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(54) **Collapsible crate**

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Caisse pliable

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Description

BACKGROUND OF THE INVENTION

[0001] Collapsible crates are well known. Four walls each connected via a hinge to a base are selectively movable about the hinge between a use position, in which the wall is generally perpendicular to the base, and a collapsed position onto the base. Various latch mechanisms have been provided to connect adjacent walls at the corner to selectively lock the crate in the use position.

[0002] Some collapsible crates also include retractable supports so that another, non-collapsible, nestable container can be supported thereon. One such collapsible crate includes end walls each having a support that is partially supported on the adjacent walls when in the support position. The nestable containers can be supported on the supports when the supports are in the support position. Ends of the supports are received in arcuate channels in the adjacent walls to permit the end walls to be collapsed.

[0003] The collapsible crates may be stacked on a dolly having spring-loaded locking fingers designed to interlock with recesses on some containers stacked thereon. On some dollies, the spring-loaded locking fingers are aligned with the collapsible crate in a location where a recess cannot be provided. In particular, the spring-loaded locking fingers are aligned with the arcuate channels in the adjacent walls.

[0004] A container having the features of the preamble of claim 1 is disclosed in WO 2008/062494.

SUMMARY OF THE INVENTION

[0005] The present invention provides a container as set forth in claim 1.

[0006] The tab may engage the spring-loaded fingers on a dolly.

[0007] The container may further include at least one rib on an exterior of the side wall. The rib may include a recess formed therein to accommodate the tab of an identical container stacked thereon when the container is in a collapsed position with the plurality of walls collapsed on the base.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008]

Figure 1 is a perspective view of a container according to one embodiment of the present invention in an assembled upright position.

Figure 2 shows the container of Figure 1 in a collapsed position.

Figure 3 is an interior perspective view of a quarter of the container of Figure 1.

Figure 4 is an interior view of one of the end walls.

Figure 5 is an exterior view of the quarter of the con-

tainer of Figure 3.

Figure 6 is an view of a portion of Figure 5.

Figure 7 is a section view of the container of Figure 2 in a collapsed position with the base of an identical container stacked thereon.

Figure 8 is an enlarged view of a portion of Figure 7.

Figure 9 is a section view through a portion of the container of Figure 1 adjacent an alignment, finger on a dolly.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0009] A collapsible container 10 according to one embodiment of the present invention is shown in Figures 1. The collapsible container 10 includes a base 12, collapsible side walls 14 (or "long walls") and collapsible end walls 18 (or "short walls"). The side walls 14 are pivotably connected to upstanding side members 16, which are integrally molded the base 12 and extend upwardly along the side edges of the base 12. Each end wall 18 includes a support member 20 pivotably and slidably connected thereto by arms 24.

[0010] As shown in Figure 2, the end walls 18 and side wall 14 are collapsible onto the base 12 for convenient shipping and storage when empty.

[0011] A quarter view of the collapsible container 10 is shown in Figure 3. The collapsible container 10 would be symmetric about the section lines. Each of the support members 20 includes a support portion 21 extending between opposite ends 22, which protrude outwardly relative to the arms 24. Each side wall 14 includes an arcuate channel 30 adjacent each end wall 18. The end 22 of the support member 20 is received in the associated channel 30. The channel 30 extends from an upper portion of the side wall 14 to a vertical channel 34 through the upstanding portion 16.

[0012] In Figure 3, the support member 20 is shown in the support position. In Figure 4, the support member 20 is shown pivoted to a retracted position.

[0013] Figure 5 is an exterior view of the container 10 showing the bottom of the base 12. As shown, the base 12 includes a plurality of feet 38 (or a drag rail) protruding downwardly. Aligned at least partially with the channel 34 through the upstanding portion 16 is a downward projection, in the form of an alignment tab 40 projecting downwardly from the base 12. The alignment tab 40 is arranged to abut a spring-biased finger or button (which may be spring biased and retractable) on a dolly or other support surface, to prevent the container 10 from sliding relative to the dolly or support surface.

[0014] As shown in Figure 6, the side wall 14 includes some recesses to accommodate the alignment tab 40. For example, the exterior surface of the side wall 14 may include vertical ribs 42, 44 which overlap an exterior surface of the arcuate channel 30. An opening 46 is formed through the surface of the arcuate channel 30 and a recess 48 is formed through one of the vertical ribs 44.

[0015] Figures 7 and 8 show the collapsed container 10 with the base 12' of an identical container 10' stacked thereon (walls of the upper container 10' removed for clarity). As shown, when stacking collapsed containers 10, 10', the alignment tab 40' of the upper container 10 is received in the opening 46 through the surface of the arcuate channel 30 and the recess 48 through the rib 44. This permits the containers 10, 10' to stack stably when in the collapsed position.

[0016] Figure 9 is a section view through a portion of the container 10 on a dolly 60. The dolly 60 includes a plurality of alignment fingers 62 (one shown) each biased upwardly by a spring 64 to prevent the container 10 from sliding off the dolly 60. The base 12 of the container 10 partially compresses the finger 62 into the deck of the dolly 10 and the tab 40 abuts an inner surface of the finger 62 to help keep the container 10 in position on the dolly 10. The container 10 may include such a tab 40 aligned with each of the vertical channels 34 in the upstanding members 16, and the tabs 40 may each engage a different spring-loaded finger 62 in the manner shown in Figure 9.

[0017] 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 scope as defined by the following claims.

Claims

1. A collapsible container (10) comprising:

a base (12) having a pair of opposed upstanding side members (16), at least one of the side members (16) including a vertical channel (34), the base (12) including a downward projection (40). a plurality of walls (14,18) extending upward from the base (12), the plurality of walls (14,18) movable between an upright position and a collapsed position onto the base (12), the plurality of walls (14,18) including a first wall (18) and an adjacent second wall (14);
at least one support (20) pivotably mounted to the first wall (18) and movable from a retracted position toward an interior of the container (10) to a support position, the support (20) including an end (22) received in the vertical channel (34) as the first wall (18) is collapsed onto the base (12); **characterised in that:**

the downward projection is a tab (40) aligned with the vertical channel (34).

2. The collapsible container (10) of claim 1 wherein the downward projection (40) is spaced inwardly from

the exterior periphery of the base (12).

3. The collapsible container (10) of claims 1 or 2 further including a plurality of drag feet (38) extending downward from the base (12).

4. The collapsible container (10) of any one of the preceding claims wherein the second wall (14) is pivotably mounted to the at least one of the side members (16), the container (10) further including at least one rib (42,44) on an exterior of the second wall (14), the rib (44) including a recess (48) formed therein to accommodate the downward projection (40) of an identical container (10') stacked thereon when the plurality of walls (14,18) of the container (10) are collapsed on the base (12).

5. The collapsible container (10) of claim 4 wherein the second wall (14) includes an arcuate recess (30) on an interior surface thereof to accommodate the support (20) when the first wall (14) is moved to the collapsed position, the second wall (14) including an opening (46) formed through the arcuate channel (30) to accommodate the downward projection (40) of the identical container (10') stacked thereon when the container (10) is in the collapsed position.

6. The collapsible container (10) of any one of the preceding claims on a dolly (60) having a spring-biased finger (62) projecting upward from a deck, the collapsible container (10) supported on the deck and partially compressing the finger (62), the downward projection (40) abutting the finger (62) to prevent the container (10) from sliding off the dolly (60).

Patentansprüche

1. Klappbarer Behälter (10), umfassend:

eine Basis (12) mit einem Paar gegenüberliegender aufrechter Seitenglieder (16), wobei zumindest eines der Seitenglieder (16) einen vertikalen Kanal (34) enthält, wobei die Basis (12) einen nach unten gerichteten Vorsprung (40) enthält,
mehrere Wände (14, 18), die von der Basis (12) nach oben verlaufen, wobei die mehreren Wände (14, 18) zwischen einer aufrechten Position und einer auf die Basis (12) geklappten Position beweglich sind, wobei die mehreren Wände (14, 18) eine erste Wand (18) und eine benachbarte zweite Wand (14) enthalten,
zumindest eine Stütze (20), die schwenkbar an der ersten Wand (18) angebracht ist und aus einer zu einem Inneren des Behälters (10) hin eingeklappten Position in eine Stützposition beweglich ist, wobei die Stütze (20) ein Ende (22)

- enthält, das in dem vertikalen Kanal (34) aufgenommen ist, wenn die erste Wand (18) auf die Basis (12) geklappt ist, **dadurch gekennzeichnet, dass** der nach unten gerichtete Vorsprung eine Zunge (40) ist, die an dem vertikalen Kanal (34) ausgerichtet ist.
2. Klappbarer Behälter (10) nach Anspruch 1, wobei der nach unten gerichtete Vorsprung (40) einwärts vom Außenumfang der Basis (12) beabstandet ist.
 3. Klappbarer Behälter (10) nach einem der Ansprüche 1 oder 2, ferner enthaltend mehrere Schleppfüße (38), die von der Basis (12) nach unten verlaufen.
 4. Klappbarer Behälter (10) nach einem der vorhergehenden Ansprüche, wobei die zweite Wand (14) schwenkbar an dem zumindest einen der Seitenglieder (16) angebracht ist, wobei der Behälter (10) ferner zumindest eine Rippe (42, 44) auf einer Außenseite der zweiten Wand (14) enthält, wobei die Rippe (44) eine Aussparung (48) enthält, die zum Unterbringen des nach unten gerichteten Vorsprungs (40) eines identischen Behälters (10') darin ausgebildet ist, welcher darauf gestapelt ist, wenn die mehreren Wände (14, 18) des Behälters (10) auf die Basis (12) geklappt sind.
 5. Klappbarer Behälter (10) nach Anspruch 4, wobei die zweite Wand (14) eine bogenförmige Aussparung (30) auf einer Innenfläche davon zum Unterbringen der Stütze (20) enthält, wenn die erste Wand (14) zur geklappten Position bewegt ist, wobei die zweite Wand (14) eine Öffnung (46) enthält, die zum Unterbringen des nach unten gerichteten Vorsprungs (40) des identischen Behälters (10'), der darauf gestapelt ist, durch den bogenförmigen Kanal (30) ausgebildet ist, wenn der Behälter (10) in der geklappten Position ist.
 6. Klappbarer Behälter (10) nach einem der vorhergehenden Ansprüche auf einem Rollbock (60) mit einem Finger (62) mit Federvorspannung, der von einem Deck nach oben vorsteht, wobei der klappbare Behälter (10) auf dem Deck gestützt ist und den Finger (62) teilweise zusammendrückt, wobei der nach unten gerichtete Vorsprung (40) an den Finger (62) angrenzt, um zu verhindern, dass der Behälter (10) vom Rollbock (60) rutscht.

Revendications

1. Conteneur pliable (10) comprenant :
 - une base (12) ayant une paire d'éléments latéraux verticaux opposés (16), au moins l'un des

éléments latéraux (16) comprenant un canal vertical (34), la base (12) comprenant une saillie descendante (40),
 une pluralité de parois (14, 18) s'étendant vers le haut depuis la base (12), la pluralité de parois (14, 18) pouvant se déplacer entre une position verticale et une position affaissée sur la base (12), la pluralité de parois (14, 18) comprenant une première paroi (18) et une seconde paroi adjacente (14) ;
 au moins un support (20) monté à pivotement sur la première paroi (18) et qui peut se déplacer d'une position rétractée vers l'intérieur de la caisse (10) à une position du support, le support (20) comprenant une extrémité (22) reçue dans le canal vertical (34) lorsque la première paroi (18) est affaissée sur la base (12) ; **caractérisée en ce que :**

- la saillie descendante est une languette (40) alignée sur le canal vertical (34).
2. Conteneur pliable (10) selon la revendication 1, dans laquelle la saillie descendante (40) est espacée vers l'intérieur de la périphérie externe de la base (12).
 3. Conteneur pliable (10) selon la revendication 1 ou la revendication 2, comprenant par ailleurs une pluralité de pieds de traction (38) s'étendant vers le bas depuis la base (12).
 4. Conteneur pliable (10) selon l'une quelconque des revendications précédentes, dans laquelle la seconde paroi (14) est montée à pivotement sur au moins l'un des éléments latéraux (16), la caisse (10) comprenant en outre au moins une nervure (42, 44) sur l'extérieur de la seconde paroi (14), la nervure (44) comprenant un évidement (48) qui y est formé pour recevoir la saillie descendante (40) d'une caisse identique (10') empilée par-dessus lorsque la pluralité de parois (14, 18) de la caisse (10) sont affaissées sur la base (12).
 5. Conteneur pliable (10) selon la revendication 4, dans laquelle la seconde paroi (14) comprend un évidement arqué (30) sur sa surface interne pour recevoir le support (20) lorsque la première paroi (14) est déplacée en position affaissée, la seconde paroi (14) comprenant une ouverture (46) formée via le canal arqué (30) pour recevoir la saillie descendante (40) de la caisse identique (10') qui y est empilée lorsque la caisse (10) se trouve en position affaissée.
 6. Conteneur pliable (10) selon l'une quelconque des revendications précédentes sur un chariot (60) ayant un doigt (62) sollicité par un ressort et faisant saillie vers le haut depuis un plateau, la caisse pliable (10) étant supportée sur le plateau et comprimant partiel-

lement le doigt (62), la saillie descendante (40)
s'aboutant sur le doigt (62) pour empêcher la caisse
(10) de glisser hors du chariot (60).

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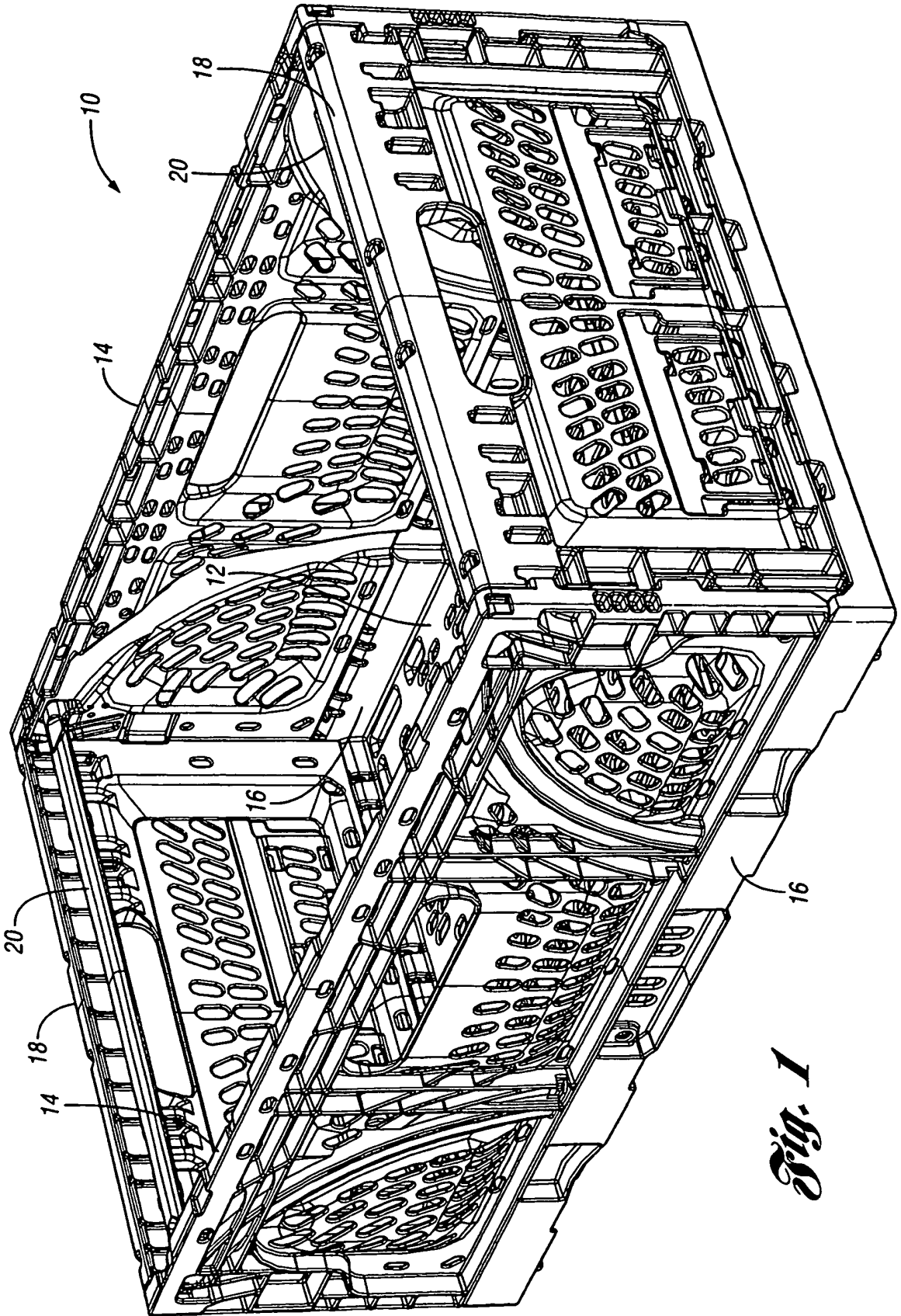


Fig. 1

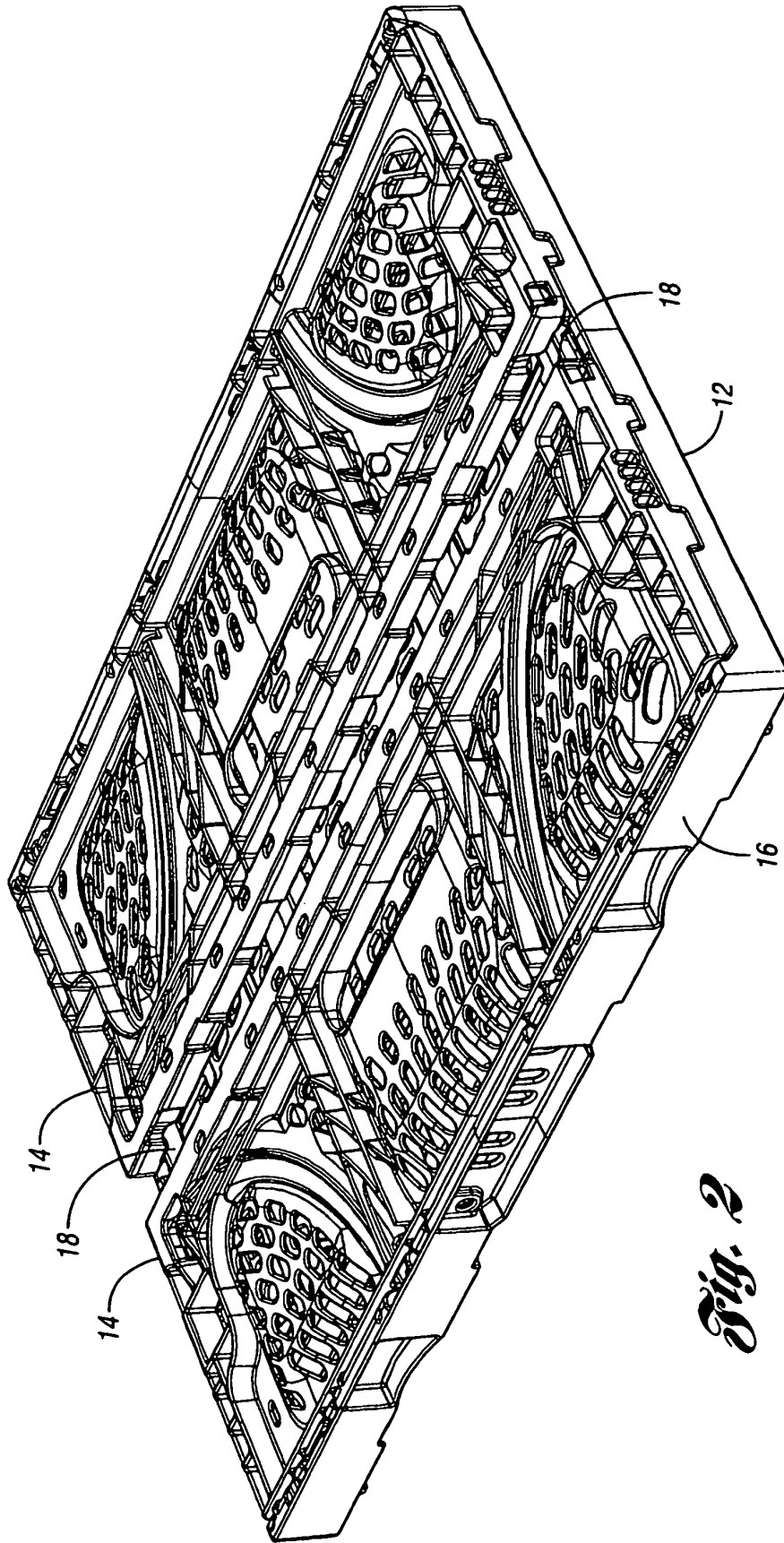


Fig. 2

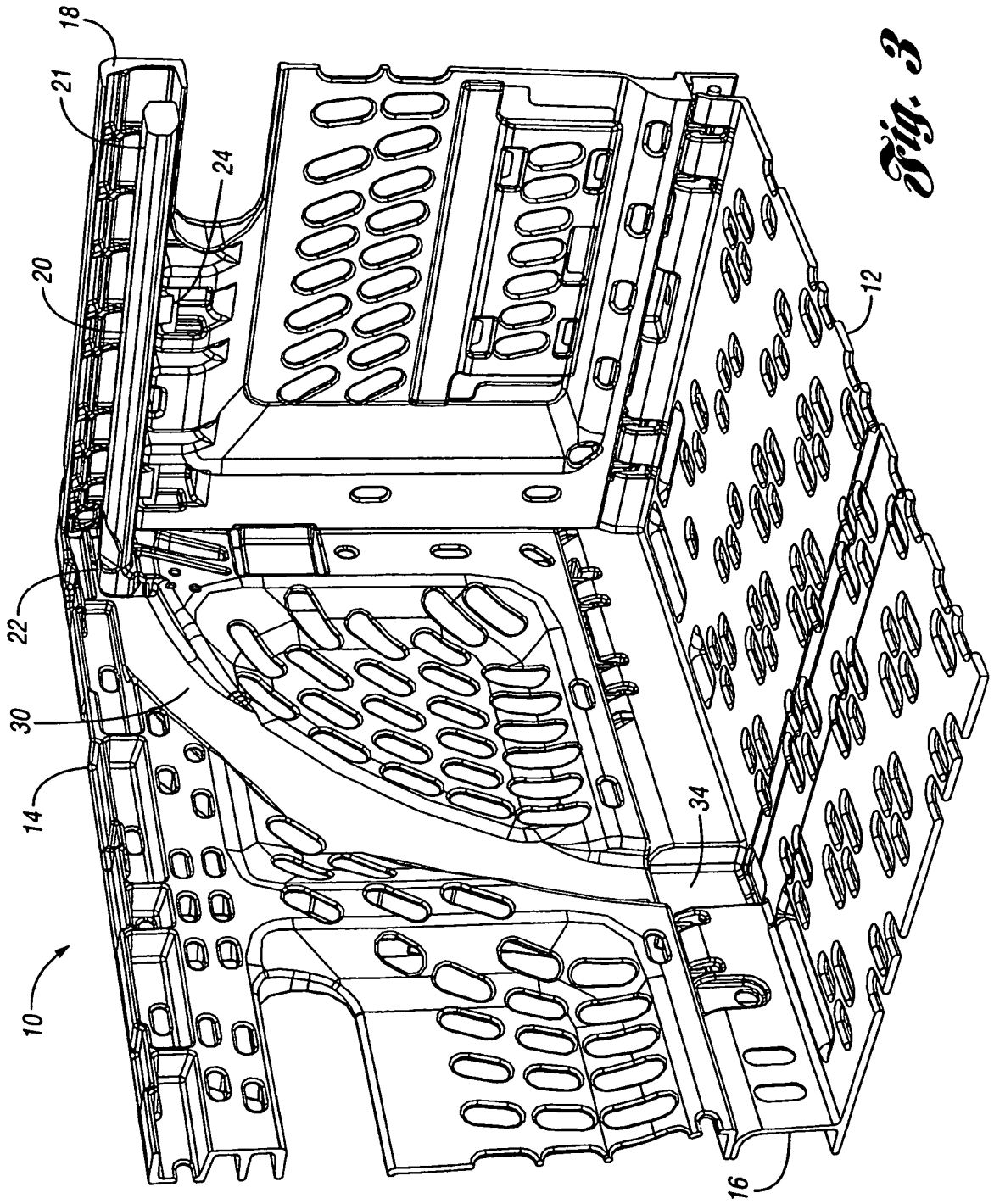


Fig. 3

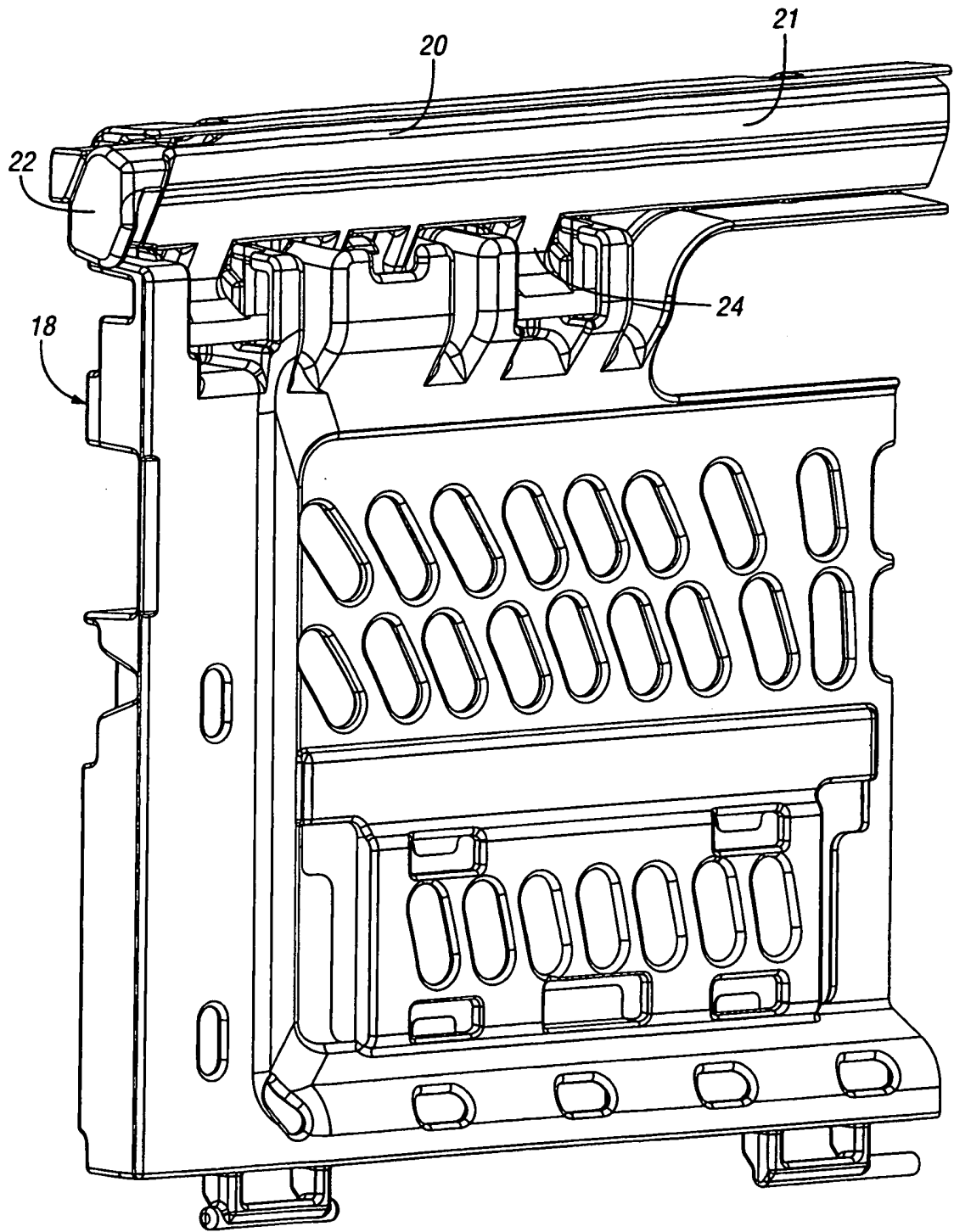


Fig. 4

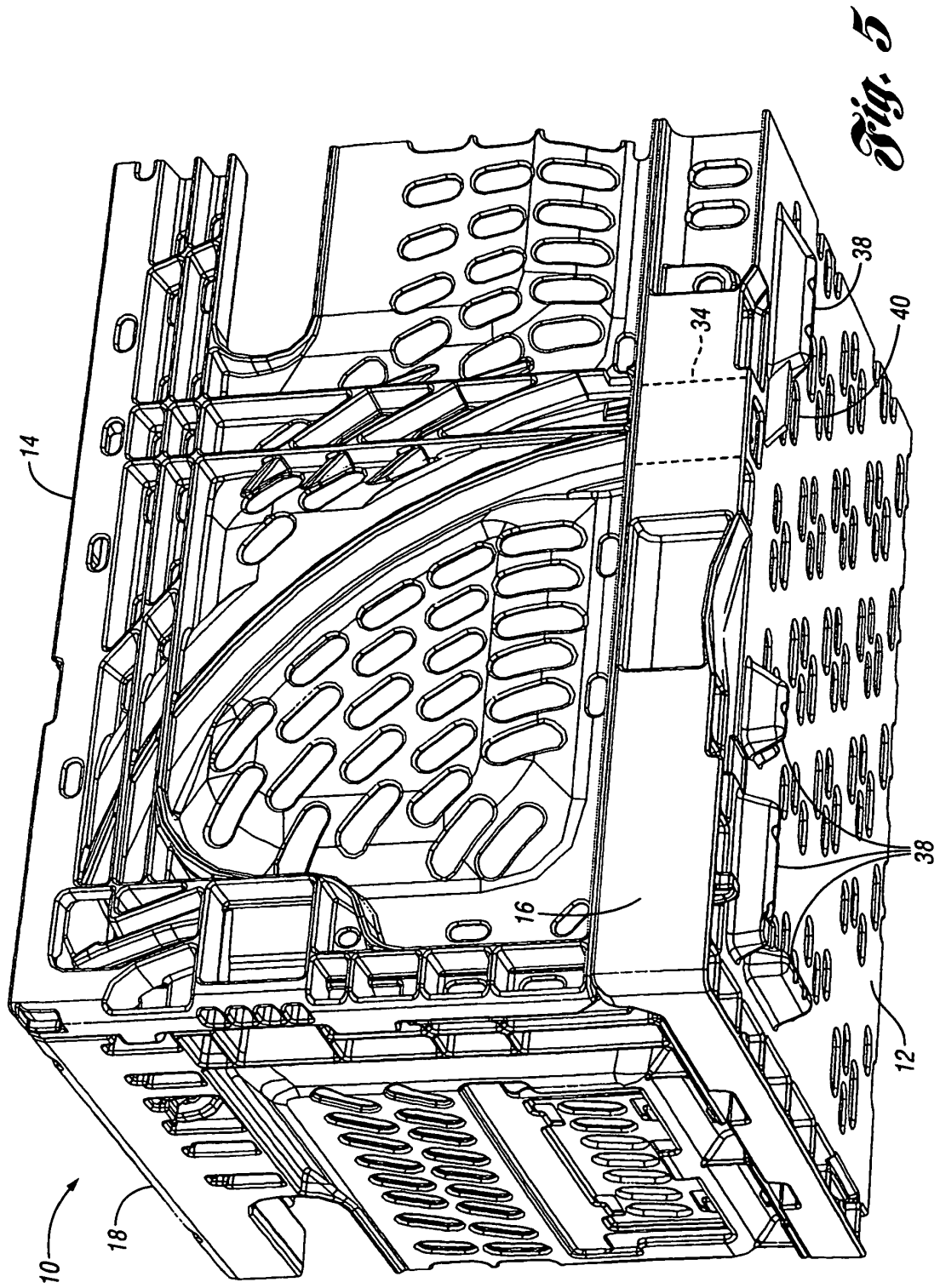


Fig. 5

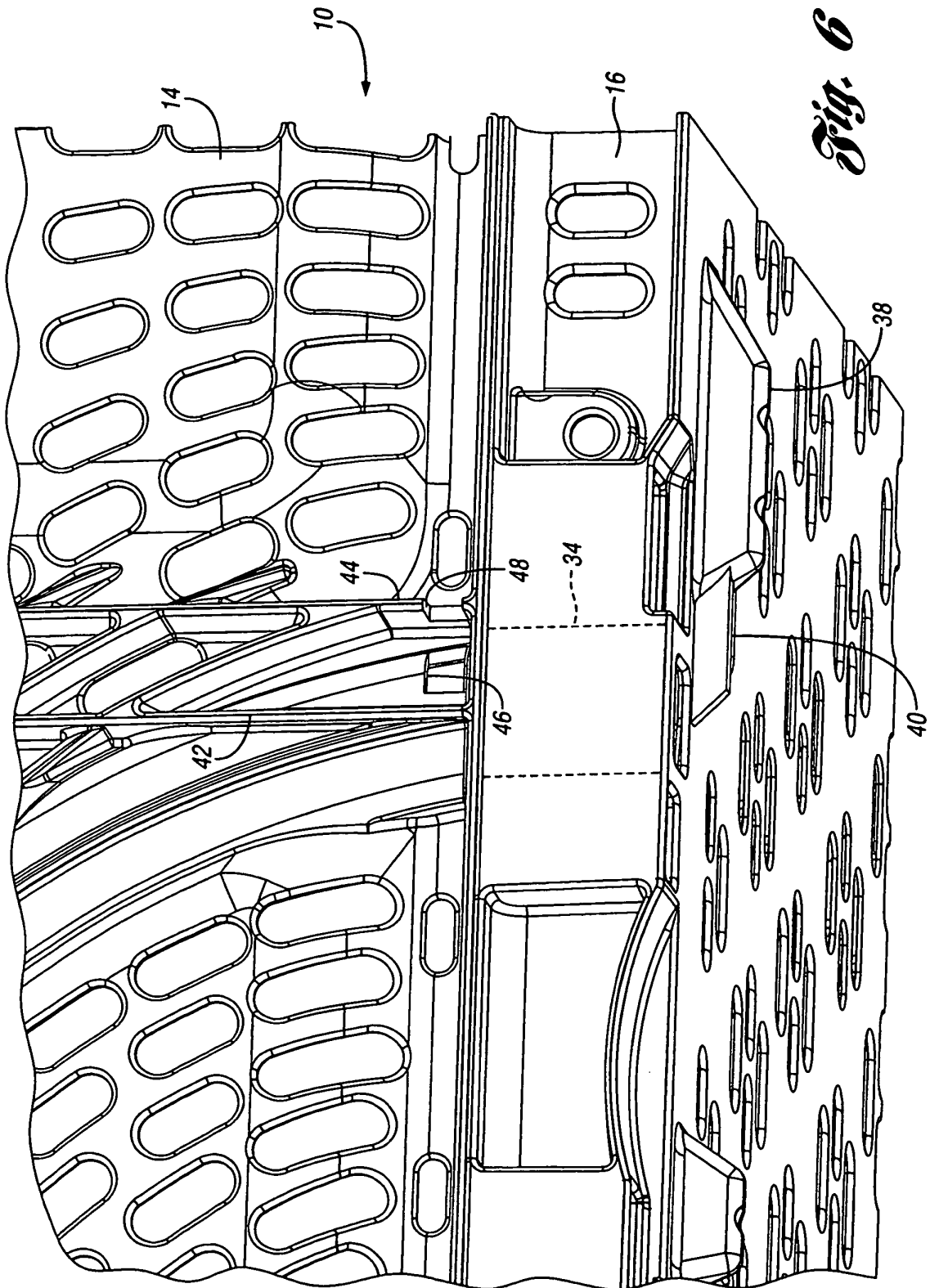


Fig. 6

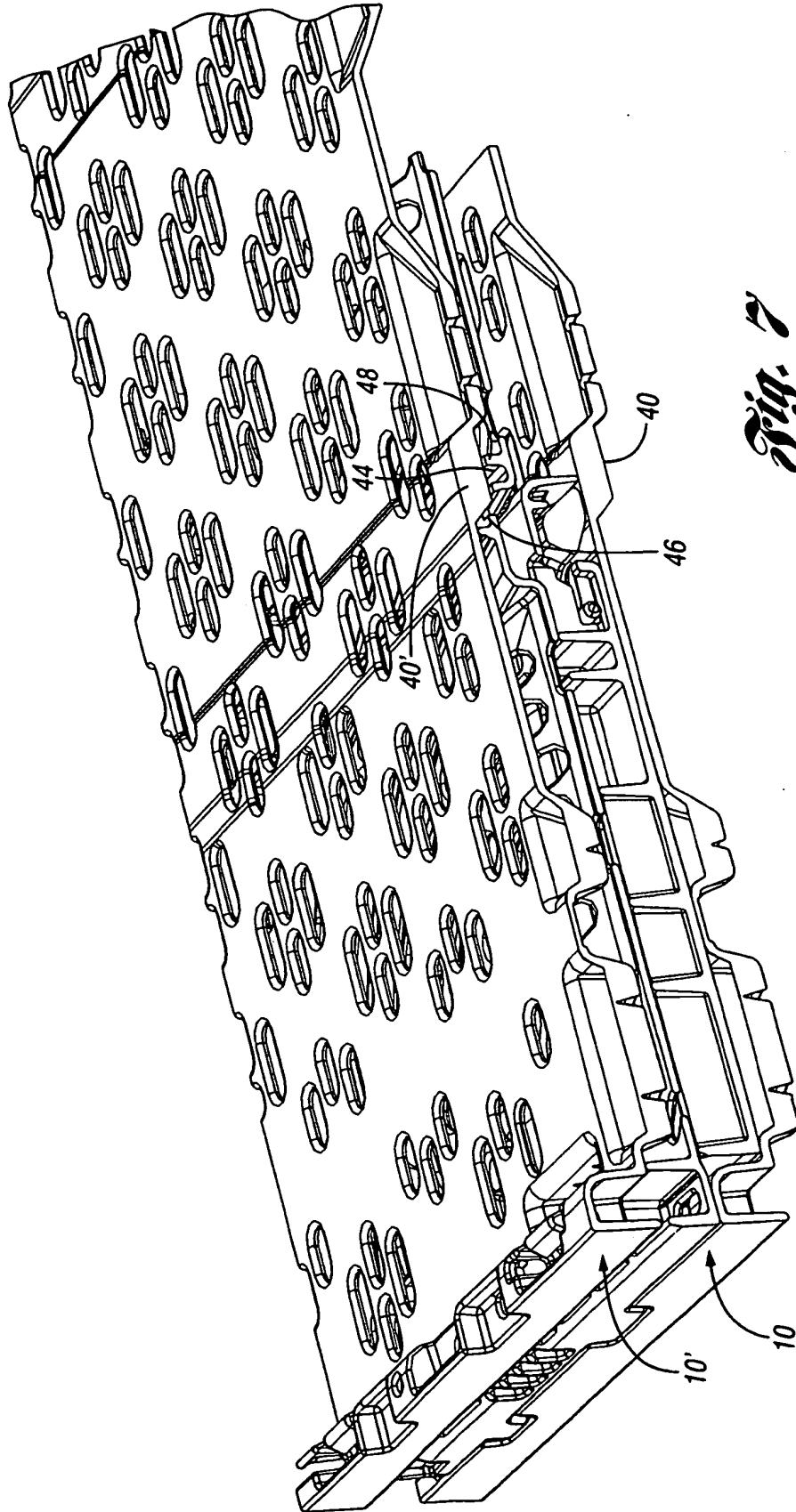


Fig. 7

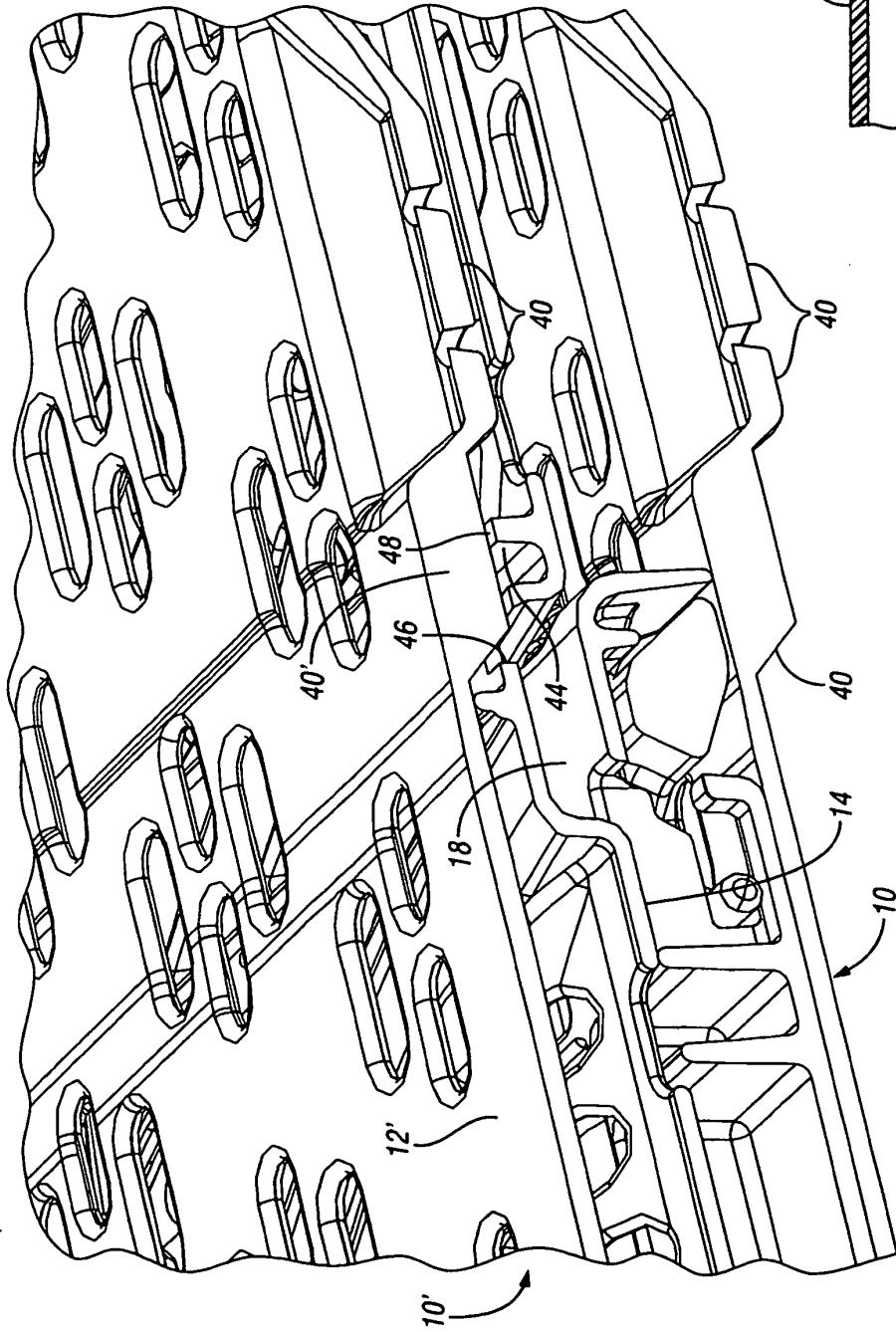


Fig. 8

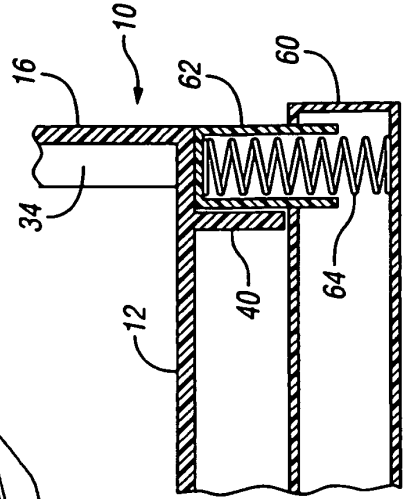


Fig. 9

REFERENCES CITED IN THE DESCRIPTION

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