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United States Patent	12383082
Kind Code	B1
Date of Patent	August 12, 2025
Inventor(s)	Bailey; Kyndra Lee

Modular customizable retail shelving apparatus

Abstract

The modular shelving apparatus can have at least two mounting brackets each with a plurality of posts protruding from a face and a first and second slot disposed substantially perpendicular to each other thereon. A removable ledge portion can be mounted to each of the first slots of each of the mounting brackets and can include a plurality of slots for inserting dividers therein. A tray portion can be mounted to each of the second slots of each of the mounting brackets and can include a plurality of posts protruding from a face thereof. Removable dividers can be installed in one or more of the plurality of slots of the removable ledge to configure the modular shelving apparatus based on needs.

Inventors: **Bailey; Kyndra Lee (Maxwell, TX)**

Applicant: **Bailey; Kyndra Lee** (Maxwell, TX)

Family ID: **1000008021821**

Assignee: **KynYouBelievelt LLC (Lockhart, TX)**

Appl. No.: **18/765455**

Filed: **July 08, 2024**

Publication Classification

Int. Cl.: **A47F5/08** (20060101); **A47F5/00** (20060101)

U.S. Cl.:

CPC **A47F5/0815** (20130101); **A47F5/0043** (20130101); **A47F5/0823** (20130101);

Field of Classification Search

CPC: A47F (5/0815); A47F (5/0043); A47F (5/0823); A47F (5/0884); A47B (96/02); A47B (96/027)

USPC: 211/186; 211/57.1; 211/75; 211/88.01; 211/88.02; 211/90.01; 211/184; 211/72; 248/220.31; 248/220.41; 248/220.42; 248/220.43

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Primary Examiner: Novosad; Jennifer E.

Attorney, Agent or Firm: Dunlap Bennett & Ludwig, PLLC

Background/Summary

BACKGROUND OF THE INVENTION

(1) The present invention relates to retail shelving, and, more particularly, to modular retail shelving configured to be customizable based on differing applications.

(2) Shelving has traditionally been utilized for storage and organization of a variety of products in both retail and non-retail settings. Many shelving systems utilized are modular, allowing for reconfiguration of the shelving system to suit a specific product or need. However, disadvantages associated with modular retail shelving are numerous and include such things as bulky manufacturer specific backing, fixed width shelving, and a requirement to disassemble the shelving prior to reconfiguration.

(3) U.S. Pat. No. 9,468,313 illustrates a prior art modular shelving system with a plurality of dividers configured to be customizably affixed to the tray. However, the system of the '313 patent is disadvantageous because the tray is a fixed size thereby limiting customization and requiring manufacture and complete replacement of an entirely new tray if a different size is required. Furthermore, the system of '313 requires additional fastening mechanism to mount the tray.

(4) U.S. Pat. No. 8,162,158 illustrates a second prior art modular shelving system with mounting brackets, a plurality of dividers, and a tray portion configured to be customizably affixed to a slatwall. However, the system of the '158 patent is disadvantageous because in order to reconfigure the dividers the system must be disassembled thereby creating inefficiencies in retail display.

(5) U.S. Pat. No. 5,255,802 illustrates a third prior art modular shelving system with a backing, a tray, and a plurality of dividers configured to be customizable. However, the system of the '802 patent is disadvantageous because the tray and backing are of fixed size thereby limiting customization and requiring manufacture and complete replacement of different sizes of backing and trays.

(6) As can be seen, there is a need for a modular retail shelving system configured to be customizable that addresses the disadvantages of the prior art.

SUMMARY OF THE INVENTION

(7) In one aspect of the present invention, a modular retail shelving apparatus is provided. In embodiments the modular retail shelving apparatus is customizable and reconfigurable to suit the needs of the user. The modular retail shelving apparatus has at least two mounting brackets, each mounting bracket of the at least two mounting brackets having, a plurality of mounting posts protruding from a first face, a first mounting slot in a second face, and a second slot in a third face, wherein the first slot is substantially perpendicular to the second mounting slot; a ledge having a plurality of divider slots disposed within a first face, a first tab disposed on a first end of the ledge and a second tab disposed on a second end of the ledge; and a tray having a first plurality of tray post protruding from a first face, a second plurality of tray posts protruding from the first face, a first tray slot disposed within the first face and proximate to a first end, and a second tray slot disposed within the first face and proximate to a second end.

(8) Additionally, one or more dividers with a plurality of divider posts protruding from a first face thereof can be provided, and can be mounted to one or more of the divider slots. The modular retail shopping apparatus can be mounted to a backing, such as a pegboard, which can allow configuration limited only by the locations of holes within the backing.
(9) These and other features, aspects and advantages of the present invention will become better understood with reference to the following drawings, description, and claims.

Description

BRIEF DESCRIPTION OF THE DRAWINGS
(1) FIG. **1** is a perspective view of an embodiment of a modular retail shelving apparatus, according to aspects of the present invention;
(2) FIG. **2** is an exploded view of an embodiment of a modular retail shelving apparatus, according to aspects of the present invention;
(3) FIG. **3** is a top plan view of an embodiment of a modular retail shelving apparatus, according to aspects of the present invention;
(4) FIG. **4** is a cross-sectional view of an embodiment of a modular retail shelving apparatus taken along line **4-4** of FIG. **3**, according to aspects of the present invention; and
(5) FIG. **5** is a cross-sectional view of an embodiment of a modular retail shelving apparatus taken along line **5-5** of FIG. **3**, according to aspects of the present invention.
DETAILED DESCRIPTION OF THE INVENTION
(6) The following detailed description is of the best currently contemplated modes of carrying out exemplary embodiments of the invention. The description is not to be taken in a limiting sense but is made merely for the purpose of illustrating the general principles of the invention, since the scope of the invention is best defined by the appended claims.
(7) In addition to the disadvantages of prior art modular shelving systems listed above, no current modular shelving systems are constructed to secure lightweight, and/or thinner products that have difficulty standing upright on their own.
(8) Broadly, one embodiment of the present invention is a modular retail shelving apparatus configured to be secured to a backing in a customizable configuration to suit a specific product or need. The modular retail shelving apparatus of the present invention can include at least two mounting brackets, a ledge portion, a tray portion, and at least one divider, which can be arranged on a backing in a customizable configuration to suit a specific product or need. The present invention eliminates the need to fully disassemble retail shelving to change a configuration, such as number of dividers, length of a tray portion, or length of a ledge portion, etc. Additionally, the present invention provides sufficient depth to allow products such as greeting cards, stickers, etc., to be displayed upright, securely, without falling over.
(9) The present invention can be monolithically formed, or manufactured, utilizing injection molding, 3-D printing, laser cutting, or other additive manufacturing techniques. The present invention can be formed of polymer materials such as acrylic, or other plastics, and can be transparent. Alternatively, the present invention can be formed of organic materials, and/or engineered materials.
(10) Referring to FIGS. **1**-**5**, FIG. **1** illustrates an embodiment of a fully assembled modular retail shelving apparatus. In embodiments, the modular retail shelving apparatus can be mounted to a backing **44** including a plurality of holes **46** configured for customized mounting. In embodiments, backing **44** can be a pegboard and the plurality of holes can be pegboard holes, but is not so limited. Advantageously, placement of components of the modular retail shelving apparatus are limited only by the number, spacing, and/or location of the plurality of holes.
(11) At least two mounting brackets **10** can be mounted to backing **44** via a subset of the plurality

of holes **44**. In embodiments, the at least two mounting brackets **10** can form end caps for the modular retail shelving apparatus. Additionally, the at least two mounting brackets **10** can be configured to receive and secure a ledge portion **38** and a tray portion **30**. In embodiments, the ledge portion **38** can include a plurality of slots **40** configured to receive a plurality of dividers **22**, in a manner dictated by the needs of a user of the modular retail shelving apparatus as illustrated in FIG. **3**. In embodiments, the tray portion **30** can form a shelf configured to support products in the modular retail shopping apparatus as illustrated in FIG. **3**. Advantageously, portions of the modular retail shelving apparatus, such as dividers, can be moved, repositioned, or otherwise reconfigured, without the need to disassemble the remaining components of the modular retail shelving apparatus.

(12) FIG. **2** illustrates an exploded view of an embodiment of the modular retail shelving apparatus. A bracket **10** of the at least two brackets can be monolithically formed and can include a bracket post **12**, a middle bracket post **14**, and a lower bracket post **16** configured to secure bracket **10** to backing **44**. In embodiments, bracket post **12** can be curved in a claw shape so as to prevent bracket **10** from inadvertently becoming detached from backing **44** as illustrated in FIGS. **3-4**. In embodiments, middle bracket post **14**, and lower bracket post **16** can be similarly shaped and can be configured to prevent excessive movement of bracket **10** while affixed to backing **44** as illustrated in FIGS. **3-4**. Additionally, bracket **10** can include a tray portion slot **18** and a ledge portion slot **20**. In embodiments, tray portion slot **18** can be oriented substantially horizontally when bracket **10** is mounted to backing **44** and is configured to accept a tray slot **32** of tray portion **30**. In embodiments, ledge slot portion **20** can be oriented substantially vertically when bracket **10** is mounted to backing **44** and is configured to accept a ledge slot **42** of ledge portion **38**. Advantageously, tray slot portion **18** and ledge slot portion **20** can be sized in order to provide friction fitting between each of the slot portions and their corresponding slot.

(13) A divider **22** of the plurality of dividers can be monolithically formed and can include a divider post **24**, a middle divider post **26**, and a lower divider post **28** configured to secure divider **22** to backing **44** as illustrated in FIGS. **3** and **5**. In embodiments, divider post **24** can be curved in a claw shape so as to prevent divider **22** from inadvertently becoming detached from backing **44** as illustrated in FIGS. **3** and **5**. In embodiments, middle divider post **26**, and lower divider post **28** can be similarly shaped and can be configured to prevent excessive movement of divider **22** while affixed to backing **44** as illustrated in FIGS. **3** and **5**. Additionally, divider **22** can be sized in order to provide friction fitting between a slot **40** of the plurality of slots and can be positioned, or arranged, in a manner to suit the needs of the modular shelving apparatus.

(14) A tray portion **30** can be monolithically formed and can include a plurality of tray slots **32**, a plurality of short posts **34**, and a plurality of long posts **36**. In embodiments, each tray slot **32** of the plurality of tray slots can be disposed proximate to an end of tray portion **30** opposite of one another. Each of tray slots **32** can be configured to interface with a tray slot portion **18** of a bracket **10** and can be sized in order to provide friction fitting between itself and a tray slot portion **18**. In embodiments, the plurality of short posts **34** and the plurality of long posts **36** can be configured to interface with backing **44**, as illustrated in FIG. **3**, and can provide support for tray portion **30** thereby preventing sagging while supporting products in the modular retail shelving apparatus. In embodiments, the plurality of short posts **34** have less length than the plurality of long posts **36**. In embodiments, the plurality of short posts **34** can have more width than the plurality of long posts **36**. In embodiments, the plurality of short posts **34** and the plurality of long posts **36** can be placed in a pattern, for example, every third post can be a short post **34**. Advantageously, utilization of the plurality of short posts **34** can provide better attachment to backing **44**, while the plurality of long posts **36** can maintain ease of collapsibility.

(15) A ledge portion **38** can be monolithically formed and can include a plurality of divider slots **40**, and a plurality of bracket tabs **42**. In embodiments, divider slots **40** can be spaced along a top portion of ledge portion **38** and can be oriented substantially vertically when ledge portion **38** is

installed on the modular shelving apparatus. In embodiments, divider slots **40** can be sized in order to provide friction fitting between a divider slot **40** and a divider **22** as illustrated in FIGS. **3** and **5**. In embodiments, each of the plurality of bracket tabs **42** can be disposed proximate to an end of ledge portion **38** opposite of one another. Additionally, each of the plurality of bracket tabs **42** can be configured to interface with a ledge slot portion **20** of a bracket **10** and can be sized to provide friction fitting between itself and the ledge slot portion **20**. Advantageously, ledge portion **38** can provide security by preventing products positioned in the modular shelving apparatus from becoming dislodged, or otherwise falling out.

(16) FIG. **4** is a cross-sectional view of the modular shelving apparatus taken along line **4-4** of FIG. **3**. FIG. **4** more clearly illustrates the interface between bracket **10** and backing **44**. Specifically, bracket post **12**, middle bracket post **14**, lower bracket post **16** of bracket **10** each fit within one of the plurality of holes **46**. Bracket post **12** can be claw-shaped such that a tip portion of the claw can prevent bracket from being intentionally or unintentionally removed from one of the plurality of holes **46**. Additionally, a vertical orientation and friction fit of ledge portion **38** within ledge slot portion **20** is shown, and a horizontal orientation and friction fit of tray portion **30** within tray slot portion **18** is shown.

(17) FIG. **5** is a cross-sectional view of the modular shelving apparatus taken along line **5-5** of FIG. **3**. FIG. **5** more clearly illustrates the interface between divider **22** and backing **44**. Specifically, divider post **24**, middle divider post **26**, and lower divider post **28** of divider **22** each fit within one of the plurality of holes **46**. Divider post **24** can be claw-shaped such that a tip portion of the claw can prevent divider from being intentionally or unintentionally removed from one of the plurality of holes **46**. Additionally, a vertical orientation and attachment of divider **22** to backing **44** is shown.

(18) It should be understood, of course, that the foregoing relates to exemplary embodiments of the invention and that modifications may be made without departing from the spirit and scope of the invention as set forth in the following claims.

Claims

1. A modular retail shelving apparatus, comprising: at least two mounting brackets, each mounting bracket of the at least two mounting brackets comprising: a plurality of mounting posts protruding from a first face; a first mounting slot in a second face; and a second mounting slot in a third face, wherein the first mounting slot is substantially perpendicular to the second mounting slot; a ledge comprising: a plurality of divider slots disposed within a first face; a first tab disposed on a first end of the ledge; and a second tab disposed on a second end of the ledge, wherein the first tab is couplable to the first mounting slot of one of the at least two mounting brackets and the second tab is couplable to the first mounting slot of the other of the at least two mounting brackets; and a tray comprising: a first plurality of tray posts having a first length protruding from a first face; a second plurality of tray posts having a second length protruding from the first face; a first tray slot disposed within the first face and proximate to a first end; and a second tray slot disposed within the first face and proximate to a second end, wherein the first tray slot is couplable to the second mounting slot of one of the at least two mounting brackets and the second tray slot is couplable to the second mounting slot of the other of the at least two mounting brackets.

2. The modular retail shelving apparatus of claim 1, further comprising: at least one divider having a plurality of posts protruding from a first face, wherein the at least one divider is configured to be inserted into one of the plurality of divider slots.

3. The modular retail shelving apparatus of claim 1, further comprising: a backing having a plurality of holes disposed thereon, the backing configured to receive at least one of the plurality of mounting posts of each of the at least two mounting brackets.