

Feb. 3, 1970

W. S. BROWN, JR., ET AL

3,493,032

GUIDE TRACK FOR MOVABLE PARTITIONS

Filed June 13, 1968

3 Sheets-Sheet 1

FIG 1

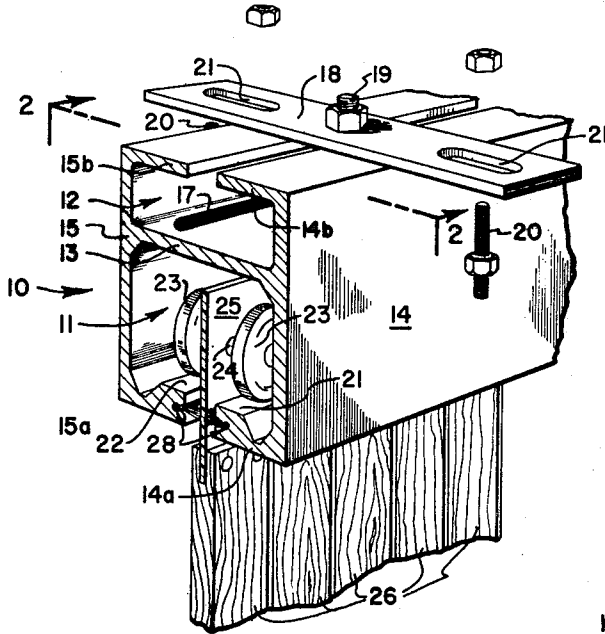


FIG 3

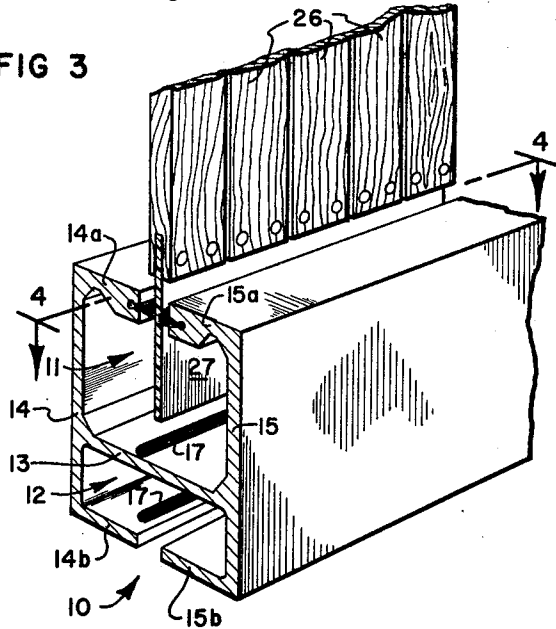
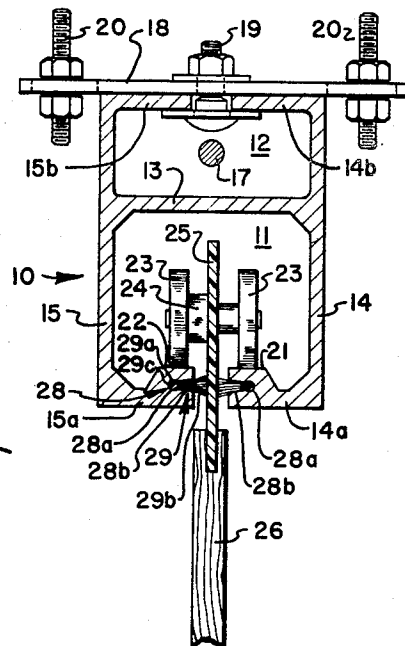


FIG 2



INVENTORS:
WILLIAM S. BROWN, JR.
MERLIN W. BALLARD

BY:

B. Brown

ATTORNEY

Feb. 3, 1970

W. S. BROWN, JR., ET AL

3,493,032

GUIDE TRACK FOR MOVABLE PARTITIONS

Filed June 13, 1968

3 Sheets-Sheet 2

FIG 4

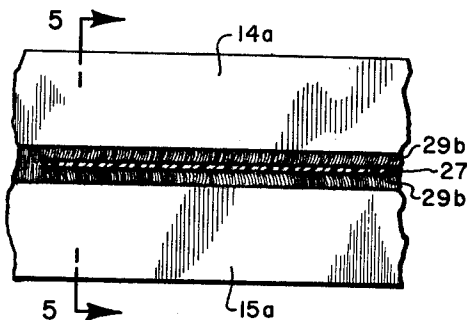


FIG 5

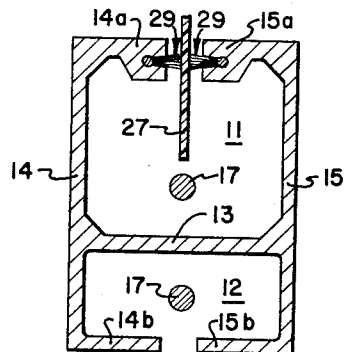


FIG 8

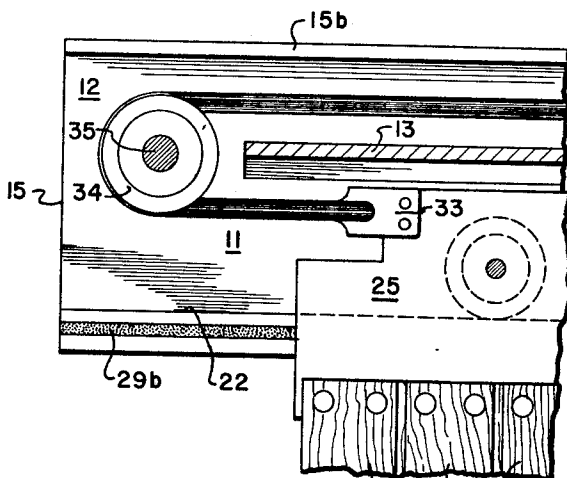


FIG 6

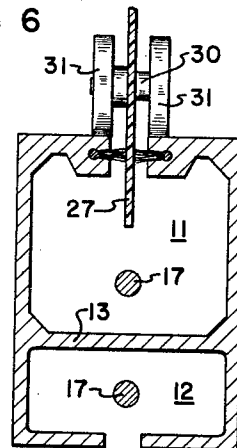


FIG 9

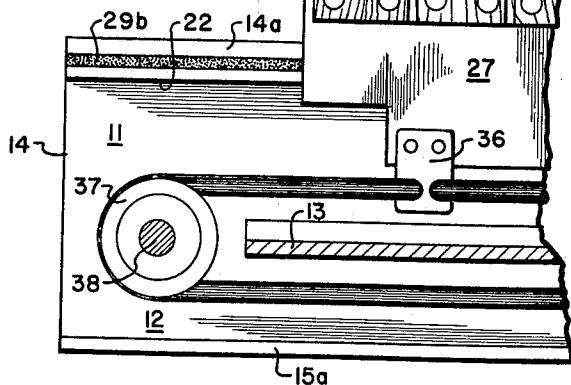
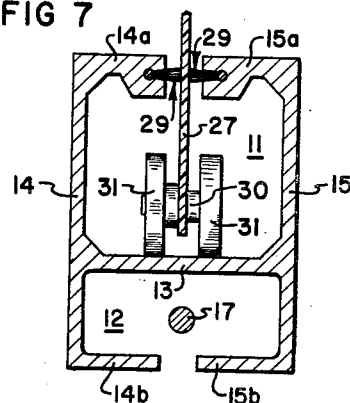


FIG 7



INVENTORS:
WILLIAM S. BROWN, JR.
MERLIN W. BALLARD

BY:

B. Brown

ATTORNEY

Feb. 3, 1970

W. S. BROWN, JR., ET AL

3,493,032

GUIDE TRACK FOR MOVABLE PARTITIONS

Filed June 13, 1968

3 Sheets-Sheet 3

FIG 10

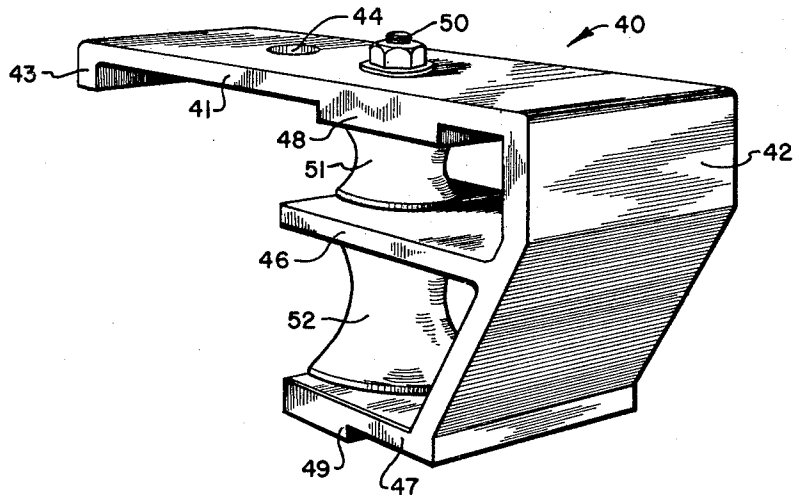


FIG 11

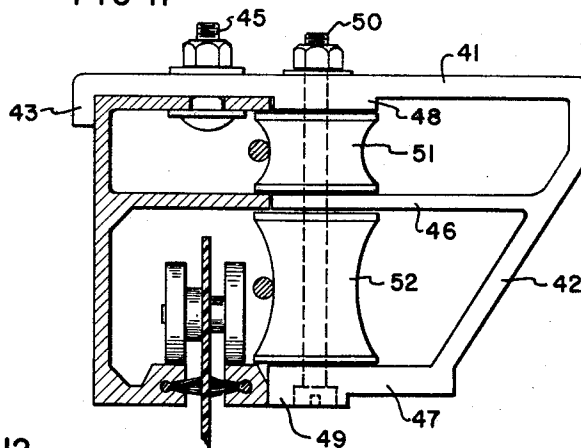
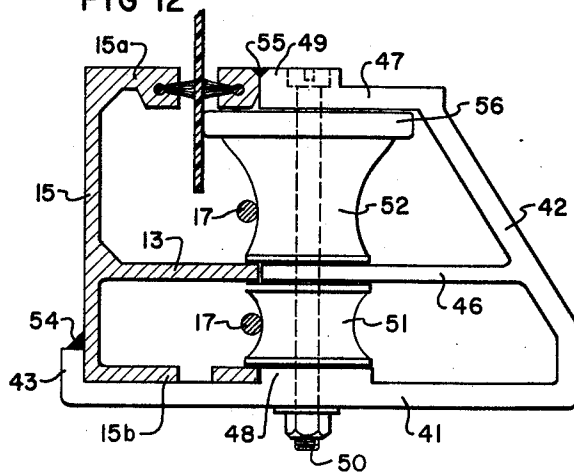


FIG 12



INVENTORS:
WILLIAM S. BROWN, JR.
MERLIN W. BALLARD
BY:

B. Deane

ATTORNEY

1

3,493,032

GUIDE TRACK FOR MOVABLE PARTITIONS
William S. Brown, Jr., 1264 Greenfield Circle, and Merlin
W. Ballard, 2082 Brent Lane, both of Salt Lake City,
Utah 84121

Filed June 13, 1968, Ser. No. 736,754

Int. Cl. E05d 15/06

U.S. Cl. 160—201

5 Claims

ABSTRACT OF THE DISCLOSURE

A guide track useful as both upper and lower tracks for straight or curved coilable partitions. It provides separated compartments for the cables used to move the partitions and has an access slot to each compartment to facilitate cable positioning and placement of the track such that a portion of the partition it is used with will extend upwardly into one compartment when the track is used as an upper track and downwardly into the same compartment when the track is used as a lower track. The one compartment has guide surfaces for support wheels and grooves to receive flexible sealing elements that are adapted to slidably pass the upper and lower ends of the partition. A radius guide bracket is attached to pass an operating cable, or operating cables, around a curve formed by the track.

Brief description

In the guiding of movable partitions, such as coilable slat walls and sliding doors, it is generally desirable to have both an upper and a lower track so that the partition is not only positively guided, but is also supported against swinging transversely to its direction of travel. Both tracks may perform supporting and stabilizing functions or one may be used merely to stabilize the partition. In any event, both must present a clean attractive appearance in order not to detract from the appearance of the building in which the partition is installed.

To insure smooth continuous operation, means must be provided to keep dust and dirt from accumulating in the tracks. When the partitions are cable operated and are to be passed around a curve, means are advantageously provided for separating the cables and for guiding the cables throughout their entire lengths in such a manner that binding or damage to the tracks or cable does not occur. Cable operated partitions of this coilable type and drive means for them are well known.

It is a principal object of this invention to provide a guide track suitable for use with movable partitions, both as an upper guide track and as a lower guide track.

It is another object to provide a guide track that is particularly useful with cable operated movable partitions that are capable of traversing a curve.

It is an outstanding feature of the guide track of the invention that it can be used, without structural modification, and merely by turning it upside down, as either an upper guide track or a lower guide track.

Other outstanding features of the guide track of the invention are the separated compartment passage for the cable or cables used to move the partition, and the attachable radius guide brackets that allow the cable to freely traverse a curve, without damaging the tracks and without the cable or cables being damaged.

Additional objects and features of the invention will become apparent from the following detailed description and drawings, disclosing what is presently contemplated as being the best mode of the invention.

Brief summary

A track unit useful as either an upper or a lower guide track of movable partitions. Separated compartments

2

maintain the operating cables of the partitions separate and a radius guide attachment is provided to guide the cables around curves.

The drawings

FIG. 1 is a fragmentary perspective view of the guide track of the invention used as an upper guide track, with a movable partition, also shown fragmentarily, suspended therefrom;

FIG. 2 a vertical section taken on the line 2—2 of FIG. 1;

FIG. 3 a view like FIG. 1, but with the guide track used as a lower track and the movable partition extending downwardly thereinto;

FIG. 4 a horizontal section, taken on the line 4—4 of FIG. 3;

FIG. 5 a vertical section, taken on the line 5—5 of FIG. 4;

FIG. 6 a view like FIG. 5, but showing the partition having rollers traveling on the uppermost surface of the lower track;

FIG. 7 a view like FIGS. 5 and 6, but showing the partition having rollers running on a surface of the central portion of the lower track;

FIG. 8 a central vertical section taken through the guide track, as used as an upper track, and showing how the center portion is removed to provide for pulley placement;

FIG. 9 a view similar to that of FIG. 7, but showing the guide track used as a lower track;

FIG. 10 a perspective view of an attachable radius guide bracket;

FIG. 11 a vertical section through an upper track having a radius guide bracket attached; and

FIG. 12 a vertical section through a lower track having a radius guide bracket attached.

Detailed description

Referring now to the drawings:

In the illustrated, preferred, embodiment the basic guide track of the invention is shown generally at 10. As shown, it includes a first compartment 11 and a second compartment 12 separated by a central web 13.

The central web extends between side walls 14 and 15, which are inturned at flanges 14a and 15a, respectively, to define with the central web 13, the compartment 11. Side walls 14 and 15 are also inturned at flanges 14b and 15b, respectively, to define with the center partition the compartment 12.

Preferably the opposed flanges 14b and 15b have a space between them. This facilitates placement of a cable 17 therein and makes it easier to secure the guide track to an overhead or floor support. Although there are many possible ways for securing the guide track to an overhead support, one exemplary method is shown in FIGS. 1 and 2, wherein a hanger strap 18 is bolted to the flanges 14b and 15b by a carriage bolt 19, and full threaded bolts 20, are then inserted upwardly through elongated holes 21 in the overhanging portions of the strap and through an overhead support before anchoring nuts are placed thereon. The spacing, positioning, and number of the hanger straps used will be dependent upon the particular requirements of the installation. The illustrated arrangement allows the hanger straps to be moved longitudinally along the track, the bolts 20 to be moved transversely in and out with respect to the track and the track to be positioned vertically so that the track can be anchored to give the best possible support, alignment and positioning of the movable partition.

The flanges 14a and 15a are respectively provided with longitudinally built up runner surfaces 21 and 22 that can serve as non-binding guide paths for rollers 23 that

e mounted on axle shafts 24 extending through a flexible upper edging 25 of the movable partition. In the partition illustrated, vertical slats 26 are riveted to the upper edging 25 and to a similar flexible lower edging 27, FIG. 5, such that the partition will traverse curves and can be filed for storage. While other materials can be used, iron has been found very suitable for the edgings 25 and 27, and the slats 26 can be made of wood, plastic, metal or other desired material.

The spaced apart flanges 14a and 15a provide clearance for the upper edging 25 when the guide track is used as an upper track and the lower edging 27, when it is used as a lower track.

The inner, or facing, edges of the flanges 14a and 15a are each provided with a seal retainer groove 28. The grooves include an enlarged seal 28a and a mouth 28b, directed outwardly from the seal and a long sealing element 29, shown best in FIG. 2, is inserted into and projects from each groove 28.

Sealing element 29 includes a bead 29a of deformable, resilient material such as rubber, closely spaced, flexible bristles 29b and a portion 29c of rubber or the like into which the bristles are embedded and which anchors the bristles to the bead. In placing the sealing elements into the grooves, the beads 29a are compressed, forced into the grooves 28a and allowed to expand, thereby securing the sealing elements in place or they are pulled in from one end of the track. The bristles of the opposing sealing members will normally overlap and interfit thereby preventing admission of dust and the like into the track and closing the otherwise unsightly gap formed between flanges 14a and 15a. When the movable partition is moved between them, however, the bristles of the sealing members merely rush against an edging 25 or 27.

As best seen in FIG. 5, the guide track, when used as a lower track, can perform a stabilizing function, with the flexible edging 27 extending downwardly between the intumed flanges 14a and 15a and the opposed sealing elements 29. Alternatively, the lower track can both support and stabilize the partition. As shown in FIG. 6, the lower flexible edging 27 of the partition journals on axle shaft 30 that has wheels 31 mounted thereon. The wheels are then positioned to run on the uppermost surface of the lower track, which then becomes a non-binding guide path for the rollers, with the flexible edging of the movable partition extending downwardly therefrom and into the compartment 11. The wheels 31 can also be placed inside the compartment 12, FIG. 7, where they will travel on the central web 13, with the web then serving as a non-binding guide path for the rollers.

It should be apparent that the lower track can be set into a building floor so that the upper surface of the track is flush with the floor or it can be arranged to protrude above the floor level. The particular arrangement employed will depend upon the particular installation situation.

If two cables (not shown) are used to move the partition, they can be easily separated by placing one in compartment 11 and one in compartment 12. If a single cable 17 is used, with a pulley system such as is disclosed, for example, in the co-pending application for U.S. Patent, Ser. No. 717,338, of Hugh M. Lyman, the cable can be connected at 33, FIG. 8, to the forward end of edging 25 in compartment 11 of the upper track, be passed around a pulley 34 journaled about an axis 35 that extends between the side walls where a section of web 13 has been removed, and be passed back through compartment 12. The cable 17 can then be passed through compartment 11 of the lower track, be connected at 36, FIG. 9, to the forward end of edging 27, be passed around a pulley 37 journaled on an axle shaft 38 extending between the side walls where a section of central web 13 has been removed and then be passed back through compartment 12 to a take up drum, not shown.

The length of the upper and lower tracks used for any

movable partition will be dependent upon the particular installation requirements. The tracks can be curved, if desired, and if the partition used is constructed to be able to traverse the curve or curves. The guide rail is preferably made in standard lengths, each of a single continuous extrusion and is preferably made in predetermined lengths of extruded aluminum or it can be made of other suitable, lightweight, durable material.

If the track is curved additional means are required to keep the cable from cutting into the side of the track on the inside radius of the curve and thereby damaging either or both the cable and the track. Thus, radius guide brackets of the type shown at 40, FIGS. 10 and 11, are provided.

Each radius guide bracket includes a long arm 41 that projects from a wall 42 and that has a depending end 43; adapted to hook over the remote side of the upper track when the radius guide is installed. A hole 44 in the arm 41 is adapted to be aligned with the space between intumed flanges 14a and 15 of the track 10 so that a carriage bolt 45 can be used to bolt the radius guide to the track. Prior to such assembly, the side wall of the track forming the inner radius of the curve is cut away far enough to allow placement of the radius guide.

A center arm 46, of the radius guide, projects from wall 42 and is adapted to be aligned with the center partition of the track and a short arm 47 also projects from the wall 42 to be in alignment with flange 14a. Bosses 48 and 49 are provided on the arms 41 and 47, respectively to reinforce them at points where a bolt 50 is passed therethrough. Bolt 50 also passes through a hole provided therefore in center arm 46 and a pair of concavely shaped guide rollers 51 and 52 are journaled on the bolt 50 between center arm 46 and long arm 41 and center arm 46 and short arm 47, respectively. Each cable guide roller, when the radius guide bracket is attached, extends into the track 10 far enough to prevent the cable 17 contacting the wall of the track.

As shown in FIG. 12, the radius guide bracket can be welded at 54 and 55 to the track, rather than bolted and partition guide roller 56 can be provided on bolt 50 to serve as a guide for the flexible edging of the partition as it is passed around the curve.

The radius guide bracket except for the rollers, is preferably made of a lightweight, yet durable, material such as aluminum, and the rollers are preferably made of steel or other such material not subject to being damaged by cable 17. If found desirable, bearings can be provided to insure free rotation of the rollers. The radius guide brackets can be individually formed or can be extruded in long lengths and then cut to desired size before the guide rollers are inserted.

The number and spacing of radius guides will be dependent upon such factors as the length of the curve and the arc traversed. It will be apparent that the radius guide bracket can be employed either when the guide track is used as an upper track, FIG. 11, or as a lower track, FIG. 12. It should also be apparent that they will fit equally well on either side of the track.

We claim:

1. A guide track for movable partitions comprising:
 - a pair of elongated compartments arranged one immediately above the other;
 - a solid horizontal web forming a common wall dividing said compartments;
 - a pair of intumed, spaced apart horizontal flanges formed by the walls of each of the compartments at the sides opposite the common horizontal web, said flanges defining longitudinal slots therebetween;
 - roller receiving pathways formed on opposite faces of one pair of intumed flanges; and
 - a radius guide bracket having at least one radius guide roller and support means for the roller secured to at least one of the compartments such that the roller surface extends into at least one of the compartments

5

through a side wall thereof and each said guide roller is adapted to turn about an axis normal to the elongate axis of the compartments.

2. A guide track for movable partitions as in claim 1, wherein at least one cable guide roller is provided for each compartment and each guide roller extends into a compartment through a side wall thereof. 5

3. A guide track for movable partitions as in claim 2, wherein a common axis, carried by the radius guide bracket supports pairs of guide rollers, with one of each pair of rollers extending into one compartment and the other roller extending into the other compartment. 10

4. A guide track for movable partitions as in claim 1, wherein the support means for the rollers comprises an arm adapted to reach over and hook on of the compartments, a web between the guide rollers and aligned with the web forming a common wall of the compartments and a flange aligned with the intumed flanges of the other compartment. 15

5. A guide track for movable partitions as in claim 1, wherein: 20

6

each of the cable guide rollers has a concave surface to receive a cable, and

at least one cable guide roller has a circumferential flange projecting therefrom to provide a partitioning guide surface.

References Cited

UNITED STATES PATENTS

1,868,233	7/1932	Hungerford	160—19
2,599,747	6/1952	Craigon.	
2,658,571	11/1953	Guth et al.	160—199
2,934,139	4/1960	Wardlaw et al.	160—133
3,073,383	1/1963	Crick	160—199
3,090,430	5/1963	Carlo	160—40
3,231,005	1/1966	Cookson et al.	160—133
3,349,829	10/1967	Dixon	160—199

DENNIS L. TAYLOR, Primary Examiner

U.S. Cl. X.R.

16—87