United States Patent

[11] **3,570,683**

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[54] **MOVABLE SCREEN ASSEMBLY**
9 Claims, 8 Drawing Figs.

[52] **U.S. Cl.** **211/162,** 40/129, 52/64, 52/143, 52/710, 211/184
[51] **Int. Cl.** **A47f 5/00**
[50] **Field of Search** 211/162, 180, 184; 40/129, 1; 312/132; 49/130, 380, 501; 5/163, 330; 35/77; 52/64, 710, 143

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ABSTRACT: A movable support panel assembly for hanging and supporting articles is of modular construction provided by a number of modules within an outer rectangular frame. Each module has a panel for supporting the articles, and the outer frame has roller supports at the bottom for moving the assembly on the floor and guides at the side edges for extending into stationary overhead tracks. The guides may be retracted so that the assembly may be moved to positions which are not under the track. For such movements an outrigger transporter assembly is attached to each end of the screen.

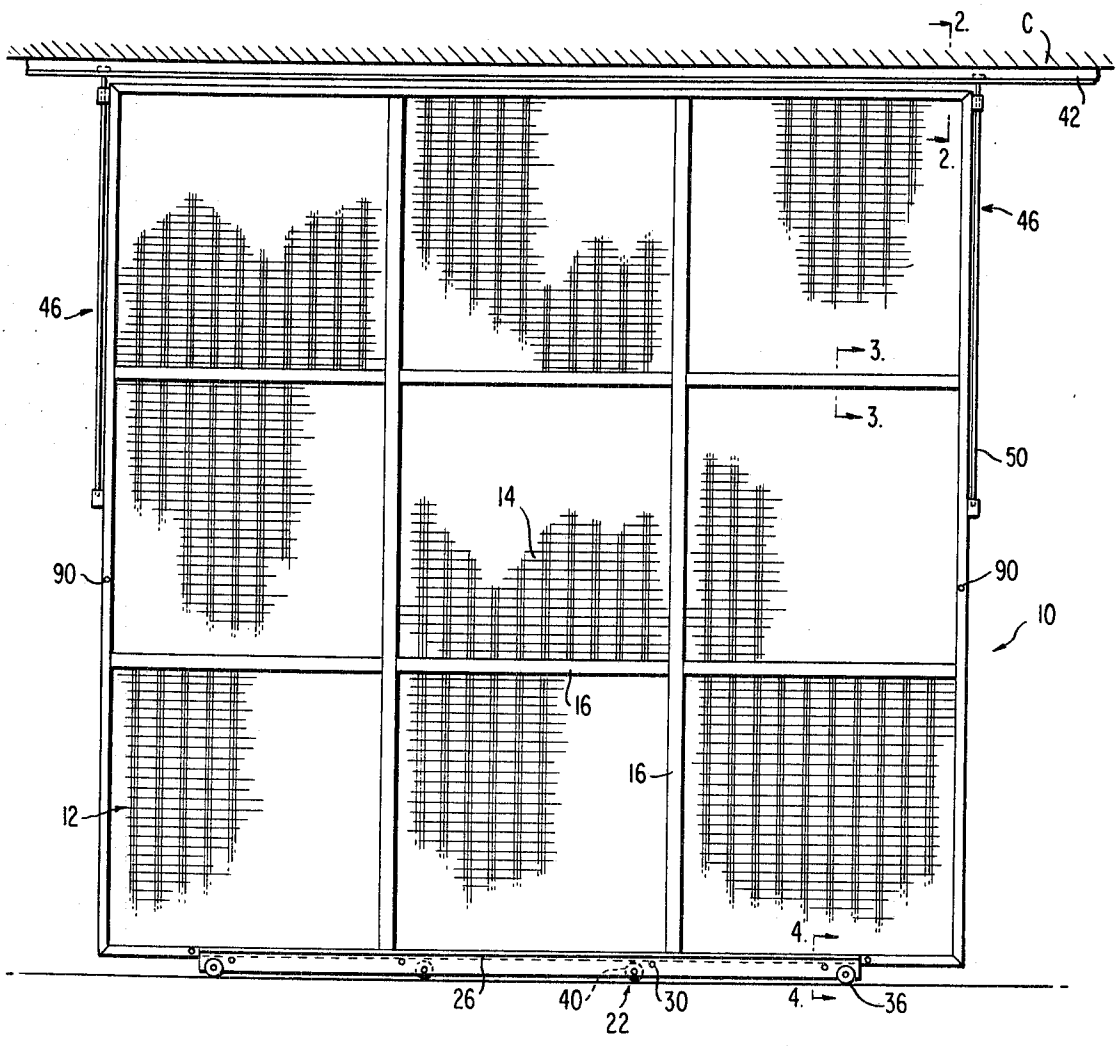
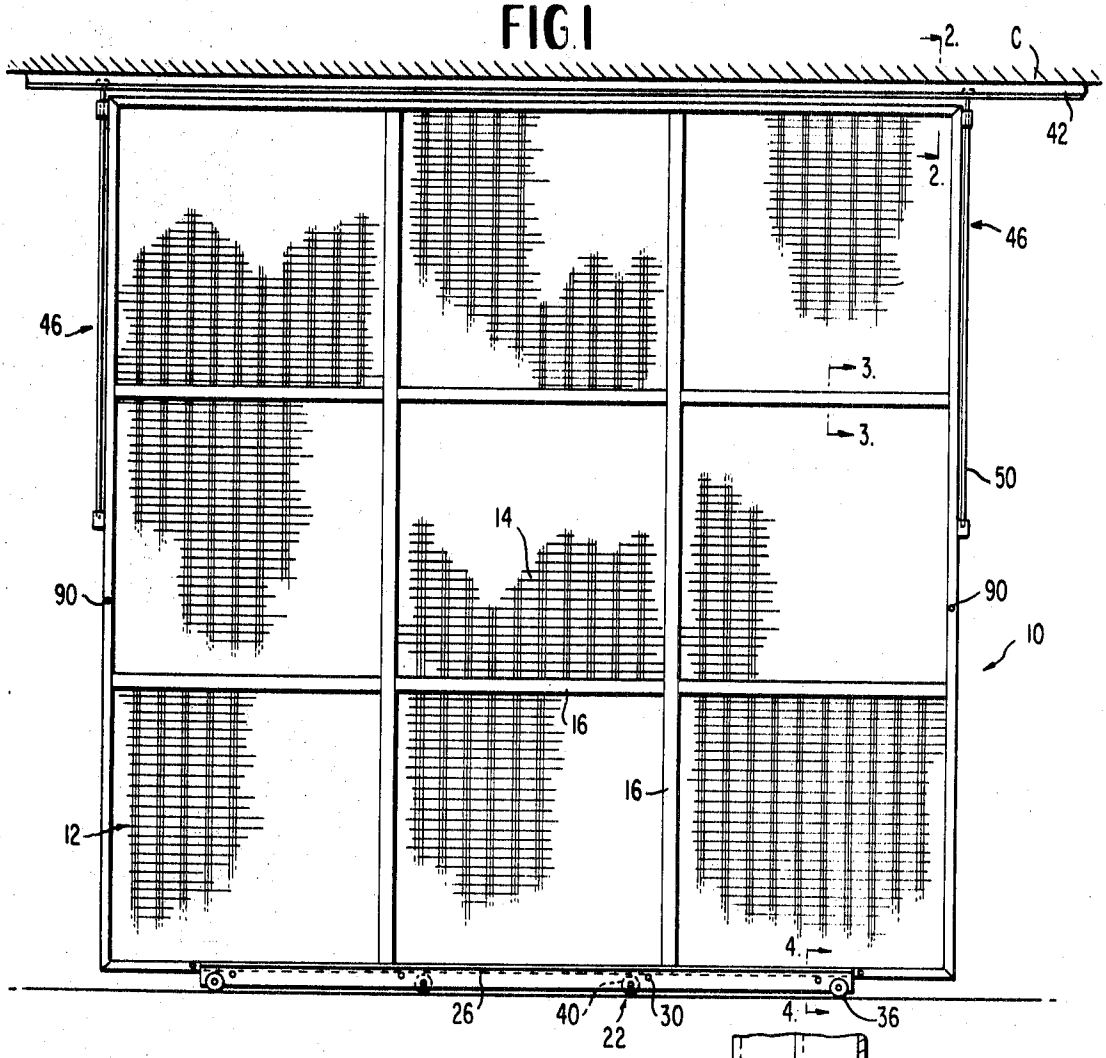


FIG. 1



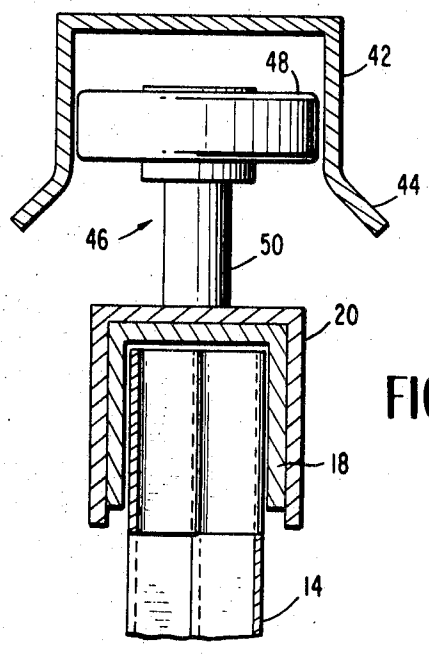


FIG. 2

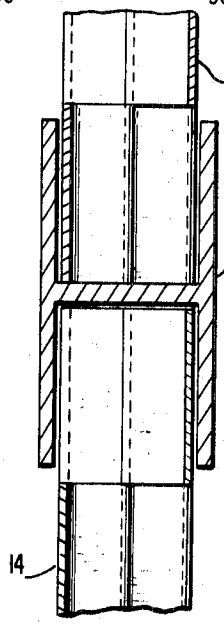


FIG. 3

FIG.4

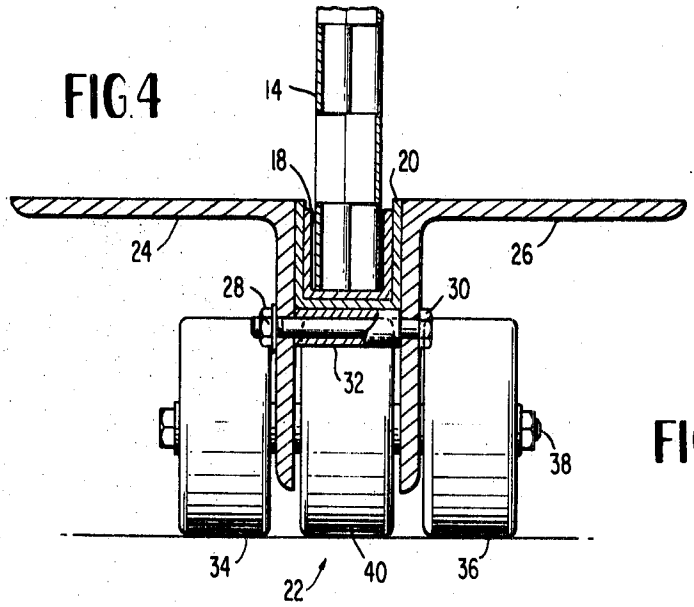


FIG.5

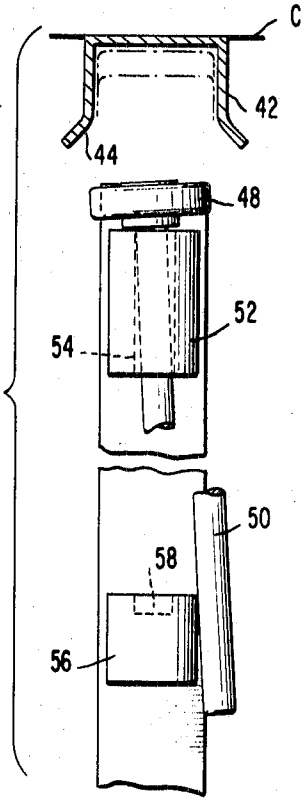


FIG.6

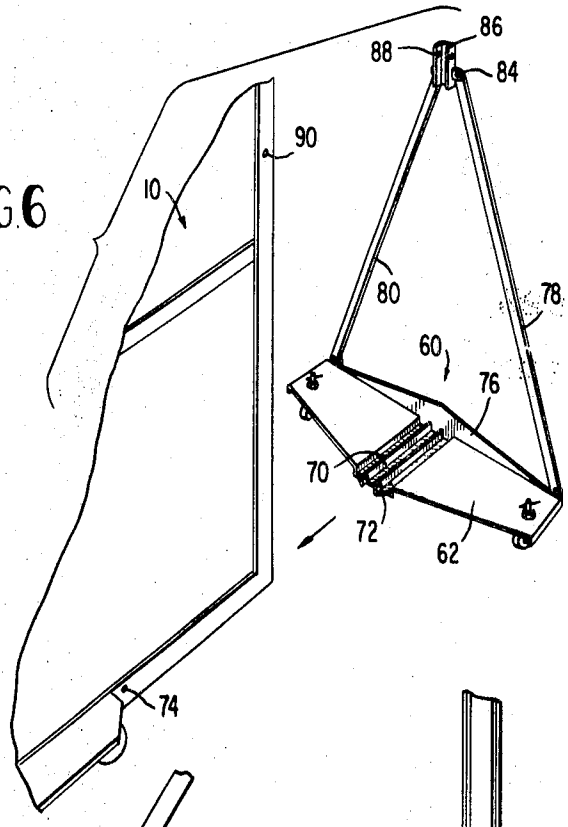


FIG.8

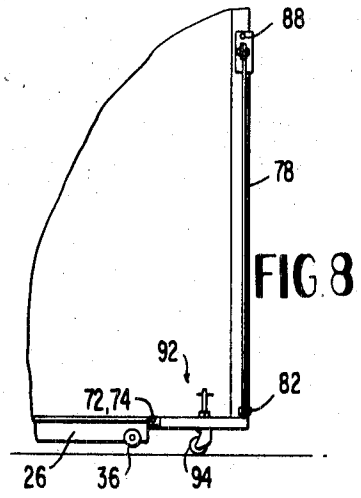
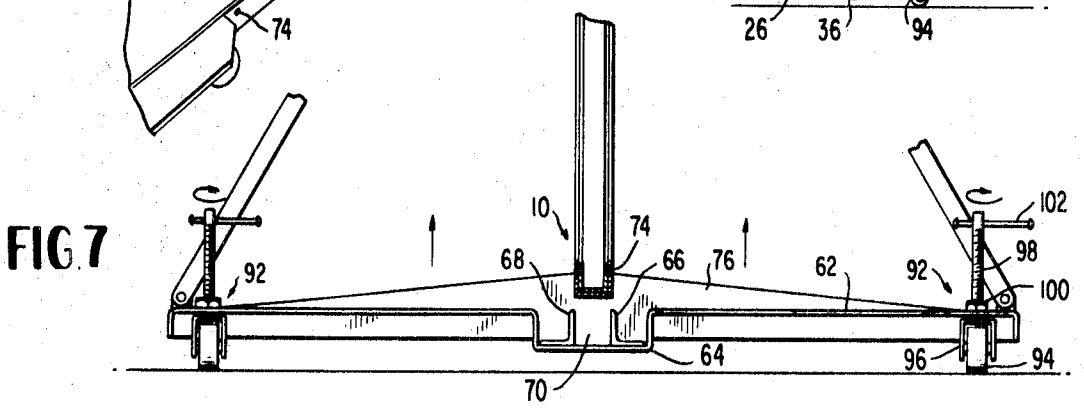


FIG.7



MOVABLE SCREEN ASSEMBLY

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to improvements in movable support panel assemblies of the slidable rolling type for hanging or supporting articles, including guides for moving the assembly under a stationary track and removable outriggers for moving the assembly when not guided by the track.

2. Description of the Prior Art

There is known in the prior art various arrangements for supporting and displaying articles on a large flat surface in which the supporting surface is suspended or hung from above on parallel roller-track assemblies so that the articles may either be stored in close relation to each other or pulled from the storage position on the track for viewing. Because the overhead roller-track assembly supports the entire weight of the frame plus the supported articles, utilization of this construction creates structural problems with the overhead support.

It is also known in the art to provide movable selfstanding wall partitions with removable adjustable dollies therefor. However, these partitions are structurally complicated and not in the nature of simple screens and do not follow a guided track.

Further, it is known in the art to provide a display device with a support for supporting it from below and a guide for guiding it from above. Such devices, however, again are not in the nature of a screen and have no provision for moving away from the track.

In the prior art, the larger the frame the greater the number of intermediate projection vertical supports creating interference with the support of large objects.

There is an unfulfilled need in the art to provide a panel assembly suitable for supporting various objects. For example, there is a need to support the articles for storage in relatively close quarters allowing the articles to be removed from storage position for viewing and further moved to additional areas away from the storage position.

SUMMARY OF THE INVENTION

This invention provides a movable assembly of modular panels (eliminating large intermediate support projections) for supporting or hanging various objects which is less expensive than those of the known art while utilizing available materials. The entire weight of the movable assembly plus the hung objects is supported by rollers resting on the floor which makes it easier and simpler to move, and is guided by an overhead track acting as a direction guide only via retractable guides extending upwardly above the top of the assembly. Installation is not restricted by roof height or allowable roof loads. The assembly can be removed from the confinement of the guide track and placed on outriggers attached to its ends for easy movement to other locations. The assembly is constructed from a number of modules within a rectangular frame permitting economical manufacture as well as ease in handling and shipping the components.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a side elevation view of the movable support panel assembly of this invention in its track-guided position.

FIG. 2 is a detailed sectional elevation taken along line 2–2 of FIG. 1.

FIG. 3 is a detailed sectional elevation taken along line 3–3 of FIG. 1.

FIG. 4 is a detailed sectional elevation taken along line 4–4 of FIG. 1.

FIG. 5 is an end elevation with the guide illustrating the retraction of the guide from the track.

FIG. 6 is a perspective view of an end of the screen and an outrigger.

FIG. 7 is an end elevation view of the outrigger.

FIG. 8 is a side elevation view of the outrigger.

DESCRIPTION OF THE PREFERRED EMBODIMENT

A movable support panel assembly 10 as shown in FIG. 1 is useful for hanging or supporting objects for display and for other purposes. It is possible that the assembly of this invention would be used with a number of other similar assemblies and normally kept in a storage position with the assembly relatively close to each other as determined by the supported articles, For inspecting one support panel assembly briefly it could be pulled from its supported position and guided by a track above while being supported from below. However, the assembly may be equipped with outriggers so that it can be completely removed from the track.

The construction of the movable assembly 10 includes a number of modular panels 12 each having a panel or screen surface 14 of identical dimensions. The panel or screen surface 14 may be stamped or perforated metal, solid metal, wood, plywood, cork, plastic or expanded welded or woven metal screening or mesh, and other rigid materials regardless of thickness.

The individual panels may be factory or field assembled, and are supported in their own frame made up of beams 16 having an H-shaped section as shown in FIG. 3 or channel-shaped beams 18 shown in FIG. 2 at their outer edges. This assembly of modular panels is then placed within an outer frame 20 which provides the outside support for the fully assembled panels. The vertical and horizontal channels of the outside support are butted or mitered at their corners to permit a smooth finish and are locked to the panels by suitable known means.

The support panel assembly 10 is equipped for movement by a support roller assembly 22 shown in more detail in FIG. 4. This support roller assembly is made up of a pair of angle rails 24 and 26 secured together by a nut and bolt 28, 30 and spaced apart by a spacer sleeve 32 which also provides the level of support and horizontal alignment of the screen assembly 10. A pair of outer support wheels or rollers 34 and 36 are journaled on suitable axles 38 supported from the lower edge of the angle bars. Similarly, an inner support wheel or roller 40 may be supported on a similar axle at spaced locations as shown in FIG. 1. Other wheel arrangements including a three wheel assembly with middle wheel acting as a spacer could be used. The wheel arrangements provide a double clamp of the angle rails against the bottom rail of the assembled panel or screen. Obviously, the support roller assembly can be removed from the modular screen assembly by removing the nut bolt 28 and 30 and slipping it off. The top surface of rails 24, 26 can be utilized as a support shelf for very large or heavy objects.

The movable panel assembly 10 is guided from above for example by a stationary overhead guide track 42. The guide track 42 is channel shaped with outwardly flaring edges 44 as shown for example in FIGS. 2 and 5 to assist in guiding the track wheels into the tracks upon the raising of guide shaft 50.

The movable panel assembly carries a guide assembly 46 at each end thereof as shown in FIG. 1 The guide assembly is shown in more detail in FIGS. 2 and 5 and includes a guide roller 48 rotatably journaled on an actuator shaft 50. The actuator shaft 50 extends through an upper guide collar 52 having an oversized hole 54 therein with relation to the 142 diameter of the shaft 50. A lower guide shaft support 56 has a blind shaft support hole 58 therein. As can be seen with reference to FIG. 5, the guide roller 48 can be placed in position by manually moving the shaft 50 upwardly and placing its lower end into blind hole 58. To disengage the guide roller, the shaft 50 is moved up until the end of the shaft clears the blind hole 58 (to the upper of the two phantom line positions in FIG. 5) and then is swung sideways and dropped to the full line position shown in FIG. 5. The oversized hole 54 allows this movement of the shaft 50. Other suitable known means could be utilized for retracting and latching the guide assembly.

For transporting the movable screen assembly from one position to another when it is no longer guided by the guide

rail **42** there is provided a transporter assembly or outrigger dolly **60**, one for each end of the screen **10**. This outrigger dolly **60** includes a baseplate **62** having a sunken central portion **64** carrying a pair of angle irons **66** and **68** spaced apart to provide a central slot **70** for receiving the bottom of the assembly **10** as shown for example in FIGS. **6** and **7**. The front end of the angle bars include bolt holes **72** for cooperating with holes **74** in the screen assembly for securing the outrigger after it is in position.

The dolly **60** also includes an end plate **76** and upwardly extending arms or braces **78** and **80** each of which is secured to a flange **82** at the baseplate and a flange **84** attached to each side of a connecting piece **86**. A hole **88** through the connecting piece functions the bolt hole and cooperates with hole **90** in the frame of as a assembly **10**.

A pair of caster wheel assemblies **92** is provided on each transporter dolly and is shown in FIG. **7**. Each wheel assembly includes a wheel **94** in a yoke **96** mounted on a threaded shank or stem **98**. This stem is threaded in a nut **100** secured to the baseplate **62**. A handle **102** is provided for the threaded shank so that the raised position of the base plate **62** above the floor can be adjusted. To install the dolly, the dolly is moved in position, a bolt or pin is placed through holes **72** and **74** after which the wheels are raised by turning handles **102**, bolts or securing pins are then placed through holes **88** and **90**. The dollies can be used to transport the assembly to any position outside the guide track. Even when guided, however, the entire weight of the assembly **10** and the supported objects are resting on the floor and borne by the rollers. The overhead track **42** acts as a directional guide only. This construction allows the assembly **10** to be removed from the confinement of the overhead guide track **42** and placed on the transporters **60** for movement to other locations.

The modular design and fabrication permits economical manufacture as well as ease in handling and shipping of the components. Furthermore the panel assembly construction permits the unrestricted use of panel filler materials. The outriggers or transporters can support the full panel assembly including any supported weight without tipping and the construction is such that the outrigger may be attached without substantial effort or exertion on the part of the operator to allow easy movement over reasonably level floors in any direction.

Obviously, variations may be made within the spirit and scope of this invention including the specific construction of the transporters or outrigger dollies, and the other assemblies mentioned above.

We claim:

1. A movable support panel assembly for hanging and displaying articles, said support panel assembly being adapted to cooperate with a stationary overhead guide track and comprising in combination:

a plurality of panel modules each including a panel having a surface capable of supporting the articles and a frame member to hold the peripheral edges thereof,

an outer frame of the shape to hold a plurality of assembled panel modules to provide a unitary assembly,

a support roller assembly attached to a bottom edge of the outer frame,

a guide attached to and extending above the top of the outer frame and being receivable within the stationary overhead guide track, said guide being retractable from the track so that the support panel assembly may be moved to a position away from the track, and

a movable transporter assembly attachable to the outer frame to facilitate movement of the support panel assembly away from the track.

2. A support panel assembly as in claim **1** wherein the guide includes a roller on a shaft movable vertically from a position to engage or disengage from the stationary overhead guide track.

3. A support panel assembly as in claim **1** wherein the transporter assembly includes a base extending outwardly from the sides of the support panel assembly and mounting adjustable wheels thereon, the base being attachable to the bottom of the outer frame.

4. A support panel assembly as in claim **1** wherein the support roller assembly is formed from a pair of rails secured together in spaced relation and sandwiching the bottom of the outer frame while also providing a support for rollers carried thereby.

5. A support panel assembly as in claim **1** wherein the stationary track has outwardly flaring bottom edges.

6. A support panel assembly as in claim **1** wherein the outer frame and frame members include channel shaped holding portions so that there are no substantial lateral projections of the frames from the support panel faces.

7. A support panel assembly as in claim **1** wherein the guide comprises a roller mounted on a shaft that is vertically movable on said outer frame.

8. A support panel assembly as in claim **1** wherein a pair of transporter assemblies are removably secured to the outer frame at opposite sides thereof.

9. A support panel assembly as in claim **3** wherein the transporter assembly further includes a pair of upwardly extending braces adapted to be secured to the side of the outer frame.