US 20070284974A1

(19) United States

(12) Patent Application Publication (10) Pub. No.: US 2007/0284974 A1

Buhrman (43) Pub. Date: Dec. 13, 2007

(54) MODULAR FURNITURE SYSTEM

(76) Inventor: **Gary R. Buhrman**, Town & Country, MO (US)

Correspondence Address:
WOODARD, EMHARDT, MORIARTY, MCNETT & HENRY LLP
111 MONUMENT CIRCLE, SUITE 3700
INDIANAPOLIS, IN 46204-5137

(21) Appl. No.: **11/423,288**

(22) Filed: **Jun. 9, 2006**

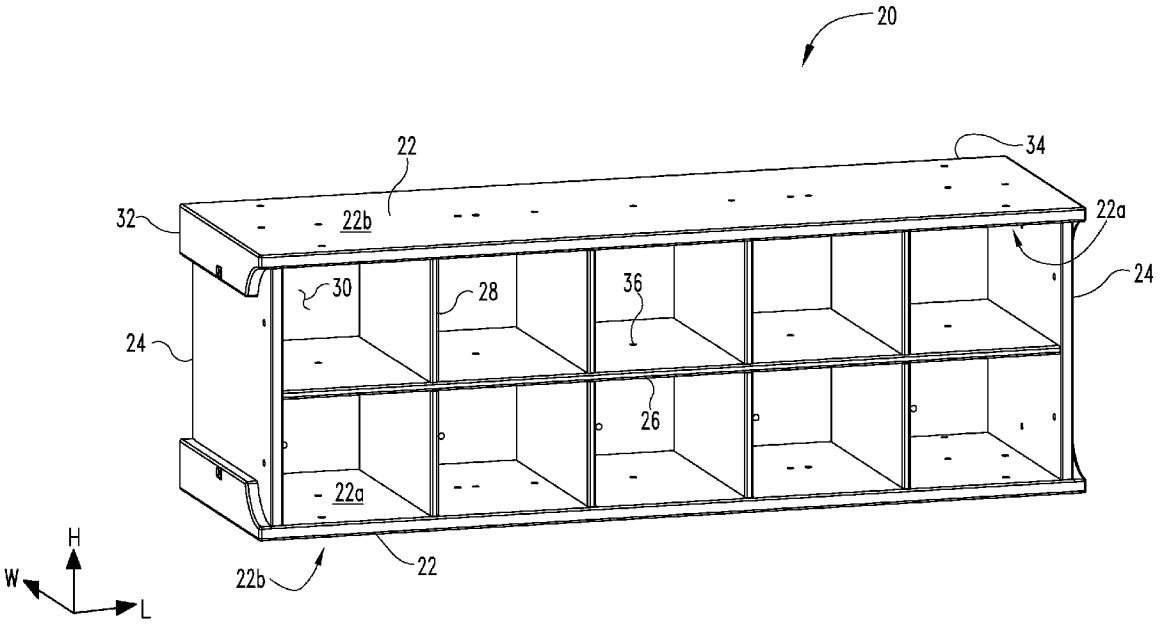
Publication Classification

(51) **Int. Cl.**
A47B 87/00 (2006.01)

(52) **U.S. Cl.** **312/108**

(57) **ABSTRACT**

In one embodiment of the present invention, a kit comprises interchangeable base panels, short side panels, tall side panels, at least one short back panel, at least one tall back panel, at least one horizontal divider, at least one short vertical divider, and at least one tall vertical divider. The base, side, and back panels, and the horizontal and vertical dividers, are selectively assemblable to form at least two disassemblable configurations, including a cubbie configuration and a locker configuration. In certain embodiments, the cubbie configuration includes the base panels, the short side panels, the short back panel, the horizontal divider, and the short vertical divider. Additionally, in certain embodiments, the locker configuration includes the base panels, the tall side panels, the tall back panel, the horizontal divider, and the tall vertical divider.



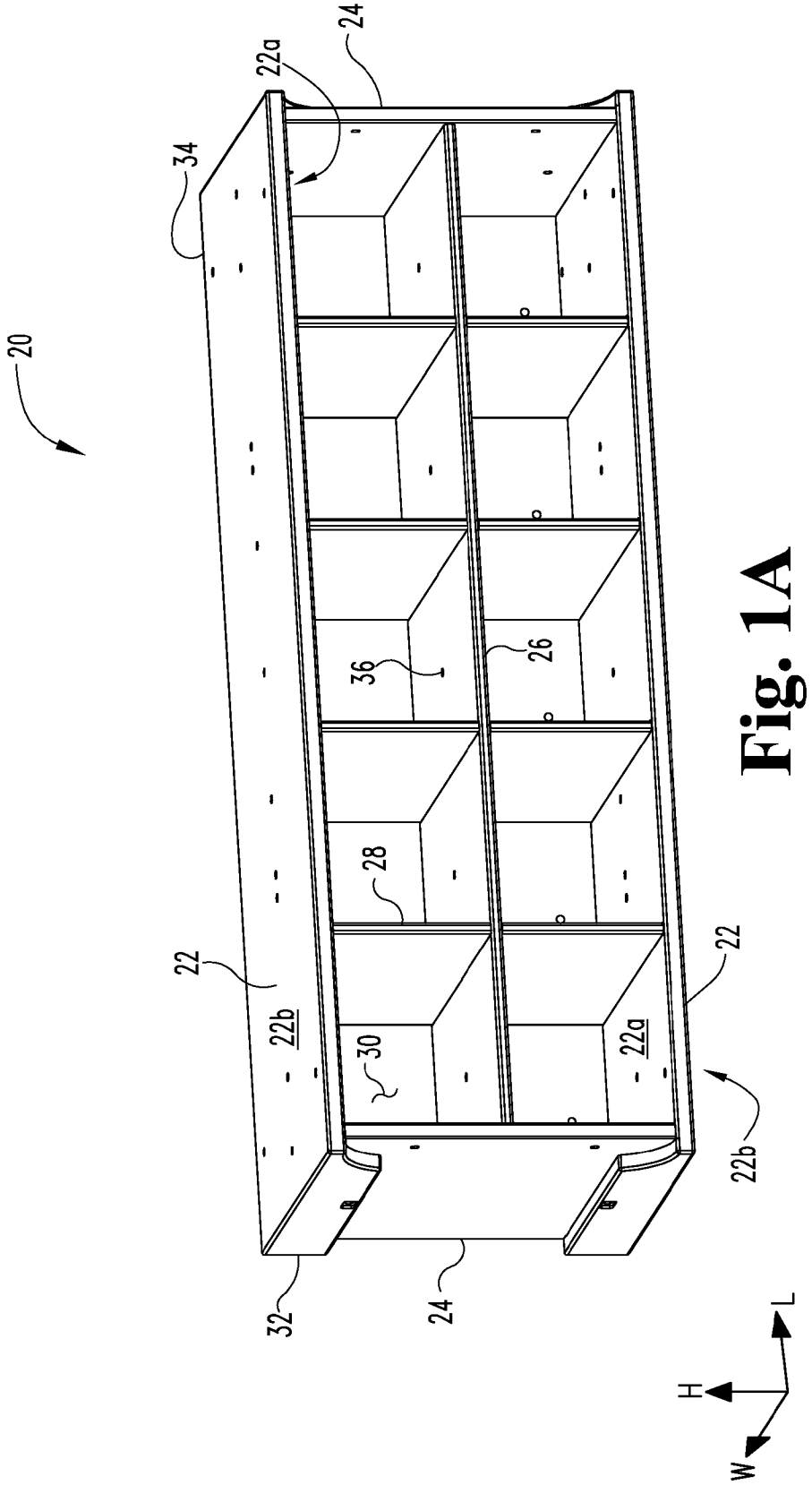


Fig. 1A

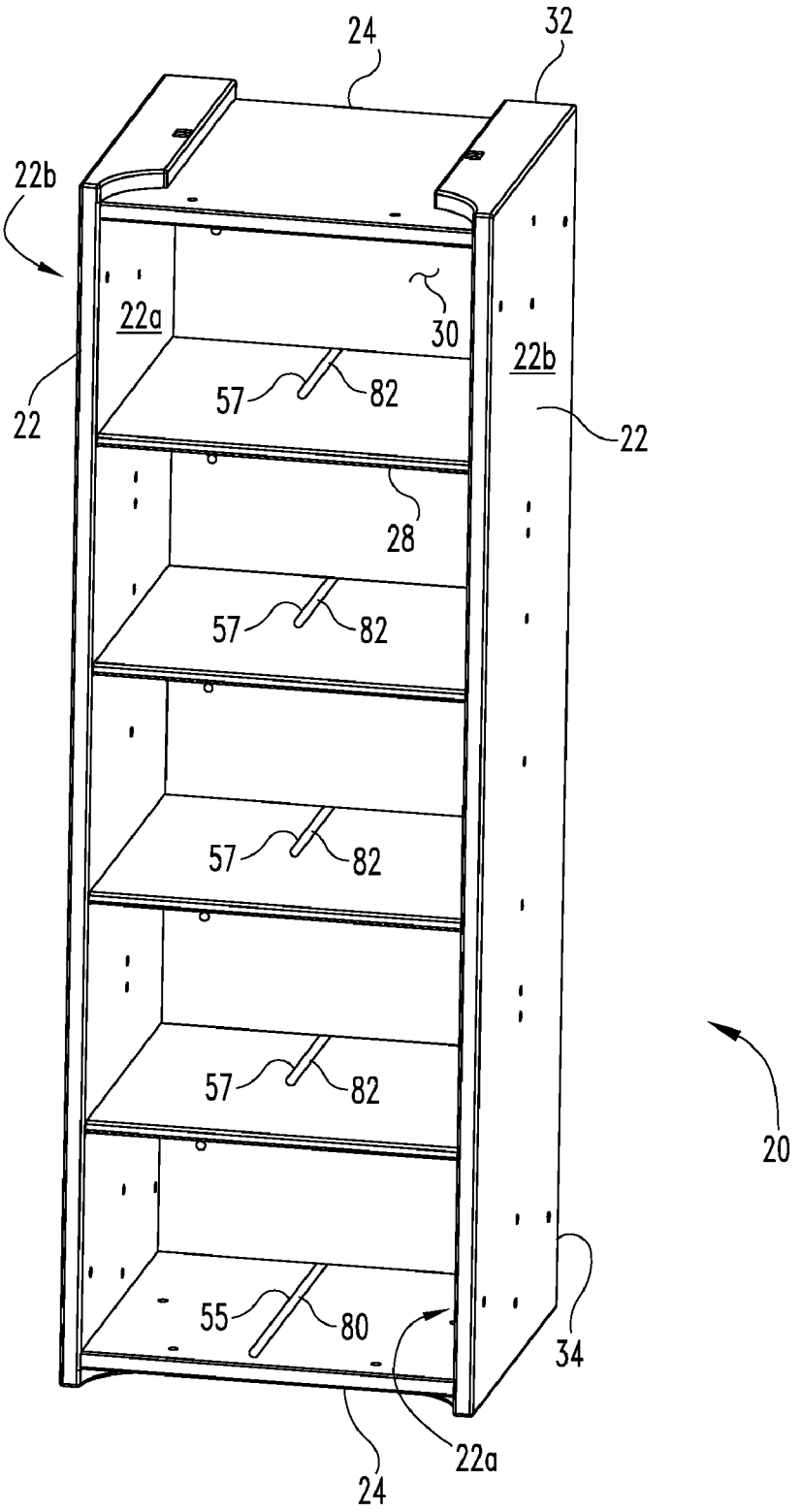

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Fig. 1B

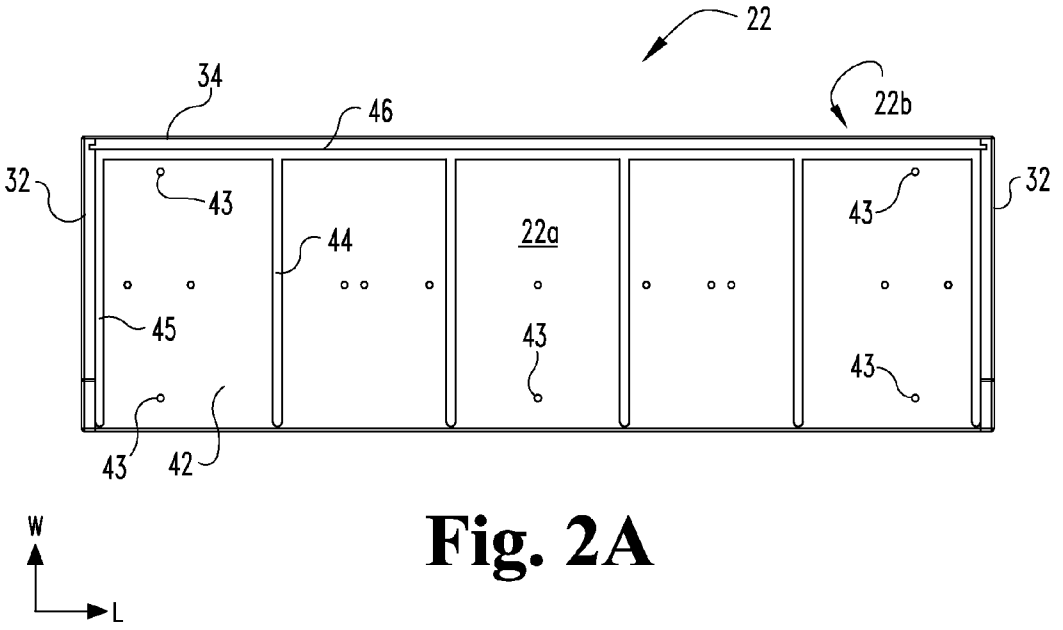

Fig. 2A

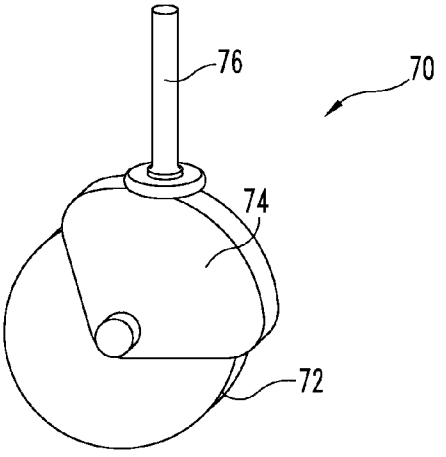

Fig. 2B

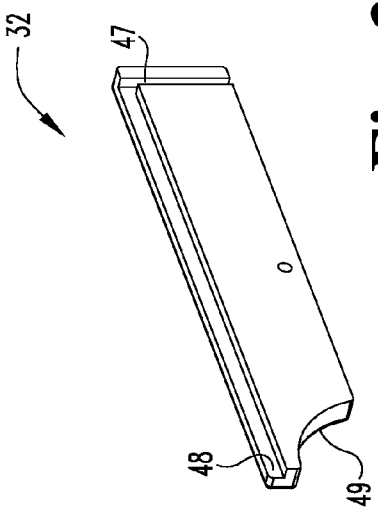

Fig. 3

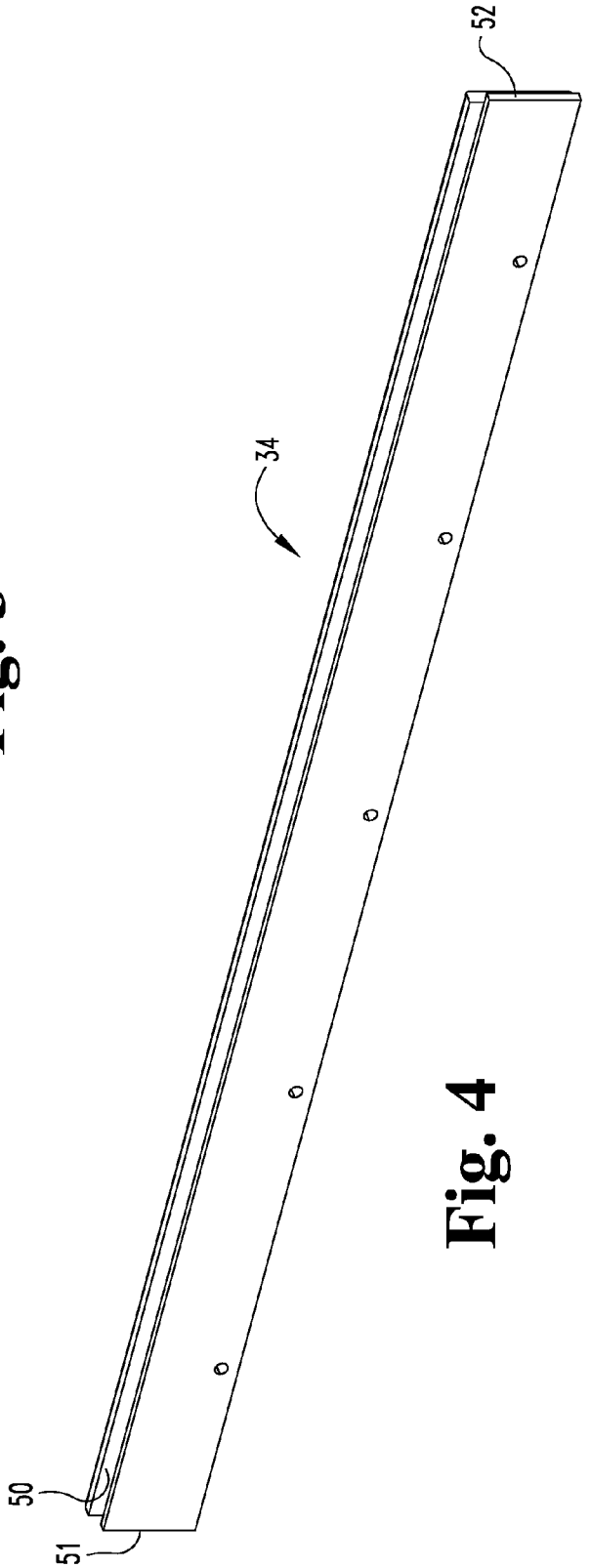

Fig. 4

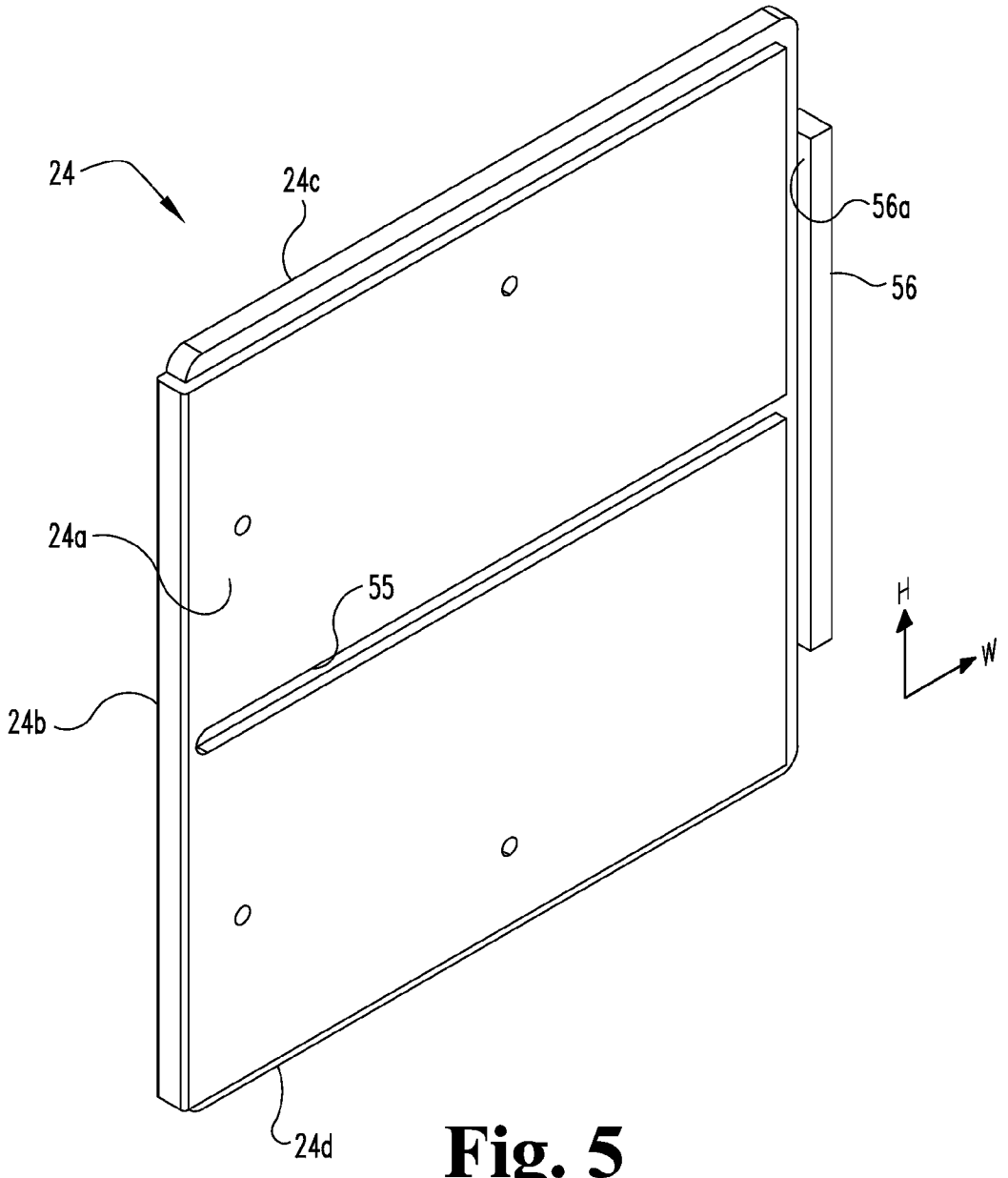

Fig. 5

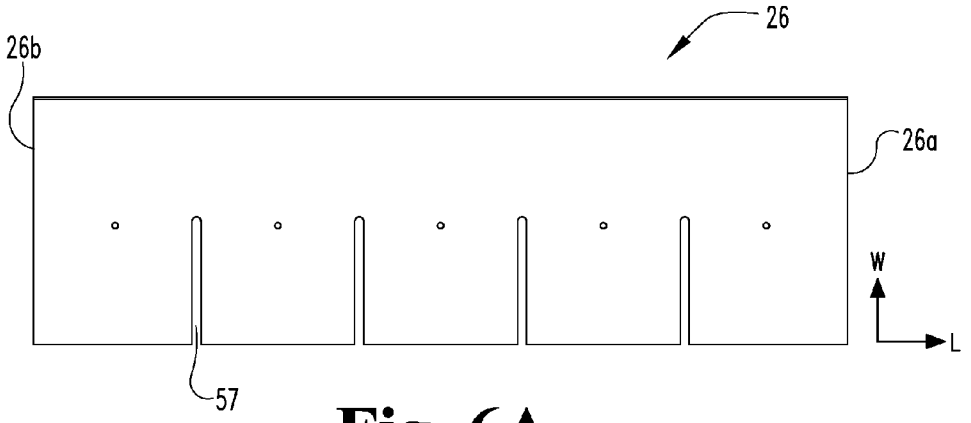

Fig. 6A

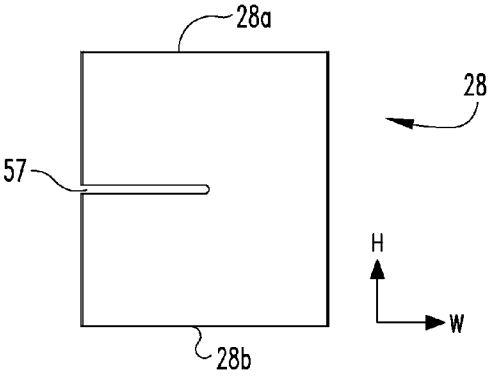

Fig. 6B

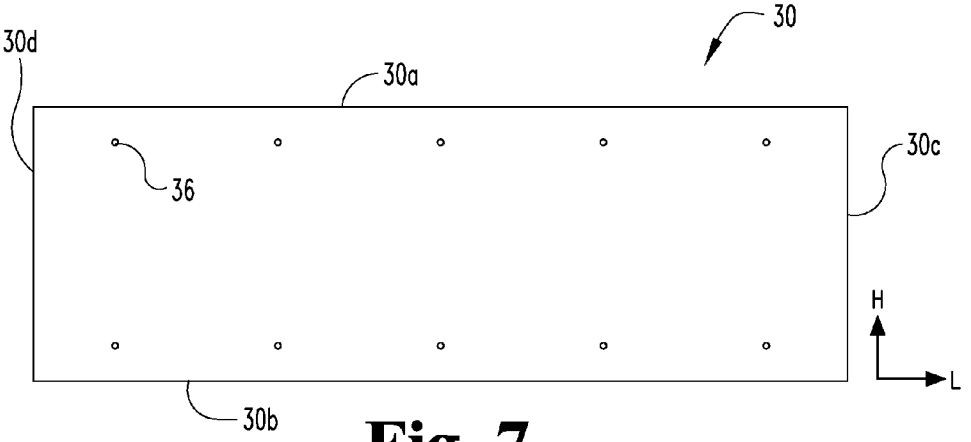

Fig. 7

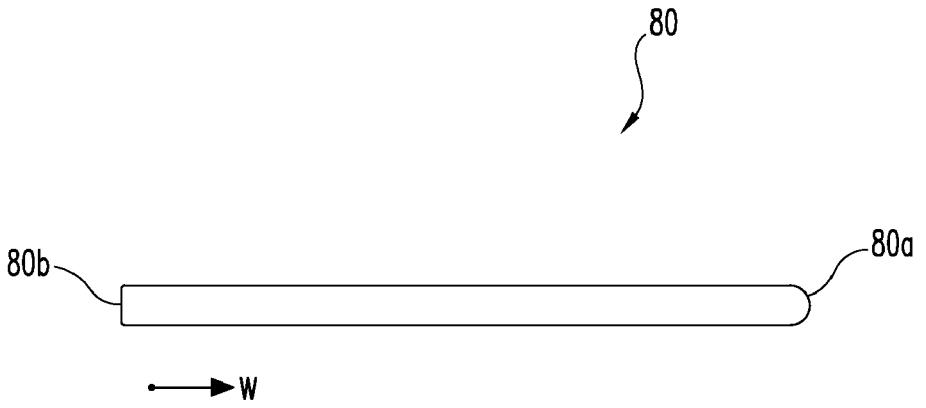

Fig. 8A

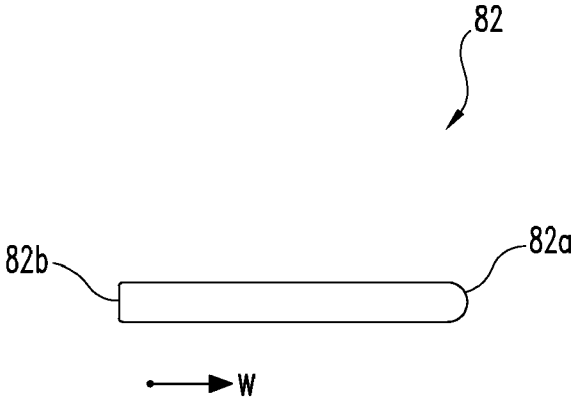

Fig. 8B

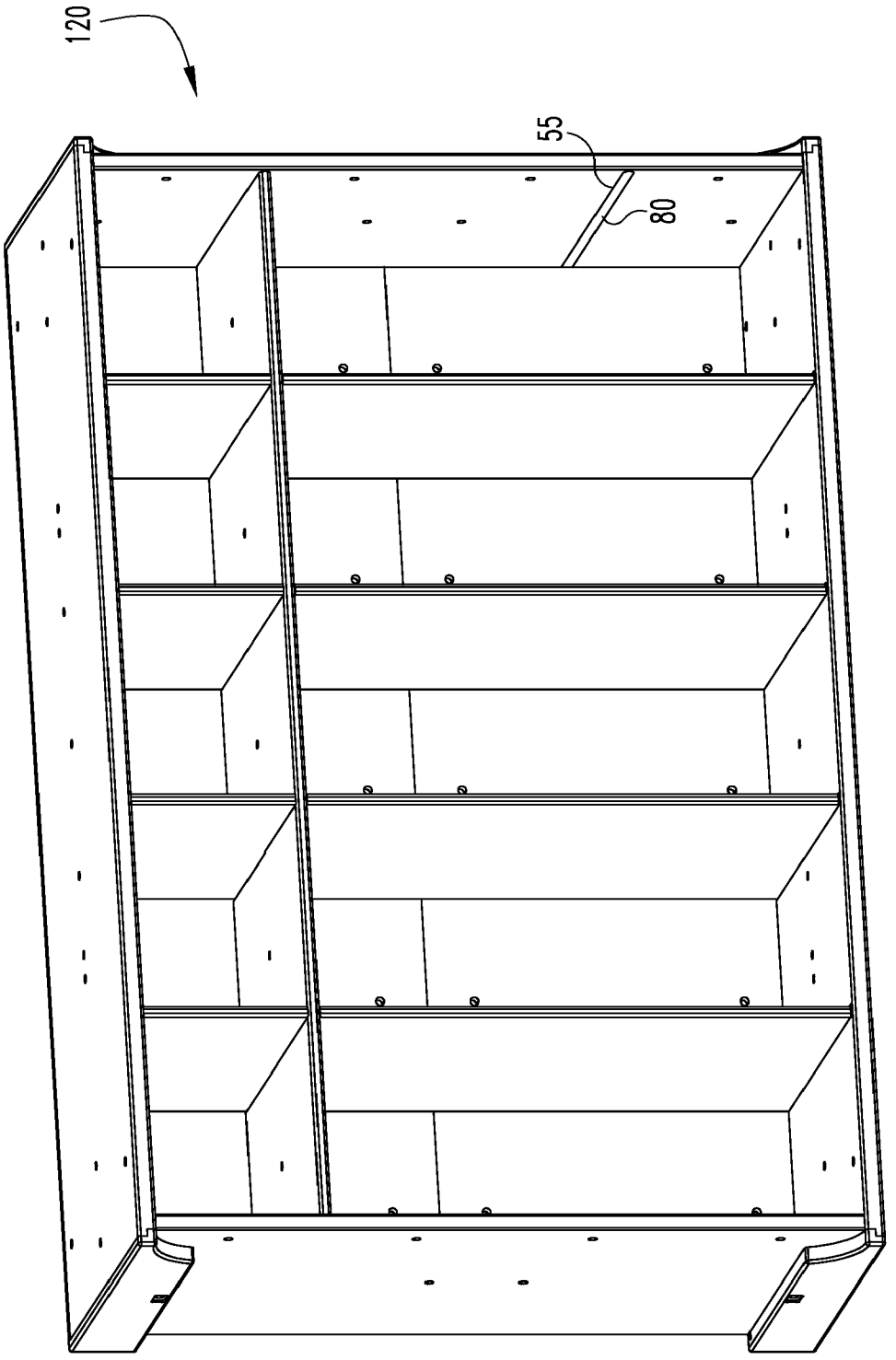

Fig. 9

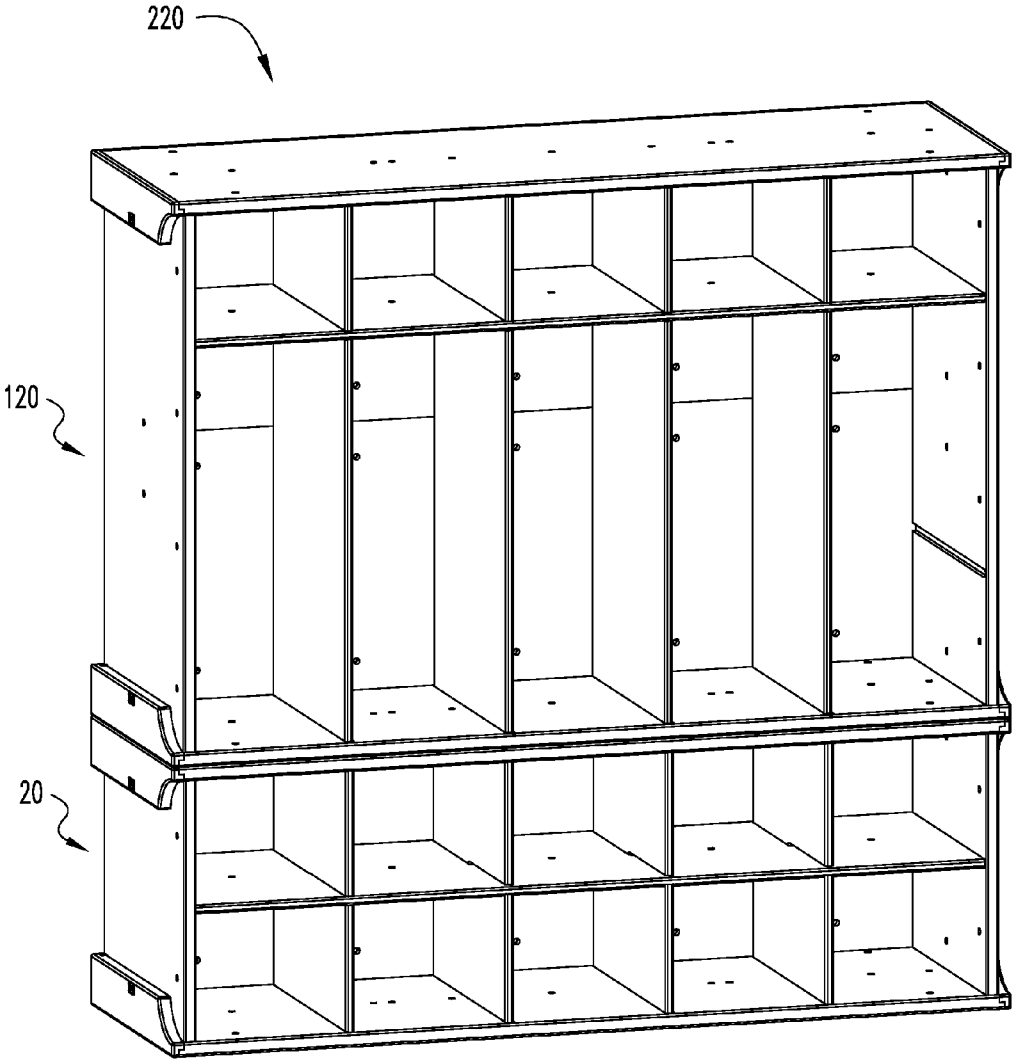

Fig. 10

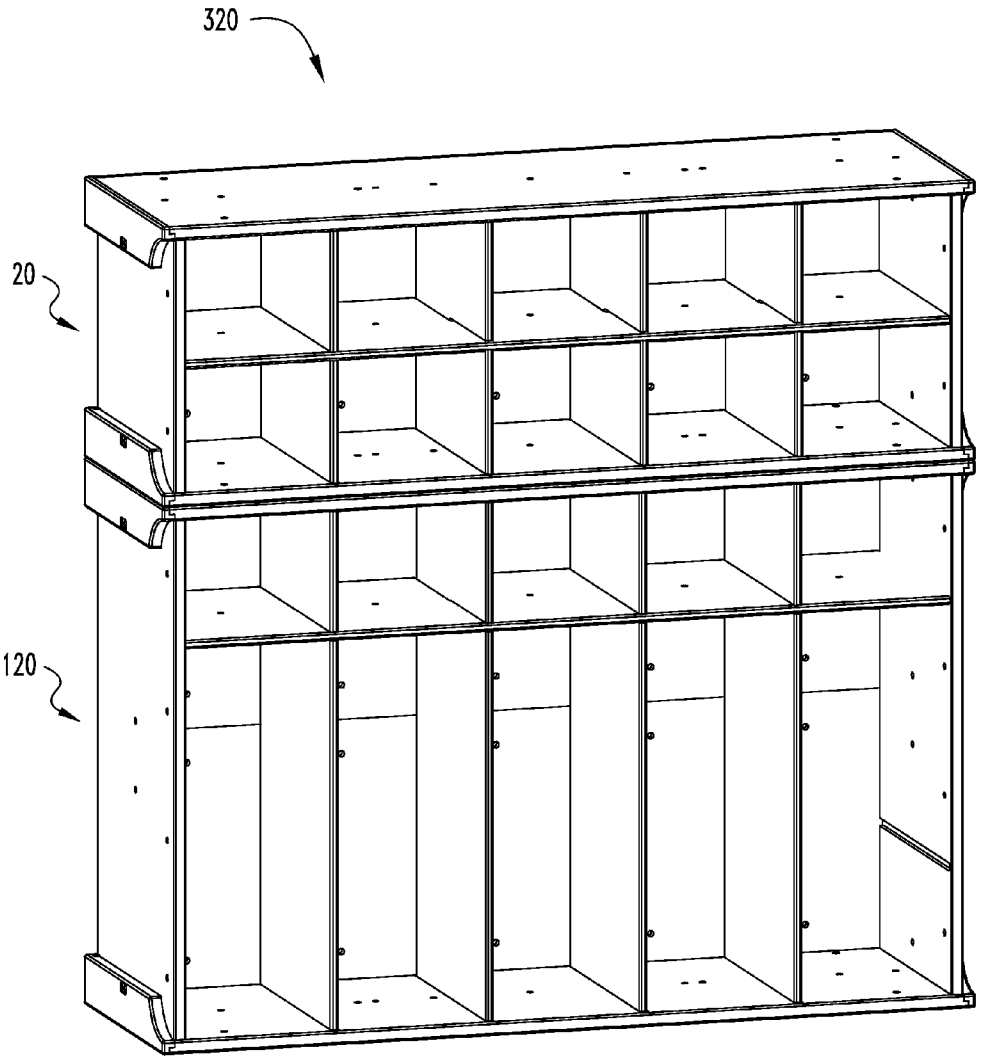

Fig. 11

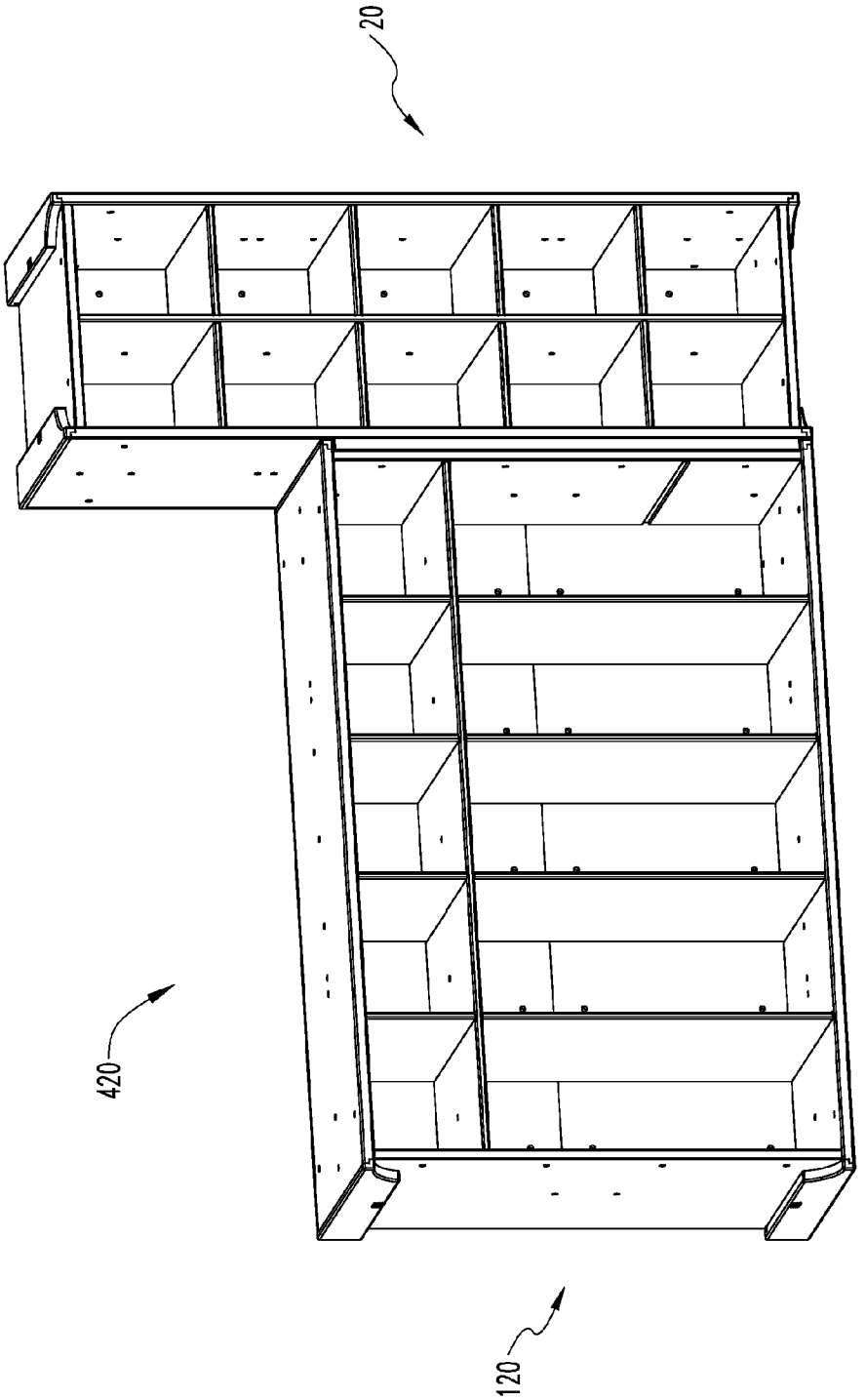

Fig. 12

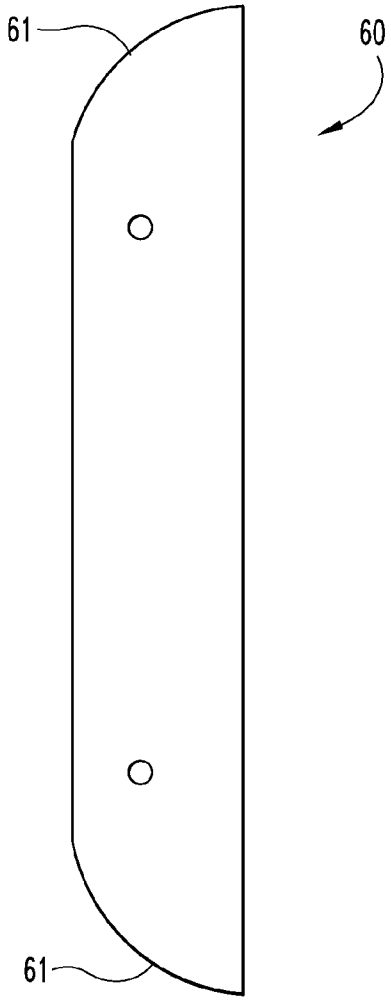

Fig. 13A

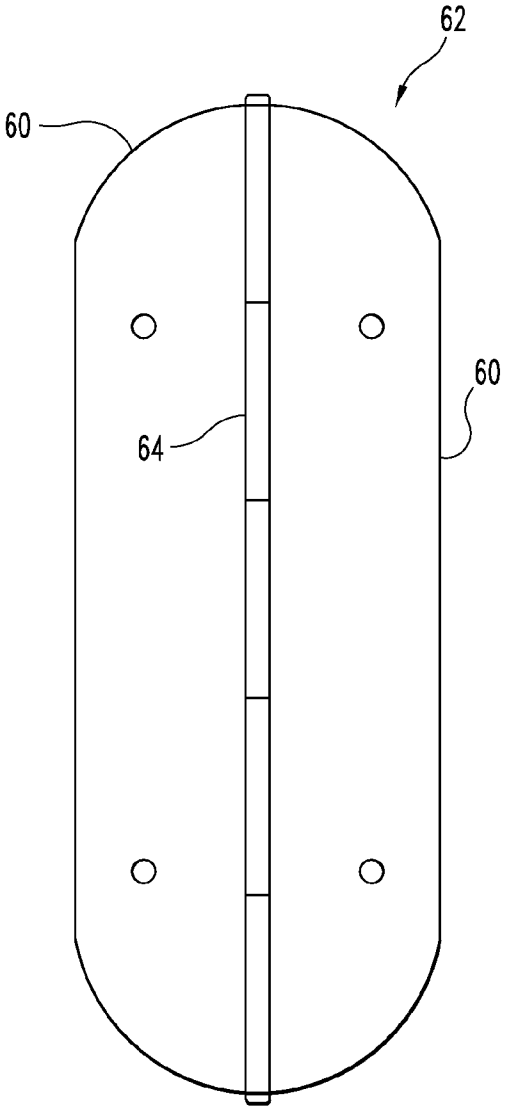

Fig. 13B

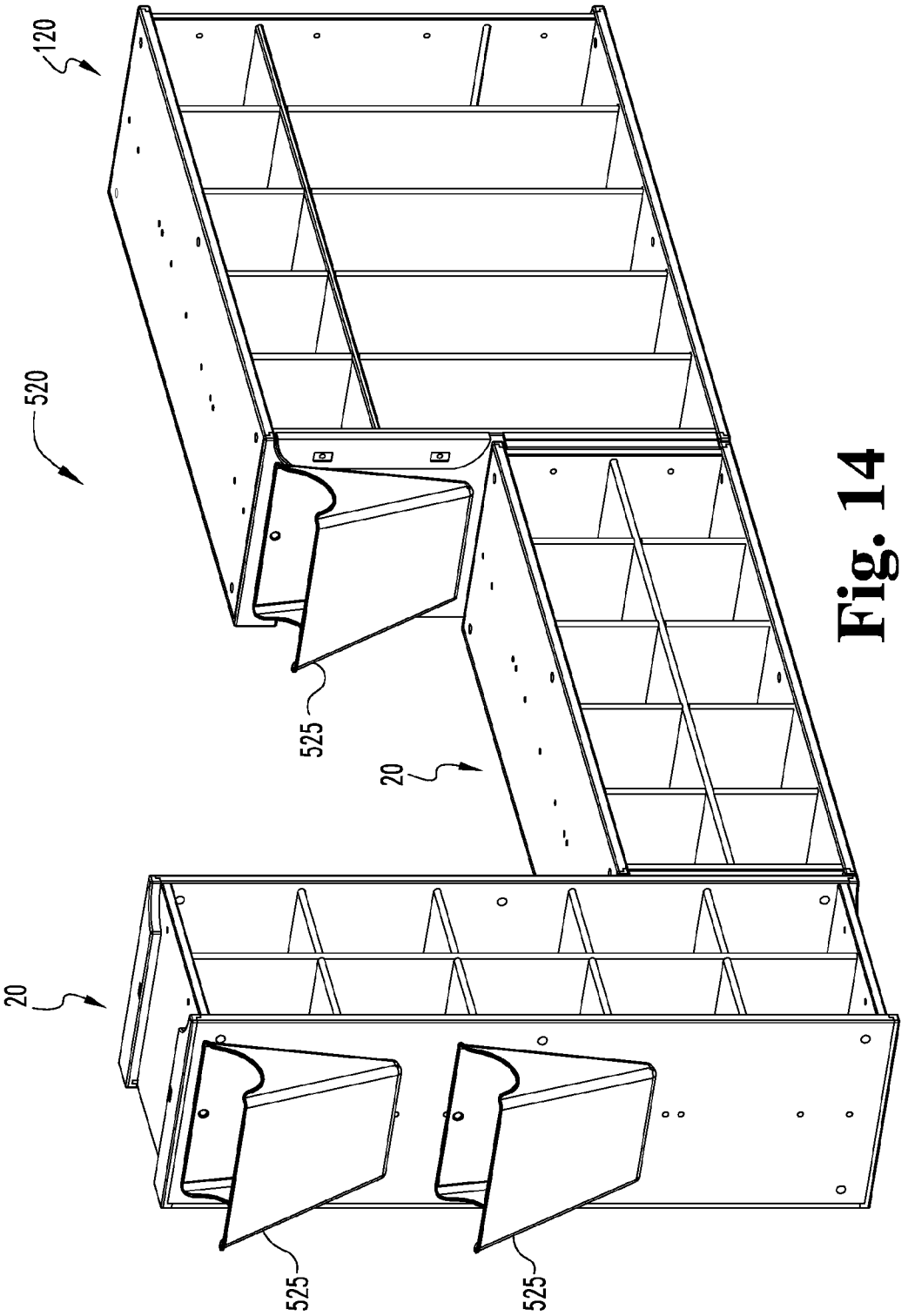

Fig. 14

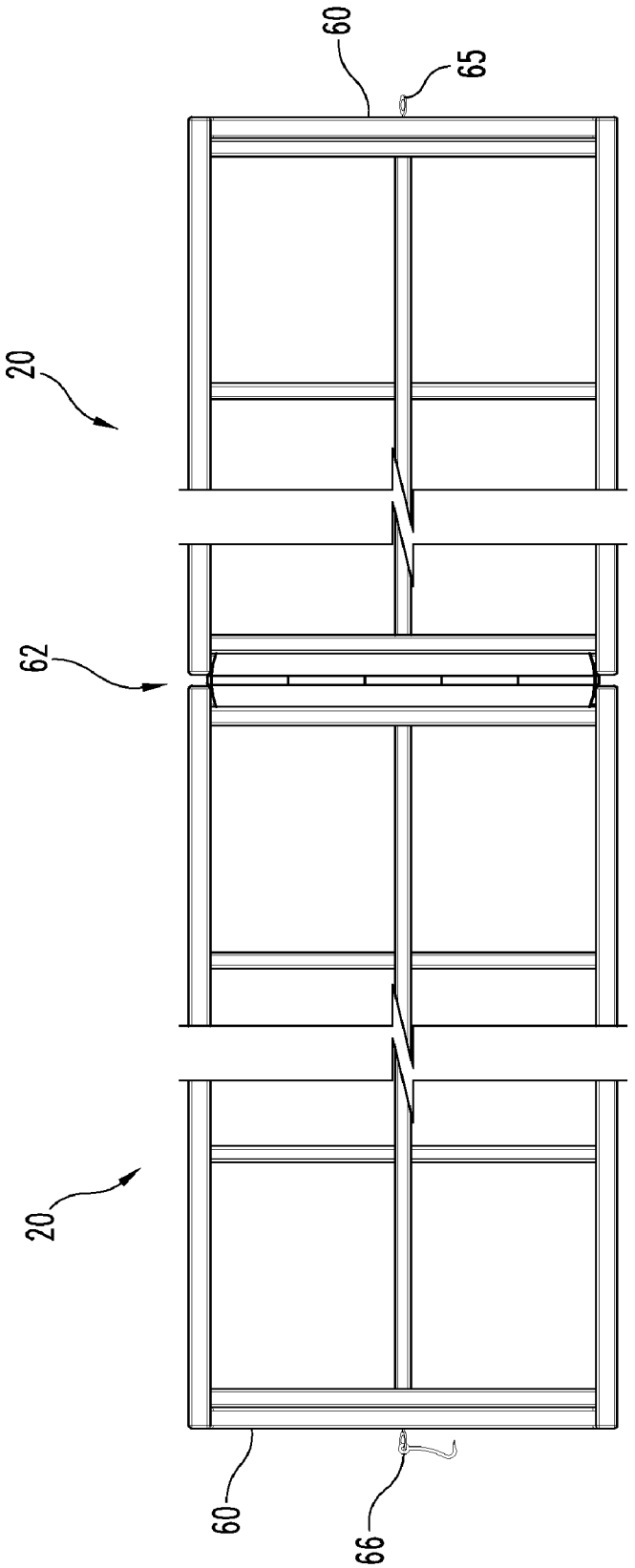

Fig. 15A

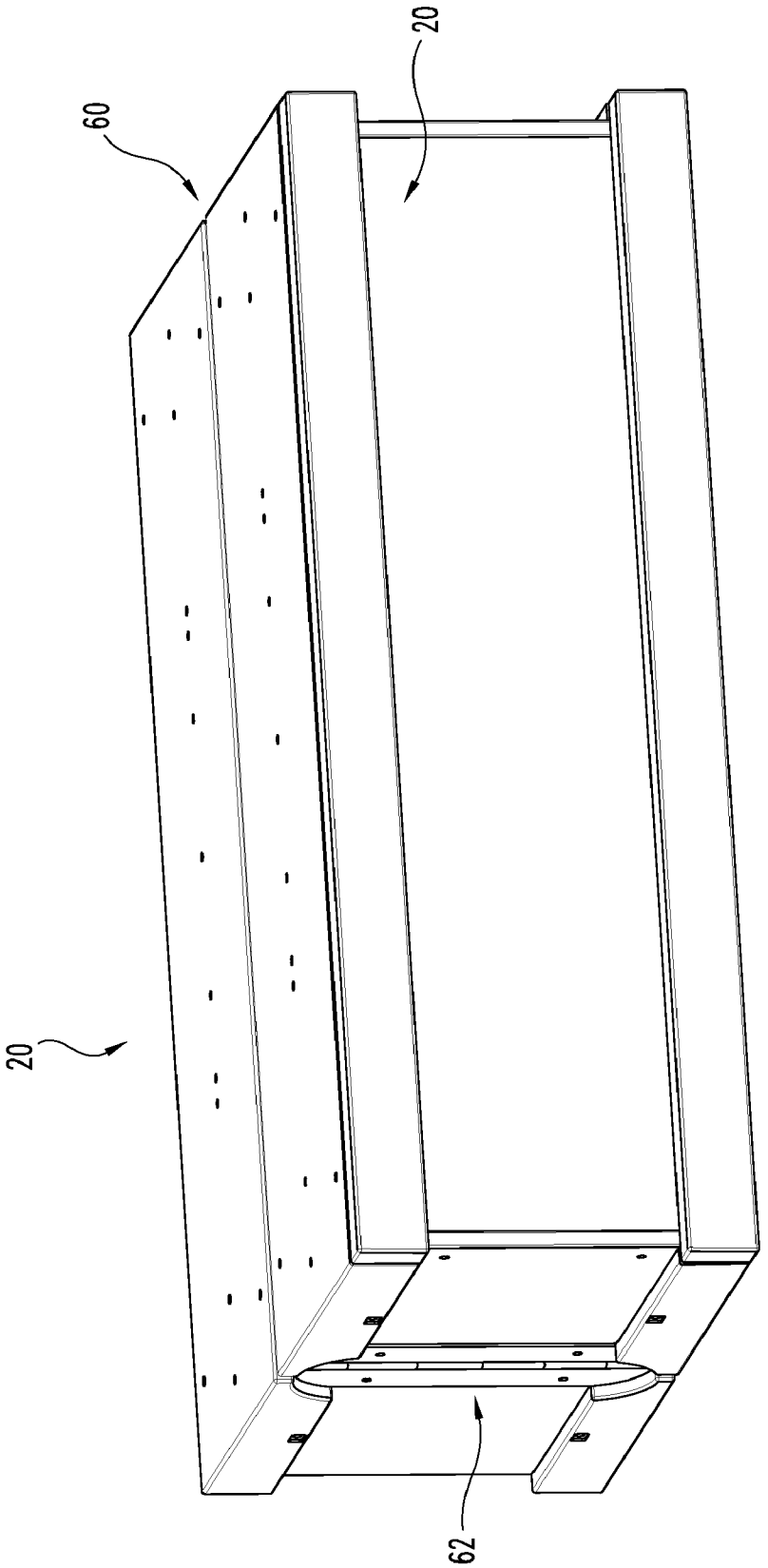

Fig. 15B

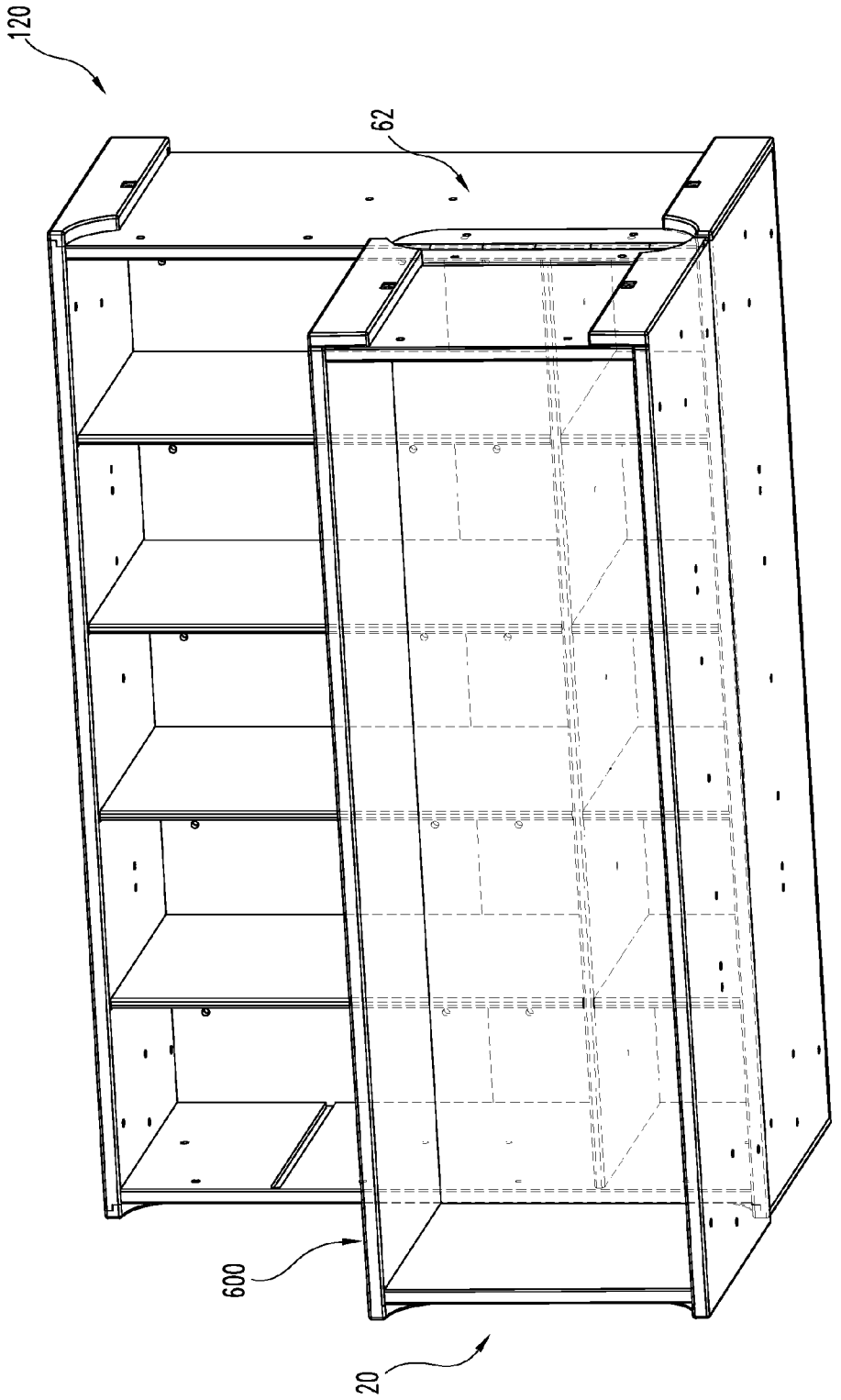

Fig. 16

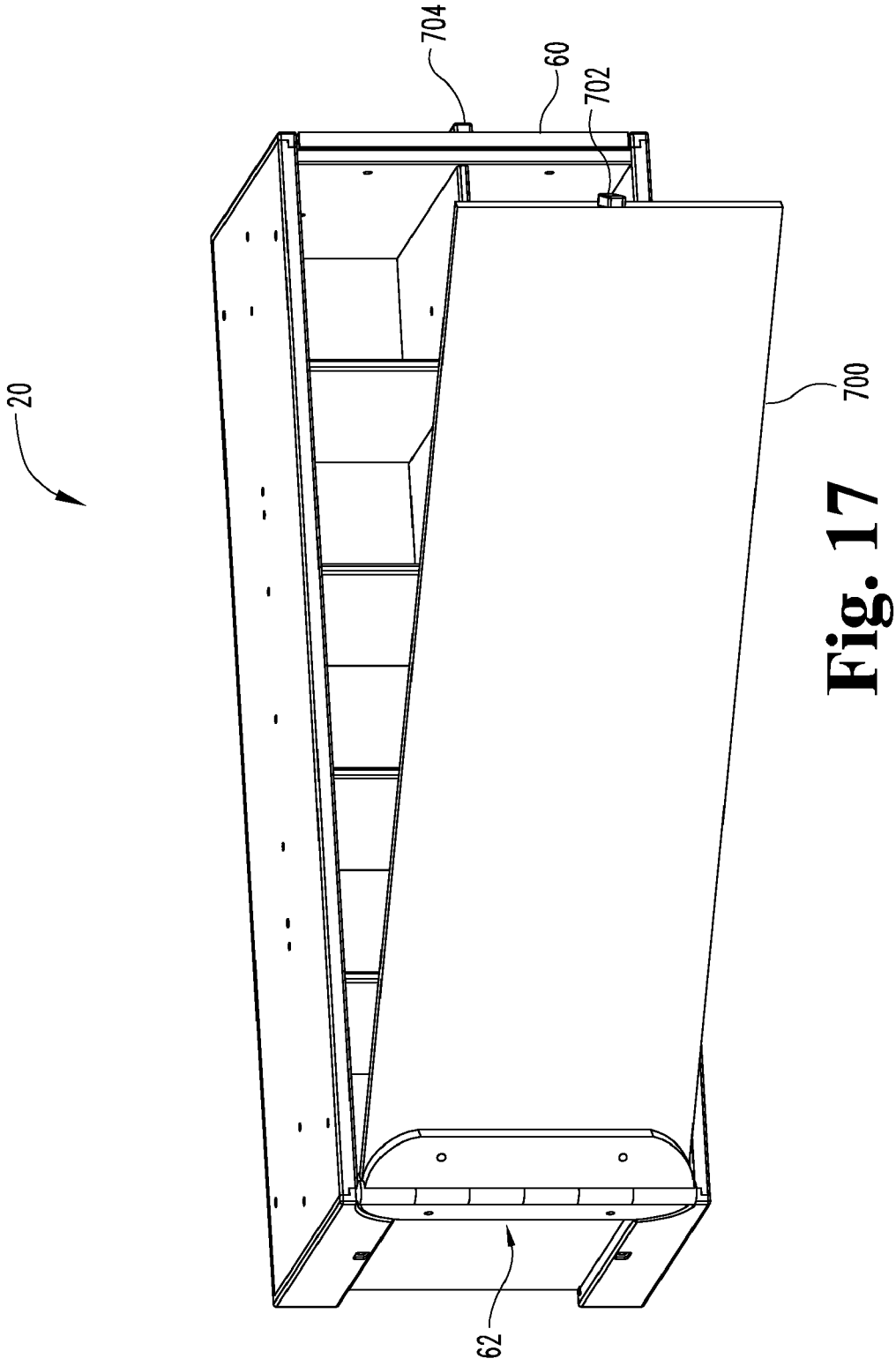

Fig. 17

MODULAR FURNITURE SYSTEM

FIELD OF THE INVENTION

[0001] This invention relates to a modular furniture system, and more specifically to a system having panels and multiple interlocking dividers to form various furniture configurations.

BACKGROUND OF THE INVENTION

[0002] Modular furniture is a popular method of furnishing in places such as schools. Standard pieces of modular furniture include various components, some of which are similar, and often identical, that assemble together to form pieces of furniture. Typically such arrangements are not intended to be disassembled. In the traditional arrangement, furniture, and even modular furniture, is bulky and weighty, and is thus costly to transport. Kits used to create a specific structure which is intended to be permanent often require fasteners and tools for assembly, include larger and heavier components and may require instructions or training for assembly.

[0003] There is a need for an improved modular furniture system. Certain embodiments of the present invention address these and other needs.

SUMMARY

[0004] In certain embodiments of the present invention, modular furniture systems and arrangements have interlocking inner dividers and outer panels to create various furniture pieces, such as cubbies or lockers. Certain embodiments are packaged as kits which can be easily shipped and assembled. The kits have components which are preferably interchangeable and connectable to form various configurations. In certain embodiments, the components of the arrangements are removably and slideably connectable, with the components having slots, grooves or shelves to engage each other. The inner dividers, outer panels, and overall assembly can be arranged vertically, horizontally and/or stacked as desired. In preferred embodiments, kits include two base panels and various other components, so that an arrangement including the two base panels with a desired combination of other panels and dividers can be created. In certain embodiments, kits include hinge assemblies so that one or more modular furniture arrangements can be connected together to form an overall assembly.

BRIEF DESCRIPTION OF THE DRAWINGS

[0005] FIG. **1**A is a perspective view of one embodiment of the present invention.

[0006] FIG. **1**B is a front view of one embodiment of the present invention

[0007] FIG. **2**A is a top view of one side of a component of the embodiment of FIG. **1**A.

[0008] FIG. **2**B is a front view of a component of embodiments of the present invention.

[0009] FIG. **3** is a perspective view of a component of the embodiment of FIG. **1**A.

[0010] FIG. **4** is a perspective view of a component of the embodiment of FIG. **1**A.

[0011] FIG. **5** is a perspective view of a component of the embodiment of FIG. **1**A.

[0012] FIG. **6**A is a top view of a component of the embodiment of FIG. **1**A.

[0013] FIG. **6**B is a side view of a component of the embodiment of FIG. **1**A.

[0014] FIG. **7** is a front view of a component of the embodiment of FIG. **1**A.

[0015] FIG. **8**A is a top view of a component of embodiments of the present invention.

[0016] FIG. **8**B is a top view of a component of embodiments of the present invention.

[0017] FIG. **9** is a perspective view of another embodiment of the present invention.

[0018] FIG. **10** is a perspective view of yet another embodiment of the present invention.

[0019] FIG. **11** is a perspective view of a further embodiment of the present invention.

[0020] FIG. **12** is a perspective view of yet a further embodiment of the present invention.

[0021] FIG. **13**A is a front view of a component of embodiments of the present invention.

[0022] FIG. **13**B is a front view of a component of embodiments of the present invention.

[0023] FIG. **14** is a perspective view of another embodiment of the present invention.

[0024] FIG. **15**A is a front view of yet another embodiment of the present invention.

[0025] FIG. **15**B is a perspective view of the embodiment of FIG. **15**A.

[0026] FIG. **16** is a perspective view of a further embodiment of the present invention.

[0027] FIG. **17** is a perspective view of yet a further embodiment of the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0028] For the purposes of promoting an understanding of the principles of the invention, reference will now be made to the embodiments illustrated and specific language will be used to describe the same. It will nevertheless be understood that no limitation of the scope of the invention is thereby intended, such alterations, modifications, and further applications of the principles of the invention being contemplated as would normally occur to one skilled in the art to which the invention relates.

[0029] Illustrated in the accompanying figures are modular furniture systems and arrangements having interlocking inner dividers and outer panels to create various furniture pieces, such as cubbies or lockers. Certain embodiments are packaged as kits which can be easily shipped and assembled and disassembled. The kits have components which are preferably interchangeable and connectable to form various configurations. Non-limiting examples of arrangements are illustrated in the accompanying figures.

[0030] In certain embodiments, the components of the arrangements are removably and slideably connectable, with the components having slots, grooves and shelves to engage each other. The inner dividers, outer panels, and overall assembly can be arranged vertically, horizontally and/or stacked as desired. In preferred embodiments, kits include two base panels and various other components, so that an arrangement including the two base panels with a desired combination of other panels and dividers can be created.

[0031] FIG. **1**A illustrates a modular furniture arrangement **20** creating a plurality of cubbies using two base pieces and a variety of other components. Arrangement **20** includes two base panels **22**, two short side panels **24**, one long

horizontal divider **26**, four short vertical dividers **28** and a short back panel **30**. In certain embodiments, arrangement **20** includes side casings **32** and back casings **34** (see FIG. **4**), selectively and releasably mountable around peripheries of the arrangement, to provide reinforcement, strength and stability to the arrangement and maintain formation of the arrangement. In certain embodiments, the side and back casings are releasably connected to base panels **22**. Additionally, the panels and dividers can include mounting holes **36** to allow for the connection of various items, such as other furniture arrangements, hanging hooks, trays, racks or bins (see FIG. **14**). The short vertical dividers and the long horizontal divider connect with each other via slots in the dividers (FIGS. **6**A-**7**). In certain embodiments, the base panels and the side panels include grooves and shelves to receive the ends or edges of the dividers to further secure the dividers in place. The panels and the dividers connect together to form arrangement **20**.

[0032] In the illustrated embodiment, arrangement **20** creates **10** cubbies. It should be appreciated that arrangement **20** is for illustration only and alternate sizes and geometric shapes of the components can be used in other embodiments forming various other furniture pieces. Additionally, arrangement **20** can be orientated differently and the reference directions, including back panels, side panels, and base panels, are for illustration and description purposes only (see, for example, FIG. **1**B).

[0033] FIG. **1**B illustrates an arrangement **20'**. Arrangement **20'** includes an arrangement **20** rotated approximately 90 degrees, so that arrangement **20'** is resting on two side casings **32**. In certain embodiments, arrangement **20'** includes the same panels and dividers as arrangement **20**, except that long horizontal divider **26** is absent. As illustrated, short vertical dividers **28** include slots **57** configured to cooperate with corresponding slots in a long horizontal divider **26**. In certain embodiments in which long horizontal divider **26** is absent, inserts **82** are placed in slots **57**. Additionally, as illustrated, short side panels **24** include grooves **55** configured to receive ends of a long horizontal divider **26**. In certain embodiments in which long horizontal divider **26** is absent, inserts **80** are placed in grooves **55**. In the illustrated embodiment, arrangement **20'** creates 5 shelves or cubbie areas stacked vertically. However, it should be appreciated that arrangement **20'** can be arranged differently to create various other cubbie and/or shelf arrangements.

[0034] FIG. **2**A is a top view of a base panel **22**, along with side casings **32** and back casing **34**. Panel **22** includes an inner face side **22***a* opposite an outer face side **22***b*. Panel **22** is generally rectangular in shape having a length along a length direction L and a generally perpendicular width along a width direction W; however, other geometric shapes and configurations can be used. The casings can be releasably connected to the base panel by screws, brackets, or other such connection mechanisms as would occur to one skilled in the art.

[0035] In certain preferred embodiments, base panel **22**, in conjunction with side casings **32** and back casings **34**, defines grooves to receive ends of the inner dividers, side panels, and back panels, to assemble the arrangement. In the illustrated embodiment, base panel **22** includes five middle portions **42** which serve as the bottom or top of the cubbies. Additionally, base panel **22** includes four middle grooves **44** between middle portions **42** which snugly receive ends or edges of the short vertical dividers. In the illustrated embodiment, there are two side grooves **45**, between two end middle portions **42** and side casings **32**, which snugly receive ends or edges of the side panels. Additionally, there is one back groove **46**, between middle portions **42** and back casing **34**, which snugly receives an end or edge of back panel **30**. Optionally, the base panels can include ribs or supporting members to provide increased stability and strength to the base panels.

[0036] In the embodiment illustrated in FIG. **1**A, base panels **22** are the top and bottom pieces of arrangement **20**. In preferred embodiments, the base panels are interchangeable. As illustrated, inner sides **22***a* face the inside of arrangement **20** and outer sides **22***b* face out from arrangement **20**. In certain alternative embodiments, a bottom base panel is slightly larger than a standard base panel to provide a sturdy base when arrangement **20** is assembled and used.

[0037] In certain embodiments, base panels **22** include holes **43** to cooperate with casters and/or other types of wheel mechanisms to provide easier mobility of the arrangements. As an example, FIG. **2**B illustrates a caster **70** that can be used with a base panel **22**. Caster **70** generally includes a wheel member **72**, a housing member **74**, and a pin member **76**. In certain embodiments, pin member **76** is configured to be received in a hole **43** of base panel **22**. In certain embodiments, at least four casters **70**, or other such wheel mechanisms, are positioned adjacent the four corners of base panel **22**. Optionally a fifth castor can be positioned approximately at the front and middle of base panel **22**.

[0038] FIG. **3** illustrates a side casing **32**. In certain embodiments, side casing **32** includes a groove **47** to receive an end of back casing **34**, thereby engaging side casing **32** to back casing **34**. Additionally, side casing **32** can include a groove or shelf **48** along an inner edge of the side casing to receive an end of base panel **22**. In the illustrated embodiment, groove **48** extends adjacent an upper edge of the illustrated side casing. It should be appreciated that the opposite side casing positioned on the furniture arrangement is a mirror image of the illustrated side casing **32**. As stated above, side casing **32** can be connected to base panel **22** by various connection mechanisms as would occur to one skilled in the art, such as a bracket and screw connection mechanism. In certain embodiments, side casing **32** includes a curved section **49**. In such embodiments, side casing **32** is positioned with the curved section placed towards the front.

[0039] FIG. **4** illustrates a back casing **34**. In certain embodiments, back casing **34** includes a groove or shelf **50** along a top inner edge of the back casing to receive an elongated side of base panel **22**. As stated above, back casing **34** can be connected to base panel **22** by various connection mechanisms as would occur to one skilled in the art, such as a bracket and screw connection mechanism. Back casing **34** has ends **51** and **52** which, in certain embodiments, are received in grooves **47** in side casings **32** to engage the back casing to the side casings.

[0040] FIG. **5** illustrates a side panel **24** having an inner side **24***a* and an outer side **24***b*. In the embodiment illustrated in FIG. **1**A, side panels **24** are the sides of arrangement **20** with inner sides **24***a* facing the inside of arrangement **20** and outer sides **24***b* facing out from arrangement **20**. A groove or shelf **55** is disposed on inner side **24***a* and configured to receive an end edge of a divider. In the embodiment illustrated in FIG. **1**A, shelf **55** receives an end edge of long horizontal divider **26**. Shelf **55** preferably does not extend all

the way through the thickness of side panel **24** and may not extend the entire width of side panel **24** along a width direction W. Side panel **24** further includes raised ends **24***c* and **24***d*. In certain preferred embodiments, ends **24***c* and **24***d* are received in grooves **45** of base panels **22** when arrangement **20** is assembled. Additionally, in certain embodiments, side panel **24** can include an extension **56**, having an inside surface **56***a*, to be positioned adjacent back panel **30** to hold back panel **30** in place, providing strength and stability to assembly **20**.

[0041] It should be appreciated that side panel **24** could be wider along width direction W to create a larger arrangement, such as creating deeper cubbies. Additionally, it should be appreciated that side panel **24** could be taller in a height direction H to create a larger, taller arrangement having larger and/or additional cubbies or lockers. In such embodiments, side panel **24** can include more shelves **55** to receive ends of additional dividers. Side panel **24** is preferably noncircular in shape such as rectangular or square; however, it should be appreciated that alternative shapes and configurations are possible as would occur to one skilled in the art.

[0042] FIG. **6**A illustrates a long horizontal divider **26** having inter-locking half slots **57**. In preferred embodiments, slots **57** are evenly spaced along horizontal divider **26**; however, the slots could be irregularly spaced along the divider. Long horizontal divider **26** is preferably noncircular in shape, such as rectangular or square; however, other alternative shapes and configurations are contemplated. Additionally, long horizontal divider **26** can be longer or shorter along length direction L and width direction W. In certain preferred embodiments, a length of the long horizontal divider is substantially equal to lengths of the base panels, and a width of the long horizontal divider is substantially equal to widths of the long and side panels. Long horizontal divider **26** includes ends **26**a and **26**b. In certain preferred embodiments, ends **26**a and **26**b are received on shelves **55** of side panels **24** when arrangement **20** is assembled.

[0043] In the illustrated embodiment, long horizontal divider **26** includes four slots **57**; however, it should be appreciated that divider **26** could include a different quantity of slots **57**, creating a different quantity of cubbies when connected with additional short vertical dividers. In preferred embodiments, slots **57** extend from an edge of long horizontal divider **26** to a point approximately half the width of divider **26** along width direction W. In alternative embodiments, slots **57** extend further or less along width direction W.

[0044] FIG. **6**B illustrates a short vertical divider **28** having one inter-locking half slot **57**. Short vertical divider **28** is preferably noncircular in shape such as rectangular or square; however, other alternative shapes and configurations are contemplated. In the illustrated embodiment, there is one slot **57**, however there could be more slots **57** as would occur to one skilled in the art. In certain preferred embodiments, a height of the short vertical divider along a height direction H is substantially equal to the height of the side panels, and a width of the short vertical divider along a width direction W is substantially equal to the width of the side panels. Additionally, short vertical divider **28** can include a different width and/or a different height along width direction W and height direction H, respectively, than the illustrated embodiment. Short vertical divider **28** includes ends **28***a* and **28***b*. In certain preferred embodiments, ends **28***a* and **28***b* are received in grooves **44** of base panels **22** when arrangement **20** is assembled.

[0045] Similar to long horizontal divider **26**, slot **57** in short vertical divider **28** preferably extends from an edge of divider **28** to a point approximately half the width of divider **28** along width direction W. In alternative embodiments, slot **57** extends beyond or less than half the width of divider **28**. Slots **57** in short vertical dividers **28** engage slots **57** in long horizontal divider **26**, as illustrated in FIG. **1**, to form the cubbies of arrangement **20** with the short vertical dividers positioned perpendicular to the long horizontal divider. The slots in the dividers enable the short vertical dividers to interlock with the long horizontal dividers to form the inner walls of the arrangement.

[0046] FIG. **7** illustrates a short back panel **30**. In certain preferred embodiments, ends **30**a and **30**b are received in back grooves **46** of base panels **22** to form a back wall when arrangement **20** is assembled. Optionally, there are mounting holes **36** in the back panel **30** for mounting back casings **34** to back panel **30**. Back panels include ends **30***a* and **30***b* which, in certain embodiments, are positioned adjacent inside surface **56**a of extension **56** of side panel **24**.

[0047] Back panel **30** is preferably noncircular in shape including a rectangular or square shape. In the illustrated embodiment, back panel **30** is rectangular. However, it should be appreciated that alternative shapes and sizes are contemplated. As one example, the arrangement can include five back panels equal in width to the one illustrated back panel **30** to be received in grooves **46** of base panels **22**. In the illustrated embodiment, the back panel is substantially equal in height to the height of the short vertical dividers, along a height direction H. Additionally, in the illustrated embodiment, there is one back panel **30**, however the back panel could number more than one, in part depending on the size and configuration of the back panels.

[0048] FIG. **8**A illustrates a long insert **80**. Insert **80** is configured to be received in grooves when the grooves do not otherwise have a corresponding end of a divider positioned therein. In certain embodiments, insert **80** can be received in grooves **44**, **45**, **46**, and/or **55**. FIG. **8**B illustrates a short insert **82**. Insert **82** is configured to be received in slots in the inner dividers when the particular slots are not otherwise cooperating with another slot of an inner divider. In certain embodiments, insert **80** can be received in slots **57** of the inner dividers. In preferred embodiments, inserts **80** include a larger width along a width direction W than inserts **82**. In certain embodiments, insert **82** includes a width corresponding to the half-width of slots **57** in the inner dividers. In the illustrated embodiments, inserts **80** and **82** include curved ends **80***a* and **82***a*, respectively, and straight ends **80***b* and **82***b*, respectively, to snugly fit within the slots and grooves of the arrangements. The inserts have a thickness to fill the groove depth, for example with a ½ thickness for a ½ depth groove, a full thickness to fill a full depth groove, or two ½ thickness inserts to fill a full depth groove.

[0049] In preferred embodiments, inserts **80** and **82** are configured to fit within the slots and grooves by interference fit and create continuous, smooth surfaces in the arrangements. Optionally, fasteners or adhesive can be used. In arrangement **20'**, inserts **82** are inserted into slots **57** of short dividers **28**. In such embodiments, short dividers **28** having inserts **82** are positioned such that inserts **82** are positioned adjacent back panel **30** of arrangement **20'**.

[0050] Referring generally to FIGS. **1**-**8**B, the overall assembly of arrangement **20** is as follows. In one preferred embodiment, the components in the kit substantially connect and interlock to form arrangement **20**. A kit includes two base panels, two short side panels, one long horizontal divider, four short vertical dividers and one short back panel, among other panels and dividers. During assembly, the short vertical dividers and the short side panels are snugly inserted into grooves on an inner side of a base panel positioned as the bottom panel. Slots in the long horizontal divider are aligned with slots in the short vertical dividers, and the dividers are positioned so that the long horizontal divider interlocks with the short vertical dividers.

[0051] The interlocking dividers are assembled upon or placed on a base panel so that edges of the vertical dividers engage middle grooves in the base panels. Ends of the long horizontal divider are positioned onto shelves on inner sides of the side panels. The back panel is inserted between the dividers into the back groove in the bottom base panel. A second base panel is placed over the side panels and dividers so that the short vertical dividers, short side panels and short back panel are snugly received in corresponding grooves in the top base panel. In some embodiments, the side panels and the back panel are secured to the base panels by screws or other releaseable fasteners. In certain embodiments, inserts **80** and **82** can be placed within grooves and/or slots, respectively, where such grooves and/or slots are not cooperating with another panel or divider, to create smooth, continuous surfaces in the arrangement.

[0052] In certain embodiments, the modular furniture arrangements are assembled without the use of tools or fasteners by using, as examples, snap together mechanisms or manual fasteners. In one option, a large kit can include two base panels and a plurality of short and tall side and back panels, horizontal dividers, and short and tall vertical dividers, allowing a user to assemble a desired arrangement. Numerous alternative furniture arrangements are possible, a few of which are described below in conjunction with the following figures. In certain embodiments, one or more furniture arrangements can be combined as desired. The arrangements are preferably disassemblable, so that other arrangements can be created as desired. In preferred embodiments, each arrangement includes two base panel pieces along with other dividers, side panels and a back panel assembled together to create desired arrangements.

[0053] FIG. **9** illustrates an example arrangement **120** creating a set of lockers and cubbies above the lockers. Arrangement **120** is similar in configuration to arrangement **20**, except that the short vertical dividers of arrangement **20** are replaced with tall vertical dividers in arrangement **120**. In certain embodiments, the tall vertical dividers are interchangeable with the long horizontal dividers. Additionally, the back and side panels are taller along a height direction H in arrangement **120**, with the height of the back panel and the tall vertical dividers being approximately equal to the height of the side panels. In the illustrated embodiment, inserts **80** are inserted into grooves **55** to create flat inner surfaces of the arrangement.

[0054] Arrangement **120** is preferably assembled in a similar manner as arrangement **20**. In alternative embodiments, the long horizontal divider is absent with the arrangement forming taller lockers. In alternative embodiments, there are multiple long horizontal dividers creating numerous cubbies. In other embodiments, arrangement **120** can be used in an upside-side position to place the cubbies below the lockers. In still other embodiments, arrangement **120** can be placed on a side, with the base panels positioned generally vertical.

[0055] FIG. **10** illustrates an example arrangement **220** forming a combination of lockers and cubbies, or other such storage areas as desired. Arrangement **220** shares common characteristics with arrangements **20** and **120**. Arrangement **220** includes an arrangement **120** positioned on top of an arrangement **20**.

[0056] FIG. **11** illustrates an example arrangement **320** also forming a combination of lockers and cubbies, or other such storage areas. Arrangement **320** shares common characteristics with arrangements **20**, **120** and **220**. Arrangement **320** consists of an arrangement **20** positioned on top of an arrangement **120**.

[0057] FIG. **12** illustrates an example arrangement **420** forming a combination of lockers and cubbies, or other such storage areas as needed by users. Arrangement **420** shares common characteristics with arrangements **20**, **120**, **220** and **320**. Arrangement **420** includes an arrangement **120** with an arrangement **20** positioned on a side, the arrangement **20** being turned **90** degrees from the illustrated position in FIG. **1**A.

[0058] FIG. **13**A illustrates a single plate **60**. As illustrated, in certain embodiments, plate **60** can include curved sections **61** to fittingly contact curved sections **49** of side casings **32**. FIG. **13**B illustrates a hinge assembly **62** including two plates **60** connected with a hinge **64**. In certain embodiments, hinge assembly **62** includes a piano hinge. However, it should be appreciated that hinge assembly **62** can use other types of hinge mechanisms as would occur to one skilled in the art. In some embodiments, the arrangements can include one or more single plates **60** and/or hinge assemblies **62** connected between separate assemblies. In such embodiments, hinge assemblies **62** can be used to connect the arrangements together, such as by inserting screws through plates **60** into the outer surfaces of the sub-assemblies, creating a pivot arrangement with respect to a door panel or another sub-assembly (see FIGS. **15**A-**17**). In certain embodiments, hinge assembly **62** allows for pivoting of one plate relative to the other plate of less than about **180** degrees. However, it should be appreciated that hinge assembly **62** can be configured differently so as to permit less or greater pivoting of one plate relative to the other plate and the respective sub-assemblies.

[0059] FIG. **14** illustrates an example arrangement **520** forming a combination of lockers and cubbies, or other such storage areas as needed by users. Arrangement **520** shares common characteristics with arrangements **20**, **120**, **220**, **320** and **420**. Arrangement **520** includes an arrangement **120** and two arrangements **20**, with one arrangement **20** positioned on a side, that particular arrangement **20** being turned 90 degrees from the illustrated position in FIG. **1**. In certain embodiments, arrangement **520** can include accessories, such as magazine racks **525** mounted to the exterior of the arrangements **20** and **120**. Racks **525** can be connected to the arrangements by the use of fasteners or other such connection mechanisms in conjunction with mounting holes **36**. In certain other embodiments, other types of accessories can be connected to the exterior of the arrangements in addition to or in place of magazine racks **525**.

[0060] FIG. **15**A illustrates two arrangements **20** connected together via a hinge assembly **62**. Each arrangement

20 includes one plate **60** of hinge assembly **62** mounted to a side panel of the arrangement. Additionally, in the illustrated embodiment, each arrangement **20** includes a single plate **60** connected to a side panel of the arrangement opposite hinge assembly **62**. Hinge assembly **62** operates to allow one arrangement **20** to pivot relative to the other arrangement **20**. In FIG. **15**A, arrangements **20** are in an open position. FIG. **15**B illustrates arrangements **20** in a closed position. Additionally, one of the arrangements **20** can include a latch **65** and the other arrangement **20** can include a hook **66** to cooperate with latch **65** to lock the two arrangements **20** together. In such embodiments, latch **65** and hook **66** can be positioned on single plates **60**. However, it should be appreciated that arrangements **20** can lock in the closed position in appropriate manners using various mechanisms as would occur to one skilled in the art. In certain embodiments, arrangements **20** can include casters, as described above, or other such wheel assemblies, to increase the ease of mobility of the arrangements and the movement (e.g. opening and closing) of the arrangements relative to each other.

[0061] FIG. **16** illustrates an arrangement **120** and an arrangement **20** connected together via hinge assembly **62**. In the illustrated embodiment, arrangement **120** is rotated approximately 180 degrees from the illustration of FIG. **9**. In such embodiments, arrangement **20** can be pivoted about hinge assembly **62** to cover the lower cubbies created by the rotated arrangement **120**. Additionally, in the illustrated embodiment, arrangement **20** creates a bench surface **600**. In such embodiments, bench surface **600** can provide for seating and/or can provide a surface to place books, bags, or other such items. Additionally, arrangement **20** can lock to arrangement **120** in any appropriate manner, for example by a hook and latch mechanism similar to hook **66** and latch **65**.

[0062] FIG. **17** illustrates an arrangement **20** having a door **700** connected to arrangement **20** via hinge assembly **62**. In the illustrated embodiment, door **700** can pivot about hinge assembly **62** to cover the cubbies of arrangement **20**. In certain embodiments, door **700** can include a hook **702** to cooperate with a latch **704** positioned on arrangement **20** lock to door **700** to arrangement **20**. In some embodiments, latch **704** can be mounted to a single plate **60** mounted to a side panel of arrangement **20**. However, it should be appreciated that door **700** can lock to arrangement **20** in other appropriate manners as would occur to one skilled in the art.

[0063] In preferred embodiments, the components of the modular furniture arrangements are made from lightweight materials. In certain preferred embodiments, the components are formed in blow-molded or injection-molded plastic. As an example, the components are made with hollow, blow-molded or injection molded, polyethylene. In certain preferred embodiments, the components are molded in plastic to define the shelves, grooves and slots described herein. In such embodiments, the plastic molded components are waterproof and easy to clean, along with having other advantages associated with plastic materials.

[0064] In some embodiments, the components can be made from metal, rubber or other types of plastic. In other embodiments, the components are made from wood. As an example, some assemblies mix materials, such as the inner dividers being made from wood, with the outer panels being formed of a plastic material. Alternatively, the components are made from a transparent material, such as polycarbonate, which may be clear or tinted. However, it should be appreciated that other materials can be used as would generally occur to one skilled in the art. In certain preferred embodiments, the edges of the furniture arrangements and the components thereof are generally rounded to protect users of the arrangements which can include children.

[0065] In preferred embodiments, kits include two base panel pieces and various other components. A user selects components, including two base panels and various other panels and dividers, from the kit to assemble an arrangement as desired. Various other possible alternative arrangements can be created using components such as those described herein and other alternative components. In other arrangements, multiple panels and dividers may be combined in vertical and horizontal arrangements to create various other modular furniture pieces. In certain embodiments, multiple furniture arrangements are connectable together via hinge assemblies included in the kits.

[0066] As mentioned above, the arrangements can optionally include casters or wheel assemblies mounted to the base panels, serving as a base to the arrangement and to facilitate the ability to move the arrangements. In an optional embodiment requiring tools and fasteners, the wheels can be selectively mountable to and removable from the base panel as desired. Additionally, in certain embodiments, the arrangements can optionally include drawers insertable in the cubbies created by the various arrangements. In such embodiments, the insert drawers can optionally be included in the kits.

[0067] While the invention has been illustrated and described in detail in the drawings and foregoing description, the same is to be considered as illustrative and not restrictive in character, it being understood that only the preferred embodiment has been shown and described and that all changes and modifications that come within the spirit of the invention are desired to be protected.

What is claimed is:

1. A kit, comprising:

two interchangeable base panels having a length and a width perpendicular to the length, at least two short side panels having a short height, at least two tall side panels having a tall height, wherein said tall height differs from said short height, at least one short back panel having a height corresponding to the height of said short side panels, at least one tall back panel having a height corresponding to the height of said tall side panels, at least one horizontal divider having a length corresponding to the length of said base panels, at least one short vertical divider having a height corresponding to the height of said short side panels, and at least one tall vertical divider having a height corresponding to the height of said tall side panels;

wherein said base, side, and back panels, and said horizontal and vertical dividers, are selectively assemblable to form at least two disassemblable configurations, wherein each of said configurations includes a first base panel positioned generally parallel to a second base panel;

wherein a first configuration is a cubbie configuration:

wherein two of said short side panels are positioned as sides of said cubbie configuration between said base panels, such that said base panels are spaced apart by the height of said short side panels and said short side panels are spaced apart by the length of said base panels;

wherein said at least one short back panel is positioned as a back of said cubbie configuration;

wherein said two short side panels and said short back panel are selectively engaged to and positioned generally perpendicular to said first and second base panels; and,

wherein said at least one horizontal divider is selectively engaged to said two short side panels and said at least one short vertical divider, and said at least one short vertical divider is selectively engaged to said base panels, said at least one short vertical divider being positioned generally parallel to and between said two short side panels and said at least one horizontal divider being positioned generally parallel to and between said base panels;

wherein a second configuration is a locker configuration:

wherein two of said tall side panels are positioned as sides of said locker configuration between said base panels, such that said base panels are spaced apart by the height of said tall side panels and said tall side panels are spaced apart by the length of said base panels;

wherein said at least one tall back panel is positioned as a back of said locker configuration;

wherein said two tall side panels and said tall back panel are selectively engaged to and positioned generally perpendicular to said first and second base panels; and

wherein said at least one horizontal divider is selectively engaged to said two tall side panels and said at least one tall vertical divider, and said at least one tall vertical divider is selectively engaged to said base panels, said at least one tall vertical divider being positioned generally parallel to and between said two tall side panels and said at least one horizontal divider being positioned generally parallel to and between said base panels.

2. The kit of claim **1**, wherein in said locker configuration, said horizontal divider is offset between said base panels, such that the distance between said horizontal divider and said first base panel is smaller than the distance between said horizontal divider and said second base panel.

3. The kit of claim **1**, wherein said at least one tall vertical divider and said at least one horizontal divider are interchangeable.

4. The kit of claim **1**, wherein said kit is combinable with a second kit, said second kit including panels and dividers assemblable to form at least one configuration, and comprising at least one hinge assembly, wherein said hinge assembly is selectively engageable to configurations formed from said kit and said second kit to connect said configurations together.

5. The kit of claim **4**, wherein one configuration formed from said kit and said second kit is a cubbie configuration, and the other configuration formed from said kit and said second kit is a locker configuration.

6. The kit of claim **1**, wherein:

each of said base panels includes a back edge along the length of said base panel and two side edges along the width of said base panel;

said back panel includes two ends along the length of said back panel;

each of said side panels has a width corresponding to the width of said base panels and includes two ends along the width of said side panel engageable with said side edges of said base panels; and

each of said base panels includes at least one back groove adjacent the back edge of said base panel to snugly receive one of said ends of said back panel, and further includes two side grooves, one of said two side grooves adjacent each of said side edges of said base panels, wherein each of said side grooves snugly receives one of said ends of one of said side panels.

7. The kit of claim **1**, wherein said vertical divider has a width corresponding to the width of said base panels and includes two opposite ends along the width of said vertical divider, wherein each of said base panels includes at least one middle groove to snugly receive one of said ends of said vertical dividers.

8. The kit of claim **1**, wherein said horizontal divider has a width corresponding to the width of said base panels and includes two opposite ends along the width of said horizontal divider, wherein each of said side panels includes at least one shelf to snugly receive one of said ends of said horizontal divider.

9. The kit of claim **1**, wherein each of said horizontal divider, said short vertical divider, and said tall vertical divider has a width corresponding to the width of said base panels and includes a slot to interlock said horizontal and vertical dividers, wherein said slots are interlocking slots extending approximately half the width of each of said horizontal divider, said short vertical divider, and said tall vertical divider.

10. The kit of claim **1**, comprising at least one back casing and at least two side casings selectively and releasably mounted about a periphery of said configurations to maintain formation of said configurations, said back casing and said side casings being selectively and releasably engageable to said base panels.

11. The kit of claim **10**, wherein said side casings each include a groove and a shelf, wherein said back casing has a length corresponding to the length of said base panels and a height perpendicular to said length, wherein said back casing includes two opposite ends along the height of said back casing, wherein each of said base panels includes two ends along the width of said base panel, wherein said groove receives one of said ends of said back casing and said shelf receives one of said ends along the width of said base panel.

12. The kit of claim **1**, comprising at least one mounting hole defined in one or more of said base, side, and back panels, and said horizontal and vertical dividers, for mounting at least one object to said configurations.

13. A furniture assembly, comprising:

at least two interchangeable base panels having a length, at least two short side panels having a height, at least two tall side panels having a height, at least one short back panel having a height corresponding to the height of said short side panels, at least one tall back panel having a height corresponding to the height of said tall side panels, at least one horizontal divider having a length corresponding to the length of said base panels, at least one short vertical divider having a height corresponding to the height of said short side panels, and at least one tall vertical divider having a height corresponding to the height of said tall side panels;

wherein said base, side, and back panels, and said horizontal and vertical dividers, are selectively assemblable to form at least two disassemblable configurations.

14. The furniture assembly of claim **13**, wherein in each of said configurations, a first base panel is positioned generally parallel to a second base panel, wherein each of said base panels includes a back groove to selectively engage edges of said back panel, at least one middle groove to selectively engage edges of said vertical dividers, and two side grooves to selectively engage edges of said side panels, wherein said horizontal divider and said tall and short vertical dividers each include at least one inter-locking half slot to interlock said horizontal divider with said tall and short vertical dividers;

wherein a first configuration is a cubbie configuration:

wherein two of said short side panels are positioned as sides of said cubbie configuration between said base panels, such that said base panels are spaced apart by the height of said short side panels and said short side panels are spaced apart by the length of said base panels;

wherein said short back panel is positioned as a back of said cubbie configuration;

wherein said two short side panels and said short back panel are selectively engaged to and positioned generally perpendicular to said first and second base panels; and,

wherein said at least one horizontal divider is selectively engaged to said two short side panels and said at least one short vertical divider, and said at least one short vertical divider is selectively engaged to said at least one horizontal divider and said base panels, said at least one short vertical divider being positioned generally parallel to and between said two short side panels and said at least one horizontal divider being positioned generally parallel to and between said base panels.

15. The furniture assembly of claim **14**, wherein a second configuration is a locker configuration:

wherein two of said tall side panels are positioned as sides of said locker configuration between said base panels, such that said base panels are spaced apart by the height of said tall side panels and said tall side panels are spaced apart by the length of said base panels;

wherein said tall back panel is positioned as a back of said locker configuration;

wherein said two tall side panels and said tall back panel are selectively engaged to and positioned generally perpendicular to said first and second base panels; and

wherein said at least one horizontal divider is selectively engaged to said two tall side panels and said at least one tall vertical divider, and said at least one tall vertical divider is selectively engaged to said at least one horizontal divider and said base panels, said at least one tall vertical divider being positioned generally parallel to and between said two tall side panels and said at least one horizontal divider being positioned generally parallel to and between said base panels.

16. The furniture assembly of claim **14**, comprising at least one long insert and at least one short insert, wherein said long insert is configured to fit in one of any of said back groove, said middle groove, and said side grooves, and wherein said short insert is configured to fit in one of any of said inter-locking half slots.

17. The furniture assembly of claim **13**, wherein said furniture assembly is combinable with a second furniture assembly, said second furniture assembly including panels and dividers assemblable to form at least one configuration, and comprising at least one hinge assembly selectively engageable to configurations from said furniture assembly and said second furniture assembly to connect said configurations.

18. The furniture assembly of claim **15**, wherein said assembly is arrangeable to form a second locker configuration comprising a plurality of said horizontal dividers positioned generally parallel to and between said base panels, and a plurality of said tall vertical dividers positioned generally parallel to and between said tall side panels.

19. The furniture assembly of claim **13**, comprising at least two back casings and at least four side casings, wherein said casings are selectively and releasably mounted around two peripheries of a configuration to maintain engagement of said panels and said dividers of said configuration, said casings being selectively and releasably engaged to said base panels.

20. The furniture assembly of claim **13**, wherein each of said base panels has a width perpendicular to the length of said base panel, wherein said horizontal divider has a width corresponding to the width of said base panels and includes two opposite ends along the width of said horizontal divider, wherein each of said side panels includes at least one shelf to snugly receive one of said ends of said horizontal divider.

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