United States Patent [19]

Jones

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[45] **Apr. 10, 1973**

[54] **SHELF MOUNTABLE STORAGE CONTAINER**

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[73] Assignees: **Wallace Thomas Jones; Fred H. Walbaum**, Bakerfield, Calif. ; part interest to each

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[21] Appl. No.: **123,758**

[52] **U.S. Cl.**.....**211/126**, 220/22

[51] **Int. Cl.**.....**A47f 3/14**

[58] **Field of Search**.....211/126, 88, 86, 211/94, 103, 102, 162, 117, 113, 176; 220/18, 22.3, 22, 94, 96; 248/303, 302; 312/111, 107; 16/110, 5, 114, 124; 229/52 A, 52 AM, DIG. 6; 206/44.12

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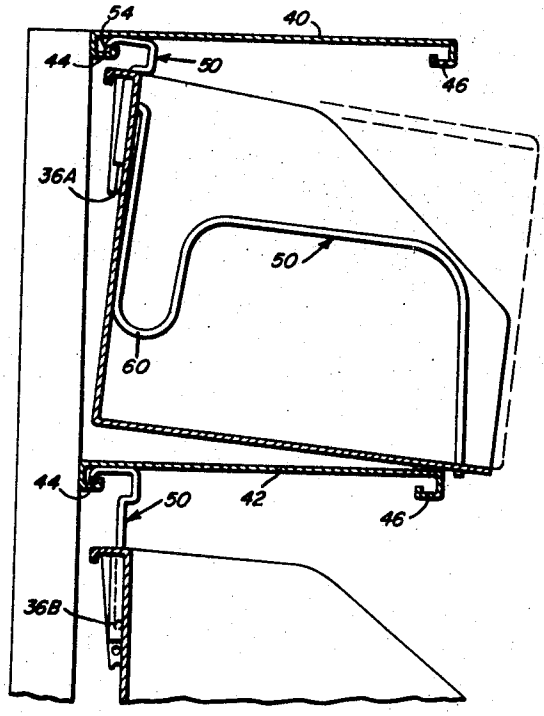
Primary Examiner—Ramon S. Britts

Attorney—Clarence A. O'Brien and Harvey B. Jacobson

[57] **ABSTRACT**

A shelf mountable container assembly is provided with both fixed and adjustable flanges adapted to engage the underside channels of various sized mounting shelves. The container assembly is comprised of a pair of vertical side walls interconnected by a bottom panel and a closed end panel. A fixed mounting flange extends outwardly and downwardly from the top edge portion of the end panel for engagement with a shelf mounting channel,and a pair of flange support ribs include several vertically spaced adjustment apertures for embracing locking pins on an adjustable mounting bracket. The end and bottom panels each contain mounting slots adapted to accept opposite end portions of resilient wire dividers to separate the container into smaller compartments. The container assembly is also provided with a detachable handle extension,a straddle plate for interconnecting abutting containers and a container retriever for removing containers from the shelves.

10 Claims, 16 Drawing Figures



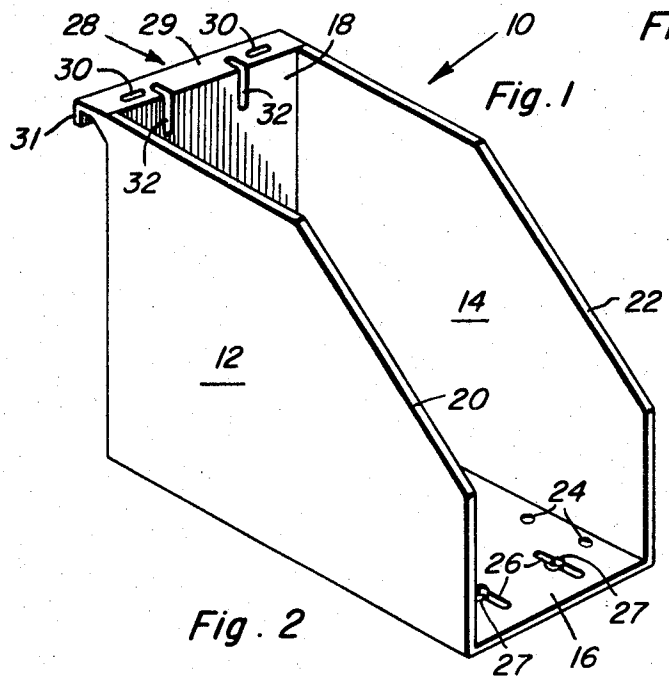


Fig. 1

Fig. 2

Fig. 4

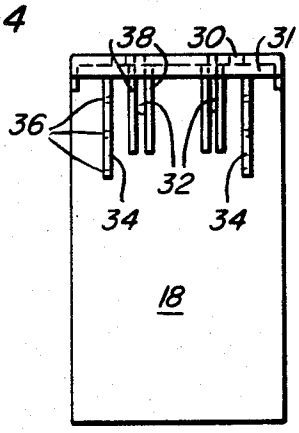
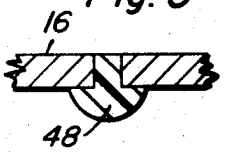


Fig. 5



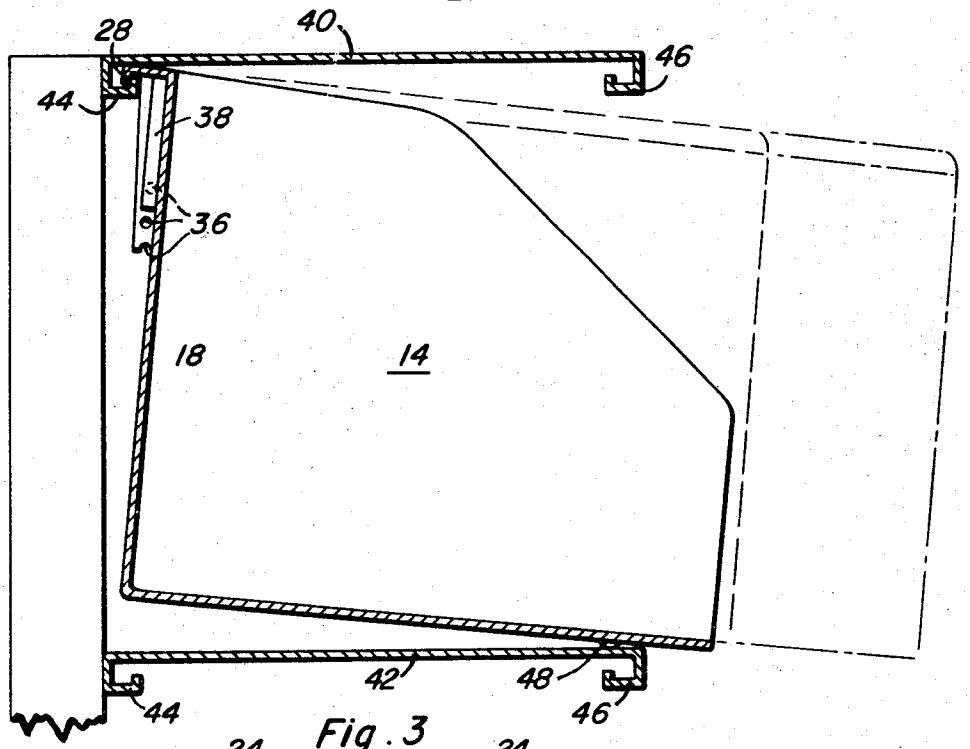
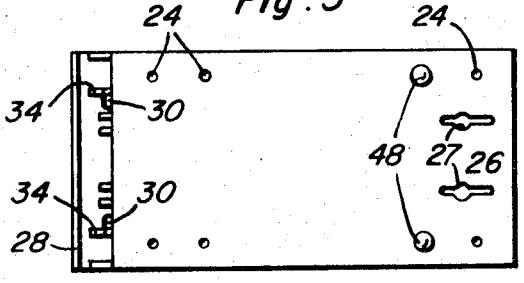


Fig. 3



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Fig. 6

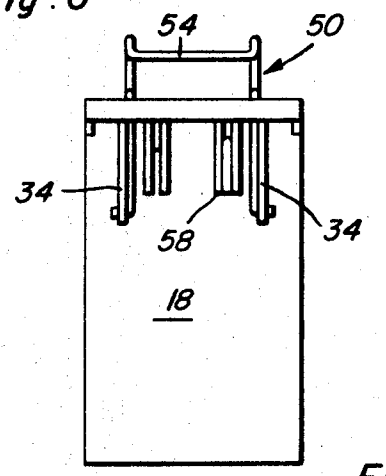


Fig. 8

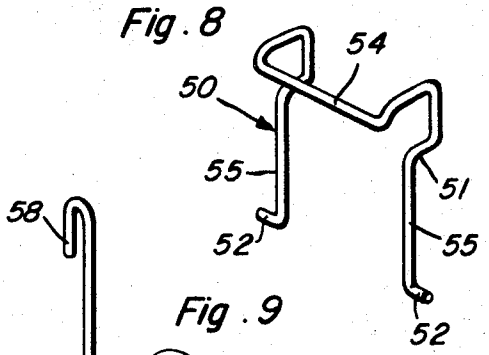


Fig. 9

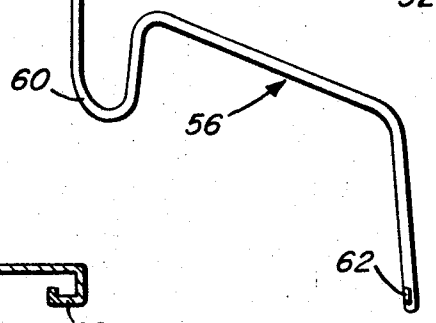


Fig. 7

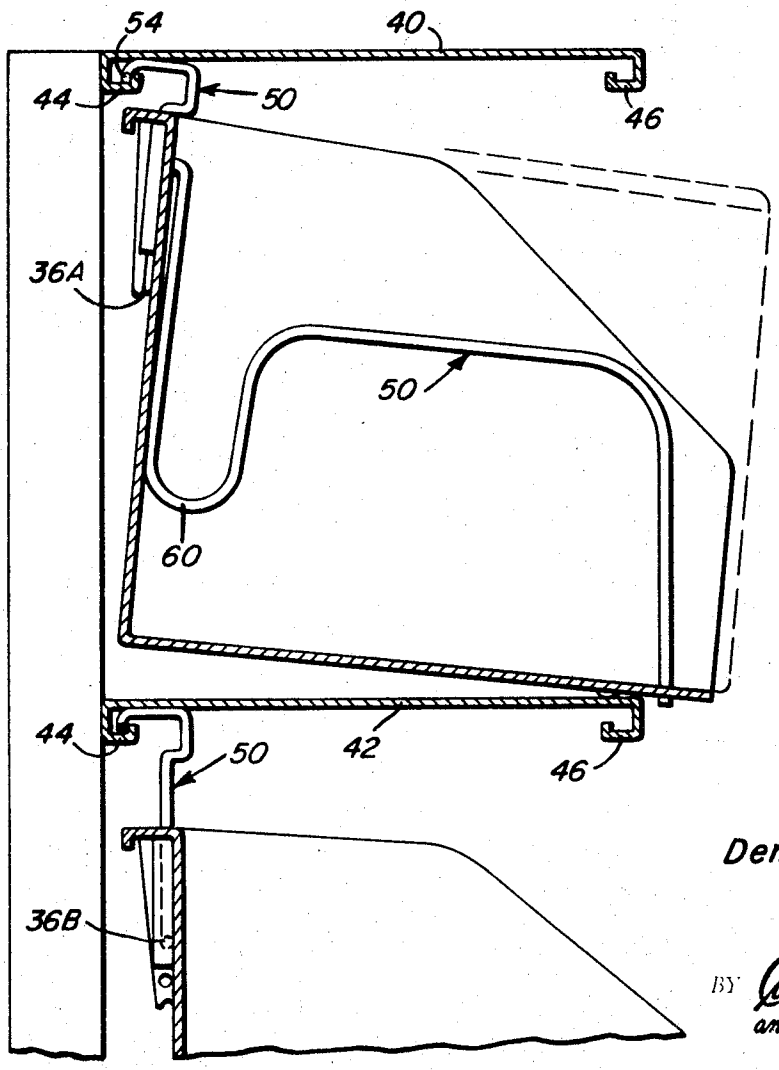
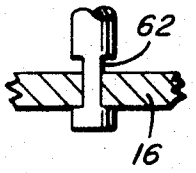


Fig. 10



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Fig. 11

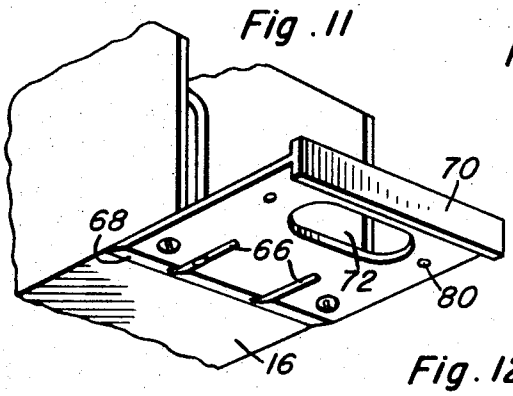


Fig. 13

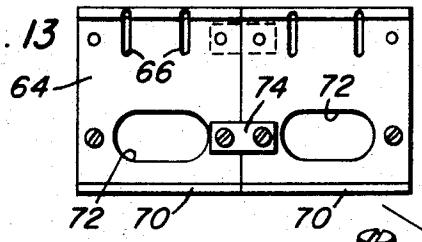


Fig. 14

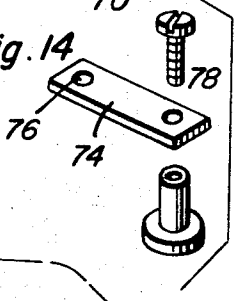


Fig. 12

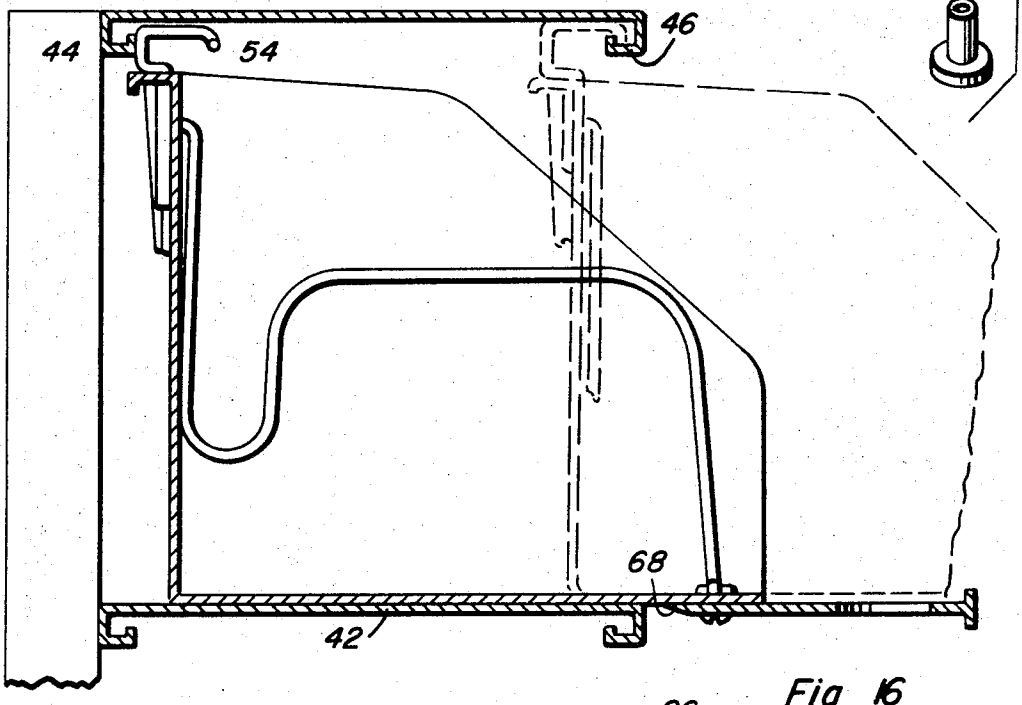


Fig. 16

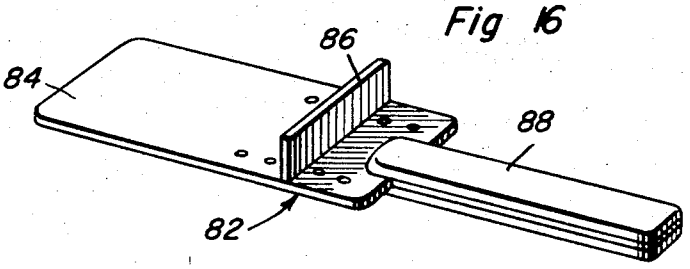
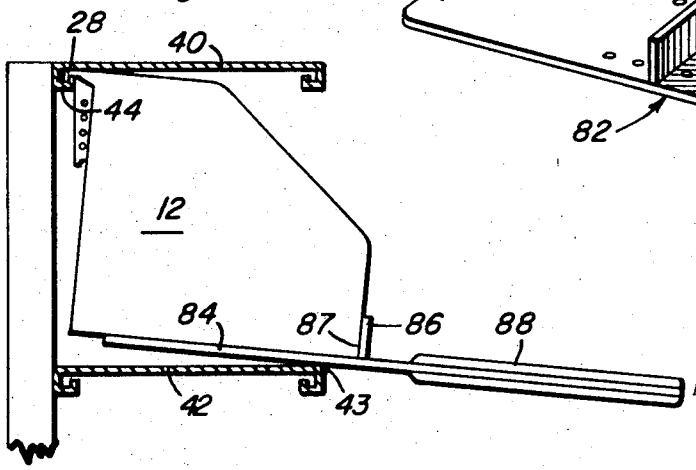


Fig. 15



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SHELF MOUNTABLE STORAGE CONTAINER

Previously, shelf mountable storage containers have been provided which were mounted between vertically spaced walls and held in position by a single fixed flange which engaged corresponding mounting rails. While these containers could be conveniently locked into position, when the vertical spacing between the rails was different, or when the stored documents were of a greater vertical dimension, it was necessary to provide a container of the appropriate size corresponding to the shelf spacing. As such, it was necessary to maintain an inventory of containers of different sized containers to fulfill the requirements of each individual situation. Such an arrangement resulted in increased manufacturing and inventory costs, not to mention the inconvenience to file clerks and others using such storage containers.

It is an object of the present invention to provide a shelf mountable storage container assembly which includes a vertically adjustable mounting bracket which renders the container adaptable to shelves of different vertical spacing, making it unnecessary to maintain an inventory of various sized storage containers.

Another object of the present invention is to provide a shelf mountable storage container assembly having an adjustable mounting bracket which is adaptable to engage either the front or back channels underneath the abutting top mounting shelf.

It is a further object of the present invention to provide a storage container, the horizontal depth of which may be increased by the simple addition of a detachable handle extension, thereby providing a storage container which will accept documents of increased horizontal length and which may be easily slid to the loading position by way of the handle extension.

It is still another object of the present invention to provide a shelf mountable storage container assembly which includes mounting slots in the back and bottom panels which accept resilient wire dividers, thus providing a means of sectioning the container into a series of smaller container compartments.

Another object of the present invention is to provide a shelf mountable storage container assembly having a container retriever or extractor which may be conveniently and easily slipped under each container for removal and replacement in the shelf structure.

Another object of the present invention is to provide a shelf mountable storage container assembly which includes a plurality of containers which may be conveniently clustered together by way of straddle plates interconnecting each detachable handle extension, thereby providing a single composite container comprised of a plurality of interlocked standard containers.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIG. 1 is a perspective view of the shelf mountable storage container of the present invention;

FIG. 2 is a cross-sectional view of the storage container shown in FIG. 1, when mounted in a shelf structure;

FIG. 3 is a bottom view of the storage container shown in FIG. 1;

FIG. 4 is an end view of the closed end of the storage container shown in FIG. 1;

FIG. 5 is an enlarged cross-sectional view of a rubber mounting foot installed in the bottom of the storage container;

FIG. 6 is an end view of the storage container with the adjustable mounting bracket and wire divider installed;

FIG. 7 is a cross-sectional view of the storage container, shown in FIG. 6, installed in a shelf structure;

FIG. 8 is a perspective view of the adjustable mounting bracket installed in the storage container as shown in FIG. 6;

FIG. 9 is a side view of an unmounted resilient wire divider;

FIG. 10 is an enlarged cross-sectional view illustrating the notched flats of the resilient wire divider engaging the lower slot in the bottom panel;

FIG. 11 is a partial perspective view of the storage container with the detachable handle installed;

FIG. 12 is a cross-sectional view of the storage container shown in FIG. 11, with a phantom view of the container in the loading position and adjustable mounting bracket engaging the outer shelf channel;

FIG. 13 illustrates the way in which the containers may be clustered by interlocking a pair of detachable handles with a straddle plate;

FIG. 14 is an enlarged perspective view of a straddle plate and bolt for mounting thereof;

FIG. 15 is a side view of the storage container mounted in a shelf structure, illustrating the use of the container retriever for loading and unloading;

FIG. 16 is a perspective view of the container retriever shown in FIG. 15.

Referring now more specifically to FIG. 1, the preferred embodiment of the storage container of the present invention is indicated generally by the numeral 10, and includes a pair of vertically extending side walls 12 and 14 which are connected by a bottom panel 16 and closed end panel 18. The storage container 10 may be made of metal, wood, molded plastic, fiberglass, fiberboard or other suitable materials, or combinations thereof. The container may be made of a single piece, or of several component pieces which may be assembled and disassembled, as desired. Each of the vertical side walls 12 and 14 has an angled outer corner portion 20 and 22 respectively which permit easy access to documents, files, and similar stored materials, as shown in FIG. 2. The bottom panel 16 includes a plurality of round holes or openings 24, and lower divider slots 26 each having an enlarged circular portion 27, the purposes of which are hereinafter explained. A fixed mounting flange 28 includes a horizontal portion 29 which extends outwardly from the upper edge portion of closed end panel 18 and a vertical portion 31 which extends downwardly therefrom for mounting the storage container to the under channel of a shelf structure, as shown in FIG. 2. The horizontal portion 29 of fixed flange 28 includes a pair of bracket receiving holes 30 and a pair of upper divider slots 32 extend downwardly into end panel 18, the purposes of which are hereinafter explained.

Referring to FIGS. 2 through 4, it is appreciated that a pair of vertical support ribs 34 are attached to closed end panel 18 and extend upwardly to engage the bottom of fixed flange 28 for support thereof. Each support rib 34 includes a plurality of vertically spaced adjustment apertures which are adapted to receive an adjustable mounting bracket, as explained below. Two pairs of elongated support members 38 are attached to closed end panel 18 adjacent the edges of upper divider slots 32 to provide a channel in which the mounting finger 58 is inserted thereby locking the divider wire 56 in a vertical position and preventing divider wire 56 from moving from side to side. Each storage container is mounted into a shelf structure which is comprised of a plurality of vertically spaced shelves 40 and 42 each having inner and outer mounting channels 44 and 46 respectively extending from the bottom surfaces thereof. The vertical spacing of shelves 40 and 42 may be such that when mounting the storage container with fixed flange 28 engaging inner channel 44, the storage container may be tilted outwardly and downwardly, as shown in FIG. 2. Tilting may be desired to provide easier access for loading and unloading the containers and retrieving documents and files therefrom. When desired, the plurality of rubber mounting feet 48 may be installed in round holes 24 to provide cushioned resting feet which engage bottom shelf 42. Rubber feet 48 may be of the conventional type which snap into position, as shown in FIG. 5.

When the vertical spacing of shelves 40 and 42 is greater than that shown in FIG. 2, or when it is desired to mount the storage container with less tilt or in the horizontal position, an adjustable mounting bracket 50 may be installed in the flange area of end panel 18, as shown in FIG. 6. Adjustable mounting bracket 50 is formed of a flexible, resilient material such as a bent metal rod or wire, or similar material, and includes a pair of horizontal locking pins 52 and an angular flange portion 54. horizontal locking pins 52 are of a dimension which is slightly less than the corresponding dimensions of bracket receiving holes 30 in fixed flange 28, such that adjustable mounting bracket 50 may be installed by squeezing side portions 55 toward each other, and inserting pins 52 through receiving holes 30 to engage a pair of adjustment apertures 36 in support ribs 34. The resiliency of adjustable mounting flange 50 insures positive engagement of locking pins 52 when the squeezing force is released during the process of installation. The adjustable mounting flange 50 may be oriented such that bent flange portion 54 is adapted to engage either an inner channel 44 or an outer channel 46, as shown in FIGS. 7 and 12. Engagement of flange 50 with the outer channel 46 acts as a stop to prevent the storage container from sliding off the shelf unless upward pressure is exerted on the front corner of the bottom panel to tilt the container back, such that the bracket dips below the outer channel. In addition, the vertical extend of mounting bracket 50 may be adjusted by selecting the appropriate adjustment apertures 36 to provide the desired spacing as illustrated at the bottom of FIG. 7 where adjustment apertures 36A are used. The container illustrated at the top of FIG. 7 shows the insert pins 52 engaged in the adjustable aperture slots 36B. The horizontal portion 51 of the adjustable mounting bracket limits the depth the side portions 55 can pass after being inserted through the receiving holes 30, thereby preventing insert pins 52 from sliding downward out of the adjustment aperture slots 36B.

It is appreciated that the storage container may be subdivided into a plurality of container compartments by the use of a pair of divider wires 56 made of resilient, flexible material similar to that of adjustable flange 50. Each divider is preferably of circular cross-section, the diameter of which is slightly less than that of enlarged portions 27 of slots 26 and slightly less than the width of slots 32. Each wire divider 56 includes an upper end portion with a downwardly turned mounting finger 58 which extends into one of the upper divider slots 32 for rigid engagement with end panel 18. A flexing U-shaped bend 60 is provided to assure adequate flexing during installation. The lower end portion of each wire divider 56 includes a pair of notched flats 62 which provide a mounting area of decreased thickness which engage the side walls of one of the lower divider slots 26 in bottom panel 16. This engagement is shown in enlarged scale in FIG. 10. The installation of wire dividers 56 is relatively simple and requires an initial movement in the downward direction to start engagement mounting finger 58 in upper divider slots 32, followed by a slight horizontal compression to align the lower end portion with the enlarged portions 27 of lower divider slots 26. Release of the horizontal compression force places the notched flats 62 in positive engagement with the narrowed portions of lower divider slots 26.

Referring in more detail to FIGS. 11 through 14, it will be appreciated that each storage container 10 may be provided with a detachable handle extension 64 which is bolted to the bottom panel 16 of each storage container through the round holes 24 which are not occupied by rubber feet 48. Each detachable handle 64 includes a pair of spaced elongated slots which are adapted to align with the lower divider slots 26 and have a width slightly greater than that of wire dividers 56, such that installation of the handle extension will not interfer with the mounting wire dividers. The inside edge of each detachable handle 64 is provided with a beveled edge portion 68 which provides smooth sliding engagement with lower shelf 42 when the storage container is slid to its back-most position. A retaining lip 70 is provided at the outer edge to insure that documents and other materials filed in the storage container will be held in place. In addition, a handle hole 72 may be provided for easy gripping when sliding or carrying the storage containers. Thus, it is appreciated that detachable handles 64 serve both as a carrying means and as a means of retaining the documents and other files in place.

A straddle plate 74 is provided for connecting the storage containers in abutting relationship, such that two or more containers may be clustered together to form a single composite container which may be moved and carried about as a single piece. Each straddle plate 74 includes a pair of mounting holes 76 extending therethrough to accept a bolt 78 which extends through holes 80 in bottom panel 16, to tie the storage containers together as a unit. When desired the straddle plate may be installed by round holes 24 with or without the detachable handles 64.

Referring to FIGS. 15 and 16, it can be seen that a storage container retriever 82 is provided for lifting, removing and replacing the storage containers in and out of the shelf structures and providing easy alignment between each shelf channel and fixed flange or adjustable mounting bracket. Container retriever 82 includes a flat retriever plate portion 84, a retaining wall 86 extending perpendicular therefrom, and a gripping handle 88 at one end thereof. Retriever plate portion 84 is adapted to engage the bottom panel 16 of each storage container, while the retaining wall 86 is adapted to engage the lower front corner 87 of each storage container. To use the retriever, the retriever plate portion 84 is wedged between the bottom panel 16 and the lower shelf structure 42 and is levered about corner 42 of shelf structure 42, as shown in FIG. 15. As handle grip 88 is levered in a downward direction, the fixed flange 28 (or adjustable bracket 50) is disengaged from channel 44, such that the storage container is easily removed from the shelf structure. To remount the storage container, the process is merely reversed by levering gripping handle 88 in the upward direction to reengage flange 28 with channel 44. While retriever 82 is illustrated with a storage container not having a detachable handle extension, the retriever plate portion 84 may be of such a length that it will adequately accept storage containers which have a detachable handle 64 mounted thereon.

It is appreciated, that the present invention provides a storage container assembly which is adapted to meet the needs of a great number of situations, yet is relatively simple in construction and economical to produce. It should be noted, that minor changes in shape of storage container or its components are deemed to fall within the scope of the present invention, and it is foreseeable, that the storage container assembly may be provided with more or less than two wire dividers, where such is felt to be advantageous. Similarly, minor changes in the shape and/or construction of the container retriever is deemed to fall within the scope of this disclosure. Also, the receiving holes 30 could be moved to the outside of the support ribs 34, instead of the inside, with the insert pins 52 facing inward with the same adjustability resulting.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention.

What is claimed as new is as follows:

1. A shelf mountable storage container assembly comprising a container having a pair of spaced vertical side walls, a bottom panel connecting said pair of side walls at the bottoms thereof, an end panel extending upwardly from said bottom panel and between said side walls, a fixed flange attached to the top of said end panel having a horizontal portion extending outwardly from said end wall, said fixed flange being adapted to engage a horizontal mounting channel on the underside of a mounting shelf, and a pair of spaced vertical support ribs underlying said fixed flange and attached to the outer surface of said panel, each of said pair of support ribs including a plurality of vertically spaced adjustment apertures, and an adjustable mounting bracket in selective retentative engagement with a pair of said apertures for mounting said container in different orientations and different shelf arrangements.

2. The assembly set forth in claim 1 wherein the horizontal portion of said fixed flange includes a pair of bracket receiving holes for receiving said adjustable mounting bracket.

3. The combination set forth in claim 2 wherein said mounting bracket is of flexible, resilient construction.

4. The assembly set forth in claim 3 wherein said adjustable mounting bracket includes a pair of lower end portions each having a horizontal locking pin extending therefrom engaging a pair of said adjustment apertures and an upper portion extending horizontally and downwardly to define flange portion for engagement with a mounting channel on the underside of a mounting shelf.

5. A shelf mountable storage container assembly comprising a container having a pair of spaced vertical side walls, a bottom panel connecting said pair of side walls at the bottoms thereof, an end panel extending upwardly from said bottom panel and between said side walls, an opening extending in a downward direction through the top portion of said end panel to define an upper divider mounting slot, said bottom panel including a lower divider mounting slot, and an elongated member defining a divider and having an upper end portion bent upon itself to provide a downwardly extending mounting finger which extends through said upper divider mounting slot to hold said divider in place relative to said end panel, a lower end portion retentatively received by said lower mounting slot to hold said divider relative to said bottom panel, and a flexible, resilient medial portion between said upper and lower end portions to allow flexing of said end portions relative to each other during mounting to aid retention of said divider by said slots.

6. The assembly set forth in claim 5 wherein said divider is of thin wire-like construction bridging said end and back panels, the lower portion of said divider including a pair of notched flats which define an area of reduced thickness for engagement with said lower divider slots.

7. The assembly set forth in claim 6 wherein said lower divider slots include a portion having a first width for receiving the bottom of said divider and a portion of second width less than the first width for engaging said notched flats of said divider.

8. A shelf mountable storage container assembly comprising a container having a vertical end panel with top portion, adjustable bracket mounting means attached to the top portion of said vertical end panel, and an adjustable bracket connected to said mounting means, said mounting means including a plurality of vertically spaced pairs of opposed apertures for selectively adjusting the vertical mounting position of said adjustable bracket, said adjustable bracket being of flexible, resilient one-piece construction and including an upper portion having a downwardly bent flange portion, a pair of parallel side portions extending downwardly from the upper portion, and a pair of free end portions below said side portions, each of said free end portions terminating in a horizontal pin, said pins

extending away from each other and engaging a pair of said apertures under the resiliency of said bracket for selectively adjusting the vertical position of said adjustable bracket relative to said container.

9. The assembly set forth in claim 8 wherein said adjustable bracket is formed from an elongated member bent upon itself.

10. The assembly set forth in claim 9 wherein said elongated member comprises a single piece of wire-like material.

* * * * *