United States Patent

Sheehan

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[54] **TILTING RACK FOR BINDER FILES**

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[52] **U.S. Cl.**.....**40/104.14,** 248/445

[51] **Int. Cl.**.....**A47b 23/00**

[58] **Field of Search**.....40/102, 104; 211/169.1; 248/143, 445–446; 281/16, 17, 36; 108/1, 7–8

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[57] **ABSTRACT**

A tilting rack for mounting groups of loose leaf binder files and the like for reference purposes on a desk top or other support surface, comprising a panel member having angled leg members fixed at the underside thereof to support the panel for end to end rocking movement into oppositely tilted positions on the support surface. Tracking channels along the panel sides are provided to slidably and pivotally engage rod members protruding from the ends of binder file mounting devices designed for hanging suspension file units. The binders may be turned over and shifted on the panel and the panel tilted to obtain the most convenient position for access to the contents of any binder.

8 Claims, 5 Drawing Figures

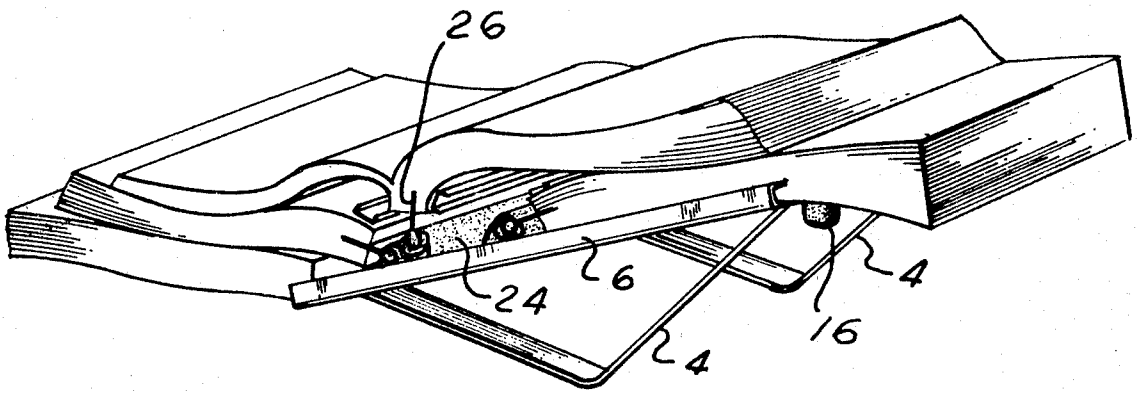


Fig. 1.

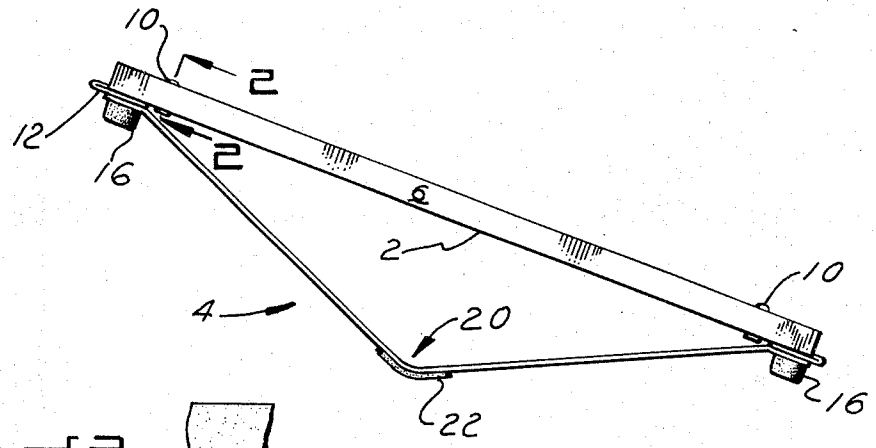


Fig. 2.

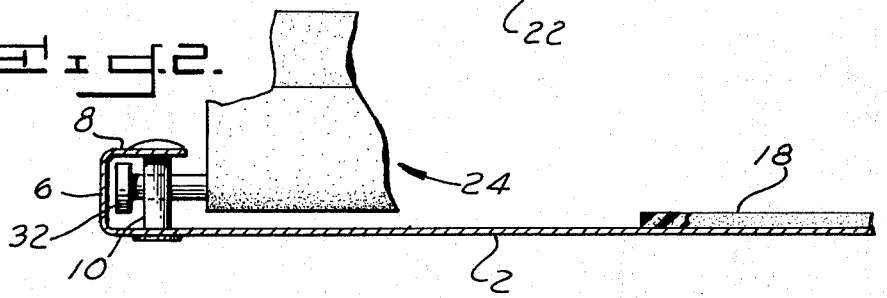
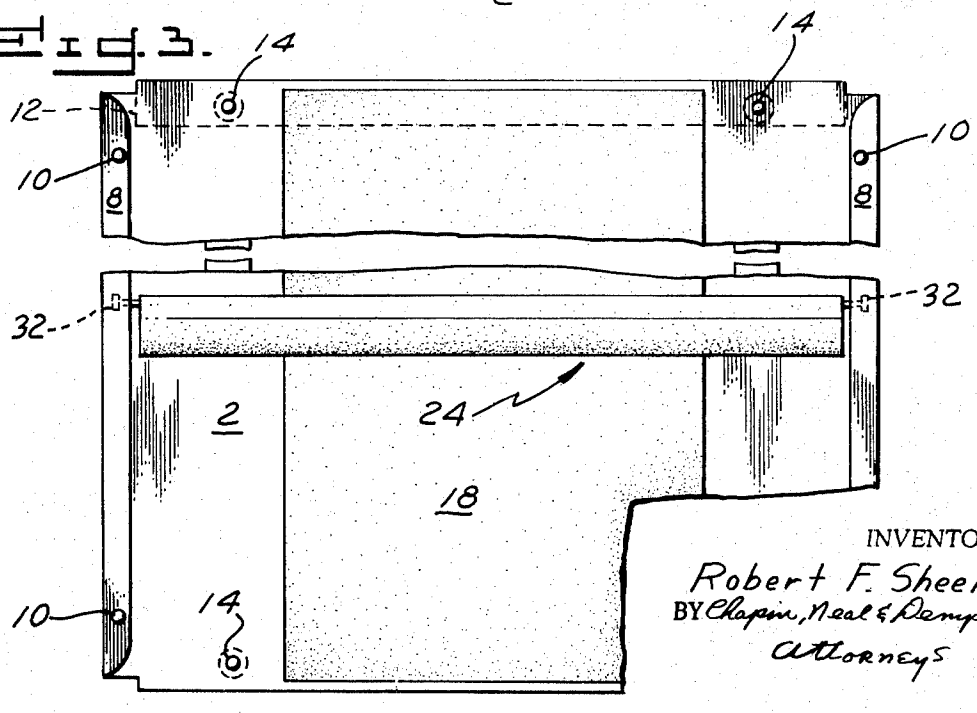


Fig. 3.



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Fig. 4.

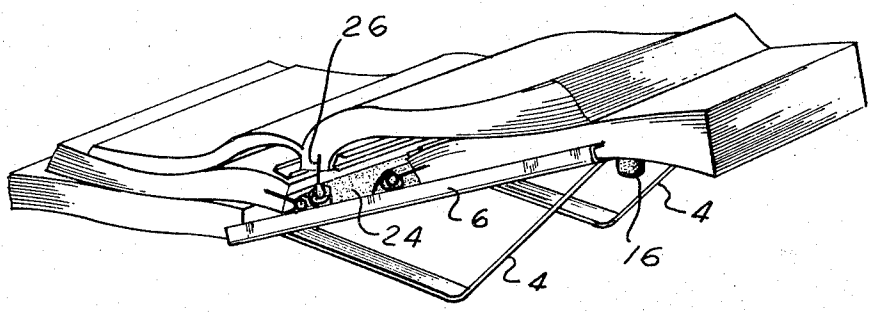
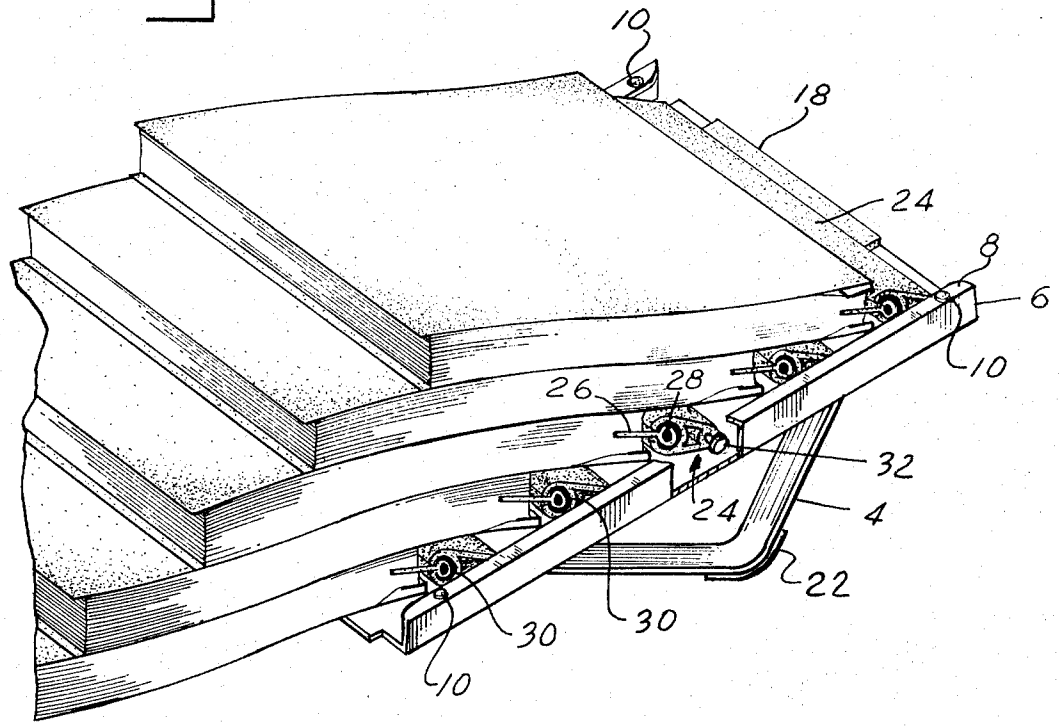


Fig. 5.



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TILTING RACK FOR BINDER FILES

The specific binder file mounting means, disclosed herein for use with the tilting rack structure of the present invention, is claimed per se in copending application Ser. No. 93,216 filed Nov. 27, 1970, entitled "- Hanger File Device."

BACKGROUND

This invention relates to a tilting rack structure on which groups of file binder books and the like may be mounted for reference and referral to the contents thereof as at a desk or other table top work station. The invention is particularly directed to a tilting device designed to accommodate relatively large and bulky loose leaf file binder assemblies and to enable a more efficient handling and use of such files than has heretofore been the case with known prior devices.

The structure of the present invention is more specifically designed for use in conjunction with conventional types of loose leaf post binder file assemblies in which the print-out record sheets of computer or data processing machinery are bound between inexpensive flexible cover assemblies and kept for current reference purposes over relative short periods of time after which the files are then transferred to a temporary storage place for later final disposition. Such print-out sheets are commonly of a size up to 11 × 17 inches and the binder units in which filler packs of the same are bound may be on the order of 1 ½to 3 inches or greater in thickness. The bound units, accordingly, are relatively bulky and somewhat awkward to handle particularly under conditions where a group of such binder volumes contain all the records needed in order to obtain the desired information and where it is not practical to retrieve all the necessary data at one time from each of the binders in turn. Thus, as a common occurrence, storage of such binders on a desk top or work table surface creates a problem of maintaining a number of volumes conveniently available for referral purposes without excessive handling of a haphazard and time consuming nature. The tilting rack of the present invention is a simple and efficient assembly to overcome such problems.

A further problem involved in maintaining such records for daily reference use lies in the fact that it is often necessary to deposit the binders in a temporary storage place as a locked overnight filing cabinet or the like. The tilting rack of the present invention is accordingly designed to accommodate a mounting device of the type adapted for suspending a binder unit in a file cabinet assembly. Thus the binder may be readily transferred back and forth between the tilting rack and a suspension file unit without undue manipulation or excessive handling.

SUMMARY OF THE INVENTION

This invention contemplates a tilting rack assembly having a panel and generally V-shaped leg members fixed to and extending between the panel ends for rocking between oppositely tilted panel positions on a platform surface, and grooved tracking channels at each side of the panel providing means to receive in slidable and pivotal engagement the tips of hanger rod elements of suspension file mounting assemblies extending from the bound edges of a loose leaf unit of the post binder type or like bound record sheet files.

The assembly of this invention provides an extremely simple and effective unit for desk top use of relatively large capacity binder files containing data processing record sheets. Suspension file mounting devices may be quickly engaged or disengaged by the panel tracking channels so as to load the rack for use or remove binders therefrom with a minimum of effort. When loaded for full efficiency in operation, a rack will contain only as many binders (or less) as will permit the weight of the same to be readily shifted towards either panel end and thereby cause the panel to rock towards that end. The V-shaped panel support legs provide an "over the center" rocking movement when the predominant weight of the binders is transferred from one end to the other across the transverse mid-section of the panel. The distribution of weight is determined by the relative position of the bound edges of binders on the panel and the endwise direction of the binder sheets.

The panel is desirably a single piece of sheet metal having integral marginal extensions at the sides thereof which are angularly bent to provide flanged channel portions forming grooved tracks for releasably holding the tip ends of the suspension file hanger units and sliding or turning the binders on the panel.

The panel surface between the sides is preferably provided with a pad or sheet of foam rubber or similar material to serve as a frictional surface from end to end and on which the hanger element of a two-part suspension file mounting means may rest when the binder attachment element thereof is disengaged from the hanger element. This prevents a free sliding movement of the latter and guards against the tip ends thereof inadvertently falling out of engagement with the tracking channels. The pad surface is preferably at an elevation relative to the overlying portion of the track channels so that a slight lifting motion in handling the hanger element permits an unimpeded sliding movement thereof in the channels.

The two-part assembly comprising a hanger element and a binder attaching element, as more specifically disclosed in the aforesaid related application, may be most advantageously used with the tilting rack structure of the present invention. The assembly provides a longitudinally slidable engagement of the two elements and limited hinging movement therebetween. Thus the binder is also hingedly connected to the rack affording a high degree of flexibility in arranging the binders in the assembly for convenient access to the record sheets of an open binder.

A preferred embodiment of the present invention is disclosed by the following description and accompanying drawings from which the above and further detailed objects and advantages will be readily apparent.

THE DRAWINGS

FIG. 1 is a side elevational view of a tilting rack embodying the invention;

FIG. 2 is a fragmentary sectional view as on line 2—2 of FIG. 1;

FIG. 3 is a top plan view of the rack shown by FIG. 1;

FIG. 4 is a perspective view of the rack on which a group of binder units are mounted with one of the units opened for reference use; and

FIG. 5 is a perspective view of the rack from a different angle, the group of binders being mounted one on top of another.

Referring to FIGS. 1–3 the rack includes a panel member 2 preferably of rigid sheet metal stock having a pair of rocking members as the angled metal straps 4. The straps are generally V-shaped and arranged along opposite sides below panel 2 being fixed to the marginal end edges thereof.

Panel 2 is provided with longitudinally disposed flanged tracking channels along its side edges for receiving the ends of binder mounting means as will be described. Such channels are preferably formed by bending integral marginal extensions of the panel 2 metal. As in FIG. 2 each tracking channel includes an upstanding vertical portion 6 and a reversely bent horizontal portion 8 overlying the panel margin. A grooved channel tracking means is thus formed along each side and, as shown adjacent the ends of each track (FIG. 3), stop elements are provided by rivets 10 fastened between flanged portions 8 and the underlying edge portion of the panel.

Integral portions at the ends of the panel are preferably reversely folded as indicated at 12 to form a reinforced marginal end edge. The anchored ends of the V-shaped rocker legs 4 are attached thereto by rivets 14. Rivets 14 further anchor bumper buttons 16 at the underside of the panel ends for seating against a supporting surface.

Extending substantially the full length of the panel on the upper surface thereof is an overlay pad 18 of suitable resilient sheet material as a sponge rubber composition to provide a cushioned frictional covering and prevent free gravitational sliding movement of a binder and/or the binder mounting elements on the panel as will be later described.

As may be noted from FIG. 1 the metal straps 4 are angularly bent at the juncture of the leg portions to form curved rocker fulcrum portions at 20 in spaced relation below the transverse mid section of the panel. The angular relation of the legs preferably provides oppositely tilted panel positions on the order of 30° as shown. A protective strip 22 of suitable frictional and cushioning material is also provided on the rocker surfaces to prevent slippage and marring a platform support.

Large and bulky binder units of the type for which the rack is particularly designed may be mounted on the rack by the suspension files hanging devices in the manner indicated by FIGS. 4 and 5. The mounting devices shown each comprise a hanger element 24 and a binder mounting element 26 separable therefrom. The element 26 is a plate-like strip secured along the bound edge of each binder together with the record sheet contents and extends preferably at a central location from the back edge. Element 26 at its outer longitudinal edge is provided with an enlarged "beaded" conformation as at 28, this edge being slidably received in a slotted tubular passage 30 of the hanger element 24. The slot through which strip 26 extends from the hanger provides a loose fit and a limited hinging movement is thus afforded between the elements as will be apparent from the various angular dispositions thereof in FIG. 4. The hanger elements 24 in cross section are generally of a triangular shape, and the end edge faces are provided with rod-like projections having cylindrical heads as the tip ends 32. The heads are engaged in the grooves of the channel tracks for slidable and pivotal movement of the hanger between the stops 10. When not urged otherwise the body of the hanger element 24 will rest across pad 18 and the headed ends 32 are thus disposed in close proximity to the inner face of the upper flanged portion 8 as indicated by FIG. 2. This serves to prevent excessive looseness of the hanger element engagement on the rack without sacrificing freedom for guided movement when turning a binder over on the rack or sliding a binder along towards one end or another. And as previously mentioned a slight lifting movement will free the hanger from any frictional drag by reason of contact with the pad 18.

It will be noted from FIGS. 2 and 3 that the hanger elements 24 may be readily mounted on or removed from the rack by a rotational swinging motion of the hanger relative to the panel surface so as to engage or disengage the headed tips 32. Further, as will be evident from FIGS. 2, 4 and 5 the ends of the slotted passages 30 of elements 24 mounted in place are accessible for insertion or removal of the headed edge 28 of a binder attaching element 26. Thus, if desired, the hanger elements may remain on the rack, being held against free sliding movement by the pad 18, and different binders mounted as needed without regard to removing the element 24. This flexibility in handling may be of advantage in reducing the time required for transferring volumes to and from the rack and a cabinet file or other storage place.

As will be apparent from FIG. 5 a group of record binder volumes may be arranged on the rack with the bound edges held thereby and piled one on top of the other in neat shingled fashion ready for use. The rack is tilted in the direction of the weighted lower end. Access to a binder below the top volume is readily obtained by reversely turning the overlying binders to lie in the direction of the upper edge of the rack and opening to the desired record sheets. The binders may be shifted along the panel for a most convenient positioning thereof as may be seen in one example from FIG. 4 wherein four volumes are shown. Here the open binder and binder overlying the raised end of the rack are shifted towards the lower rack end to provide support for the opposite portions of the open volume.

It will be further realized from FIG. 5 that access to the lowermost binder volume may be greatly assisted by manually tilting the rack while simultaneously raising the outer edges of several of the topmost binders to turn the same over on the panel. The rocking action of the panel may, of course, be utilized in various ways to aid in the positional displacement and disposition of the binder volumes as will best suit the user's preference. It will also be appreciated that by draping binders adjacent each end of the panel over the edges thereof and equalizing the panel weight load sufficiently over each end portion the panel may be supported in a more or less balanced condition with both ends elevated.

While the tilting rack assembly has been disclosed herein with particular reference to relatively large bulky types of loose leaf post binder files for data processing record sheets, the invention is, of course, adapted for use with bound records of other types and sizes.

What is claimed is:

1. A tilting rack assembly for groups of loose leaf binder files and the like comprising

a panel member and between the ends thereof longitudinally disposed tracking channels along opposite side edges of the panel,

rocker means at the panel underside having angled portions providing fulcrum surfaces in spaced relation below the panel mid-section for resting on a platform surface and rocking said panel to and from oppositely tilted positions thereon, and

binder file mounting means having at opposite end edges thereof protruding elements pivotally and slidably interengageable with said tracking channels, said mounting means having portions with means to secure the bound margin of a binder file thereto in offset relation to said protruding elements for pivoting and sliding action of a binder file relative to said panel.

2. The rack assembly of claim 1, in which,

the rocker means comprises a pair of straps having V-shaped leg portions curved at the intersection thereof to form said fulcrum portions and the ends of the straps are fixed to the panel undersurface at opposite marginal end edge portions thereof.

3. The rack assembly of claim 1, in which,

said tracking channels are flanged members providing opposed inwardly facing grooved channels along the panel sides and said protruding elements of the mounting means are headed rod members, the tip ends thereof being engageable in said channels when the mounting means is disposed transversely across the panel surface whereby pivotal movement of the mounting means towards a diagonally related cross-wise position disengages said mounting means from the tracking channels.

4. The rack assembly of claim 3, in which

said panel is of sheet metal material and said tracking channels are integral angularly bent flange extensions at the sides of the panel, and stop members engageable by said headed rods are provided adjacent the ends of said tracking channels to limit the travel of binders at the ends of the rack.

5. The rack assembly of claim 4, in which,

a friction pad overlies the upper surface of the panel between the sides thereof and extends substantially from end to end, said mounting means being engageable therewith to prevent a free gravitational sliding movement thereof in tilted positions of said panel.

6. The rack assembly of claim 5, in which,

said panel at its opposite ends is provided with integral reversely folded extensions forming reenforced marginal edge portions, said rocking means comprises a pair of straps angularly curved to provide said fulcrum surfaces centrally below the panel mid-section, the end portions of the straps being anchored against the undersurface of said reenforced edge portions by rivets, and a resilient bumper foot is also attached at the underside of said strap ends by said rivets.

7. A tilting rack device for pivotably and slidably mounting thereon a group of loose leaf binder files and the like provided with mounting means at the bound edges of the files including rod-like projections extending from each end thereof, said device comprising

a panel platform and extending between opposite ends thereof grooved tracking channels at the panel side edges, the openings of said grooves lying in mutually opposed inwardly facing relation and adapted for engagement by the projections of said binder mounting means,

and means for rocking the panel from end to end to and from oppositely tilted positions on a platform support, having leg members angularly directed from the underface of said panel and provided with curved rocker fulcrum sections in spaced relation below the transverse panel mid-section.

8. The device of claim 7, in which,

the grooved tracking channels are integrally formed with said panel platform, stops are provided at the ends of said channels and adapted to limit endwise travel of the endmost binders of a group mounted on said platform and having mounting means engaged in the channels, and said leg members are provided by V-shaped straps secured at the ends of the panel.

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