

Dec. 2, 1969

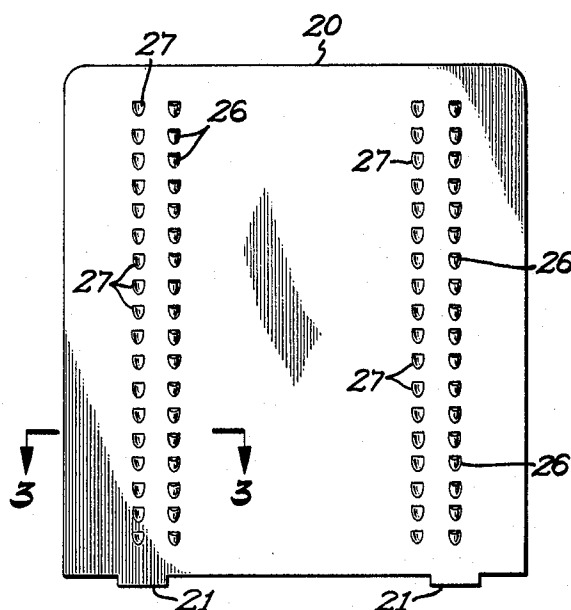
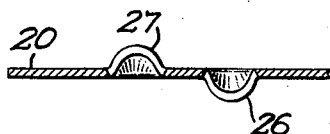
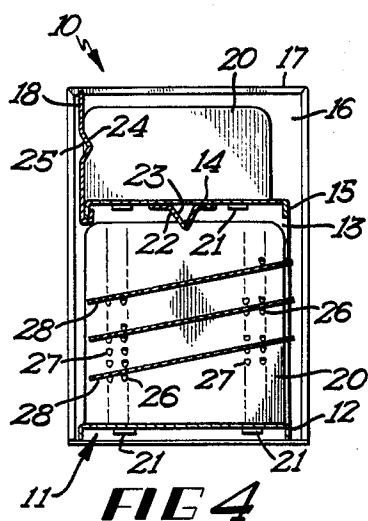
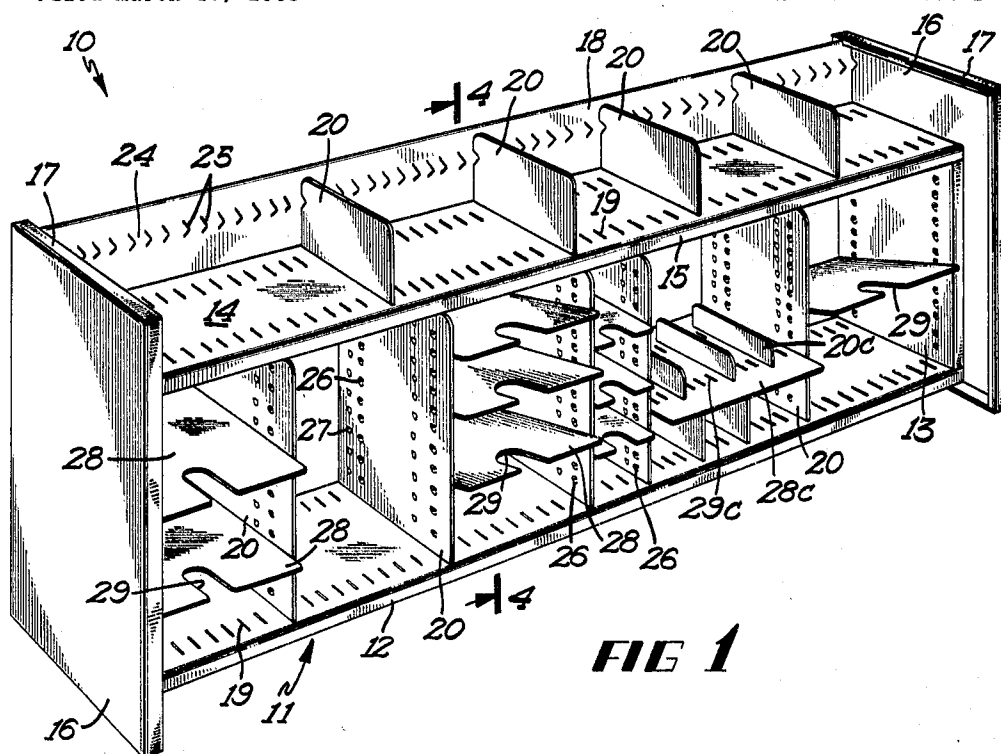
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3,481,485

ADJUSTABLE SHELF SUPPORT DEVICE

Filed March 18, 1968

2 Sheets-Sheet 1



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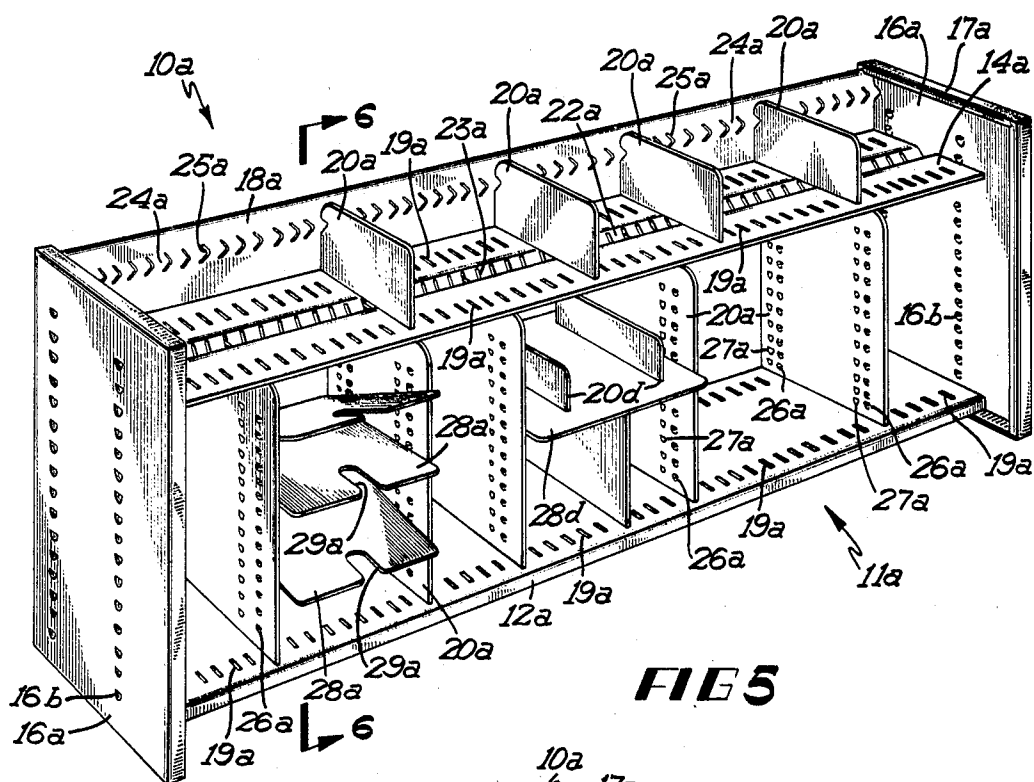


FIG 5

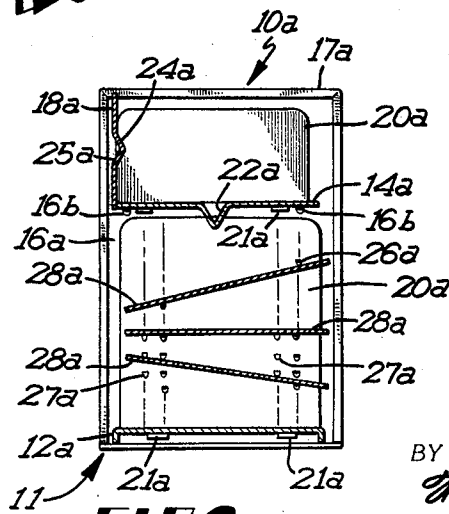


FIG 6

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3,481,485

ADJUSTABLE SHELF SUPPORT DEVICE
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5 Claims

ABSTRACT OF THE DISCLOSURE

An adjustable compartmented shelf structure comprising a horizontal base panel and a horizontal upper panel rigidly connected together and spaced apart in substantially parallel relation. Said base panel having a plurality of slots therein arranged in a pair of longitudinal rows, each slot in one row being disposed in alignment with a slot in the other row. A plurality of vertical compartment defining plates each having a pair of spaced apart longitudinally aligned attachment tabs affixed thereto and projecting from the lower edge thereof into a pair of transversely aligned slots in the base panel to thereby define a filing space between adjacent plates. Locking means on the upper panel engageable with each plate to releasably lock the same in substantially rigid upright relation. Each vertical plate having a first group of support elements struck laterally from one surface thereof, and a second group of support elements struck laterally from the other surface thereof. A plurality of transverse plates positioned between and supported by the support elements of adjacent vertical plates selectively in substantially horizontal parallel relation to the base panel or in inclined relation thereto.

An object of this invention is to provide a novel compartmented shelf structure which is comprised of upper and lower panels and a plurality of detachable vertical and transverse plates which are adjustable relative to each other and to the panel to thereby permit a user to readily and easily form the shelf structure into compartments of different widths and heights for accommodating papers, books and the like.

Another object of this invention is to provide a shelf structure including a plurality of vertical plates having support elements thereon which are adapted for use in supporting flat transverse plates thereon in a horizontal position to form a support for books, papers and the like, or alternatively to support the flat transverse plates in an inclined position so that the inclined plates may be used to direct sliding movement of documents and the like in sorting operations.

These and other objects and advantages of this invention will more fully appear from the following description made in connection with the accompanying drawings wherein like reference characters refer to the same or similar parts throughout the several views, and in which:

FIG. 1 is a perspective view of my novel compartmented shelf structure,

FIG. 2 is a side-elevation view on an enlarged scale of a vertical compartment defining plate,

FIG. 3 is a fragmentary cross-sectional detailed view taken approximately along line 3—3 of FIG. 2 and looking in the direction of the arrows and,

FIG. 4 is a cross-sectional view taken approximately along line 4—4 of FIG. 1 and looking in the direction of the arrows.

FIG. 5 is a perspective view of a slightly modified form of the novel compartmented shelf structure.

FIG. 6 is a cross-sectional view taken along line 6—6 of FIG. 5 and looking in the direction of the arrows.

Referring now to the drawings and more specifically to FIG. 1, it will be seen that one embodiment of the

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novel shelf structure designated generally by the reference numeral 10 is there shown. This shelf structure is preferably formed of a suitable metallic material and includes a substantially flat horizontal base panel 11 which is of generally rectangular configuration. The front and rear longitudinal marginal portions of the base panel 11 are bent to define downwardly extending flanges or legs 12 so that the base panel 11 is spaced above the support surface upon which the shelf structure is positioned.

A pair of fixed generally rectangular shaped flat end plates 13 are rigidly secured to opposite ends of the base panel 11 and project upwardly therefrom. An elongate generally rectangular shaped upper horizontal panel 14 is rigidly secured to the upper portions of end plates 13. The upper horizontal panel 14 is disposed in substantially parallel relation to the base panel 11 and has front and rear longitudinal marginal portions bent to define downwardly extending flanges 15.

A pair of generally rectangular shaped flat end panels 16 are rigidly secured to the end plates 13 and it will be noted that these end panels 16 are substantially larger than the end plates 13. The end panels 16 have inturned peripheral flanges 17 integrally formed therewith and projecting inwardly therefrom, the lower peripheral flange portion thereof underlying the flanges 12 of the base panel 11. It will be noted that the end panels 16 project upwardly beyond the upper panel 14 and forwardly of the upper and base panels as well as the front edge of the end plates 13.

An elongate generally flat rectangular shaped back panel 18 extends between and is secured to the end panel 16 and is secured to and projects upwardly from one longitudinal flange 15 of the upper panel 14. The base panel 11 and the upper panel 14 each has a plurality of substantially identical transversely extending, longitudinally spaced apart slots 19 therein which are arranged in a pair of transversely spaced apart longitudinally extending rows. It will be noted that each slot in one row of each panel is disposed in transverse alignment with one of the slots in the other row.

The shelf structure 10 includes a plurality of vertical generally rectangular shaped flat compartment defining plates 20 each having a pair of engagement tabs 21 integrally formed with the lower edge thereof and projecting downwardly therefrom. These engagement tabs are adapted to be positioned in a pair of transversely aligned slots in either the base panel or upper panel to orient the plates in upright relation. Locking means are also provided for releasably locking the vertical plates 20 in upright relation and to this end it will be seen that an elongate substantially channel shaped locking member 22 is provided and is secured to the lower surface of the upper panel 14. This locking member has a plurality of spaced apart slots 23, therein, each slot being adapted to receive the upper marginal portion of the vertical plate 20 therein to releasably lock the plate in an upright condition.

The back panel 18 also has an elongate locking channel 24 formed therein which extends longitudinally throughout the length of the back panel and which has a plurality of longitudinally spaced apart slots 25 therein. Each slot in the locking channel 24 is adapted to receive the rear marginal edge portions of a vertical plate 20 therein and cooperates with the slots in the upper panel to releasably lock the plate in the vertical position. It will be noted that each slot 25 is disposed in the same vertical plane as a pair of transversely aligned slots 19 in the upper panel 14, while each slot 23 and the locking member 22 is disposed in the same vertical plane as the pair of aligned slots 19 in the base panel.

It will also be noted that some of the vertical compartment defining plates 20 have a plurality of similar support elements 26 struck laterally from one surface

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thereof, these support elements being arranged in a pair of longitudinally spaced apart rows. These support elements 26 constitutes a first group of support elements. A second group of support elements 27 are struck from the other surface of each vertical plate and are arranged in a pair of transversely spaced apart vertical rows. It is also pointed out that the end plates 13 have support elements struck from the inner surface only thereof. In the embodiment shown, each support element in each row on a plate 22 is disposed in transverse alignment with a support element in every other row.

A plurality of substantially flat generally rectangular shaped horizontal compartment defining plates 28 are also provided each being adapted to be supported upon support elements 26 and 27 of adjacent vertical plates 20. These horizontal plates 28 may be horizontally oriented and disposed in substantially parallel relation with respect to the upper and base panels, and may be selectively positioned in any number of desired locations between the upper and base panels. It is also pointed out that these horizontal panels may also be disposed in inclined relations with respect to the upper and base panels to provide guiding surfaces for a sorting operation.

Although the vertical plates 20 which are supported upon the upper panel 14 are not provided with support elements, it is pointed out that these plates could also be provided with such support elements. It will also be noted that each horizontal plate 28 has an arcuate recess 29 in the front surface thereof to facilitate removal of documents, papers and the like which is supported upon each plate. It will also be noted that a horizontal plate 28a may be provided for support upon the support elements 26 and 27 and which has a plurality of slots 29a therein. These slots may accommodate the smaller vertical plates 20a as best seen in FIG. 1.

By utilizing support elements which are struck from opposite surfaces of the vertical support plates, these support elements may be very easily formed in a stamping operation and provide very accurate support for supporting the transverse or horizontal plates in either an inclined or completely horizontal position.

It will be noted in the preceding paragraphs that the shelf structure is capable of adjustment to provide filing compartments which may be readily varied with respect to their widths by adjusting the spacing between adjacent vertical plates and which may also be adjustable to vary their respective heights by adjusting the position of the transverse plates on the vertical plates. Therefore, substantially any size filing compartment may be formed by the user by merely adjusting the vertical and transverse support plates of the shelf structure.

The capability of the vertical support plates in supporting a transverse support plate in inclined relation also increases the range of usage of the shelf structure. In this regard, the transverse support plates may be positioned in slightly inclined relations so that only the forward portion of the inclined plate is disposed slightly above the horizontal and this arrangement facilitates removal of document supported on such slightly inclined plate. The transverse plates 28 may also be supported in steeply inclined relation with respect to the vertical plates for the purpose of acting as sorting guides as pointed out above. In this regard, a plurality of steeply inclined plates may be provided which are arranged in a side by side relation and each of which provides a sliding surface for directing documents, papers or the like into a receptacle. In the embodiment shown, there is no obstruction or back panel between the base panel and upper panel thus lending the shelf structure for use as a sorting means.

However, the incline plates may be used in conjunction with shelf structures which are provided with back panels between the base panel and upper panel and when so used would facilitate removal of documents from supported relation on the transverse plates.

From the foregoing description it will be seen that I

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have provided a novel and improved shelf structure which includes a plurality of vertical and horizontal plates that may be adjusted relative to each other to permit the formation of filing spaces of various size and configuration. It will also be seen from the preceding paragraphs that the unique construction of the vertical support plates not only permits transverse support plates to be supported selectively in a plurality of horizontal positions, but also permits support of the transverse plates in inclined positions.

Referring now to FIGS. 5 and 6 it will be seen that a different embodiment of the shelf structure is there-shown and is designated generally by the reference numeral 10a. This shelf structure is also formed of a suitable metallic material and includes a substantially flat, horizontal generally rectangular base panel having downturned peripheral flanges or legs 12a. A pair of fixed, generally rectangular shaped end panels 16a secured through the ends of the base panel 11 and these end panels 16a have inturned peripheral flanges 17a integrally formed therewith. The end panels 16a are also provided with inwardly struck support elements 16b which are arranged in a pair of laterally spaced apart vertically arranged rows. These support elements 16b are similar in construction and configuration with the support elements 26 and 27 of the vertical plate 20.

An elongate generally rectangular shaped upper horizontal panel 14a extends between the end panel 16a and is supported in parallel relation with the base panel 11a by means of the support element 16b. It will be noted that the upper horizontal panel 14a does not have a marginal flange in the manner of the embodiments of FIGS. 1 through 4. The upper panel 14a has its central portion downwardly offset to form a downwardly extending channel shaped locking member 22a throughout the length thereof. This locking member 22a is provided with a plurality of longitudinally spaced apart locking slots 23a which are adapted to receive and releasably lock the upper peripheral portions of vertical plates therein. In this regard, it will be noted that both the base panel 11a and the vertical 14a are each provided with a plurality of substantially identical transversely extending, longitudinally spaced apart slots 19a therein which are arranged in a pair of transversely spaced apart longitudinally extending rows.

The shelf structure is also provided with a plurality of vertically extending generally rectangular shaped flat compartment defining plates 20a each having a pair of downwardly extending engagement tabs 21a affixed to the lower edge thereof adapted to extend through a pair of aligned slots 19a in either the base panel 11a or the upper panel 14a. Each plate 20a is also cooperatively engaged by either the slots 23a in the upper panel 14a or by slots 25a in the back panel 18a. It will be noted that the back panel 18a has a vertical dimension corresponding to the vertical dimension of the back panel 18 of the embodiment of FIGS. 1 to 4. In this regard, the lower edge of back panel 18a is spaced slightly above the upper peripheral edge of a vertical plate 20a when the latter is mounted on the base panel 11a.

The vertical compartment defining plates 20a also have a plurality of similar support elements 26a struck laterally from one surface thereof, these support elements being arranged in a pair of longitudinally spaced apart rows. A second group of support elements 27a are struck from the other surface of each vertical plate and are arranged in a pair of transversely spaced apart vertical rows. These support elements 26a and 27a as well as the plates 20a are substantially identical in construction to the plate 20 and the associated support elements 26 and 27 of the embodiment of FIGS. 1 to 4.

A plurality of substantially flat generally rectangular shaped horizontal compartment defining plates 28a are provided each being supported by certain of the support elements 26a and 27a of adjacent vertical plates 20a.

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Referring now to FIG. 6 it will be seen that one of the horizontal plates 28a may be horizontally oriented so that it is disposed in substantially parallel relation with the base panel 11a. It will also be noted that another of the horizontal plates has been inclined forwardly and downwardly while another has been illustrated as inclined downwardly and rearwardly. Thus the horizontal plates 28a may be disposed in a plurality of different positions. Each of the horizontal plates 28a also has an arcuate recess 29a therein in the manner of the embodiment of FIG. 1. A horizontal plate 28d may be provided for support on the support elements 26a and 27a of adjacent plates 20a. Horizontal plate 28d has a plurality of transversely extending slots therein which may accommodate smaller vertical plates 20d. Thus it will be seen that the embodiments of FIGS. 5 and 6 are quite similar in construction to the embodiments of FIGS. 1 to 4.

Thus it will be seen that I have provided a novel and improved shelf structure, which is not only of simple and inexpensive construction, but one which functions in a more efficient manner than any heretofore comparable known device.

It will, of course, be understood that various changes may be made in the form, details, arrangement and proportions of the various parts without departing from the scope of my invention.

What I claim is:

1. An adjustable, compartmented shelf structure for use in supporting papers, books and the like comprising a substantially flat, horizontal base panel having a plurality of transversely extending slots therein arranged in a pair of transversely spaced apart longitudinally extending rows, each slot in one row being disposed in substantially transverse alignment with a slot in the other row,
- a plurality of generally flat rectangular compartment defining vertical plates each having a pair of spaced apart longitudinally aligned attachment tabs affixed thereto and projecting from one edge thereof, said tabs of each plate extending into a pair of transversely aligned slots in said base panel to orient each plate in upright relation whereby to define a filing space between adjacent plates,
- locking means connected with said base panel and being releasably engageable with each vertical plate to lock the same in upright relation,
- each vertical plate having a first group of support elements struck laterally from one surface thereof, and a second group of support elements struck laterally

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from the other surface thereof, said support elements in one group being arranged in a pair of transversely spaced apart vertical rows, and the support elements of said second group being arranged in a pair of transversely spaced apart vertical rows, each support element in one row being disposed in transverse alignment with a support element in the other row, and a plurality of substantially rectangular transverse plates each being positioned between a pair of adjacent vertical plates and being supported by support elements on said vertical plates selectively in horizontal parallel relation to the base panel or in an inclined relation thereto.

2. The shelf structure as defined in claim 1 and an upper horizontal panel spaced above said base panel in substantially parallel relation thereto, end panels extending between and interconnecting said base and upper panels, said upper panel having a plurality of transversely extending slots therein arranged in a pair of transversely spaced apart longitudinally extending rows, each slot in one row being disposed in substantially transverse alignment with the slot in the other row, a plurality of generally flat rectangular compartment confining vertical plates having longitudinal tabs on lower edge thereof extending into said slots of said upper panel to orient each plate in upright relation and define a filing space between adjacent plates, and said locking means being connected with the lower surface of said upper panel.

3. The shelf structure as defined in claim 1 wherein each of said transverse plates has an arcuate recess at one transverse edge thereof.

4. The shelf structure as defined in claim 1 wherein said support elements each has an arcuate upwardly facing support edge which is substantially parallel to the base panel.

5. The shelf structure as defined in claim 1 wherein the rows of support elements comprising one group are spaced from the rows of support elements comprising the other group.

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