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(54) Retail product container display system

(57) A retail product container display system includes at least one product storage lane (10). The at least one product storage lane (10) comprising a left hand side rail (10A) and a right hand side rail (10B) and at least two connectors (10C) engaged with receptacles (16) therefore on each of the left hand (10A) and right hand side rails (10B). The receptacles (16) are disposed at corresponding longitudinally spaced apart positions along each of the side rails (10A, 10B). Each of the side rails (10A, 10B) comprises a vertical wall (9) and a horizontal floor (7).

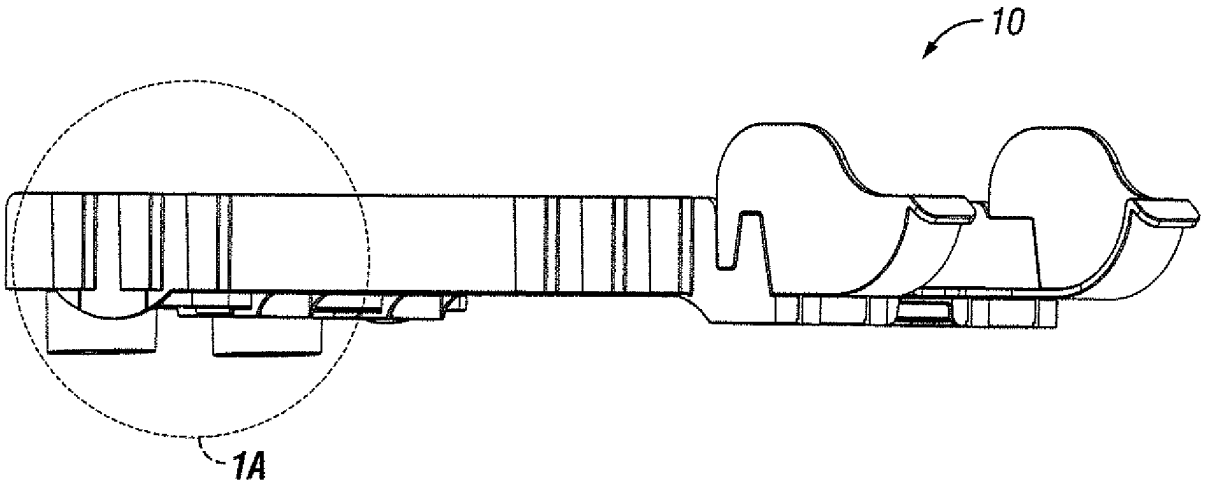

FIG. 1

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Description

[0001] This disclosure relates generally to the field of retail product display systems. More specifically, the disclosure relates to product displays in which generally cylindrical product containers are stored and displayed for sale.

[0002] Retail product displays known in the art include display systems for beverage containers. Such displays may include both bottled beverage containers stored in a substantially vertical orientation and substantially cylindrical cans also stored substantially vertically. Both such types of containers may be stored in, for example, a refrigerated display case. Vertically oriented containers may be stored on a device that separates the product containers into laterally adjacent rows or "lanes", and urges the product containers forward using a spring loaded pusher or gravity. One such device is sold under the trademark FLEXROLLER, which is a registered trademark of Bruegmann, USA, Inc., 589 Garden Oaks. Blvd, Houston, TX 77018.

[0003] It is frequently the case that bottle containers are substantially taller than cans. Thus, using side by side devices such as the FLEXROLLER device may result in underutilized space in a refrigerated display case. One device known in the art for using the available vertical space more efficiently displays cylindrical containers such as cans disposed horizontally and uses gravity to urge the stored cans forward to the front of the device. Several of such devices may be vertically stacked to use the space in the refrigerated display case. One such device is sold under the trademark THE CLUB, which is a trademark of RTC Industries, Inc., 2800 Golf Road, Rolling Meadows, IL 60008. Other devices may store product containers horizontally and have vertical stacking by having therein a serpentine track to enable vertical separation of rows of the containers. Examples of such devices are sold by Display Technologies, LLC, 111 Marcus Ave, Lake Success N.Y. 11042.

[0004] Each of the foregoing example devices is made for a particular height of cylindrical product container (can) and/or is made with a plurality of vertical rows of "lanes."

[0005] A retail product container display system includes at least one product storage lane. The at least one product storage lane comprising a left hand side rail and a right hand side rail and at least two connectors engaged with receptacles therefor on each of the left hand and right hand side rails. The receptacles are disposed at corresponding longitudinally spaced apart positions along each of the side rails. Each of the side rails comprises a vertical wall and a horizontal floor.

[0006] According to the present invention a retail product container display system comprises:

at least one product storage lane, the at least one product storage lane comprising a left hand side rail and a right hand side rail; and

at least two connectors engaged with receptacles therefore on each of the left hand and right hand side rails, the receptacles disposed at corresponding longitudinally spaced apart positions along each of the side rails; and

wherein each of the side rails comprises a vertical wall and a horizontal floor.

[0007] According to a preferred embodiment each of the at least two connectors comprises, on each side thereof, a deflectable locking tab having a detent bar on a surface thereof, and wherein the receptacles each include a plurality of laterally spaced apart slots configured to engage the detent bar of a respective end of one of the at least two connectors, whereby a width of the at least one product storage lane is adjustable.

[0008] According to another preferred embodiment the receptacles are disposed on a bottom surface of the horizontal floor of each of the left hand and right hand side rails.

[0009] According to another preferred embodiment the system further comprises a plurality longitudinally spaced apart channels formed on an outer surface of the side wall of each of the side rails, the channels each configured to receive a vertical support connector therein, whereby a plurality of lanes are vertically stackable.

[0010] According to another preferred embodiment the plurality of longitudinally spaced apart channels are arranged to enable vertical assembly of a plurality of lanes, and wherein vertically adjacent lanes are interconnected by a support connector disposed in each selected ones of the spaced apart channels on each of the side rails.

[0011] According to another preferred embodiment a longitudinal position of the channels on the left hand side wall is offset from a longitudinal position of the channels on the right hand side wall such that a lateral space between laterally placed adjacent lanes is settable to substantially zero.

[0012] According to another preferred embodiment the system further comprises support feet attachable to a bottom of each of the left hand side rail and the right hand side rail, the support feet providing the at least one lane with a selected tilt.

[0013] According to another preferred embodiment the system further comprises an end barrier disposed at a forward end of at least one of the left hand side rail and the right hand side rail.

[0014] According to another preferred embodiment the end barrier is integrally formed with the at least one of the left hand side rail and the right hand side rail.

[0015] According to another preferred embodiment each of the side rails comprises a forward stop and a forward end; and wherein each of the at least two connectors comprises, on each side thereof, a deflectable locking tab having a detent bar on a surface thereof, and wherein the receptacles each include a plurality of laterally spaced apart slots configured to engage the detent

bar of a respective end of the one of the at least two connectors, whereby a width of the at least one storage lane is adjustable.

[0016] Other aspects and advantages will be apparent from the description and claims that follow.

Brief Description of the Drawings

[0017]

FIG. 1 is an example of one "lane" of a product display system according to the present disclosure.

FIG. 1A shows a detailed view of "feet" that can be assembled to an example lane at a back end thereof to facilitate gravity feed of product containers stored on the lane.

FIG. 2 shows example vertical supports that enable stacked assembly of a plurality of lanes such as shown in FIG. 1 as well as two additional lanes that may be assembled vertically with respect to the example lane shown in FIG. 1.

FIG. 3 shows an exploded view of a three-lane, vertically stacked display system according to the present disclosure.

FIG. 4 shows an exploded view of connectors that enable assembly of lanes to various widths.

FIG. 5 shows a partially assembled lane with connectors coupled to one side rail.

FIG. 6 shows a bottom view of an assembled lane.

FIG. 6A shows a detailed view of a connector assembled into a locking receptacle formed on the bottom of a side rail.

FIG. 6B shows a detailed, oblique view of an example connector.

FIG. 6C shows a side view of the example connector in FIG. 6B.

FIG. 6D shows a bottom view of the example connector to illustrate locking features.

FIG. 6E shows an example receptacle on the bottom of a side rail.

FIG. 6F shows the receptacle in more detail.

FIGS. 7 and 8 show side and oblique views, respectively, of an assembled display system in "waterfall" configuration.

Detailed Description

[0018] FIG. 1 shows an example "lanes" 10 in oblique view. The lane 10, when assembled from components to be further explained below forms a single basic display unit of a product container display system according to the present disclosure. FIG. 1A shows support feet 12 that may be affixed, such as by clips, to the bottom of a lane 10 at its rearward end so as to tilt the lane 10 (FIG. 1) forward. The support feet 12 may be used in instances where the device in which the system is used has a substantially horizontal bottom, whereby the forward tilt provided by the support feet 12 urges product containers (see FIG. 7) to a forward end of the lane 10. In such circumstances, the lowermost lane 10 in a plurality of vertically assembled, stacked lanes will have the support feet 12 attached to the bottom thereof as shown in FIG. 1A.

[0019] FIG. 2 shows two additional lanes 10, which may be substantially identical to the lane shown in FIG. 1, along with a plurality of vertical support connectors 14 that may be disposed in receptacles (explained with reference to FIG. 3) on an exterior of the sides of each lane 10 so that a plurality of lanes 10 may be assembled vertically stacked to form the product display system.

[0020] FIG. 3 shows components of an example display system in exploded view. Each lane (10 in FIGS. 1 and 2) may include a left hand side rail 10A and a right hand side rail 10B. Each side rail 10A, 10B may include a substantially vertically extending wall 9 and a substantially horizontal floor 7. The side rails 10A, 10B may include connector receptacles 16 on a bottom surface of the floor 7 to provide an engagement feature for connectors 10C that adjustably connect the left hand side rail 10A to the right hand side rail 10B. The foregoing receptacles 16 and connectors 10C will be explained in more detail below. The wall 9, receptacles 16 and floor 7 may be molded or formed as a single, unitary component from any suitable material such as plastic.

[0021] Each of the side rails 10A, 10B may have a corresponding forward end barrier 10D, 10E affixed to the forward end of the side rail. The end barriers 10D, 10E may be formed integrally with the corresponding side rail 10A, 10B or may be formed as separate components that can be affixed to the corresponding side rail using suitably shaped interlocking features (not shown in detail). The end barriers 10D, 10E provide a stop for product containers (FIG. 7) stored on each lane (10 in FIG. 1) as the containers are urged forward by gravity when one or more product containers are removed from the lane (10 in FIG. 1). FIG. 3 also shows how the vertical support connectors 14 may be inserted into suitably shaped channels 18 formed into the exterior of the vertical wall 9 of each side rail 10A, 10B. A plurality of channels 18 may be formed at spaced apart locations along each side rail 10A, 10B to enable assembly of the system as shown with each lane 10 in a different longitudinal position with respect to the other lanes 10, or all lanes may be assemble to be

in the same longitudinal position with respect to each other. The example shown in FIG. 3 includes three lanes, however the number of lanes in any configuration of a system according to the present disclosure is not a limit on the scope thereof.

[0022] FIG. 4 shows the side rails 10A, 10B and connectors 10C in exploded view. As explained above, each connector 10C may slidably, and lockingly engage a receptacle 16 formed in the floor (7 in FIG. 3), which may be proximate a front and rear longitudinal end of each side rail 10A, 10B. FIG. 5 shows the connectors 10C assembled to the right hand side rail 10B, with the left hand side rail 10A still unassembled.

[0023] FIG. 6 shows a bottom view of an assembled lane, wherein the connectors 10C are lockably disposed in respective receptacles 16. FIG. 6A shows one of the receptacles 16 in more detail with the connector 10C locked in place. The connector 10C may include a resilient, flexible locking tab 11 formed on each side. The locking tab 11 may include a detent bar 13 or similar feature extending from the surface of each locking tab 11. The detent bar 13 may engage any one of a plurality of locking slots A, B, C formed in a bottom surface of the receptacle 16. By engaging the detent bar 13 in the appropriate one of the locking slots A, B, C, the width of the lane (10 in FIG. 1) may be adjusted for selected size product containers (FIG. 7).

[0024] FIG. 6B shows one of the connectors 10C in oblique view to illustrate the resilient locking tabs 11. Each of the locking tabs 11 may be formed into the body 15 of the connector 10C such that the locking tabs 11 may be deflected in a direction normal to the plane of the connector body 15. FIG. 6C shows a side view of the connector 11 to illustrate that when the locking tabs (11 in FIG. 6B) are undeflected, the detent bars 13 protrude slightly below the bottom plane 17 of the connector 10C so that the detent bars 13 may lockingly engage the selected slots (A, B, C in FIG. 6A) in the respective receptacle (16 in FIG. 6). A bottom view of the connector 10C showing the detent bars 13 is shown in FIG. 6D. FIG. 6E shows a bottom view of the right hand side rail 10B to illustrate the position of the receptacles 16. FIG. 6F shows one of the receptacles 16 in more detail, illustrating the relative positions of the slots A, B, C. When assembling a connector 10C to a receptacle 16, the locking tab (13 in FIG. 6B) may be deflected slightly so that the detent bar (13 in FIG. 6C) is free to move longitudinally within the receptacle 16. When the detent bar 13 is positioned in the selected slot, A, B, C, the locking tab 11 may be released to enable the detent bar 13 to engage the selected slot A, B, or C and lock the connector 10C to the respective side rail (10A, 10B in FIG. 3) in the selected one of the slots A, B or C. In this way, the width of each lane (10 in FIG. 1) may be selected for a specific size product container.

[0025] Returning to FIG. 6, in one example, the channels 18 formed in the side wall (9 in FIG. 3) of the left hand side rail 10A may be longitudinally offset from the corresponding channels 18 formed in the right hand side wall 10B. Such longitudinal offset may enable lanes to be placed side by side in a same longitudinal position with respect to each other while reducing the lateral spacing between laterally adjacent lanes (10 in FIG. 1). It will be readily appreciated that when the channels 18 are so placed on each of the respective side walls 9, the effective lateral spacing between laterally adjacent lanes at a same relative longitudinal position may be settable to substantially zero, whereas if the channels were in the same longitudinal position on each side wall, the lanes would be laterally spaceable at a minimum of twice the lateral dimension of the channels 18.

[0026] FIG. 7 shows three lanes 10 assembled in "waterfall" configuration, wherein each vertically successively higher lane 10 is disposed longitudinally behind the lower vertically adjacent lane 10. Such configuration may make it easier for a user to access product containers 21 stored on each lane. FIG. 8 shows how such waterfall configuration may be formed by assembling successively higher lanes by inserting the vertical support connectors 14 in successively more forward channels 18A, 18B, 18C. It is within the scope of the present disclosure to assemble lanes vertically using a same respective channel for the vertical support connectors 14. Further, while the present example shows three sets of corresponding channels on each side wall, the number of channels is not a limitation on the scope of the present disclosure. Further, the number of lanes which may be vertically stacked is not a limitation on the scope of the present disclosure.

[0027] A retail product container display system according to the present disclosure may be configured to accommodate various size product containers while being assembled from identical parts. A system according to the present disclosure may be configured for any selected vertical space while being assembled from identical parts.

[0028] While the invention has been described with respect to a limited number of embodiments, those skilled in the art, having benefit of this disclosure, will appreciate that other embodiments can be devised which do not depart from the scope of the invention as disclosed herein. Accordingly, the scope of the invention should be limited only by the attached claims.

Claims

1. A retail product container display system, comprising:

   at least one product storage lane (10), the at least one product storage lane (10) comprising a left hand side rail (10A) and a right hand side rail (10B); and

   at least two connectors (10C) engaged with receptacles (16) therefore on each of the left hand

and right hand side rails (10A, 10B), the receptacles (16) disposed at corresponding longitudinally spaced apart positions along each of the side rails (10A, 10B); and
wherein each of the side rails (10A, 10B) comprises a vertical wall (9) and a horizontal floor (7).

2. The system of claim 1 wherein each of the at least two connectors (10C) comprises, on each side thereof, a deflectable locking tab (11) having a detent bar (13) on a surface thereof, and wherein the receptacles (16) each include a plurality of laterally spaced apart slots (A, B, C) configured to engage the detent bar (13) of a respective end of one of the at least two connectors (10C), whereby a width of the at least one product storage lane (10) is adjustable.

3. The system of claim 2 wherein the receptacles (16) are disposed on a bottom surface of the horizontal floor (7) of each of the left hand and right hand side rails (10A, 10B).

4. The system of claim 1 further comprising a plurality longitudinally spaced apart channels (18) formed on an outer surface of the side wall (9) of each of the side rails (10A, 10B), the channels (18) each configured to receive a vertical support connector (14) therein, whereby a plurality of lanes (10) are vertically stackable.

5. The system of claim 4 wherein the plurality of longitudinally spaced apart channels (18) are arranged to enable vertical assembly of a plurality of lanes (10), and wherein vertically adjacent lanes (10) are interconnected by a support connector (14) disposed in each selected ones of the spaced apart channels (18) on each of the side rails (10A, 10B).

6. The system of claim 4 wherein a longitudinal position of the channels (18) on the left hand side wall (9) is offset from a longitudinal position of the channels (18) on the right hand side wall (9) such that a lateral space between laterally placed adjacent lanes (10) is settable to substantially zero.

7. The system of claim 1 further comprising support feet (12) attachable to a bottom of each of the left hand side rail (10A) and the right hand side rail (10B), the support feet providing the at least one lane (10) with a selected tilt.

8. The system of claim 1 further comprising an end barrier (100, 10E) disposed at a forward end of at least one of the left hand side rail (10A) and the right hand side rail (10B),

9. The system of claim 8 wherein the end barrier (10D, 10E) is integrally formed with the at least one of the left hand side rail (10A) and the right hand side rail (10B).

10. The system of claim 1, wherein each of the side rails (10A, 10B) comprises a forward stop and a forward end; and wherein each of the at least two connectors (10C) comprises, on each side thereof, a deflectable locking tab (11) having a detent bar (13) on a surface thereof, and wherein the receptacles (16) each include a plurality of laterally spaced apart slots (A, B, C) configured to engage the detent bar (13) of a respective end of the one of the at least two connectors (10C), whereby a width of the at least one storage lane (10) is adjustable.

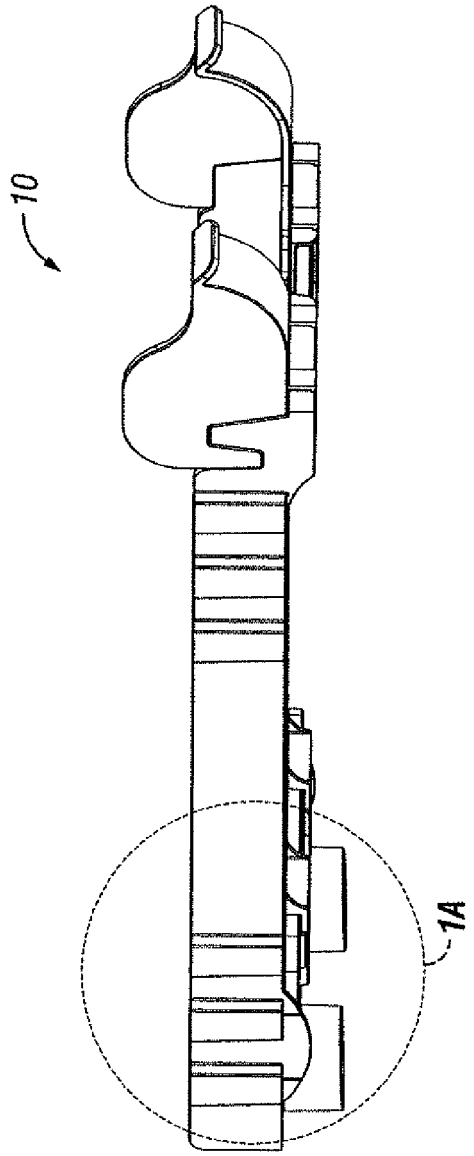

FIG. 1

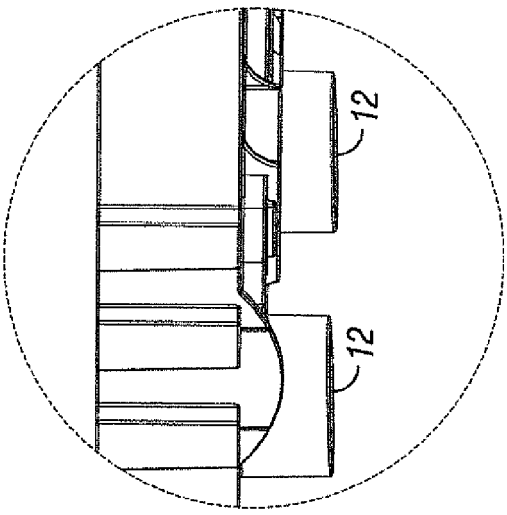

FIG. 1A

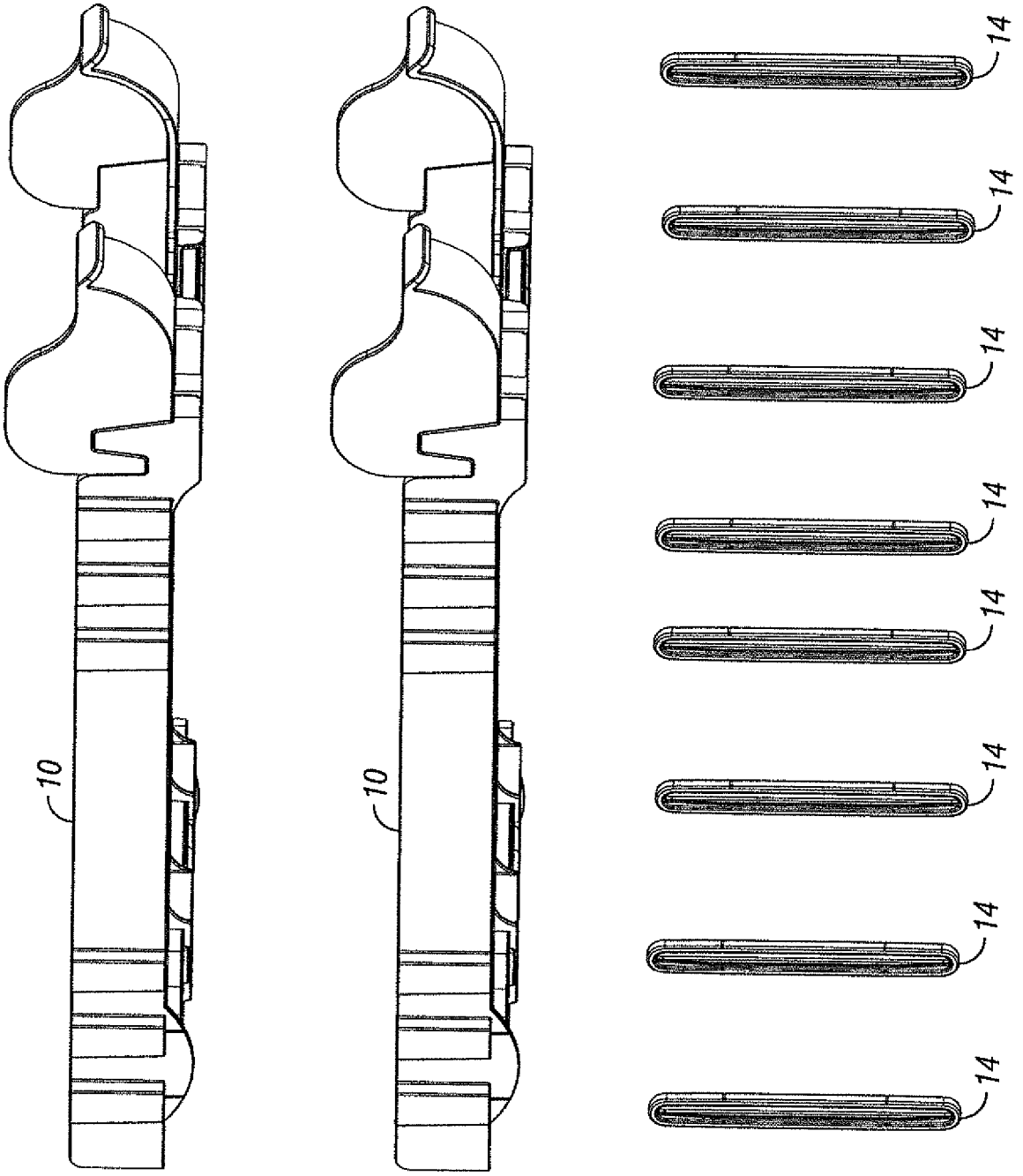

FIG. 2

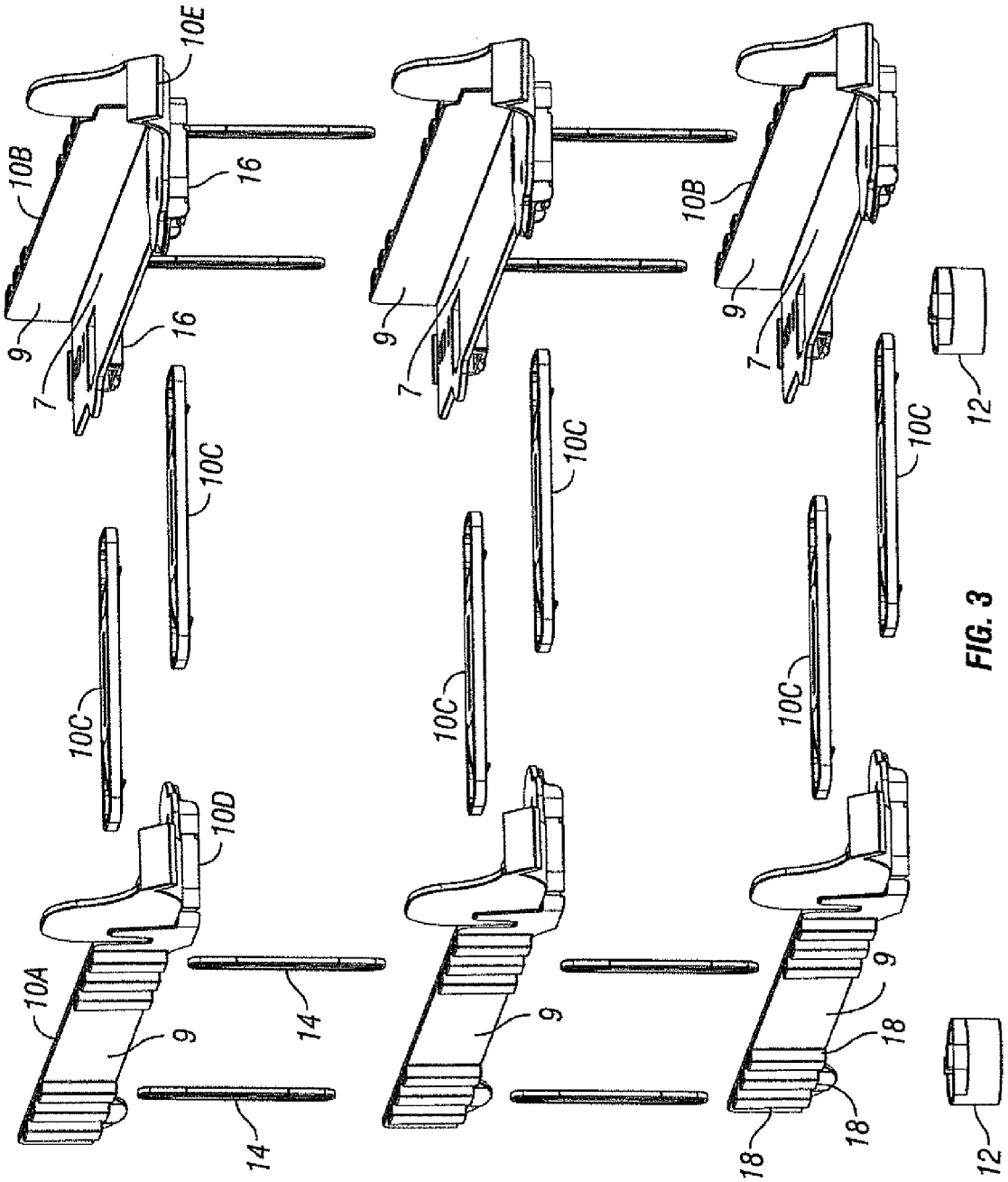
10E
10B
16
16
9
7
10C
10C
10D
10A
9
14
14
10B
9
7
10C
10C
10B
9
7
10C
12
9
18
18
18
12

FIG. 3

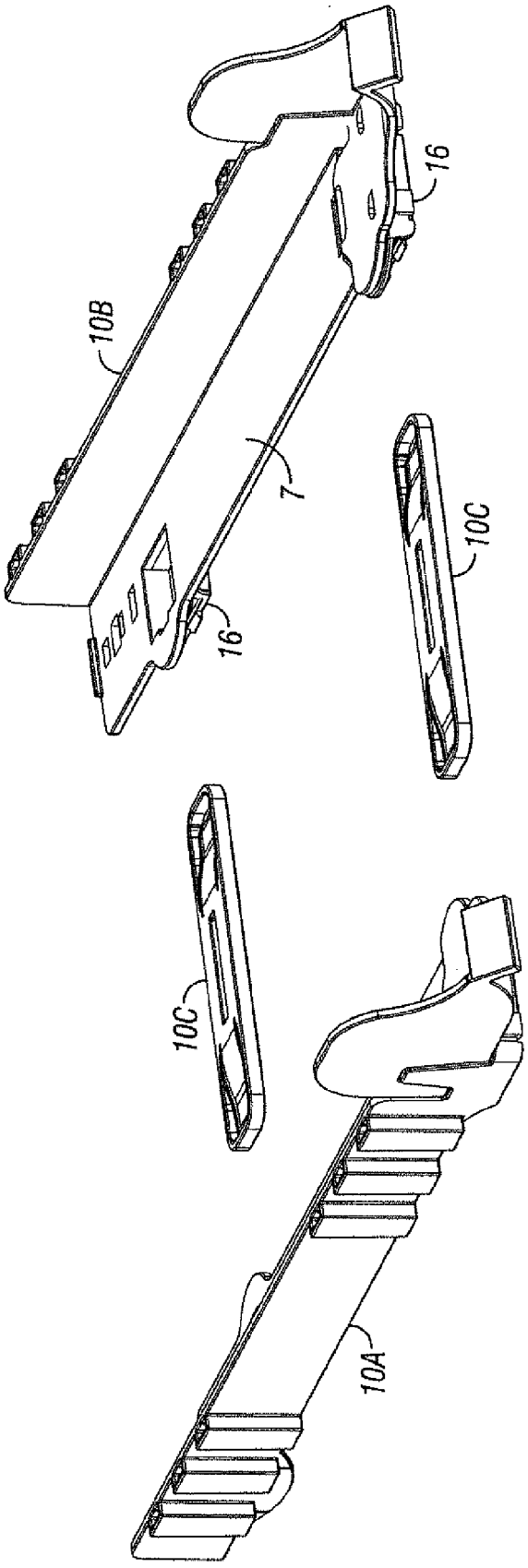

FIG. 4

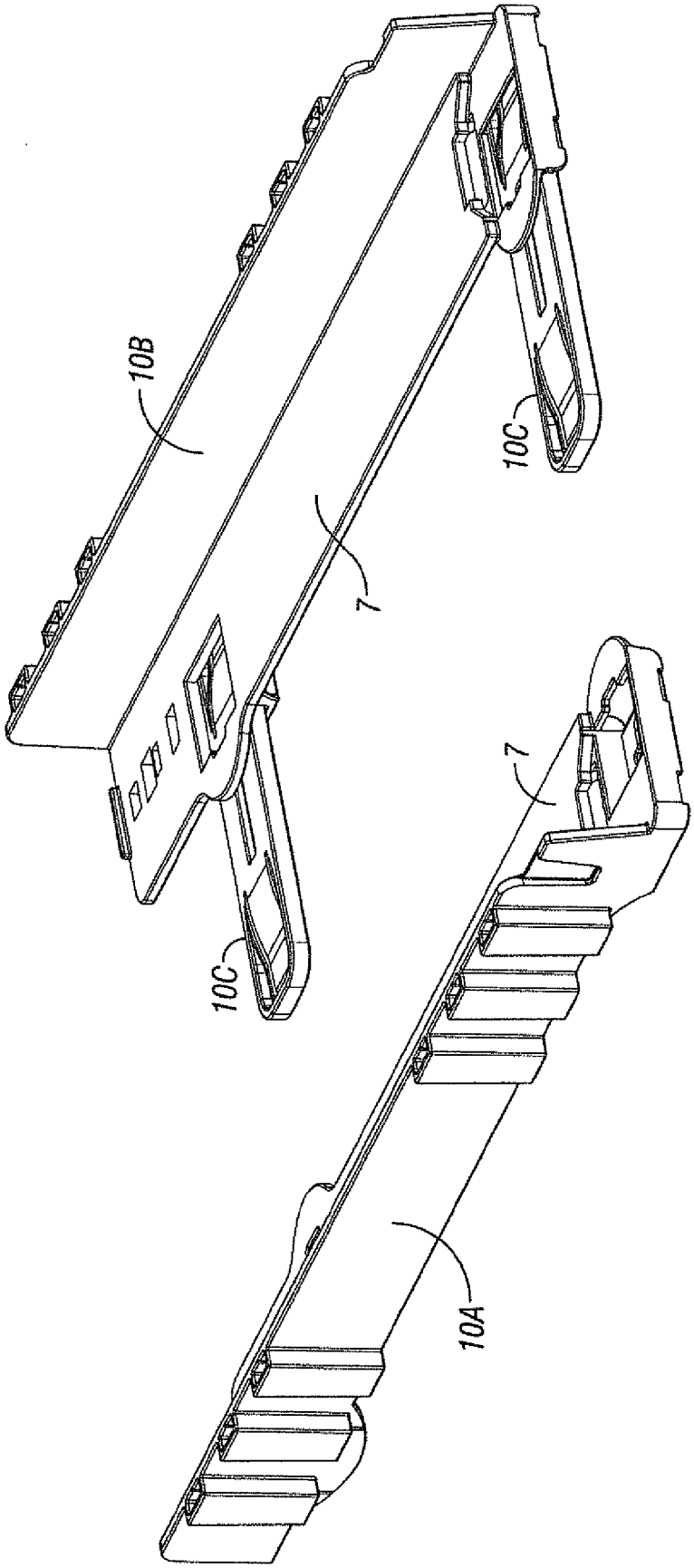

FIG. 5

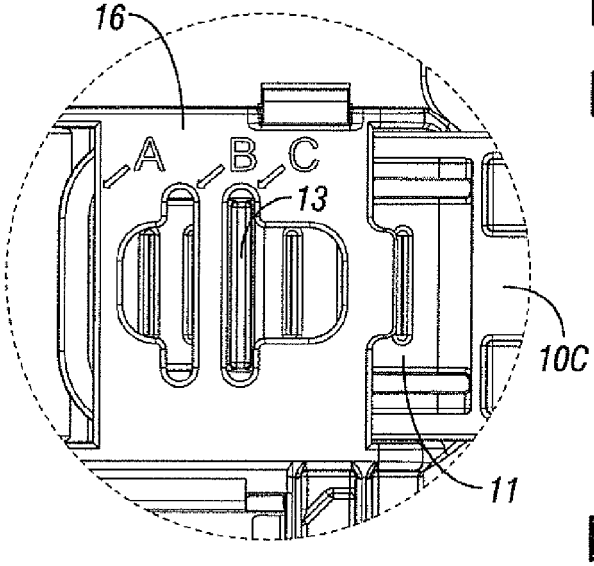
16
A
B
C
13
10C
11

FIG. 6A

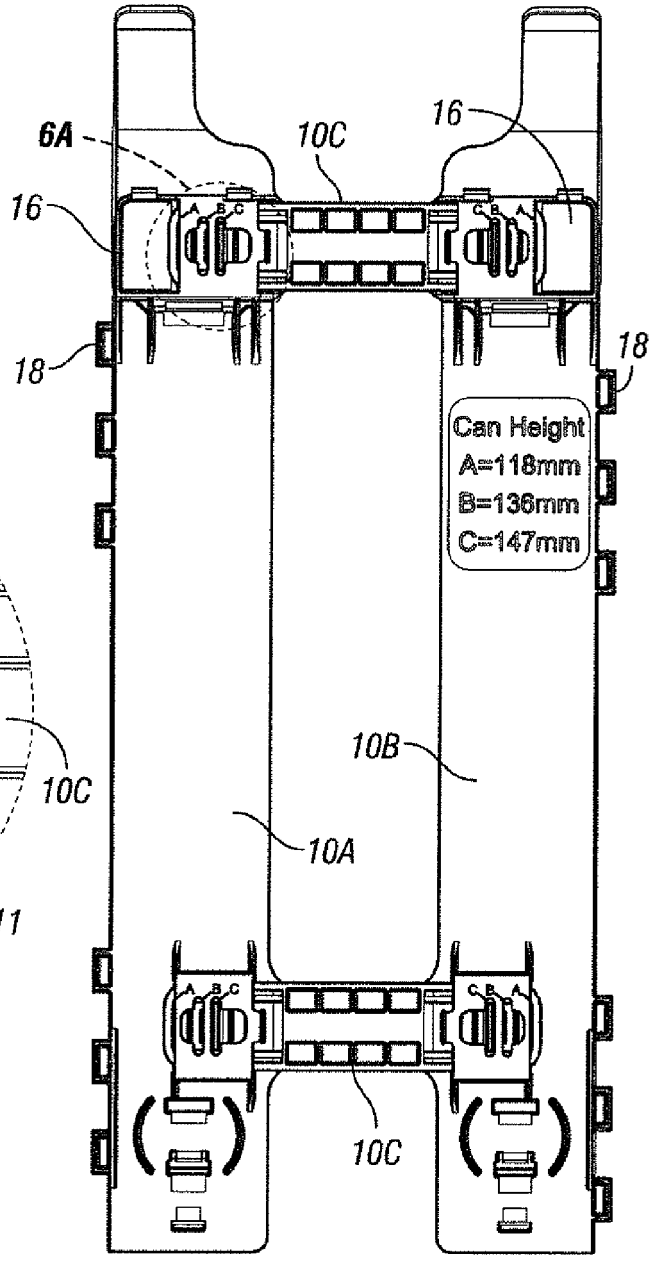
6A
10C
16
16
18
18
Can Height
A=118mm
B=136mm
C=147mm
10B
10A
10C

FIG. 6

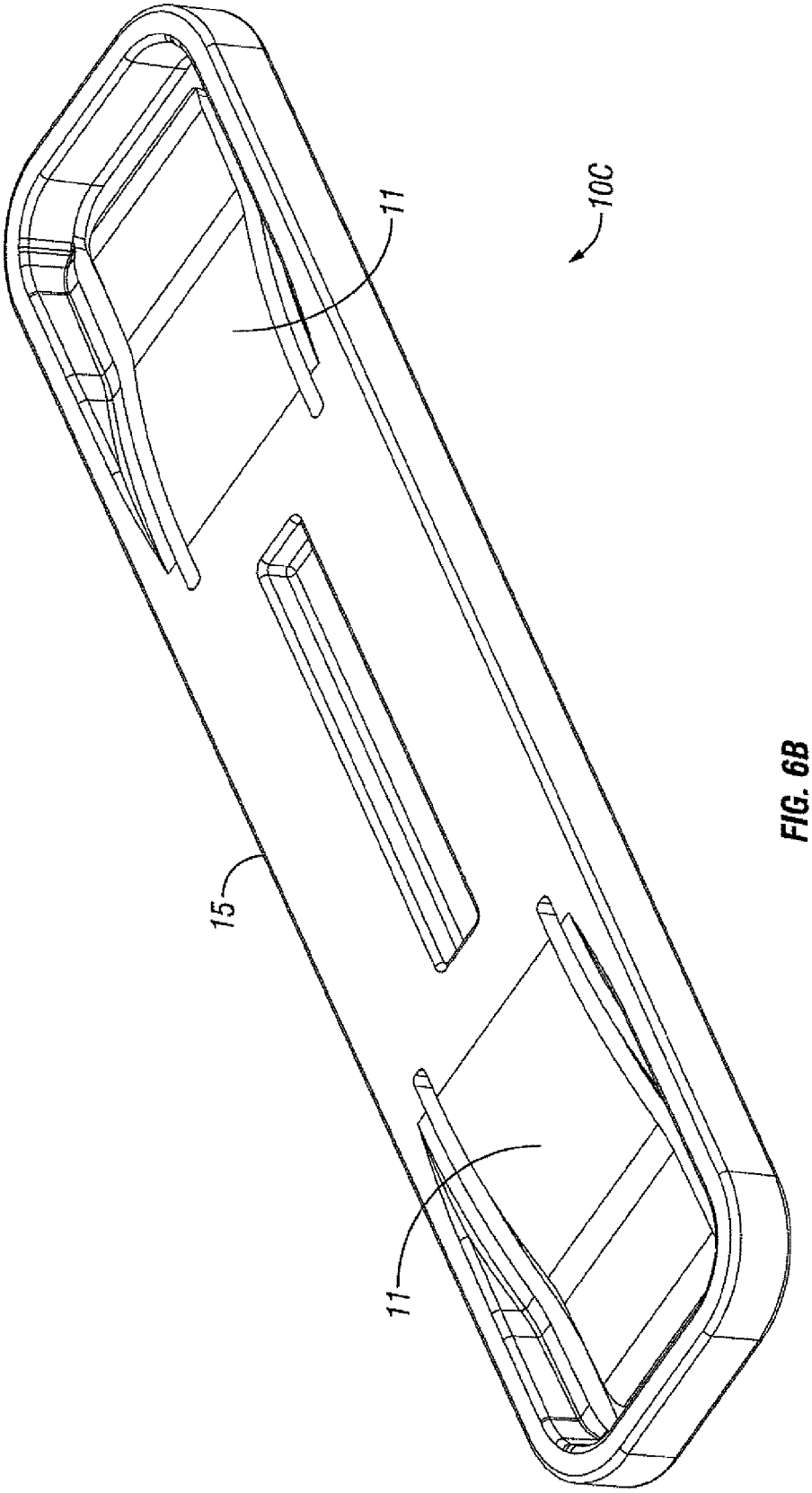

FIG. 6B

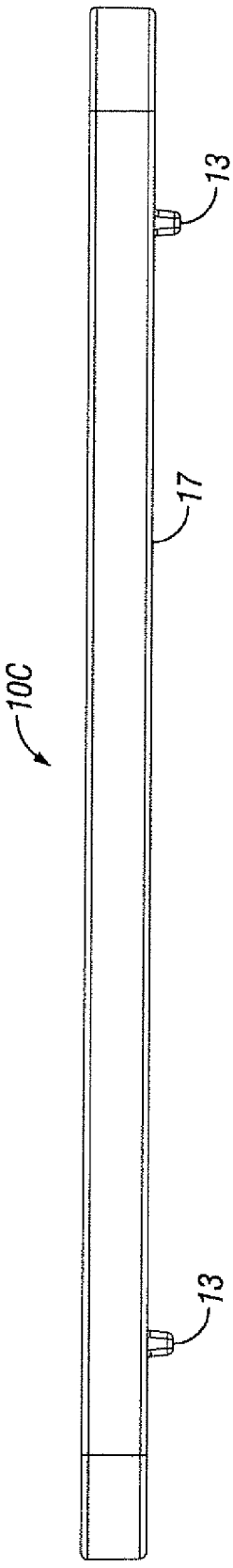

FIG. 6C

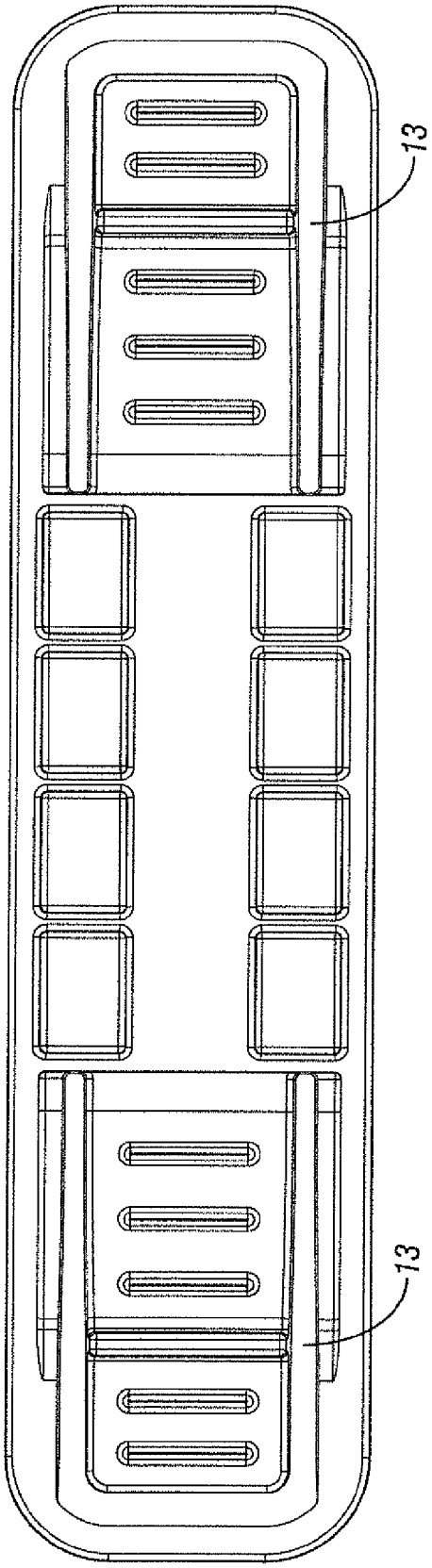

FIG. 6D

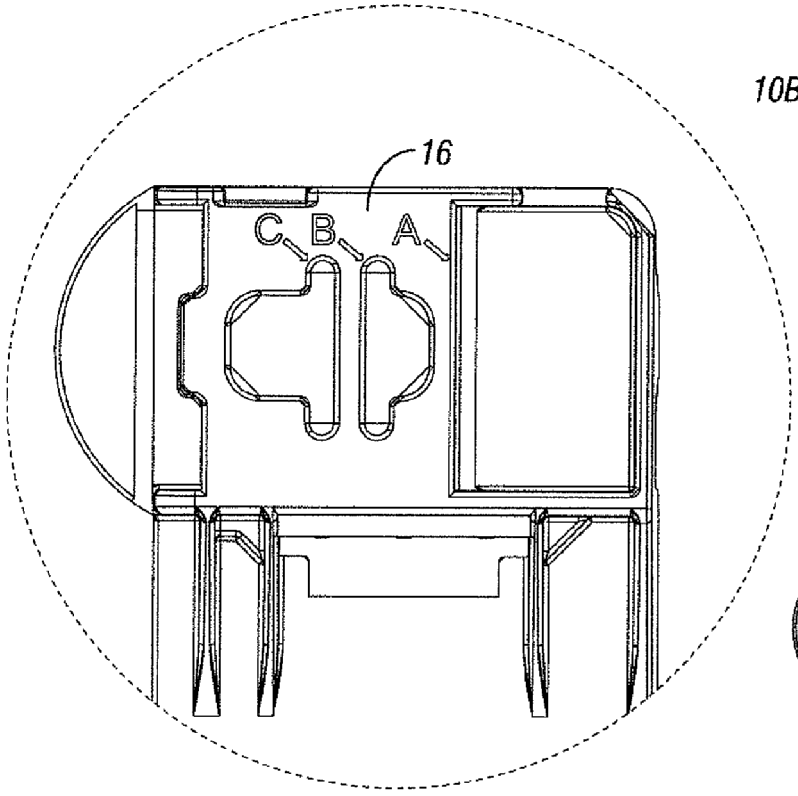

FIG. 6F

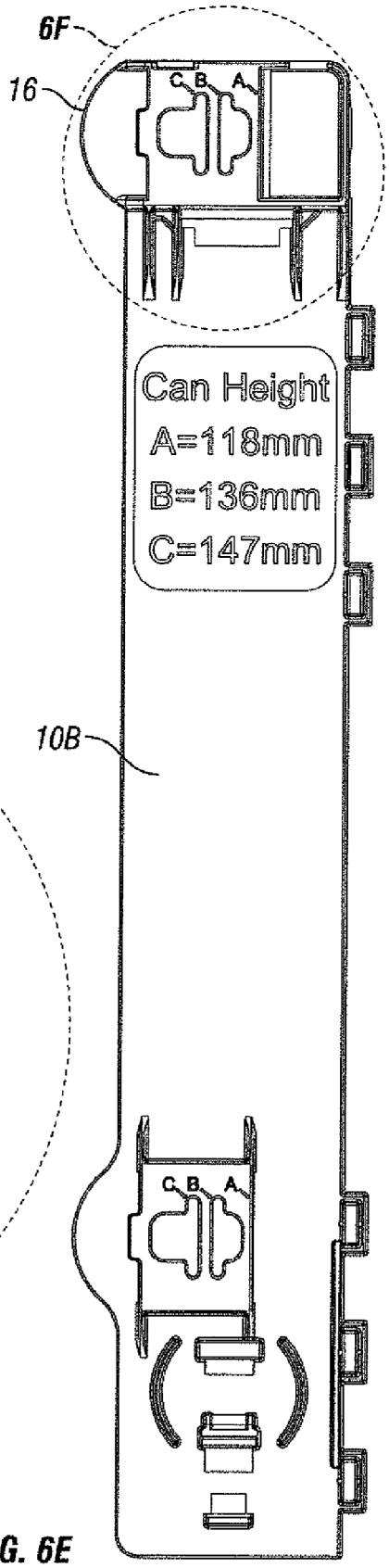

FIG. 6E

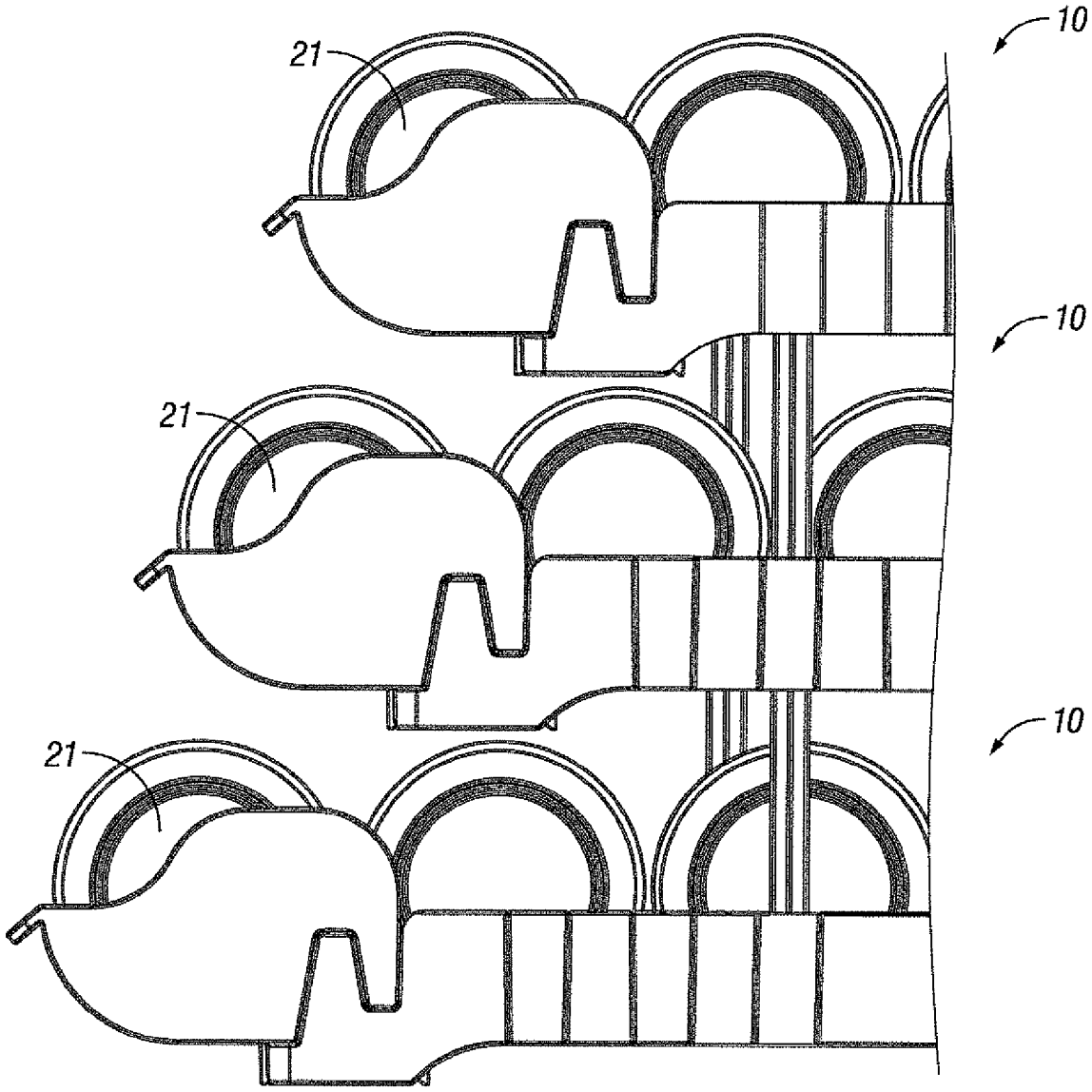

FIG. 7

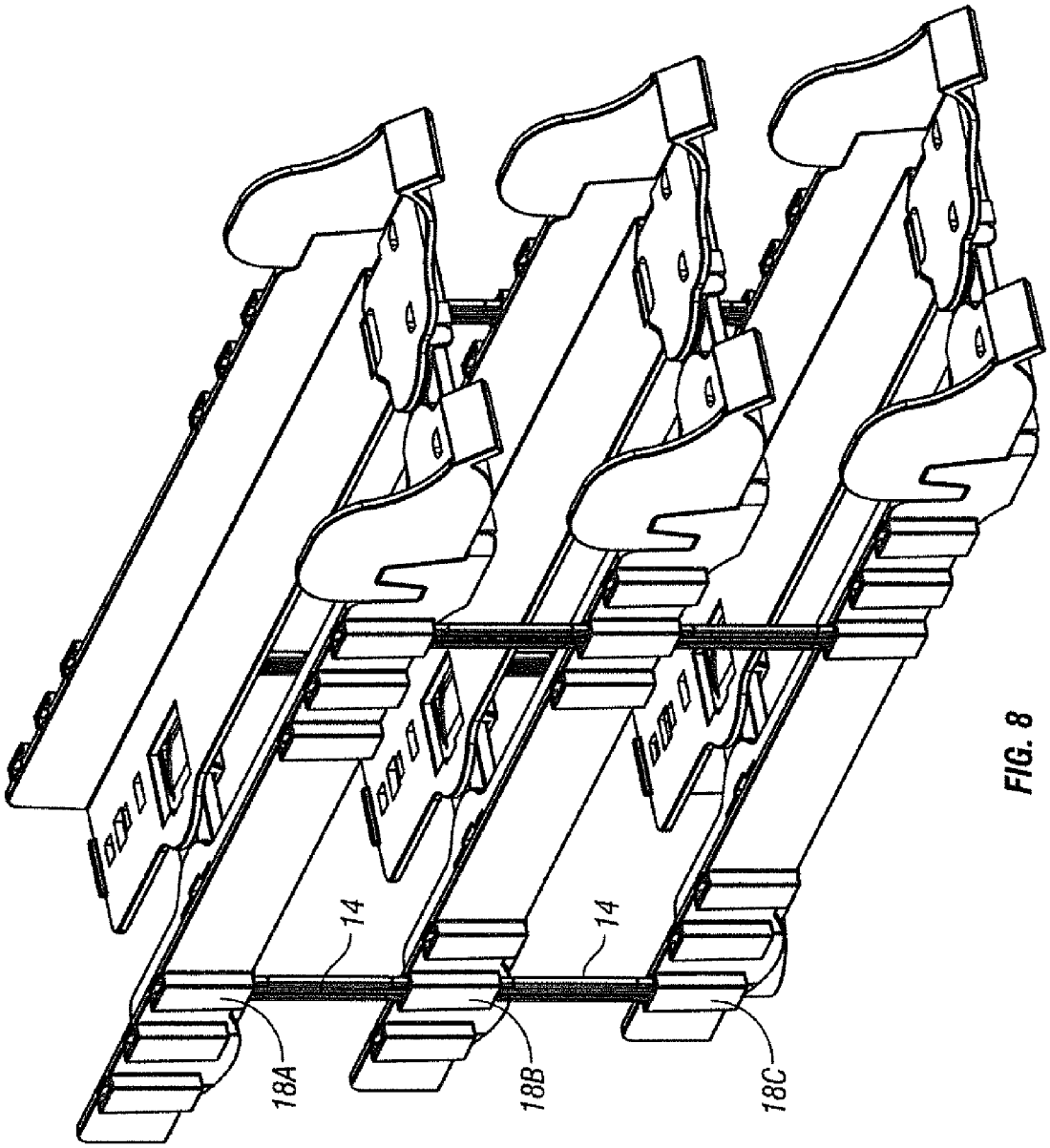

FIG. 8

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EUROPEAN SEARCH REPORT

Application Number
EP 14 17 5187

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X Y	US 2006/186066 A1 (JOHNSON ALLEN E [US] ET AL) 24 August 2006 (2006-08-24) * paragraph [0061] - paragraph [0063] * * paragraph [0066] - paragraph [0068] * * paragraph [0075] * * paragraph [0082] * * paragraph [0086] * * paragraph [0093] - paragraph [0098] * * paragraph [0101] * * paragraph [0104] * * paragraph [0106] - paragraph [0107] * * paragraph [0122]; figures 12-23 * -----	1-3,7-10 4-6	INV. A47F1/12
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TECHNICAL FIELDS SEARCHED (IPC)
A47F A47B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	31 October 2014	Jacquemin, Martin

CATEGORY OF CITED DOCUMENTS

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EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 14 17 5187

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