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(54) **VERTICAL SUPPORT PANEL FOR USE WITH A WIRE SHELF**

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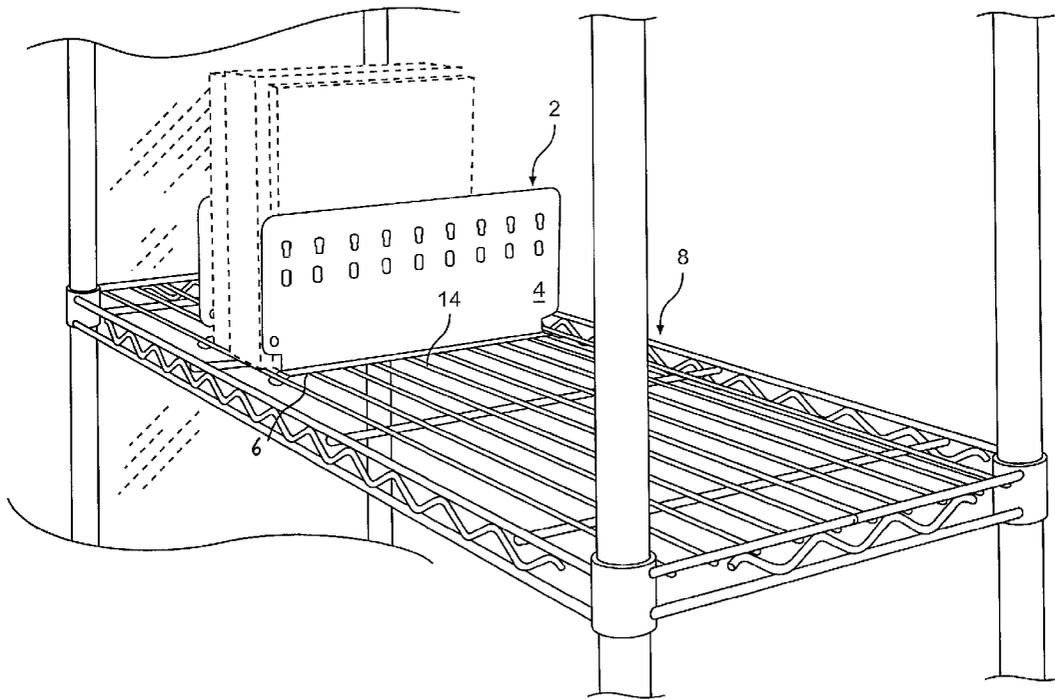
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(57) **ABSTRACT**

A device for use with a wire shelf includes a planar top portion and a foot extending from the top portion and adapted to secure the top portion to the wire shelf. The foot has a base that extends orthogonally from the top portion and a catch for engaging the wire shelf. Two of the devices can be combined to support a longitudinal beam along a wire shelf, with a divider being supported by the longitudinal beam.

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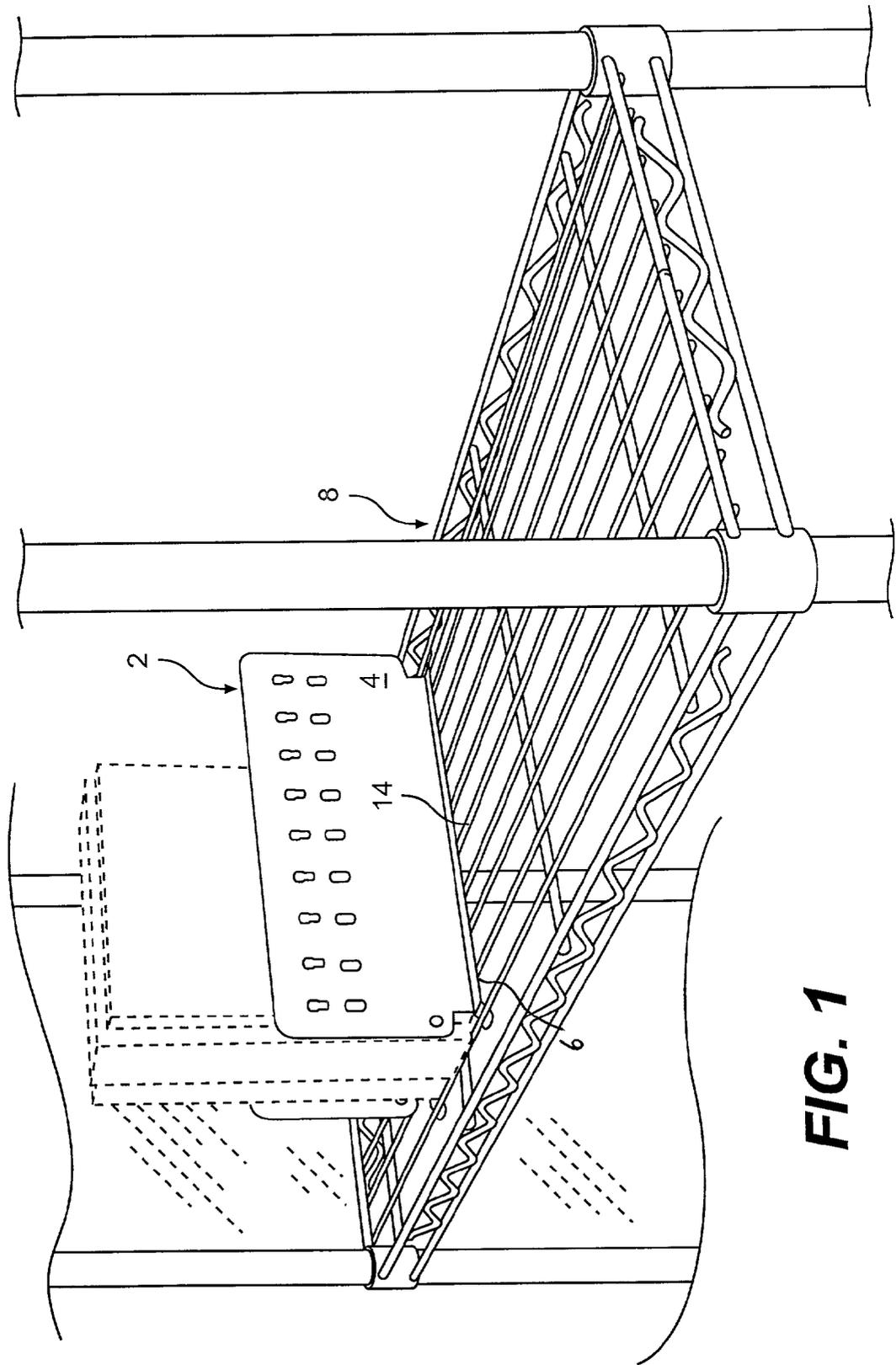


FIG. 1

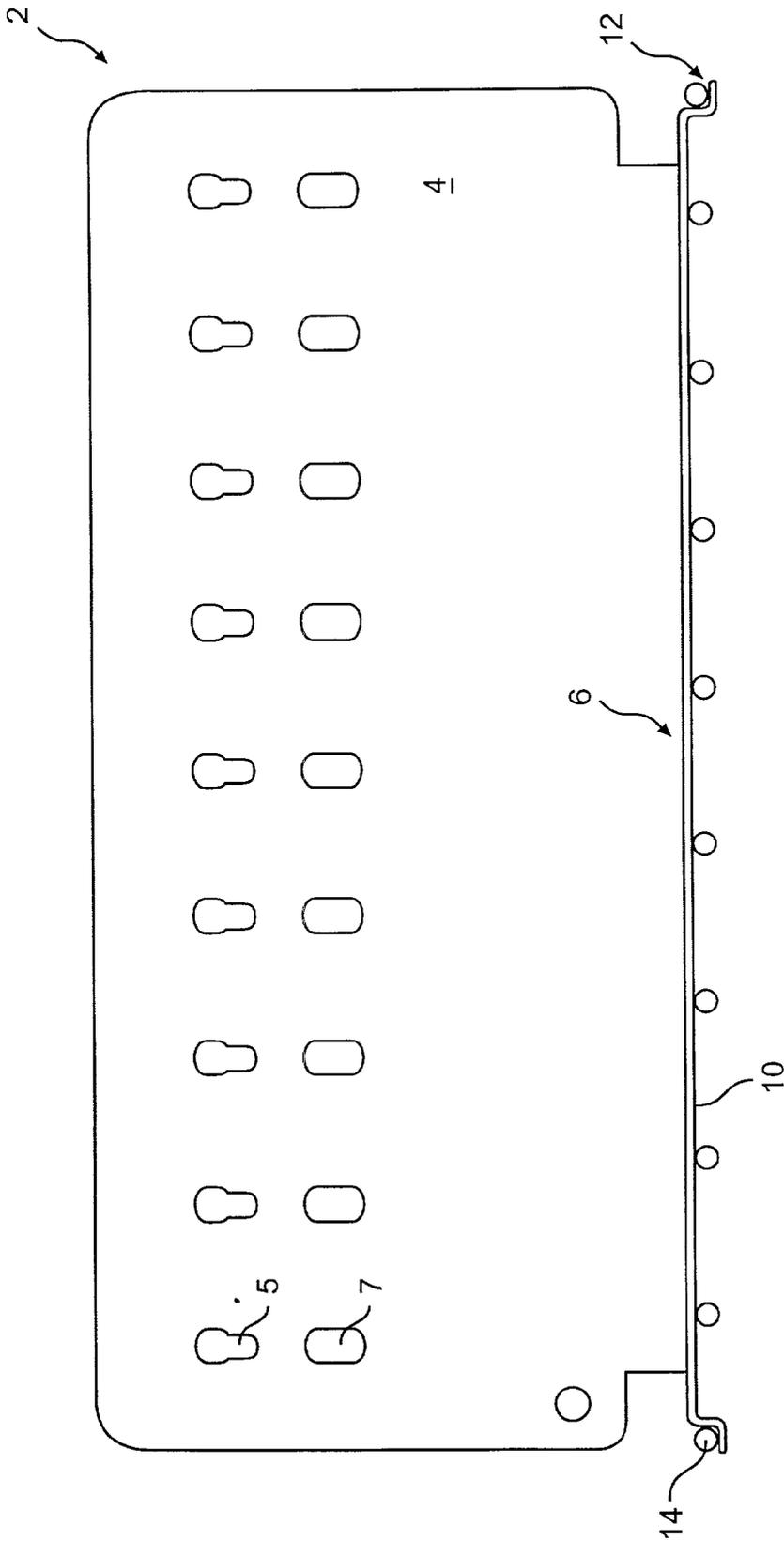


FIG. 2

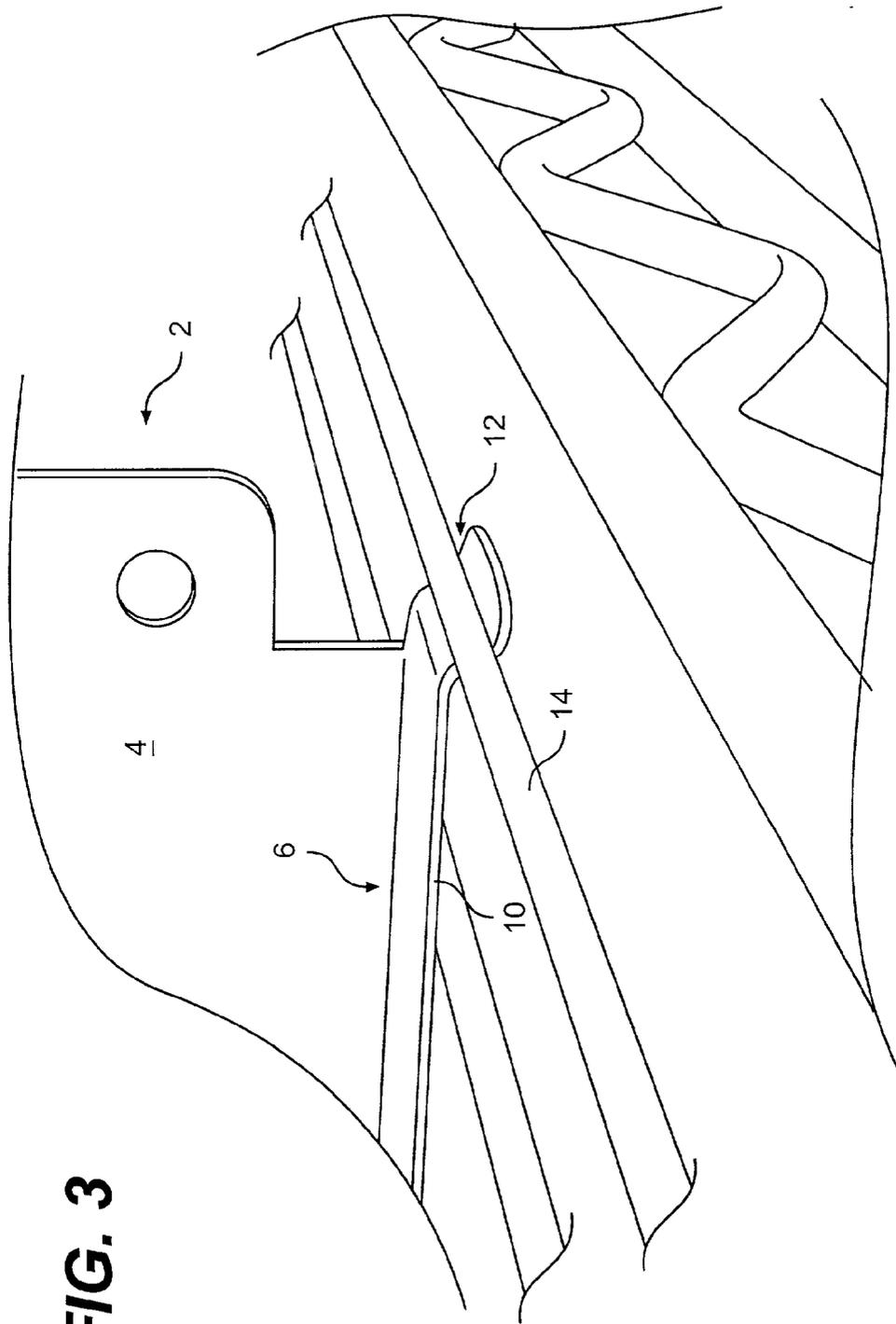


FIG. 3

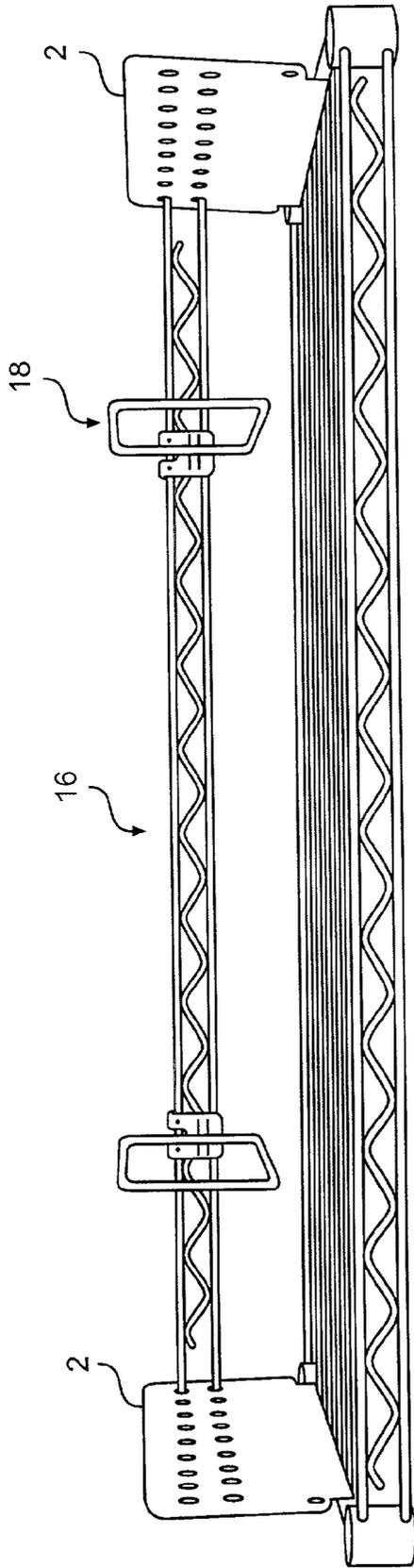


FIG. 4

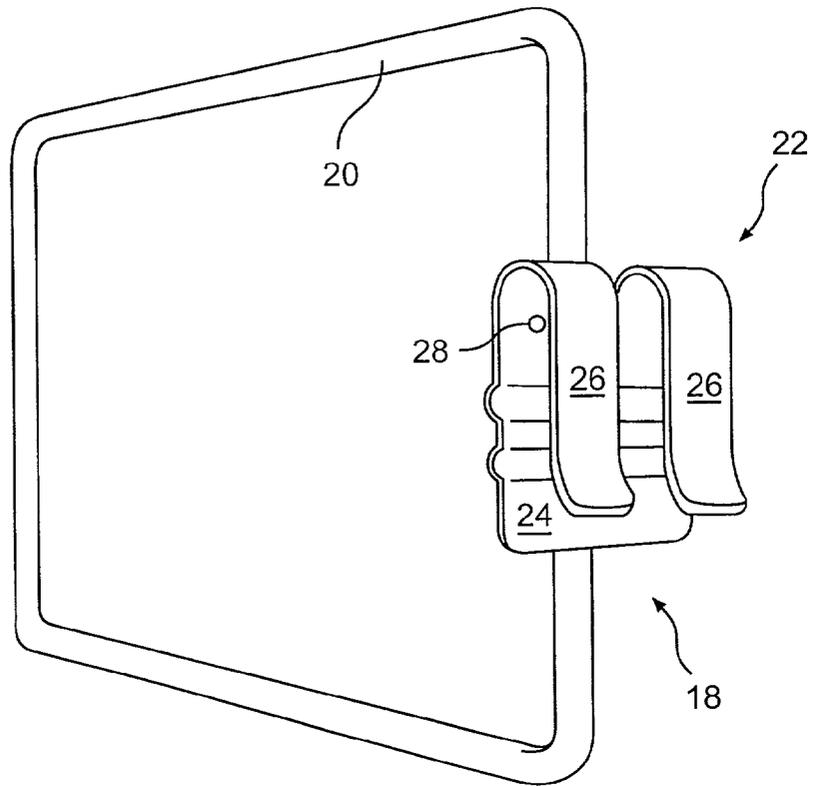


FIG. 5

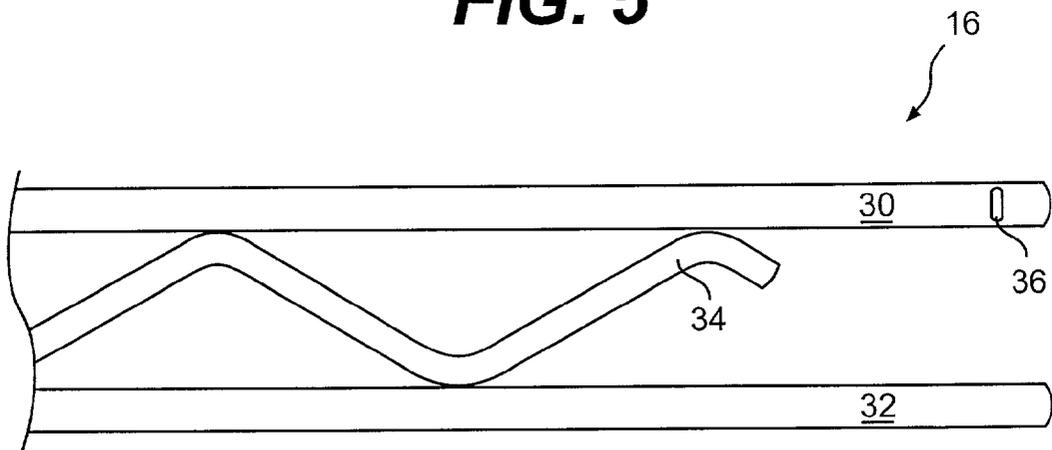


FIG. 6

VERTICAL SUPPORT PANEL FOR USE WITH A WIRE SHELF

FIELD OF THE INVENTION

[0001] The invention relates generally to a vertical support for use in a wire shelving system, and more particularly to movable dividers adapted for use with wire shelves.

BACKGROUND OF THE INVENTION

[0002] Wire shelving systems have found wide use in commercial and residential applications. In a typical adjustable wire shelving system of the knockdown type, a plurality of support posts, usually four, are provided for supporting a shelf at the corners. Each pole includes spaced, horizontal grooves for receiving a tapered sleeve. The shelf is formed to have frusto-conically shaped openings, or collars, at each corner. The sleeves are positioned on the posts and then received within the collars to support the shelf. The shelf may be supported horizontally, or it may have a slope.

[0003] A conventional formed wire shelf includes a plurality of longitudinally extending wire members and a plurality of transversely extending wire members welded to one another at their respective intersecting points to form a rigid structure. For additional support, a vertically oriented edge beam is provided around the perimeter of the shelf by a serpentine-like member and a lower support member cooperating with a peripheral top wire.

[0004] Shelving systems as described above can be found in U.S. Pat. Nos. 3,424,111, 3,523,508 and 3,757,705. These shelving systems are sold and marketed under the trademark SUPER ERECTA SHELF by InterMetro Industries Corporation of Wilkes-Barre, Pa.

[0005] Shelving systems with wire shelves are readily adaptable for storing and supporting a wide array of items, such as food items, boxes, tools, etc.

[0006] There is a need, however, for dividers readily adaptable for use with wire shelves. The wire shelves can be part of a shelving system such as described above or a cantilevered shelving system. Such dividers will further increase the versatility of the wire shelves.

SUMMARY OF THE INVENTION

[0007] Accordingly, it is a principal object of the present invention to provide a divider for use with a wire shelf.

[0008] In one aspect of the invention, a device for use with a wire shelf includes a top planar portion and a foot extending from the top portion and adapted to secure the top portion to the wire shelf. The foot has a base extending from the top.

[0009] In another aspect of the present invention, the foot includes a catch depending from the base adapted to engage a wire of the wire shelf.

[0010] In yet another aspect of the present invention, the top portion and foot are integrally formed.

[0011] In another aspect of the present invention, a shelving system includes at least one wire shelf, vertical support posts to support the shelf, and a vertical panel removably attached to the wire shelf. The panel includes a planar top

portion and a foot extending therefrom to secure the panel to the wire shelf. The foot includes a base extending from the top portion.

[0012] In another aspect of the present invention, a device for use with a wire shelf includes first and second panels, a longitudinal beam and a divider movably attached to the longitudinal beam. Each panel includes a planar top portion and a foot extending therefrom to secure the panel to the wire shelf. The longitudinal beam is supported between the first panel and the second panel.

[0013] In still another aspect of the present invention, the panel includes a plurality of key holes and a plurality of oblong holes.

[0014] In yet another aspect of the invention, the longitudinal beam is supported in one of the plurality of key holes and one of the plurality of oblong holes.

[0015] In still another aspect of the invention, the longitudinal beam includes an upper rail having a notch at both ends and a lower rail. The notch of the upper rail is adapted to mate with one of the plurality of key holes and the lower rail is supported by one of the plurality of oblong holes.

[0016] In another aspect of the invention, a shelving system includes at least one wire shelf, support posts for supporting the shelf, first and second panels, a longitudinal beam and a divider. The first and second panels each include a planar top portion and a foot extending therefrom to secure the panel to the wire shelf. The beam is supported between the first panel and the second panel, and the divider is movably attached to the longitudinal beam.

[0017] These and other aspects, objects and features of the present invention will become apparent from the following detailed description of the preferred embodiments of the present invention, read in conjunction with the reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0018] FIG. 1 is a partial perspective view showing a shelving system with a panel according to a first embodiment of the invention;

[0019] FIG. 2 shows a side elevation view of the panel shown in FIG. 1;

[0020] FIG. 3 is a partial perspective view of the panel shown in FIG. 1 engaging a wire shelf;

[0021] FIG. 4 is a partial perspective view of a shelving system with panels according to a second embodiment of the invention;

[0022] FIG. 5 is a perspective view of a divider according to the present invention; and

[0023] FIG. 6 is a partial side elevation view of a longitudinal support beam according to the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0024] The invention relates generally to a vertical support panel for use with a shelving system including at least one open wire shelf.

[0025] As shown in FIG. 1, a vertical support panel, or simply panel, 2 according to a first embodiment of the invention is shown engaged to a wire shelf 8. The panel generally includes a planar top portion 4 and a foot 6.

[0026] As illustrated in FIGS. 2 and 3, the planar top portion 4 includes two rows of holes 5 and 7 that will be discussed in more detail below in connection with the second embodiment of the invention. The foot 6 protrudes orthogonally from the top portion 4 and is formed to have a base 10 and an L-shaped catch 12 depending from both ends of the base 10.

[0027] Although the panel 2 is preferably formed as a single, integral piece, it may be comprised of several parts joined together. For example, the base 10, the catch 12 and the planar top portion 4 may be separate pieces joined to one another by welding, epoxy or any other suitable means for joining. Moreover, while the panel 2 is preferably formed from punched and stamped sheet metal, alternative materials such as wire, mesh, molded plastic, etc., can be used without departing from the scope of the invention.

[0028] Although illustrated as an L-shape, the catch 12 may have a variety of shapes. Such shapes include, but are not limited to, an S-shape, a hook-shape, or clip-shape or any other shape capable of engaging the wire shelf.

[0029] When the panel 2 is attached to the shelf 8, the bottom surface of the base 10 and the top and outside surfaces of the catch 12 engage the wires 14 of the shelf 8. The base 10 and catch 12 cooperate to create a tensioning force to secure the panel in place. In addition, the width of the base 10 and catch 12 enable the panel 2 to resist lateral forces, such as from a book resting against the panel 2. With this arrangement, the panel 2 is self-supported on the shelf but can be easily moved along the length of the shelf.

[0030] FIG. 4 illustrates the second embodiment of the invention. In this embodiment, two panels 2, as disclosed above with regard to the first embodiment, are provided to support a longitudinal support beam 16 above the shelf 8. The beam 16 in turn supports a divider 18.

[0031] As illustrated in FIG. 5, the divider 18 has a wire frame 20 and a clip 22 attached thereto. The divider is preferably designed to slide along the beam, with the clip allowing the divider to be easily removed from the beam. In this embodiment, the clip 22 has a substantially flat back 24 and two prongs 26 depending from the back 24. Stamped in the back 24 are two protrusions 28. Of course, clips or hooks of varying types may be used to secure the divider 18 to the beam 16 without departing from the scope of the invention. In addition, the frame 20 may be, by way of nonlimiting example, a solid piece, rather than a wire frame, or a wire mesh. Moreover, the divider 18 may be made from materials other than metal, such as plastic or wood.

[0032] FIG. 6 illustrates one end of the beam 16. The beam 16 generally comprises an upper rail 30, a lower rail 32 and a central rail 34 bent back and forth in a serpentine manner between the upper rail 30 and the lower rail 32. The upper rail 30 of the beam 16 has a notch 36 at both of its ends. The beam 16 may span the entire length of the shelf 8 as illustrated in FIG. 4, or the beam 16 may be shorter and the panels 2 brought closer together to span only part of the length of the shelf 8.

[0033] Referring back to FIG. 2, the planar top 4 of the panel 2 includes a plurality of keyholes 5 and a plurality of oblong holes 7 disposed beneath the keyholes 5. The bottom portion of each keyhole 5 is smaller than the full diameter of the upper rail 30 of the beam 16, while the diameter of each oblong hole 7 and the top portion of each keyhole 5 is larger than the diameter of the rails 30, 32.

[0034] In operation, the upper rail 30 is inserted into the top of the keyhole 5 and the lower rail 32 is inserted into the oblong hole 7. The beam 16 is then allowed to rest in the holes so that notch 36 mates with a side portion of the keyhole 5. In this way the beam is supported from below and also prevented from sliding laterally.

[0035] Although a keyhole and oblong hole arrangement is described, other shapes and arrangements for the holes may be used without departing from the scope of the invention.

[0036] As illustrated in FIG. 4, one end of the beam 16 fits into the holes of one panel 2, and the other end of the beam 16 fits into the corresponding holes of another panel 2. Dividers 18 clip onto the beam 16, with the protrusions 28 in the back 24 of the clip 22 serving as detents to help prevent the dividers 18 from slipping off of the beam 16. In addition, the divider 18 may be slid along the beam 16 when manipulated by an operator, but will snag and remain in place when pressed by an uneven force such as one side of a book. Several dividers 18 may be placed on a single beam 16, allowing a single shelf to be divided into a number of discrete sections.

[0037] While the present invention has been described with respect to what is presently considered to be the preferred embodiments, the present invention is not limited to the disclosed embodiments. Rather, the present invention covers various modifications and equivalent arrangements included within the spirit and scope of the appended claims. The scope of the appended claims is to be accorded the broadest interpretation so as to encompass all such modifications and equivalent structures and functions.

What is claimed is:

1. A device adaptable for use with a wire shelf, said device comprising:

a planar top portion; and

a foot extending from said top portion and adapted to secure said top portion to the wire shelf, wherein said foot includes a base extending from said top portion.

2. A device according to claim 1, wherein said foot includes a catch depending from said base adapted to engage a wire of said wire shelf.

3. A device according to claim 2, wherein said base extends substantially orthogonally from said top portion.

4. A device according to claim 2, wherein said catch is L-shaped.

5. A device panel according to claim 2, wherein said catch is provided on opposite ends of said base.

6. A device according to claim 1, wherein said planar top portion and said foot are integrally formed.

7. A shelving system comprising:

at least one wire shelf;

support posts to support said shelf; and

- a panel movably attached to said wire shelf, said panel comprising a planar top portion and a foot extending from said top portion to secure said panel to said wire shelf.
- 8.** A shelving system according to claim 7, wherein said foot includes a catch depending from said base adapted to engage a wire of said wire shelf.
- 9.** A shelving system according to claim 8, wherein said base extends substantially orthogonally from said top portion.
- 10.** A shelving system according to claim 8, wherein said catch is L-shaped.
- 11.** A shelving system according to claim 8, wherein said catch is provided on opposite ends of said base.
- 12.** A shelving system according to claim 7, wherein said planar top and said foot are integrally formed.
- 13.** A device for use with a wire shelf, said device comprising:
- a first panel and a second panel, each comprising a planar top portion and a foot extending from said top portion and adapted to secure said respective panels to the wire shelf;
 - a longitudinal beam supported between said first panel and said second panel; and
 - a divider movably attached to said longitudinal beam.
- 14.** A device according to claim 13, wherein said foot includes a base extending from said top portion and a catch depending from said base.
- 15.** A device according to claim 14, wherein said first and second panels comprise openings, and said longitudinal beam is supported in said openings in said first and second panels.
- 16.** A device according to claim 15, wherein said longitudinal beam comprises a serpentine rail disposed between a lower rail and an upper rail, and a notch at opposite ends of said upper rail, with the notch received in said openings in said first and second panels.
- 17.** A device according to claim 13, wherein said divider includes a clip removably attached to said longitudinal beam and a dividing portion extending from said clip.
- 18.** A shelving system comprising:
- at least one wire shelf;
 - support posts for supporting said shelf;
 - a first panel and a second panel each comprising a planar top portion and a foot extending from said top portion to secure said respective panels to said wire shelf;
 - a longitudinal beam supported between said first panel and said second panel; and
 - a divider movably attached to said longitudinal beam.
- 19.** A shelving system according to claim 18, wherein said foot includes a base extending from said top portion and a catch depending from said base.
- 20.** A shelving system according to claim 18, wherein said longitudinal beam is supported in openings in said first and second panels.
- 21.** A shelving system according to claim 18, wherein said divider includes a clip removably attached to said longitudinal beam and a dividing portion extending from said clip.
- 22.** A shelving system according to claim 18, wherein said longitudinal beam comprises a serpentine rail disposed between a lower rail and an upper rail, and a notch at opposite ends of said upper rail, with the notch received in the openings in said first and second panels.
- 23.** A device adaptable for use with a wire shelf, comprising:
- a vertical portion extending upwardly from the shelf; and
 - means for securing said vertical portion to the wire shelf, said means including a base extending from said vertical portion.

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