Jan. 27, 1970 S. E. HUBBARD 3,491,400

SLIDING WALL PANEL SYSTEM

Original Filed Aug. 4, 1965 3 Sheets-Sheet 1

FIG. 1

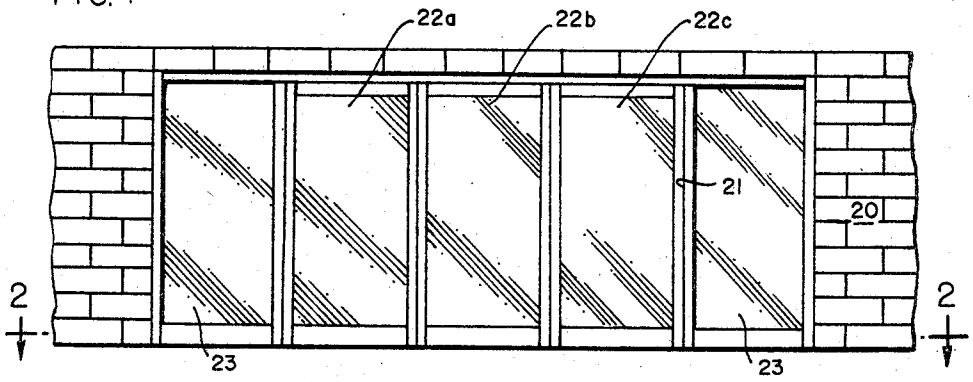


FIG. 2

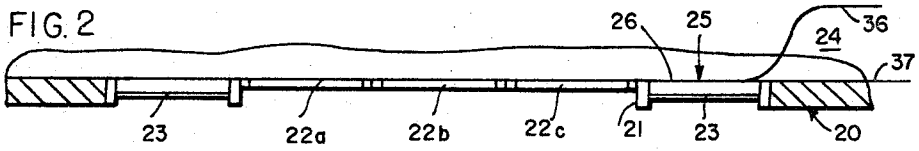
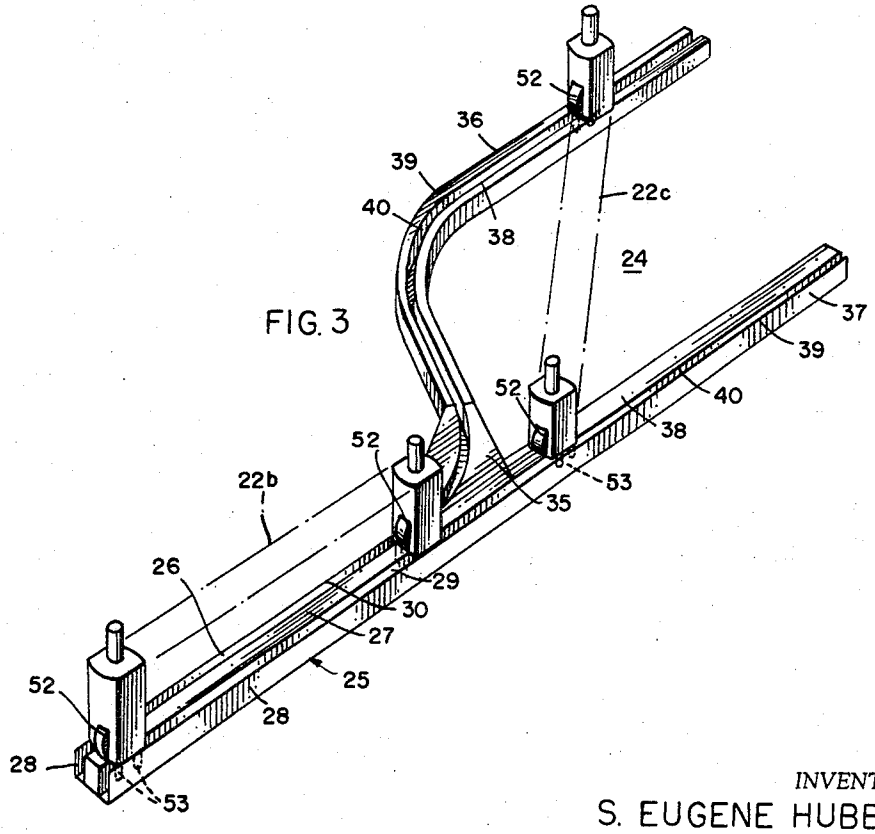


FIG. 3



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FIG. 4

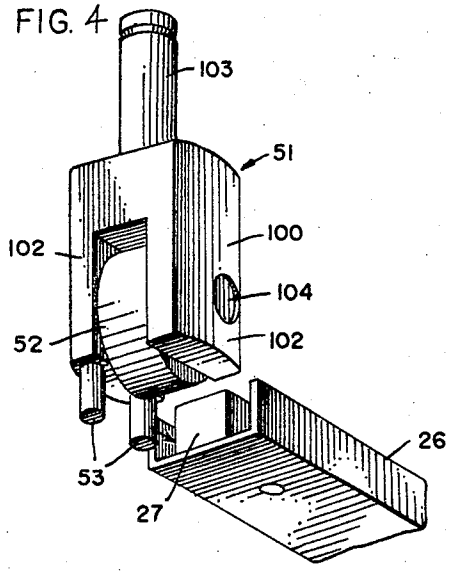
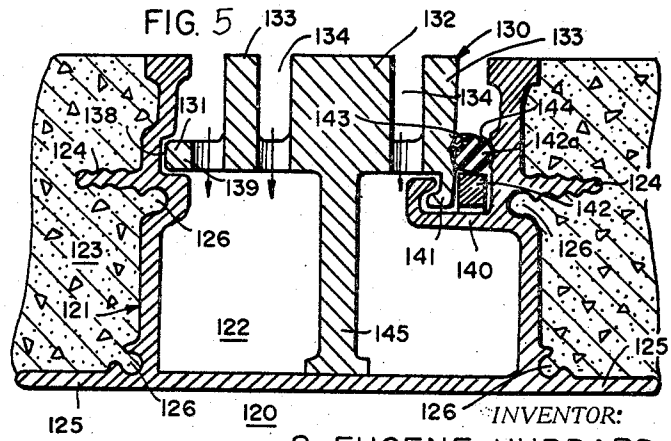


FIG. 5



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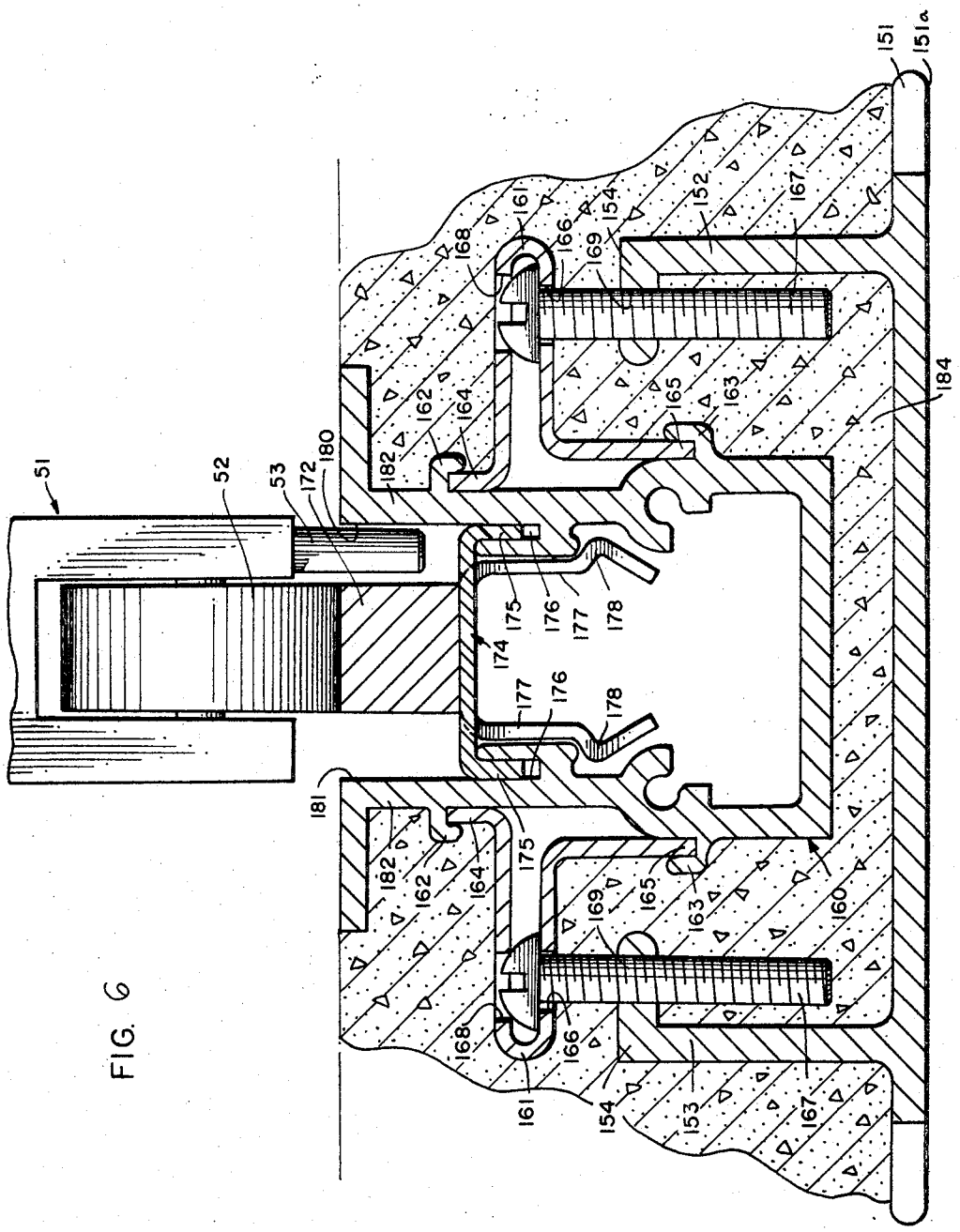


FIG. 6

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SLIDING WALL PANEL SYSTEM

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Original application Aug. 4, 1965, Ser. No. 477,188, now Patent No. 3,334,375, dated Aug. 8, 1967. Divided and this application July 24, 1967, Ser. No. 664,586

Int. Cl. E05d *15/26, 15/06;* E06b *7/14*

U.S. Cl. 16—96 10 Claims

ABSTRACT OF THE DISCLOSURE

An improved track structure is provided for a sliding panel such as would be used in a storefront construction and the like. The improved track structure includes drainage means below the track elements for draining moisture from the track channels. If desired the track may be adjustably suspended from suitable track shoe supports to provide for leveling the track. The track and shoe supports would be imbedded in concrete or other floor material after suitable leveling of the track.

This application is a division of Ser. No. 477,188 filed Aug. 4, 1965 and now Patent No. 3,334,375 issued Aug. 8, 1967.

The present invention relates to a new and improved sliding wall panel system and, more particularly, to a system of components for the construction of operable wall panels such as used on store and building fronts, and to new and improved sliding wall panels and improved hardware therefor.

Such sliding building fronts, consisting usually of large glazed panels and manually-operated swinging-door entrances, are useful where it is desired to effect immediate change from open-air to enclosed operation in response to weather, seasonal, or merchandising changes.

Operable wall panels or store fronts have been in part an outgrowth of the very rapid development brought about by the dramatic introduction of the enclosed mall shopping center. They differ from sliding doors not only in size, but in that they are customarily exposed to the weathering and structural forces characteristic of stationary building fronts. Moreover another point of difference is that they must include within their own boundaries fully practical entrance doors for use during periods when for reasons of weather or season the front as a whole is closed.

In accordance with the present invention there is provided a self draining track for use within a sliding wall panel and including a generally channel-shaped base member defining a drainage channel. A rail support extends across the channel and carries a rail. Flange means extend upwardly at opposite sides of the rail to define the guide grooves for receiving the guide means on the casters.

In accordance with yet another feature of the present invention means are provided for fastening the lower track to a building with suitable power tools, and thereafter for accurately leveling the rail of the track by suitable threaded members.

For a better understanding of the present invention reference may be had to the accompanying drawings wherein:

FIG. 1 is a fragmentary front elevational view of a building incorporating a sliding panel assembly according to the present invention;

FIG. 2 is a cross sectional plan view of the building wall of FIG. 1 taken along line 2—2 of FIG. 1, illustrating

the opening in the building and the storage area for the panels;

FIG. 3 is a schematic view of the track section of the panels of FIGS. 1 and 2, and illustrating the diverging track leading to the storage area;

FIG. 4 is a fragmentary schematic view of a lower caster and track geometry according to the present invention;

FIG. 5 is a cross sectional view of a self draining lower track according to the present invention; and

FIG. 6 is a cross sectional view of another embodiment of a self draining lower track adapted for power tool installation according to the present invention.

Referring now to the drawings, and particularly to the embodiment of FIGS. 1 through 5, there is illustrated the sliding wall panel and track geometry according to the present invention. As therein illustrated there is shown a building wall **20** having an opening **21** closed by a plurality of wall panels **22***a*, **22***b*, **22***c*, collectively hereinafter referred to as **22**. In addition, in the illustrated embodiment, there are provided a pair of fixed side panels **23** on respective sides of the opening **21**. It is understood, of course, that any desired opening may be closed by the sliding panels according to the present invention. The panels **22** move along a track **25** alongside of the opening **21** and into a storage area **24**.

Referring now to the track geometry, as schematically illustrated in FIGS. 3 and 4, the track across the opening **21** in the building **20** is a double-grooved portion **26** including a center rail **27** and a pair of spaced flanges **28** defining respective guide grooves **29**, **30**.

To provide for stacking of the doors in the door storage area **24**, the rail **27** divides, as at **35**, FIG. 3, into a pair of spaced single-groove track sections **36**, **37**. Each of the track sections **36**, **37** includes a rail portion **38** and an outwardly spaced flange **39** providing a single groove **40** spaced outwardly from the rail portions **38**.

To provide for guiding the panels **22** along the track **25** into the storage area **24**, each of the panels **22** is provided with a pair of spaced lower casters **50** and **51**, FIG. 4, each including a flat-faced roller **52** adapted to ride on a flat rail of the track **25**, and a depending guide **53**. The guides **53** of respective casters **50**, **51** are received in opposite ones of the grooves **29**, **30** so as to selectively guide the forward and back ends of the sliding door panel. The casters **50** and **51** are spaced apart a greater distance than the spacing between the single track sections **36** and **37**, as best illustrated in FIG. 3, so as to afford stability to the panel when it is in the storage area.

From the preceding description it is evident that with the two lower casters placed on the rail of the double-groove track with their guides in opposite ones of the grooves, each caster will be constrained to follow the groove into which its guide means are engaged, as best illustrated in FIG. 3.

FIG. 4 illustrates the caster **51** in greater detail. As therein illustrated, the caster **51** includes an inverted fork-shaped yoke **100** having a pair of spaced lower arms **102** extending from an upper shaft **103**. The flat-faced roller **52** rides on the rail **27** and is supported on the axle **104** extending between the arms **102**. Suitable guide means, here shown as the guide pins **53**, extend from the lower edge of one of the arms **102** into the groove of a typical double-groove track portion **26**.

The trackage illustrated in FIGS. 3 and 4 has been shown schematically; in accordance with the present invention, it has been found desirable in many installations to provide drainage means to the trackage since the sliding panels are normally exposed to the weather. The track system illustrated in FIG. 5 provides for an

assembly of extruded members providing the functions of support, guidance, drainage, anchorage, disassembly for cleaning, and a screeding edge for concrete floors. More specifically there is illustrated in FIG. 5 a floor track assembly **120** including a generally channel-shaped gutter or base member **121** defining a drainage channel **122** and adapted to be cast directly into a concrete floor **123**. The base member **121** is advantageously provided with outwardly extending flange elements **124**, **125** defining screeding edges for tying the track **120** into the concrete floor **123**. Additionally the base member **121** is provided with suitable extruded spines **126** to provide for securing end caps to the base member thereby to collect drainage from the base member into a suitable sewer or gutter and to facilitate the attachment of adjoining sections of non-draining trackage.

Additionally the track assembly **120** includes a suitable track member **130** having a rail support element **131** on which is formed a suitable rail **132** and a pair of spaced flanges **133** defining spaced guide grooves **134**. Cooperating parts are formed on the base member **121** and the track member **130** to interlock the sections. More specifically the base member **121** includes a locking groove **138** formed along the inner surface of one of its side walls, and a flange portion **139** adapted to interlock within the locking groove **138**. Moreover a hook member **140** extends from the opposite side wall of the base member **121** and a complementary hook portion **141** extends from the side edge of the track member **130** to interlock with the hook member **140**. An intermittent key strip **142** positioned between the hook portion **141** and the adjacent side wall of the base member **121** prevents accidental disengagement of the hook portion **141** from the hook member **140** under wind or other side loading of the panels. Moreover an intermittent resilient stuffer **142***a* fitted in suitable indents **143** and **144** prevent accidental removal of the key strip **142**.

To provide further structural stability to the track member **130**, an elongated center support or flange **145** extends under the rail **132** and against the bottom surface of the base member **121**.

Frequently it is desirable to provide for power tool installation of track on an existing or new floor, with subsequent leveling of the track and grouting thereof. FIG. 6 illustrates a self draining track structure which is adapted to be power tool installed and screw leveled. As therein illustrated, there is shown a track supported on a plurality of spaced track shoe supports or runners **150** of generally channel-shaped cross-section and provided with lower flanges **151** having inwardly extending slots **151***a* to provide for lateral alignment in case the track should be secured with screws instead of power driven studs. Spaced upstanding side legs **152** and **153** on the shoe supports **150** terminate in inwardly extending, confronting flanges **154**. Additionally there is provided a general channel-shaped base member **160** defining a drainage channel and provided with outwardly extending side flange elements **161** defined by intermittent or spaced clips and snapped to the base portion through interlocking hook members **162** and **163** and interfitting flanges **164** and **165**. The outwardly extending side flange elements **161** are formed of sheet material having a reverse bend and provided with a screw aperture **166** in its lower surface through which passes an adjusting screw **167**. Another opening **168** aligned with and spaced above the screw opening **166** is sufficiently large to permit insertion of a screw driver or other tool to engage the head of the screw **167**, but is sufficiently small to prevent the screw **167** from dropping through the hole **168**. The screws **167** are threaded into threaded apertures **169** in the flanges **154**.

To support a rail **172** there is provided a rail support element **174** of bent sheet material and including downwardly extending flanges **175** at its edges which engage within upwardly opening grooves **176** defined in the side walls of the base member **160**. Moreover the rail support element **174** includes spaced downwardly extending projections **177** forming detents **178** effective to snap the rail support member **172** into engagement with the base member **160**. The rail **172** may be secured to the rail support element **174** in any suitable manner as with bolts.

To define suitable guide grooves **180** and **181** on respective sides of the rail **172**, the base member **160** is provided with upwardly extending flange means **182** spaced apart from the rail **170** in parallel relation therewith.

The track assembly is illustrated with a cooperating typical caster **51** including a flat-faced roller **52** and suitable guide pins **53**.

From the above brief description, the installation and operation of the track assembly according to the embodiment of FIG. 6 is believed clear. However, briefly, the spaced shoe supports **150** are attached to the base member **160** by the spaced clips **161** with the screws **167**. The base member **160** and the shoe supports **150** are installed in the floor recess as a unit, and the track is later adjusted to level.

Although various embodiments and features of the invention have been described, it will be apparent that numerous other modifications and embodiments will be devised by those skilled in the art which will fall within the true spirit and scope of the present invention.

What is claimed as new and desired to be secured by Letters Patent of the United States is:

1. A self draining track for a sliding wall panel and the like and adapted to be cast into a floor; including a base member defining drainage means; rail support means carried by said base member; a rail carried on said support means; means defining flange means spaced apart from said rail; said drainage means being a generally channel-shaped base member for collecting moisture and directing the moisture into suitable drains; said rail support means being provided with drain opening communicating with said drainage means; and said flange means extending upwardly spaced apart from said rail to define groove means therewith.

2. A track as defined in claim **1** wherein said flange means includes a pair of upwardly extending flanges spaced on opposite sides of said rail to define a pair of guide grooves with said rail.

3. A self draining track as defined in claim **1** wherein said rail support means is removable from said base member to provide for cleaning of said drainage means.

4. A track for a sliding wall panel including a generally channel-shaped base member having spaced upwardly extending side legs and defining a drainage channel; outwardly extending flange elements to provide for mounting said base member; a rail support element extending across said channel, said support element and said side walls having interlocking cooperating parts securing said support element in place; drain means associated with said support element communicating with said drainage channel; a rail carried on said support element; and upwardly extending flange means spaced apart from said rail to define groove means therewith.

5. A track as defined in claim **4** above wherein said cooperating parts include a groove formed on the inner surface of one of said side walls and a hook member extending from the inner surface of the other of said side walls, and additionally includes a flange portion on said rail support element positioned in said groove and a hook portion defined on said rail support element interlocked with said hook member.

6. A track as defined in claim **5** above and additionally including a key strip positioned between said hook portion and the said other of said side walls to prevent disengagement of said hook portion from said hook member.

7. A track as set forth in claim 6 above and additionally including a resilient stuffer over said key strip to prevent accidental removal of said key strip.

8. A track as set forth in claim 4 above wherein said cooperating parts include downwardly extending flanges at the side edges of said rail support element rceived in upwardly opening grooves defined along the inner surface of said side walls.

9. An adjustable track assembly for a sliding wall panel and the like and comprising a plurality of spaced, generally channel-shaped track supports each having side walls and a bottom wall and having confronting flanges extending inwardly from said side walls, a track including a track support member having outwardly extending side flange elements, a rail carried on said track support member, means carried on said track support member defining groove means with said rail, and threaded members adjustably interconnecting said outwardly extending flange elements of said track support member with said confronting flanges on respective ones of said track supports.

10. An adjustable track assembly for a sliding wall panel and the like and comprising a plurality of spaced generally channel-shaped track supports each having side walls and a bottom wall with confronting flanges extending inwardly from said side walls, a track including a generally channel-shaped base member having spaced, upwardly extending side legs and defining a drainage

channel, outwardly extending flange elements extending from said side walls to provide for mounting said base member, a rail support element extending across said channel, said support element and said side walls having interlocking cooperating parts securing said support element in place, drain openings in said support element communicating with said drainage channel, a rail carried on said support element, upwardly extending flange means spaced apart from said rail to define groove means therewith, and threaded members adjustably interconnecting said track to respective ones of said supports to provide for leveling of said track.

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U.S. Cl. X.R.

49—408; 160—206