2 and 4, a centrally located bottle top receiving portion or area 24' (i.e., in the middle row, middle column of receiving portions 24, see Figure 4) is shown having a symmetrical first cap size bottom wall portion 52 completely surrounded by a symmetrical second cap size bottom wall portion 54. The second cap size bottom wall portion 54 includes a substantially vertical, octagonal outer boundary or wall 62. The outer boundary 62 connects the second cap size bottom wall portion 54 to floor engaging bottom wall portion 60. In other receiving portions or areas 24, the outer wall 62 does not fully surround the second cap size bottom wall portion 54 and therefore, does not have an octagonal shape.

[0036] Other bottle top receiving portions or areas 24 include first cap size bottom wall portions having a variety of mostly irregular shapes, along with second cap size bottom wall portions 54 having a variety of mostly irregular shapes. Additionally, many of the second cap size bottom wall portions 54 do not completely surround the first cap size bottom wall portions 52. Moreover, more than one second cap size bottom wall portion 54 may exist in a bottle top receiving portions 24.

[0037] During use, a first beverage crate 10 containing bottles having a first cap size (e.g., 28 mm) is placed on the floor. A second beverage crate 10 is then placed (i.e., stacked) on top of the bottles in the beverage crate 10. The caps of the bottles will contact and tend to align in the first cap size bottom wall portions 52 in the respective receiving portions or areas 24. Some of the caps will likely contact and abut one of the circular arc segments 58 of the scalloped wall 56.

[0038] In instances where the first beverage crate 10 contains bottles having a second cap size (e.g., 38 mm), the caps will contact and tend to align on the second cap size bottom wall portions 54 in the respective receiving portions or areas 24. The outer wall 62 in each receiving portion 24 prevents the caps from sliding into other areas 24 or onto the floor engaging bottom wall portions 60.

[0039] While the specific embodiments have been illustrated and described, numerous modifications come to mind without significantly departing from the spirit of the invention, and the scope of protection is only limited by the scope of the accompanying Claims.

CLAIMS:

1. A beverage crate having a bottom surface configured to allow secure stacking of the beverage crate on bottles having a first cap size and bottles having a second cap size different than the first cap size, the beverage crate comprising:

a bottom wall for supporting a plurality of beverage bottles, the bottom wall having a first side, an opposing second side, a first end, and a second;

a first side wall connected to the bottom wall along the first side;

a second side wall connected to the bottom wall along the second side;

the bottom wall including an upper surface for supporting bottles in the beverage crate and a lower surface having a generally square shape centrally located bottle cap receiving area and a plurality of other generally square bottle cap receiving areas shaped to contact tops of bottles contained in a lower beverage crate, the lower surface including a first lowermost surface forming a floor engaging portion, the centrally located receiving area and each of the plurality of other receiving areas of the bottom surface configured to securely stack on one of a plurality of bottles having a first cap size and a plurality of bottles having a second cap size different than the first cap size, the centrally located bottle cap receiving area having a symmetrically formed first bottom surface portion at a first depth from the lowermost surface surrounding a perimeter of the centrally located receiving area and a second bottom surface portion at a second depth from the lowermost surface greater than the first depth, each of the plurality of other receiving areas having a first irregular shaped surface portion at the first depth, and a second irregular shaped surface portion at the second depth.

2. The beverage crate of claim 1 further comprising a wall connecting each of the plurality of first bottom surface portions to the plurality of second bottom surface portions.

3. The beverage crate of claim 2 wherein each wall connecting each of the plurality of first bottom surface portions to the plurality of second bottom surface portions has a plurality of arc shaped segments.

4. The beverage crate of claim 3 wherein the arc shaped segments have a radius of curvature corresponding to a radius of curvature of the first size caps.

5. The beverage crate of claim 1 further comprising a first handle portion connected to the first and second side walls at the first end, and a second handle portion connected to the first and second side wall at the second end.

6. The beverage crate of claim 1 wherein the first cap size has a radius of 28 millimeters.

7. The beverage crate of claim 1 wherein the second cap size has a radius of 38 millimeters.

8. The beverage crate of claim 1 wherein each side wall includes a plurality of columns.

9. A plastic beverage crate having a bottom surface configured to stack on bottles having multiple sized caps comprising:

a bottom wall having a generally planar upper surface for supporting a plurality of beverage bottles, a first side wall extending upward from a first side of the bottom wall and an opposing second side wall extending upward from a second side of the bottom wall, the bottom wall including a lower surface having a plurality of generally square shaped receiving areas having a corresponding plurality of irregularly shaped first wall portions at a first depth, and a plurality of irregularly shaped second wall portions at a second depth, and a plurality of wall portions defining a lowermost surface of the beverage crate configured to support the beverage crate on a flat surface.

10. The beverage crate of claim 9 further comprising a plurality of substantially vertical walls connecting each of the plurality of first wall portions to a corresponding plurality of second wall portions.

11. The beverage crate of claim 10 wherein each of the plurality of vertical walls include a plurality of arc shaped segments.

12. The beverage crate of claim 11 wherein each arc shaped segment has a radius of curvature measured to match the outside circumferential shape of the first cap size.

13. The beverage crate of claim 9 wherein at least portions of the plurality of wall portions defining a lowermost surface of the beverage crate are formed from a plurality of rib segments.

14. The beverage crate of claim 9 wherein the first cap size is 28 mm and the second cap size is 38 mm.

15. The beverage crate of claim 9 wherein the lower surface of the bottom wall includes a plurality of bottle top receiving areas.

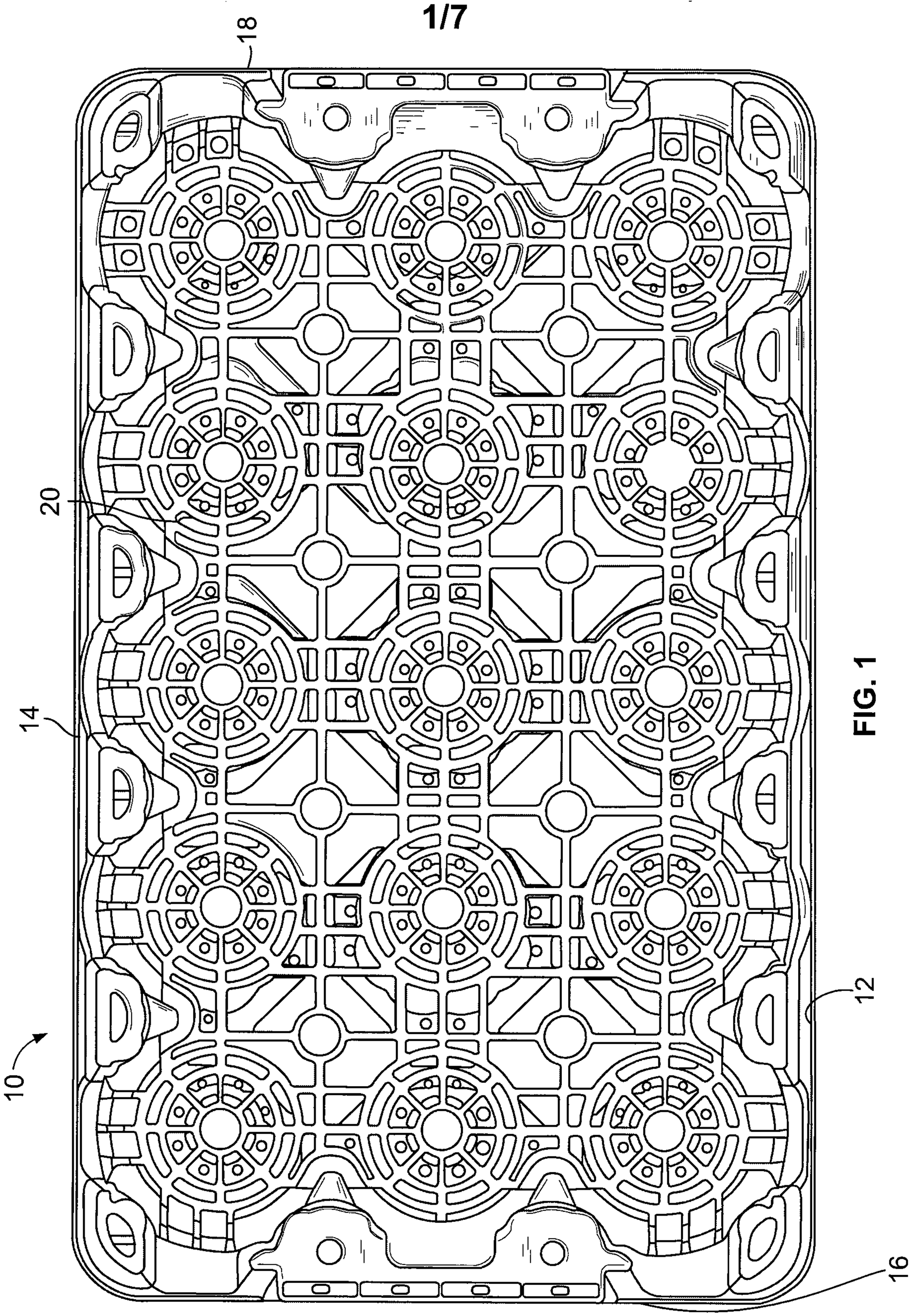

FIG. 1

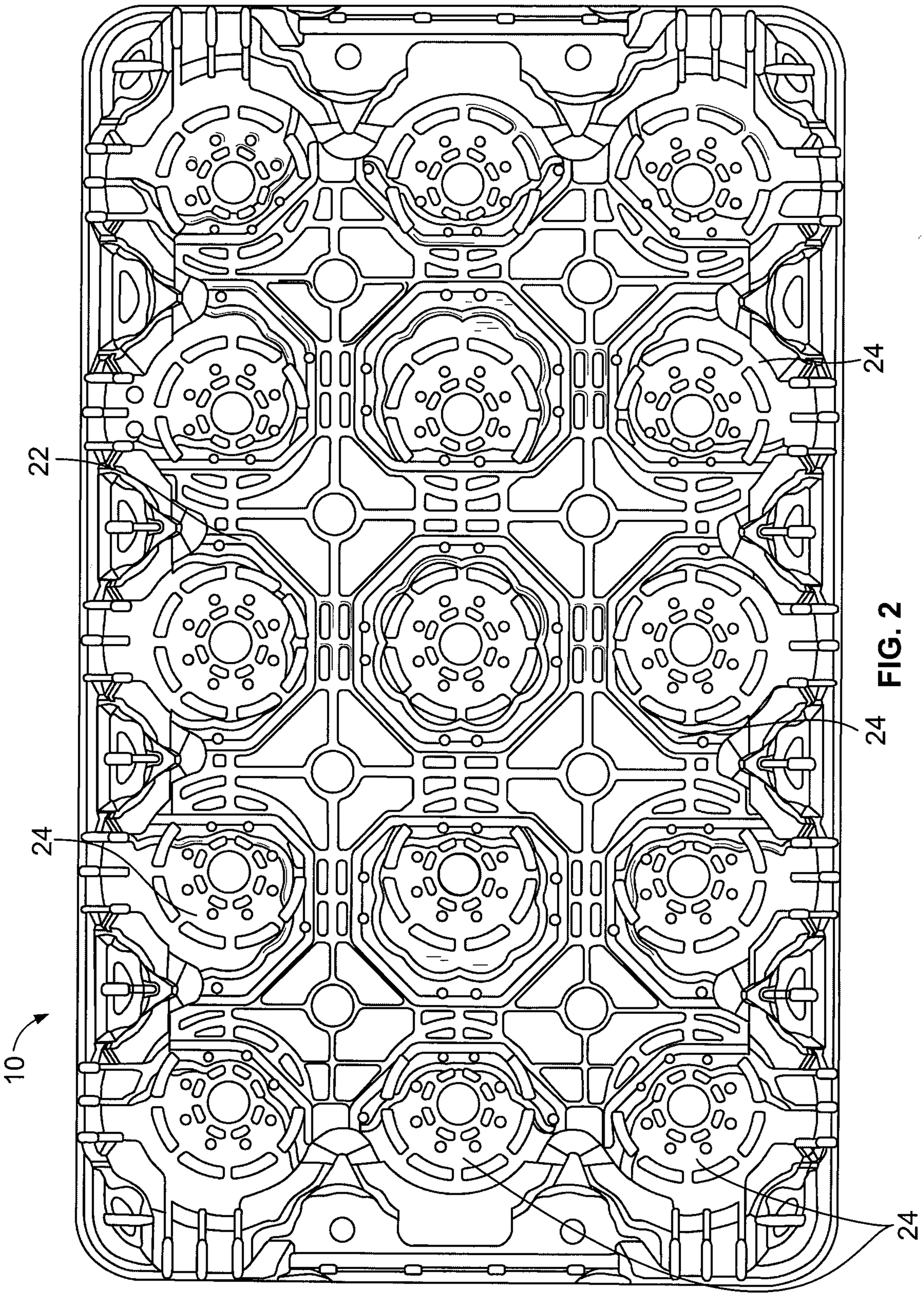

FIG. 2

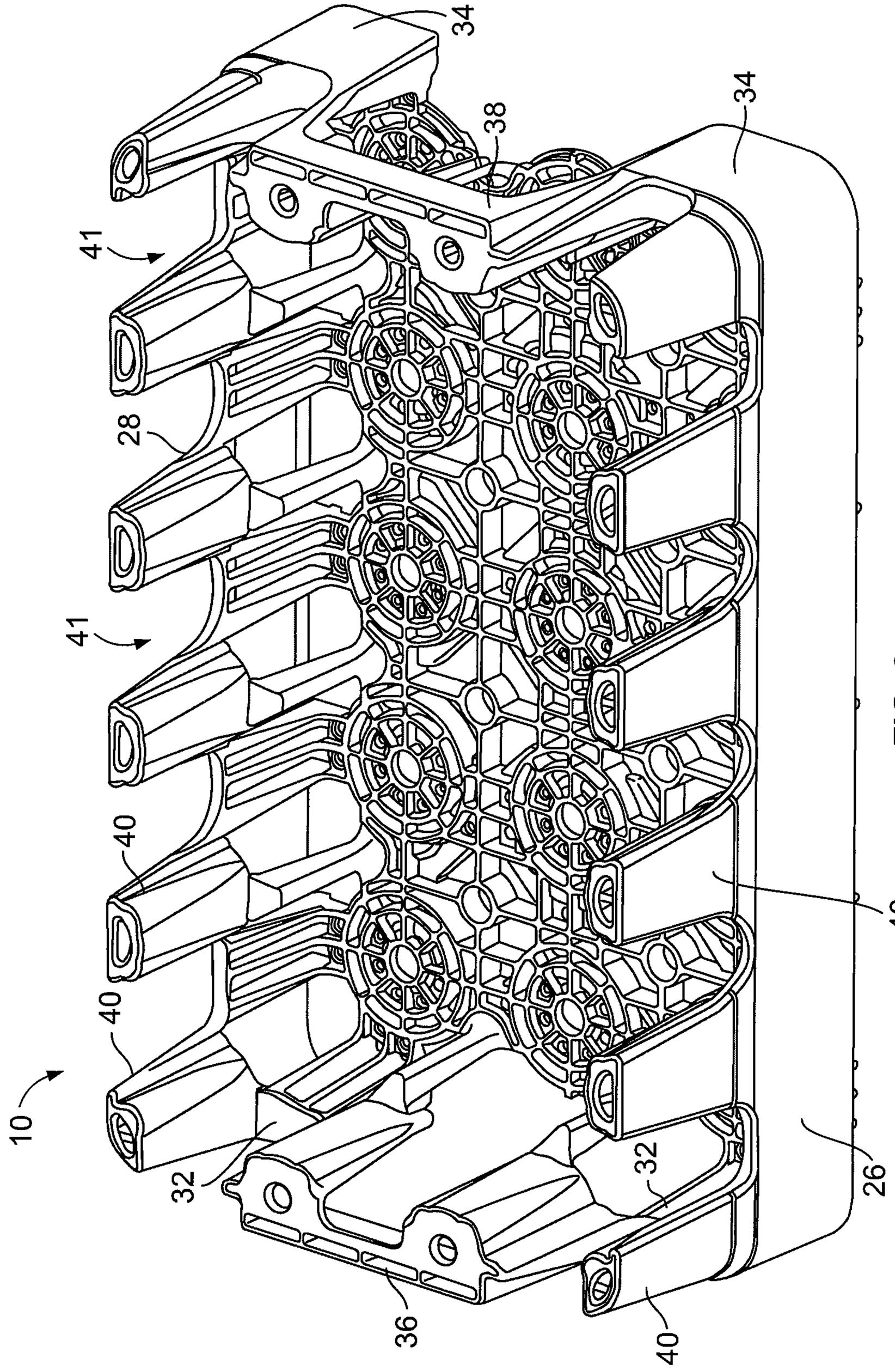

FIG. 3

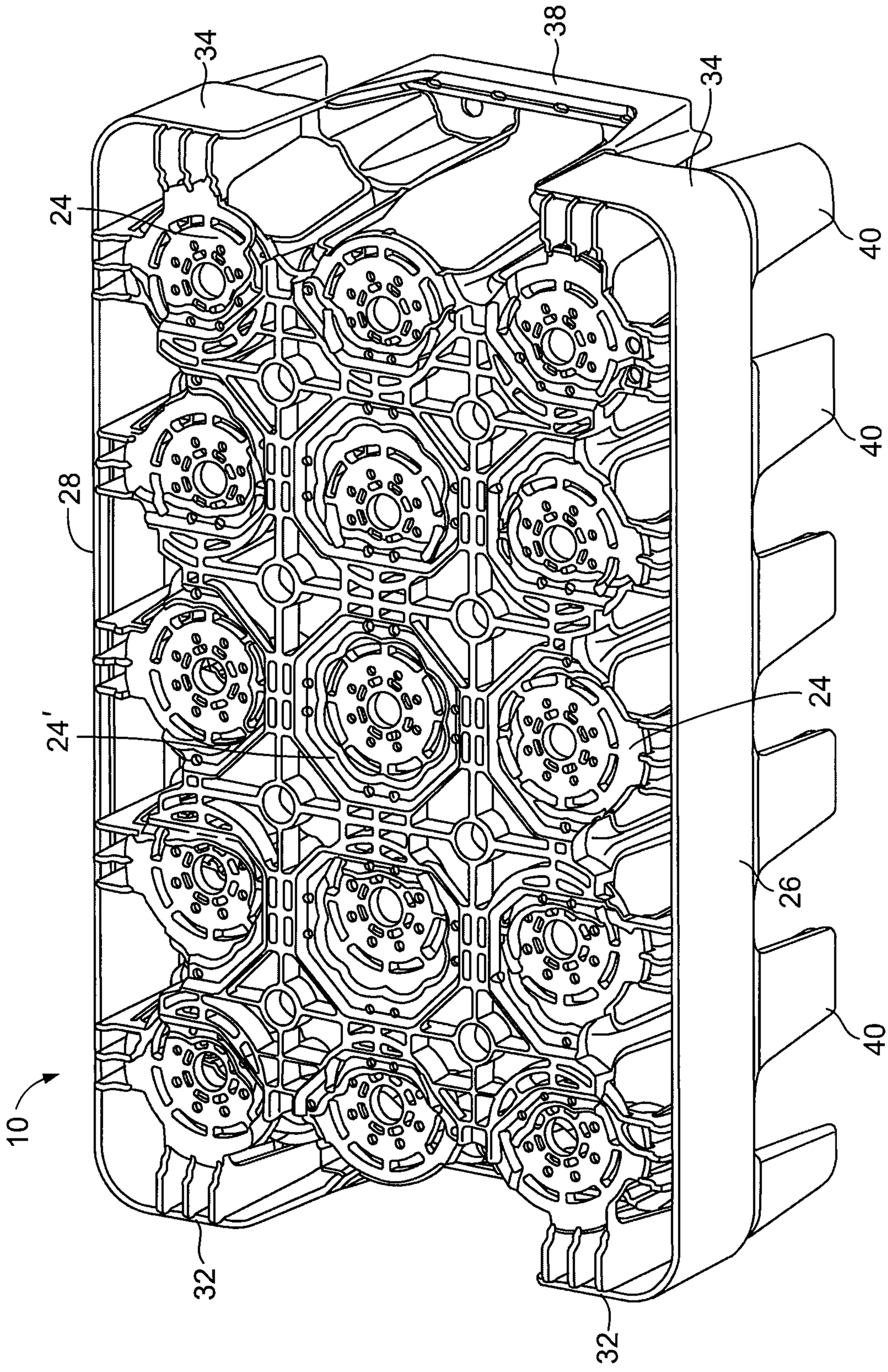

FIG. 4

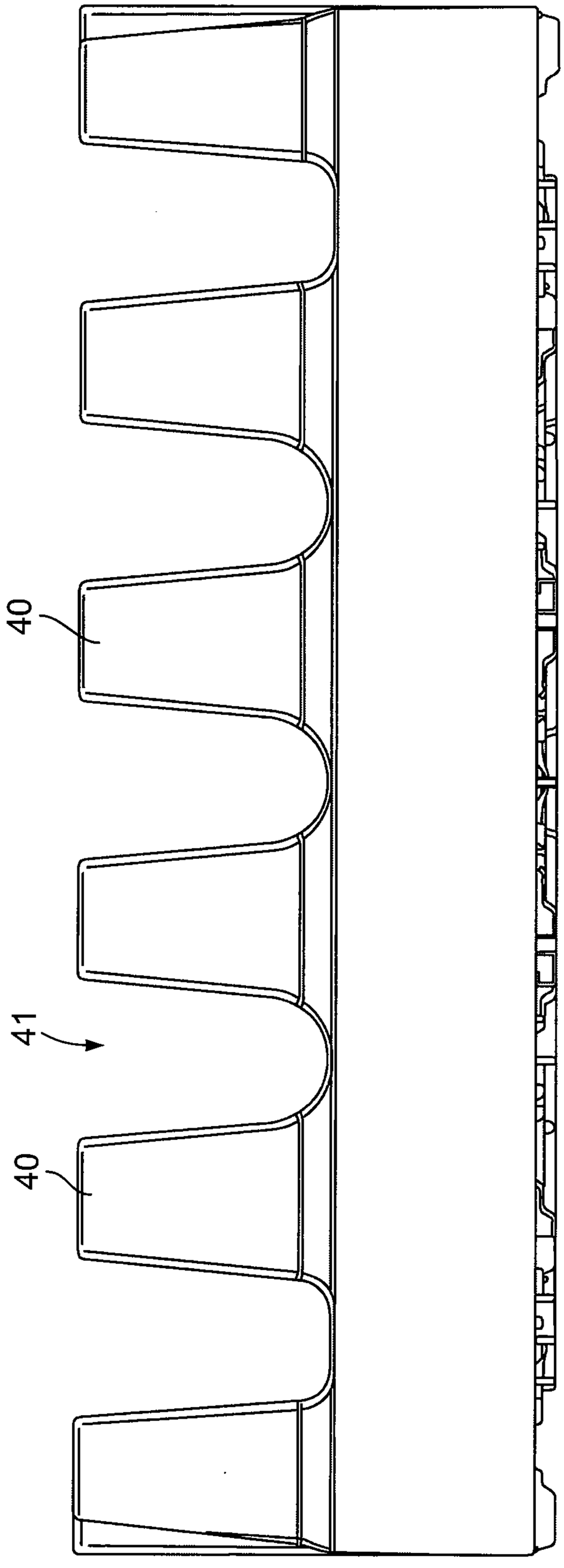

FIG. 5

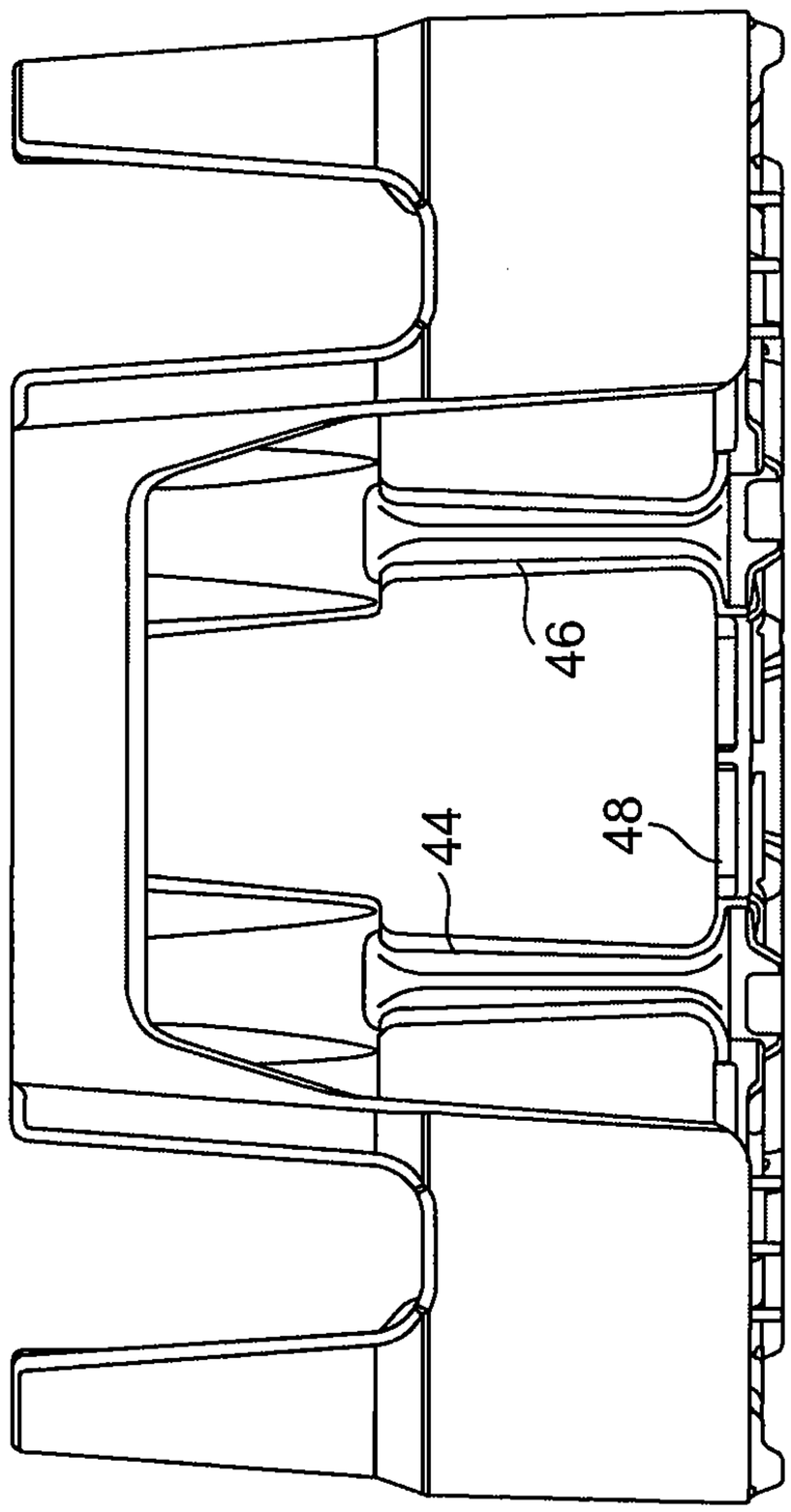

FIG. 6

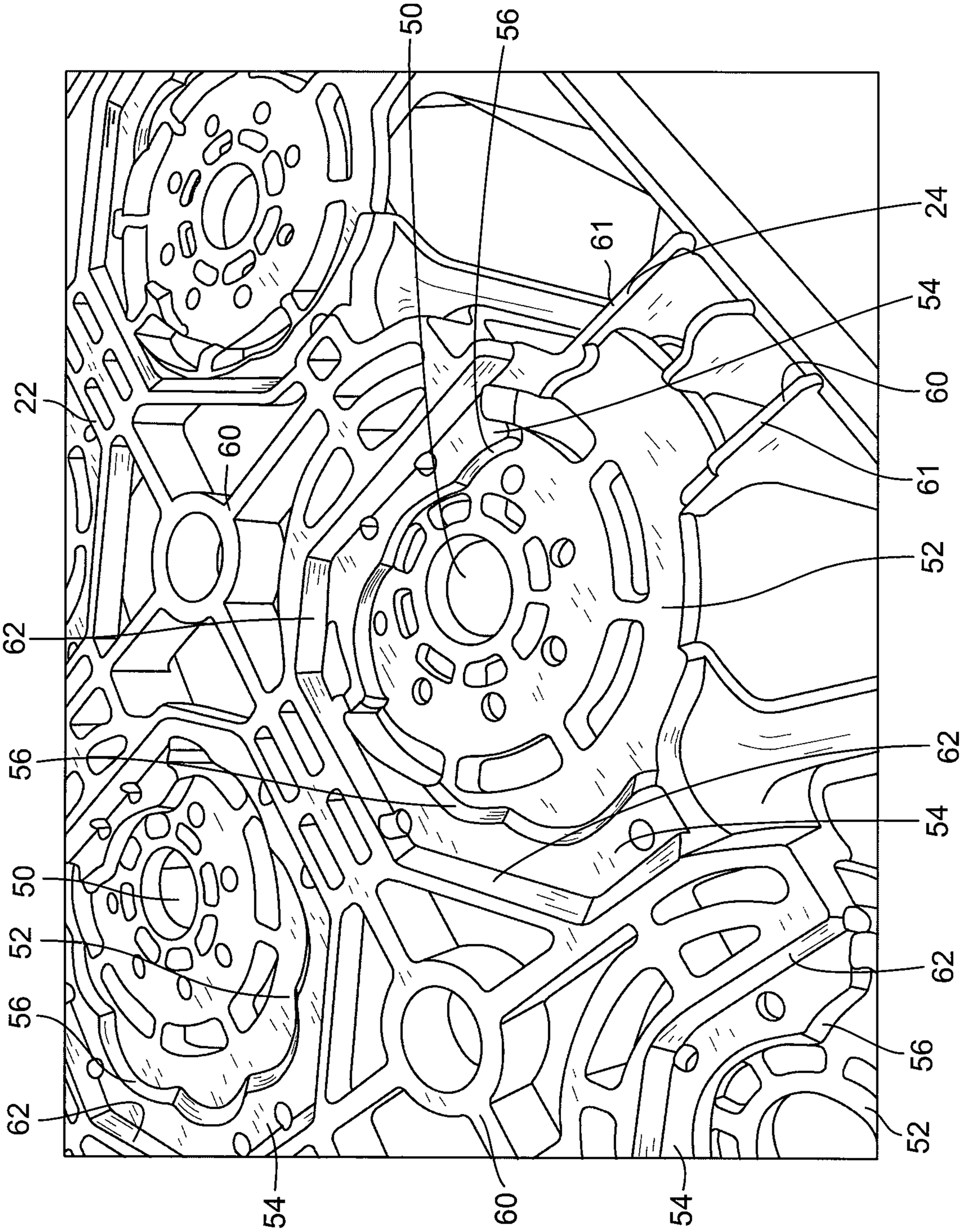

FIG. 7

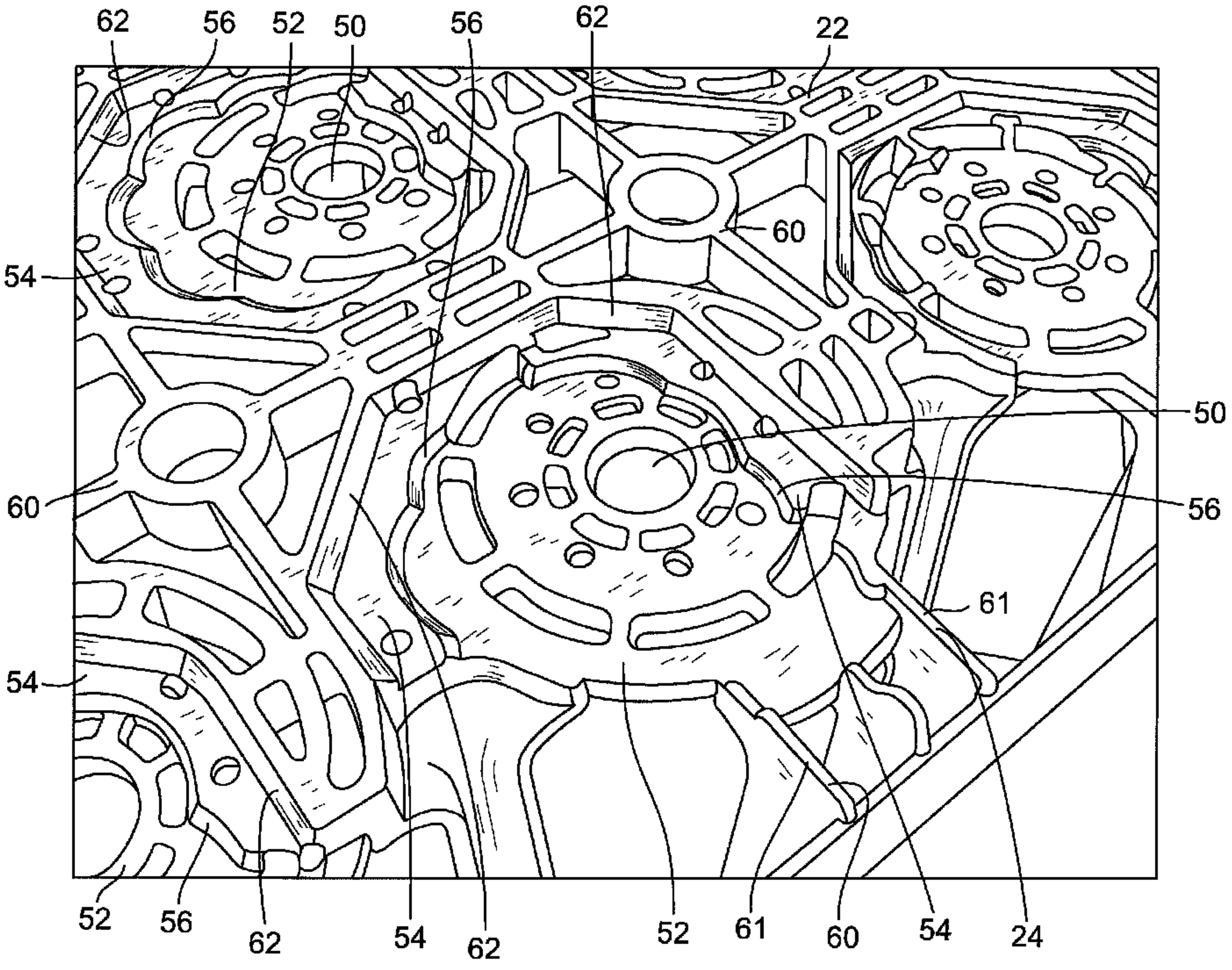

FIG. 7