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**Richter et al.**(10) **Pub. No.: US 2008/0156751 A1**(43) **Pub. Date: Jul. 3, 2008**(54) **MERCHANDISING SYSTEM**(76) Inventors: **Gary M. Richter**, Waukesha, WI (US); **Allen E. Johnson**, Hartford, WI (US); **M.Scott Bryson**, Brookfield, WI (US); **Daniel J. Schiffer**, Menomonee Falls, WI (US); **Terrence G. Berglund**, Hales Corners, WI (US)

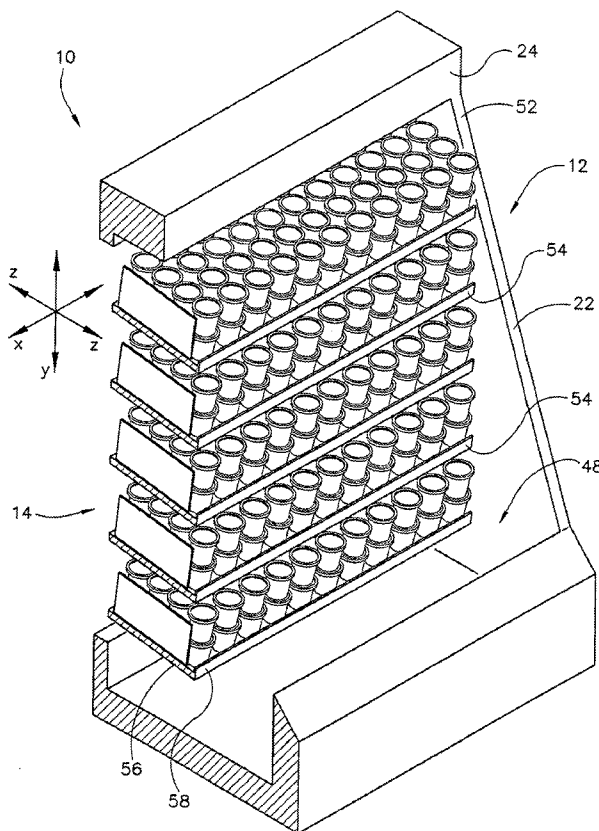
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(63) Continuation of application No. 11/051,040, filed on Feb. 4, 2005, which is a continuation-in-part of application No. 10/996,170, filed on Nov. 23, 2004, now Pat. No. 7,124,898, which is a continuation of application No. PCT/US04/23791, filed on Jul. 23, 2004, Continuation-in-part of application No. 10/272,527, filed on Oct. 15, 2002, now Pat. No. 6,886,699, Continuation-in-part of application No. 10/132,662, filed on Apr. 25, 2002, now Pat. No. 7,028,852.

(57) **ABSTRACT**

A merchandising system for articles comprising a first divider providing a sidewall and a generally longitudinal member along the sidewall and a second divider providing a sidewall and a generally longitudinal member along the sidewall. The first divider is coupled to the second divider to form a compartment for the articles between the sidewall of the first compartment and the sidewall of the second compartment. The compartment has a front and a back. A support for the articles is provided within the compartment between the sidewall of the first divider and the sidewall of the second divider from adjacent the front of the compartment to adjacent the back of the compartment by the member on the first divider and the member on the second divider.



**FIG. 1**

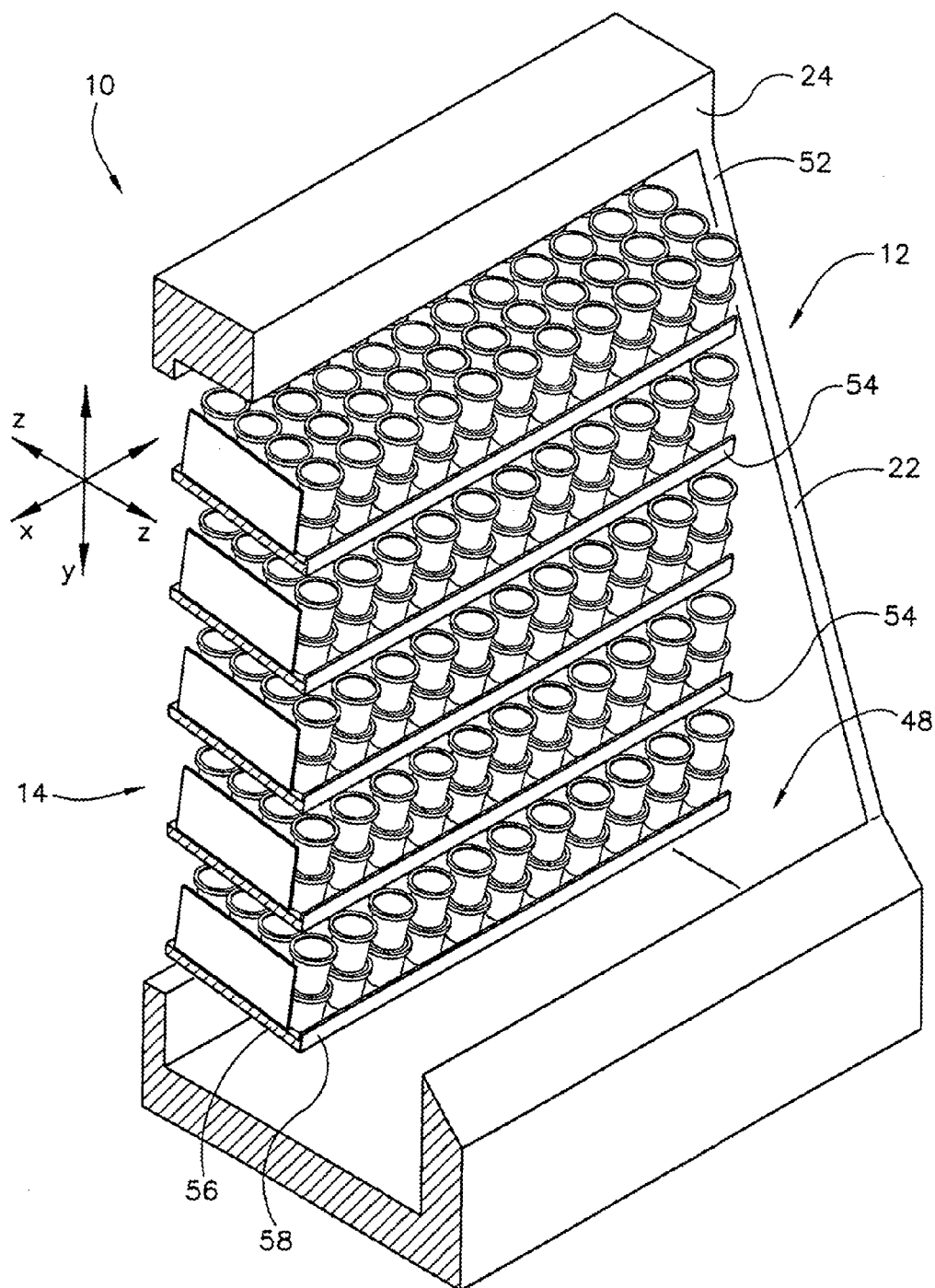


FIG. 2A

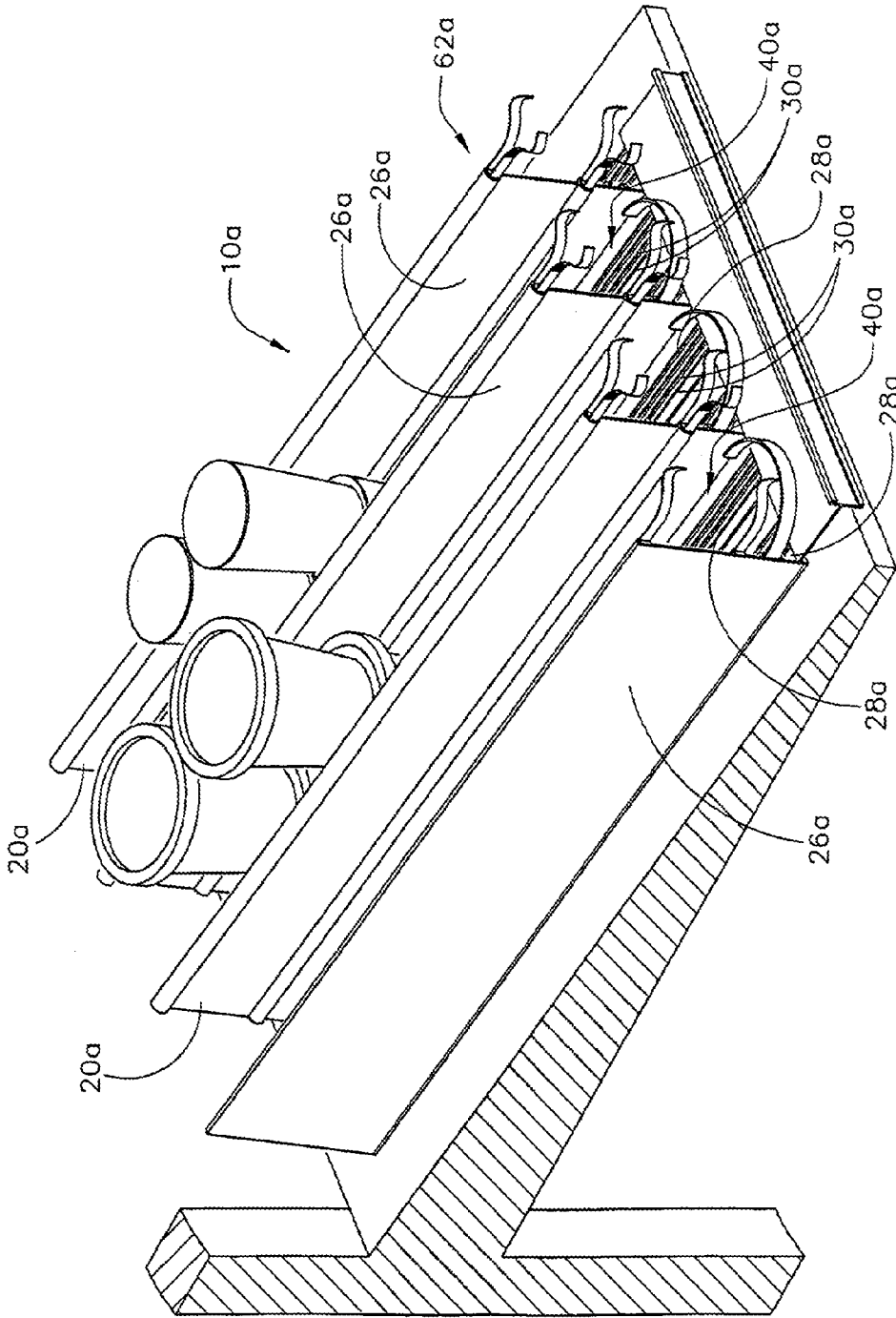
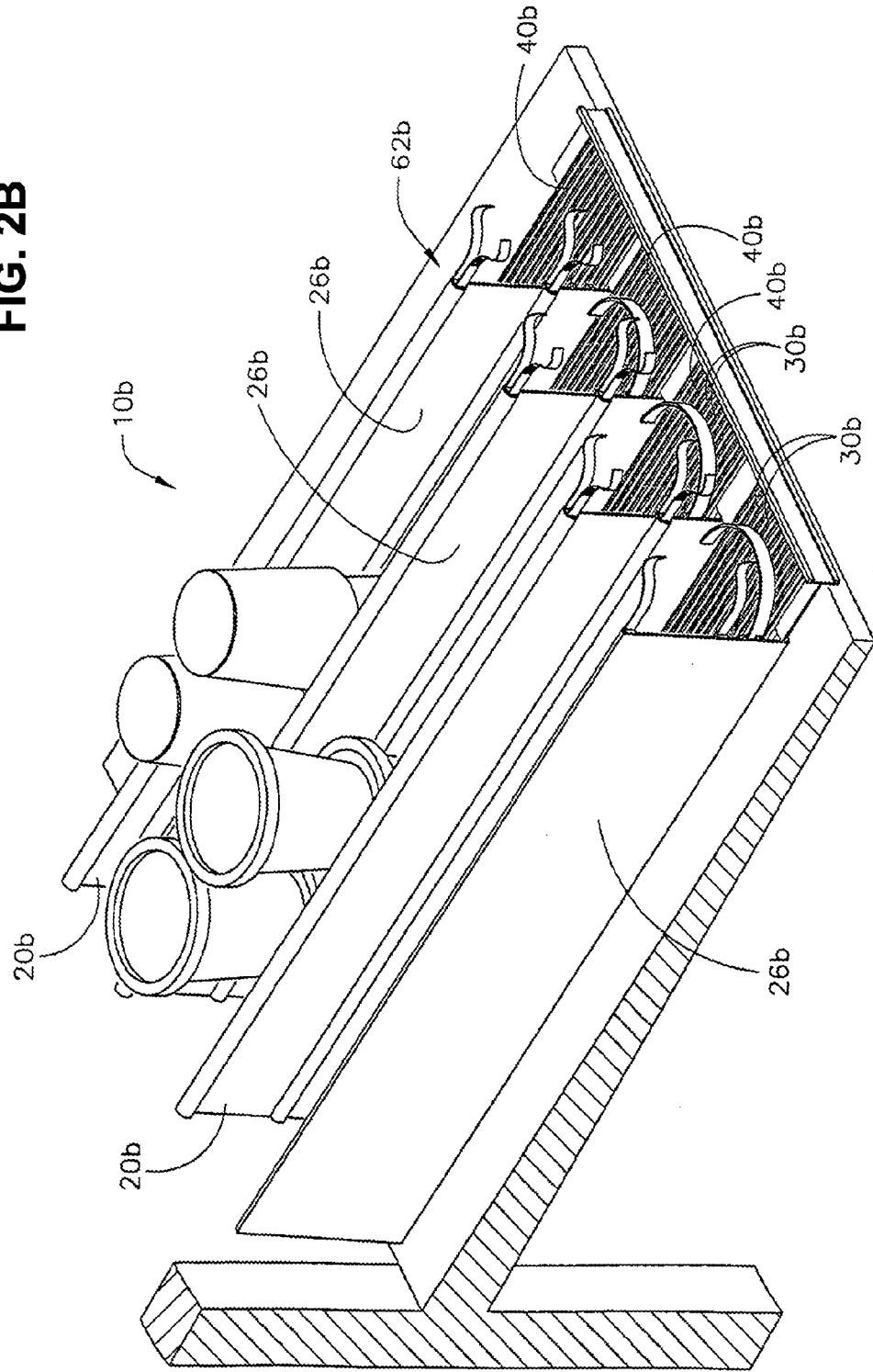
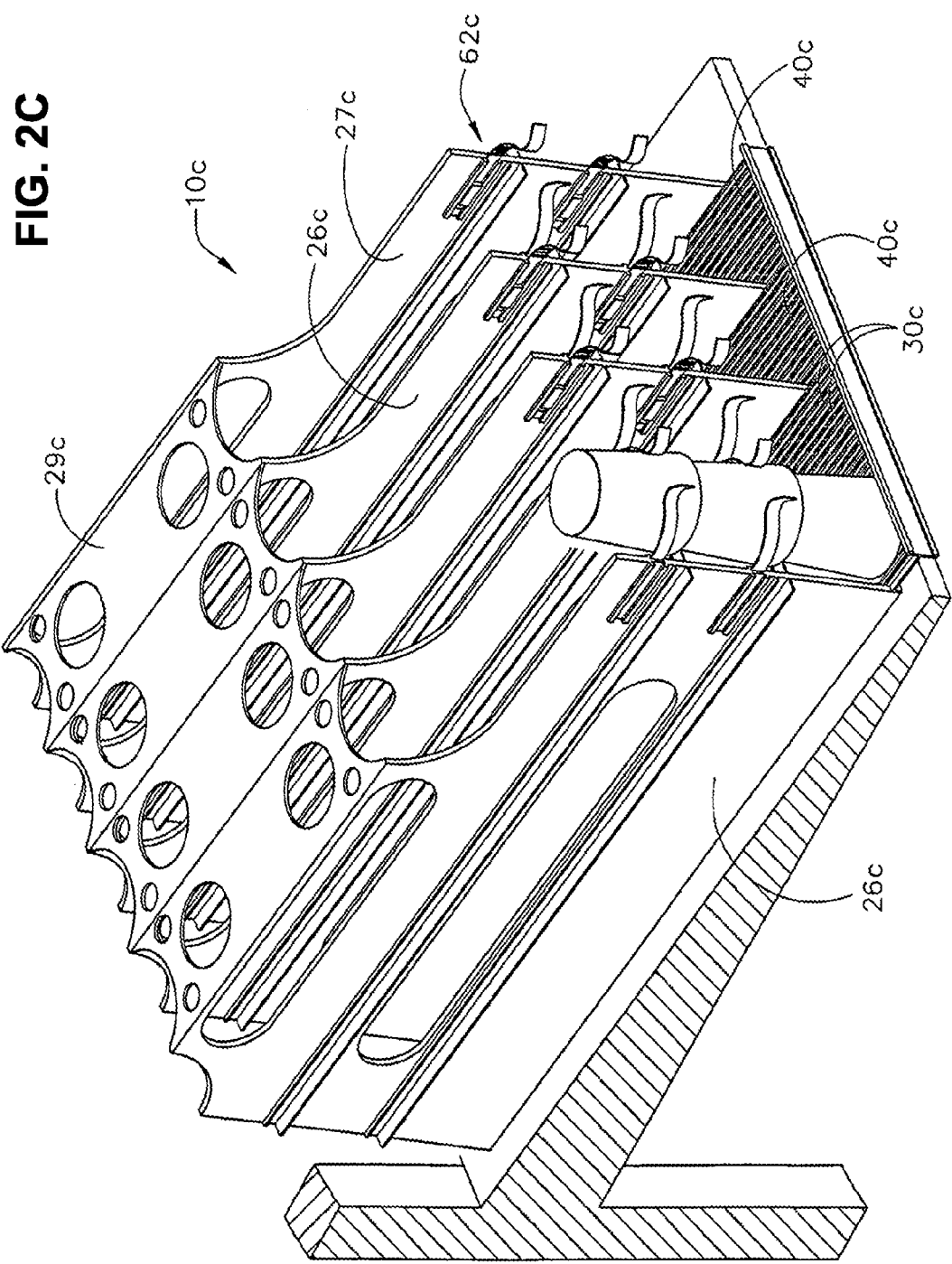
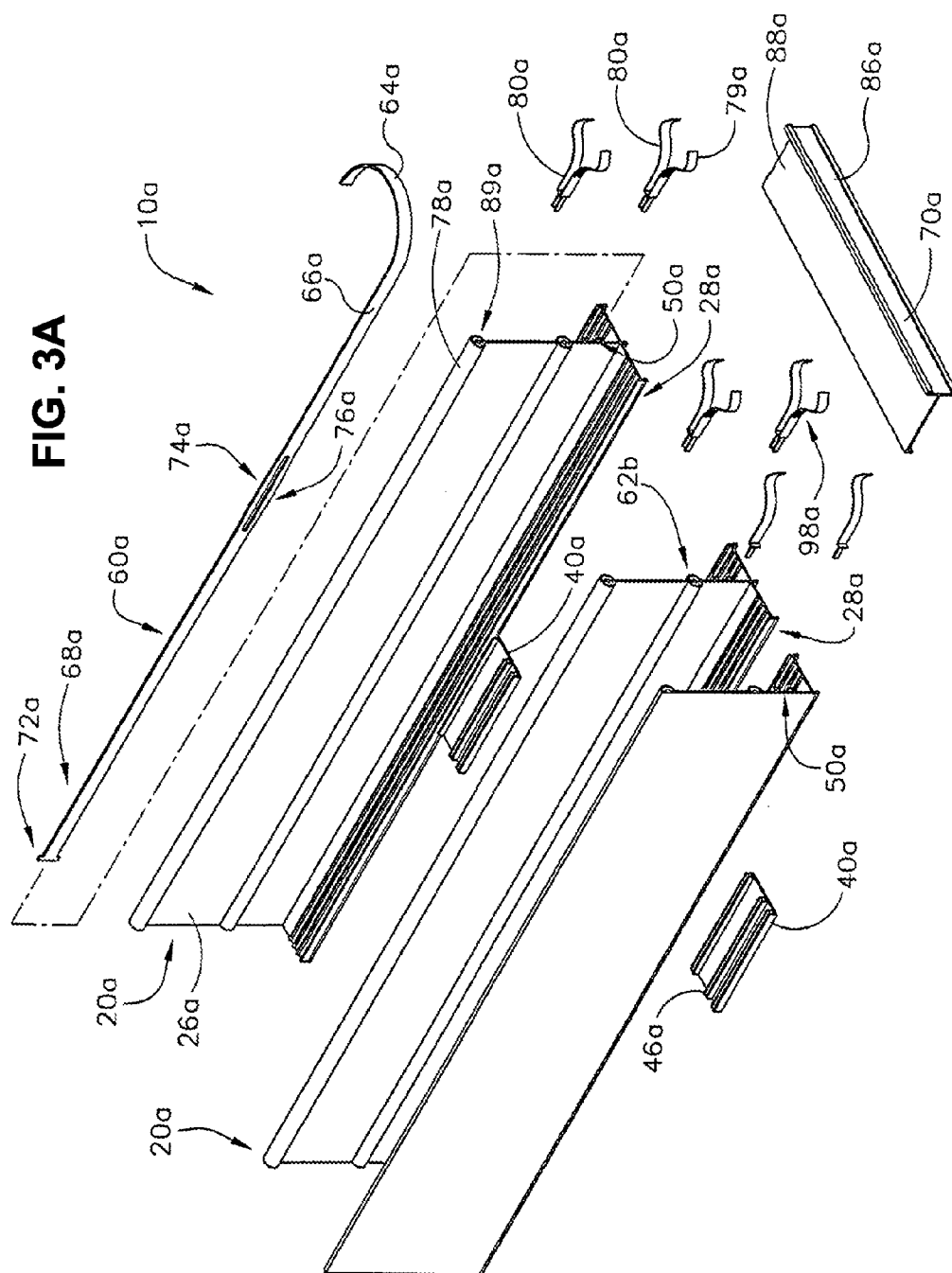


FIG. 2B

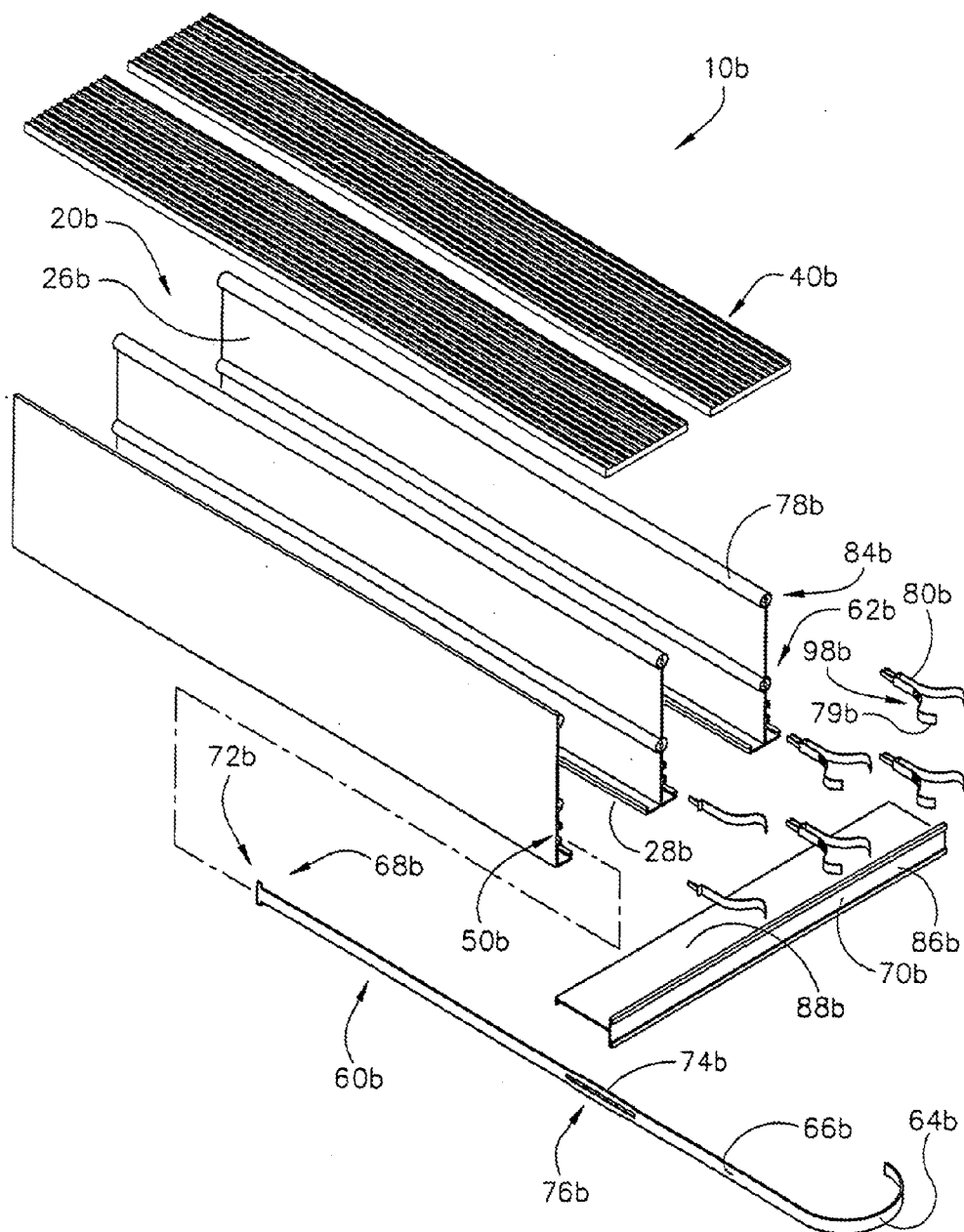




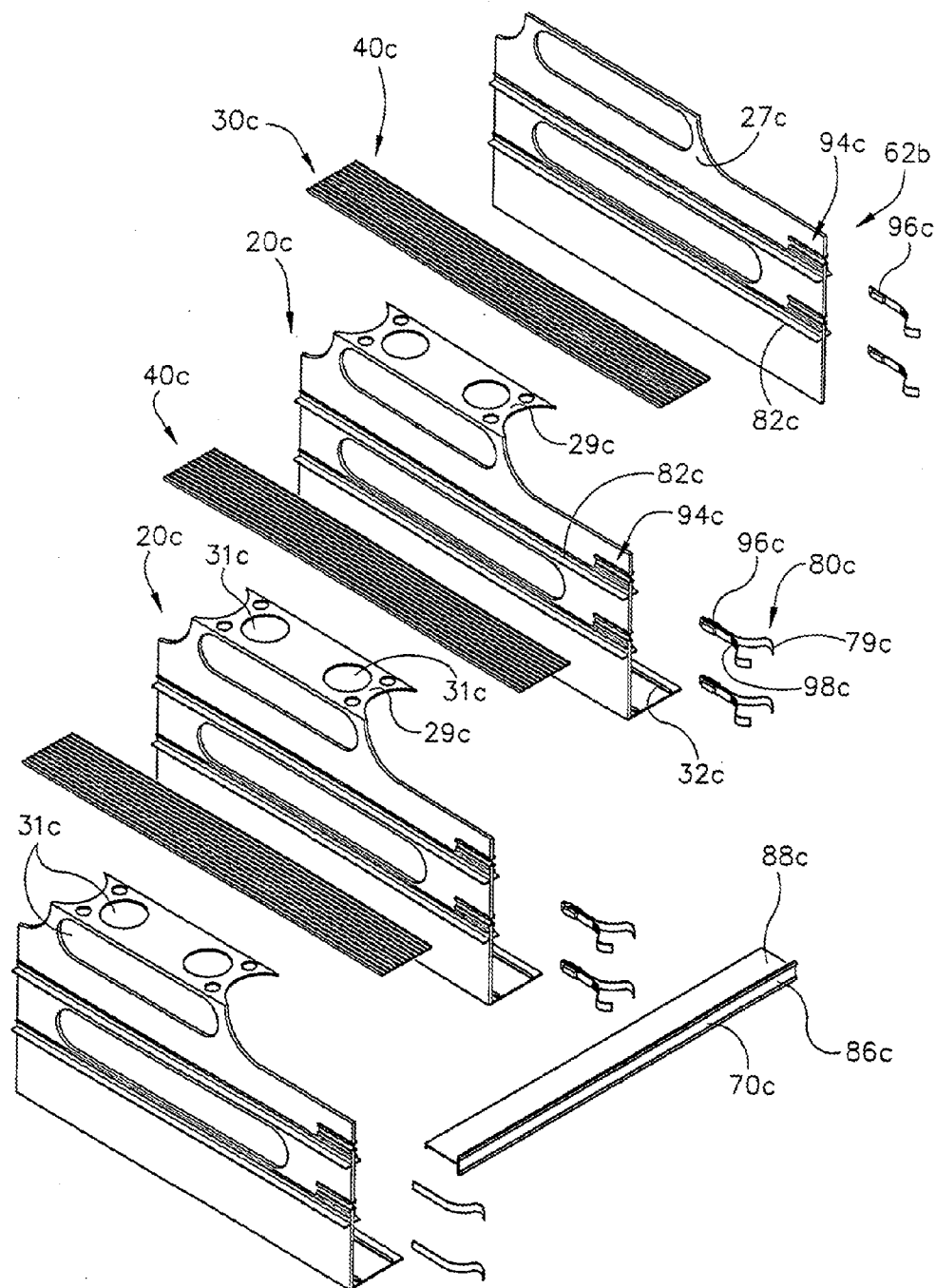
**FIG. 3A**



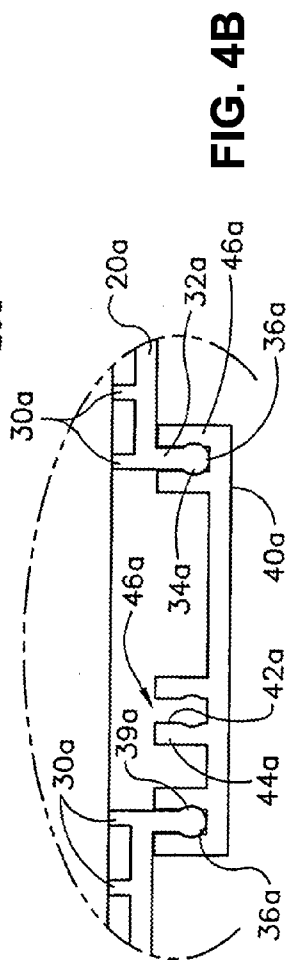
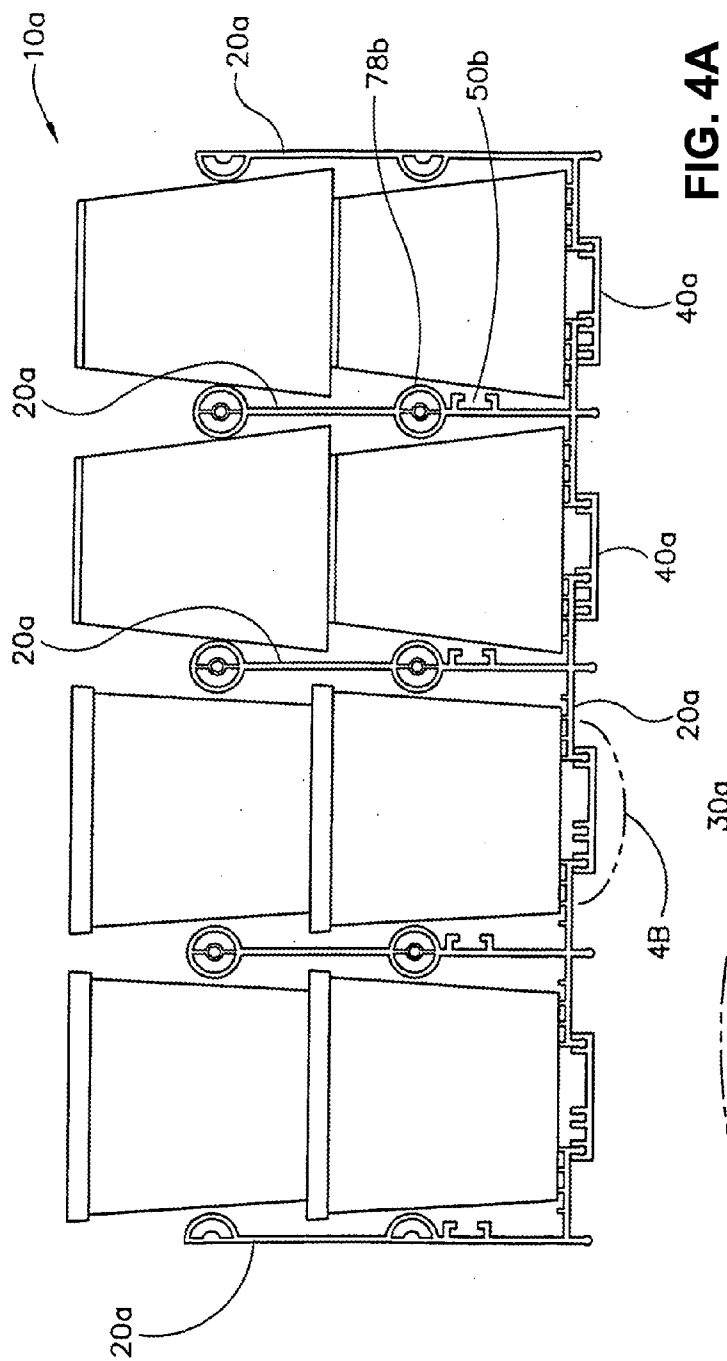
**FIG. 3B**



**FIG. 3C**







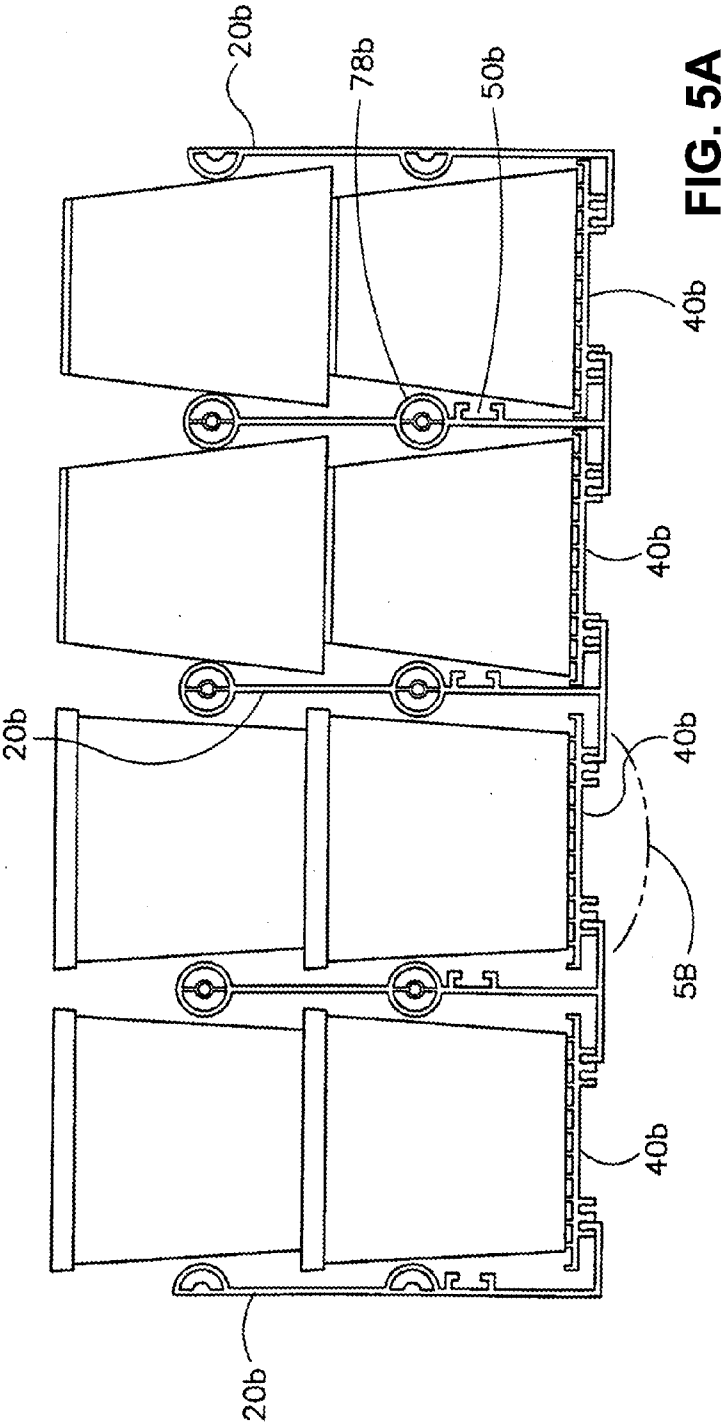


FIG. 5A

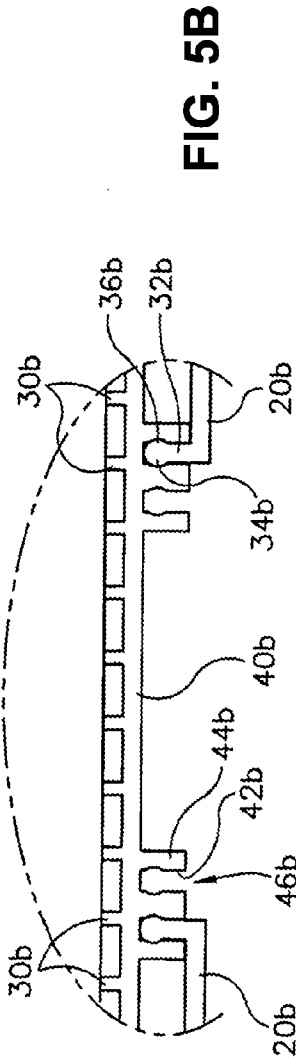
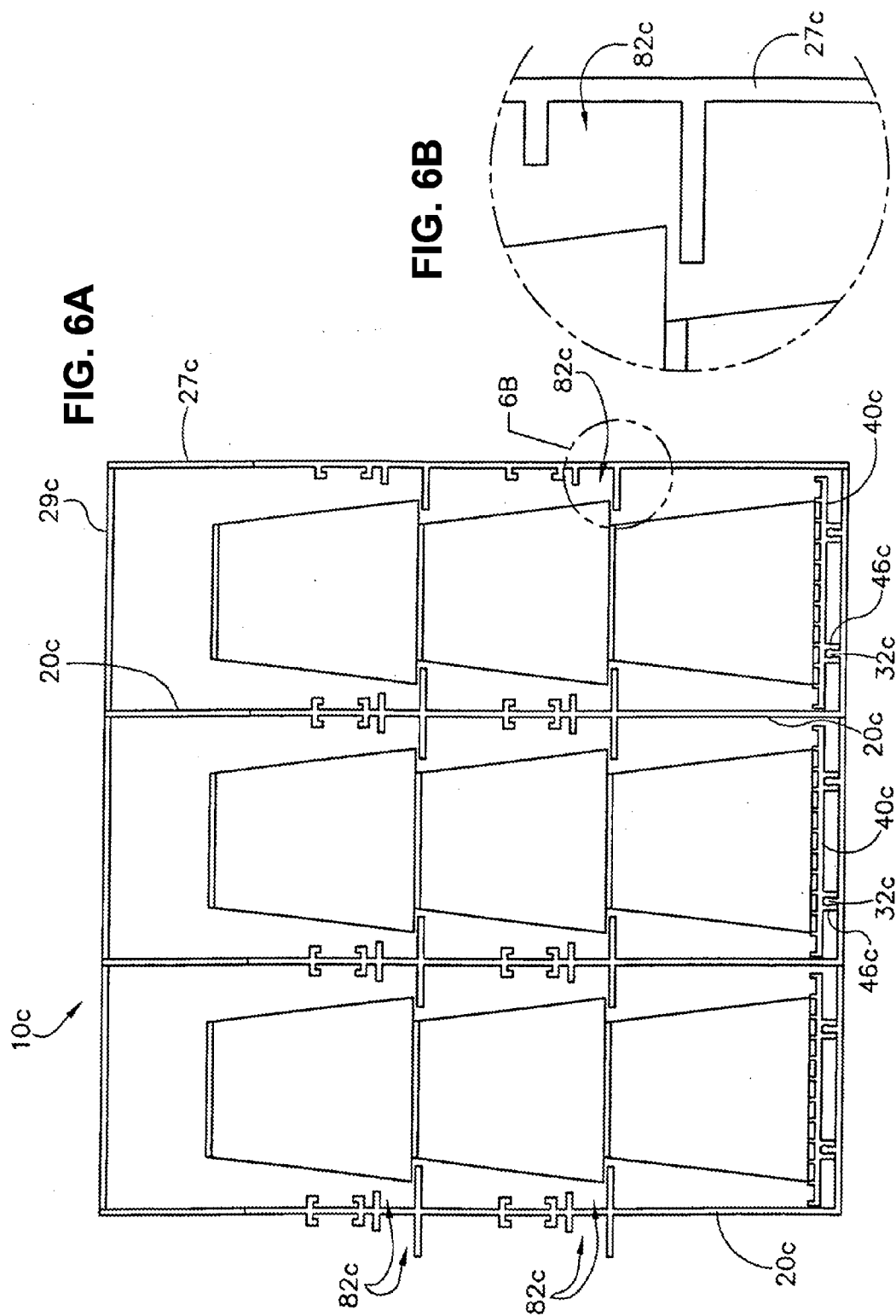
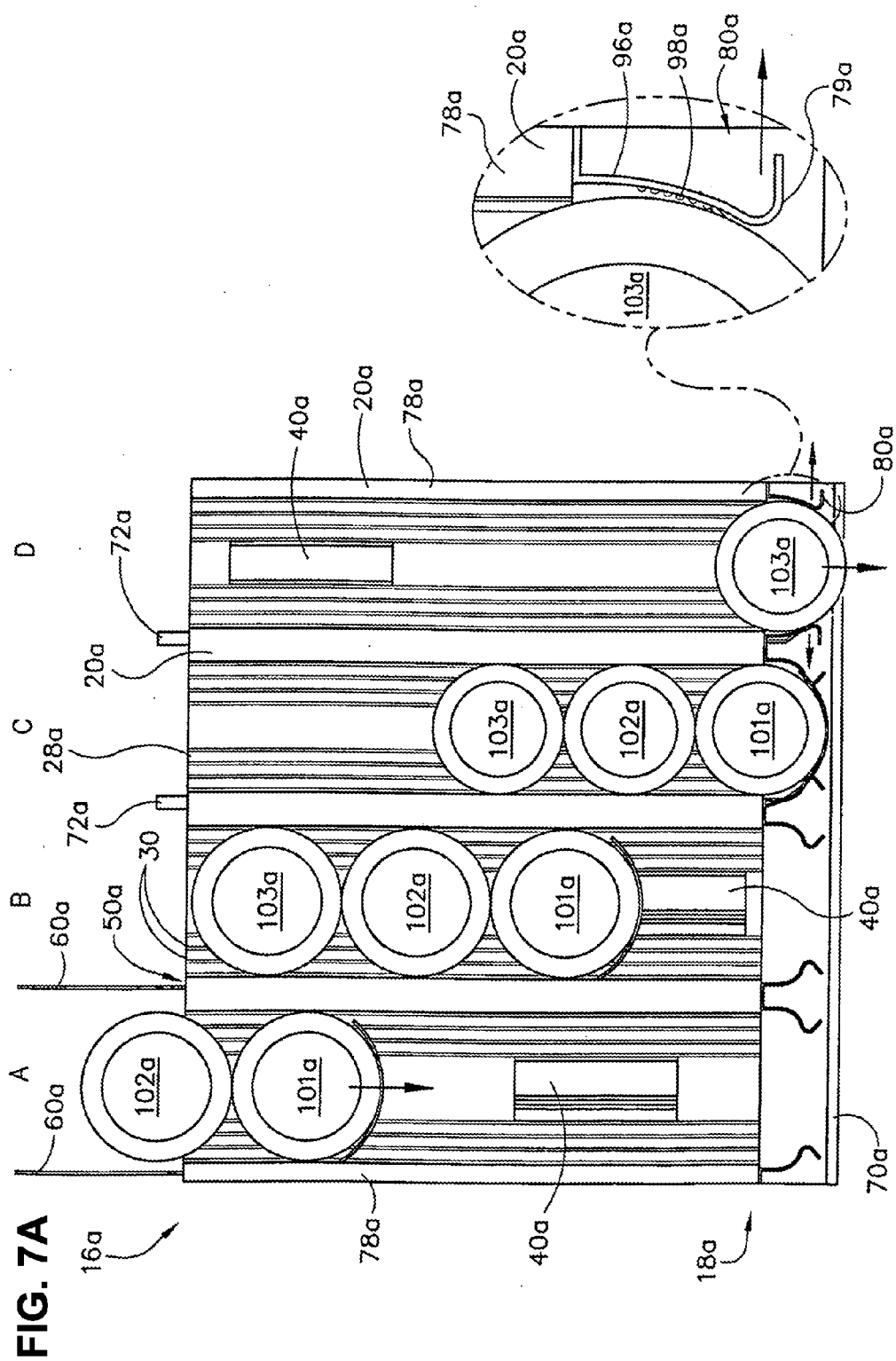
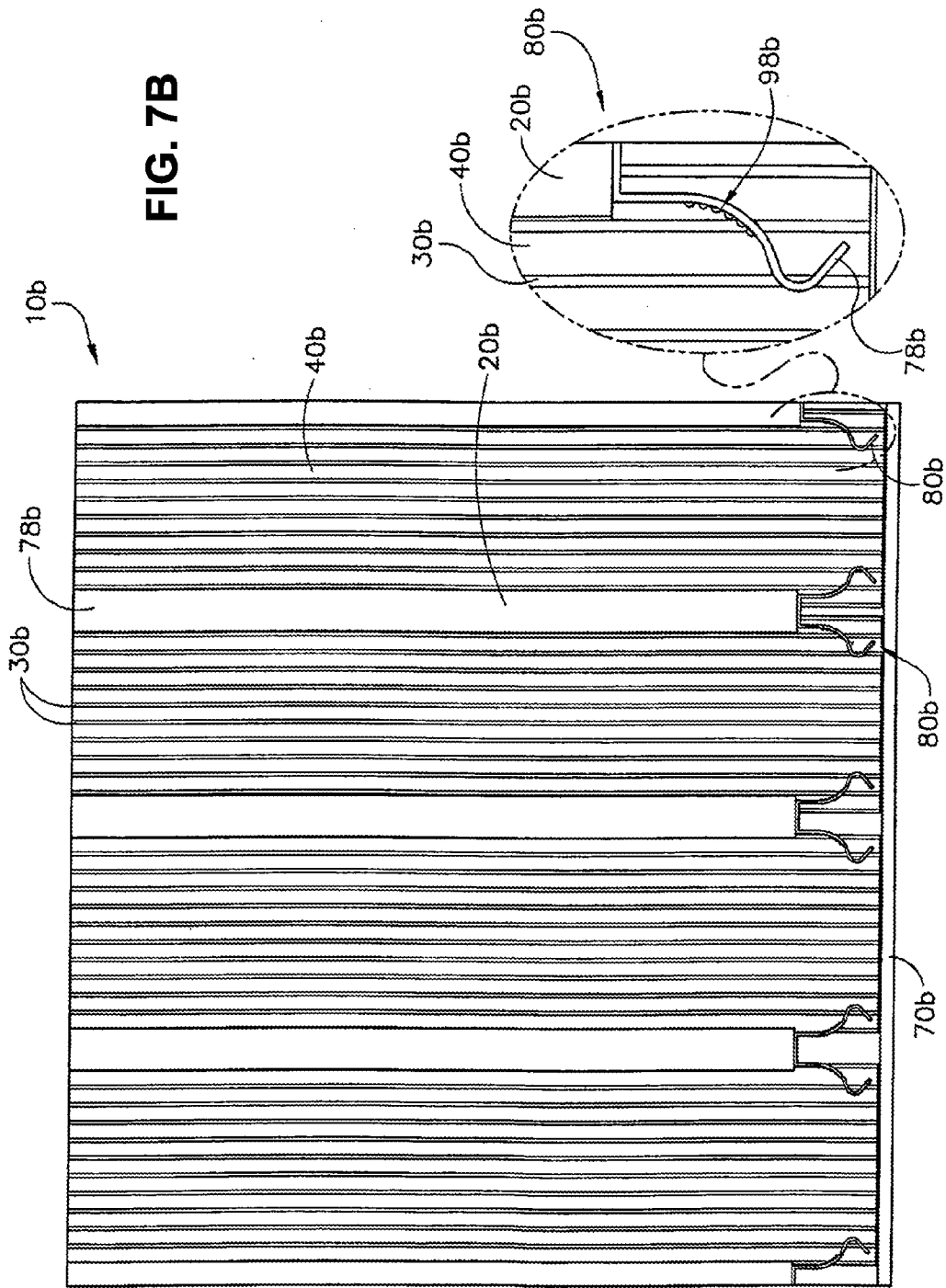


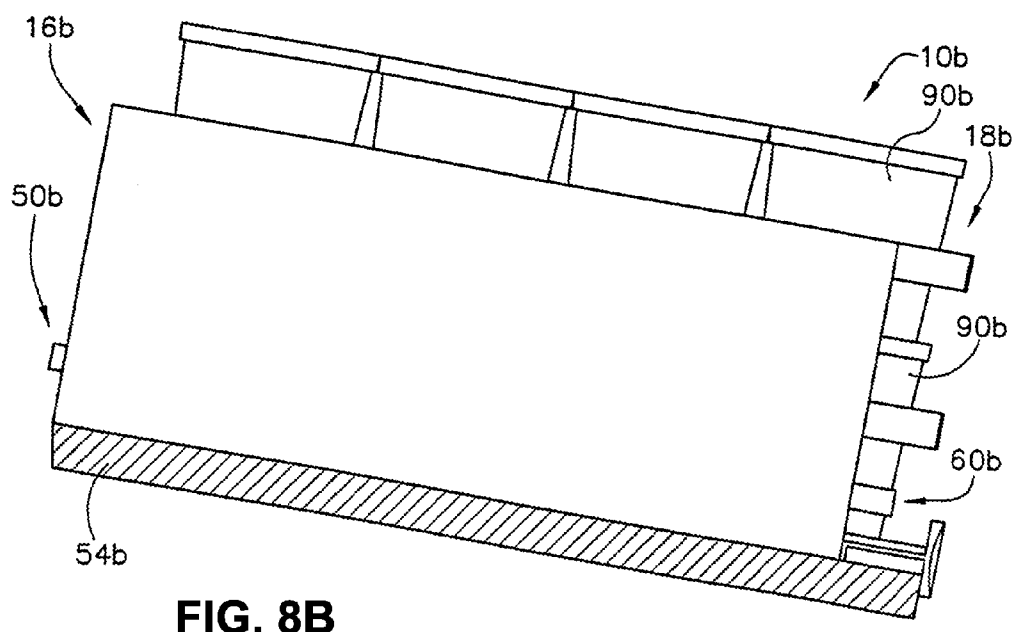
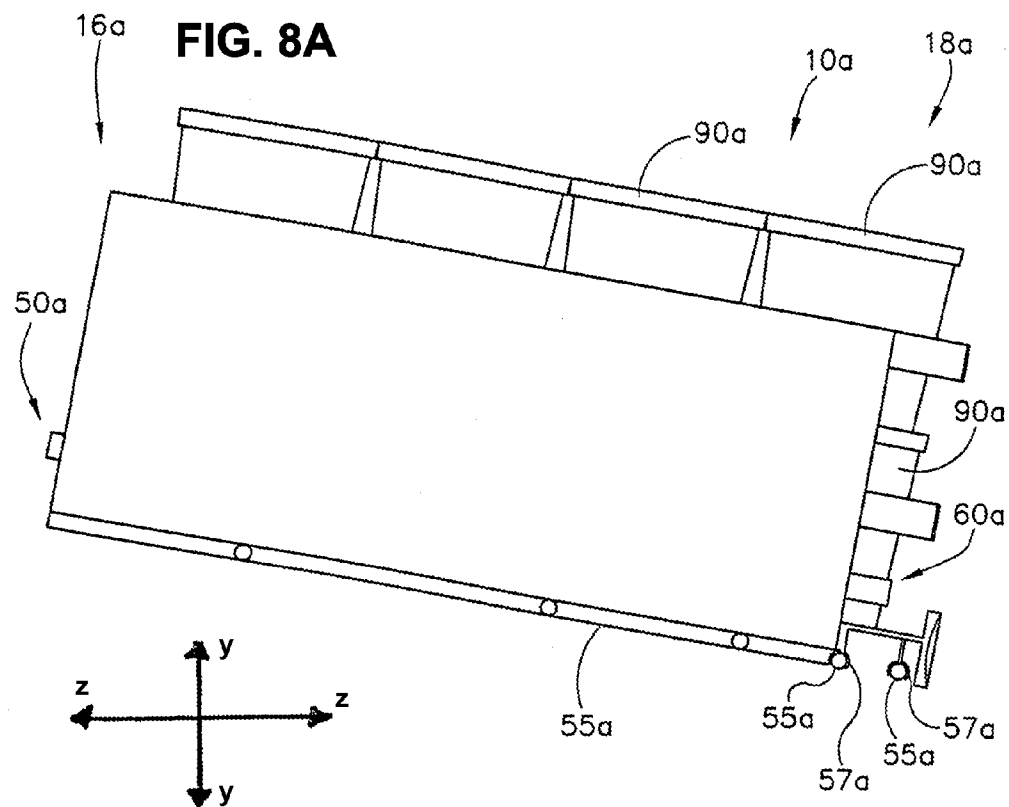
FIG. 5B



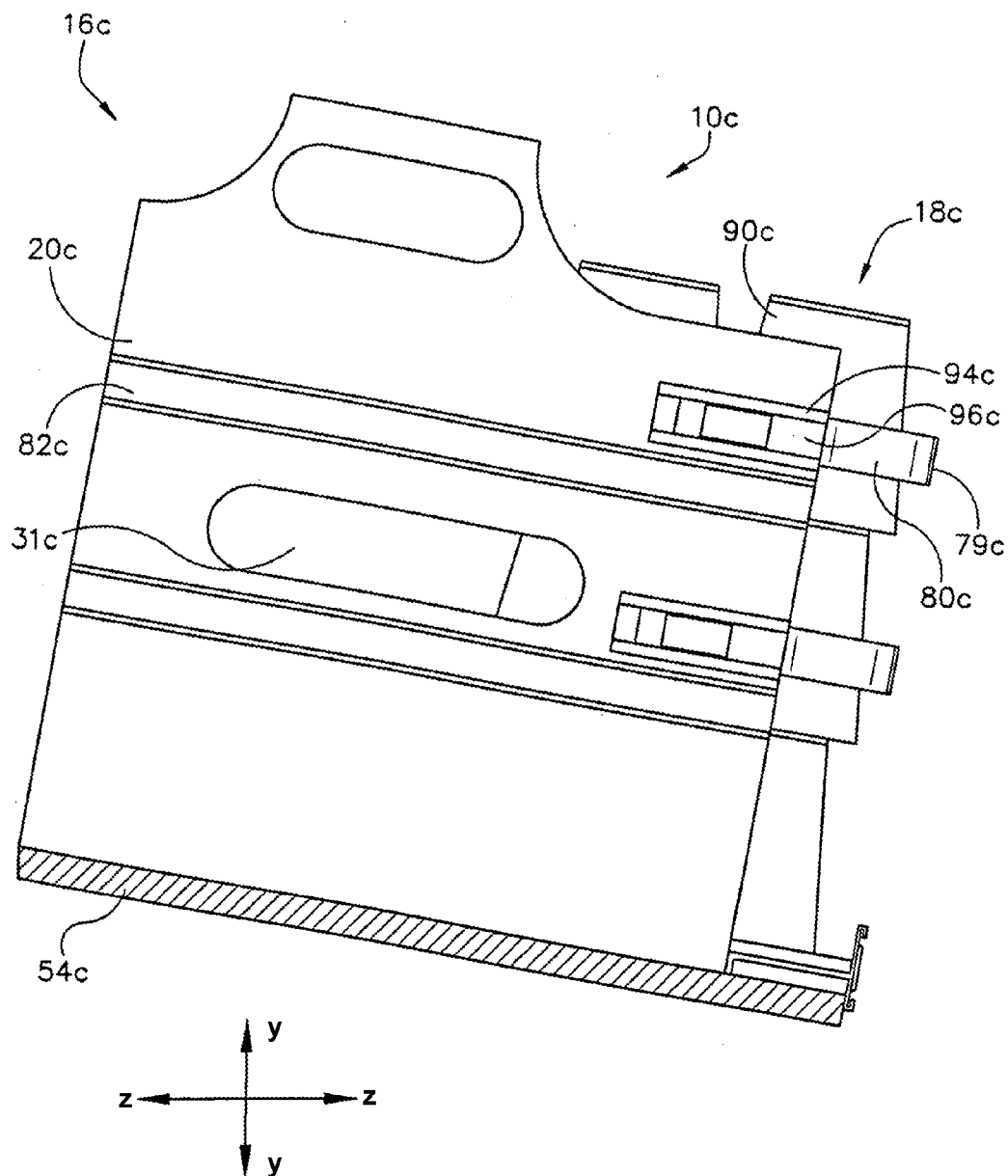




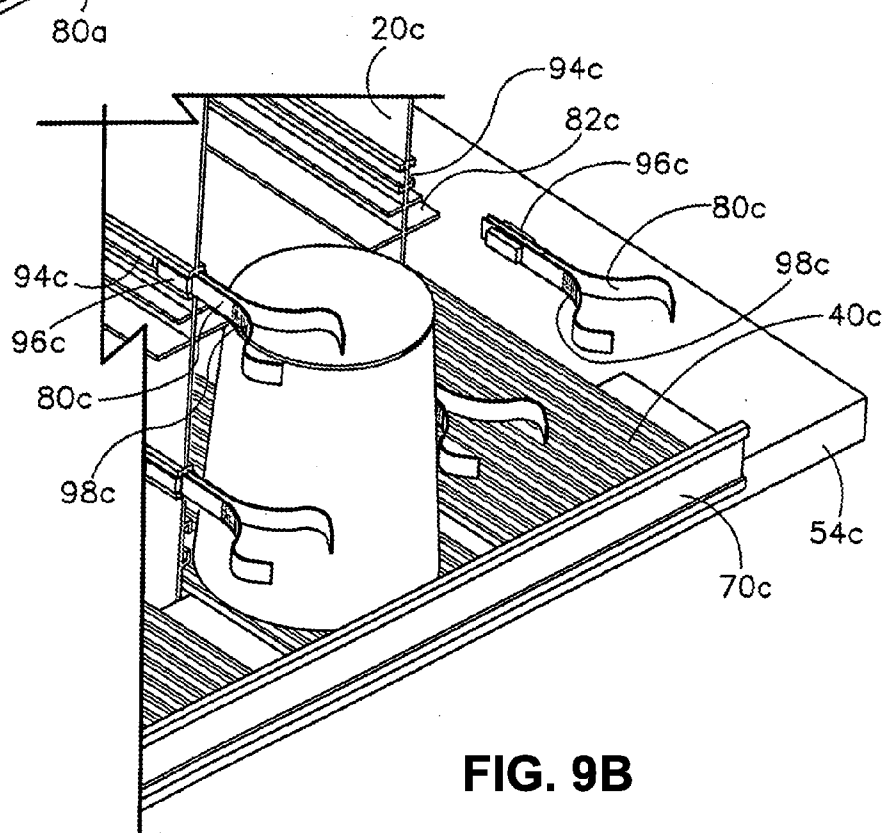
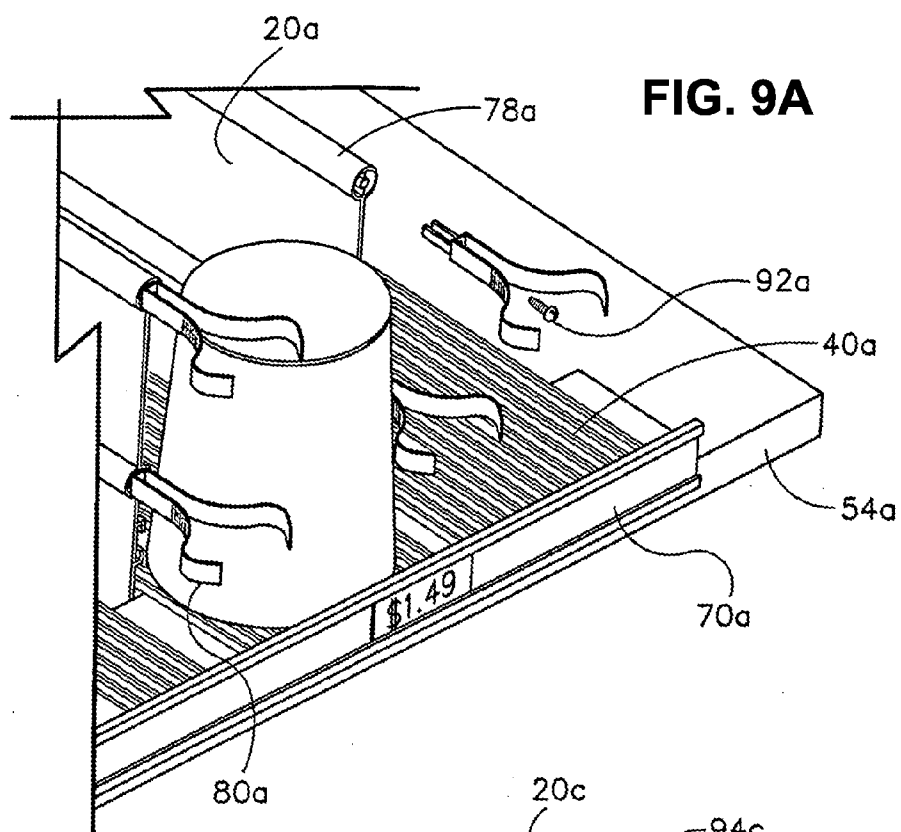




**FIG. 8C**







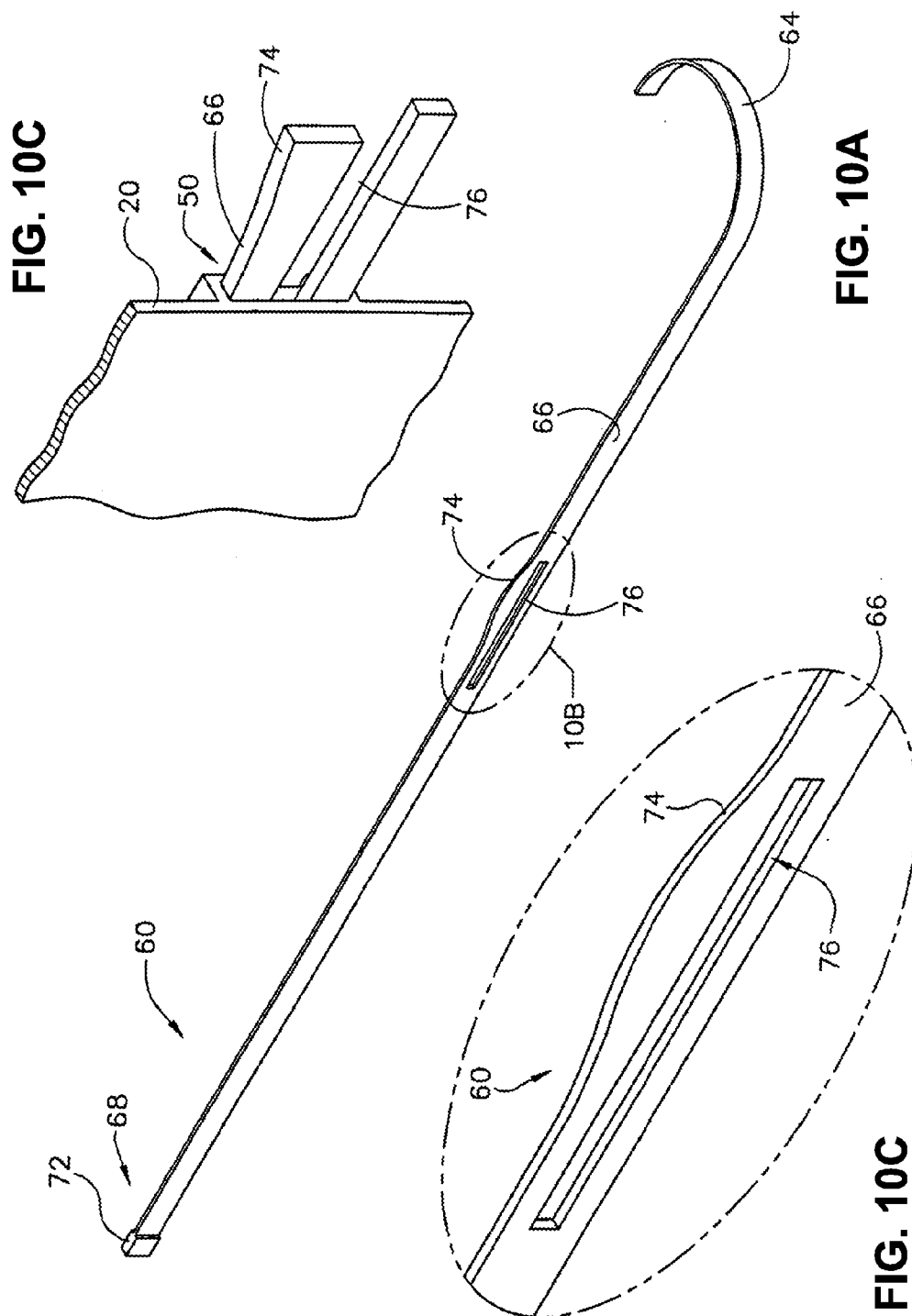
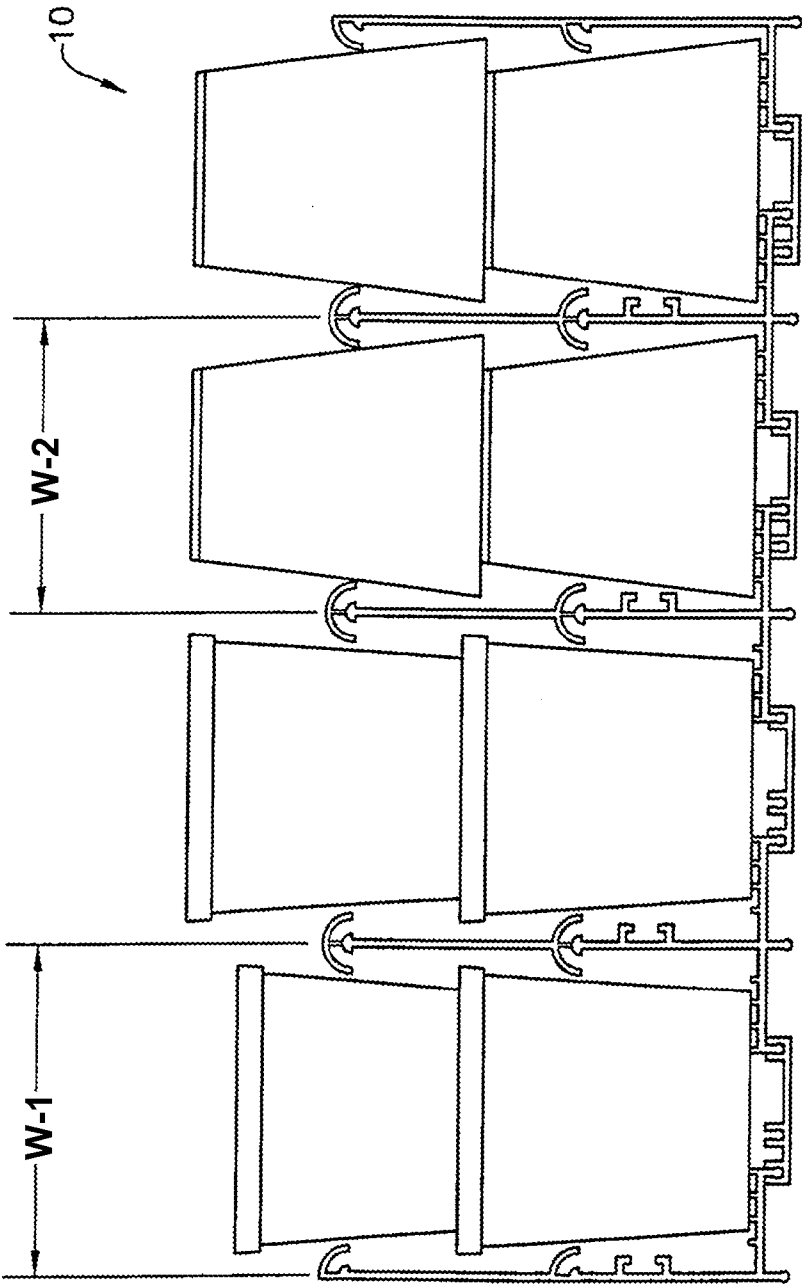


FIG. 11A



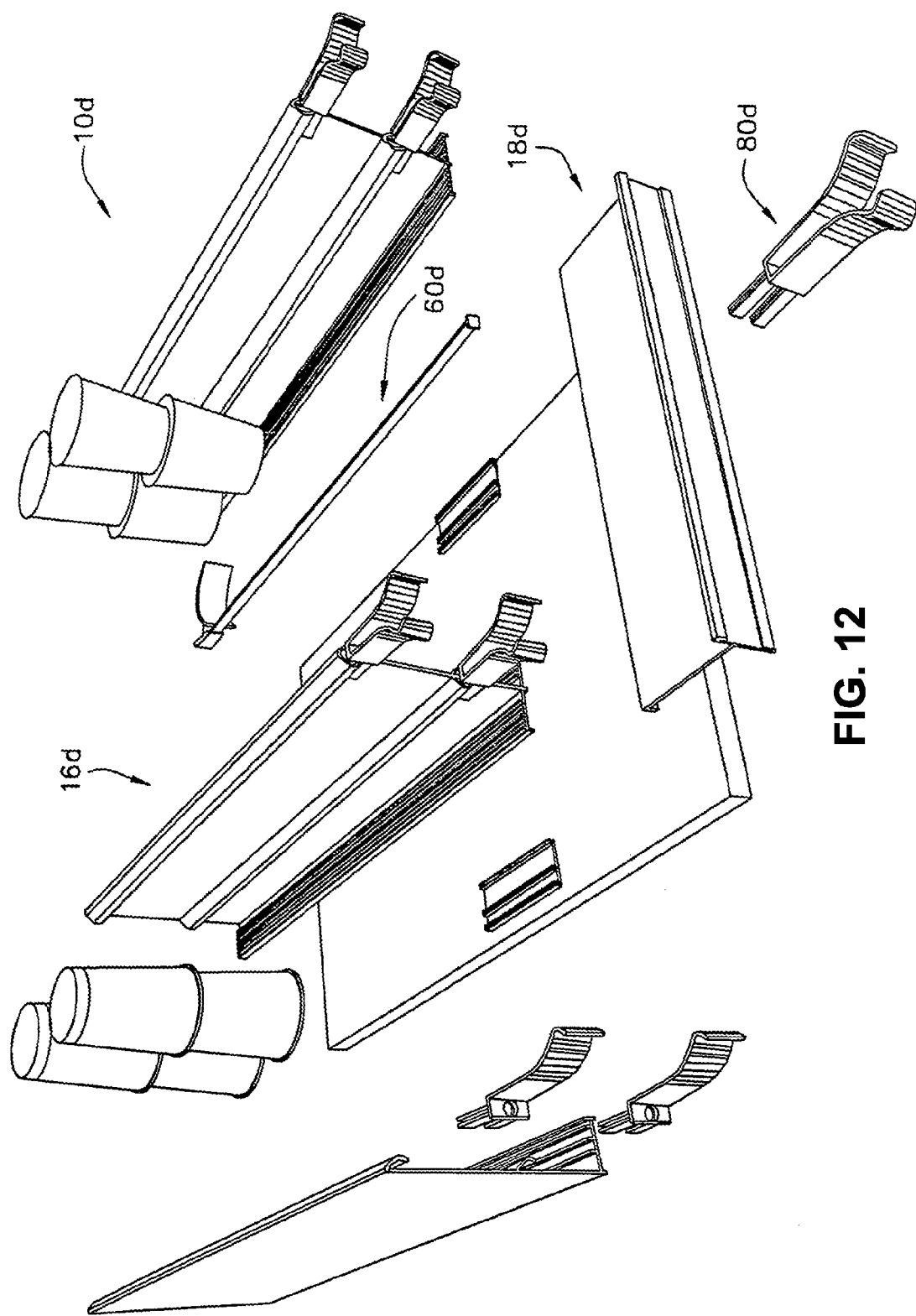
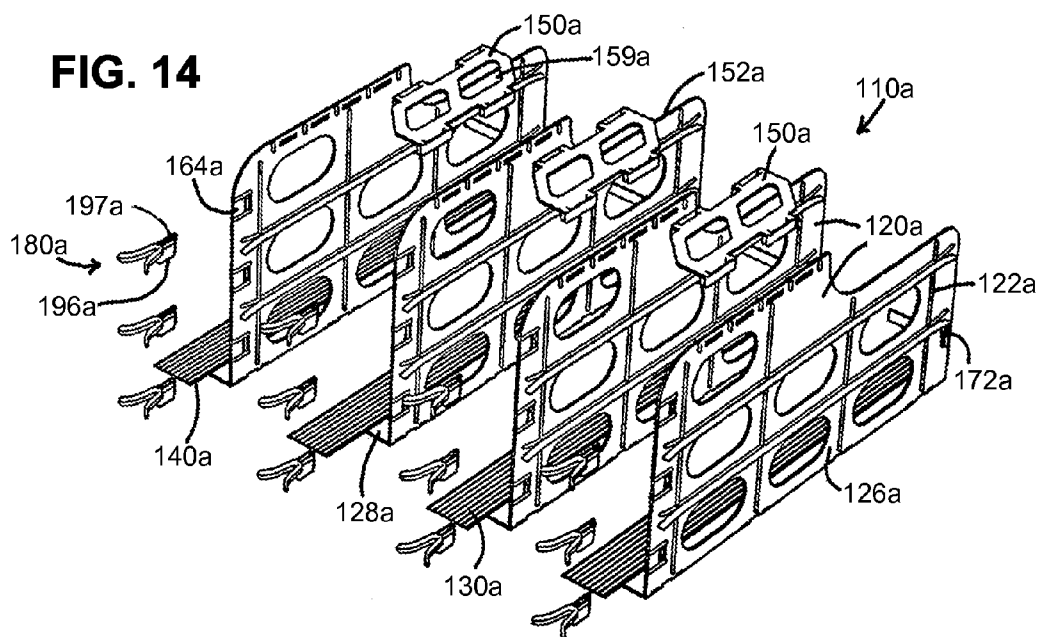
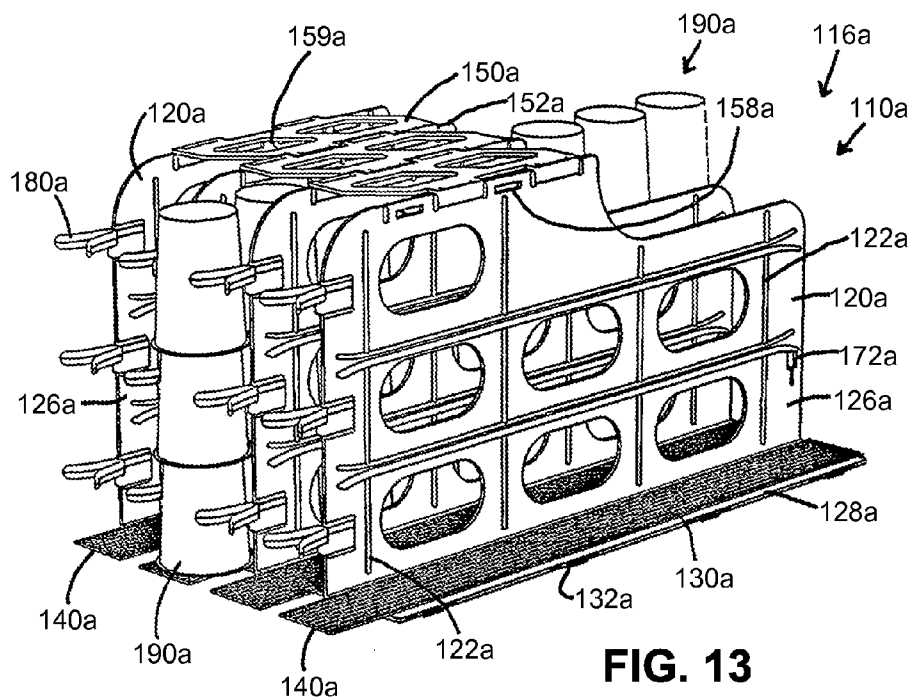
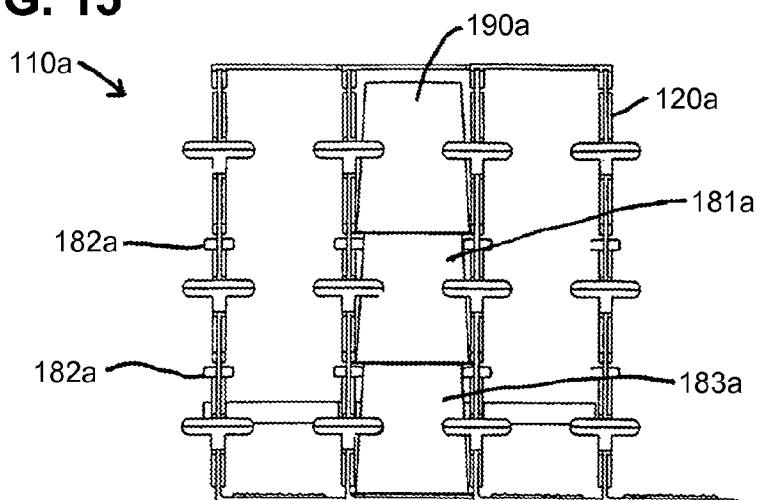


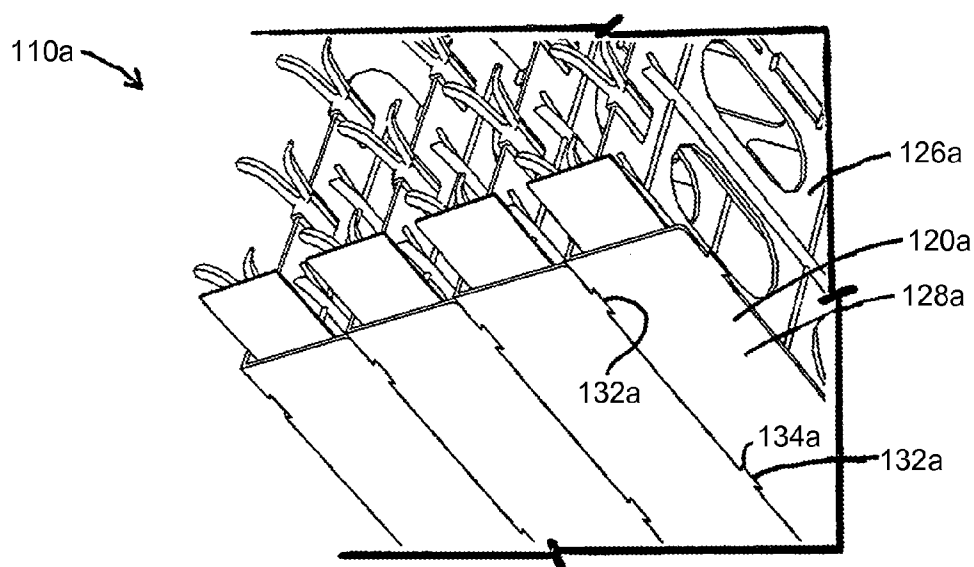
FIG. 12



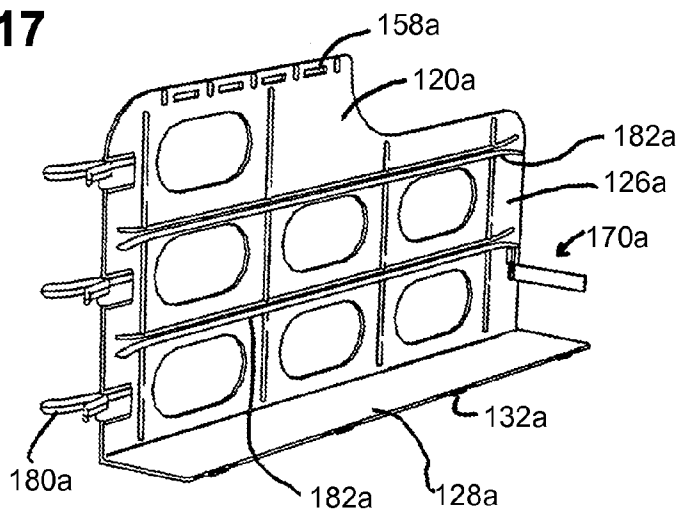
**FIG. 15**



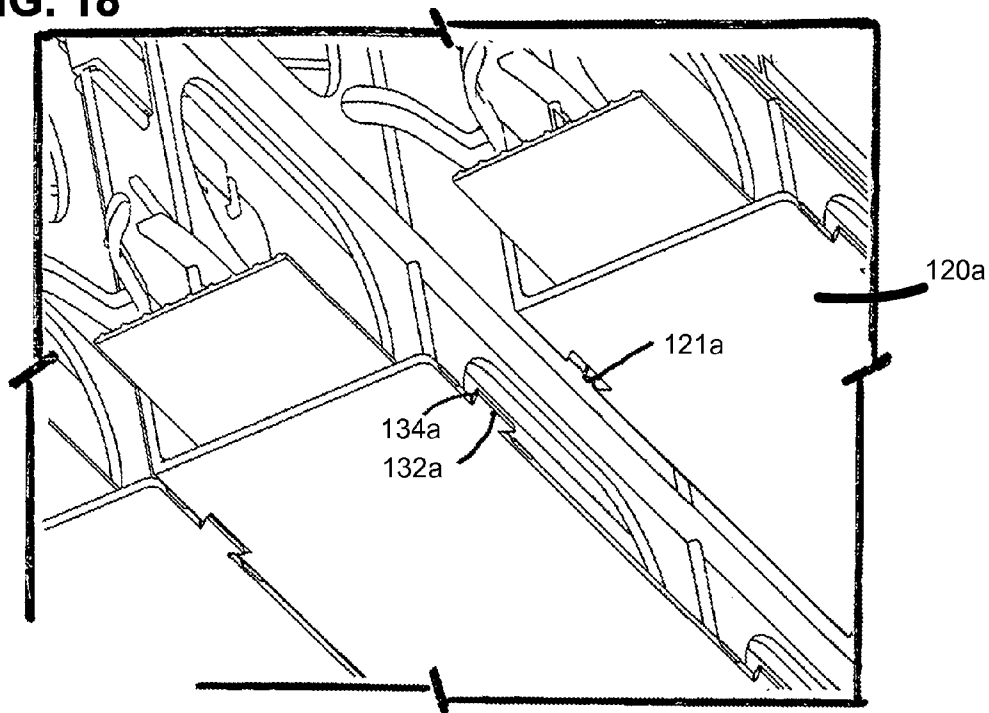
**FIG. 16**



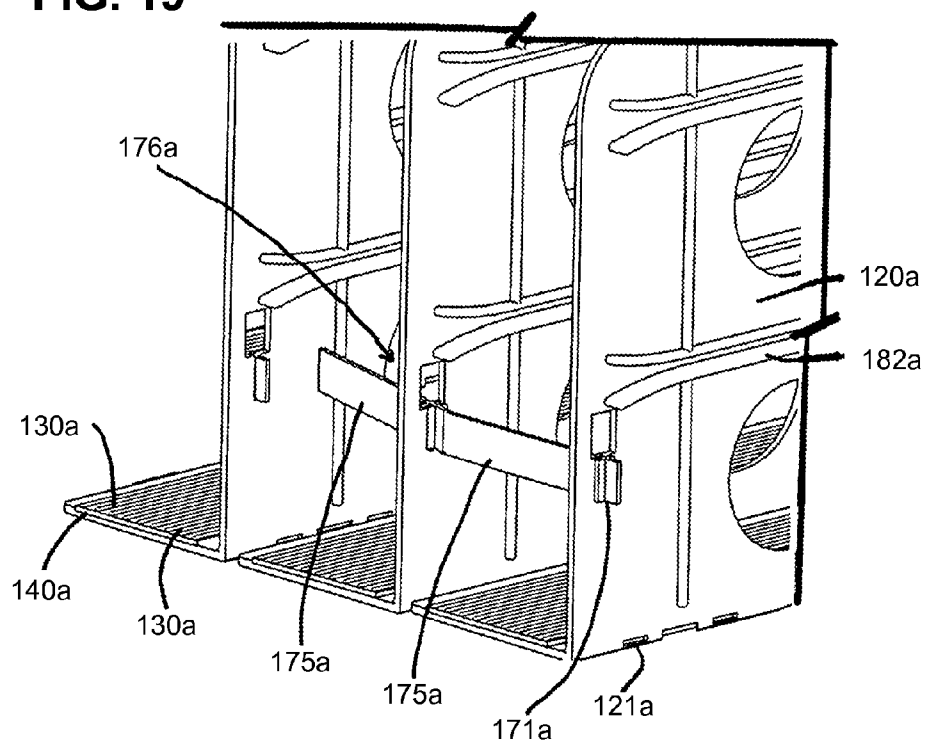
**FIG. 17**



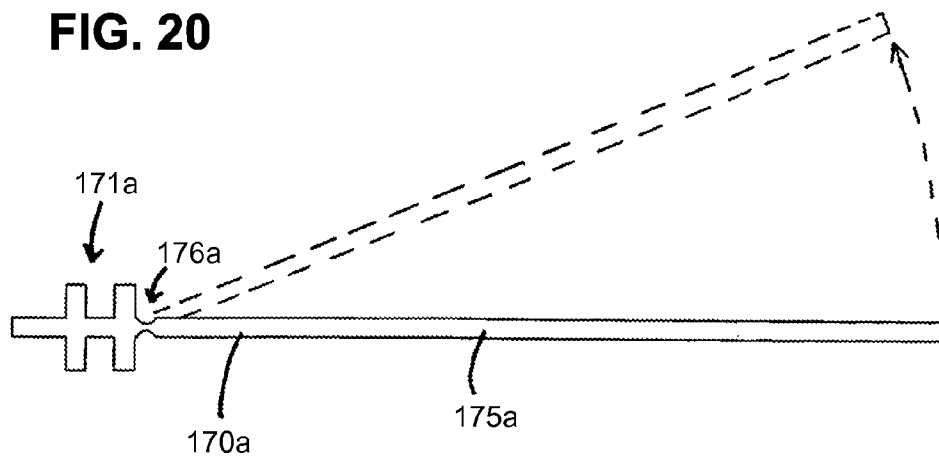
**FIG. 18**



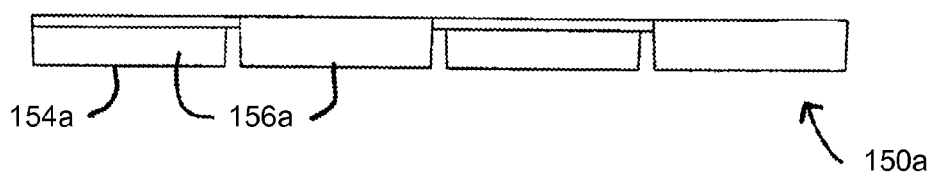
**FIG. 19**



**FIG. 20**



**FIG. 21**



**FIG. 22**

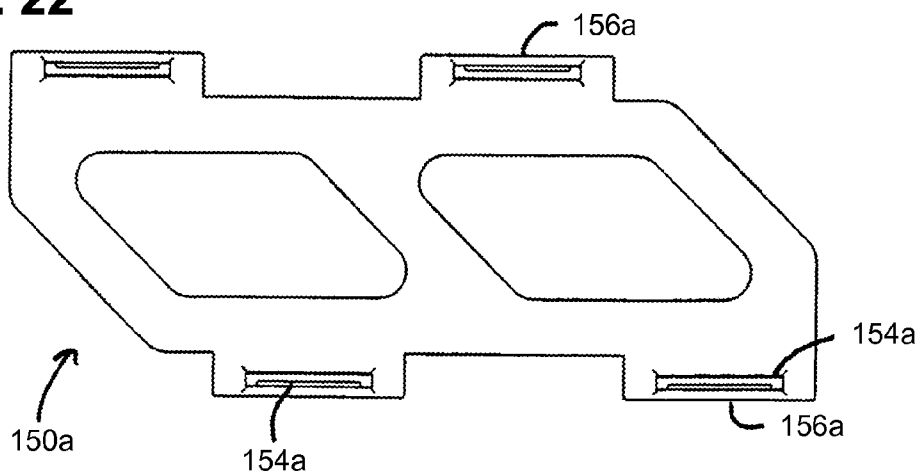




FIG. 23

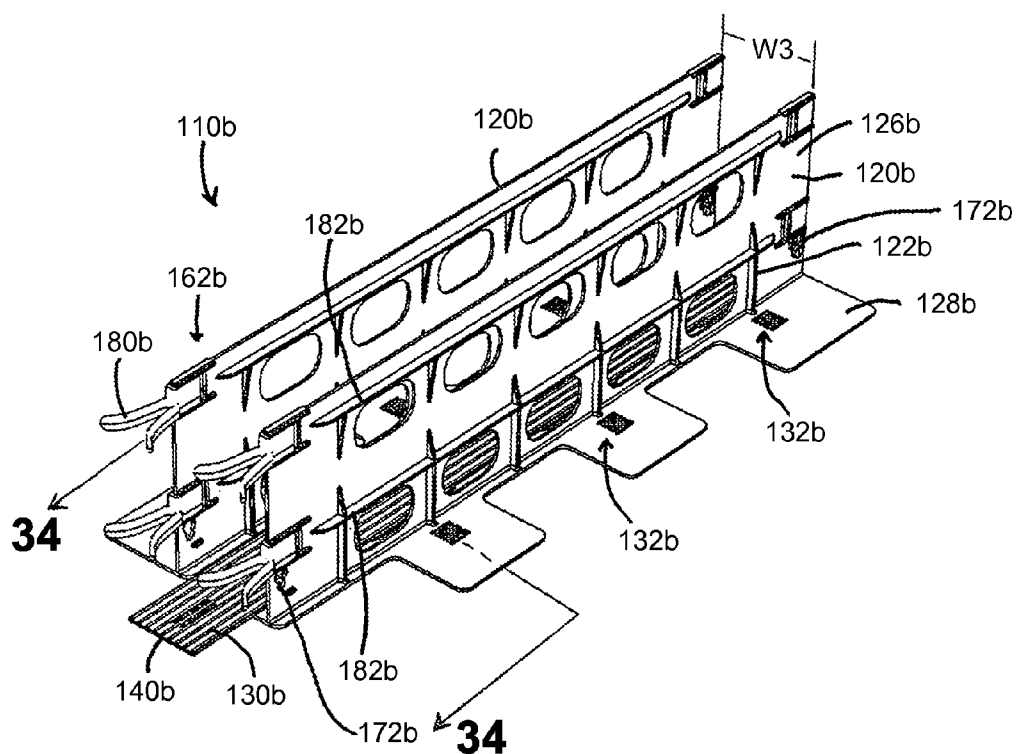
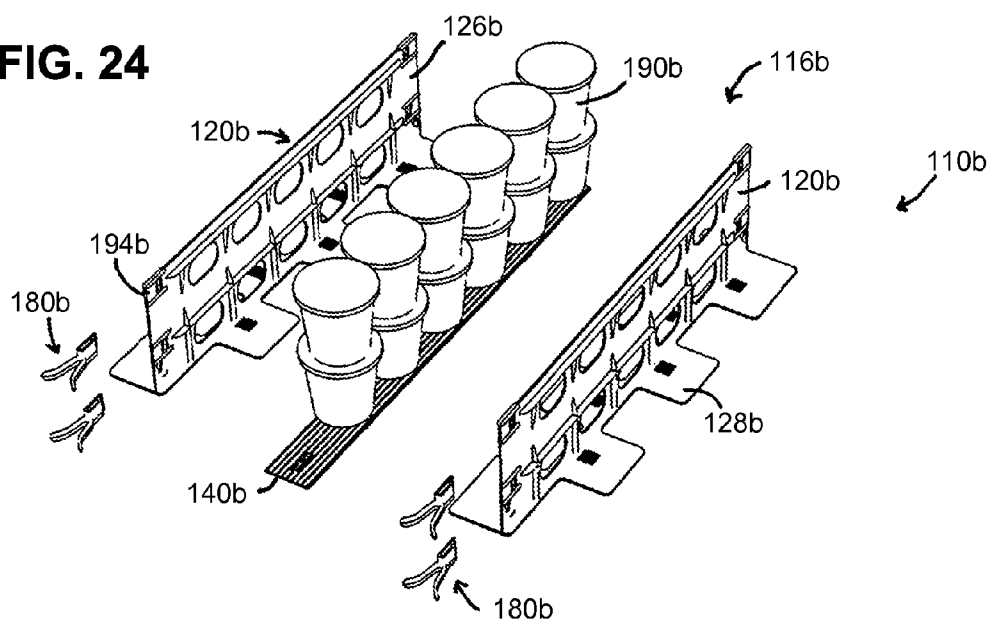
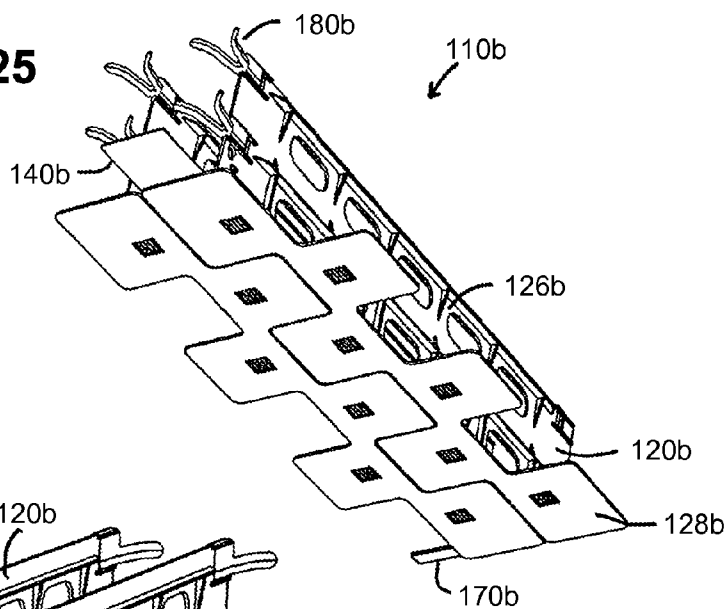


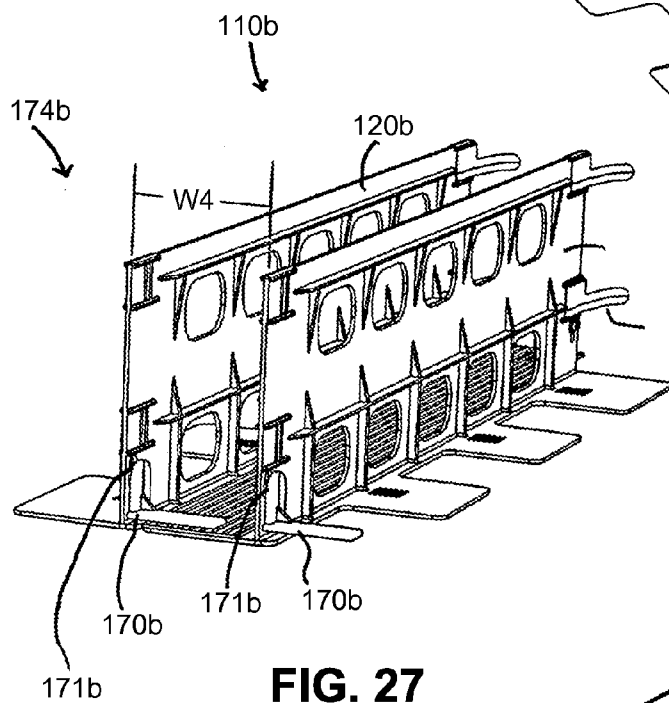
FIG. 24



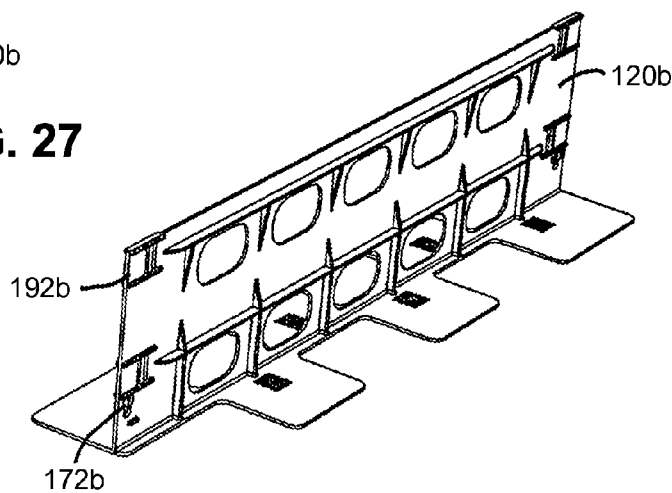
**FIG. 25**

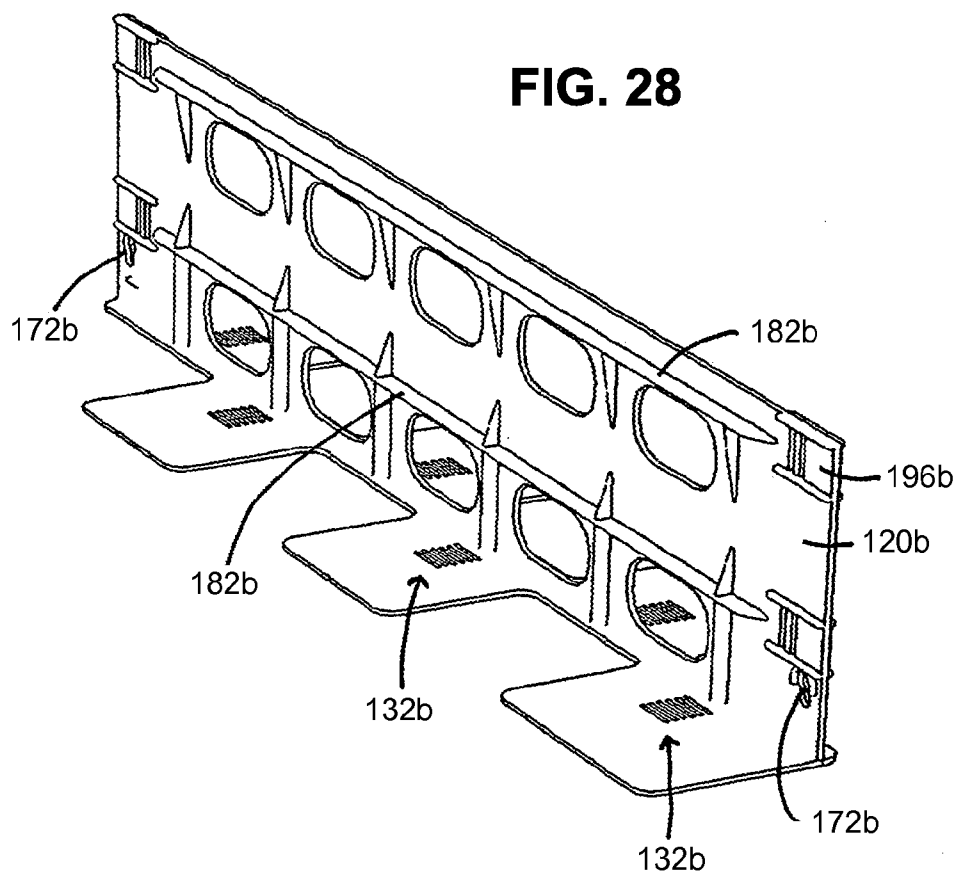


**FIG. 26**

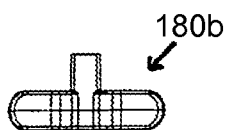


**FIG. 27**

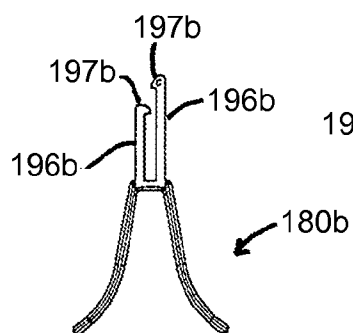
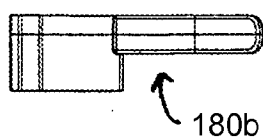




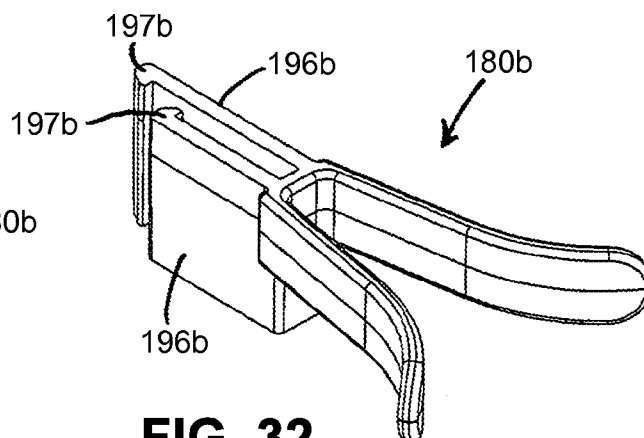
**FIG. 29**



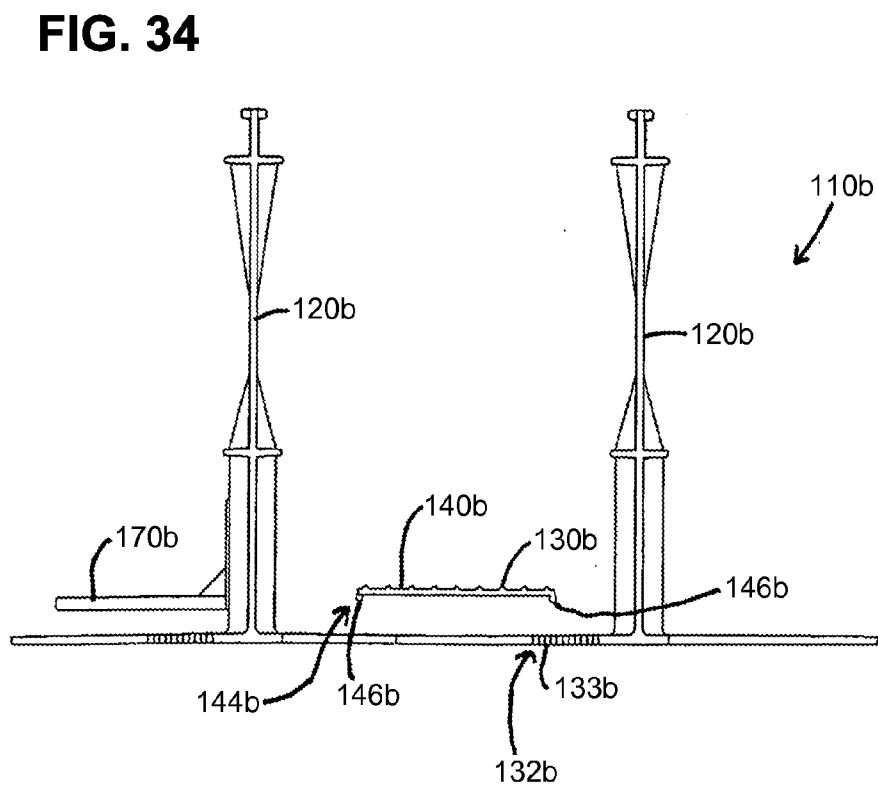
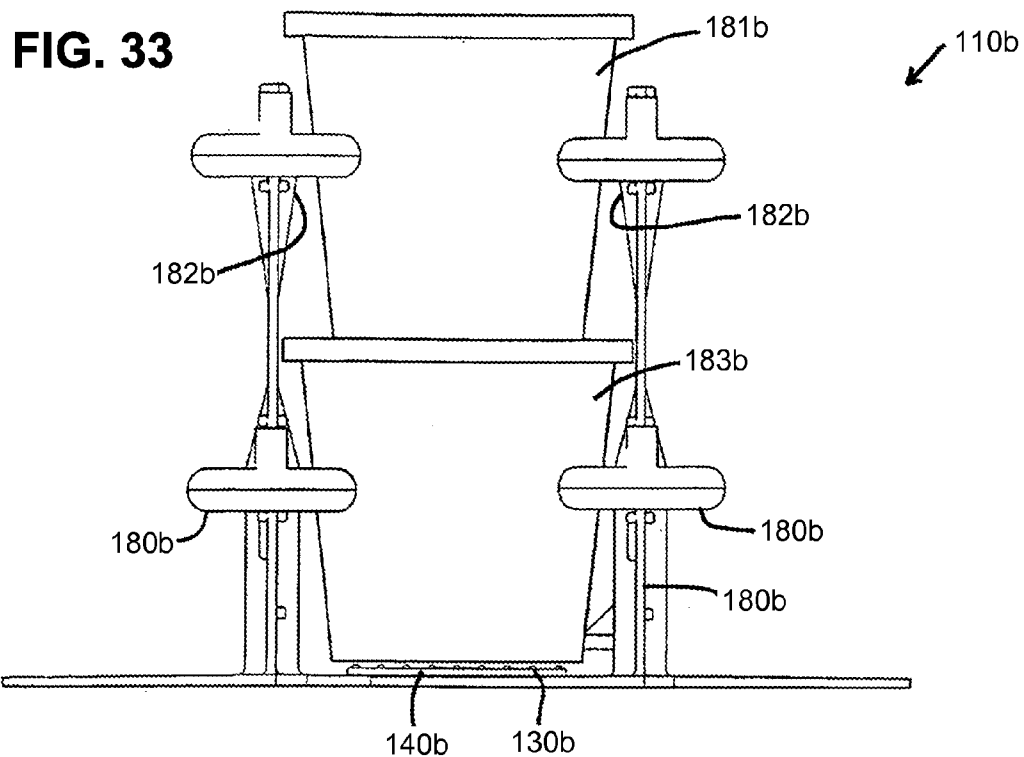
**FIG. 30**



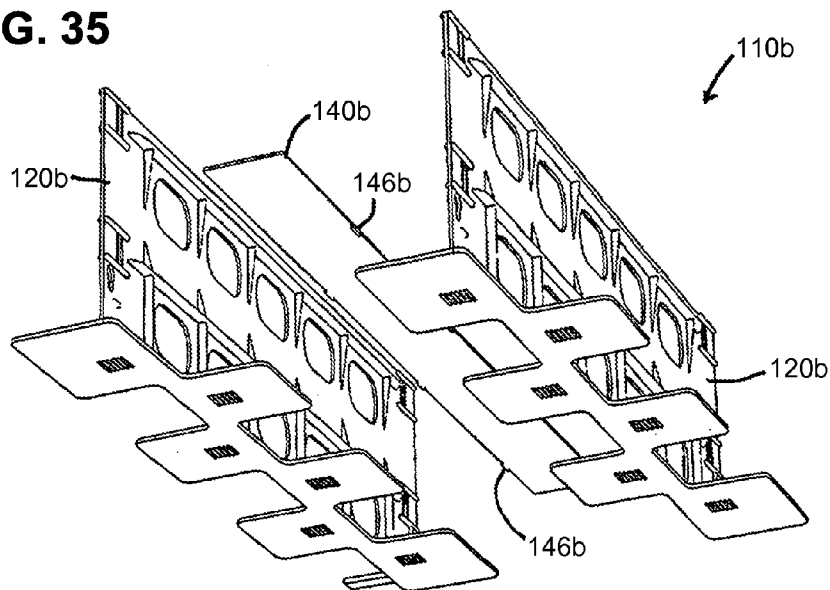
**FIG. 31**



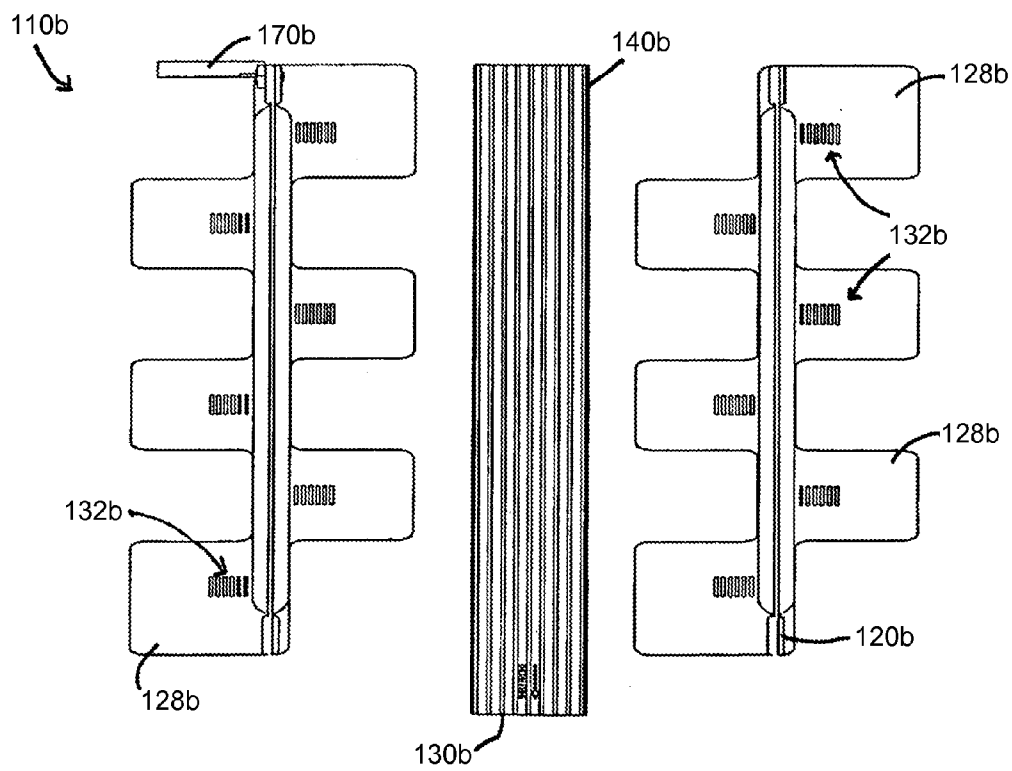
**FIG. 32**



**FIG. 35**



**FIG. 36**



## MERCHANDISING SYSTEM

### CROSS-REFERENCE TO RELATED APPLICATIONS

**[0001]** This application is a continuation application of U.S. application Ser. No. 11/051,040, filed Feb. 4, 2005, which was a continuation-in-part of co-pending U.S. application Ser. No. 10/996,170, filed Nov. 23, 2004, which is a continuation of co-pending International Application No. PCT/US04/023791, filed on Jul. 23, 2004, which claims the benefit of U.S. application Ser. No. 60/489,676, filed on Jul. 23, 2003. This application is a continuation-in-part application of co-pending U.S. application Ser. No. 10/272,527, filed Oct. 15, 2002, which claims the benefit of U.S. application Ser. No. 60/329,656, filed on Oct. 15, 2001. This application is a continuation-in-part application of co-pending U.S. application Ser. No. 10/132,662, filed on Apr. 25, 2002, which claims the benefit of the following patent applications: (1) U.S. application Ser. No. 60/286,892, filed on Apr. 26, 2001, (2) U.S. application Ser. No. 60/313,894, filed on Aug. 21, 2001, (3) U.S. application Ser. No. 60/329,656, filed on Oct. 15, 2001, and (4) U.S. Application Ser. No. 60/335,924, filed on Oct. 31, 2001.

**[0002]** This Application claims the benefit of priority as available under 35 U.S.C. §§ 119-121 and 365 to the following patent applications (which are hereby incorporated by reference in the present Application): (1) U.S. application Ser. No. 11/051,040, filed Feb. 4, 2005; (2) U.S. application Ser. No. 10/996,170, filed on Nov. 23, 2004; (3) International Application No. PCT/US04/023791, filed on Jul. 23, 2004; (4) U.S. application Ser. No. 10/272,527, filed Oct. 15, 2002; (5) U.S. application Ser. No. 10/132,662, filed on Apr. 25, 2002; (6) U.S. application Ser. No. 60/489,676, filed on Jul. 23, 2003; (7) U.S. application Ser. No. 60/286,892, filed on Apr. 26, 2001; (8) U.S. application Ser. No. 60/313,894, filed on Aug. 21, 2001; (9) U.S. application Ser. No. 60/329,656, filed on Oct. 15, 2001; and (10) U.S. application Ser. No. 60/335,924, filed on Oct. 31, 2001.

### FIELD

**[0003]** The present invention relates to merchandising systems and methods. In particular, the present invention relates to a merchandising system providing for orderly presentation, display, storage, arrangement, and dispensing of articles.

### BACKGROUND

**[0004]** It is known to provide for merchandising systems that may be used for displaying and dispensing an article. Such merchandising systems do not realize certain advantageous features (and/or combinations of features). It is also known to provide for a merchandising system that may be used for displaying products in consumer settings such as grocery stores, retail outlets, shops, etc. Such known merchandising systems may be used to present, display and store products in fixed or limited spaces such as on shelves, in display cases, in cabinets, etc.

**[0005]** It is beneficial when merchandising an article such as a product to allow potential customers to view or handle it in a convenient and comfortable manner. Known merchandising systems may display products to a consumer by providing the products in inefficient configurations. Products and product containers come in a variety of sizes and shapes, and some products may be more difficult to merchandise (e.g.,

present for potential retail sale) than others. Within fixed or limited spaces, known merchandising systems may not be configured to optimize the presentation of such products to a consumer. Such known merchandising systems also do not always provide convenient ways for dispensing products, especially those with unique or irregular shapes. Ease of use can be an important concern for customers and store personnel. As is sometimes the case, product or container design may be dictated by considerations separate from the ease or difficulty with which the product may be presented.

**[0006]** Some known merchandising systems may not provide effective arrangements for displaying, storing and presenting articles. Some merchandising systems fail to provide adequate support for articles, as well as smooth, efficient sliding of the article along the length of the system. Some merchandising systems do not provide sufficient arrangements of advancing these types of articles along the merchandising system. Some merchandising systems do not provide strong and/or rigid support for articles. Accordingly, many merchandising systems may not provide articles in a straight, linear, or level arrangement due to sagging, deformation, bowing, deflection and/or movement due to the weight of the articles. In addition, some merchandising systems do not provide for a variety of differently sized articles and are not configured to operate with a variety of shelving structures. Some merchandising systems do not retain articles for proper dispensing. Some merchandising systems are not easily repositionable on a shelving structure. Some known merchandising systems are not configured for easy loading or removal of articles or for at least partially restricting movement of the articles along the system. In addition, some known merchandising systems are not configured to allow multiple products to be stacked on one another. Some known merchandising systems are not configured to prevent articles from sliding in an uncontrolled manner along the length of the system. Some known merchandising systems are not configured to prevent articles from tipping and/or falling from the system, especially during movement of the articles.

**[0007]** Accordingly, it would be advantageous to provide a merchandising system that is configured for stocking, orderly presentation, and convenient storage of products with various shapes including shapes that may not be easily stored, presented, or displayed, such as products with uniquely shaped containers. It would also be advantageous to provide a merchandising system that is configured for selective modularity in the construction and assembly of the merchandising system. It would further be advantageous to provide a merchandising system that allows for the construction and assembly of a merchandising system with any number of product facings, modules, compartments, etc. It would further be advantageous to provide a merchandising system that advances a product and/or allows a product to advance along a defined path. It would further be advantageous to provide a merchandising system that self-faces articles (e.g., allows articles to move to the front of the system after articles are removed). It would be advantageous to provide a merchandising system that is configured to easily move articles along a path for stocking, aligning, and/or facing purposes. It would also be advantageous to provide a merchandising system that allows multiple (levels of) products to be stacked on one another. It would further be advantageous to provide a merchandising system that is configured to at least partially restrict and/or restrain article movement in one or more level. It would further be advantageous to provide a merchandising system

that can evenly distribute the weight of articles and/or products over the length of the system. It would further be advantageous to provide a merchandising system that allows for smooth, controlled, and efficient gliding of articles and/or products along the length of the system. It would further be advantageous to provide a merchandising system that prevents articles from tipping and/or falling when provided in the system, especially during movement of the articles.

[0008] It would be advantageous to provide a system that provides any one or more of these or other advantageous features.

#### BRIEF DESCRIPTION OF THE DRAWINGS

[0009] FIG. 1 is a side perspective view of a merchandising system according to an exemplary embodiment.

[0010] FIG. 2A is a front perspective view of a merchandising system according to an exemplary embodiment.

[0011] FIG. 2B is a front perspective view of a merchandising system according to an exemplary embodiment.

[0012] FIG. 2C is a front perspective view of a merchandising system according to an exemplary embodiment.

[0013] FIG. 3A is an exploded front perspective view of the merchandising system of FIG. 2A according to an exemplary embodiment.

[0014] FIG. 3B is an exploded front perspective view of the merchandising system of FIG. 2B according to an exemplary embodiment.

[0015] FIG. 3C is an exploded front perspective view of the merchandising system of FIG. 2C according to an exemplary embodiment.

[0016] FIG. 4A is an orthogonal front view of the merchandising system of FIG. 2A according to an exemplary embodiment.

[0017] FIG. 4B is a detailed view of a portion of the merchandising system of FIG. 4A according to an exemplary embodiment.

[0018] FIG. 5A is an orthogonal front view of the merchandising system of FIG. 2B according to an exemplary embodiment.

[0019] FIG. 5B is a detailed view of a portion of the merchandising system of FIG. 5A according to an exemplary embodiment.

[0020] FIG. 6A is an orthogonal front view of the merchandising system of FIG. 2C according to an exemplary embodiment.

[0021] FIG. 6B is a detailed view of a portion of the merchandising system of FIG. 6A according to an exemplary embodiment.

[0022] FIG. 7A is an orthogonal top view of the merchandising system of FIG. 2A according to an exemplary embodiment.

[0023] FIG. 7B is an orthogonal top view of the merchandising system of FIG. 2B according to an exemplary embodiment.

[0024] FIG. 7C is an orthogonal top view of the merchandising system of FIG. 2C according to an exemplary embodiment.

[0025] FIG. 8A is a side view of the merchandising system of FIG. 2A according to an exemplary embodiment.

[0026] FIG. 8B is a side view of the merchandising system of FIG. 2B according to an exemplary embodiment.

[0027] FIG. 8C is a side view of the merchandising system of FIG. 2C according to an exemplary embodiment.

[0028] FIG. 9A is a front perspective view of a merchandising system comprising tabs according to an exemplary embodiment.

[0029] FIG. 9B is a front perspective view of a merchandising system comprising tabs according to an alternative embodiment.

[0030] FIG. 10A is a front perspective view of a pusher assembly according to an exemplary embodiment.

[0031] FIG. 10B is a detailed front perspective view of the pusher assembly according to an exemplary embodiment.

[0032] FIG. 10C is a detailed perspective view of the pusher assembly positioned in a slot according to an exemplary embodiment.

[0033] FIG. 11 is a front orthogonal view of a merchandising system according to an alternative embodiment.

[0034] FIG. 12 is an exploded perspective view of a merchandising system according to an exemplary embodiment.

[0035] FIG. 13 is a front perspective view of a merchandising system according to an exemplary embodiment.

[0036] FIG. 14 is an exploded perspective view of a merchandising system according to an exemplary embodiment.

[0037] FIG. 15 is front elevation view of a merchandising system according to an exemplary embodiment.

[0038] FIG. 16 is a bottom perspective view of a merchandising system according to an exemplary embodiment.

[0039] FIG. 17 is a front perspective view of a divider of a merchandising system according to an exemplary embodiment.

[0040] FIG. 18 is detailed view of portion of dividers of a merchandising system according to an exemplary embodiment.

[0041] FIG. 19 is a detailed view of a portion of dividers of a merchandising system according to an exemplary embodiment.

[0042] FIG. 20 is a top elevation view of a member of a merchandising system according to an exemplary embodiment.

[0043] FIG. 21 is a side elevation view of a connector of a merchandising system according to an exemplary embodiment.

[0044] FIG. 22 is a bottom elevation view of a connector of a merchandising system according to an exemplary embodiment.

[0045] FIG. 23 is a front perspective view of a merchandising system according to an exemplary embodiment.

[0046] FIG. 24 is an exploded perspective view of a merchandising system according to an exemplary embodiment.

[0047] FIG. 25 is a bottom perspective view of a merchandising system according to an exemplary embodiment.

[0048] FIG. 26 is a rear perspective view of a merchandising system according to an exemplary embodiment.

[0049] FIG. 27 is a front perspective view of a divider of a merchandising system according to an exemplary embodiment.

[0050] FIG. 28 is a front perspective view of a divider of a merchandising system according to an exemplary embodiment.

[0051] FIG. 29 is a front elevation view of a member of a merchandising system according to an exemplary embodiment.

[0052] FIG. 30 is a side elevation view of a member of a merchandising system according to an exemplary embodiment.

**[0053]** FIG. 31 is a top elevation view of a member of a merchandising system according to an exemplary embodiment.

**[0054]** FIG. 32 is a front perspective view of a member of a merchandising system according to an exemplary embodiment.

**[0055]** FIG. 33 is a front elevation view of a merchandising system according to an exemplary embodiment.

**[0056]** FIG. 34 is a cross-sectional view of the merchandising system of FIG. 23 taken along line 34-34.

**[0057]** FIG. 35 is a bottom exploded perspective view of a merchandising system according to an exemplary embodiment.

**[0058]** FIG. 36 is a top exploded view of a merchandising system according to an exemplary embodiment.

#### DETAILED DESCRIPTION

**[0059]** It is to be understood that the inventions are not limited to the details or methodology set forth in the following description or illustrated in the drawings. The inventions are capable of other embodiments or being practiced or carried out in various ways. It is also to be understood that the phraseology and terminology employed is for the purpose of description and should not be regarded as limiting.

**[0060]** Referring to the FIGURES, exemplary embodiments of a merchandising system are shown. The merchandising system may provide for display, space division, and orderly presentation of products. The merchandising system may provide for selective size (shown as width) adjustment of a product display, "facing," cell, compartment, or display area, while not requiring the width adjustment of adjacent product displays, "facings," cells, compartments, or display areas. As shown in FIG. 1, a merchandising system 10 may provide a large number of facings. Should a single facing need to be adjusted (for example, to accommodate a differently sized product), that single facing may be readily adjusted without the need to resize any (or potentially all) of the remaining facings.

**[0061]** The merchandising system may further provide for modularity in the construction and assembly of the merchandising system. For example, product displays, "facings," cells, compartments, or display areas may be added and/or removed to an existing merchandising system by reconfiguring the number and arrangement of dividers and connectors.

**[0062]** The merchandising system may be a shelf system, shelf divider system, product facing tray system, product self-facing and organization tray system, divider system, shelf tray system, pusher system, dispensing system, tray system, etc. The merchandising system may be provided for use on a shelf (or any portion of a shelf), shelves, racks, displays, or other merchandising systems, or alternatively may be provided as a separate, independent merchandising system. According to other alternative embodiments, the system may be configured or oriented to provide for vertical size (e.g., height) adjustment.

**[0063]** According to an exemplary embodiment shown in FIG. 1, a merchandising system 10 (e.g., grid system, tray system, shelf system, display system, case, divider system, storage system, modular system, etc.) comprises a frame system 12 and a shelving system 14. Frame system 12 (e.g., mounting structure, shelving structure, support, framework, frame, base, bar, grid, housing, storage unit, etc.) comprises a storage unit 52 and a lower portion 48 or section. According to an exemplary embodiment, the system is a refrigerated

system configured to display, store and/or dispense product. According to an exemplary embodiment, the system may be configured to contain products and/or containers for food-stuffs or the like, such as yogurt, to be

**[0064]** As shown in FIG. 1 storage unit 52 (e.g., support, frame, mount, member, wall, grid, unit, container, etc.) or other support is provided for use with frame system 12. According to an exemplary embodiment shown in FIG. 1 storage unit 52 comprises at least one side 22 and a top section 24 (e.g., top portion, section, overhead, roof, housing, cap, cover, etc.). The sides may be provided with one or more aperture and/or slot for providing an arrangement for positioning the shelving system with respect to the frame system. According to alternative embodiments, any suitable device and/or process may be used to secure the shelving system to the frame system. According to various alternative embodiments, a wide variety of storage units, shafts, supports, sides, covers, etc. may be provided in the merchandising system. According to alternative embodiments, the number, size, position, overall configuration, etc. of the storage unit may vary.

**[0065]** As shown in FIG. 1 lower portion 48 (e.g., bottom area or section, concavity, opening, area, basket, basin, reservoir, channel, well, etc.) or other area is provided for use with frame system 12. According to an exemplary embodiment shown in FIG. 1, lower portion 48 comprises an area below sides 22, top section 24 and/or shelving system 14. Lower portion 48 is configured to hold, store and/or display various articles. According to various alternative embodiments, a wide variety of bottom sections, openings, areas, channels, etc. may be provided in the merchandising system. According to alternative embodiments, the number, size, position, overall configuration, etc. of the bottom section may vary.

**[0066]** As shown in FIG. 1, shelving system 14 (e.g., frame, tray, shelf system, holder, mounting section or area, etc.) is provided for use with merchandising system 10. According to an exemplary embodiment shown in FIG. 1, shelving system 14 comprises a shelf 54.

**[0067]** According to an exemplary embodiment shown in FIG. 1, shelf 54 (e.g., support, frame, guide, beam, ledge, bar, etc.) comprises a body portion 56 and a first end 58. Referring to FIG. 1, body portion 56 (e.g., member, straight section or portion, main section or portion, etc.) is configured to receive and support products as provided in various merchandising systems.

**[0068]** Referring to FIG. 1, member or body portion 56 has a generally uniform cross-section and is configured to have a longitudinal axis (from a back end to a front end). According to other embodiments, the body portion may have a cross-section of various shapes (e.g., triangular, rectangular, oval, etc.) and its longitudinal axis may be other than straight (such as curved or arched) and may extend at various angles with respect to the Z-Z axis. Further, the cross-section of the body portion may be non-uniform.

**[0069]** According to an exemplary embodiment shown in FIG. 1, body portion 56 extends at a downward angle with respect to the Z-Z axis (e.g., sloping toward the ground and/or horizontal). The angled configuration enables articles to slide toward first end 58 as other articles are removed from shelf 54. For example, as an article located nearest first end 58 is removed, the next product in line is urged forward by gravity toward first end 58.



[0070] Shown in FIG. 2A is a first exemplary embodiment of a merchandising system 10a, shown in FIG. 2B is a second exemplary embodiment of a merchandising system 10b, and shown in FIG. 2C is a third exemplary embodiment of a merchandising system 10c, wherein each system may be used with the system described with respect to FIG. 1. As shown, merchandising systems 10a, 10b, 10c have modular configurations that include one or more dividers 20a, 20b, 20c (which may be panels, dividers, separators, divisions, partitions, tracks, extrusions, panels, channels, or other panels or members, frames, supports, walls, partitions, guides, etc.) and one or more connectors 40a, 40b, 40c (which may be interfaces, couplings, connecting members, adjustment members, “combs,” connector modules, etc.). Dividers 20a, 20b, 20c provide space division, separation, organization, and merchandise variously sized products (not shown). Adjacent dividers 20a, 20b are coupled with an intermediate link or connector 40a, 40b. Adjacent dividers 20c are coupled directly to one another.

[0071] Dividers 20a are shown in FIGS. 2A, 3A, 4A, 4B, 7A, and 8A. Dividers 20b are shown in FIGS. 2B, 3B, 5A, 5B, 7B, and 8B. Dividers 20c are shown in FIGS. 2C, 3C, 6A, 6B, 7C, and 8C. Dividers 20a, 20b, 20c comprise a panel section (shown as portion 26a, 26b, 26c) and one or more horizontal portions or sections (shown as portions 28a, 28b, 28c). The divider (which may be tracks, extrusions, panels, channels, open frame or rail, etc.) may be provided in a variety of configurations. According to one particularly preferred embodiment, dividers 20a, 20b include end dividers and center dividers. End dividers have an “L-shaped” cross section. Center dividers have a “T-shaped” cross section. End dividers and center dividers may include solid portions and/or portions that include apertures or cut-outs. Divider 20a (shown in FIGS. 2A, 3A, 4A, 4B, 7A, and 8A) and 20b (shown in FIGS. 2B, 3B, 5A, 5B, 7B, and 8B) provide a horizontal section, or portion (shown as portions 28a, 28b), and a panel section, vertical section, division panel or portion (shown as portions 26a, 26b). Portions 26a, 26b and 28a, 28b form a “T-shaped” cross-section. The end dividers comprise one portion 28a, 28b on one side of portion 26a, 26b to form an “L-shaped” cross-section. Portion 28a is provided with friction reducing ribs or protrusions (shown as ribs 30a). Ribs 30a provide friction reduction on a product support surface (e.g., portion 28a) such that product which is being displayed or supported on merchandising system 10a may move more easily along the length of divider 20a.

[0072] According to an exemplary embodiment shown in FIGS. 2C, 3C, 6A, 6B, 7C, and 8C, divider 20c has a “C-shaped” cross-section. Divider 20c includes a vertical section or portion 26c, a lower horizontal section 28c, and an upper horizontal portion 29c. Portions 28c and 29c are configured to attach to portions of adjacent dividers 20c. Portions 29c provide additional support for system 10c. According to various exemplary embodiments, dividers 20c may be connected together according to any suitable method (e.g., fasteners, adhesives, sonic welding, etc.). Once a desired number of dividers 20c have been connected, a separate wall 27c is coupled to the end divider to form system 10c. According to various alternative embodiments, any number of devices may be used instead of wall 27c (e.g., a separate end divider may be used that includes two side walls, an upper portion, and a lower portion). Portions 29c, 26c, and wall 27c are shown including apertures 31c. Apertures 31c may be used to reduce the amount of material required to manufacture the system

and can reduce production costs. According to an alternative embodiment, dividers 20c may have an “L-shaped” cross-section. Instead of included portions 29c which are integrally formed as part of dividers 20c, a separate top portion may be provided that couples to the dividers to provide overall structural support to the system. The top portion may couple to the end portions and center portions according to any suitable arrangement (e.g., fasteners, adhesives, sonic welding, etc.). The top portion may align with the end dividers to provide an overall rectangle shape. According to alternative embodiments, any number of shapes may be used (e.g., square, pyramid, curved, etc.).

[0073] Divider 20a further includes one or more engagement portions 32a configured to engage, couple, connect, coact or otherwise interface with connector 40a. As shown in FIG. 4A, engagement portion 32a comprises a projection or leg 34a provided on a bottom side of divider 20a. Leg 34a is configured to engage with connector 40a. According to a particularly preferred embodiment, leg 34a engages connector 40a via a friction-fit or interference-fit. According to another particularly preferred embodiment shown in FIG. 4B, leg 34a may be provided with a groove or depression (shown as depression 36a) which is configured to interface with a projection 42a on a tooth 44a of a groove 46a of connector 40a.

[0074] According to a second and third embodiment shown in FIGS. 5A, 5B and 6A, 6B, dividers 20b and 20c include one or more engagement portions 32b and 32c on a top side of dividers 20b and 20c. The bottom sides of dividers 20b and 20c are configured to lay (e.g., rest) directly on a shelf (e.g., shelf 54 shown in FIG. 1). Engagement portions 32b and 32c are configured to engage with grooves 46b, 46c of connectors 40b and 40c (e.g., projections 42b, 42c and teeth 44b, 44c) and comprise projections or legs 34b and 34c. According to an alternative embodiment, the divider may be provided without engagement portions. The connector 40c may be configured to lay (e.g., rest) on top of the horizontal surface of the divider and remain movable with respect to the divider. According to an exemplary embodiment, the connector may include a flat undersurface that rests on the divider. According to various alternative embodiments, any number of configurations may be utilized.

[0075] As shown in FIGS. 3A and 3B, dividers 20a, 20b may be further provided with a slot 50a, 50b (which may be a slot, channel, track, guide, pusher track, etc.) for receiving a pusher assembly 60a, 60b or other product biasing mechanism (e.g., arm, rod, member, puller, etc.). It should be noted that the various embodiments of the merchandising system shown may be used with any type of panel or divider sections (or partitions), including merchandising systems that are provided without pushers or product biasing mechanisms (e.g., system 10c). According to various other exemplary embodiments, the slot may be omitted (e.g., system 10c).

[0076] Dividers 20a, 20b include guides 78a, 78b (e.g., runners, tabs, ribs, supports, etc.) located along the sides of dividers 20a, 20b. According to an exemplary embodiment, guides 78a, 78b are coupled to (e.g., attached to, affixed to, etc.) dividers 20a, 20b. Guides 78a, 78b have an overall circular cross-section with a substantially hollow interior portion 84a, 84b. According to alternative embodiments, the guides may have a cross section of any other suitable shape (e.g., oval, triangular, rectangular, etc.) that will allow articles to be positioned on the shelf. Guides may be used to direct (e.g., guide) the articles along the shelf as they are dispensed.

According to an exemplary embodiment, guides **78a**, **78b** provide at least some resistance to prevent sliding of the article when not being dispensed or to slow the dispensing of articles. According to various embodiments, the guides may be integrally formed with the sides of the frame. According to various alternative embodiments, the guides may be formed separately and then connected to the frame by suitable attachment process (e.g., gluing, taping, adhering, sonic welding, etc.).

[0077] According to an alternative embodiment shown in FIGS. 2C, 3C, and 6B, guides **78c** include channels or tracks **82c**. Tracks **82c** are intended to provide additional support for products that slide along the system. According to a preferred embodiment shown in FIGS. 2C, 6A, 6B and 8C, a second product (shown as yogurt container **81c**) is supported entirely by a first product (shown as yogurt container **83c**). As each product slides along the system, the second product may become unstable. Tracks **82c** provide support to a lower portion of the second product to maintain stability of the second product and prevent the second product from falling over. According to alternative embodiments, the tracks may completely and/or at least partially support the products when provided in the system (e.g., some or all articles may be supported by the track if an article becomes displaced).

[0078] Connectors **40a** (shown in FIGS. 2A, 3A, 4A, 4B, 7A, and 8A), **40b** (shown in FIGS. 2B, 3B, 5A, 5B, 7B, and 8B), **40c** (shown in FIGS. 2C, 3C, 6A, 6B, 7C, and 8C) of merchandising systems **10a**, **10b**, **10c** may be flat elongated members (which may be a web, mat, etc.). As shown in FIGS. 4A-4B, 5A-5B, and 6A-6B, connectors **40a**, **40b**, **40c** may be provided with a series of grooves **46a**, **46b**, **46c** (which may be notches, grooves, cuts, etc.) thereby forming a series of teeth **44a**, **44b**, **44c** (which may be projections, extensions, etc.). According to various alternative embodiments, a connector may be provided with a series or index of grooves along a portion (either width or length) of the connector (i.e., provided along a partial width or partial length of the connector). According to various alternative embodiments, grooves may be provided at any desired spacing, with any desired number of grooves.

[0079] Connectors **40a**, **40b**, **40c** configured to coact (e.g., receive, couple, engage or otherwise connect) with dividers **20a**, **20b**, **20c**. As shown in FIGS. 4A-4B, 5A-5B, and 6A-6B, the width of grooves **46a**, **46b**, **46c** is approximately equal to the width of legs **34a**, **34b**, **34c** on dividers **20a**, **20b**, **20c**. Legs **34a**, **34b**, **34c** are intended to provide for a more secure engagement between the connectors **40a**, **40b**, **40c** and dividers **20a**, **20b**, **20c**, by “snapping” or projecting into recess or grooves **46a**, **46b**, **46c**. According to an exemplary embodiment, the projections are slightly rounded along a bottom edge so that they may “snap” into the slots on the connectors. For example, grooves **46a**, **46b**, **46c** include “teeth” or extensions **44a**, **44b**, **44c** along the upper portion that are configured to grip rounded edges **36a**, **36b**, **36c** of legs **34a**, **34b**, **34c**.

[0080] As shown in FIGS. 4A-4B, 5A-5B, and 6A-6B, connector **40a** engages the bottom side of dividers **20a** whereas connectors **40b**, **40c** engage the upper side of dividers **20b**, **20c**. Connectors **40b**, **40c** are intended to extend substantially the length of dividers **20b**, **20c**. Connectors **40b**, **40c** advantageously allow products to slide along an entire solid surface. Connectors **40b**, **40c** are provided with friction reducing ribs or protrusions (shown as ribs **30b**, **30c**). Ribs **30b**, **30c** provide friction reduction on a product support surface such that product which is being displayed or sup-

ported on merchandising system **10a** may move more easily along the length of connector **40b**, **40c**.

[0081] According to an alternative embodiment, the connector may be provided with a series of straight grooves and teeth. According to other various alternative embodiments, a variety of shapes, sizes, spacings, arrangements, and other configurations may be provided with the connector. According to various alternative embodiments, the connector may comprise tabs or teeth that interlock with the dividers in predetermined locations, thereby adjusting the distance between dividers. According to various other embodiments, the connector may comprise slide mechanisms that enable the divider to slide from one position to another. According to various other embodiments, the connector may comprise any other suitable mechanism for adjusting the divider position, configuration, orientation, etc.

[0082] Connectors **40a**, **40b**, **40c** may be provided in one or a variety of unit sizes (e.g., length or width) or shapes (e.g., orthogonal or diagonal or curved). According to a particularly preferred embodiment, connector **40a** has a length in the range of about 2 to 8 inches. According to another particularly preferred embodiment, connector **40a** has a length of about 2 to 4 inches. Alternatively, the connector may be provided in (or may be “field-cut” to) a variety of lengths or sizes which allow for the connectivity and/or interface with dividers. According to an exemplary embodiment, connectors **40b**, **40c** have lengths in the range of about 10.0 inches to 36.0 inches. According to a preferred embodiment, connectors **40b**, **40c** have lengths in the range of about 14 inches to about 26 inches.

[0083] One or more connectors may be provided between adjacent dividers. Providing one connector between adjacent dividers allows the connector to be easily accessed from the front, thereby allowing for adjustment to be accomplished relatively easily. Providing two connectors between adjacent dividers provides for added stability between adjacent dividers.

[0084] According to an exemplary embodiment shown in FIGS. 2A through 3C, a display portion or device **70a**, **70b**, **70c** may be attached to shelving systems **10a**, **10b**, **10c** for displaying information about the articles (e.g., price, manufacturer, bar code, etc.). As shown in FIGS. 2A through 3C, display portions **70a**, **70b**, **70c** include a front slot or channel **86a**, **86b**, **86c** configured to receive graphics, pricing, bar codes, and/or other information. Channels **86a**, **86b**, **86c** are configured to provide a “stop” for products that are located at the front of the systems. As products advance toward the front of the systems, the products reach channels **86a**, **86b**, **86c** provide a surface for at least partially restraining movement of the products. According to an exemplary embodiment, the lower portions of products rest against the display portions. Display portions **70a**, **70b**, **70c** include back portions **88a**, **88b**, **88c** which are intended to lay on the shelf. According to various embodiments, any suitable device or method may be used to secure the display portion to the shelving system (e.g., gluing, taping, adhering, fastening, etc.). According to an exemplary embodiment, the display portion may be integrally formed with the shelf, divider, and/or connector.

[0085] According to an exemplary embodiment shown in FIGS. 2A through 3C and 9A through 9B, a tab **80a**, **80b**, **80c** (e.g., front stop, stopper, block, obstruction, plug, cap, etc.) is provided with dividers **20a**, **20b**, **20c** that couples to (e.g., connects to, attaches to, is affixed to, etc.) front ends **62a**, **62b**, **62c** of dividers **20a**, **20b**, **20c**. As shown in FIGS. 2A, 2B, 3A,

and 3B, tabs **80a**, **80b** are attached to guides **78a**, **78b**, (e.g., in interior hollow portions **84a**, **84b** of guides **78a**, **78b**) by way of a fastening device (shown as screw **92a** in FIG. 9A) such as a nail, screw, clip, etc. The tab may be coupled to the divider according to any suitable device or method, and may be formed separately or integrally with the divider. According to an alternative embodiment shown in FIGS. 2C, 3C, and 9B, tab **80c** attaches to divider **20c** by sliding into a channel **94c** located on divider **20c**. Tab **80c** includes two members **96c** configured to fit within channels **94c** positioned on each side of divider **20c**. Tab **80c** is held in place by friction between members **96c** and channels **94c**. Ridges may be included on the members and/or the channels to increase resistance. As shown in FIGS. 2A through 3C and 9A through 9B, tabs **80a**, **80b**, **80c** include gripped surfaces **98a**, **98b**, **98c**. Gripped surfaces **98a**, **98b**, **98c** allow articles to be dispensed as desired by providing enough resistance to keep the articles from inadvertently sliding from the merchandising system.

[0086] Tab **80a**, **80b** is preferably configured such that it restrains the movement of articles being dispensed or urged forward by gravity. According to an exemplary embodiment, tabs **80a**, **80b**, **80c** include an outer curved portion **79a**, **79b**, **79c** configured to provide a return angle for easy reloading of the system. According to an exemplary embodiment, the tabs provided on the divider provide resistance against force applied by the pusher assembly urging articles toward the front of the shelf. In the illustrated embodiment, the tabs are configured such that the removal of an article from the shelf requires more force than the angle of the shelf provides. As shown in FIGS. 7A and 7C, as articles are removed through tabs **80a** and **80c**, members **96a** and **96c** move in the direction of the arrows (yogurt containers **103a**, **102c** at sections "D"). When products are stocked and/or returned through the members, outer curved portions **79a**, **79c** move in the direction of the arrows to allow the product to be placed in the system. The angle of the shelf provides enough force to overcome the friction that may be present between the articles and the shelf, thereby enabling movement of the articles toward the first end of the shelf. According to alternative embodiments, other members may be provided to restrain such movement.

[0087] According to an exemplary embodiment, pusher assembly **60a**, **60b** (e.g., follower, puller, plate, hook, pull tab, paddle, pusher, biasing device, etc.) is provided with systems **10a**, **10b**. Pusher assemblies **60a**, **60b** are provided for use with merchandising systems **10a**, **10b** for urging articles in one direction or another. According to exemplary embodiments shown in FIGS. 2A, 2B, 3A, and 3B, pusher assemblies **60a**, **60b** include plates **64a**, **64b** (e.g., hooks, pullers, tabs, etc.) and members **66a**, **66b** (e.g., rods, extensions, arms, etc.). According to a preferred embodiment, plates **64a**, **64b** and members **66a**, **66b** are integrally formed as one piece. According to various other embodiments, the plate and member may be formed separately and then attached according to any suitable method (e.g., gluing, taping, adhering, etc.). According to an exemplary embodiment shown in FIGS. 2A, 2B, 3A, and 3B, pusher assemblies **60a**, **60b** are provided for contacting, coacting, biasing, pushing and/or pulling articles placed in merchandising systems **10a**, **10b**. According to alternative embodiments, the pusher assembly may be provided in a variety of sizes and shapes depending on the particular needs associated with the overall merchandising system.

[0088] According to an exemplary embodiment shown in FIGS. 2A, 2B, 3A, and 3B, pusher assemblies **60a**, **60b**

include members **66a**, **66b** which slide through a slot or channel **50a**, **50b** of dividers **20a**, **20b**. According to an exemplary embodiment, pusher assemblies **60a**, **60b** are configured to move (and thereby pull articles) toward a rear **16a**, **16b** of merchandising systems **10a**, **10b**. According to alternative embodiments, the member may be attached to the guide by any other suitable arrangement such as fasteners, screws, rivets, bolts, snaps, clips, clamps or other various connectors or connection methods. As shown in FIGS. 3A and 3B, members **66a**, **66b** may include a handle **72a**, **72b** at an end **68a**, **68b** of members **66a**, **66b**. Handles **72a**, **72b** act to prevent members **66a**, **66b** from sliding too far along slots **50a**, **50b** because handles **72a**, **72b** are configured to be larger than the diameter of slot openings at the rear of the dividers. As shown in FIGS. 10A through 10C, members **66a**, **66b** include a raised portion **74a**, **74b** (which may be a bump, extension, etc.) configured to provide tension against slots **50a**, **50b** as members **66a**, **66b** are slid through slots **50a**, **50b**. According to an exemplary embodiment, members **66a**, **66b** include apertures or openings **76a**, **76b**. Openings **76a**, **76b** are located adjacent to raised portions **74a**, **74b** to provide some flexibility as raised portions **74a**, **74b** slide along slots **50a**, **50b**. Openings **76a**, **76b** are able to flex inward as members **66a**, **66b** are moved along slots **50a**, **50b**. According to an exemplary embodiment, pusher assemblies **60a**, **60b** may be provided with indicia (e.g., on the face) and may be provided in a variety of sizes and shapes to suit the application (e.g., product size).

[0089] According to an alternative embodiment shown in FIG. 12, pusher assembly **60d** is pulled toward a front **18d** of system **10d**. Preferably, system **10d** is used with a substantially horizontal shelf so that pusher assembly **60d** is used to pull articles toward front **18d** to align products after supplies have been depleted by customers (e.g., less products left on the shelf). When stocking, articles are fed through tabs **80d** at front **18d** of system **10d**. The articles push assembly **60d** backwards toward a rear **16d** of system **10d**.

[0090] According to an exemplary embodiment shown in FIG. 8A, articles **90a** (shown as yogurt containers) may be stocked (e.g., loaded) in multiple layers (preferably two levels of yogurt containers) on merchandising system **10a** along wire shelf supports **55a**. System **10a** includes wire connectors **57a** for coupling or engaging wire shelf supports **55a**. According to an exemplary embodiment, wire connectors may be provided. Similarly, any number of systems may be provided on wire shelf supports. According to the exemplary embodiment shown in FIG. 8A, wire shelf supports **55a** provide an overall downward angle with respect to the Z-Z axis. According to an exemplary embodiment, wire shelf supports **55a** create an angle in the range of about 4 to 10 degrees with respect to the Z-Z axis (e.g., the horizontal). According to a preferred embodiment, wire shelf supports **55a** creates an angle of about 6 to 8 degrees with respect to the Z-Z axis. Articles may be stocked (e.g., loaded) in multiple layers from either the front or rear of the merchandising system. According to a preferred embodiment, articles are stocked onto the merchandising system from rear end **16a**. Before stocking the articles, pusher assembly **60a** is pulled toward rear end **16a** of system **10a**. As articles **90a** are loaded onto dividers **20a**, pusher assembly **60a** provides resistance or a biasing force against the articles so that each article does not slide in an uncontrolled manner toward front end **18a** of system **10a**. If the articles are free to slide toward front end **18a**, the articles could tip over or fall from the merchandising system alto-

gether. After dividers **20a** have been fully (or partially loaded) as desired, pusher assembly **60a** is positioned at front end **18a** of system **10a** by sliding pusher assembly **60a** along slot **50a**, thereby allowing articles **90a** to slide to front end **18a** as well. Pusher assembly **60a** may then remain at front end **18a** as articles are dispensed. The process may be repeated as necessary each time the shelf is stocked. (See FIG. 7A). According to an alternative embodiment, the pusher assembly may be provided without the guides that are intended to provide suitable resistance to prevent articles from tipping over or falling out of the system when sliding along connector. Guides **78a** are configured to provide support to the sides of articles loaded in the system as the articles advance.

[0091] According to a second embodiment shown in FIG. 8B, articles **90b** (shown as yogurt containers) may be stocked (e.g., loaded) in multiple layers (preferably two or three levels of yogurt containers) on merchandising system **10b** along shelves **54b**. Shelf **54b** is angled downward with respect to the Z-Z axis in FIG. 8B. According to an exemplary embodiment, shelf **54b** is at an angle in the range of about 2 to 10 degrees with respect to the Z-Z axis (e.g., the horizontal). According to a preferred embodiment, shelf **54b** is at an angle of about 4 to 7 degrees with respect to the Z-Z axis. Articles may be stocked (e.g., loaded) in multiple layers from either the front or rear of the merchandising system. According to a preferred embodiment, articles are stocked onto the merchandising system from rear end **16b**. Before stocking the articles, pusher assembly **60b** is pulled toward rear end **16b** of shelf **54b**. As articles **90b** are loaded onto shelf **54b**, pusher assembly **60b** provides resistance or a biasing force against the articles so that each article does not slide in an uncontrolled manner toward front end **18b** of system **10b**. If the articles are free to slide toward front end **18b**, the articles could tip over or fall from the merchandising system altogether. After shelf **54b** has been fully (or partially loaded) as desired, pusher assembly **60b** is positioned at front end **18b** of shelf **54b** by sliding pusher assembly **60b** along slot **50b**, thereby allowing articles **90b** to slide to front end **18b** as well. Pusher assembly **60b** may then remain at front end **18b** as articles are dispensed. The process may be repeated as necessary each time the shelf is stocked. According to an alternative embodiment, the pusher assembly may be provided without guides that are intended to provide suitable resistance to prevent articles from tipping over or falling out of the system when sliding along the connector. Guides **78b** are configured to provide support to the sides of articles loaded in the system as the articles advance.

[0092] According to a second embodiment shown in FIG. 8C, articles **90c** (shown as yogurt containers) may be stocked (e.g., loaded) in multiple layers (preferably three levels of yogurt containers) on merchandising system **10c** along shelves **54c**. Shelf **54c** is angled downward with respect to the Z-Z axis in FIG. 8C. According to an exemplary embodiment, shelf **54c** is at an angle in the range of about 2 to 10 degrees with respect to the Z-Z axis (e.g., the horizontal). According to a preferred embodiment, shelf **54c** is at an angle of about 6 to 8 degrees with respect to the Z-Z axis. Articles may be stocked (e.g., loaded) in multiple layers from either the front or rear of the merchandising system. According to a preferred embodiment, articles are stocked onto the merchandising system from rear end **16c**. Tracks **82c** are intended to provide support if needed to prevent articles from tipping over or falling out of the system when sliding along connector **40c**. Tracks **82c** are configured to provide support to portions of

articles loaded in that begin to tip over or fall out of the system as the articles advance. Under normal use, tracks **82c** are not intended to contact the articles (e.g., yogurt containers) which are supported by either connector **40c** (e.g., the bottom yogurt container) or a yogurt container underneath a particular yogurt container. According to an alternative embodiment, a pusher assembly may be utilized to help prevent articles from sliding at an undesirable rate along the system.

[0093] Shown in FIG. 13 is a first exemplary embodiment of a merchandising system **110a** and shown in FIG. 23 is a second exemplary embodiment of a merchandising system **110b**, wherein each system may be used with the system described with respect to FIG. 1. As shown in FIGS. 13 and 23, merchandising systems **110a**, **110b** have modular configurations that include one or more dividers **120a**, **120b** (which may be panels, dividers, separators, divisions, partitions, tracks, extrusions, panels, channels, or other panels or members, frames, supports, walls, partitions, guides, etc.) and one or more members or connectors **140a**, **140b** (which may be interfaces, couplings, connecting members, adjustment members, "combs," connector modules, tracks, etc.). Dividers **120a**, **120b** provide space division, separation, organization, and merchandise variously sized products. Adjacent dividers **120a** are coupled directly to one another. Adjacent dividers **120b** are coupled with an intermediate link or connector **140b**.

[0094] Dividers **120a** are shown in FIGS. 13 through 19. Dividers **120b** are shown in FIGS. 23 through 28 and 33 through 36. Dividers **120a**, **120b** comprise a panel section (shown as portion **126a**, **126b**) and one or more horizontal portions or sections (shown as portions **128a**, **128b**). The divider (which may be tracks, extrusions, panels, channels, open frame or rail, etc.) may be provided in a variety of configurations. According to one particularly preferred embodiment, dividers **120a**, **120b** include end dividers and center dividers. The dividers may have an "L-shaped" cross section and/or the dividers may have a "T-shaped" cross section. The dividers may include solid portions and/or portions that include apertures or cut-outs. Divider **120a** (shown in FIGS. 13 through 19) and **120b** (shown in FIGS. 23 through 28 and 33 through 36) provide a horizontal section, or portion (shown as portions **128a**, **128b**), and a panel section, vertical section, division panel or portion (shown as portions **126a**, **126b**). As shown in FIGS. 25, 35 and 36, portions **126b** of system **110b** are laterally spaced apart on a single side of divider **120b** and are staggered on each side of divider **120b**. The staggered configuration allows the system to provide additional support to products while reducing the amount of material needed to manufacture the dividers. Member **140a**, **140b** may be provided on portion **128a** and includes friction reducing ribs or protrusions (shown as ribs **130a**, **130b**). Ribs **130a**, **130b** provide friction reduction on a product support surface (e.g., portion **128a**, **128b**) such that product which is being displayed or supported on merchandising system **110a**, **110b** may move more easily along the length of divider **120a**, **120b**. According to an exemplary embodiment, dividers **120a**, **120b** include vertical ribs **122a**, **122b** (e.g., bars, members, supports, etc.) for added rigidity and/or stability. The ribs may be integrally formed with the divider, formed separately from the divider and fastened according to a suitable manner, etc. According to various exemplary embodiments, the dividers may be connected together according to any suitable method (e.g., fasteners, connectors, adhesives, sonic welding, etc.). Once a desired number of dividers have been

connected, a separate wall may be coupled to the end divider to form the system. According to various alternative embodiments, any number of devices may be used instead of a wall (e.g., a separate end divider may be used that includes two side walls, an upper portion, and a lower portion). According to a particularly preferred embodiment, the dividers comprise a “fixed width” system and are not intended to be adjustable in width once connected to adjacent dividers (e.g., the width between adjacent dividers is not intended to be adjustable).

**[0095]** As shown in FIGS. 13, 14, 21 and 22, separate connectors **150a** (e.g., fasteners, clips, members, “snap-on top cap,” etc.) are provided that couple dividers **120a** together to provide overall structural support to the system. The connectors are configured to couple to the end portions and center portions according to any suitable arrangement (e.g., fasteners, adhesives, sonic welding, etc.). As shown in FIGS. 13 and 14, connectors **150a** couple to upper edges **152a** of dividers **120a** within channels or grooves **154a** of connectors **150a**. Grooves **154a** comprise legs **156a** configured to be inserted into apertures **158a** (e.g., slots) provided on dividers **120a**. The connectors may align with the dividers to provide an overall rectangle shape. Connectors **150a** may be locked in place by applying downward force to cause connectors **150a** and divider apertures **158a** to engage. According to other alternative embodiments, any number of shapes may be used (e.g., square, pyramid, curved, etc.). Connectors **150a** may comprise apertures or cut-outs **159a** to reduce manufacturing costs. Connectors **150a** comprise staggered legs **156a** so that a single mold may be used to make each connector used in system **110a**. A staggered configuration is intended to allow the connectors to couple to the dividers at different locations on adjacent dividers.

**[0096]** Divider **120a** further includes one or more engagement portions **132a** (e.g., interlocking arrangements such as coacting “dovetail” members) configured to engage, couple, connect, coact or otherwise interface with apertures or openings **121a** provided on the sides of dividers **120a**. As shown in FIGS. 16 and 18, engagement portion **132a** comprises a projection or leg **134a** provided on a bottom side or edge of divider **120a**. Leg **134a** is configured to engage with apertures **121a**. According to a particularly preferred embodiment, leg **134a** engages apertures **121a** with a friction-fit or interference-fit to couple adjacent dividers together.

**[0097]** According to an exemplary embodiment shown in FIGS. 23, 28, 34 and 36, dividers **120b** include one or more engagement portions **132b** (e.g., grooves) on a top side of dividers **120b**. The bottom sides of dividers **120b** are configured to lay (e.g., rest) directly on a shelf (e.g., shelf **54** shown in FIG. 1). Engagement portions **132b** are configured to engage with projections **146b** (e.g., teeth) of connectors **140b** and comprise channels or grooves **133b**. According to an alternative embodiment, the divider may be provided without engagement portions of the type shown in the FIGURES. The connector may be configured to lay (e.g., rest) on top of the horizontal surface of the divider and remain movable with respect to the divider. According to an exemplary embodiment, the connector may include a flat undersurface that rests on the divider. According to various other alternative embodiments, any number of configurations may be utilized.

**[0098]** According to an exemplary embodiment shown in FIGS. 13-15, 17, 19, 23, 28, and 33, dividers **120a**, **120b** include channels or tracks **182a**, **182b**. Tracks **182a**, **182b** are intended to provide additional support for products that slide along the system. According to a preferred embodiment

shown in FIGS. 15 and 33, a second product (shown as yogurt container **181a**, **181b**) is supported entirely by a first product (shown as yogurt container **183a**, **183b**). As each product slides along the system, the second product may become unstable. Tracks **182a**, **182b** provide support to a lower portion of the second product to maintain stability of the second product and prevent the second product from falling over. According to alternative embodiments, the tracks may completely and/or at least partially support the products when provided in the system (e.g., some or all articles may be supported by the track if an article becomes displaced). According to various exemplary embodiments, the tracks may be integrally formed with the dividers, formed separate from the dividers, etc.

**[0099]** Connectors **140b** (shown in FIGS. 23 through 25, 33 through 34 and 36) of merchandising systems **110b** may be flat elongated members (which may be a web, mat, etc.). As shown in FIG. 34, connectors **140b** may be provided with a series of projections **146b** (which may be notches, grooves, cuts, etc.) thereby forming a series of teeth **144b** (which may be projections, extensions, etc.). According to various alternative embodiments, a connector may be provided with a series of projections along a portion (either width or length) of the connector (i.e., provided along a partial width or partial length of the connector). According to various alternative embodiments, grooves may be provided at any desired spacing, with any desired number of grooves.

**[0100]** Connectors **140b** are configured to coact (e.g., couple, engage or otherwise connect) with dividers **120b**. As shown in FIG. 34, the width of projections **146b** is approximately equal to the width of grooves **133b** on dividers **120b**. Grooves **133b** are intended to provide for a secure engagement between the connectors **140b** and dividers **120b** by allowing projections **146b** to “snap” or project into recess or grooves **146b**. According to an exemplary embodiment, the projections are slightly rounded along a bottom edge so that they may “snap” into the slots on the connectors. Projections **146b** may be coupled to different grooves **146b** to adjust the width between adjacent dividers. As shown in FIG. 23, dividers **120b** are separated by a width **W3**. As shown in FIG. 26, dividers **120b** are separated by a width **W4** which is greater than **W3**. Connectors **140b** are intended to extend substantially the length of dividers **120b**. Connectors **120b** advantageously allow products to slide along an entire solid surface. Connectors **140b** are provided with friction reducing ribs or protrusions (shown as ribs **130b**). Ribs **130b** provide friction reduction on a product support surface such that product which is being displayed or supported on merchandising system **110b** may move more easily along the length of connector **140b**. According to various exemplary embodiments, the connectors may be extruded plastic and may be impregnated with silicone.

**[0101]** According to an alternative embodiment, the connector may be provided with a series of straight grooves and teeth. According to other various alternative embodiments, a variety of shapes, sizes, spacings, arrangements, and other configurations may be provided with the connector. According to various alternative embodiments, the connector may comprise tabs or teeth that interlock with the dividers in predetermined locations, thereby adjusting the distance between dividers. According to various other embodiments, the connector may comprise slide mechanisms that enable the divider to slide from one position to another. According to various other embodiments, the connector may comprise any

other suitable mechanism for adjusting the divider position, configuration, orientation, etc.

**[0102]** According to an exemplary embodiment, a display portion or device may be attached to the shelving systems for displaying information about the articles (e.g., price, manufacturer, bar code, etc.). The display portions may include a front slot or channel configured to receive graphics, pricing, bar codes, and/or other information. The channels may be configured to provide a “stop” for products that are located at the front of the systems. As products advance toward the front of the systems, the products reach the channels provide a surface for at least partially restraining movement of the products. According to various embodiments, any suitable device or method may be used to secure the display portion to the shelving system (e.g., gluing, taping, adhering, fastening, etc.). According to an exemplary embodiment, the display portion may be integrally formed with the shelf, divider, and/or connector. According to various exemplary embodiments, the display portion (e.g., extruded) shown in FIGS. 3A through 3C and 9A through 9B may be used with systems shown in FIGS. 13 through 36.

**[0103]** As shown in FIGS. 17, 19, 20, 26 and 34, members 170a, 170b (e.g., stop, bar, etc.) are coupled to a apertures, shown as keyhole openings 172a, 172b, at rear portions 174a, 174b of systems 110a, 110b. Members 170a, 170b are configured to prevent and/or stop product from falling out of the back of the shelving system (e.g., by force applied from the front of the system, sliding, etc.). The member may be coupled to the divider according to any suitable method. As shown in FIGS. 17, 19, 20, 26 and 34, portions 171a, 171b of members 170a, 170b are placed through openings 172a, 172b and coupled to dividers 120a, 120b by friction fit. Members 170a are configured to include a hinge 176a that allows portions 175a to pivot toward the front of system 110a as product is being stocked or loaded into system 110a. As shown in FIGS. 19 and 20, portion 175a is pivoting in a direction to allow product to be placed in system 110a between dividers 120a.

**[0104]** According to an exemplary embodiment shown in FIGS. 13, 14, 17, 23, 24, 25, 29 through 32, and 33, a tab 180a, 180b (e.g., finger, front stop, stopper, block, obstruction, plug, cap, etc.) is provided with dividers 120a, 120b that couples to (e.g., connects to, attaches to, is affixed to, etc.) front ends 162a, 162b of dividers 120a, 120b. According to an exemplary embodiment shown in FIGS. 13, 14, 23 and 24, tabs 180a, 180b attach to dividers 120a, 120b by sliding into channels 194a, 194b located on dividers 120a, 120b. Tabs 180a, 180b include two members 196a, 196b configured to fit within channels 194a, 194b positioned on each side of divider 120a, 120b. Tabs 180a, 180b are held in place by friction between members 196a, 196b and channels 194a, 194b. Members 196a, 196b include portions 197a, 197b that “snap” into place within channels 194a, 194b. Ridges and/or gripped surfaces may be included on the members and/or the channels to increase resistance between product and the members. According to an exemplary embodiment, the tab is made from clear injection molded material.

**[0105]** According to embodiments shown in FIGS. 13, 15, 24, and 33, articles 190a, 190b (shown as yogurt containers) may be stocked (e.g., loaded) in multiple layers (preferably three levels of yogurt containers) on merchandising system 110a, 110b. The merchandising system is preferably configured to be placed on an inclined shelf arranged so that the product advances toward the front of the system by the force

of gravity. The systems shown in FIGS. 13-36 may be placed on shelves such as those shown in FIGS. 8A, 8B and 8C. According to an exemplary embodiment, the shelf may be at an angle in the range of about 2 to 10 degrees with respect to the horizontal axis. According to a preferred embodiment, the shelf is at an angle of about 6 to 8 degrees with respect to the horizontal axis. Articles may be stocked (e.g., loaded) in multiple layers from either the front or rear of the merchandising system. According to a preferred embodiment shown in FIGS. 13, 15, 24, and 33, articles are stocked onto the merchandising system from rear end 116a, 116b. Tracks 182a, 182b are intended to provide support if needed to prevent articles from tipping over or falling out of the system when sliding along connector 140a, 140b. Under normal use, tracks 182a, 182b are not intended to contact the articles (e.g., yogurt containers) which are supported by either connector 140a, 140b (e.g., the bottom yogurt container) or a yogurt container underneath a particular yogurt container. According to an alternative embodiment, a pusher assembly may be utilized to help prevent articles from sliding at an undesirable rate along the system. According to other alternative embodiments, the tracks may contact the articles under normal or other use.

**[0106]** According to various exemplary embodiments, the assemblies and components of the merchandising system may be constructed from a variety of suitable materials, including metals, metal alloys, aluminum, polymers, composites, plastics (including high impact plastics and injection molded plastic), ceramics, etc.

**[0107]** According to various exemplary embodiments, the frame system may be constructed from metal, metal alloys, aluminum, plastics, polymers, composites, etc. According to other alternative embodiments, any other suitable material may be used to construct the frame system. According to an exemplary embodiment, the frame system may be chrome plated to improve aesthetic appeal.

**[0108]** According to various exemplary embodiments, the shelf may be constructed from metal, metal alloys, aluminum, plastics, polymers, composites, etc. According to a preferred embodiment, the shelf is constructed from metal or metal alloys. According to alternative embodiments, any other suitable material may be used to construct the shelf. According to an exemplary embodiment, the shelf is approximately 10 to 30 inches wide and approximately 30 to 60 inches long. According to a preferred embodiment, the shelf is about 20 inches wide by about 48 inches long. According to an exemplary embodiment, the shelf is about 0.25 inch to about 1 inch thick. According to a preferred embodiment, the shelf is about 0.625 inch thick.

**[0109]** According to an exemplary embodiment, the shelves may be spaced at various distances from one another. For example, the shelves may be spaced about 6 inches to about 9 inches apart. According to a preferred embodiment, the shelves are spaced about 7 to 8 inches apart, thereby leaving about 4 to 7 inches of stocking space.

**[0110]** The divider and pusher assembly may generally be made from injection molded plastic or from a variety of other plastics, polymers, composites, and processes (e.g., extrusion, cast, etc.). For example, the divider may be constructed from high-impact plastics, polymers, other plastics, and the like. The various components of the divider may be formed separately and then connected using a sonic welding process (or other suitable attachment technique). Using plastic offers several advantages including that the pieces are moldable in a

variety of different colors, surface finishes, textures, etc. According to an exemplary embodiment, some or all of the components may be clear (e.g., opaque) to show products within the system. Other suitable materials (including metal, metal alloys, aluminum, etc.) may be used according to alternative embodiments. According to various exemplary embodiments, each component of the divider and pusher assembly may be sized to operate with various sized yogurt containers. For example, the pusher assembly may include a member that is approximately 48 inches long and a plate that is approximately 1 to 5 inches wide. According to various other embodiments, the member and plate may be any suitable size to operate with various sized articles.

[0111] According to one particularly preferred embodiment, the connectors are constructed from extruded plastic. According to one alternative embodiment, the connectors may be constructed from injection molded plastic. A variety of plastics may be used in constructing or assembling the connectors. For example, the connectors may be constructed or assembled from high-impact plastics, polymers, high-impact plastic. Using plastic offers several advantages including that the pieces may be constructed in a variety of different colors, surface finishes, textures, etc. According to various alternative embodiments, a variety of other known or suitable materials may be used including metals, alloys, composites, etc.

[0112] According to one exemplary embodiment, the divider is constructed by co-extruding a material of a first rigidity (or flexibility) with a material of a second rigidity (or flexibility). According to an exemplary embodiment, the divider is a dual durometer extrusion having portions constructed from a rigid PVC, and portions constructed from a flexible, low tack, or "gummy" PVC. The friction material (such as a "gummy" material) assists the merchandising system to stay in place during use by increasing the friction between the divider and the support surface such as a shelf. Additionally, the friction portion helps to increase the engagement between the connector and the divider, thereby helping to prevent motion of the divider in a direction along the length of the divider. According to various exemplary embodiments, non-skid material, other friction material, non-skid feet (e.g., of rubber or another elastomeric material or the like) may be provided on the bottom of the merchandising system (including dividers and connectors).

[0113] According to the exemplary embodiment, the connector may also be constructed by co-extruding a material of a first rigidity (or flexibility) with a material of a second rigidity (or flexibility). According to an exemplary embodiment, the connector is a dual durometer extrusion having a portion (i.e., an upper portion) constructed from a rigid polyvinyl chloride (PVC), and another portion (i.e., a lower portion) constructed from a flexible, low tack, or "gummy" PVC. The portion constructed from a "gummy" material assists the merchandising system to stay in place during use by slightly adhering to a support surface such as a shelf. Similar extrusion processes may be used in the construction and assembly of other types of connectors.

[0114] As shown in the FIGURES, the merchandising system is intended to provide dividers that may be selectively adjusted. Products or merchandise may be placed between adjacent dividers. The merchandising system may allow the dividers to be reconfigured and resized for different sized divisions without the need to reconfigure or resize adjacent dividers. A "facing" or cell may be resized or have its width

changed without needing to resize adjacent areas (e.g., where one facing or cell is resized for a different product size, but adjacent facings do not need to be resized).

[0115] The merchandising system may be placed on top of shelves or shelving units. The merchandising system may simply rest on the top of a surface, or may be supported by feet on a shelf. According to exemplary embodiments, low-bond adhesives, soft-tack adhesives, plastics, polymers, elastomers, rubber (including craton rubber), other friction enhancing materials, etc. may be applied to restrict the motion of the merchandising system.

[0116] The various configurations of dividers and connectors shown in the FIGURES allow a user to pick and choose dividers for use in constructing merchandising systems. The different configurations allow for the same basic elements to be used in constructing a wide variety and sizes of merchandising system configurations. For example, one merchandising system configuration may require two end dividers, and three center dividers. Another merchandising system configuration may require two end dividers, five center dividers, etc. Any wide variety and configurations of dividers may be used to construct a merchandising system to meet various requirements such as space constraints, product sizes, etc.

[0117] The merchandising system may be constructed or assembled by pressing, snapping, engaging, placing, etc. the engaging portions of the dividers onto or with connectors. The connectors provide for a relatively simple connection between two divider panels. The dividers shown in the FIGURES may be readily adjusted. The dividers include legs (which may be interfaces, projections, extensions, etc.) that attach or couple to interfaces (such as notches, teeth, etc. on the connector). The dividers may be disconnected from an existing interface on the connector, and then attached or coupled with another interface at a different spacing. The merchandising system advantageously allows for selected dividers to be adjusted, resized, refaced and/or reconfigured without requiring the adjustment of adjacent dividers or divider sets.

[0118] In order for the merchandising system to be configured to display or fit specific products, manufacturers, set of products, etc., the merchandising system may be reconfigured to allow sizing for variously sized products, etc. As shown in FIG. 11, a first sizing or spacing (e.g., width) of dividers (indicated by "W-1") may be used for a first product, while a second sizing or spacing (e.g., width) of dividers (indicated by "W-2") may be used for a second product. According to one exemplary embodiment, connectors may be provided with a continuous, even distribution of interfaces (which may be notches, teeth, etc.). The merchandising system is configured to accommodate a wide variety of product sizes. According to one alternative embodiment, a connector may be provided with a limited number of interfaces set apart at predefined distances. For example, a connector (not shown) may be provided with three interfaces providing for three adjustment positions (e.g., for brand specific merchandising systems having a predefined number of adjustment positions intended to correlate to a predefined number of products or product sets). According to alternative embodiments, any configuration, arrangement, sizing or distribution of interfaces may be provided.

[0119] It is also important to note that the construction and arrangement of the elements of the merchandising system as



shown in the exemplary embodiments is illustrative only. Although only a few embodiments of the present inventions have been described in detail, those skilled in the art will readily appreciate that many modifications are possible (e.g., variations in sizes, dimensions, structures, shapes, tolerances, and proportions of the various elements, values of parameters, mounting arrangements, use of materials, colors, orientations, etc.) without materially departing from the novel teachings and advantages of the subject matter of the present inventions. For example, elements shown as integrally formed may be constructed of multiple parts or elements show as multiple parts may be integrally formed. For example, a connector or connector portion of any of the exemplary or alternative embodiments could be made as an integral piece with a divider. The operation of the connection between the divider and connector may be reversed or otherwise varied, the shape or size (e.g., length or width) of the dividers or other elements of the system (e.g., shelf divider or interface of the divider members) may be varied, the nature or number of discrete adjustment positions provided on the connectors may be varied (e.g., by variations in the number of engagement points or size of the engagement points or type of engagement).

**[0120]** It should be noted that the elements and/or assemblies of the system may be constructed from any of a wide variety of materials that provide sufficient strength or durability, including any of a wide variety of moldable or extrudable plastic materials (such as high-impact plastic) in any of a wide variety of colors, textures and combinations. It should also be noted that the merchandising system may be used in association with a shelf (e.g., of a shelving unit or the like) or any of a wide variety of other surfaces in any of a wide variety of other applications. Accordingly, all such modifications are intended to be included within the scope of the present inventions.

**[0121]** The merchandising system may be to display and merchandise a variety of products, including containers, packages, bags, boxes, tubes, etc. The products may be food products, foodstuffs, snacks, prepared food packages, etc. Alternatively, other products of a variety of sizes and weights may be displayed and merchandised, such as consumer products, parts, batteries, automotive batteries, tissue boxes, etc.

**[0122]** The order or sequence of any process or method steps may be varied or re-sequenced according to alternative embodiments. In the claims, any means-plus-function clause is intended to cover the structures described herein as performing the recited function and not only structural equivalents but also equivalent structures. Other substitutions, modifications, changes and omissions may be made in the design, operating conditions and arrangement of the preferred and other exemplary embodiments without departing from the spirit of the present inventions.

What is claimed is:

**1.** A merchandising system for a first set of articles and a second set of articles of the same or similar size, the merchandising system comprising:

a first divider and a second divider, each divider having a front end and a back end, and a first horizontal section connecting the dividers adjacent a lower edge of each divider, the dividers and the horizontal section defining a space for receiving the first and second sets of articles; the first set of articles received between the first and second dividers along an upper surface of the horizontal section and slidable along the space between the back ends of the dividers and the front ends of the dividers;

the second set of articles received between the first and second dividers above the first set of articles and slidable along the space between the back ends of the dividers and the front ends of the dividers;

the first divider having a first track extending generally between the front and back ends of the divider and extending toward the second divider, the first channel sized and positioned to slidably engage the second set of articles;

the second divider having a second channel defined extending generally between the front and back ends of the divider and extending toward the first divider, the second channel sized and positioned to slidably engage the second set of articles; and

the first and second channels positioned generally opposite each other and cooperating to define an first support for the second set of articles, the first support configured to contact and completely support the articles of the second set of articles within the space above the first set of articles, the first support extending only partially between the first and second dividers.

**2.** The merchandising system of claim 1, wherein the first and second channels are each defined by a lower track and the lower tracks of each channel cooperating to provide support to a lower portion of the second set of articles.

**3.** The merchandising system of claim 1, wherein the first and second channels are each defined by upper and lower tracks which cooperate to extend above and below a lower portion of the second set of articles and provide support to the second set of articles.

**4.** The merchandising system of claim 1, further comprising a second horizontal section extending between the first and second dividers adjacent an upper edge of each divider.

**5.** The merchandising system of claim 4, wherein the first and second horizontal sections are each integrally formed with one of the first and second divider.

**6.** The merchandising system of claim 1, wherein the first horizontal section is integrally formed with one of the first and second divider.

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