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B. FITERMAN ET AL

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DESK TOP FILE WITH SELECTIVELY POSITIONABLE DIVIDERS
AND CORNER SHELVES
Filed Nov. 1, 1967

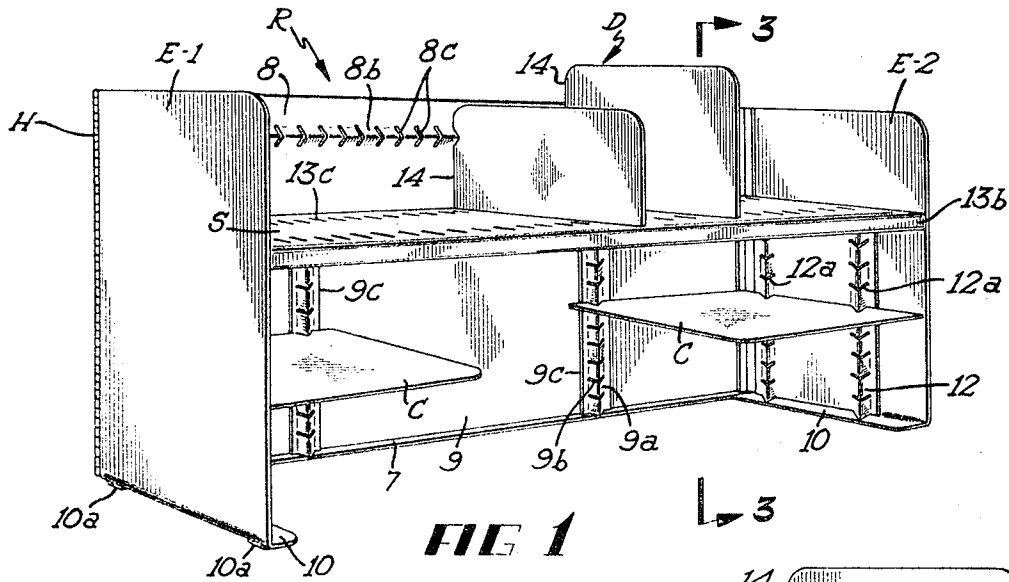


FIG 1

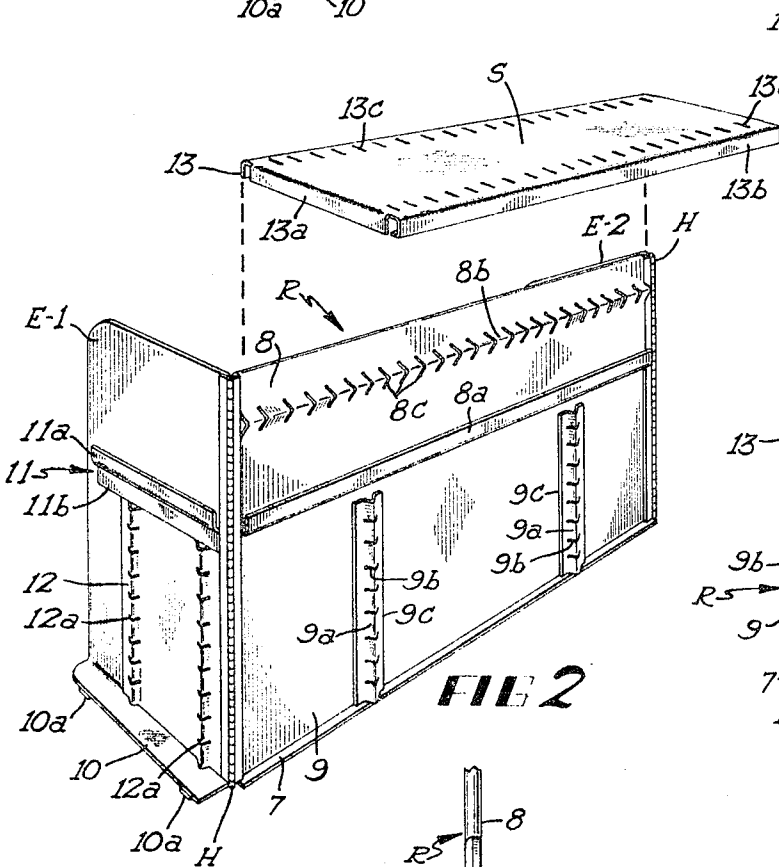


FIG 2

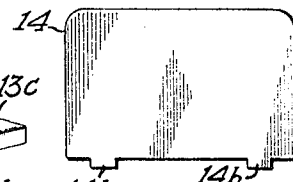


FIG 4

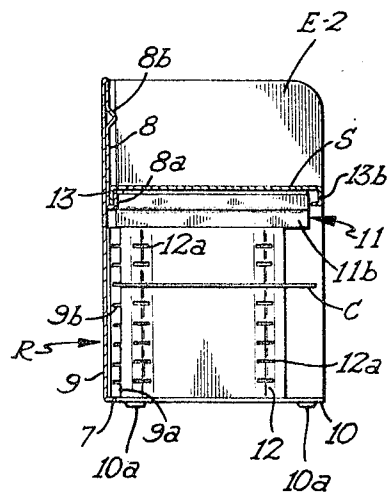


FIG 3

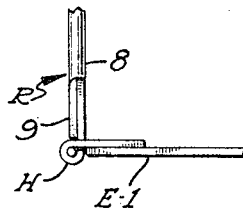


FIG 5

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DESK TOP FILE WITH SELECTIVELY POSITIONABLE DIVIDERS AND CORNER SHELVES

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4 Claims

ABSTRACT OF THE DISCLOSURE

A desk top file for providing orderly divisions and compartments for various materials, and for also screening small appliances and materials, for privacy, upon a desk. This improved file is constructed from a plurality of upstanding walls, panels, shelves and vertical dividers of substantially rigid sheet material, and comprises a main rectangular back wall and two hingedly connected side walls, positioned perpendicularly and extending forwardly of the back wall when the device is set up. The main shelf and corner shelves (selectively disposed at variable heights below the main shelf) have secondary functions in rigidly interlocking the upstanding walls of the device for structural strength and simplicity. The main shelf has elongated, downturned elements rigidly interlocking with upturned attachment elements provided by the main rear wall and the side walls. A series of horizontal corner shelves are also selectively interlocked with the back and side walls to further rigidify the overall structure. The structure may be very compactly collapsed, with the side walls being swung rearwardly flush against the rear wall and with the vertical dividers and corner shelves being compactly overlaid and disposed beneath the main horizontal shelf, to form a very shallow profile package for shipment, storage and sale.

BRIEF REFERENCE TO PRIOR ART

Heretofore, to our knowledge, desk top files have generally employed the principle of a hingedly connected, elongated rear wall with side walls which are angled thereto in converting the device to a screen for divisionally filing assorted material, and giving cover to implements and minor appliances hidden therebehind. The side walls of the device have been interconnected with the main rear wall for maintaining the overall device in upright position and have usually included an intermediate horizontal shelf with variable types of connection between the shelf and wall structure. Such devices have lacked rigidity and strength and have required an excess number of parts for interconnections and for direction of vertical dividers, selectively, upon the shelf. To our knowledge, these devices have been rather bulky and lacking in structural strength for the support of heavy classified material such as books, large quantities of paper and other heavy supplies, and have not utilized cooperating multifunctional parts which not only rigidify the device when set up for use, but also act in part as selectively positionable, horizontal shelves.

SUMMARY OF THE INVENTION

The invention of this application, while utilizing in general an elongated, rear, upstanding wall with side walls hingedly connected thereto, provides for a compactly collapsible overall device adapted to be packaged in a very thin profile flat container and having a minimum number of cooperating parts which may be quickly assembled to rigidify the upstanding structure and lock the horizontal support for reinforcing with the rear and side walls of the device.

The invention further provides for horizontal corner shelf structures selectively positionable at different elevations and interconnected and further rigidifying the rearward and side walls of the device. The horizontal shelf member, with its interlocking connection at rear and side edges, with the rear wall and side walls respectively, may be disposed at a level well above the desk or other supporting medium with provision for screening and privacy of numerous small appliances and other structural elements therebehind on the desk. Vertical divider plates, preferably of at least two heights, may be selectively interlocked with the upper horizontal shelf and rear wall of the file in various spaced positions relatively to the side wall.

In addition to the summary of the features and improved construction of our device, it is an object to provide a desk top file constructed throughout of substantially rigid sheet materials such as steel or plastic, which may be commercially manufactured at low cost and which comprises a minimum number of cooperating parts, several of the parts in combination having multifunctions or purposes.

In the successful form of the invention illustrated in the drawings,

FIG. 1 is a front perspective view of our desk top file set up for use with only a few of the selectively applied divider plates and corner shelf elements being employed;

FIG. 2 is an exploded view in front perspective, showing one of the side walls (right) being swung rearwardly to collapsed position and the other side wall being swung to an intermediate position, and showing the horizontal main shelf lifted above the end and side walls;

FIG. 3 is a vertical section taken substantially along the line 3—3 of FIG. 1 looking in the direction of the arrows;

FIG. 4 is a side elevation of one of the vertical dividers detached; and

FIG. 5 is a fragmentary, detail top elevational view showing the piano type hinge employed for pivotal connection of the two side walls of the device with the large rectangular rear wall.

In the form of the invention illustrated, an elongated rectangular rear wall R is provided, constructed from sheet steel or other substantially rigid material, and as shown, having a turned lower supporting edge 7 and a doubled upper section 8 formed by stamping process in bending the upper edge of the sheet material of wall R upon itself, as clearly shown in FIG. 3. The front facing lower edge of the doubled section 8 is offset and upturned to form an interlocking flange 8a which extends longitudinally of rear wall R for interlocking engagement with the rear edge of the main shelf S of the device.

In the forming of the integral rear wall R, a horizontal, longitudinal bead 8b as shown, is of angular cross section but could of course be of arcuate cross section, and in any event, is provided with a series of longitudinally spaced, vertical slots 8c for frictionally receiving and interlocking with the rear edges 10 of upstanding vertical divider plates designated as an entirety by the letter D. It will be noted that a multiplicity of the slots 8c are provided to give a wide diversity in selective positioning and arrangement of the dividers D.

The lower longitudinal section 9 (as shown, of single ply steel) is provided with a pair of parallel, vertical bead-forming structures such as the strips 9a bent into V-shaped cross sectional configuration with flat attachment longitudinal edges 9c. Thus bead members 9a are shaped and contoured similarly to the longitudinal bead 8b of the top section of the vertical back wall R and are provided in each instance with a series of horizontal slits 9b dimensioned to frictionally engage and interlock

with certain edges of corner horizontal shelf plates. It will be noted that the strips 9a are spaced far apart and in rather close relation with the ends of the rear wall R so that corner plates indicated as an entirety by the letter C, acting as shelves, may be utilized while still leaving an unencumbered central portion for receiving rather tall objects, implements and the like. While the attachment beads 9a are shown as independent strips, spot welded or otherwise rigidly secured to the forward face of rear wall section 9, it will of course be understood that they may be integrally die formed in the sheet steel or other material of the rear wall R.

Hingedly affixed to left and right hand ends of rear wall R, we provide upstanding end or side walls E-1 and E-2, as shown being of substantially the identical height of rear wall R and constructed from relatively rigid sheet material such as sheet steel, and having in-turned base flanges 10 which may act as the supporting elements for the entire file structure. As shown, a pair of nonabrasive, slightly compressible foot washers 10a are secured in spaced relation to the bottom surfaces of the flanges 10 for nonabrasive contact with the top of a desk or other horizontal supporting surface. The end walls E-1 and E-2 as shown, are hingedly connected by piano type, elongated hinges identified as entireties by the letter H, to the respective ends of the rear wall R. As shown, the hinge construction includes two metallic strip hinge elements, one of which is welded or otherwise secured to the appropriate end of the rear wall and the other of which is similarly secured to the associated end wall. The hinge construction as shown, permits smooth swinging of the end walls E-1 and E-2 rearwardly to a collapsed position, as shown in FIG. 2, relatively to the end wall E-2, or to intermediate or forwardly swung positions, the latter position being the operative use position, as shown in FIG. 1. End walls E-1 and E-2, on their forward surfaces have rigidly attached, transverse, horizontal, upstanding, interlocking flanges 11a which are disposed at the same height as the interlocking, upstanding flanges 8a of the rear wall R and which, as shown, are edge portions of strips 11 welded or otherwise affixed to the end walls. The flanges 11a are offset slightly from the attachment flanges 11b of the strips 11.

The stock of the sheet material end wall E-1 is bent to provide, for each end, a pair of parallel, spaced beads 12 of similar shape and structure to the beads 8b of the rear wall and the vertical beads 9a formed in the lower portion 9 of the rear wall. These beads 12 are provided for each pair with a multiplicity of interlocking slits 12a which are adapted to frictionally engage and receive edges of horizontal corner shelf plates C when the ends are swung into approximately perpendicular relation to the rear wall, as will be seen from inspection of FIG. 1.

An elongated, main shelf S constructed of relatively rigid sheet material such as sheet steel, serves not only as the main and upper supporting shelf of the device, but has the dual function of securely interlocking the end walls E-1 and E-2 with the rear wall R to reinforce and rigidify the entire structure. To such ends, shelf S is provided with a downturned, interlocking medium which as shown is in the form of a unitary, downturned locking flange 13 which as shown in FIG. 3 closely and frictionally interfits with the upturned locking flange 8a provided horizontally in the upper portion of the upper section 8 of the rear wall R. It will of course be understood that in place of unitary elongated flanges 8a and 13, a plurality of similar extending spaced tabs or locking tongues could be provided as an equivalency. Shelf S is also provided at its ends with downturned, interlocking flanges 13a which have clearance at the terminal portions from the rear locking flange 13 and which are adapted to interengage with and frictionally interlock with the upturned flanges 11a provided in horizontal extension along the appropriate levels of the end walls E-1 and E-2. The forward edge 13b of the shelf S is downturned and then

inturned for reinforcing and strengthening effect and also to present a more ornamental appearance.

Our structure further includes a multiplicity of selectively positionable divider plates D, preferably of at least two different heights, which in configuration are illustrated in FIG. 4, having straight rear edges 14 which are adapted to be selectively embraced and confined in an appropriate slot 8c formed in the horizontal bead 8a. The lower edges of the divider plates D, while being generally linear and horizontal, have provided downwardly extending pairs 14b of rectangular tabs which are selectively insertable through respective pairs of receiving slots 13c extending in parallel rows, transversely of the body of shelf S. The successive pairs of receiving slots 13c are spaced apart and dimensioned similarly to the retaining tabs 14b of the divider plates. Several pairs of slots 13c are respectively aligned with receiving notches 8c of the horizontal bead 8b so that the rear edge of each divider plate used may be received in one of the notches or slots 8c while the tabs on the lower edge of the same plate are received and interlocked with the slots 13a.

The selectively positionable corner shelves C are in the form of rectangular plates having, as shown, straight line edges. The rear and one adjacent edge of each corner shelf plate employed is frictionally engaged and received in the appropriate slots 9b of the appropriate vertical attachment bead 9a carried by rear wall R, and in a corresponding pair of the slots 12a provided by the spaced beads 12 of the adjacent or corresponding end wall of the file.

The use and attachment of one or more of the horizontal corner shelves C, in each of the rectangular corners of the file, serves to supplement the structural reinforcement of the entire file and assists in providing for a relatively high top shelf S which through its detachable interlocking, constitutes the main rigidifying structure.

As heretofore brought out by the description of parts and cooperating relation, our desk file is readily and compactly collapsible to constitute a shallow assembly package for disposal in a carton or container for storage, shipment and sale. To this end, it will be readily seen that both end walls E-1 and E-2 may be swung back flush against the rear surface of the vertical rear wall R (in the manner of the showing of side wall E-2 in FIG. 2). Thereafter, with the main supporting shelf disengaged and removed from the several walls, this shelf, approximating the rear wall in length, may be disposed either over the front or back of the rear wall in very compact, flush position. The divider plates be superimposed, flatwise, and disposed within the pan-shape of the shelf S. The collapsed structure in convenient and larger size commercial form, may be easily contained within a profile rectangular container having a height approximating three inches only.

Despite the relatively few unitary parts of this device, it may be readily assembled for use by first smoothly swinging the end walls E-1 and E-2 forwardly to positions approximately perpendicular to the rear wall R. Thereafter, the main shelf S may be rigidly and frictionally interlocked by applying downward pressure to the rear end edges thereof and the interlocking of the rear, downturned flange 13, with the upturned flange 8a provided near the top portion of the rear wall R. Simultaneously, the end flanges 13a of the shelf will be frictionally and interlockingly engaged with the upstanding flanges 11a extending horizontally and provided by the inner faces of the end walls E-1 and E-2, respectively. This readily applied and releasable interlocking entirely rigidifies the overall structure and enables a relatively high shelf to be utilized, which can sustain substantial weight from heavy books, piles of paper and other articles in the divided compartments or space thereof. The height of the shelf S permits articles and appliances of considerable size

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to be supported on the desk below the shelf and out of view from the public.

As previously recited, the application selectively of the horizontal corner shelf C optionally provides other shelf supporting means and horizontal dividers and with dual function, further rigidifies the lower portions of the interconnected rear wall R with the respective end walls E-1 and E-2.

It should further be noted that only a minimum number of actual parts are employed to obtain all of the improved and new results herein recited. Further, the formation of the rear wall with reinforced doubled upper zone 8 and formation of the divider-retainer bead 8b may be carried out with conventional sheet bending and die methods at very little cost.

It will also be apparent that the welded vertical strips 9a and the end pieces E-1 and E-2 may be commercially formed at relatively low cost.

From the foregoing description it will be seen that we have provided a collapsible, knockdown desk top file with provision for selective positioning of vertical dividers and selectively usable horizontal corner shelves, which when set up and interconnected is of very rigid, rugged construction to withstand continued hard usage and to support relatively heavy materials.

It will further be seen that the device is very quickly and readily collapsed into a very compact, substantially flush relation of the relatively few component parts thereof.

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 our invention.

What is claimed is:

1. In a desk top file adapted to be set up in rigid, upstanding position and to be readily collapsed for packaging and storage,
 - a substantially vertical, rectangular rear wall, vertical side walls hingedly connected to said rear wall and adapted to be swung backwardly into parallel collapsed position against said back wall, and adapted to be also swung forwardly to substantially perpendicular relation with said back wall for use,
 - a main shelf of generally rectangular shape and of very shallow cross sectional shape, and substantially equal in length to that of said rear wall,
 - said main shelf and said walls having cooperating, interlocking means for very rigidly interlocking said walls and said shelf together into an upstanding, rigid assembly, and wherein said cooperating interlocking means are readily disengageable, said cooperating interlocking means comprises, the rear edge of said shelf having a rigid depending flange for interlocking with cooperating upstanding means, immediately disposed of the height of said rear wall,
 - and means at the two end edges of said shelf for interlocking respectively with cooperating means in the intermediate portions of said side walls.
2. The structure set forth in claim 1 wherein said shelf has a back edge provided with longitudinally extending downturned attachment flanges,
 - and wherein said back wall has a horizontal intermediate portion provided with upturned attachment flange means for interlocking with said downturned rear flange of said shelf,

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and wherein the end walls of said shelf have downturned interlocking flange means for interengagement and locking with upturned attachment flanges at the intermediate height of said side walls.

3. The structure set forth in claim 1 wherein said desk top file comprises a plurality of vertical divider plates also having interlocking means at the rear vertical edges thereof for interlocking selectively with means disposed in horizontal spaced relation and provided by said back wall at a predetermined level.

4. In a desk top file adapted to be set up in rigid, upstanding position and to be readily collapsed for packaging and storage,

a substantially vertical, rectangular rear wall, vertical side walls hingedly connected to said rear wall and adapted to be swung backwardly into parallel collapsed position against said back wall, and adapted to be also swung forwardly to substantially perpendicular relation with said back wall for use,

a main shelf of generally rectangular shape and of very shallow cross sectional shape, and substantially equal in length to that of said rear wall,

said main shelf and said walls having cooperating, interlocking means for very rigidly interlocking said walls and said shelf together into an upstanding, rigid assembly, and wherein said cooperating interlocking means are readily disengageable,

and a plurality of horizontal divider shelves for positioning in the corners of the general structure produced by the interlocking of said main horizontal shelf with the rear and side walls of the device, said rear wall having a plurality of edge-attachment receiving elements disposed in alignment at a predetermined spaced distance from the hinged edge of said back wall,

and the adjacent end wall carrying a corresponding series of edge-engagement vertically spaced attachment elements,

and said horizontal divider shelves having adjoining angularly disposed edges detachably disposed in attached position with said adjacent edges engaged and engage and attached by corresponding pairs of said edge-attachment elements,

said horizontal divider shelves serving to further reinforce and interconnect the overall combination of said rear wall, said hinged side walls and said main horizontal shelf.

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U.S. Cl. X.R.

108—111

UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

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Benjamin Fiterman et al.

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

Column 6, line 43, cancel "and engage".

Signed and sealed this 27th day of January 1970.

(SEAL)

Attest:

Edward M. Fletcher, Jr.

Attesting Officer

WILLIAM E. SCHUYLER, JR.

Commissioner of Patents