ADJUSTABLE SHELF SYSTEM

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ABSTRACT

A system for facilitating the adjustment of shelves in a shelving unit having opposing side walls; the side walls having a plurality of aligned grooved vertical tracks, each of said tracks having at least one aligned offset stop point; a shelf having a plurality of pins, each pin being attached within a track such that the shelving unit may adjust vertically and then be set onto an offset stop point.
Figure 6
ADJUSTABLE SHELF SYSTEM

FIELD OF THE INVENTION

[0001] The present invention is directed to the field of adjustable shelving. In particular, the present invention is directed to shelving which allows for the adjustment of shelf position without the use or removal of conventional shelving pins.

BACKGROUND OF THE INVENTION

[0002] Most shelving of the type used for book shelves and the like comprises a box or rectangular structure which then supports the shelves. The structure will typically have a plurality of pairs of vertical holes. A plurality of pins (generally four) must be removed and inserted in to sides of the frame. These pegs are typically individually placed and removed. It is often difficult to align the four pins. This often leads to the shelving being crooked, or off balance. This requires a time-consuming exercise in trial and error.

[0003] There have been a number of patents issued in the area of adjustable shelving. U.S. Patent Application Pub. No. US 2002/0195029 discloses an adjustable sliding-shelf assembly for high quality wood furniture. The adjustable shelf system includes at least four columns positioned in a vertical direction and attached to the inside of the cabinet, each column defining at least one column-notch. The adjustable shelf system further includes at least two support members, each support member having two ends, each end having at least one protrusion configured to removably engage, by horizontal movement, at least one column-notch. A shelf is positioned adjacent to the at least two support members. The adjustable shelf system further includes at least two slider assemblies configured to horizontally slide the at least one shelf into and out of the cabinet, each drawer slide assembly attached to one of the at least two support members and one side of the shelf.

[0004] U.S. Pat. No. 5,884,405 discloses an adjustable shelf for a refrigerator compartment has two parts, a platform and a support member and provides adjustment of both the length and the height of the shelf. The platform is attached at a first end to a compartment wall at one of two heights. The support member is slidably attached to the second end of the platform to allow adjustment of the length of the shelf. The support member has two legs with different lengths. The selection of the leg to support the platform in cooperation with selection of the corresponding attachment height at the first end of the platform determines the height of the shelf.

[0005] U.S. Patent Application Pub. No. US 2003/0047179 discloses a shelf system comprising a tray or wire shelf or rack having double running surfaces on two opposing sides, which in use provide support for said shelf on the runners provided within an oven cavity. The shelf may be placed within an oven and slid over the runners formed on opposite side walls of the surface liner of the oven. Either the top running surface or bottom running surface of the shelf may be supported by a runner on either side of the oven. Therefore the shelf may be placed in the oven where the runner is between the double running surfaces, or the double running surfaces may allow for the placement of the shelf between two runners. Therefore the number of shelf positions within the oven cavity may be up to double that provided in conventional ovens, allowing for a finer adjustment of positioning of the shelf within an oven.

[0006] While there have been a number of patents and prior art directed to shelving, none have provided a system for easily adjusting shelving.

[0007] It is an object of the present invention to provide a novel shelving adjustment system.

[0008] It is a further object of the present invention to provide a novel shelving adjustment system which utilizes a plurality of vertical grooves and support points.

[0009] It is a further object of the present invention to provide a shelving adjustment system in which the shape of the vertical grooves and support points can be altered.

[0010] These and other objects of the present invention will become apparent from the following summary and database description.

SUMMARY OF THE INVENTION

[0011] The present invention comprises a system for facilitating the adjustment of shelves consisting of a shelving unit having opposing side walls; the opposing side walls having a plurality of aligned grooved vertical tracks, each of said tracks having at least one aligned offset stop points; a shelf having a plurality of pins, each pin being attached within a track such that the shelf unit may adjust vertically and then be set onto an offset stop point with the pins. A further embodiment of the present invention consists of a system for facilitating the adjustment of shelves further comprising a horizontal track in communication with the vertical tracks so the shelf can be removed.

[0012] A still further embodiment of the present invention discloses a system for facilitating the adjustment of shelves: a shelving unit having opposing side walls; the opposing side walls having a plurality of grooved aligned vertical tracks, each track having a plurality of vertically aligned offset stop points; a plurality of shelves, each having a plurality of pins, each pin being attached within a track such that the shelves may be selectively adjusted vertically via the aligned grooved tracks, and then be set onto a plurality of offset stop points; and a horizontal track in communication with the vertically tracks and pins so the shelf can be removed from the shelving system.

[0013] Yet a further embodiment of the present invention discloses a system for facilitating the adjustment of shelves: a shelving unit constructed from wood having opposing side walls; the opposing side walls having a plurality of grooved aligned vertical tracks which extend in a diagonal or step-wise manner, each track having a plurality of vertically aligned offset stop points; at least one shelf having a plurality of pins, each pin being aligned within a vertically aligned track such that the shelf unit may adjust vertically via the aligned grooved tracks, and then be set onto an offset stop point with the pin; and a horizontal track in communication with the vertically tracks and pins so the shelf can be removed from the shelving system.

BRIEF DESCRIPTION OF THE FIGURES

[0014] FIG. 1 is a perspective view of a first embodiment of the present invention.
FIG. 2 is a perspective view of a second embodiment of the present invention.

FIG. 3 is a perspective view of a third embodiment of the present invention.

FIG. 4 is a perspective view of the fourth embodiment of the present invention.

FIG. 5 is a section view of the first embodiment of the present invention.

FIG. 6 is a section view of the second embodiment of the present invention.

FIG. 7 is a section view of the third embodiment of the present invention.

FIG. 8 is a section view of the fourth embodiment of the present invention.

FIGS. 9 and 10 are overhead views of the shelving.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The present invention is directed to a novel shelving system which enables shelving to be easily moved and readjusted without the need for removing pins from the side walls of the shelving unit. In contrast to systems which use removable pins, the present invention comprises a system which permits shelving to be vertically moved and adjusted and to be completely removed.

In a preferred embodiment the invention comprises a shelving system 10. The shelving comprises vertical sidewalls 13. The system has two pairs 12, 14 of grooved vertical tracks 16 which are aligned and which extend parallel. Each of the pairs of tracks is placed on the inside layer of the sidewalls. The opposing tracks are aligned.

The grooved vertical tracks extend from the bottom 18 of the unit to the top 20. Each of the grooves has a plurality of offset vertical stop points 22 which permit the shelves to be held in a vertical position at predetermined intervals. As shown in FIG. 9, the shelves 25 each have a plurality of imbedded posts 26 which move along the vertical tracks.

Each of the sets of vertical grooves has a at least on horizontal track which extends out the shelving and which enables the shelves 25 to be removed. FIGS. 2 to 4 illustrate alternative embodiments for the vertical tracks of the present invention.

FIGS. 5 to 8 illustrate side views of the alternative embodiments of the invention. As shown, each of the embodiments provide an additional vertical groove configuration for supporting the shelves FIG. 5 illustrates a series of horizontal ledges. FIG. 6 illustrates a diagonal slot system having horizontal ledges. In this embodiment, the shelves move upward and downward in a diagonal manner FIG. 7 illustrates an offset configuration in which the horizontal ledges are vertically offset. FIG. 8 illustrates a further embodiment of the invention in which the horizontal ledges each include a vertical locking cavity. In each of the embodiments the systems include a horizontal track 26 which facilitates the removal of the shelves.

FIG. 9 is a figure of another embodiment in which the horizontal ledge locks into a groove. FIG. 10 illustrates a further embodiment in which the vertical track is offset. This prevents the shelf from slipping through when it is moved.

It is to be noted that the present invention can accommodate and facilitate shelving constructed from a wide variety of woods and metals.

These present invention has been described in the context of the above preferred embodiment. It is to be appreciated that the true nature and scope of the invention is to be determined with reference to the attached claims.

1. A system for facilitating the adjustment of shelves:

a shelving unit having opposing side walls; the opposing side walls having a plurality of aligned grooved vertical tracks, each of said tracks having at least one aligned offset stop points;

a shelf having a plurality of pins, each pin being attached within a track such that the shelf may adjust vertically and then be set onto an offset stop point with the pins.

2. The system for facilitating the adjustment of shelves further comprising a horizontal track in communication with the vertical tracks so the shelving can be removed.

3. A system for facilitating the adjustment of shelves:

a shelving unit having opposing side walls; the opposing side walls having a plurality of grooved aligned vertical tracks, each track having a plurality of vertically aligned offset stop points;

at least one shelf having a plurality of pins, each pin being attached within a vertically aligned track such that the shelf unit may adjust vertically via the aligned grooved tracks, and then be set onto an offset stop point with the pin; and

a horizontal track in communication with the vertically tracks and pins so the shelf can be removed from the shelving system.

4. The shelving system of claim 3 wherein the grooved tracks extend in diagonal direction terminating in a stop point.

5. The shelving system of claim 3 wherein the grooved tracks extend in stepwise manner, each step terminating in a stop point.

6. A system for facilitating the adjustment of shelves:

a shelving unit constructed from wood having opposing side walls; the opposing side walls having a plurality of grooved aligned vertical tracks which extend in a diagonal or stepwise manner, each track having a plurality of vertically aligned offset stop points;

a plurality of shelves, each having a plurality of pins, each pin being aligned within a track such that the shelves may be selectively adjusted vertically via the aligned grooved tracks, and then be set onto a plurality of offset stop points; and

a horizontal track in communication with the vertically tracks and pins so the shelving can be removed from the shelving system.

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