

[54] **FLEXIBLE DIVIDERS FOR LATERAL SHELF FILING**

635,551 1/1962 Canada..... 211/184

[75] Inventors: **Carl J. Dean**, Charlton; **David M. Wright**, Shrewsbury; **Bernard T. Cournoyer**, Holden, all of Mass.

Primary Examiner—Roy D. Frazier
Assistant Examiner—Robert W. Gibson, Jr.
Attorney, Agent, or Firm—Milton E. Gilbert

[73] Assignee: **Barry Wright Corporation**, Watertown, Mass.

[22] Filed: **Aug. 20, 1973**

[57] **ABSTRACT**

[21] Appl. No.: **389,887**

[52] U.S. Cl. **211/184; 108/60; 211/10; 248/224; 403/353**

[51] Int. Cl.²..... **A47F 5/00**

[58] **Field of Search** 211/184, 43, 177, 41, 11, 211/10, 176; 108/60, 61; 248/224, 243, 239, 223; 403/353; 52/753 D, 753 C, 754, 757, 758 D; 220/22; 217/29, 30, 31

The invention is an improvement in lateral shelf filing. For the purposes of this invention a stationary or roll-out shelf is provided with a plurality of spaced and horizontally aligned slots in its bottom or base panel, with the slots spaced a predetermined distance from the rear of that panel. Additionally, the rear panel of the shelf comprises a plurality of pairs of vertically spaced key slots with the members of each pair being aligned with each other as well as a corresponding slot in the base panel. At least one flexible divider is associated with the shelf. The divider is formed with a pair of vertically aligned key tabs on its rear edge adapted for interlocking with a pair of key slots to provide a bayonet-type mounting. A third tab is provided along the bottom edge of the divider for insertion into one of the slots in the base panel. The divider is adapted to be mounted to the rear panel so that its third tab faces up or down, whereby when the third tab faces down the divider can be fanned on top and when it faces up the divider can be fanned from the front.

[56] **References Cited**

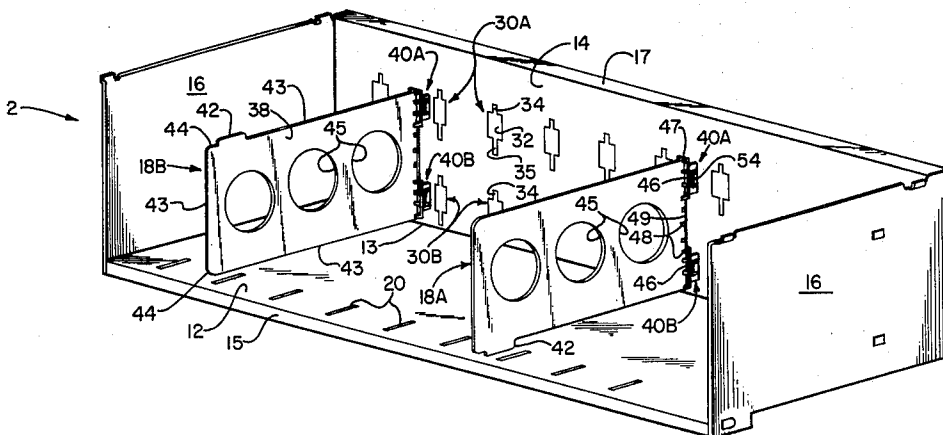
UNITED STATES PATENTS

2,266,206	12/1941	Jackson et al.	248/243
2,688,409	9/1954	Echlin	211/184
3,106,294	10/1963	Erickson	211/184 X
3,160,282	12/1964	Gunn	211/184
3,472,945	10/1969	Trachtenberg.....	108/60 UX
3,720,451	3/1973	Anders.....	211/184 X
3,826,207	7/1974	Sutherland.....	248/243 X

FOREIGN PATENTS OR APPLICATIONS

93,150	6/1962	Denmark	248/243
--------	--------	---------------	---------

4 Claims, 6 Drawing Figures



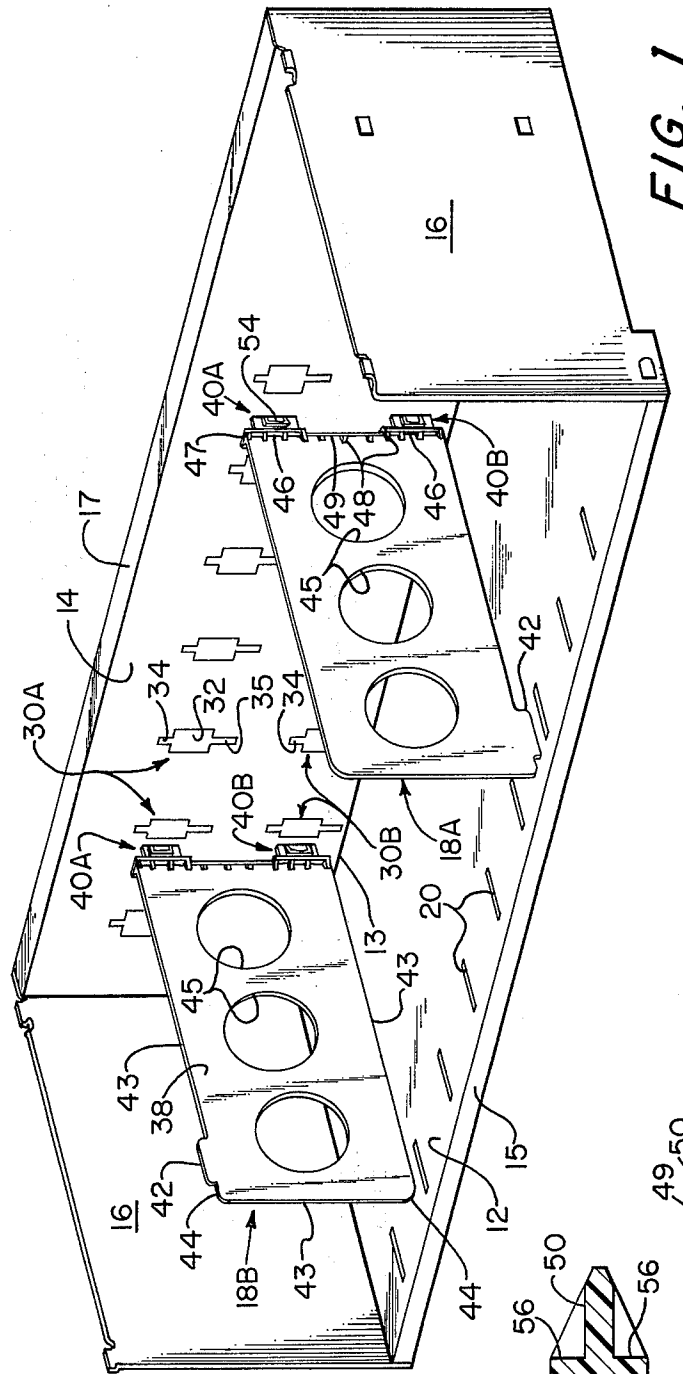


FIG. 1

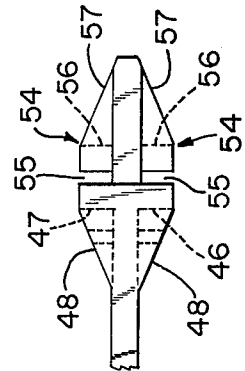


FIG. 4

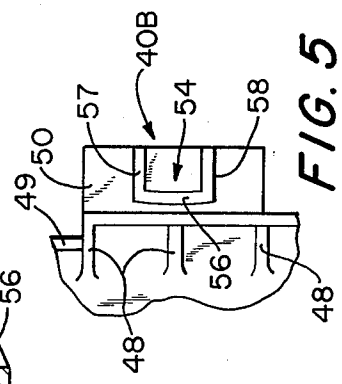


FIG. 5

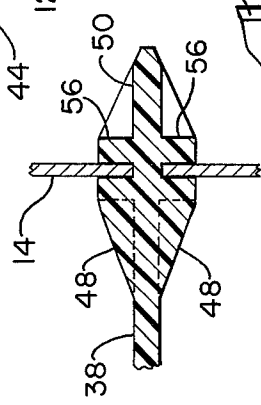


FIG. 6

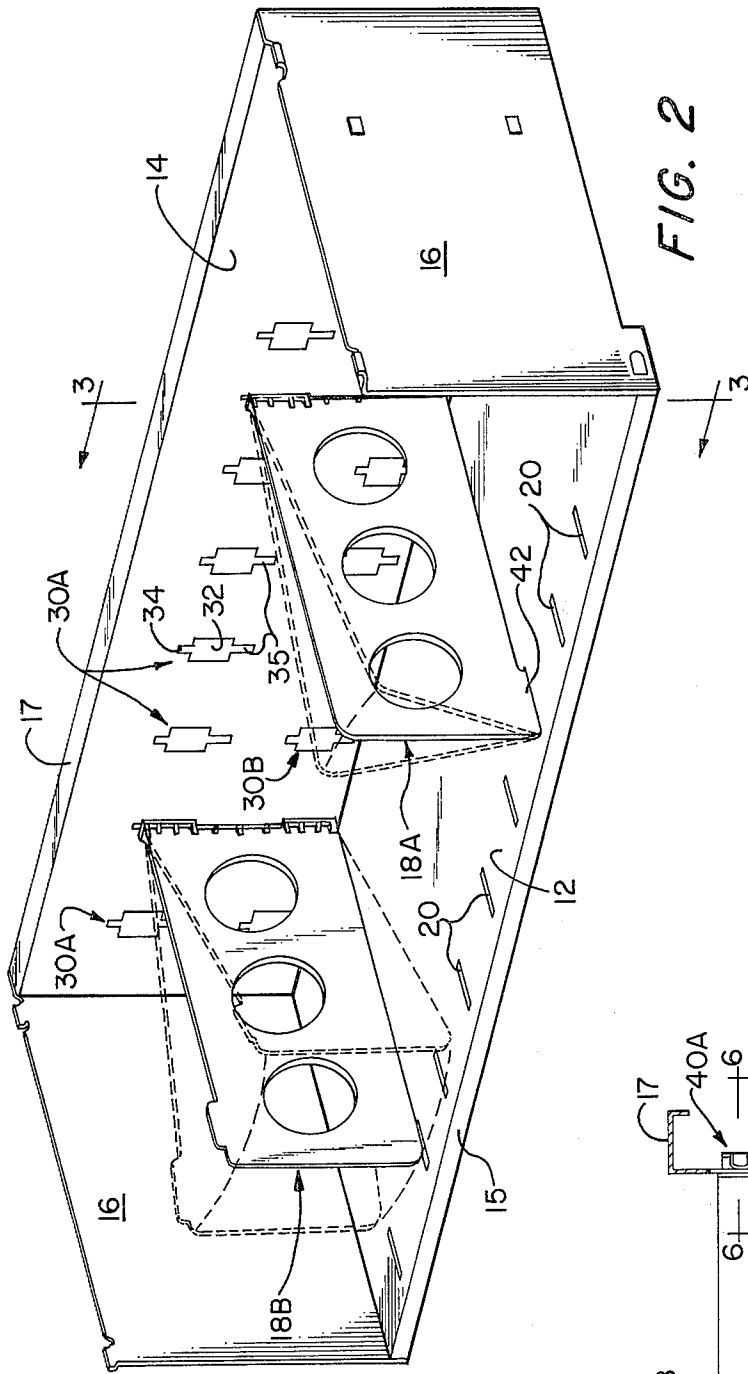


FIG. 2

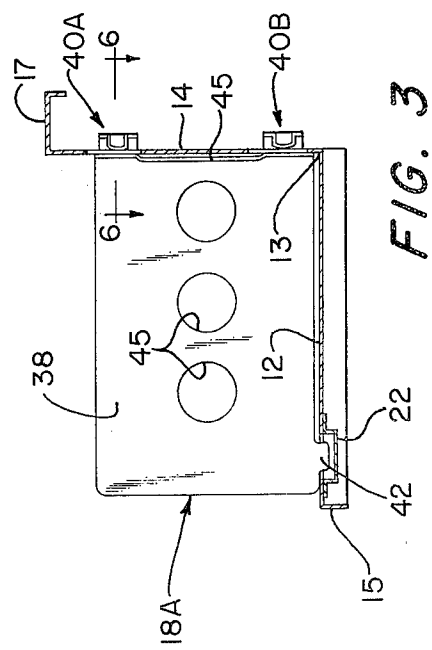


FIG. 3

FLEXIBLE DIVIDERS FOR LATERAL SHELF FILING

This invention relates to lateral shelf filing and in particular to resilient flexible shelf dividers for lateral shelf filing.

In the business world of today, a great deal of information is disseminated in the form of letters, memoranda, manuscripts and monographs, advertising literature, and the like. This material is usually placed in indexed folders to facilitate filing and retrieval. These folders in turn are commonly stored in file cabinet drawers or on open shelves. Lateral filing is utilized with stationary or roll-out shelves.

In lateral filing the folders and binders are positioned vertically side by side and oriented so that they extend from front to back. In this type of filing the folders are indexed on the top or at the front. The indexing is achieved by providing fixed or removable tabs at the top or front edge of one of the two halves of the folder, with the tabs being labelled to indicate the contents of the folders.

In lateral filing the vertically extending end walls of the shelf function as end stops for the filed material. Bookends may be provided to compress filed folders together so as to keep them erect. Preferably, however, vertical dividers are attached in some way to the horizontal shelf to provide open compartments for the stored materials and also to maintain them in an erect position.

However, dividers heretofore employed have not been satisfactory. For one thing dividers are not known which are equally satisfactory for filing systems employing side indexing and filing systems employing top indexing. Other problems have been encountered with open filing shelves or drawers which have dividers that are permanently attached. For one thing, the dividers cannot be adjusted to suit the users' needs. Of course, adjustable dividers have been provided, but these are difficult to handle or may require the use of auxiliary fastener means such as screws for securing them in place. A more prevalent problem stems from the use of dividers that are quite stiff. In such case, when a large amount of material is inserted between the dividers so that the material is tightly compressed, it is difficult to fan or separate the material to read the tabs or labels. Also it is difficult to insert or remove selected material from the shelf or drawer. Metal dividers also increase the chance of injury to personnel, particularly from rough, sharp or burred edges.

Accordingly, an object of the present invention is to provide a simple, practical and economical lateral filing unit having dividers which overcome the aforementioned problems.

Another object of the present invention is to provide a lateral filing shelf unit having new and improved dividers which are flexible, light weight, and are easily removed or attached.

Still another object of the present invention is to provide lateral filing shelf dividers which may be easily adjusted to the user's needs and are adapted for both top and front indexing systems.

A further object of the present invention is to provide a lateral filing shelving unit having flexible and resilient dividers that facilitate the spreading or fanning of filed materials and also insertion and removal of the same or other materials, the dividers being adjustable for top or side indexing.

The foregoing and other objects are achieved by a lateral filing shelving unit comprising one or more stationary or pullout shelves and at least one lateral divider associated with each shelf. Each shelf includes a base panel and a rear panel, with the base panel having a number of slots or indentations formed therein which are spaced from the back panel a predetermined distance. The rear panel of the cabinet section comprises a number of pairs of vertically aligned key slots, with each such pair being substantially aligned with one of the slots or indentations formed in the base panel. Each divider is made of a flexible material and is provided with a pair of aligned key tabs that are constructed and located so that they are capable of slidably cooperating with a pair of key slots to slidably interconnect the divider and rear panel. A third tab is provided on the divider for cooperating with a slot or indentation in the base panel only when the divider is disposed in a first orientation. Other features and many of the attendant advantages of the invention are described or rendered obvious by the following detailed description which is to be considered together with the accompanying drawings wherein:

FIG. 1 shows an exploded perspective view illustrating a preferred embodiment of the invention;

FIG. 2 shows a perspective view similar to FIG. 1 but showing the two dividers assembled for use;

FIG. 3 shows a cross-sectional view taken along line 3—3 of FIG. 2;

FIG. 4 is a top view of the rear end of one of the dividers shown in FIG. 1 showing details of one of its two locking tabs;

FIG. 5 is a fragmentary side view illustrating details of construction of the locking tab shown in FIG. 4; and

FIG. 6 is an enlarged cross-sectional view taken along line 6—6 of FIG. 3.

In the drawings like numerals designate like parts.

Referring now to FIG. 1, the illustrated apparatus comprises a metal shelf assembly 2 of the type commonly employed in roll-out shelf filing cabinets. Although not shown, it is to be understood that roll-out suspension arms of conventional design are used to mount the shelf assembly to a filing cabinet. Of course, for the purposes of this invention the shelf assembly 2 need not be mounted for roll-out movement but instead may be fixed.

Still referring to FIG. 1, the shelf assembly 2 comprises a base panel 12, a rear panel 14 and opposite side panels 16. Associated with the shelf assembly are lateral dividers 18A and 18B.

Preferably, but not necessarily, the base and rear panels 12 and 14 are formed from a single sheet of metal which is bent along a predetermined line as shown at 13 to that the two panels extend at a right angle to each other. Additionally for reinforcement purposes the forward edge of base panel 12 and the upper edge of rear panel 14 are bent to form flanges 15 and 17. Side panels 16 are joined to the base and rear panels, preferably by welding, so as to form an integral structure. The side panels are parallel to each other and extend at right angles to panels 12 and 14.

Base panel 12 is provided with a plurality of elongate parallel slots 20, the purpose of which will be described hereinafter. The slots 20 are all aligned with one another, being spaced the same predetermined distance from the rear edge of base panel 12. A U-shaped channel member 22 extends beneath slots 20 and is welded

to the undersurface of base panel 12 to provide structural support whereby to prevent the front portion of the base panel from sagging under the weight of stored filing folders.

Referring now to FIGS. 1 and 2, rear panel 14 is provided with a plurality of pairs of identical key slots 30A and 30B which consists of rectangular apertures 32, with upper and lower extensions in the form of narrow slots 34 and 35. The width (ie. the horizontal dimension as seen in FIG. 1) of slots 34 and 35 are the same, while the length of (ie. the vertical dimension as seen in FIG. 1) of slots 35 is greater than that of slots 34. Each slot 30A is vertically aligned with a corresponding slot 30B, and each pair of aligned slots 30A and 30B is aligned with a corresponding slot 20 of base panel 12. Slots 30B are spaced the same predetermined distance from the bottom of rear panel 14 and slots 30A are spaced vertically the same predetermined distance from slots 30B.

The dividers 18 are made of plastic material and each comprises a planar body 38 of generally rectangular shape, a pair of key tabs 40A and 40B and a restraining tab 42. The body 38 has flat opposite side surfaces which terminate in rounded or blunt edges 43 at the top, bottom and front sides. Additionally its two front corners are preferably rounded as shown at 44. These rounded edges and corners reduce the likelihood of injury to users. Each divider is also formed with one or more large apertures 45 for the purpose of giving the body 38 greater flexibility and also to cut down the overall weight and materials cost. Apertures 45 also function as finger holes to facilitate attachment and removal of the divider with respect to the shelf assembly.

Referring now to FIGS. 1 and 4-6, the key tabs 40A and 40B are identical and are integrally formed with the planar body 38 along the rear verticle edge of the latter. Tabs 40A and 40B are located equal distances from the upper and lower horizontal edges respectively of divider body 18. This distance is preferably made slightly less than the distance between the bottom of slots 35 of the lower key slots 30B and the juncture of base panel 12 and rear panel 14. Additionally, tabs 40A and 40B are spaced from one another a distance equal to the distance between the apertures 32 of a pair of key slots 30A and 30B. The rear edge of the planar body 38 is flat and is also indented between tabs 40A and 40B as shown at 45 in FIG. 3. Formed integral with the body 38 on its opposite sides at its rear edge are right angle flanges 46 and 47. These flanges are reinforced by a plurality of vertically spaced webs 48 formed integral with both the flanges and body 38 and terminate at indented portion 45 which has a narrower edge flange 49 on each side of body 38. The rear edges of flanges 46 and 47 are flat and flush with the flat rear edge of divider body 38.

Still referring to FIGS. 1 and 4-6, the tabs 40A and 40B comprise flat planar body portions 50 that preferably are of the same thickness as the divider body 38. In any event, however, their thickness is slightly less than the width of slots 34 and 35. These tab body portions are rectangular and preferably their edges and their rear corners are rounded so as to avoid likelihood of injury to the user and also to facilitate insertion in slots 34 and 35. The length i.e. the vertical dimension as seen in FIGS. 1 and 5) of each tab body portion 50 is made greater than the corresponding dimension of the center apertures 32 of the key slots but less than the

overall distance between the opposite ends of each pair of narrow slots 34 and 35. The depth or lateral dimension of each tab body portion 50 is substantially greater than the thickness of rear panel 14. In this connection it is to be appreciated that the upper and lower edge portions of divider body 38, the flanges 46 and 47 project far enough so that the distance between their outer edges is greater than the width of the center apertures 32 of the key slots.

Formed integral with the opposite side surfaces of each tab body portion 50 are two ears 54. These ears may be solid but preferably as shown each ear is U-shaped and comprises a rib or a flange 56 connecting two parallel legs 57 and 58. The latter are tapered, having a triangular or wedge configuration in plan view (see FIG. 4). Flanges 56 are spaced from flanges 46 and 47 and are curved (as viewed in side elevation, FIG. 5) so as to present a concave surface to the flat rear surface of the adjacent flange 46 and 47. The ears 54 are located so that the minimum distance of the gap or groove 55 formed between flanges 56 and the adjacent flanges 46 and 47 is about equal to the thickness of rear panel 14. The vertical distance between the upper and lower surfaces of legs 57 and 58 respectively is slightly less than the vertical dimension of the apertures 32 of the key slots. Also the flanges 56 project laterally from the tab body portions so that the overall distance between their outer edges is slightly less than the width of apertures 32 but greater than the width of slots 34 and 35. The body portions of tabs 40A and 40B are spaced from one another so that (a) the distance between their upper and lower edge respectively is less than the distance between the upper end of a slot 34 of an upper key slot 30A and the lower end of a slot 35 of a corresponding lower key slot 30B, and (b) the distance between their lower and upper edges respectively is greater than the distance between the lower end of a slot 35 of an upper slot 30A and the upper end of a slot 34 of a lower key slot 30B. Also the corresponding ears 54 on each pair of locking tabs 40A and 40B are spaced from one another so that (a) the upper surface of leg 57 of the upper ear and the lower surface of the leg 58 of the lower ear are spaced apart slightly less than the upper edge of aperture 32 of a key slot 30A and the lower edge of aperture 32 of the corresponding aligned slot key slot 30B, and (b) the lower surface of leg 58 of the upper ear and the upper surface of the leg 57 of the lower ear are spaced apart slightly more than the lower edge of aperture 32 of key slot 30A and the upper edge of aperture 32 of the corresponding key slot 30B.

Referring again to FIGS. 1-3, one of the horizontal edges of each divider 18 is provided with a restraining tab 42. Restraining tab 42 is integrally formed with divider body 38 and projects beyond the edge of the divider body a distance about equal to the distance between the bottom end of slot 35 of a key slot 30B and the base panel 12. The length of tab 42 is slightly less than that of the slots 22. Tab 42 is spaced from the rear edge of the divider flanges 46 and 47 a distance equal to the distance of slots 20 from rear panel 14.

Dividers 18 may be made of any strong, durable and flexible material. Good results have been found to occur where the dividers are molded from ABS resins although it will be obvious to one skilled in the art that the dividers may be formed of other moldable plastics.

The above-described dividers may be installed in either of two positions, depending upon whether a top or side indexing mode of filing is contemplated. However, in both positions attachment of the dividers to the rear panel is accomplished in the same way. First the divider is held so that its two locking tabs 40A and 40B are aligned with a pair of vertically aligned key slots 30A and 30B. Then the tabs are inserted through the aligned key slots, with the oversized aperture section 32 of the key slots allowing the ears on the locking tabs to penetrate through rear panel 14. The tabs are inserted far enough from the rear surfaces of flanges 46 and 47 to engage panel 14, and then installation is completed by pushing the divider downward so that the ears can interlock with the panel (as shown in FIG. 6) along opposite sides of the slot extensions 35 of the two key-slots. The curved surfaces of flanges 56 facilitate the downward movement required to interlock tabs 40 and slots 30 while the minimum width of grooves 55 assures that those curved surfaces and the rear surfaces of flanges 46 and 47 will frictionally engage the opposite sides of panel 14 and thereby hold the divider in place.

Depending upon whether top or side indexing of files is contemplated, the divider is installed with its restraining tab 42 down or up. When installed with restraining tab 42 in the down position, the tab 42 interlocks with a slot 20. It is to be noted that the spacing of the locking tabs 40A and 40B and the spacing and locations of the key slots 30A and 30B are such that when the divider is interlocked with rear panel 14, a gap is left between the bottom edge of the divider body and base panel 12. This is to prevent any problems due to possible misalignment of the base and rear panels or bucking or warping of the base panel.

The capacity of mounting the dividers with their restraining tabs up or down gives rise to two different actions and certain advantages. Referring now to FIG. 2, if the folders to be filed are top indexed, the divider is mounted so that its restraining tab 42 is engaged in a slot 20, as shown by divider 18A. When so mounted, the divider is capable of a fanning action (shown in dotted lines) which may be characterized as a vertical V action since it can be fanned by flexing it to one side or the other relative to its bottom and rear edges which are held fixed by virtue of engagement of its locking tabs 40A and 40B and its restraining tab 42 with the rear and base panels respectively. This fanning action facilitates separating files for purposes of identification and also removal and insertion. An added advantage of locking the tab 42 to the base panel is that the top indexed folders cannot slump or slide under the divider. For front indexed folders, the dividers are mounted with their restraining tabs 42 facing up, as shown in FIG. 1 by divider 18B. This permits a fanning action (shown in dotted lines) which may be characterized as a lateral V action since the divider can be fanned by flexing it to one side or the other relative to its rear edge which is anchored to rear panel 14. This action facilitates laterally fanning front indexed folders for identification and removal or insertion.

The present invention has numerous other advantages. The dividers may be molded of various plastics by conventional molding techniques at relatively low cost. The use of plastic material allows the dividers to be colored throughout, thus eliminating the problem incurred with metal dividers of having to repaint to cover scratches. The use of plastic also permits ade-

quate control of flexibility and resiliency. More important, the dividers are easily installed and removed, thereby facilitating increasing or decreasing the spacing between them. In this connection, it is noted that key slots of other configurations may be used, with corresponding changes in tab configuration being made to assure proper mating. Thus for example, the oversized central portions 32 of the key slots may be made square, oval, circular, etc. It also is contemplated that more than two locking tabs may be provided on each divider, but this is not preferred since it increases mold costs and necessitates one or more additional rows of key slots to be provided in the rear panel of shelving unit. Also, as previously noted, the invention is applicable to fixed as well as roll-out shelves. In the case of fixed shelf units, the base and rear panels may be formed separately from one another, e.g., the rear panel may be an integral part of an open cabinet and the base panel may be separate shelf removably mounted to the cabinet. It also is contemplated that the ears on the opposite sides of tabs 40A and 40B may be made a solid side extension, i.e., the space between the legs 57 and 58 and flange 56 may be filled in solid so that each ear is a solid wedge shaped integral side extension of the planar body of the tab. This tapered or wedge shape, like that of the legs 57 and 58 facilitates insertion of the key locking tabs into the key slots.

Since certain obvious changes may be made in the illustrated embodiment of the device without departing from the scope of the invention, it is intended that all the matter contained herein be interpreted as illustrative and not in a limiting sense.

What is claimed is:

1. A shelving assembly adapted for lateral filing purposes comprising:
 - a base panel;
 - a rear panel extending at substantially a right angle to said base panel;
 - at least one restraining slot formed in said base panel and spaced from said rear panel a first predetermined distance;
 - first and second aligned key slots formed in said rear panel, one of said key slots being spaced from said base panel a second predetermined distance, and the other of said key slots being spaced from said one key slot a third predetermined distance; and
 - a flexible, resilient, substantially planar divider having a front edge, a rear edge, and longitudinally extending top and bottom edges, a restraining tab on said bottom edge and first and second key locking tabs on said rear edge;
 - said key locking tabs being spaced with respect to one another and also with respect to said top and bottom edges such that either of said first and second key locking tabs may be inserted in said first key slot and slidably interlocked with said rear panel and simultaneously the other of said key locking tabs may be inserted in said second key slot and slidably interlocked with said rear panel, and said restraining tab being so located with respect to said bottom edge that (a) said restraining tab is aligned with and extends into said restraining slot so as to restrain a portion of said divider against lateral movement relative to said base panel when said first and second key tabs are inserted in said first and second key slots respectively, and (b) said restraining tab is aligned with but faces away from

7

8

said restraining slot when said first and second key tabs are inserted in said second and first key slots respectively; and

said first and second key locking tabs extending through said key slots and being slidably interlocked with said rear panel.

2. An assembly according to claim 1 wherein said key slots each comprise a relatively large central aperture with elongate aligned slot extensions at their upper and lower sides, and said key locking tabs each comprise a planar body portion sized to fit in said elongate slot extensions and projecting ears on each side of said planar body portions sized to fit in said central aperture, said key locking tabs extending through said key slots and the said ears of said key locking tabs engaging said rear panel so as to slidably interlock said key locking tabs to said rear panel.

3. A flexible shelf divider comprising:
a flexible substantially planar body having a front edge, a rear edge, and upper and lower edges;
a first pair of flange sections formed integral with opposite sides of said body along a first portion of said rear edge;
a second pair of flange sections formed integral with opposite sides of said body along a second portion of said rear edge;

each of said flange sections having a flat surface that extends lengthwise of said rear edge and at a right angle to the plane of said body, said flat surfaces all being co-planar with one another; and

a pair of mutually spaced locking tabs formed integral with said body at said first and second portions of said rear edge;

each of said tabs comprising a flat body portion that is coplanar with said flat body and a pair of ears on opposite sides of said body portion, each of said body portions having upper and lower edges and an end edge, each of said ears having upper and lower surfaces that terminate short of the upper and lower edges of said tab body portion and a flat end surface that extends between said upper and lower surfaces at substantially a right angle to said body portion and in confronting relation with the said flat surface of one of said flange sections, the end surface of each ear and the confronting flat surface of the adjacent flange section being spaced from one another so as to form a groove therebetween.

4. A flexible shelf divider according to claim 3 wherein said ears extend substantially to the end edges of said body portions.

* * * * *

30

35

40

45

50

55

60

65

UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 3,905,484
DATED : September 16, 1975
INVENTOR(S) : Carl J. Dean, David M. Wright, and Bernard T.
Cournoyer

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 4 - Line 5: Insert after the word "lower" the word "rear"

Column 4 - Line 32: Add the letter "s" to word "edge"

Column 5 - Line 34: Delete word "bucking" and substitute therefor the word "buckling"

Column 6 - Line 13: Insert before the word "shelving" the word "the"

Column 6 - Line 19: Insert after the word "be" the article "a"

Signed and Sealed this

thirteenth Day of *January* 1976

[SEAL]

Attest:

RUTH C. MASON
Attesting Officer

C. MARSHALL DANN
Commissioner of Patents and Trademarks