May 25, 1971 R. E. GARTZKE 3,579,710

TRAVERSABLE HARDWARE IN GUIDEWAY FOR SHELF OR DRAPERY USE

Filed Sept. 9, 1968 3 Sheets-Sheet 1

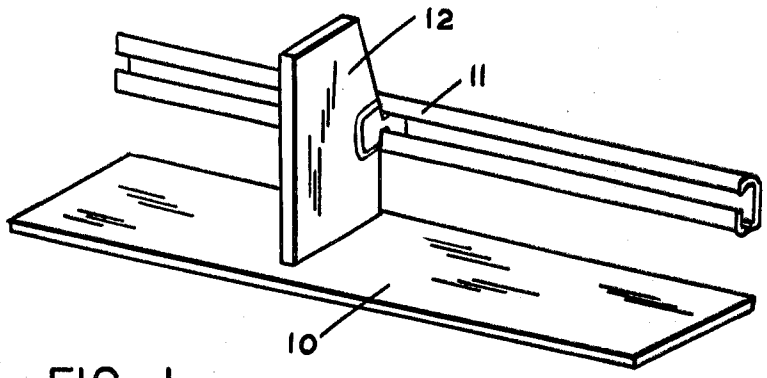


FIG. 1

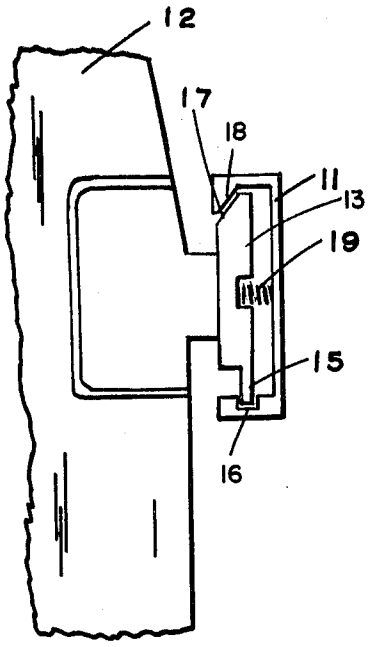


FIG. 2

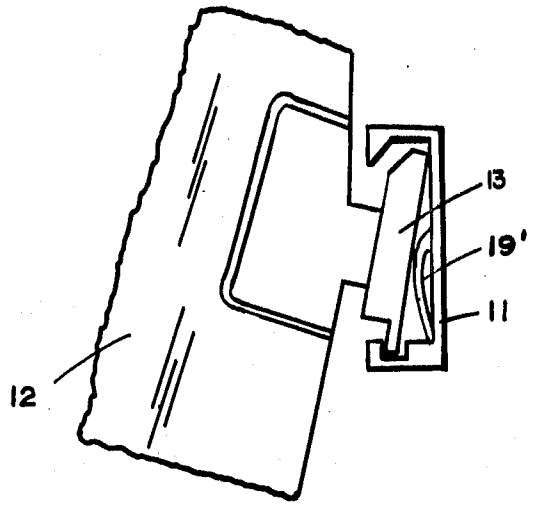


FIG. 3

RUDOLF E. GARTZKE
INVENTOR

BY Keith Scholl
ATTORNEY

TRAVERSABLE HARDWARE IN GUIDEWAY FOR SHELF OR DRAPERY USE

Filed Sept. 9, 1968 3 Sheets-Sheet 2

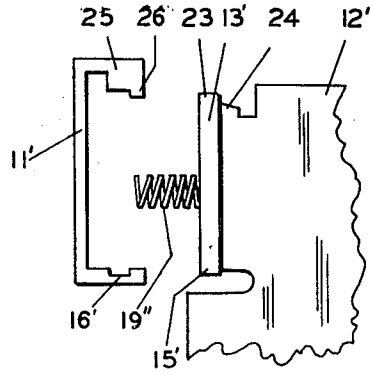


FIG. 4

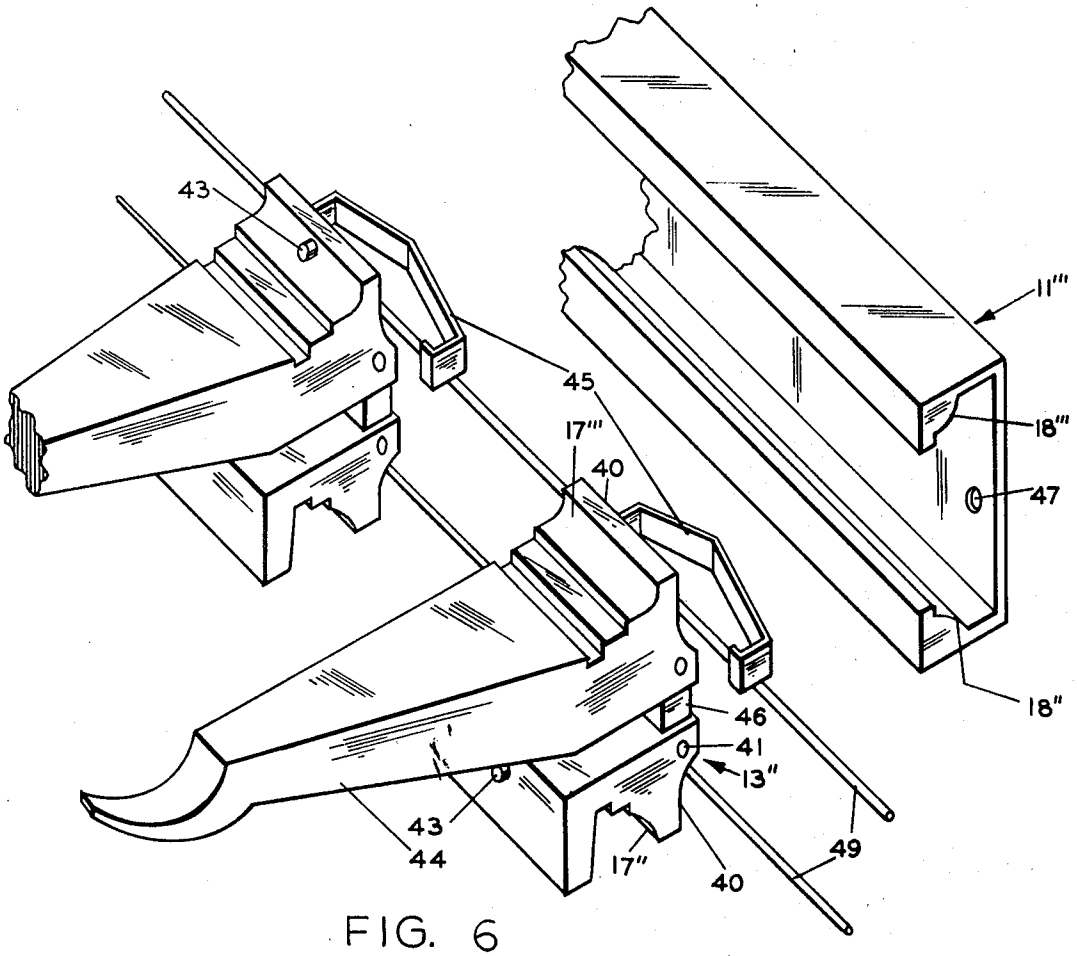


FIG. 6

RUDOLF E. GARTZKE
INVENTOR.
BY Keith Schoff
ATTORNEY

May 25, 1971 R. E. GARTZKE 3,579,710

TRAVERSABLE HARDWARE IN GUIDEWAY FOR SHELF OR DRAPERY USE

Filed Sept. 9, 1968 3 Sheets-Sheet 3

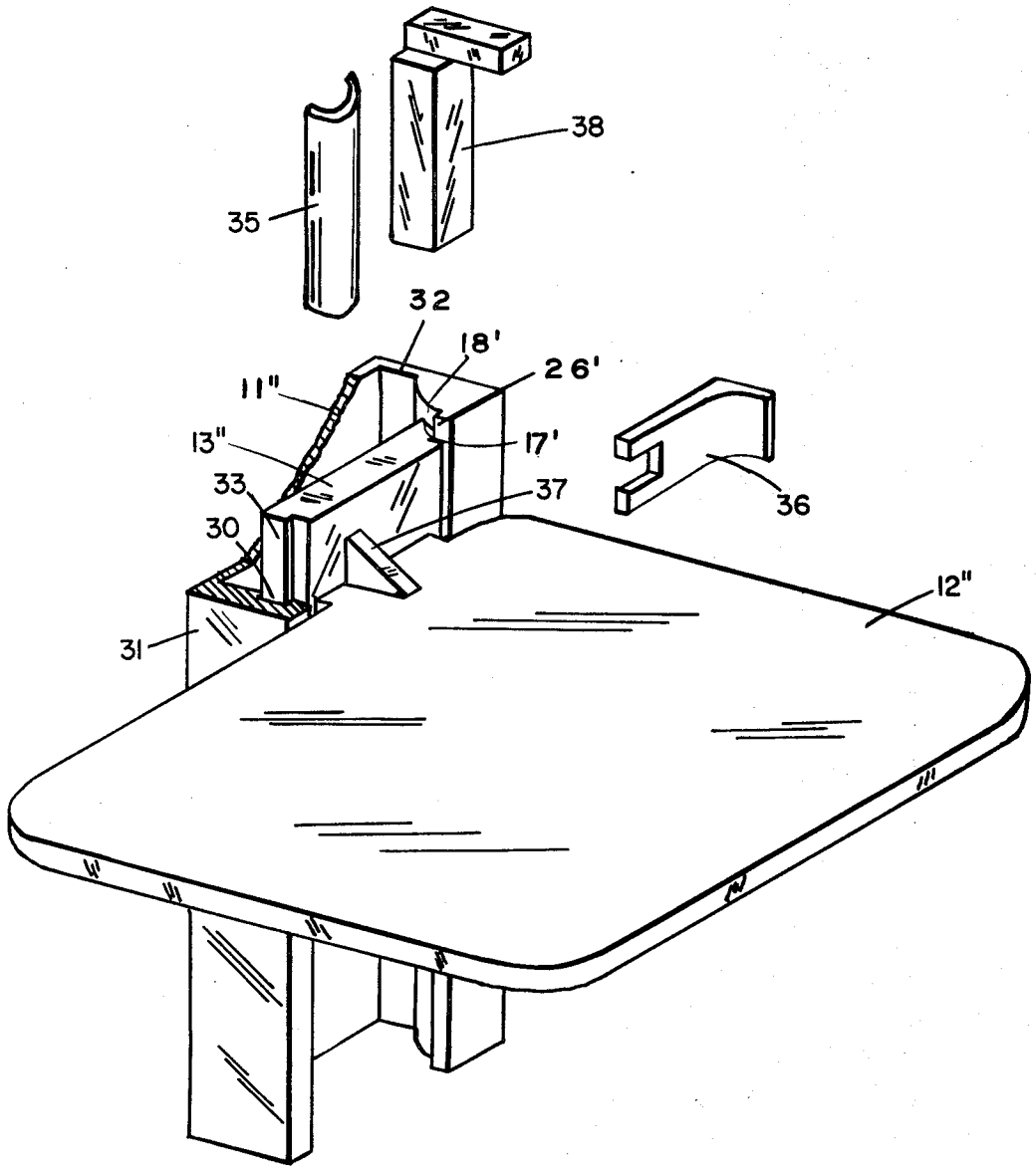


FIG. 5

RUDOLF E. GARTZKE
INVENTOR

BY Keith Sutton
ATTORNEY

United States Patent Office 3,579,710
Patented May 25, 1971

3,579,710

TRAVERSABLE HARDWARE IN GUIDEWAY FOR SHELF OR DRAPERY USE

Rudolf E. Gartzke, Madison, Wis., assignor to Gartzke's Refrigeration, Inc., Madison, Wis.

Continuation-in-part of applications Ser. No. 650,480, June 30, 1967, and Ser. No. 691,104, Dec. 4, 1967. This application Sept. 9, 1968, Ser. No. 766,663
Int. Cl. A47h *15/00*; E05d *13/02*
U.S. Cl. 16—93 9 Claims

ABSTRACT OF THE DISCLOSURE

A guideway and member traversable therein is shown; the member is resiliently urged into contact with the guideway to resist movement by force applied through a moment arm. The guideway is configured as a slotted box section wherein the member is urged against the inner surfaces of lip projections bounding the slot.

This application is a continuation-in-part of Ser. No. 650,480 filed June 30, 1967, and now abandoned, and is a continuation-in-part of Ser. No. 691,104 filed Dec. 4, 1967, and now abandoned.

This invention relates to a guideway and slide member traversable therein which is suitable for various uses such as, for example, shelves, shelf dividers or traverse hardware for draperies, and more particularly relates to an article in which one or more members are continuously insertable and adjustable in a guideway.

Articles such as books, filed folders, etc. which are stored on open shelves must be held in upstanding position by book-end means; similarly drapes must be supported from members which are continuously and easily adjustable along a traverse rod. The means of this invention provides a universal continuously adjustable, easily insertable guide in a guideway combination which is adaptable for use in shelving, shelf dividers, drapery hardware and other similar uses.

It is an object of this invention to provide a combination of a resiliently retained slideable member and guideway in which it is continuously insertable and adjustable.

It is another object of this invention to provide supporting means and retaining guideway therefor for use with shelving, draperies, etc.

Other objects will become apparent from the following detailed description and accompanying drawings in which like numeral refer to like parts and in which:

FIG. 1 is a perspective view of a shelf divider embodiment of this invention shown juxtaposed with a shelf;

FIG. 2 is a side elevation of a portion of an embodiment of FIG. 1 of this invention;

FIG. 3 is a side elevation of a portion of another shelf divider embodiment of this invention shown in a position of spring compression preliminary to being adjusted in a guideway;

FIG. 4 is a side elevation of another shelf divider embodiment of this inmention;

FIG. 5 is a perspective view in partial cutaway of an embodiment of this invention comprising a vertically adjustable horizontal shelf;

FIG. 6 is an exploded perspective view of another embodiment of this invention for use as drapery traverse hardware.

Referring now to FIGS. 1 and 2, shelf **10** is disposed in near adjacency to a vertical wall surface, not shown, to which extruded guideway **11** can be secured by screws or other convenient means. Divider **12** is perpendicularly disposed relative to shelf **10** and is manually adjusted along the length of shelf **10** by lifting the front edge of the divider slightly and then sliding divider **12** longitudinally along guideway **11** above shelf **10**. When manual force on divider **12** is released, it is frictionally secured against further movement by the resilient urging of means **19** (FIG. 2). Divider **12** is operably inserted into guideway **11** at any point along the length of the guideway by placing the uppermost extremity of guide member **13** (FIG. 2) into the top rear interior portion of guideway **11** and then moving the lowermost extremity of guide member **13** rearwardly into the guideway. Divider **12** may then be laterally adjusted to desired position and when released will seat firmly in the guideway.

As shown in FIG. 2, divider **12** is unitarily affixed to guide member **13** by connecting reinforcement. Guide member **13** is of sufficiently great lateral width to provide sufficient contact area with the guideway and transverse dimension to substantially eliminate unwanted movement or twisting of member **13** in guideway **11**. Foot portion **15** of guide member **13** is receivable in channel **16** of guideway **11** and chamfer **17** is disposed at the upper extremity of the guide member adjacent chamfer **18** of guideway **11** so that the two chamfers will operably seat, one against the other. The surfaces of chamfers **17** and **18** may be slip-resisting to prevent relative movement therebetween when they are in contact; such surfaces may be provided by coating with abrasive or rubber or resin such as poly-urethane or other material which imparts a high frictional coefficient to the surfaces. Spring **19** is provided to act against the rear interior surface of guideway **11** to urge guide member **13** forward in a manner to bring chamfers **17** and **18** into contact. Spring **19** is shown in FIG. 2 as a helical spring preferably affixed to guide member **13**. Of course, guide member **13** is configured to limit movement of divider **12** so that it does not rest on shelf **10** and thereby prevent firm contact between chamfers **17** and **18**, but rather is configured to support divider **12** above shelf **10** and insure sound contact between the chamfer surfaces.

Guideway **11** may be formed or fabricated in any operable manner, but is preferably extruded from metal or synthetic resin and cut to length as appropriate either during manufacture or installation. For shelves provided with a back panel, guideway **11** may be secured thereto, or in the absence of a back panel, to a wall surface. It is a particular advantage of this invention that no alteration, modification or addition is required of shelving for installation of the means herein described, and therefore installation costs are minimal.

Divider **12** may be made from any suitable material such as wood, metal or synthetic resin, the latter material in the form of optically transparent plate acrylic resin being preferred for use as a shelf divider because articles next adjacent a divider can be read or identified by viewing through the divider without requiring the divider or article to be removed or withdrawn. Guide member **13** may be made from similar material and if desired may be molded unitarily with divider **12** with spring **19** being inserted into a mold prior to the resin so that it will be embedded in the finished molded article. Numerous synthetic resins may be used with high impact strength materials being preferred for use.

Chamfers **17** and **18** are preferably held in firm contact to resist twisting movement of divider **12** in response to forces exerted through a moment arm. Only a rearward and upward force which tends to rotate guide member **13** about foot portion **15** thereof and to compress spring **19** will operably serve to remove chamfers **17** and **18** from mutual contact and facilitate lateral movement of divider **12**.

In FIG. 3 is shown another embodiment of this invention wherein spring **19'** is shown configured as a leaf rather than as a helix as in FIG. 2. Spring **19'** may be affixed to guideway **11** as shown or to guide member **13**

as may be desired. The material of construction may be metal, synthetic resin, glass fiber reinforced synthetic resin or other resilient material which is characterized by sufficient modulus of elasticity; although rubber or foamed resin may be used, it is not preferred except possibly in applications such as shown in FIG. 6. A resilient contacting force of several pounds as desirable in FIGS. 1–5 is best obtained by a metal spring, either integral with guide member **13** or guideway **11**, or separate from either.

The disposition of guide member **13** on divider **12** may be near either the upper or lower extremity thereof or intermediate the extremities as shown or may be mounted on the bottom of the next higher shelf or may be recessed into the top of the shelf to which the divider is fitted. With apparent modification in the peripheral position of guide member **13** relative to divider **12**, guideway **11** may be positioned on either the front or rear edge of a shelf. To increase frictional contact between guide member **13** and guideway **11**, foot portion **15** may be broadened in the manner of chamfer **17**, and in addition any of the contacting surfaces of the chamfers and of the foot portion and channel may be serrated or otherwise provided with surface texture or character to increase resistance to movement when the guide member is seated in the channel.

In FIG. 4 is shown another preferred embodiment of a guide member and guideway of this invention. Guide member **13'** is integral with divider **12'** at the upper rear extremity of the divider and is configured with a foot portion **15'** depending slightly at the lower extremity of the guide member. Foot portion **15'** runs in channel **16'** of guideway **11'** when the members are operably engaged. The upper extremity of guide member **13'** is configured with elevated runner **23** and tapered shoulder **24** disposed to be in near adjacency to the lower surfaces of spacer **25** and lip **26**, respectively, when guide member **13'** and guideway **11'** are engaged. A close fit between guide member **13'** in guideway **11'** enables the guide member to run freely in the guideway when spring **19''** is compressed in response to force components parallel to a longitudinal axis of guideway **11'**, but to resist movement by force components which would twist guide member **13'** about an axis perpendicular thereto. The dimension of guideway **11'** perpendicular to the surface to which the guideway is attachable is preferably about one-half inch, or such lesser dimension as may be occupied by means, if any, for adjustably retaining the shelves, so that usable shelf area is not reduced by guideway **11'**. The guide member and the guideway may be provided with high frictional coefficient surfaces as hereinbefore described; however, in the embodiment shown in FIG. 4 there are no chamfered fraying surfaces, and contact is made by guide member **13'** bearing against lip **26**.

In FIG. 5 is shown an embodiment of this invention disposed as a horizontal shelf. Guideway **11''** is configured with recessed channel **30** disposed interiorly of side rail **31** and is further configured with chamfer **18'** comprising a curved surface, disposed interiorly of side rail **32**. Guideway **11''** may be secured vertically to a wall with rails **31** and **32** projecting outwardly from the wall surface. Lip **26'** is shown projecting beyond chamfer **18'**. Guide member **13''** is configured to fit closely in guideway **11''** and to slide easily through the guideway. Foot portion **33** of guide member **13''** projects into channel **30** and guide member **13''** is firmly seated in guideway **11''** by chamfered surface **17'** being forcibly contacted against chamfer **18'**. Contact may be implemented by resilient means hereinbefore described or by use of either resilient curved resinous member **35** being disposed interiorly of guideway **11''** between the guide member and the guideway or by yoke member **36** being operably inserted between guideway **11''** and shelf **12''**. Guide member **13''** is affixed to shelf **12''** and fillets **37** may be provided as shown above and/or below shelf **12''** to structurally reinforce the shelf. To traverse unitary guide member and shelf along guideway **11''**, members **35** and **36** are removed, if present, and forcible engagement between curved chamber **18'** and chamfered surface **17'** is relieved thereby enabling shelf **12''** to be raised or lowered to desired position. Re-engaging chamfered surface **17'** with chamfer **18'** seats guide member **13''** and locks shelf **12''** in position. Alternate locking member **38** is shown disposed apart from guide member **13'** and guideway **11''** in position for being inserted between the rear interior of guideway **11''** and the back of guide member **13''**. Member **38** is dimensioned to drop easily into place, but without additional clearance than is required therefor to assure that chamfered surface **17'** of guide member **13''** is kept in near adjacency to chamfer **18'** and that foot portion **33** is retained in channel **30**. While foot portion **33** is operably seated in channel **30**, a force vector acting perpendicularly to the faces of cantilevered member **12''**, or the mere weight of member **12''** will frictionally bind foot portion **33** in channal **30** and prevent relative movement therebetween. Insertion of any one of member **35**, **36**, or **38** will insure seating of foot portion **33** in channel **30** and frictional contact between guide member **13''** and guideway **11''**. To remove guide member **13''** from guideway **11''**, the guide member is manipulated to place chamfered surface **17'** immediately adjacent to a rear interior corner of guideway **11''** thereby clearing foot portion **33** of channel **30** and enabling the guide member to be moved free of guideway **1''** and be withdrawn therefrom.

In FIG. 6 is shown another embodiment of this invention wherein traverse hardware for draperies comprises guideway **11'''** configured with two curved chamfers **18''** and **18'''** symmetrically disposed so that disorientation with respect to inverted position is impossible. Drapery hanger members **13''** are configured with symmetrically disposed surfaces **17''** and **17'''**, which engage surfaces **18''** and **18'''**, respectively, and which may either be curved or flat and preferably are of low frictional character for easy traversing in guideway **11'''**. The upper and lower rearward face portions **40** of slide members **13''** are configured as forward extending recesses to provide space for passage of draw cords **42** between the rear of slide members **13''** and guideway **11'''**; alternatively, cords **49** may be threaded through passages **41** in members **13''**. Fastening studs **43** are provided in slides **13''** as terminal anchor means for cords **49**, but are used only in the terminal members **13''** disposed adjacent the leading edge of the drapery which is drawn to effect closure of the draperies. The arrangement of cords and drapery hangers is conventional with two pull cords being manipulated to open or close the drapery.

Drapery hook portions **44** are integral with member **13''** as shown and project forward into position for receiving rings or hooks which are secured to drapery fabric. The dimension of members **13''** longitudinally of guideway **11'''** is at least as great for the portion thereof disposed within the confines of guideway **11'''** as for portions extending therebeyond so that force of contact between members **13''** is exerted substantially axially coincidentally with the interior confine of guideway **11'''** and without a component force acting through a moment arm which would tend to twist a member **13''** and cause it to bind in guideway **11'''**.

Resilient spring clip **45** clips on recessed portion **46** of member **13''** and is bowed to exert only very moderate force to retain member **13''** in contact with surfaces **18''**, **18'''**; high frictional coefficient for the contacting surfaces is undesirable and consequently only light spring pressure is desirable. Alternatively, other spring means or other resilient means such as elastomeric or plastomeric foamed or solid resin may be used in place of spring **45**. It is desirable, but not necessary, to provide sufficient clearance to enable member **13''** to be inserted into guideway **11''** anywhere along its length in a manner as hereinbefore described; however, members **13''** may be of such dimension as to require insertion into the open end of guide-

way 11'''. Screw holes 47 are provided in guideway 11''' for fastening the hardware in position for use. All manner of mounting and use of the described drapery hardware is conventional. Guideway 11''' may be used in the embodiments of this invention as hereinbefore described in relation and in place of guideway 11 of FIGS. 1–3, guideway 11' of FIG. 4, guideway 11'' of FIG. 5, and may be preferred in the last mentioned figure to guideway 11'' thereof.

While certain modifications and embodiments of the invention have been described for use as shelving, shelf dividers and drapery hardware, it is of course to be understood that there are a great number of variations and uses which will suggest themselves to anyone familiar with the subject matter hereof and it is to be distinctly understood that this invention should not be limited in its scope and uses except by limitations clearly imposed in the appended claims.

I claim:

1. A retaining guideway and a traversable slide member operable therein comprising in combination

(a) a guideway configured with a longitudinal slot therein, said slot communicating volumes interior and exterior thereof and substantially co-extensive therewith, the edges of said guideway being of continuous, substantially parallel configuration along the length of said guideway;

(b) said interior volume of said guideway extending therewithin beyond the faces of said slot;

(c) said slide member being configured to be operably received in said guideway and to be slideably in contact with at least one interior surface of said guideway projecting rearwardly from said slot and be fixedly retained therein by being frictionally urged into contact with the interior surface of the side of said guideway in which said slot is disposed;

(d) a projecting portion of said slide member extending through said slot exteriorly of said guideway;

(e) a spacer member disposed intermediate said guideway and said slide member disposed to urge said slide member toward said slot, said slide member being operably traversable longitudinally of said guideway.

2. The combination of claim 1 wherein the said interior surface of the side of said guideway in which said slot is disposed comprises a depending projection substantially bounding one extremity of said slot and a channel substantially bounding the other extremity of said slot and wherein said slide member is configured with one extremity disposed to fay with said depending projection and with a foot portion disposed to be received in said channel and supported thereby.

3. The combination of claim 2 wherein said depending projection comprises a chamfer.

4. The combination of claim 1 wherein said projecting portion of said slide member extending through said slot is configured as a cantilever for receiving drapery hooks.

5. The combination of claim 1 wherein said slide member is configured with forward extending recess portions in the rear face thereof which provide space between said guideway and said slide member for passage of drapery cords.

6. The combination of claim 1 wherein means are provided in said slide member for anchoring cord means.

7. The combination of claim 1 wherein said spacer member comprises resilient means.

8. The combination of claim 1 wherein locking means is provided for restraining movement of said slide member from contact with said interior surface of the side of said guideway in which said slot is disposed.

9. The combination of claim 1 wherein said projecting portion of said slide member extending through said slot is of substantially planar configuration disposed substantially perpendicularly to the longitudinal axis of said guideway.

References Cited

UNITED STATES PATENTS

1,254,766	1/1918	Blades	211—184UX
2,015,269	9/1935	Henry	16—93
2,688,409	9/1954	Echlin	211—184
3,248,749	5/1966	Williams	16—93
3,366,998	2/1968	Jansson	24—73BCMF
3,434,524	3/1969	Fein	16—87.4X

FOREIGN PATENTS

233,532	4/1961	Australia	16—93
394,537	11/1965	Switzerland	211—43

DONALD A. GRIFFIN, Primary Examiner

U.S. Cl. X.R.

211—184