United States Patent [19]

Greer

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[54] **KNOCK-DOWN DRAWER ASSEMBLY**

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[52] **U.S. Cl.** ..... **312/330 R;** 312/205; 312/263; 312/341 R; 312/343; 312/351

[51] **Int. Cl.**[2] **A47B 45/00;** A47B 88/00; A47B 88/14; A47B 96/06

[58] **Field of Search** 49/504; 160/381; 312/205, 312/257, 263, 330, 339, 340, 341, 350

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[57] **ABSTRACT**

A knock-down drawer assembly comprises first and second pairs of opposed, drawer defining vertical panels, interengaging means for interengaging the same, a drawer bottom mountable on the panels, and track means for slidably mounting the assembled drawer on a structural member.

3 Claims, 6 Drawing Figures

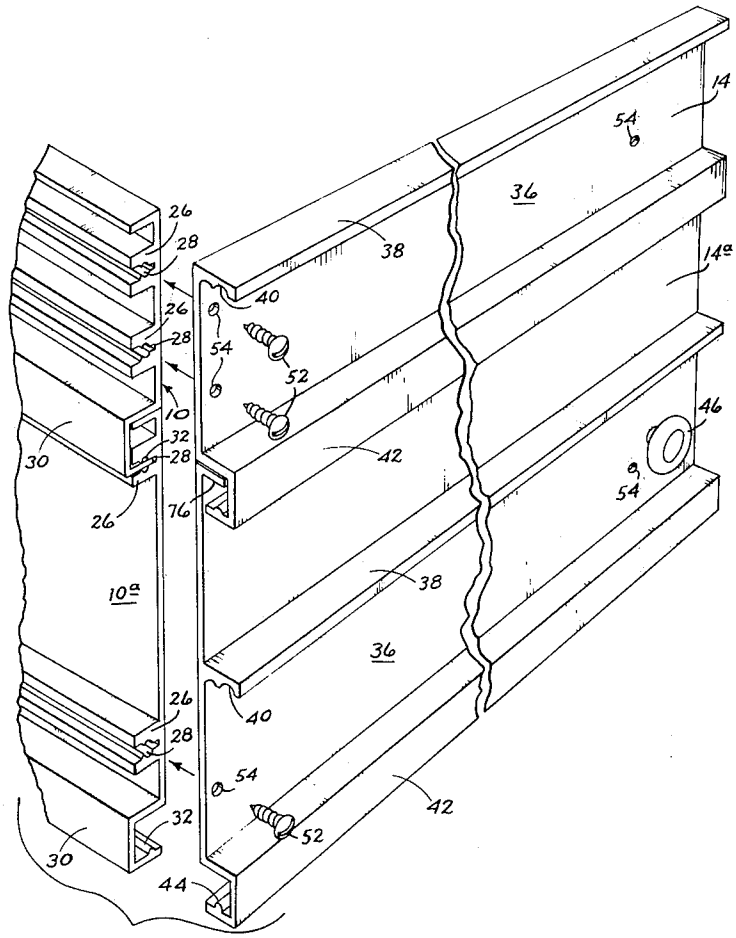
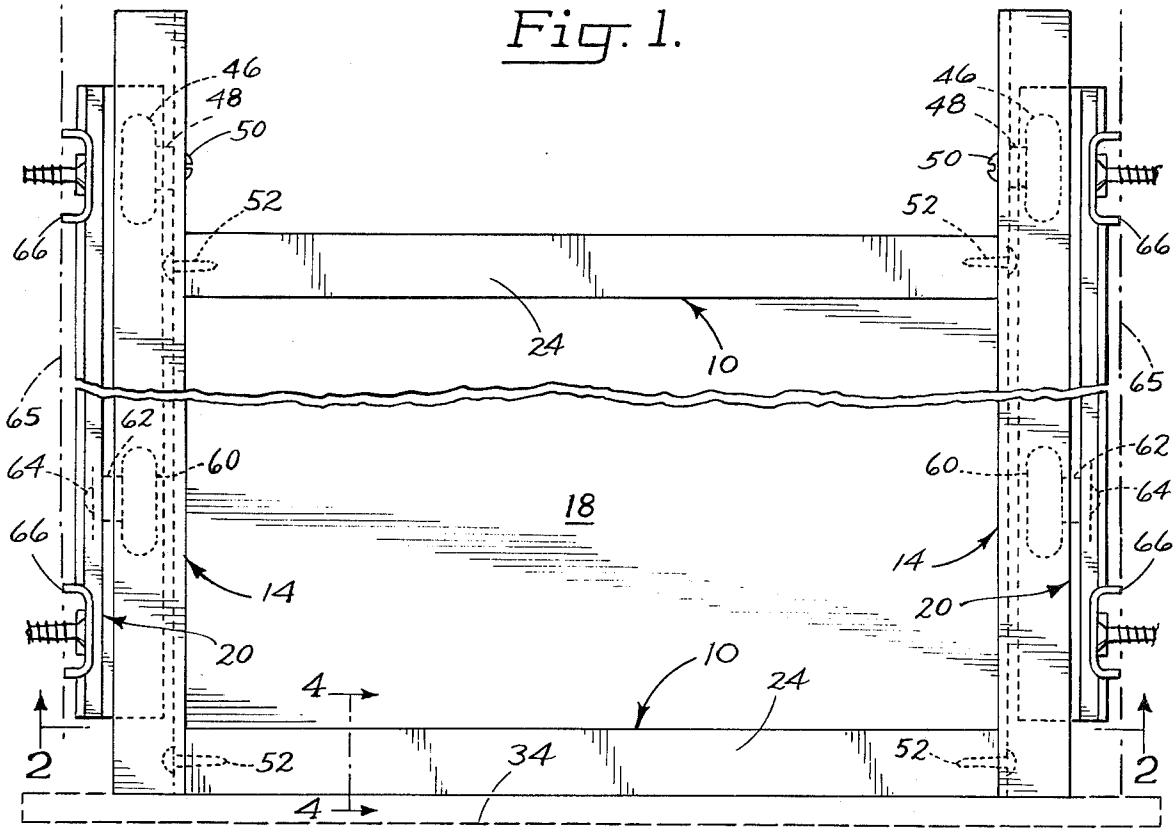


Fig. 1.



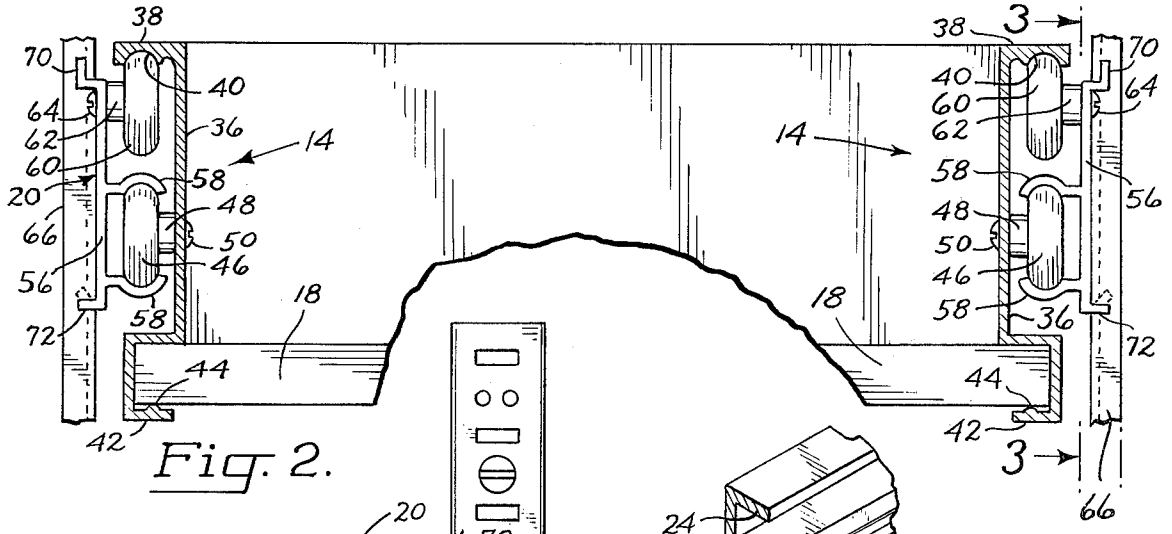


Fig. 2.

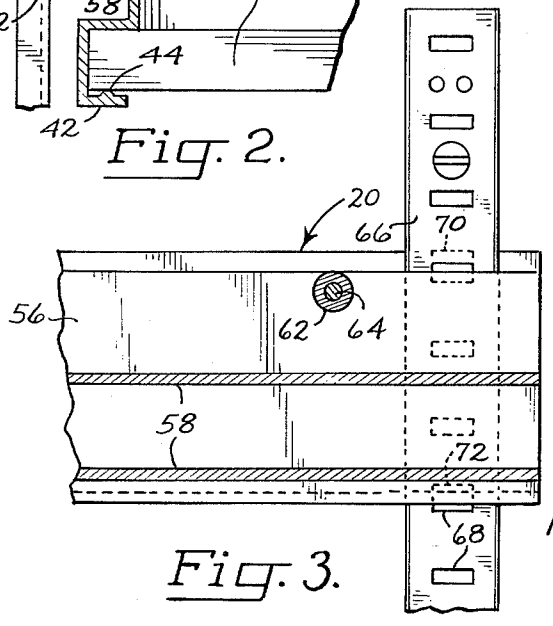


Fig. 3.

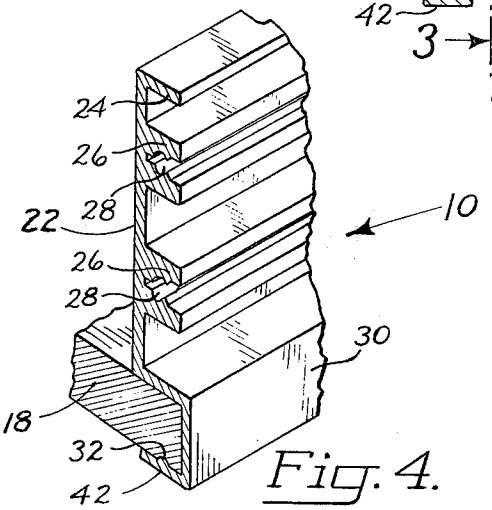


Fig. 4.

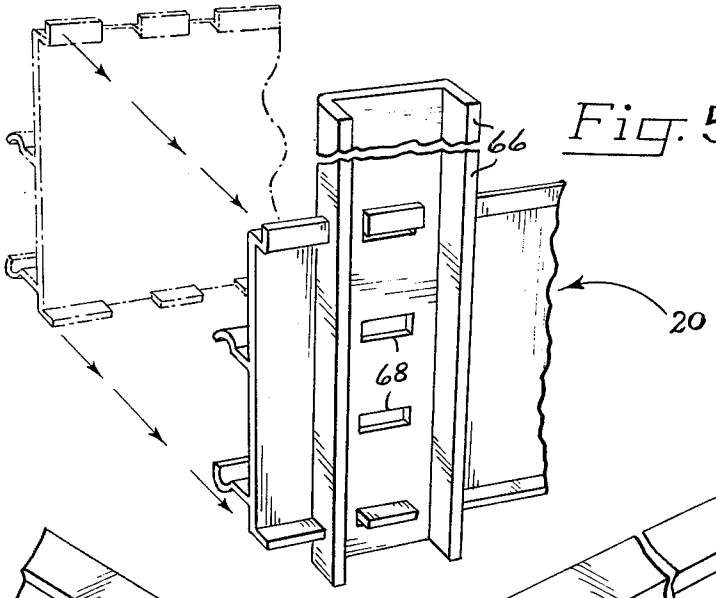

66
20
68

Fig. 5.

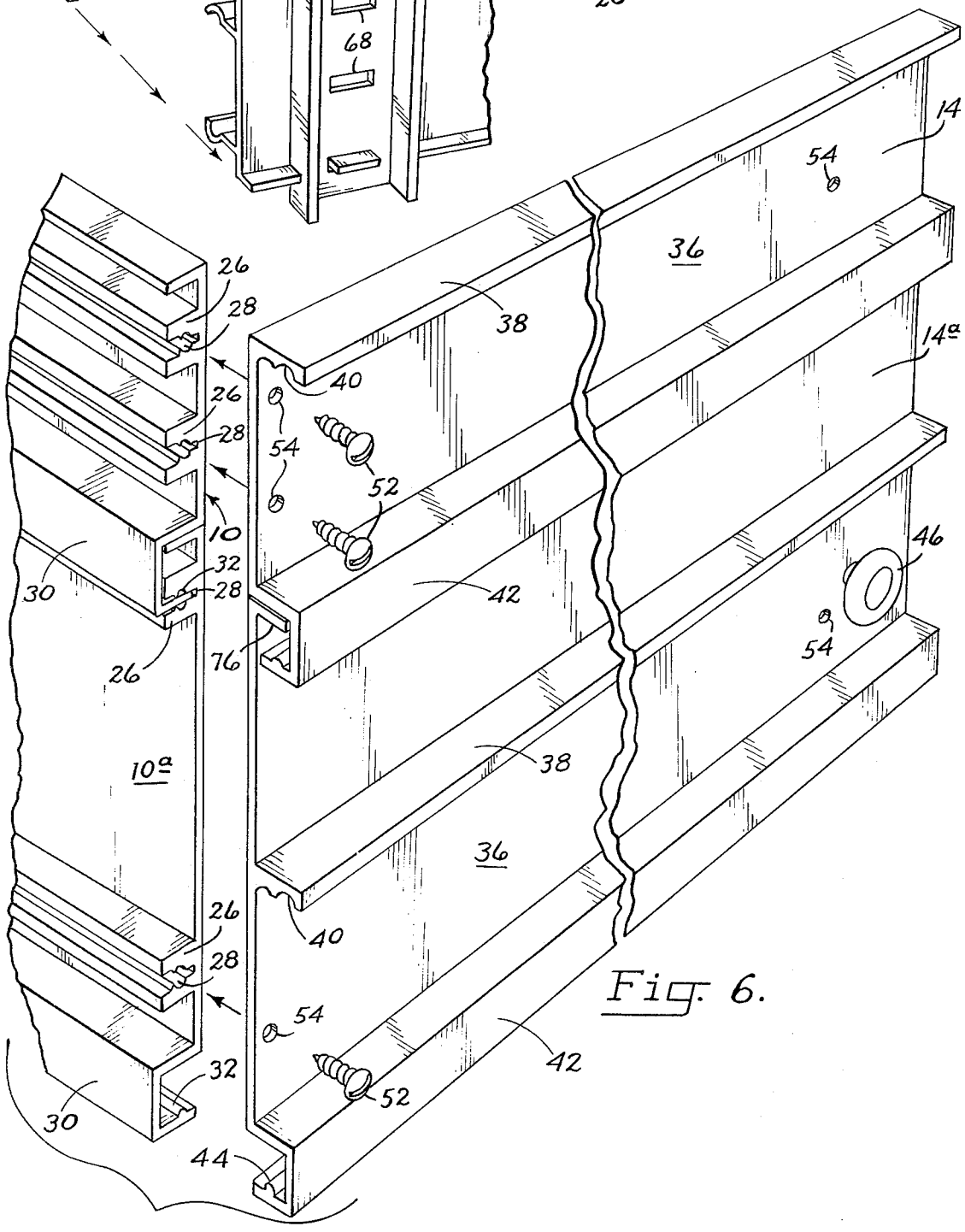

14
54
36
26
28
38
14a
40
54
52
10
32
28
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42
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76
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10a
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Fig. 6.

KNOCK-DOWN DRAWER ASSEMBLY

This invention relates to knock-down drawer assemblies.

In finishing hospitals, clinics, office buildings, apartment houses, condominiums, and other types of buildings containing a multiplicity of built-in cabinets, there is need for a drawer supplied in knock-down condition to be assembled in the cabinets at the construction site.

It is the general purpose of the present invention to provide such a drawer, characterized by the following advantages.

It consists essentially of but four easily assembled components, viz a front, a back, two sides and a bottom.

The components may be assembled into the finished drawer easily and rapidly.

The front and back components are identical, as are the two side pieces, thereby minimizing the number of required drawer parts.

It is provided with drawer guides integral with the drawer sides, thereby further minimizing the required number of drawer parts.

Drawers of any desired length, width and depth may be created from a minimum number of drawer parts by simple operations of trimming stock pieces and interlocking them into the finished drawer.

The inner surfaces of the assembled drawer are smooth and in a finished condition immediately after assembly, without requiring before use a separate painting or lining operation.

The assembled drawers may be mounted in standard vertical shelf supports without the necessity of using special fasteners.

A large number of the drawers may be shipped in knock-down condition, with resultant economy of packaging and transportation costs, as well as of storage space requirements.

The manner in which the foregoing and other objects of this invention are accomplished will be apparent from the accompanying specification and claims, considered together with the drawings wherein:

FIG. 1 is a foreshortened plan view of the hereindescribed knock-down drawer assembly in its assembled condition:

FIG. 2 is a fragmentary transverse sectional view thereof taken long line 2—2 of FIG. 1.

FIG. 3 is a fragmentary longitudinal view of the drawer assembly taken along line 3—3 of FIG. 2.

FIG. 4 is a fragmentary perspective view taken along line 4—4 of FIG. 1.

FIG. 5 is a detail perspective view illustrating the manner of mounting the drawer assembly to a structural support; and

FIG. 6 is an enlarged, fragmentary, foreshortened perspective view of the end and side panels of the drawer, illustrating their manner of assembly into the final drawer.

Broadly considered, the knock-down drawer assembly of my invention comprises first and second pairs of opposed, drawer defining panels. One of the pairs comprises the front and back; the other, the two sides of the drawer assembly. Each component of one of the pairs, normally the pair comprising the front and back panels, has on one of its face surfaces at least one slotted rib extending substantially the length thereof. Each component of the other of the pairs, normally the side panels, has panel interengaging means aligned with the slotted ribs of the first of the pairs, and engageable therewith in the assembled condition of the drawer. Preferred interengaging means comprise screws penetrating openings in one of the pairs and self threaded into the slotted ribs of the other of the pairs.

At least one pair of the panel pairs has drawer bottom mounting means along the lower margins of the component panels, and a drawer bottom mounted therein. Track means are mounted on the outer faces of the components of the side panels. Track mounting means are provided for mounting the track means.

Considering the foregoing in greater detail and with particular reference to the drawings:

The hereindescribed knock-down drawer assembly basically comprises a pair of identical front and back panels, a pair of identical side panels, a bottom panel, and a pair of track or guide members employed for mounting the assembled drawer on or in a structural unit.

In FIGS. 1–4 inclusive the front and back panels are indicated generally by the numeral 10; the two side panels by the numeral 14; the bottom panel by the numeral 18; and the two track or guide members by the numeral 20.

As noted, it is a feature of the invention that the front and back panels may be identical to each other, as may the two side panels. Rights and lefts are formed by merely reversing the position of the panels. Also, the panels may be cut to length as required to fabricate drawers of any desired length or width, a number of the panels being stacked and trimmed during one operation for economy of effort and time. This greatly reduces the number of parts which must be stocked to fabricate drawer assemblies suitable for various installations.

The panels may be fabricated from any suitable structural material. Preferably, however, they are fabricated from extruded sheets of aluminum or plastic.

Front and back panels 10 are identical in configuration but used in mirror image relation to each other in the assembled drawer. As shown particularly in FIG. 4, these units of the assembly each comprise a base 22 having a planar inner surface which forms an interior surface of the drawer. It is a feature of the invention that this surface per se is a finished surface, so that painting or lining of the interior surfaces of the drawer is unnecessary.

Front and back panels 10 each have on their exterior surfaces a plurality of outwardly extending longitudinal projections. The first of these is a flange 24 formed at substantially right angles to base plate 22 and located at the top. It serves a stiffening and finishing function.

At least one, preferably two, longitudinal split ribs 26 run the entire length of the panel and provide continuous slots 28. These are formed with central enlarged areas which provide continuous, self-threading screw holes the length of the ribs.

A preferably continuous channel segment 30 is located at the bottom of each panel. It serves the function of mounting the bottom of the drawer. Its bottom segment is formed with a continuous rib 32 the function of which will appear hereinafter.

Front panel 10 also mounts a decorative facia panel 34 in the final drawer assembly, FIG. 1.

Like front and back panels 10, side panels 14 are of identical construction and used in mirror image relation to each other in the assembled drawer. The construction of these panels is illustrated particularly in

FIGS. 2 and 3.

Each of the side panels comprises a base plate 36. The plate has a smooth inside surface which forms the finished surface of the drawer without the necessity of painting or overlying it.

The upper outer margin of each side panel 14 mounts an outwardly directed flange 38 the undersurface of which is contoured to provide a roller track 40. The lower outer margin of each side panel is formed with an inwardly directed channel 42. The bottom component of each channel is provided with a longitudinal rib 44.

The side panel channels 42 correspond in function to front and back panel channels 30 in providing a means for supporting a drawer bottom 18, which is confined and clamped between the panels when the drawer is assembled. The drawer bottom may be made of any suitable structural material, preferably wood particle board, plywood, or lumber.

Side panels 14 also mount a pair of rollers 46 which may be made from nylon, teflon or other low friction plastic material. The rollers preferably are ball bearing mounted on shafts 48 and are retained by mounting bolts 50 supported on plates 36.

Panel interengaging means interengage the front side and back panels in drawer-forming relation, with the drawer bottom confined in the channels with which the panels are provided.

Although various types of panel interengaging means may be employed for this purpose, it is preferred to employ a plurality of screws 52 which penetrate openings 54 through side panels 14, FIG. 6, and self thread themselves into slots 28 of ribs 26 carried on the outer faces of front and back panels 10.

Track and guide means mount the drawer assembly thus constituted in a cabinet or other mounting opening. The construction and manner of application of the track and guide means is illustrated particularly in FIGS. 3 and 5.

The track and guide means comprise two members indicated generally at 20. Like the panels of the drawer, they may be fabricated from extruded sheets of metal or plastic.

Each track and guide means 20 includes a base 56 which comprises a continuous plate extending substantially the length of the drawer assembly. The inner face of the base mounts a track 58 contoured and arranged to receive rollers 46 mounted on the side panels of the drawer. The inner face of the plate also mounts a roller 60. This is similar in construction to roller 46. Thus it may comprise a roller fabricated from nylon, teflon or other low friction, plastic ball bearing-mounted on a shaft 62 by means of a screw 64. Roller 60 is spaced from roller 46 both longitudinally and vertically and cooperates with the latter roller in mounting the drawer for in and out sliding movement in the supporting structure.

If desired, the track and guide plates may be secured directly to cabinet supports 65 or other framing structure, by means of screws or other suitable fasteners. Preferably, however, the mounting arrangement illustrated in FIGS. 2 and 5 is employed.

This arrangement makes use of conventional cabinet shelf mounts 66 comprising channel irons provided with a plurality of longitudinally spaced central openings 68.

The shelf mounts are fixed to the inner cabinet walls or other structural support in the usual manner. Track and guide plates 56 then are provided with upper and lower tabs 70, 72 respectively. These are dimensioned and arranged for insertion in aligned pairs of openings 68 in supports 66 so that the track and guide members, and hence the drawer assembly itself, may be mounted adjustably at the desired elevation.

It is a particular advantage of my knock-down drawer assembly that drawers of any desired length, width or depth may be composited from a minimum number of stock parts. As has been explained heretofore, the length and width of the drawers is determined simply by trimming the front, back and side panels to length and then forming apertures 54 in the appropriate places. Since ribs 26 are continuous, there always will be present openings 28 to receive screws 52 no matter to what extend front and back panels 10 are shortened.

Variations in depth of the drawer assembly may be accommodated by the simple structural expedient illustrated in FIG. 6.

In this embodiment of the invention the front, back and side panels are provided in longitudinally divided segments. One class of such segments 10, 14 are of a first width, for example 2 inches, while a second class of such segments, 10*a*, 14*a*, are of a second width, for example 4 inches. This arrangement makes possible assembling drawers having depths of a multiple of 2 inches.

The manner in which this is accomplished is illustrated in FIG. 6.

Segment 10*a* is of substantially the same construction as is segment 10, except that it is of greater width, with ribs 26 being spaced farther apart.

Similarly segment 14*a* is of substantially the same construction as segment 14 except that it is of greater width. In this case, however, the upper margin is extended and formed with an outwardly directed flange 76. Unlike flange 38, flange 36 is not provided with a track 40.

In assembling the drawer, the panel segments first are interlocked in the manner shown in FIG. 6. Thus, the upper portion of panel segment 10*a* is nested within the lower or channel segment of panel 10 with the bottom component of the channel received in slot 28 of rib 26. Here rib 32 is of service by being received in a sliding fit into the enlarged portion of slot 28.

In a similar manner flange 76 of side segment 14*a* is received within the lower channel member of side panel segment 14. In this case interlocking of a flange with a rib is not required since the side panel segments are supported and maintained in position by means of screws 52.

With the front, back and side panel segments thus interengaged to form a drawer of the desired depth, drawer bottom 18 is put in place and all of the components interlocked by threading screws 52 into slots 28 of ribs 26. The assembled drawer then is mounted on track and guide members 20 by inserting the drawer between the track and guide members, with rollers 46 tracking on tracks 58 and rollers 60 tracking on tracks 40.

In this manner there are provided knock-down drawer assemblies fulfilling the objects of the invention and in particular providing knock-down drawer assemblies comprising a minimum number of prefabricated parts which are assembleable easily and quickly into finished drawer units of any desired dimensions.

Having thus described my invention in preferred embodiments, I claim:

1. A knock-down drawer assembly comprising:

a. a pair of drawer side panels of like and uniform cross section,

b. a pair of drawer end panels of like and uniform cross section extending between and abutting the inner surfaces of the side panels,

c. each of said end panels having on its outer face at least one integral slotted rib extending the length thereof,

d. self-threading screw means extending through openings through said side panels aligned with said slotted ribs and removably connected therewith in the assembled condition of the drawer,

e. drawer bottom mounting means on the lower inner margins of the panels of at least one of said pairs of panels,

f. a drawer bottom mounted removably in said drawer bottom mounting means in the assembled condition of the drawer.

g. an integral track member on the outer face of each drawer side panel, and

h. a pair of track mounting members adapted for attachment to structural supports adjacent the sides of the drawer and including roller means engaging said track member for supporting the drawer for in

and out movement relative to the track mounting members.

2. The knock-down drawer assembly of claim **1** wherein each side and end panel includes a pair of longitudinal segments adapted to be interconnected edgewise to provide a panel of increased depth, wherein the drawer bottom mounting means comprises inwardly directed channel means integral with the bottom margin of each of said end panel segments, each channel means including an inwardly directed terminal flange, wherein a slotted rib is located adjacent the upper end of each lower end panel segment and wherein the slotted ribs are provided with slots dimensioned for reception of said terminal flanges of the upper segments, thereby enabling assembling the end panel segments into end panels of increased depth by telescoping the terminal flanges of the upper segments into the slots of the lower segments.

3. The knock-down drawer assembly of claim **2** including interlocking groove and rib components on the slotted ribs and terminal flanges for removably securing them together.

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