United States Patent

[11] 3,601,257

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[54] **FILE APPARATUS HAVING MOVABLE RACKS AS SUPPORTS FOR BINDERS**
6 Claims, 11 Drawing Figs.

[52] **U.S. Cl.** **211/162,** 312/321
[51] **Int. Cl.** **A47f 5/00**
[50] **Field of Search** 211/162, 94, 94.5; 312/321, 350

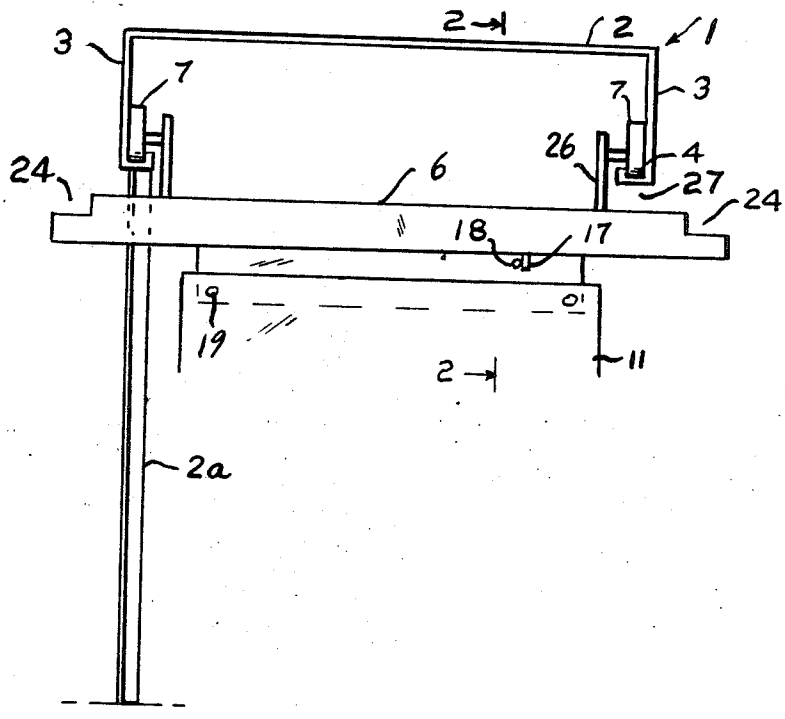
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ABSTRACT: Apparatus having parallel tracks between which racks supporting looseleaf binders are suspended by rollers movable along the tracks. The rack is tubular and has an open ended channel in which a T-bar is disposed. A plate stem depending from the T-bar through a slot lengthwise of the bottom of the rack carries a binder. The T-bar is slidably inserted or removed through an end of the channel as a unit with the binder. A nameplate clipped to an end of the rack identifies the contents of the binder. A cutaway at each end of the rack allows easy insertion or removal of the T-bar. The apparatus may be formed to carry tracks extending in a longitudinal as well as in a lateral direction, permitting selective use of either set of tracks to support the racks. The apparatus may also be formed of groups of posts supporting tracks at various levels between them. The latter construction is extensible to include additional levels of tracks; and is of a knockdown nature permitting ready assembly or disassembly of its component parts.



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SHEET 1 OF 2

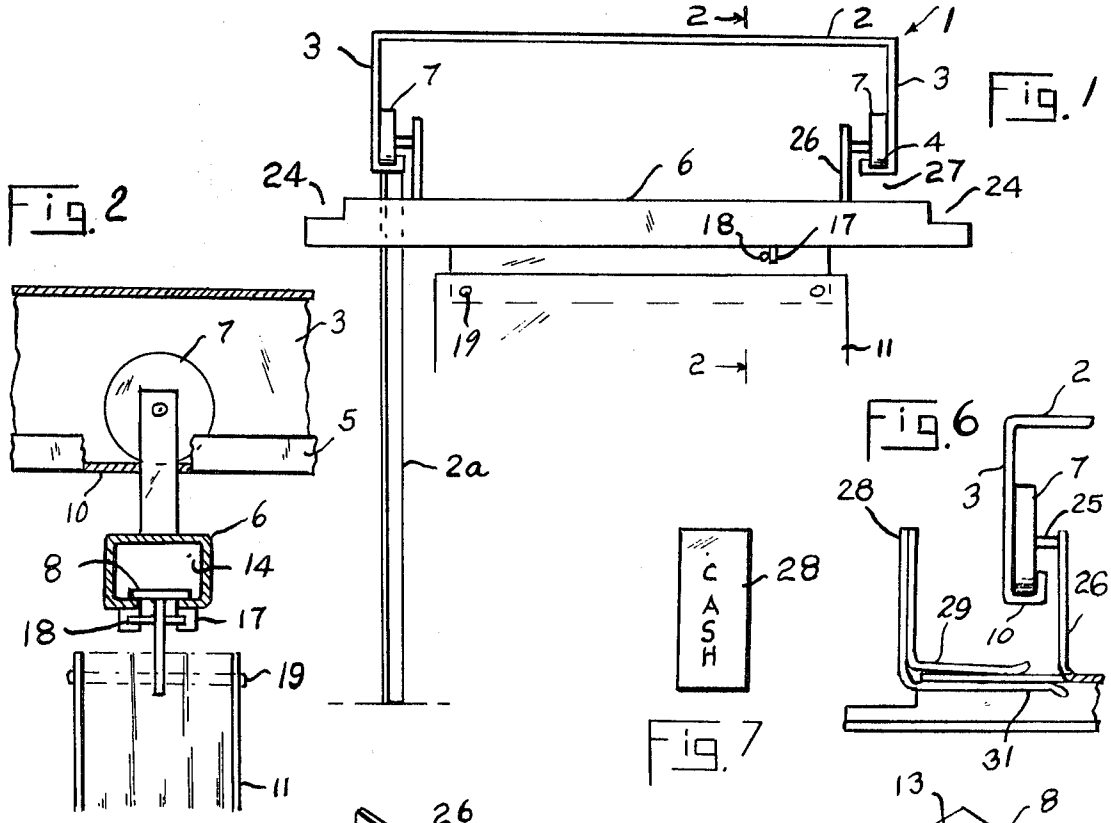


Fig. 1

Fig. 2

Fig. 7

Fig. 6

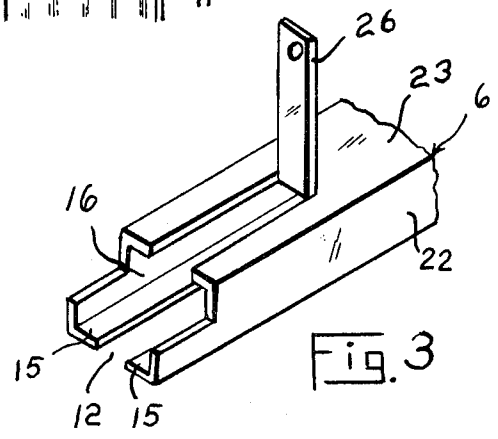


Fig. 3

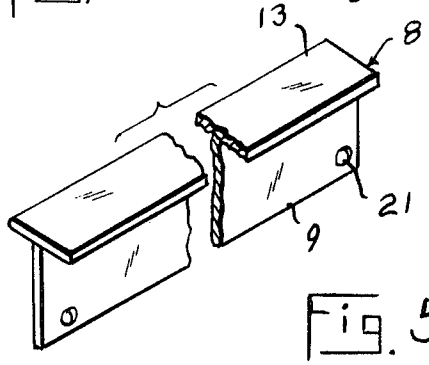


Fig. 5

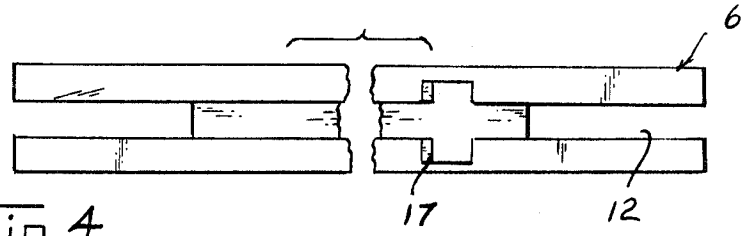


Fig. 4

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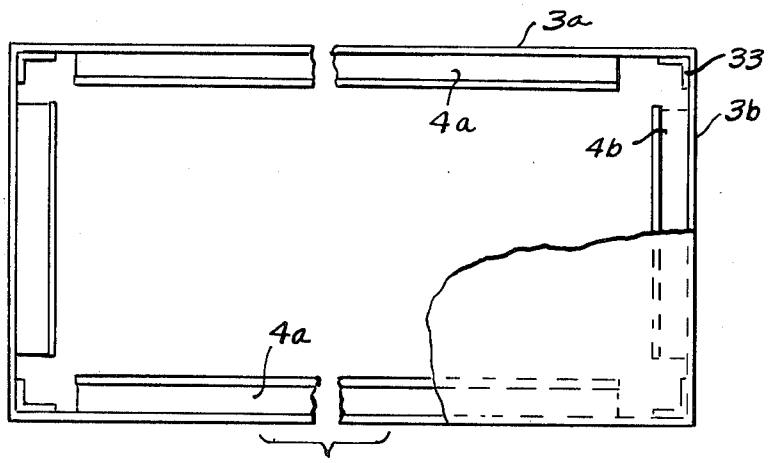


Fig. 8

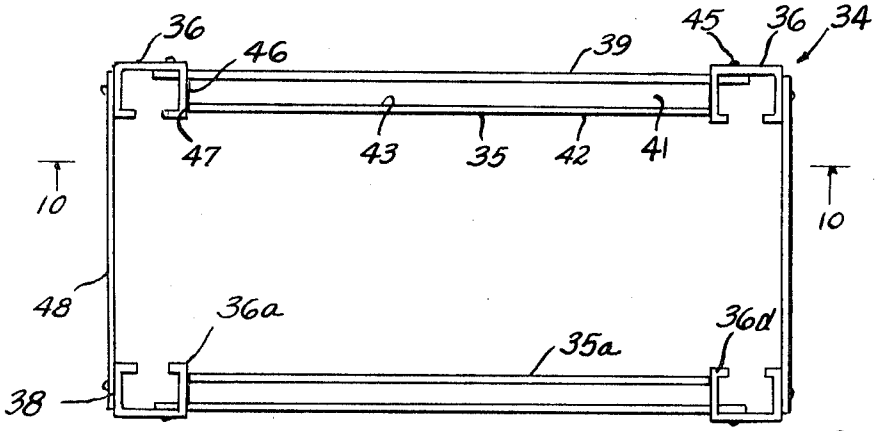


Fig. 9

Fig. 11

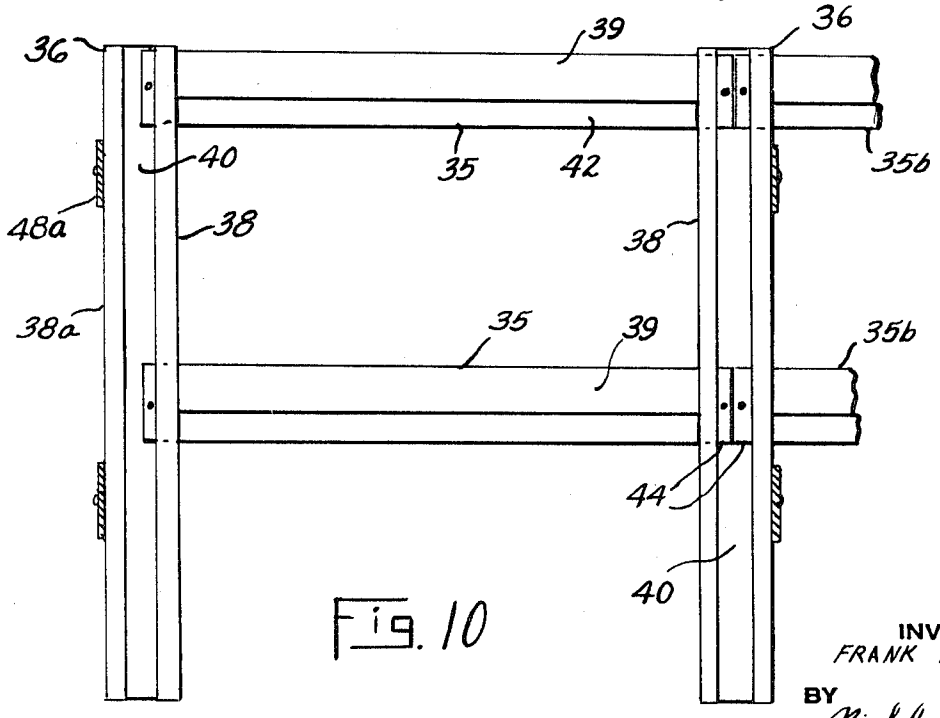
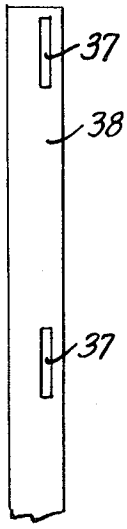


Fig. 10



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FILE APPARATUS HAVING MOVABLE RACKS AS SUPPORTS FOR BINDERS

BACKGROUND OF THE INVENTION

This invention relates to file apparatus having movable racks upon away data clips; such as loose-leaf books may be supported and from which the binders may be readily removed free of the apparatus for examination.

The general objective of the invention is to provide file apparatus in which one or more pairs of horizontal tracks are arranged, between which one or more separable racks are supported for selective movement along the tracks to selected positions, in each of which racks a slide member is removably inserted, and to which slide member a binder is separably attachable.

Another object of this invention is to provide file apparatus having pairs of tracks extending both in longitudinal and lateral directions in which binder carrying racks may be selectively supported for movement in either direction.

Another object is to provide file apparatus having pairs of tracks at multiple levels, and which is extensible so as to include additional pair s of tracks, whereby a large number of the racks may be supported in a limited area.

Another object is to provide file apparatus for such racks which is of a knock-down nature.

A feature of the invention lies in the nature of the racks and in their separable relation to the tracks.

A further feature lies in the nature of the slide member. This is in the form of a T-bar which is slidable in a channel of the rack and has a depending plate stem upon which a binder is detachably mountable.

Another feature lies in cutaway portions at opposite ends of the rack which enable the T-bar to be readily inserted or removed from the rack.

A further feature lies in a spring clip which is mountable to either end of the rack and provides a nameplate to identify the contents of the binder carried by the rack; and

A still further feature lies in the nature of the apparatus which provides the tracks for supporting the racks.

In accordance with the invention there is provided in file apparatus having a pair of parallel spaced tracks in a horizontal plane, a rack extending at right angles to the tracks having track engaging means disposed in the tracks, the track engaging means being selectively movable along the tracks so as to carry the rack with it, the rack having a channel extending lengthwise thereof and opening by means of a longitudinally extending slot through a bottom of the rack, and a T-element having a crosspiece movable in the channel of the rack and having a stem depending loosely through slot below the rack, the stem being adapted to support a binder.

BRIEF DESCRIPTION OF THE DRAWINGS

In the accompanying drawings:

FIG. 1 is a view in end elevation of a file apparatus embodying the invention;

FIG. 2 is an enlarge section taken on line 2—2 of FIG. 1;

FIG. 3 is a fragmentary detail in perspective of one end of the rack; the opposite end is the same;

FIG. 4 is a bottom plan of the rack;

FIG. 5 is a perspective view of the T-bar;

FIG. 6 is a detail showing in side elevation the indicia clip mounted to an end of the rack;

FIG. 7 is an elevational view of the outer face of the clip;

FIG. 8 is a top plan with a portion broken away of a modified form of the apparatus showing tracks extending both longitudinally and laterally;

FIG. 9 is a top plan of a further form of the apparatus providing tracks for the racks;

FIG. 10 is a section taken on line 10—10 of FIG. 9 and shows channel track members added in extension of FIG. 9; and

FIG. 11 is a side elevational view of one of the posts in the FIG. 9 construction; the opposite side of the post is the same.

DESCRIPTION OF A PREFERRED EMBODIMENT

Reference is directed to the several FIGS. of the drawing and now, especially to FIGS. 1–7 wherein is shown a file cabinet or apparatus 1, having a rectangular top 2 from which depends a pair of opposed sidewalls 3. The apparatus is supported upon a floor surface by means corner legs 2*a* one being shown. The sidewalls 3 are offset inwardly and upwardly along their bottom edges to define a pair of opposed parallel tracks 4. Each track is defined between an outer wall represented by one of the sidewalls 3, and by an inner shorter wall represented by an opposed upwardly extending lip 5. The lip is spaced from the outer wall by means of a connecting bottom wall 10. A transversely extending horizontal rack 6 is supported in suspended relation to the tracks by means of a pair of rollers 7 engaged in the tracks. The rollers are rollable along the tracks to carry the rack to any selected position. The rack is of tubular construction and is squared in cross section. It carries a separable T-bar element 8 having a plate stem 9 upon which a loose-leaf binder 11 is removably anchored. The stem 9 depends loosely through a slot 12 extending the length of the bottom side of the rack; and the crosspiece 13 of the T-bar is disposed in an open-ended channel 14 of the rack upon a pair of shoulders 15 defined by the slot. The T-bar is slidably insertable into the channel through an open end 16 of the latter so as to carry the binder with it into the apparatus. Lugs 17 depending from the underside of the shoulders 15 of the rack serve as 157 stop which is cooperable with a transverse pin 18 in the stem 9 to limit the extent to which the binder may be carried by the T-bar into the apparatus. The T-bar and binder may be readily removed as a unit from the apparatus by slidably withdrawing the T-bar through the open end 16 of the rack.

The stem 9 of the T-bar is inserted part way between the leaves of the binder, and is detachably retained to the latter by means of a pair of removable fasteners, such as pins 19. These extend through holes 21 in the stem and through registering holes in the binder.

The channel 14 of the rack is squared in cross section. It has side walls 22, a top wall 23, and a bottom defined by the shoulder 15. A portion of the rack, as at 24, is cut away adjacent its open end 16. This has a desirable advantage in that it serves to facilitate insertion of the T-bar into the channel. To insert the T-bar, an end of its crosspiece is lowered into the cutaway 24 upon the exposed portions of the shoulders 15 with the leading edge of the stem 9 positioned in the slot 12. The crosspiece is then slid rearwardly into the channel until the stop pin 18 abuts the lugs 17. This cutaway construction 24 avoids the annoyance that would otherwise attend insertion of the T-bar into the channel by "fishing" it through what would otherwise be a small opening at the end of the channel. It is to be noted that the stem 9 of the T-bar projects a short distance above the spine of the binder. This desirable arrangement not only further facilitates the insertion of the T-bar into the channel of the rack with the binder attached, but also provides a desirable clearance between the underside of the rack and the binder.

It is also noted that the cutaway 25 is repeated at the opposite end of the rack. This construction enables the tlbar to be inserted through, or removed from either end of the rack. When it is desired to utilize either end of the rack for insertion or removal of the T-bar, the stop pin 18 is removed from the stem plate 9 to avoid its engagement with the stop lugs 17.

Each of the rack's rollers 7 is rotatably mounted upon a separate pin 25 projecting from the outer face of a separate lug 26 offset upwardly from the top wall of the rack. Each roller is confined for rolling movement in its track between the sidewall 3 and the lip 5. Each roller is elevated by means of the related lug 26 above the top surface of the rack a sufficient distance to provide a clearance 27 between the rack and the underside of the track. This clearance is greater than the vertical dimension of the track lip 5. The clearance enables the rack to be elevated without interference so as to carry its rollers above and clear of the lips 5 when removing the rack

from, or assembling the rack into the tracks. To assemble a rack with its rollers into the tracks, the rack is first positioned below and askew or at a slight angle to the tracks. The rack is then raised to carry its rollers above the track lips **5**; nest, it is positioned at right angles to the tracks and lowered to seat the rollers in the tracks. This process is reversed when removing the rack from the tracks. The rollers of the rack may also be entered into the tracks through either of the open ends of the tracks, except when these open ends might be blocked by end panels, not shown, of the apparatus. ONly one rack **6** has been shown for convenience of illustration. The tracks are designed in length to accommodate a plurality of racks **6**.

So as to identify the contents of a binder carried by a rack, an indicia element **28** in the form of a spring clip is detachably mountable to the rack. It has an upright bar body laminated from spring material having a pair of spring fingers **29** and **31** projecting rearwardly and tensioned one upon the other. The fingers are designed to be clipped over an end of the top wall of the rack so as to hold the body of the clip upright, as i FIG. **6**. A suitable identifying label is provided on the outer face of the body of the clip, as indicated in FIG. 7.

The cabinet or apparatus **1** may take various forms. FIG. **8** illustrates a form of the apparatus in which roller tracks **4***a* are provided along the longitudinally extending sidewalls **3***a* and also, as at **4***b* along the laterally extending end walls **3***b* of the apparatus. In this arrangement the racks **6** may be selectively supported by the tracks **4***a* for rolling movement lengthwise of the apparatus; or by the tracks **4***b* for rolling movement laterally of the apparatus. It is understood that when one set of tracks in this arrangement are being occupied by the racks, that the other set of tracks will lie vacant. It is also understood that racks of a shorter length will be used when the longitudinally extending tracks are used. Corner legs for supporting the apparatus upon a floor surface are indicated at **33**.

In FIGS. **9–11** is shown a further form which the apparatus for supporting the tracks may take. This form is of a knockdown and extensible nature. It includes a unit **34** having a group of channel track members **35** spaced at different levels above one another and supported at their ends between a first pair of upright posts **36**. The unit includes a second group of channel track members **35***a* in opposed parallel spaced relation to the first group at corresponding levels and supported at their ends between a second pair of upright posts **36***a*. The several posts and channel members are of similar construction. Each post is tubular, and is rectangular in cross section. The lower end of the several posts serve as legs for supporting the unit upon a floor surface. Each post has a series of slots **37** in its sidewalls **38** and **38***a* at different levels. Each channel track member has a back wall **39** spaced by a connecting bottom wall **41** from a parallel upright lip or inner wall **42**, whereby a roller track **43** is defined between the lip and the backwall. Each channel track member has a tongue **44** at each end which is in continuation of its backwall **39**. Each tongue is slidably received in a separate slot **37** of a related post, and is removably fixed to the backwall **40** of the post by means of a fastener, such as a screw **45**. When the tongues at opposite ends of a channel track member are received in the slots **37** of the related posts, the terminal ends **46** and **47** respectively of the bottom wall **41** and the lip **42** abut the inner sidewalls **38** of the related posts. Braces **48** removably fastened as by screws to the outer side faces **38***a* of the posts fix the opposed groups of channel track members in parallel spaced relation.

In this structure a separate pair of tracks is provided by the opposed channel track members at each level. Each pair of tracks is adapted to support for rolling movement the roller elements of a separate group of the racks **6**. This form of the apparatus has various advantages, especially where floor space is at a minimum. It provides tracks at multiple levels, whereby a large number of the racks **6** may be accommodated. The vertical spacing between each level of tracks is designed to freely accommodate the usual binders **11** that would be supported by the racks.

IT is understood that the height of the posts **36**, **36***a* may be increased so as to include enough slots **37** to accommodate as many levels of tracks as may be desired. It is also understood that in the construction of the posts that the number of slots **37** and the spacing between them may be varied, so that the levels of the tracks may be selected prior to assembly of the structure to accommodate binders having various vertical dimensions.

It is also apparent, since the slots **37** are formed in both of the sidewalls **38** and **38***a* of the posts, that the apparatus may be selectively extended in opposite directions by the addition of further channel track members and further posts. Fragmentary portion of channel track members added in extension of the apparatus are shown at **35***b* in FIG. **10**. The backwalls **40** of the posts are of adequate dimension to accommodate the tongues **44** of oppositely extending channel track members received through opposed slots in the sidewalls of the posts.

A further advantage of this extensible form of the apparatus is that the entire apparatus may be readily disassembled into its component parts for transportation or subsequent reassembly. This can be done by simply removing the several screws securing the channel track members and the braces to the several posts, and then slipping the channel track members free of the posts.

I claim:

1. A rolling rack supporting structure comprising a first pair of spaced parallel posts, a second pair of spaced parallel posts disposed in parallel opposed spaced relation to the first pair, brace means maintaining the two pairs of posts in said opposed spaced relation, a first channel member removably anchored at opposite ends between the first pair of posts at a selected level, and a second channel member removably anchored at opposite ends between the second pair of posts at a level corresponding to that of the first channel member, the two channel members defining a pair of parallel tracks adapted for reception of end rollers of a rolling track; wherein the posts are of tubular construction each having a back wall and adjacent sidewalls, the side walls having a series of slots spaced along their length, the first channel member having a tongue projecting from each end slidably fitted in a slot at a selected level in a sidewall of the corresponding post, fastener means fixing each tongue to the backwall of the related post, and the second channel member having a tongue at each end similarly received and fixed in a slot at a corresponding level in a sidewall of the corresponding post.

2. File apparatus comprising a rectangular panel defining a horizontal cover for the apparatus; legs supporting the cover in an elevated plane; a pair of horizontal tracks suspended in parallel spaced relation to each other from the panel; each track being defined by an outer sidewall depending from the panel, a relatively narrow bottom wall extending inwardly from the sidewall, and a lip extending upwardly from the bottom wall in parallel spaced relation to the sidewall; a tubular rack square in cross section extending transversely and at a distance below the tracks; a pair of parallel uprights; each upright being mounted atop an opposite end area of the rack and carrying a roller at its upper end engaged in a separate one of the tracks; the rollers being rollable along the tracks so as to carry the rack in suspended relation with them to selectable positions; the tracks being open at corresponding ends through which open ends the rollers are exitable from the tracks; the panel being spaced above the lip portions of the tracks a distance greater than the diameter of the rollers so as to enable the rollers to be raised clear of the lip portions and free of the tracks; the rack having a longitudinal slot extending lengthwise of a bottom wall thereof; a T-member having a crosspiece slidably received in the rack through an open end thereof and having a plate depending loosely through the slot adapted for supporting work data; and the tracks being adapted to carry a plurality of such racks.

3. File apparatus as in claim **2**, characterized in that a top wall of the rack projects at opposite ends beyond the sidewalls of the tracks, to at least one end of which top wall an identifi-

cation support is detachably mounted, the support being movable with the rack as a unit.

4. File apparatus as in claim 3, characterized in that the support is a clip having an external visible surface adapted for carrying data identifying the associated rack.

5. File apparatus as in claim 3, characterized in that the rack is open at opposite ends, the bottom wall and sidewalls of the rack extend beyond opposite ends of the top wall of the rack so as to define a well adjacent each open end of the rack, the extended bottom wall of each well serving as a support upon which the crosspiece of the T-member may be rested preparatory to entering the T-member into the rack through a selected open end thereof, and the extended side walls serving as a guide to such entry.

6. A rolling rack for supporting data material, comprising a tubular member of square cross section having at least one open end and having a slot extending centrally and lengthwise of a bottom wall thereof, roller means supported at opposite end areas of the tubular member in elevated relation to the upper surface of a top wall of the tubular member, the roller means being adapted for rolling engagement in a pair of overhead tracks and for suspending the tubular member in a horizontal plane from the tracks, a T-bar received in the tubular member having a crosspiece supported upon the interior surface of the bottom wall for longitudinal slidable movement in the tubular member and having a stem plate loosely depending through the slot adapted for supporting data material; characterized in that the bottom wall and sidewalls of the tubular member extend beyond its top wall so as to define a well adjacent the open end, the extended bottom wall providing a support upon which the crosspiece of the T-bar may be rested preparatory to entering the T-bar into the open end of the tubular member, and the extended sidewalls serving as a guide to such entry.