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SHELF AND DIVIDER UNIT

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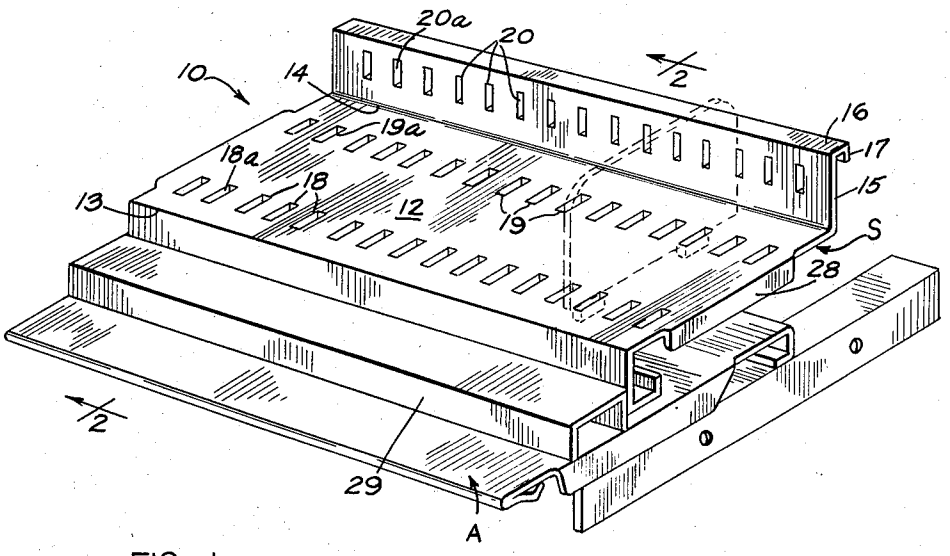


FIG. 1

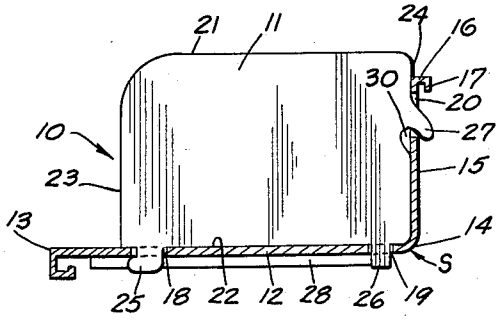


FIG. 2

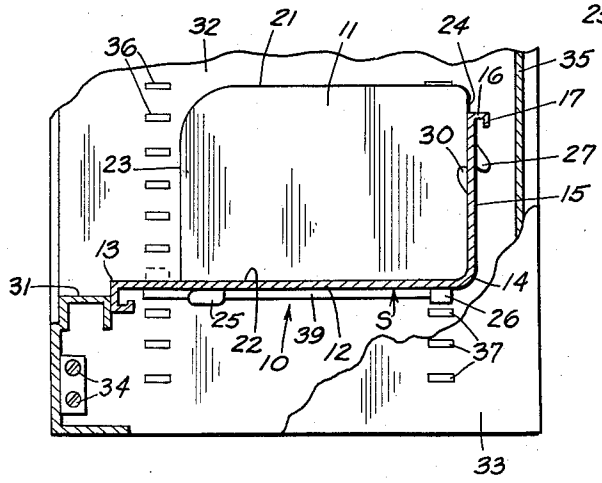


FIG. 3

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SHELF AND DIVIDER UNIT

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3 Claims. (Cl. 211—184)

This application is a continuation-in-part of our co-pending application, Serial No. 671,060, filed July 10, 1957, on "Shelving," now abandoned.

This invention relates to shelf and divider unit, and more particularly to a metal type of unit which is especially adapted for use in filing file folders, notebooks, drawings, envelopes, papers, and the like.

Vertical shelf-type filing arrangements have been known heretofore, but have been relatively restricted in usage as compared with the more conventional drawer-type filing units. One of the principal reasons for the relatively small utilization of vertical shelf-type filing units has been the awkwardness and inefficiency of the support members or dividers used to maintain the files in vertical position. These dividers, as known in the art, have frequently interfered with access to the files and have presented a definite occupational hazard to filing clerks and other personnel using the files. Moreover, the dividers should be quickly and easily adjustable to different positions along the length of the shelf, and efficient and effective filing frequently requires a substantial number of dividers on each individual shelf. These requirements have, at best, been only partially realized by known filing-shelf structural units. In addition, the fastening arrangements for the dividers, as known in the art, have in most instances been relatively expensive and have been subject to jamming, vertical instability, and other operational difficulties.

It is a primary object of our invention, therefore, to afford a novel shelf unit which substantially overcomes or minimizes the aforementioned disadvantages and difficulties of previously known arrangements.

A more specific object of the invention is to provide a new and improved vertical filing shelf unit which affords unobstructed access to the files by eliminating fastening devices and other members from the front of the shelf.

Another object of the invention is to provide a new and improved vertical filing shelf unit which permits use of a plurality of support members or dividers on the shelf without presenting an occupational hazard to the users of the shelf and without unduly increasing the cost of the complete shelf unit.

A further object of the invention is to provide a new and improved vertical filing shelf unit which employs simple sheet metal members as dividers and which affords a means for removably mounting a number of those dividers at any of a plurality of different positions along the length of a shelf without requiring the use of any auxiliary fastening device other than lugs formed as an integral part of the dividers themselves.

An additional object of the invention is to provide a new and improved vertical filing shelf unit which affords adequate vertical stability for the dividers without requiring alignment of any other principal structural member with the shelf and without adding materially to the cost of either the shelf or the dividers.

Other and further objects of the present invention

will be apparent from the following description and claims and are illustrated in the accompanying drawings which, by way of illustration, show a preferred embodiment of the present invention and the principles thereof and what is now considered to be the best mode contemplated for applying these principles. Other embodiments of the invention embodying the same or equivalent principles may be used and structural changes may be made as desired by those skilled in the art without departing from the present invention.

In the drawings:

Fig. 1 is a perspective view of a shelf unit constructed in accordance with our invention;

Fig. 2 is a sectional view, taken approximately along line 2—2 in Fig. 1 and showing a divider mounted upon the shelf in Fig. 1; and

Fig. 3 is a sectional view showing the shelf unit mounted in a cabinet.

A shelf unit **10**, embodying the principles of our invention, is illustrated in Figs. 1–3 and comprises the preferred embodiment of the invention.

The shelf unit **10**, which is particularly adapted for vertical filing of file folders, envelopes, papers, and the like, comprises a unitary sheet metal shelf S upon which a plurality of divider panels **11** are removably mounted. The shelf S includes a substantially flat elongated bottom panel **12** having parallel front and rear edges **13** and **14**, respectively. A back panel **15** is formed integrally with the bottom panel **12** and extends upwardly from the rear edge **14** of the bottom panel in substantially perpendicular relation thereto. Thus, the back panel **15** has a top edge portion **16** which is bent or otherwise deformed to provide a flange **17**, the bottom edge portion of the back panel being integral with the rear edge portion **14** of the panel **12**. The back panel **15** has a height which is substantially smaller than the front-to-rear depth of the bottom panel **12** in order that the back panel will not excessively limit the heights at which individual shelf units may be mounted in a supporting structure as described more fully hereinafter.

The shelf S is also provided with three spaced rows of narrow elongated slots. In the preferred embodiment illustrated in Fig. 1, these rows of slots comprise the slots **18** and **19** in the bottom panel **12** and the slots **20** in the back panel **15**. The slots in the three rows are transversely aligned with respect to each other; that is, each of the corresponding slots in the three rows, such as the slots **18***a*, **19***a* and **20***a* are aligned with each other in a common vertical plane transversely relative to the shelf S. As indicated in Fig. 1, the individual slots **18** and **19** extend in a direction transverse to the length of the bottom panel **12**, whereas the slots **20** in the back panel **15** extend in a vertical direction. The three rows of slots each extend longitudinally of the shelf in parallel relation to the front and rear edges **13** and **14** of the bottom panel **12**.

The first row of slots **18** is spaced inwardly from, but is adjacent to, the front edge **13** of the bottom panel. The row of slots **20**, on the other hand, is preferably located closely adjacent the top edge **16** of the back panel **15**. The remaining row of slots **19** is located intermediate the rows **18** and **20** and is closely adjacent the rear edge portion **14** of the bottom panel **12**. The slots **19** may be located in the back panel **15** instead of the bottom panel **12**, if preferred, although the illustrated arrangement in which the slots **19** are formed in the bottom panel **12** is generally more desirable.

Support for file folders, envelopes, papers, and the like upon the shelf S is provided by the divider panels **11**, which are removably mounted in the slots **18**, **19** and **20** of the shelf. In a given filing operation, the number of divider panels may vary substantially, depending upon

the thickness of the files, the number of files, and other similar factors. In general, it may be considered that ten or less divider panels are usually required for a three-foot shelf unit; four or five divider panels are frequently adequate on a shelf of this length, depending upon the nature of the files and the frequency with which they are removed and replaced. Each of the divider panels **11** comprises a rigid flat sheet, preferably sheet steel, having top, bottom, front and rear edge portions **21, 22, 23** and **24**, respectively. It is desirable that the over-all height of the divider panels be at least somewhat greater than the height of the back panel **15** of the shelf S, although this is not always essential.

Three spaced-apart mounting lugs **25, 26** and **27** are formed as an integral part of each of the divider panels **11**. These mounting lugs project from the bottom and rear edge portions **22** and **24**, respectively, of the divider panel, and are substantially in the plane of the flat sheet which forms the divider panel. Stated differently, it is preferred that the mounting lugs **25, 26** and **27** not be bent or otherwise deflected with respect to the principal flat portion of the divider panel. The divider mounting lugs **25, 26** and **27** are spaced to register with the slots **18, 19** and **20**, respectively, in the shelf S and, when the divider is mounted on the shelf, are positioned in the slots, as best indicated in Fig. 2. Moreover, and as shown in Fig. 2, the front edge portion of each of the dividers is located inwardly of the front edge portion **13** of the bottom panel **12** of the shelf and is preferably closely adjacent the front edge portion of the slot **18** engaged by the lug **25** on the divider panel. In the illustrated embodiment of the invention, the two mounting lugs **25** and **27** are substantially hook-shaped in configuration, the remaining projection or lug **26** being located intermediate the two hook-shaped lugs.

The lugs **25, 26** and **27** are so disposed on the body of the divider panel **11** that, in inserting the divider in position upon the shelf S, the leading edge of the lug **25** may be inserted through one of the slots **18** with the rear edge portion **24** of the divider tilted upwardly. The rear portion of the divider may then be pivoted downwardly to engage the lugs **26** and **27** in the slots **19** and **20** aligned with the slot **18** already engaged by the divider panel. In this mounted position, as illustrated in Fig. 2, the lugs **25** and **27** are hooked into the panels **12** and **15**, respectively, and effectively prevent demounting of the divider panel by either horizontal or vertical movement, thus minimizing the possibility of accidental removal of the divider when files are removed from the shelf S. On the other hand, the divider panel **11** may be readily removed from the shelf S by tilting the rear end portion **24** upwardly to disengage the lugs **26** and **27** and subsequently lifting the tilted divider to disengage the lug **25** from the slot **18**. Consequently, the divider **11** may be quickly and conveniently disposed in any of the multiplicity of positions along the shelf S which are afforded by the aligned sets of slots **18, 19** and **20**. Moreover, the three-point engagement of the mounting lugs of the divider panel with the bottom and back panels of the shelf S affords adequate vertical stability for the divider and thus enables the divider to provide the requisite support for envelopes, file folders, and the like disposed upon the shelf. In this connection, it should be noted that the construction of the shelf S as a single integral member makes it possible to align the slots **18, 19** and **20** with an accuracy sufficient to assure convenient and rapid mounting of the divider panels; more importantly, this integral shelf construction makes it completely unnecessary to align any auxiliary members of a shelving assembly, such as a separate back panel, with the shelf S.

It is of course contemplated that the shelf units such as the unit **10** will be mounted in tiers in a separate supporting frame. Any convenient and effective mounting arrangement may be employed in conjunction with the shelf units without departing in any way from the invention; on the other hand, it is highly preferable that the mounting arrangement selected provide for mounting the shelves at varying heights. For example, with file folders of one size, it may be desirable to separate the shelves by a given distance, whereas with different size file folders the shelf separation required may be substantially greater. Moreover, in a given shelving assembly it may be desirable to provide file accommodations for more than one type of file folder or for note books and other materials in addition to standard file folders. A preferred mounting arrangement for the shelves is described in detail in Patent No. 2,005,593 to Onions, which utilizes a highly effective yet inexpensive mounting bracket to suspend the shelves within a shelving assembly. In a mounting arrangement of this kind, the shelves such as the shelf S are provided with suitable mounting flanges **28** which engage the brackets of the shelving assembly.

As pointed out hereinabove, it is desirable that the height of the back panel **15** be made relatively small as compared with the front-to-rear depth of the bottom panel **12**. On the other hand, the back panel should be at least several inches in height to afford adequate stability for the divider panels **11** and also to serve as a backstop for the files in those shelving installations where no separate back panel is provided. In this connection it should be noted that the back panel **15**, and specifically the flange portion **17** thereof, affords an effective and convenient means for mounting identification tab cards upon the shelf unit. Where desired, a facing member such as the channel **29** (Fig. 1) or a cabinet base **31** may be mounted in front of the shelf S to afford a more finished appearance, particularly where individual doors are utilized to cover the front areas of the file shelves.

In order to facilitate insertion and removal of each of the dividers **11** a notched portion **30** may be provided in the rear edge **24** of each divider **11**, below the adjacent lug **27**, and in inserting the divider **11** into position of use, and in removing it therefrom, the inner wall of each notched portion **30** may be rested upon the bottom wall portion of one of the slots **20** in the rear or back wall panel **15**.

The shelf unit of the invention affords unobstructed access to the files, since there are no fastening devices or other members located at the front of the shelf S. Moreover, the recessed construction for the dividers **21** effectively eliminates the occupational hazard to users of the shelf which is presented by many prior art filing shelf structures. The mounting arrangement for the divider panels affords the further advantage of extreme simplicity and very low cost, since the mounting lugs **25, 26** and **27** may be formed in the divider panels by a simple punching operation as a part of and as an incident to normal manufacture of the dividers.

In Fig. 3, the shelf unit **10** is shown mounted in a cabinet in a typical mounting arrangement. The cabinet structure comprises a pair of side walls **32** and **33**, interconnected by the base member **31**. The base member may be secured to the walls **32** and **33** by suitable means, such as the bolts **34**. A back panel **35** may be incorporated in the cabinet, or the back may be left open if desired.

Each of the side walls **32** and **33**, in the mounting arrangement shown in Fig. 3, is provided with two rows of spaced slots **36** and **37**. Mounting brackets such as the bracket **39** may be mounted in the slots **36** and **37**, as described in the aforementioned patent to Onions. The shelves S may then be mounted on the brackets by engaging the flanges **28** with the brackets, affording a secure mounting arrangement but permitting ready removal and replacement of the shelves at varying heights within the cabinet. If desired, the cabinet and shelves may be provided with suitable doors such as the door assembly A illustrated in Fig. 1.

It will thus be seen from the foregoing description, considered in conjunction with the accompanying draw-

ing, that the present invention accomplishes its aforesaid and other objects, and has the desirable advantages and characteristics hereinbefore set forth, and others which are inherent in the invention, as hereinbefore described, and as defined hereinafter in the claims.

We claim:

1. A shelf and divider unit for vertical filing of file folders, envelopes, papers, and the like, comprising a unitary sheetmetal shelf including a substantially flat elongated bottom panel having parallel front and rear edges, a back panel having a top edge portion and having a bottom edge portion integral with the rear edge portion of the bottom panel and said back panel extending upwardly from the rear edge of said bottom panel in substantially perpendicular relation thereto, said back panel having a height substantially less than the front to rear depth of said bottom panel, said shelf having three spaced rows of elongated narrow spaced apart transversely aligned slots therein, the slots in said bottom panel extending transversely thereacross and the slots in said back panel extending vertically therein, said rows of slots extending longitudinally of the shelf in parallel relation to the front and rear edges of said bottom panel with a first one of said rows of slots being spaced inwardly from but adjacent to the front edge of said bottom panel, each of said slots in said first row having a front edge portion and a rear edge portion, a second row of said slots being located closely adjacent the top edge of said back panel, and the other row of said slots being located intermediate said first and second rows of slots adjacent the rear edge portion of said bottom panel, a plurality of divider panels each comprising a rigid flat sheet having top, bottom, front and rear edge portions

and having three spaced apart mounting lugs projecting from the bottom and rear edge portions thereof substantially in the plane of said flat sheet, said lugs being so spaced as to register with said slots and being positioned therein, the front edge portion of said dividers being positioned inwardly of the front edge portion of said bottom panel and adjacent the front edge portions of said slots in said first row of slots, and said dividers being removably mounted on and maintained in stable vertical position on said shelf by engagement of said lugs in said slots and by engagement of bottom and rear edge portions of said dividers with said bottom and back panels, respectively.

2. A shelf and divider unit as defined in claim 1 in which the height of each of said divider panels is substantially greater than the height of the said back panel.

3. A shelf and divider unit as defined in claim 1 in which the third row of slots is located in the bottom panel closely adjacent the rear edge portion of said bottom panel, and in which two of said lugs on each of said dividers are of substantially hook-shaped configuration and are separated from each other by the third lug.

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