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Lambert et al.

[11] **3,869,184**

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[54] **TWO-WAY TRAVEL FRONT PANEL**

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[52] **U.S. Cl.** **312/330,** 49/465, 312/220, 160/216

[51] **Int. Cl.** **A47b 88/00**

[58] **Field of Search** 312/315, 220, 319, 333, 312/330; 49/55, 465; 160/216; 126/190, 197; 292/DIG. 46

[56] **References Cited**

UNITED STATES PATENTS

1,169,696	1/1916	Thorp	160/216
1,495,836	5/1924	Frimmel et al.	160/216
1,706,085	3/1929	Straubel	312/333
2,222,866	11/1940	Craig	160/216
2,899,717	8/1959	Billings et al.	49/465 X
3,199,938	8/1965	Vouk	312/333
3,292,985	12/1966	Buhrmaster	312/333 X
3,592,521	7/1971	Cox	312/333

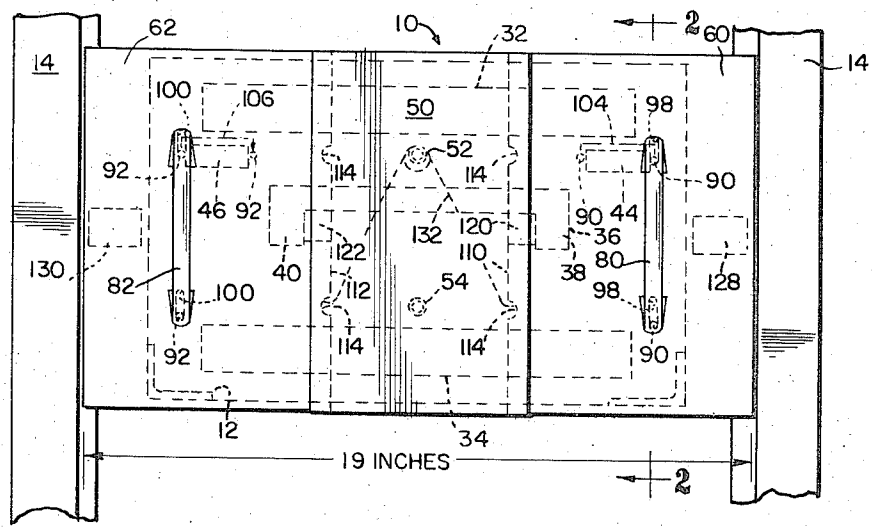
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[57] **ABSTRACT**

A cabinet structure comprising a cabinet frame, a drawer, a pair of drawer slides mounting the drawer for rectilinear movement forwardly and rearwardly from its normal position in the frame, and a two-way front panel mounted on the forward end of the drawer. The front panel includes a pair of side panels mounted for lateral movement on the drawer between respective outer positions and inner positions. The side panels engage the cabinet frame in their outer positions to prevent movement of the drawer on the slides in at least one direction relative to the frame. When the side panels are in their inner positions, they are disposed laterally inwardly from the slides to permit movement of the drawer forwardly and rearwardly on the slides and relative to the frame.

20 Claims, 5 Drawing Figures



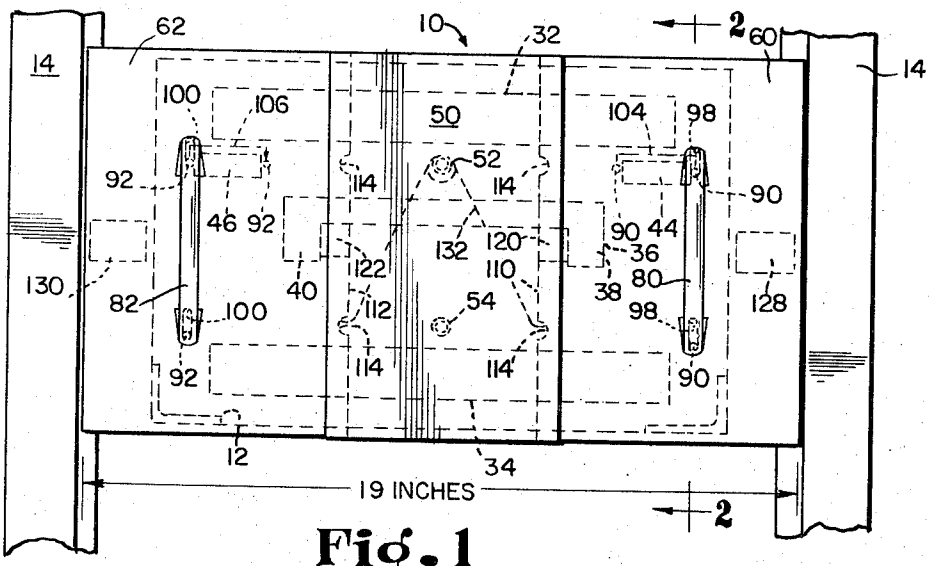


Fig. 1

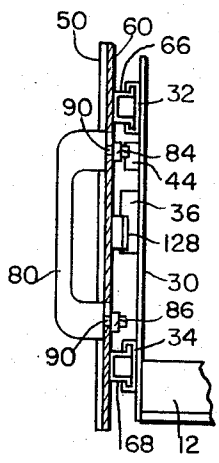


Fig. 2

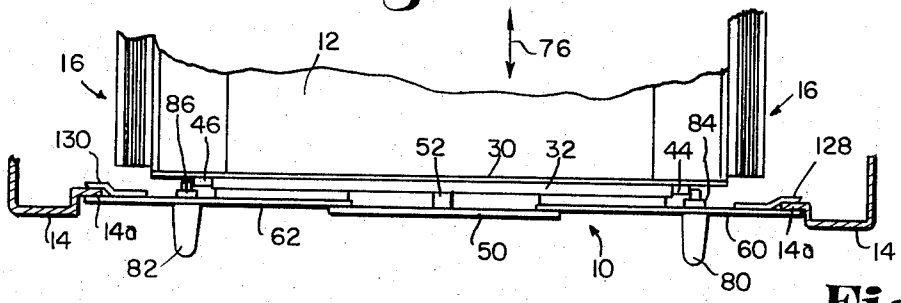
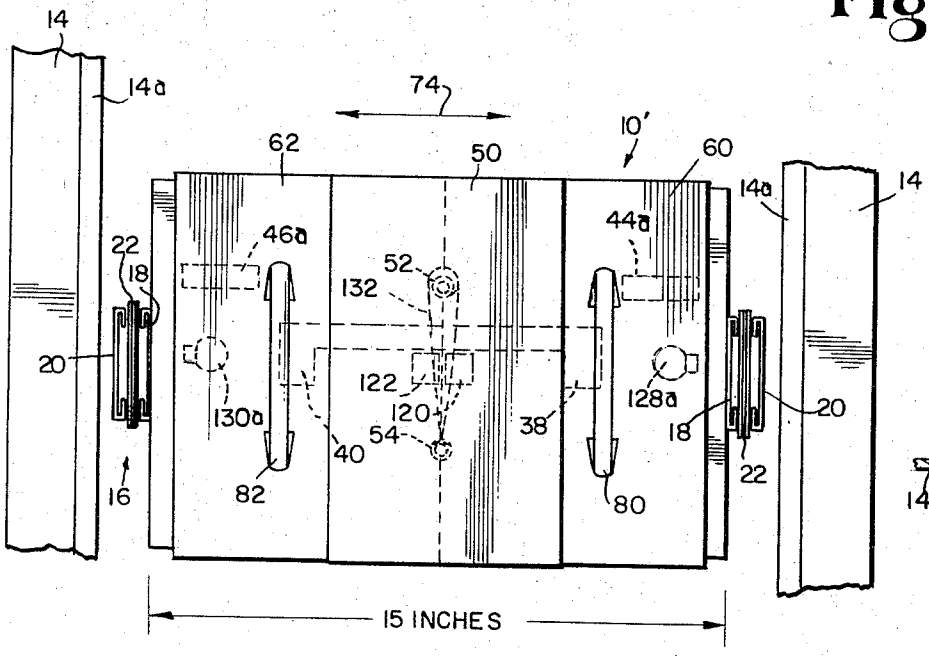


Fig. 3



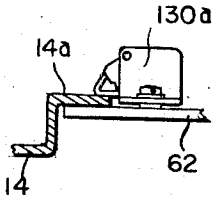


Fig. 5

Fig. 4

TWO-WAY TRAVEL FRONT PANEL

It is a primary object of our present invention to provide a two-way front panel for use upon a chassis or drawer of the type which is conventionally supported by drawer slides in a cabinet frame, the front panel being retractable from the conventional 19, 24, 30, etc. inch front panel width to a width equal to or less than 15, 20, 26 inches, respectively, which are the conventional drawer widths.

To our knowledge, a front panel in accordance with the disclosure herein has not heretofore been suggested.

Our invention, therefore, is a cabinet structure comprising a cabinet frame having forward and rearward sides, a chassis drawer having opposite sides or side walls and forward and rearward ends, a slide extending along each side of the drawer and supporting it in the frame for rectilinear movement forwardly and rearwardly from its normal position relative to the frame, and panel means mounted on one end of the drawer. Our preferred panel means includes a pair of side panels and means for mounting the side panels for lateral movement on the drawer between respective outer positions and inner positions. The side panels are engageable with the frame in their outer positions to prevent movement of the drawer on the slides in at least one direction relative to the frame. The side panels are disposed laterally inwardly from the slides in their inner positions to permit movement of the drawer forwardly and rearwardly on the slides.

Of course, the normal position for the drawer is when its forward and rearward ends coincide, respectively, with the forward and rearward sides of the cabinet frame. In some applications, it is very convenient to have the drawer movable rearwardly out of the cabinet frame so that personnel may have access to whatever is in the drawer from the rear side of the cabinet frame. This is particularly convenient for use in cabinets which contain electronic equipment of various types.

Our preferred panel means includes a base plate mounted on the drawer and track means for mounting the side panels for rectilinear lateral movement on the base plate. The base plate and the side panels are preferably generally flat, and the side panels preferably lie generally in a common vertically extending plane parallel to the plane of the base plate and spaced forwardly thereof. The panel means also preferably includes a parallel and generally flat center plate mounted on the base plate and spaced forwardly of the side panels, the center plate having opposite outer side edge portions overlying the inner side edge portions of the side panels. A forwardly projecting handle or handle means is provided on the side panel for moving the panels outwardly and inwardly. Means mounting each handle means for movement between a releasing position and a locking position and locking means cooperating with the handle means to prevent lateral movement of each side panel when its handle means is in its locking position are provided. Our preferred handle means, mounting means and locking means will be discussed hereinafter.

We prefer that the side panels, in their outer positions, prevent movement of the drawer in either direction relative to the frame. We accomplish this by having the side panels themselves engage, respectively, forward edges of the frame and then provide lock plates or conventional spring-loaded latch-type fasteners carried by each side panel to engage rearward edges of the frame.

Thus, it is an object of our invention to provide a front panel for a drawer movable in a cabinet frame, the front panel serving as a means for locking the drawer in its normal position and being laterally collapsible to permit the drawer to move both forwardly and rearwardly relative to the cabinet.

Other objects and features of our present invention will become apparent as this description progresses.

To the accomplishment of the above and related objects, this invention may be embodied in the forms illustrated in the accompanying drawings, attention being called to the fact, however, that the drawings are illustrative only, and that changes may be made in the specific constructions illustrated and described, so long as the scope of the appended claims is not violated.

In the drawings:

FIG. 1 is a fragmentary elevational view showing one embodiment of our two-way front panel on a chassis mounted in a cabinet frame;

FIG. 2 is a fragmentary sectional view taken along the lines 2—2 in FIG. 1;

FIG. 3 is a fragmentary sectional view looking down at the top of our two-way front panel;

FIG. 4 is a fragmentary view showing another embodiment of our front panel collapsed so that the chassis can move inwardly relative to the cabinet; and

FIG. 5 is an enlarged fragmentary sectional view of the spring-loaded latch shown in the embodiment of FIG. 4.

Referring now to the drawings, and particularly to FIGS. 1, 2 and 3, it will be seen that our two-way panels **10** may be mounted upon a chassis **12** which is supported for horizontally directed reciprocation outwardly and inwardly or forwardly and rearwardly relative to a cabinet frame **14** (only a portion of which is shown) by means of drawer slides indicated at **16.** The drawer slides **16** may be of the type disclosed in United States patent application Ser. No. 321,535 filed Jan. 5, 1973 which include an inner track member **18** connected to the chassis **12,** an outer track member **20** connected to the cabinet frame **14** and an intermediate track member **22.** Such drawer slides are constructed so that the intermediate track member **22** will reciprocate relative to each inner and outer track member **18,** 20. This means that the chassis **12** can move forwardly out of the cabinet frame **14** or rearwardly out of the cabinet frame unless there is an obstruction preventing such movement. The front panel means of our present invention, however, is not limited to any particular type of drawer slide.

Our two-way front panel **10** comprises a rectangularly shaped, generally flat, vertically extending back plate **30** which may be rigidly connected to the chassis **12.** Upper and lower horizontally extending female track members or slide members **32, 34** are mounted upon the backplate **30** for a purpose which will be discussed hereinafter. An inverted, U-shaped stop block **36** is also rigidly mounted to the backplate **30** to provide, at laterally spaced apart positions, downwardly extending legs **38, 40.** At laterally spaced apart points, below the upper track member **32** and above the stop block **36** are guide blocks **44, 46,** each of which may be, for instance, two inches in horizontal length. Finally, a center plate **50** which is parallel to and forwardly of the back plate **30** is centrally mounted upon

the back plate by means such as the illustrated standoffs **52, 54.**

We then provide side panels **60, 62** at opposite sides of the center plate and disposed between the center plate **50** and the back plate **30.** These side panels **60,** 62 are mounted for rectilinear horizontal movement relative to the back panel **30** by means of upper and lower male track members **66, 68** which slidably engage, respectively, the female track members **32, 34** mounted upon the back plate. This sliding engagement is best seen in FIG. **2.** Thus, the side panels **60, 62** are rectilinearly movable horizontally as indicated by the arrow **74** relative to the chassis **12** while the chassis **12** is rectilinearly movable as indicated by the arrow **76** relative to the cabinet frame **14.** Each side panel **60, 62** has an outer position (FIG. **1**) and an inner position (FIG. **4**) between which it is movable.

The manner in which the side panels **60, 62** are manually moved will now be discussed. Each panel **60, 62** carries a handle **80, 82** which is fastened thereto by means of vertically spaced apart fastening elements **84,** 86. Particularly, each fastening element **84, 86** includes a shank portion **90, 92** extending through a vertically elongated slot **98, 100** in the panel **60, 62.** This fastening arrangement permits the handles **80, 82** to be vertically movable upon the panels. Each shank portion **90,** 92 extends rearwardly to cooperate with the guide block **44, 46** disposed therebehind. Particularly, when each panel is in its outer position as shown in FIG. **1,** the shank portions **90, 92** are engaging the outer ends of the guide blocks **44, 46.** In order to get the panels **60,** 62 moved inwardly, it is necessary to lift the handles **80, 82** upwardly so that the shank portions **90, 92** can move upwardly and over the top edges of the guide blocks **44, 46** as indicated by the paths **104, 106,** to drop downwardly into engagement with the inner ends of the guide blocks. That is, when the side panels **60,** 62 are retracted to the position shown in the embodiment of FIG. **4,** the shank portions **90, 92** are in engagement with or spaced inwardly from the inner ends of the guide blocks **44, 46.** In FIG. **1,** we show that the fully extended two-way front panel **10** is 19 inches in width while the collapsed two-way panel **10** is 15 inches in width. Thus, we prefer to make the guide blocks **44,** 46 a length such that the panels **60, 62** will move laterally, for instance, 2 inches.

The panels **60, 62** lie generally in the same plane such that their inner edges **110, 112** would serve as a stop limiting the inward movement of the panels. As best seen in FIG. **1,** these inner edges **110, 112** are provided with cutouts **114** to accommodate standoffs **52, 54** mounting the front plate **50.** In order to limit the movement of the panels **60, 62** outwardly, we place stop blocks **120, 122** adjacent the inner edges of the panels to project rearwardly to engage, respectively, the downwardly and outwardly extending legs **38, 40** of the stop block **36.**

We want the two-way front panel **10** to serve as a lock holding the chassis **12** stationary relative to the cabinet frame **14.** For this reason, in the embodiment of FIGS. **1, 2** and **3,** we place lock plates **128, 130** on the outer rear surfaces of the side panels **60, 62** to engage the inwardly extending flanges **14**a of the frame as best seen in FIG. **3.** Thus, when the side panels are in their position shown in FIGS. **1** and **3,** the chassis **12** is locked against movement in the direction of the arrow **76.** When the side panels **60, 62** are moved inwardly to their position shown in FIG. **4,** the chassis **12** can move out the front of the cabinet frame or out the rear of the cabinet frame as desired. In the positions shown in FIG. **4,** the outer edges of the side panels **60, 62** are disposed inwardly to positions such that they can move in the direction of the arrow **76** relative to the intermediate track members **22** of the slides **16.** This is, of course, necessary to accommodate movement of the chassis **12** rearwardly from the cabinet frame.

In the embodiment of FIG. **4,** we place conventional and commercially available spring-loaded latch-type fasteners **128***a*, **130***a* on the outer rear surfaces of the side panels **60, 62** to engage the inwardly facing flanges **14***a* as best seen in the fragmentary view of FIG. **5.** With such catches **128***a*, **130***a*, the drawer **12** can be moved rearwardly to its closed position with the panels **60, 62** in their outer locking position. This eliminates the necessity of having the panels **60, 62** accurately postioned relative to the flanges **14***a* before the panels could be moved laterally outwardly to engage the lock plates **128, 130** in the embodiment of FIGS. **1, 2** and **3.**

Further, we may use a torsion spring **132** such as shown in both FIGS. **1** and **4** yieldably to urge the panels **60, 62** outwardly or to their outer positions. In the embodiment of FIG. **4,** the blocks **44***a* and **46***a* are elongated such that the handles **80, 82** cannot move downwardly firmly to lock the panels **60, 62** in their outer positions. Thus, in the embodiment of FIG. **4,** only the spring **132** holds the panels in their outer positions. It will be appreciated that the spring **132,** the body portion of which is wrapped around the stud **52** and the leg portions of which engage the cutouts **114,** is merely illustrative and many different types of spring means may be used to urge the panels **60, 62** outwardly.

The stop block **36** may be made of a material that deadens the noise or shock when the blocks **120, 122** move against the downwardly extending legs **38, 40.** Alternatively, the block **36** or the blocks **120, 122** may be used as mounting surfaces for noise and shock absorbing devices or layers of material.

We claim:

1. A cabinet structure comprising a cabinet frame having forward and rearward sides, a drawer having opposite sides and forward and rearward ends, said drawer having a width and height, a slide extending along each side of said drawer and supporting it in said frame for rectilinear movement forwardly and rearwardly from its normal position relative to said frame, and panel means mounted on one end of said drawer, said panel means providing a cover for said one end, said panel means including a pair of side panels and means for mounting said side panels for lateral movement on said drawer between respective outer positions and inner positions, said panel means having a width substantially equal to the width of said drawer when said side panels are in their respective outer positions, said panel means having a height substantially equal to the height of said drawer, said side panels being engageable with said frame in said outer positions to prevent movement of said drawer on said slides in at least one direction relative to said frame, said side panels having a height substantially equal to said drawer height, and said side panels being disposed laterally inwardly from said slides in said inner positions to permit

movement of said drawer forwardly and rearwardly on said slides.

2. The invention of claim 1 in which said panel means includes a base plate mounted on said drawer, said means for mounting said side panels including means for mounting said panels for lateral movement on said base plate.

3. The invention of claim 2 in which said means for mounting said side panels includes track means supporting said panels for rectilinear lateral movement.

4. The invention of claim 3 in which said track means includes at least one track member mounted on said base plate and a track member on each side panel cooperatively engaging said first-mentioned track member.

5. The invention of claim 1 including handle means on each side panel and means mounting said handle means for movement between a releasing position and a locking position, and locking means cooperating with said handle means to prevent lateral movement of each said side panel when its handle means is in its locking position.

6. The invention of claim 2 including handle means on each side panel and means mounting said handle means for movement between a releasing position and a locking position, and locking means cooperating with said handle means to prevent lateral movement of each said side panel when its handle means is in its locking position, said locking means including a block mounted on said base plate adjacent each said side panel, each block providing an outer end and inner end, and block engaging means carried by each said handle means, each engaging means movable laterally past its associated block when its handle means is in its releasing position and against one of said ends of its associated block when its handle means is in its locking position.

7. The invention of claim 6 in which each said handle means is mounted for movement upwardly from its locking position to its releasing position, each said block providing a laterally extending upper edge such that its associated engaging means is elevated to pass over said upper edge when its associated side panel moves laterally.

8. The invention of claim 2 including stop means mounted on said panel means to be stationary relative to said base plate, and stops mounted, respectively, on said side panels to move into engagement with said stop means to limit the outward movement of said side panels.

9. The invention of claim 2 in which said base plate and side panels are generally flat, said side panels lying generally in common vertically extending plane parallel to the plane of said base plate and spaced forwardly thereof, and said panel means including a parallel and generally flat center plate mounted centrally on said base plate and spaced forwardly of said side panels, said center plate having opposite outer side edge portions overlying the inner side edge portions of said side panels, and a forwardly projecting handle on each side panel for moving the panel outwardly and inwardly.

10. The invention of claim 9 in which said means for mounting said side panels includes track means supporting said panels for rectilinear horizontal movement, said track means being disposed within the space between said side panels and base plate and parallel to said base plate.

11. The invention of claim 9 including means mounting each handle for movement on its side panel between a releasing position and a locking position, and locking means cooperating with each said handle to prevent lateral movement of its said side panel when said handle is in its locking position.

12. The invention of claim 11 in which each locking means includes a forwardly projecting block mounted on said base plate and a rearwardly projecting block engaging means carried by each handle, said block providing an outer end and inner end, said engaging means being movable laterally past said block when said handle is in its releasing position and against one of said ends when said handle is in its locking position.

13. The invention of claim 1 in which said cabinet frame provides, at each side of said drawer, a laterally inwardly projecting frame portion providing forward and rearward edges, said side panels being disposed to engage respectively the forward edges of said frame portions when said drawer is in its said normal position and said side panels are in their respective outer positions.

14. The invention of claim 13 including a lock plate carried by each said side panel to engage the rearward edge of the adjacent frame portion when said drawer is in its normal position and said side panel is in its outer position.

15. For use with a drawer mounted in a cabinet to be movable forwardly and rearwardly relative to the cabinet, said drawer having a height and width, a two-way front panel means for said drawer comprising a base plate adapted to be mounted on the forward end of the drawer, a pair of side panels, said side panels having a height substantially equal to said drawer height, means for mounting said side panels for lateral movement on said base plate between respective outer positions and inner positions, said panel means having a height substantially equal to said drawer height and a width at least equal to said drawer width when said side panels are in their respective outer positions, thereby to provide a cover for said drawer forward end, the side panels being engageable with the frame in their said outer positions to prevent movement of the drawer, handle means on each side panel, means mounting each handle means for moveement between a releasing position and locking position, and locking means cooperating with each handle means to prevent lateral movement of its associated side panel when said handle means is in its locking position.

16. The invention of claim 13 including a spring-loaded, latch-type fastener carried by each side panel to engage the rearward edge of the adjacent frame portion when said drawer is in its normal position and said side panel is in its outer position, said fastener being of the type which will yield to move rearwardly past said frame portion when said drawer moves rearwardly to its normal position and said panel is in its outer position.

17. The invention of claim 1 including spring means yieldably urging said side panels to their outer positions.

18. The invention of claim 15 including spring means yieldably urging said side panels to their outer positions.

19. The invention of claim 16 including spring means yieldably urging said side panels to their outer positions.

20. The invention of claim 13 including latch means carried by each said side panel to engage the rearward edge of the adjacent frame portion when said drawer is in its normal position and said side panel is in its outer position.

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