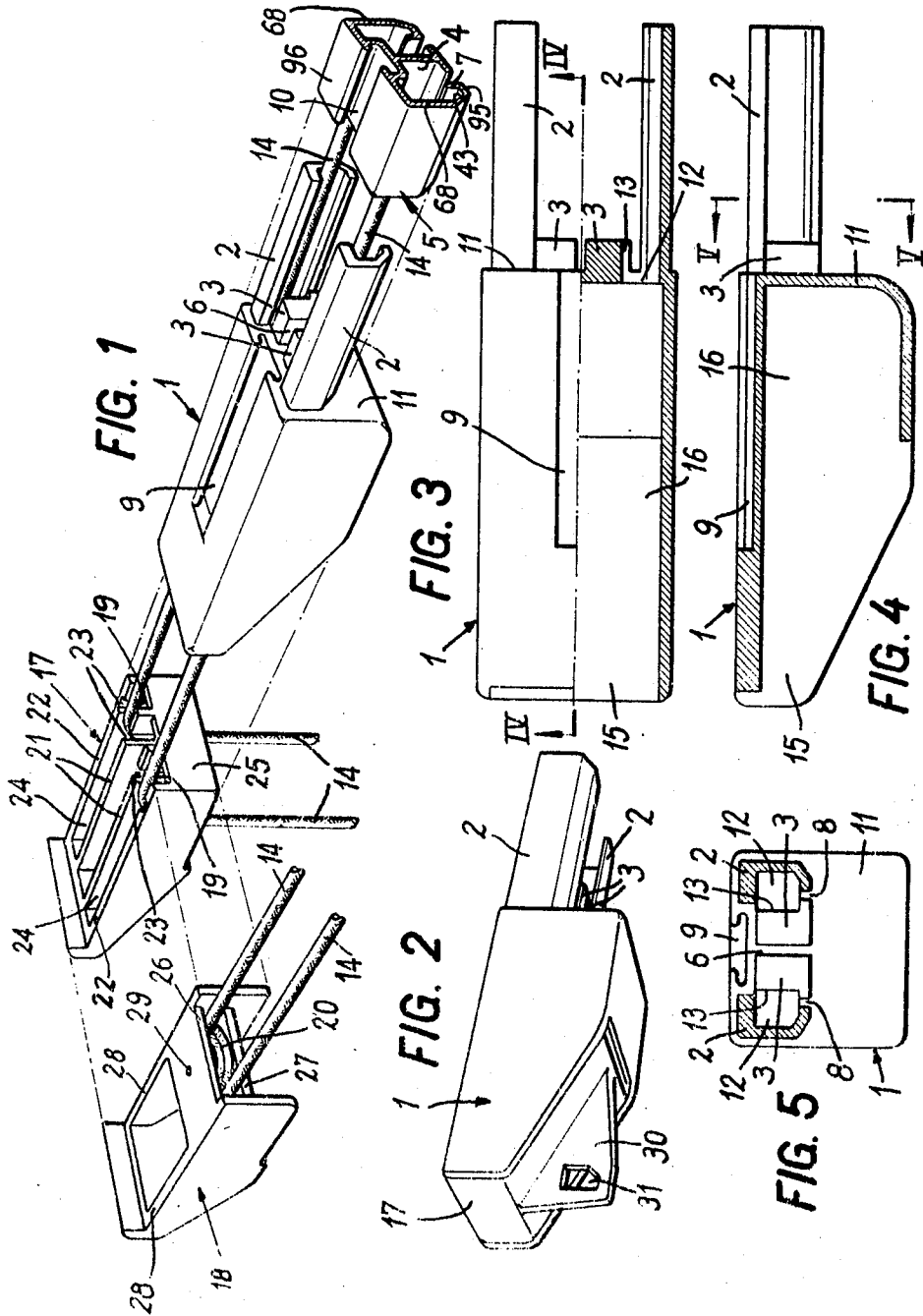


GUIDE FOR TRAVELLING CURTAINS

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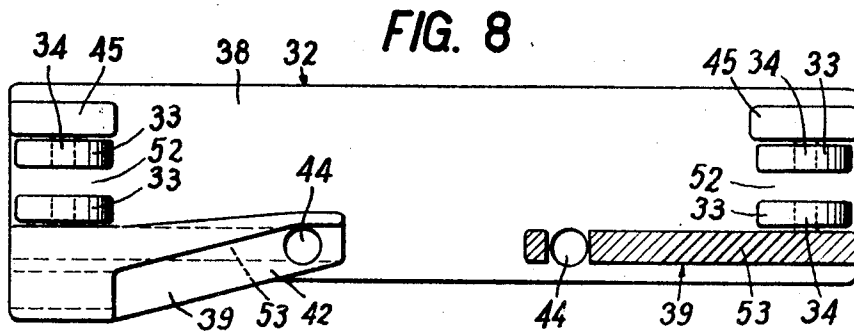
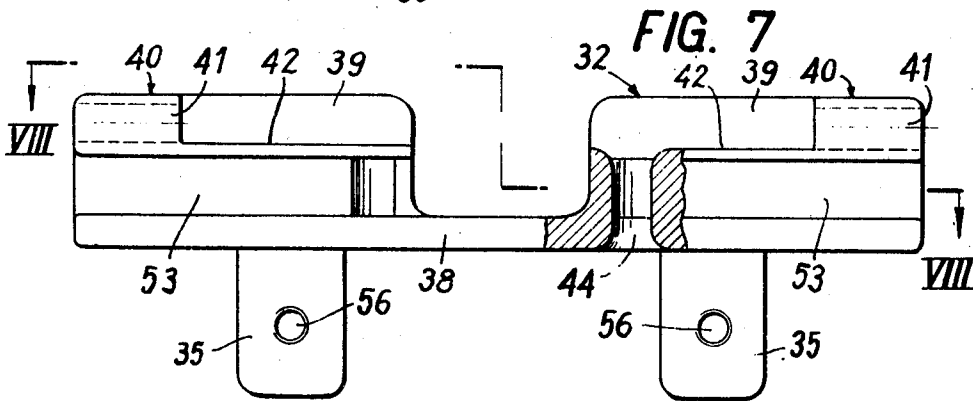
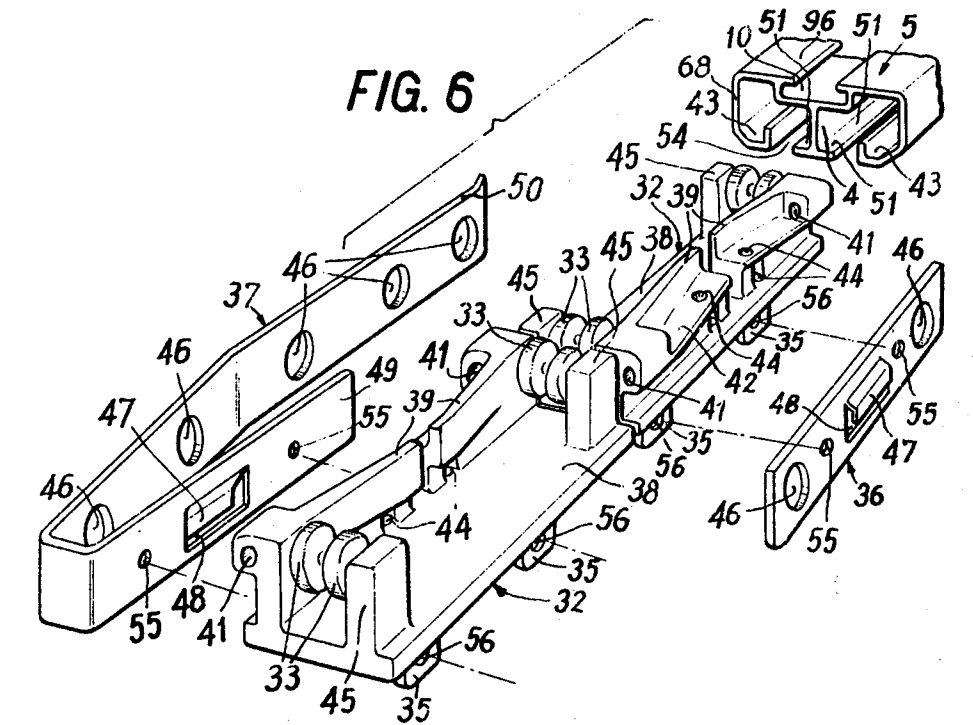


Inventor
 Gerardo Klein
 By Cushman, Darby & Cushman
 Attorneys

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Inventor
Gerardo Klein
By Cushman, Darby & Cushman
Attorneys

June 2, 1970

G. KLEIN

3,514,806

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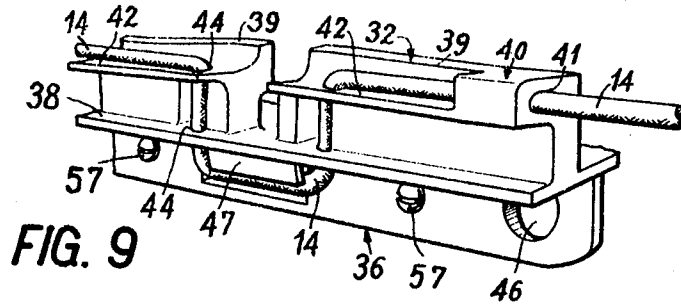


FIG. 9

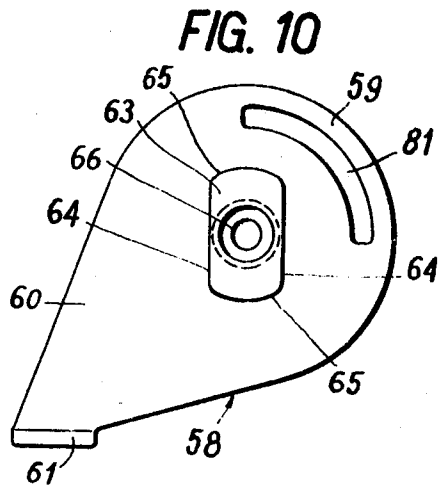


FIG. 10

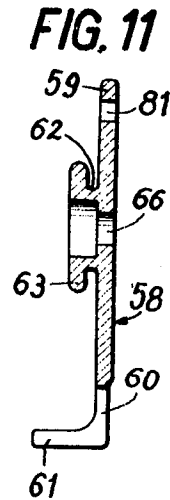


FIG. 11

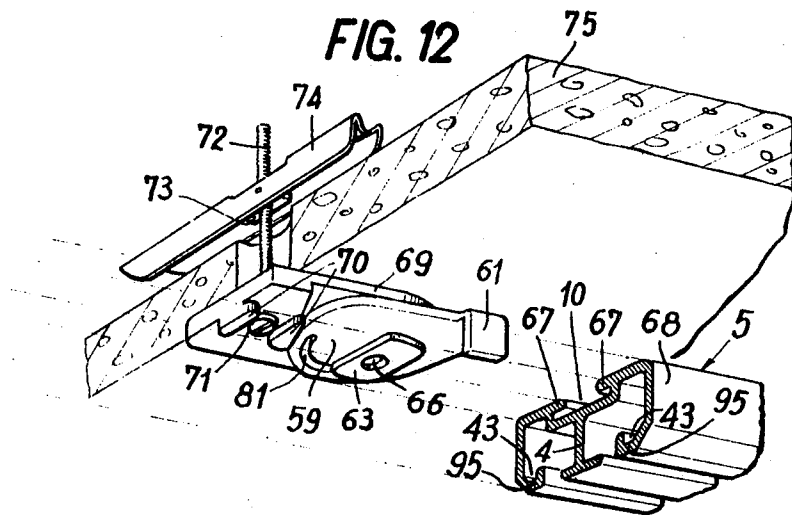


FIG. 12

Inventor
Gerardo Klein
By *Cushman, Doby & Cushman*
Attorneys

June 2, 1970

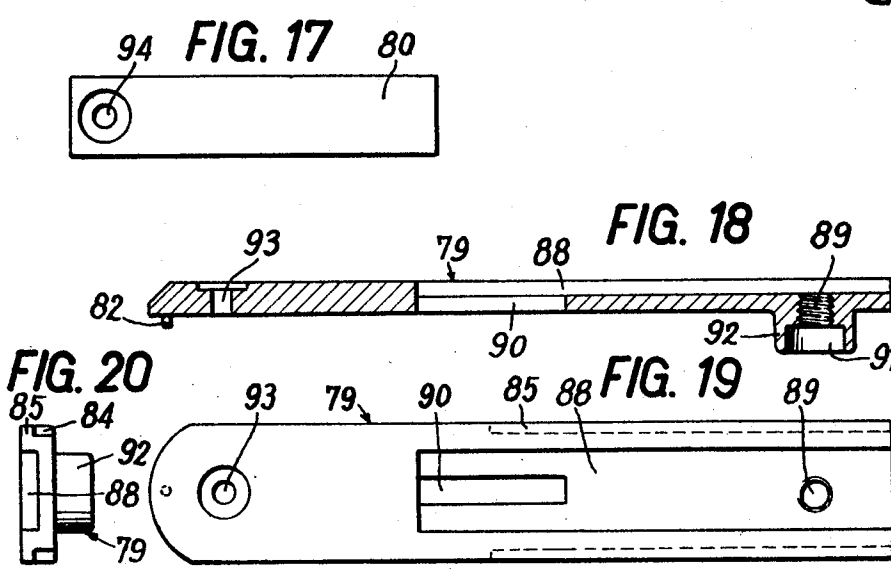
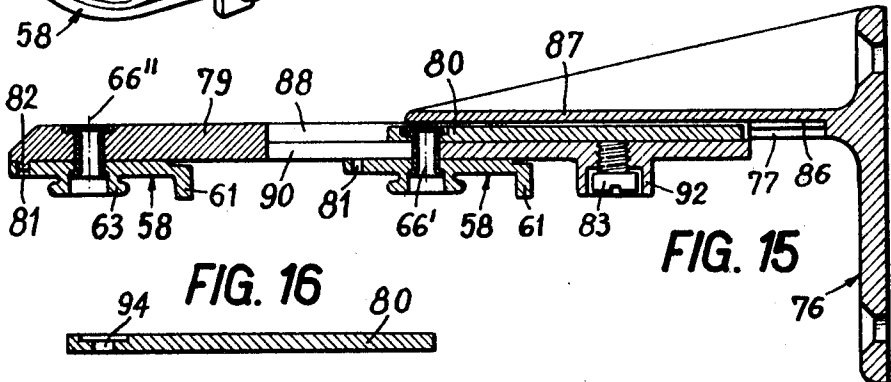
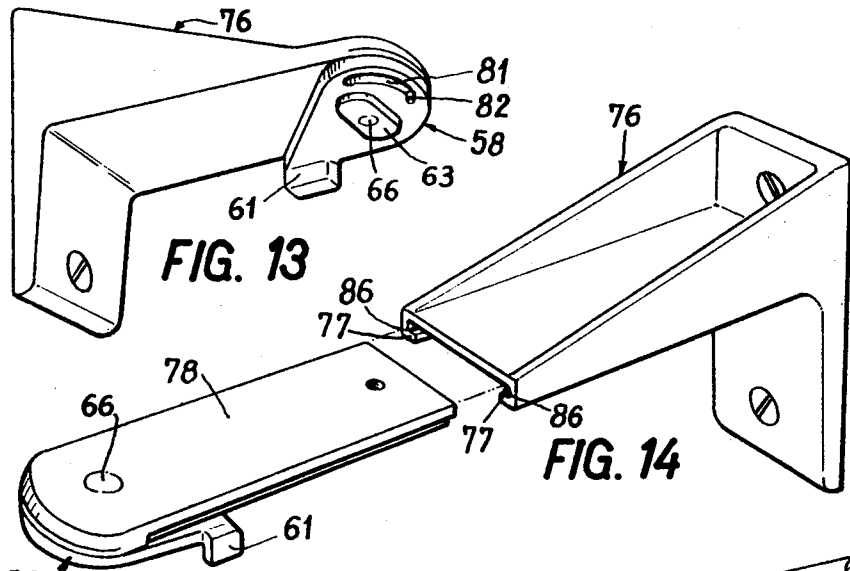
G. KLEIN

3,514,806

GUIDE FOR TRAVELLING CURTAINS

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4 Sheets-Sheet 4



Inventor
Gerardo Klein
By Cushman, Darby & Cushman
Attorneys

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3,514,806

GUIDE FOR TRAVELLING CURTAINS

Gerardo Klein, Calle Escorial 133, Barcelona, Spain

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135,482; Jan. 8, 1968, 135,495; Jan. 26, 1968,

136,112; Feb. 23, 1968, 136,963

Int. Cl. A47h 5/032, 13/10

U.S. Cl. 16—94

19 Claims

ABSTRACT OF THE DISCLOSURE

The present invention relates to a guide for sliding curtains which comprises at least a hollow shaped track, on which slide the devices for hanging the curtains and the devices for their crossing, supported by holding parts mounted on supports that can be attached to walls or ceilings, and each provided at its ends with terminals carrying guiding pulleys and a pulley for the return of the driving cord.

The shapes that guides for curtains on the market can take are many and varied, therefore we shall list below only the advantages that, in a general way, the guide, the object of the present invention, offers in comparison with the other known types of guides. The principal advantages are:

A surrounding track that protects all the sliding elements and permits the cords to be hidden and separated in independent channels, so that they can never interfere with one another;

The cords do not hang through lower grooves of the track;

The system can be used with one or two rows of curtain hanging devices in the same track;

Minimal outside dimensions, especially in regard to its height, which permit installations at the ceiling when casement sashes are very close to the ceiling;

The system requires little recess in installations fixed in the ceiling;

The holding and attachment elements of the guide are hidden by the track itself, not presenting any obstacles for the passage of the headpieces of the curtains;

Practically instantaneous placing and removing of the track, without the need of using screws;

Separation of the track from the ceiling is at most 2 mm.;

The system permits graduation of the distance of the track or tracks from the wall, and between tracks;

Special shaping of the track permits the placing of supports at distances between them of up to three times that found in various known types of guides;

The terminals can be applied to or recessed in the ceiling, or be attached to the wall by suitable supports, with the special feature that at least two of the terminals coincide with the points of application of the operating stresses, thereby avoiding undesirable bendings or loosening of the guide;

The terminals completely lack loose attachment elements (screws, etc.), the pieces bearing the guide pulleys or the pulley for returning the driving cord being able to be changed, thereby driving from either end of the curtain being achieved, as desired;

They permit the lengthwise movement of the track enough so that, without the need of dismantling the guides, it leaves a passage to remove or introduce the curtain hanging devices.

In essence, the guide, the object of the present invention, is characterized in that both terminals are made up of equal frames, made so that the ends of the track fit

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into them and they are provided with inside hollows intended to receive a part, like a box, carrying the pulleys that guide the driving cord, and a part, also like a box, carrying the pulley for the return of said cord. The track has a shape generally in the form of an inverted U with side arms bent inward and a central arm from which arises an intermediate separating partition with an inverted T section, which with said side arms makes two contiguous, equal, symmetrical and independent channels.

According to another characteristic of the present invention, the crossing devices of the curtains comprise two complementary carriages supporting the curtain, made to fit in the corresponding sliding track to constitute the inside and outside crossings, each of said carriages being provided with four rollers for holding and sliding, facing each other in pairs and arranged to turn freely around horizontal shafts fixed to a chassis provided, in its lower part, with a part carrying a cord holding element and provided with holes for receiving the curtain hanging devices.

Other characteristics and advantages of the invention will be brought out from the following description with reference to the accompanying drawings, which show, by way of non-limiting example, an embodiment.

FIG. 1 shows a perspective view, partly sectioned, of a unit of a portion of the track, a terminal frame and a part carrying the guide pulleys, and a part carrying the return pulley, in separated but corresponding position;

FIG. 2 shows a view, also in perspective, of a complete terminal;

FIG. 3 is a plane view, half-sectioned, of the terminal frame;

FIG. 4 shows a section of the frame along IV—IV of FIG. 3;

FIG. 5 is a view in section of the frame, along V—V of FIG. 4;

FIG. 6 shows a view in perspective of the unit of a portion of the track, chassis corresponding to the inside and outside crossings and parts carrying the cord holding elements, all of these being represented separated but in the corresponding fitting position;

FIG. 7 is a view in side elevation, on an enlarged scale, of a partially sectioned crossing chassis;

FIG. 8 shows a plan view of the same chassis, partly sectioned along VIII—VIII of FIG. 7;

FIG. 9 is a view in perspective of the same chassis, partly cut, showing the cord fastening elements;

FIGS. 10 and 11 represent in plan and axial section views, respectively, and on an enlarged scale, a guide supporting part;

FIG. 12 shows a support that can be applied to the ceiling, in a perspective view, in which can be seen, in fitted position, a track provided with an inverted T lengthwise channeling;

FIG. 13 is a perspective view of a wall support;

FIG. 14 shows a view, also in perspective, of an extensible wall support, with its parts separated but in fitting position;

FIG. 15 represents a view in section, in side elevation, of an extensible wall support which comprises two supporting parts;

FIGS. 16 and 17 show, in plane view and lengthwise section, respectively, a plate that can slide with which the extensible support is provided; and

FIGS. 18, 19 and 20 represent three views—lengthwise section, plane and front elevation, respectively—of a plane part with which said extensible support is also provided.

End frame 1 is provided with two U shaped lengthwise projecting rods 2, and also two other prismatic projections 3, shorter than the first ones and separated from one

another so that central partition 4 of track 5 fits in space 6 existing between the two projections 3, while wings 7 of track 5 fit into the small spaces 8 that are found between rods 2 and projections 3. The upper face of frame 1 is provided with a channeling 9 in an inverted T section; this channeling does not go all the way to the outside end of frame 1 and by its inside end corresponds to a channeling 10 of track 5, which is coupled to terminal 1 by coupling on projecting bars 2. The inside vertical face 11 of frame 1 is provided with two openings 12, limited on the inside concave faces by rods 2 and on corresponding faces 13 by projections 3, cords 14 passing through said openings 12, guided by the concavities of rods 2, as can be seen in FIG. 1. On its outside face, frame 1 presents an opening 15 that communicates with an inside hollow 16 intended to receive a part 17 or 18, that can fit like a box on frame 1, carrying guide pulleys 19 of cord 14 or return pulley 20, respectively.

Part 17 carrying guide pulleys 19 is made up of a hollow chassis, with a shape suitable for it to be introduced like a box in hollow 16 of frame 1, provided with two intermediate lengthwise partitions 21, parallel to side walls 22 of the chassis and each provided with grooves 23, that are vertical and aligned crosswise, made to receive a horizontal shaft that rests on the lower ends of grooves 23 and which, in turn, supports two guide pulleys 19, these latter being arranged to turn freely around said common shaft and placed in inside end divisions 24 of the chassis which are made by side walls 22 of this latter and by said partitions 21, which are united by means of a crosswise connecting partition 25 placed in the lower part of the face of part 17 which is opposite track 5.

Part 18 carrying the return pulley 20 is made up of a hollow chassis, with a shape suitable for it to be introduced like a box in hollow 16 of frame 1, provided with two horizontal and flat bridges 26 and 27, which join side walls 28 of the chassis, return pulley 20 being arranged to turn freely around a vertical shaft 29 introduced by pressure in both orifices made in said bridges 26 and 27.

The outside back part of each one of parts 17 and 18, carrying guide pulleys 19 and return pulley 20, respectively, is provided with a vertical wing 30, provided with an orifice 31, which forms a point of support of the two end hanging devices of the curtain corresponding to two parts 17, 18 carrying pulleys 19, 20.

Each crossing chassis 32 is provided with four support rollers 33 arranged to rotate freely around respective shafts 34, and also two flanges 35 to which are attached parts 36 and 37, corresponding, respectively, to the inside and outside crossings.

Chassis 32, identical in both carriages, is made up of a horizontal base 38, provided lengthwise with a side edge of two projecting parts 39 that are provided with guide devices 40 of cord 14, which comprise, in each of them, an inlet or outlet 41 of cord 14, a horizontal portion 42 with an L section, with a direction diverging outward from track 5 so that it separates cord 14 and forces it to be located in concavities 43 made by the lower wings doubled into a U with which track 5 is provided, and a vertical orifice 44 that goes through platform 38.

In the two remaining corners of platform 38 rise two prismatic projections 45 that on their outside face act as stops of cord 14 corresponding to the other carriage, preventing it from tangling with rollers 33.

Part 36 carrying the element for fastening cord 14 and provided with orifices 46 that receive the curtain hanging devices, corresponding to the inside crossing, is made up of a straight rod of a rectangular section, that can be attached to either of the two chassis 32 and in which the element for fastening cord 14 is made up of tongue 47 made up by outward punching of a centered rectangular portion oriented with the opening downward for the passage and holding of cord 14 between the sharp edges of said tongue 47 and of corresponding opening 48.

Part 37 carrying the element for fastening cord 14 and

provided with orifices 46 receiving the curtain hanging devices, corresponding to the outside crossing, is made up of a rod of rectangular section bent into a U, with unequal arms 49 and 50 and that can be attached to either of the two chassis 32 by its short arm 49, in which is also placed a tongue 47 to hold cord 14 in a way similar to that of part 36 corresponding to the inside crossing, whereas its long arm 50 is provided with said orifices 46.

In FIG. 6 it can be seen how the carriages fit inside track 5 and which are suspended by it. Rollers 33 rest on wings 51 of track 5, the intermediate partition 4 passing through hollow 52 left between rollers 33 (see FIG. 8), whereas portions 53 of projecting parts 39 pass through openings 54 of track 5.

Parts 36 and 37 are attached to either of the chassis 32 by means of orifices 55 and 56 made, respectively, in said parts 36, 37 and in flanges 35, and corresponding set screws 57, it being possible, if desired, to make a change of the position of parts 36 and 37 by means of said set screws.

Each one of the carriages constitutes the first fastening device of the respective half of the curtain. These halves of the curtains are suspended, as now, besides by other sliding hanging devices or hooks, by orifices 46 of the respective parts 36 and 37.

With the unit arranged as described and the cord fastened as indicated in FIG. 9, when a force is applied to the draw cord, in either direction, the carriages move easily in the corresponding direction, supported by rollers 33. In the position of total extension of the curtain, the bent flange that constitutes the long arm 50 of part 37 is located ahead of part 36, whereby the two halves of the curtain are overlapped.

Each supporting part 58 is made up of a first flat part 59 with a circular contour provided with a prolongation 60 in form of an angular flange, whose end is bent downward forming a wing 61 at a right angle, being joined to said first circular part 59, by means of a short circular groove 62, a second part 63 with a fairly rectangular contour, that is also flat and horizontal, whose larger sides 64 are perpendicular to the plane of said wing 61 and whose smaller sides 65 are replaced by curves, said supporting part 58 being able to turn around a vertical shaft 66 coinciding with the axis of said cylindrical groove 62.

When rectangular part 63 of supporting part 58 has its larger sides perpendicular to the direction of carriage 5, edges 67 of lengthwise channeling 10 of the latter (FIG. 12) are imprisoned between the circular flat part 59 and rectangular part 63 of supporting part 58 and wing 61 is in contact with side 68 of carriage 5, it being enough to turn supporting part 58 90° for carriage 5 to be freed from the support device with rectangular flat part 63 of part 58 being narrower than lengthwise channeling 10 of carriage 5.

Supporting part 58 can be applied on ceiling supports and wall supports. In FIG. 12 is shown an application of supporting part 58 to a false ceiling support made up of a flat part 69, which is applied directly to the ceiling by its upper face and which on its lower face presents two projections 70 made to be introduced into channeling 10 of carriage 5. Between both projections 70 flat part 69 is provided with an orifice 71 made to receive a support screw 72 which works with a nut 73 on which is arranged to swing a rod 74 that rests on an element 75 of the false ceiling. Supporting part 58, is made to rotate freely around shaft 66, aligned with said projections 70.

FIGS. 13, 14 and 15 to 20 show three types of wall supports that comprise in general a wall bracket 76, which can be provided directly (FIG. 13) with a supporting part 58 or (FIG. 14) guides 77, thereby a horizontal plate 78 slides and is also provided with a supporting part 58 or (FIGS. 15 to 20) also guides 77 whereby a flat part 79 slides, provided with a plate 80, to which are joined two supporting parts 58.

Supporting part 58 is provided with a passage groove

81, arranged in a 90° arc in the zone opposite wing 61 and made so that there passes through it a vertical rod 82 that is solid with horizontal plate 78 and flat part 79 (FIGS. 14 and 15) or else support 76 itself (FIG. 13), so that supporting part 58 can make at a maximum a turn of 90°.

The extensible support unit shown in FIGS. 15 to 20, besides the supporting bracket 76, flat part 79, plate 80 and supporting parts 58, comprises a screw 83 for simultaneous attachment of flat part 79 and plate 80.

Flat part 79 has a generally rectangular lengthened shape and is provided in its lower face with two recesses 84 which make the respective horizontal wings 85 made to fit in concavities 86 made by guides 77 of horizontal arm 87 of bracket 76, while in its upper face it is provided, in the part closest to bracket 76, with a housing 88 in whose bottom is made a threaded orifice 89, that permits placing of screw 83 for simultaneous attachment to bracket 76 of flat part 79 and plate 80, and a passage groove 90 that permits the passage of shaft 66' of supporting part 58 closest to bracket 76.

Set screw 83 is housed in a concavity 91 formed by a lower cylindrical projection 92 of flat part 79.

In the part of said flat part 79 farthest from bracket 76, the former is provided with a passage orifice 93 made to receive shaft 66" of supporting part 58 farthest from bracket 76.

Plate 80 is provided with a passage orifice 94 made to receive shaft 66' of supporting part 58 closest to bracket 76.

The support unit is arranged so that wings 85 of part 79 are introduced to slide in concavities 86 of bracket 76, while plate 80 can move lengthwise in housing 88 of part 79, whereby there is obtained a double relative movement between bracket 76, part 79 and plate 80 which permits regulation of the distance between the tracks and separation of them from the wall by means of plate 80 and part 79, respectively, part 79 and plate 80 being attached simultaneously by pressure of screw 83 to bracket 76.

Track 1, shown in FIGS. 1, 6 and 12, has an inverted U shape whose side arms 68 are bent inward at 95. Central arm 96 is provided on its outside surface with a central sunken portion that makes channeling 10 in an inverted T.

From the lower middle part of said channeling arises an intermediate separating partition 4 that forms two channels 54. Further, the ends of side arms 68 are bent upward in portions 7 which form, with portions 95 of arms 68, concavities 43 adapted to receive and guide the draw cords of the curtains.

It should be pointed out that an important characteristic of track 5 consists in the fact that, if desired, it is possible to use two series of curtain hanging devices, a series by each of the two channels 54, or else only one series of hanging devices by central partition 4 in an inverted T.

What is claimed is:

1. Guide for sliding curtains, comprising a hollow shaped track, by which the devices for sliding the curtains and for their overlapping, slide, supported by supporting parts mounted on supports adapted to be attached to walls or ceilings, and provided at their ends with terminals carrying pulleys for guiding and for the return of the driving cord, characterized in that said terminals are made up of equal frames, made so that the track ends fit in them and provided with inside hollows adapted to receive a first generally box-like part which carries guiding pulleys for the driving cord, and a second generally box-like part which carries a return pulley of said cord, said track having a profile generally in the shape of an inverted U with the side arms of the U bent inward and from whose central arm rises an intermediate separation partition with an inverted T section, which with said side arms make two contiguous, equal, symmetrical and independent channels.

2. Guide for sliding curtains according to claim 1, characterized in that said terminal frame is provided with two lengthwise projecting rods of U shape, with opposite concavities, and also two other prismatic projections, shorter than the former and with an essentially quadrangular profile, which form between themselves and with said U rods spaces into which fit the central partition and the track wings, respectively, the inside vertical face of the frame being closed by means of a wall provided with two openings, limited on their inside concave faces, by lengthwise rods and by the corresponding faces of the prismatic projections opposite them, so that the back and forth cords pass through one of said openings and through the concavities of the U rods, while the frame itself is provided on its upper face with an inverted T channeling which, without going to the outside of the frame, is intended to receive a support device of the guide unit, and on its outside face it is completely open and has its lower edge provided with a large bevel.

3. Guide for sliding curtains according to claim 1, characterized in that the part carrying the guide pulleys is made up of a hollow chassis, with a shape suitable for it to be introduced, like a box, in the hollow of the frame, provided with two intermediate lengthwise partitions, parallel to the side walls of the chassis and each provided with grooves, that are vertical and aligned crosswise, made to receive a horizontal shaft which rests on the lower ends of the grooves and which in turn supports the two cord guide pulleys, these latter being arranged to turn freely around said common shaft and placed in the end lower divisions of the chassis which are made by the side walls of the chassis and by said partitions, which are joined together by means of a crosswise joining partition placed in the lower part of the face of the part that is opposite the track.

4. Guide for sliding curtains according to claim 1, characterized in that the part carrying the cord return pulley is made up of a hollow chassis, with a shape suitable for its being introduced, like a box, in the hollow of the frame, provided with two horizontal and flat bridges which unite the side walls of the chassis, the return pulley being arranged to turn freely around a vertical shaft introduced under pressure in each of two orifices made in said bridges.

5. Guide for sliding curtains according to claim 1, characterized in that the outside lower part of each of the parts carrying the guide pulleys and the return pulley of the driving cord is provided with a vertical wing provided with an orifice that makes a point of support of the end curtain hanging devices corresponding to the two parts carrying the pulleys.

6. Guide for sliding curtains according to claim 1, characterized in that the curtain overlapping devices comprise two complementary carriages for supporting the curtain, made to be fitted into the corresponding slide track to constitute the inside and outside overlappings, each being provided with four-wheel carriages for supporting and sliding, facing each other in pairs and arranged to turn freely around horizontal shafts fixed to a chassis provided, on its lower part, with a part carrying a cord fastening element and provided with receiving orifices of the curtain hanging devices.

7. Guide for sliding curtains according to claim 6, characterized in that the chassis of said parts which constitute the overlapping, which is identical in both carriages, is made up of a base made up of a horizontal platform provided, along a side edge, with two equal and opposite projecting parts and each provided on the inside face with shafts, each supporting a roller, and, on the outside face, with cord guide devices which comprise, on each of the two projecting parts, a horizontal cord inlet and outlet, a horizontal cord guide portion, of L section and diverging outward from the track so that it separates the cord of the hanging devices and forces it to be located

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above lower wings bent into a U with which the track is provided which prevent the cord from hanging and showing below the track, and a vertical orifice that goes through the platform and whose lower mouth is contiguous with the cord fastening element, while on the two remaining corners of the platform rise two prismatic projections which by their inside face act as a support for the shafts of the two other remaining rollers and which on their outside face act as stops for the cord corresponding to the other carriage, preventing it from getting tangled with the rollers.

8. Guide for sliding curtains according to claim 6, characterized in that the part carrying the cord fastening element and provided with means receiving the curtain hanging devices, corresponding to the inside overlapping, is made up of a straight rod of rectangular section, which can be attached to either of the two chassis, in which the cord fastening element is made up of a tongue formed by outward punching of a centered rectangular portion directed with the opening downward for passage and holding of the cord between the sharp edges of said tongue and of the corresponding opening.

9. Guide for sliding curtains according to claim 6, characterized in that the part carrying the cord fastening element and provided with orifices receiving the curtain hanging devices, corresponding to the outside overlapping, is made up of a rod of rectangular section bent into a U, with unequal arms able to be attached to either of the two chassis by their short arm, on which the cord fastening element is made up of a tongue made by outward punching of a centered rectangular portion directed with the opening downward for the passage and holding of the cord between the sharp edges of said tongue and the corresponding opening, while its long arm is provided with said orifices.

10. Guide for sliding curtains according to claim 1, characterized in that each one of the supporting parts is made up of a first flat part of circular contour provided with a prolongation in the shape of an angular flange, whose end is bent downward forming a right angle wing, being united to said first circular part, by means of a short circular channel, a second part of fairly rectangular contour, also flat and horizontal, whose larger sides are perpendicular to the plane of said wing and whose smaller sides are replaced by curves, said support part being able to rotate around a vertical shaft, coinciding with the shaft of said cylindrical channel and attached to a stationary element, the unit being arranged so that, when the rectangular part of the supporting part has its larger sides perpendicular to the direction of the track, the edges of the lengthwise channeling in an inverted T of the latter are imprisoned between the flat circular and rectangular parts of the supporting part and the wing of the circular part is in contact with a side of the track, it being sufficient to turn the supporting part 90° for the track to be freed from the support device with the flat rectangular part of the supporting part being more narrow than said lengthwise channeling.

11. Guide for sliding curtains according to claim 10, characterized in that the supporting part is provided with a passage groove, arranged in a 90° arc in the zone opposite the wing and made so that there passes through it a vertical rod solid with the horizontal support plate, so that said supporting part can make, as a maximum, a turn of 90°.

12. Guide for sliding curtains according to claim 10, comprising two parallel tracks, characterized in that said supporting parts are mounted by pairs in a support bracket, in the horizontal arm of which is placed, to be

able to slide lengthwise, a flat part carrying on its lower face one of said supporting parts corresponding to a track, and said flat part being provided on its upper face with a lengthwise housing in which is placed to slide, independently and lengthwise to said flat part, a part also carrying on its face lower than the other, said support parts corresponding to the other track.

13. Guide for sliding curtains according to claim 12, characterized in that the horizontal arm of the support bracket is provided on both lengthwise edges of its lower face with wings bent inward into a right angle, made to guide and support said flat part.

14. Guide for sliding curtains according to claim 12, characterized in that said flat part has a fairly rectangular lengthened shape and is provided on its lower face with two recesses that make the respective horizontal wings made to fit into the concavities made by the wings bent inward of the horizontal arm of the bracket, while on its upper face it is provided, in the part closest to the bracket, with said housing in the bottom of which is made a threaded orifice, which permits placing of a screw for the simultaneous attachment of the bracket of said flat part and plate, and a passage groove that permits the passage of the shaft of the track supporting part closest to the bracket.

15. Guide for sliding curtains according to claim 14, characterized in that said set screw is housed in a concavity made by a lower cylindrical projections of the flat part.

16. Guide for sliding curtains according to claim 12, characterized in that the flat part farthest from the bracket, is provided with a passage orifice made to receive the shaft of the track supporting part farthest from the bracket.

17. Guide for sliding curtains according to claim 12, characterized in that said plate is provided with a passage orifice made to receive the shaft of the track supporting part closed to the bracket.

18. Guide for sliding curtains according to claim 1, characterized in that said central arm of the track is provided on its outside surface with a sunken central portion that makes a channel having an inverted T shape made to work with said supporting parts and which, when turned 90° in either direction, causes the fastening or freeing of the track.

19. Guide for sliding curtains according to claim 1, characterized in that the ends of said side arms of the track are bent upward, both of these bent portions making, in their lower zone, concavities made to receive and guide the curtain draw cords.

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DONALD A. GRIFFIN, Primary Examiner

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