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(57) The head rail 2 of a vertical slat blind is adjustable in length by positioning spacers 4 between the body and end covers 3. The mandrel 5 which adjusts the hangers is adjustably secured in the sleeve 71 of rotating wheel 7.

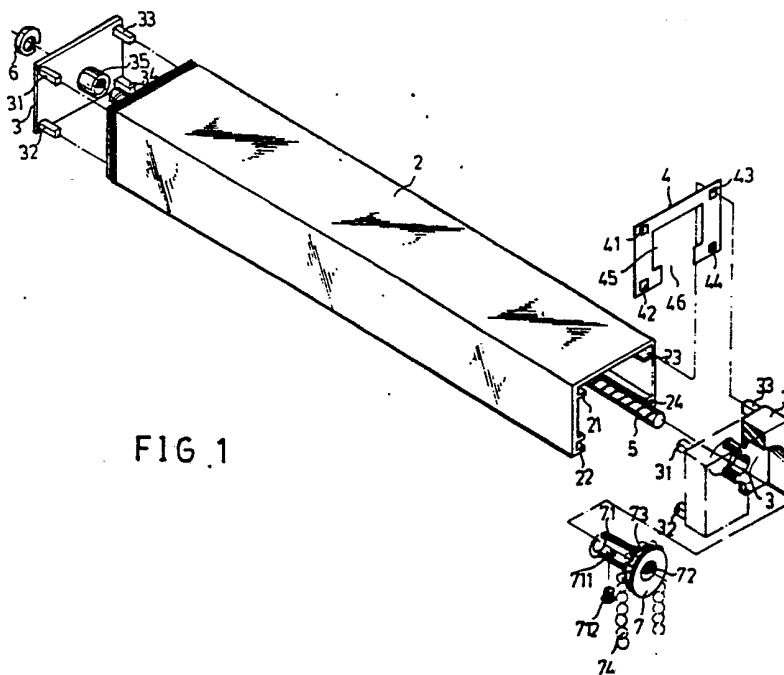


FIG 1

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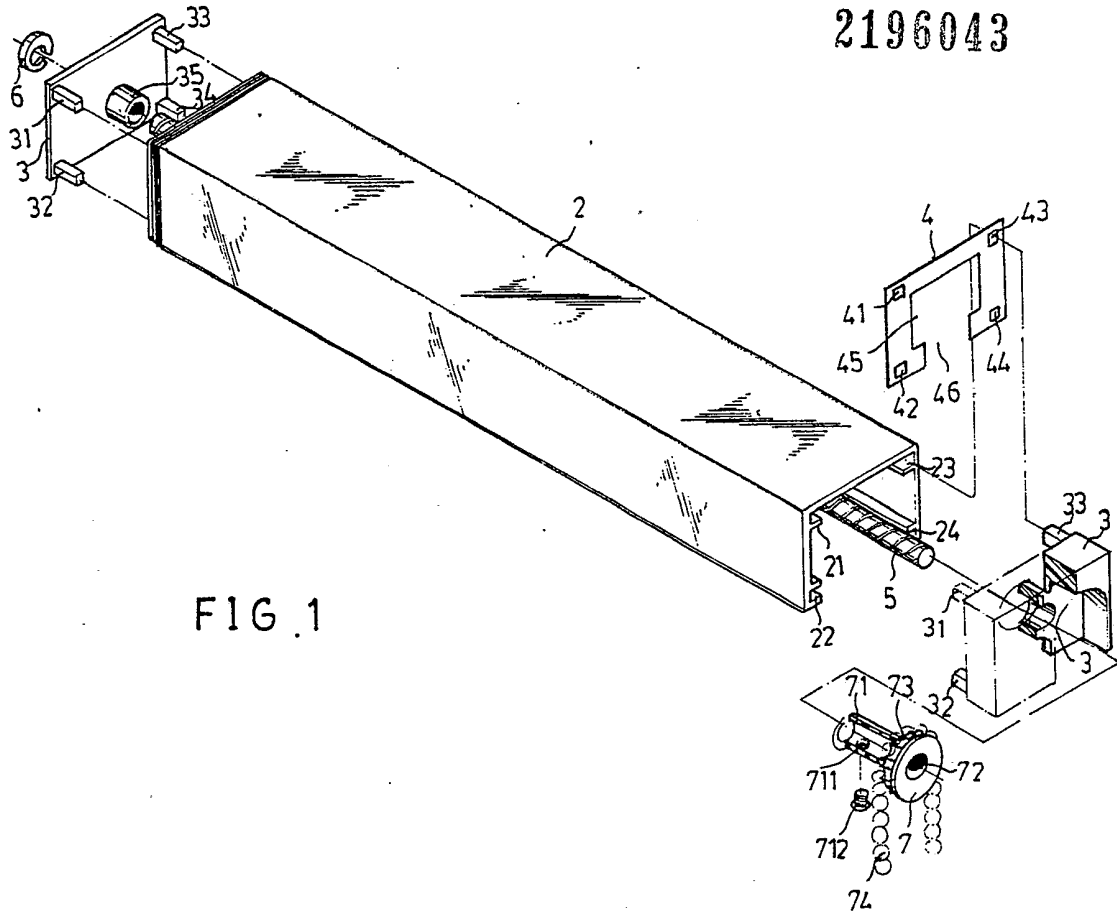


FIG. 1

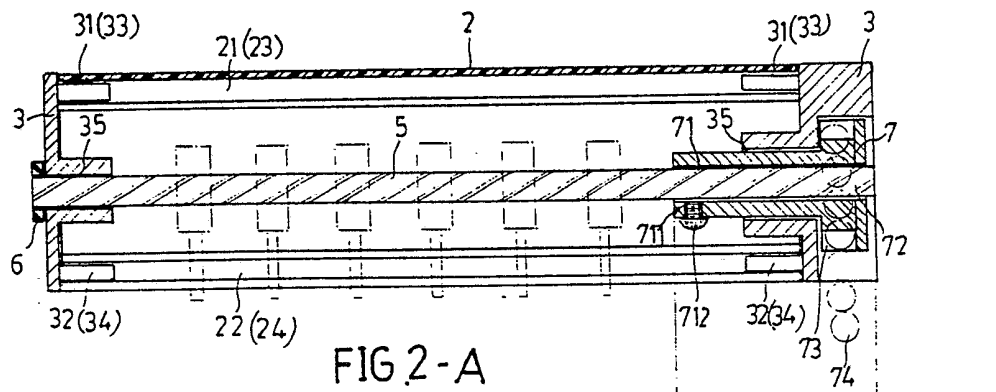


FIG. 2-A

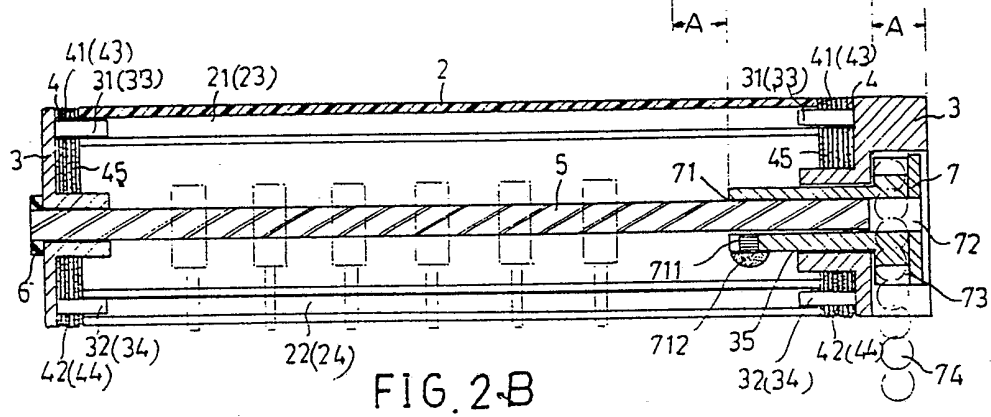


FIG. 2-B

SPECIFICATION

Improvements in vertical blinds

- 5 This invention relates to apparatus for mounting a vertical blind, and more particularly to apparatus in which lateral adjustment of the blind is achieved through a rotatable mandrel.

- 10 The invention provides apparatus for mounting a vertical blind, comprising an elongate frame of inverted channel-shaped cross-section, a mandrel, means mounting the mandrel for rotation relative to the frame, and means for imparting rotation to the mandrel, the
15 mounting means comprising end covers which are fittable onto the ends of the frame, in which spacers are provided that are interposable between the end covers and the frame whereby to enable the overall length of the
20 apparatus to be adjusted.

- The means for imparting rotation to the mandrel is preferably releasably connected to the mandrel to allow its position along the mandrel to be adjusted and it is preferably
25 connectable to the mandrel via access from below the frame when the apparatus is in position.

- More specifically, the present invention concerns the provision of a plurality of spacers
30 hanging over the lengthened foot bumpers over the periphery of both of the lateral lids and the skyrail covering sheath of a vertical Venetian Blind Skyrail, known as Vertical Venetian Skyrail permitting lateral adjustments
35 hereunder, it is characterised in that the width clearance produced out of the superposition of the spacers serves to lengthen the lateral length of the skyrail, what with the coordinated receding of the rotary sleeveings, by
40 locking of position discharged by the swivel sleeveing for the rotary, helical mandrel, so that the device can better adapt to inadequate sizing of the skyrail for installation, to enlarge scope of operation.

- 45 A conventional vertical Venetian Blind, owing to the fact that the skyrail, with regard to its lateral dimension, is restricted by fixed specification, often faces the difficulty of the lateral length failing to match the installation
50 position, the lateral width of the window in particular, either because the lateral length is too long or else too short, the worst comes when it is entirely impossible to perform the installation at all. The basic reasons for such a
55 difficulty lies primarily in the fixed setting of the skyrail, not flexible, and not compromising for any adjustments or adaptations, so that it is eventually unavoidable to result in dimensional aberrations of the width of window structured
60 according to indoor partitioning practices.

- In view of such difficulties encountered in the installation of vertical Venetian Blinds, the inventor proceeds to work for improvements to overcome them, and finally succeeded in
65 the presentation of the invention titled Vertical

Venetian Blind Skyrail permitting lateral adjustments.

- An advantage of such development is that it can provide such vertical venetian blind skyrail
70 permitting lateral adjustments, whereby an additionally provided spacer is hanging between the side lid and the skyrail so as to prolong the length of the skyrail, and as such spacers may be superposed to achieve adjustment of
75 thickness and dimension, thereby providing a more flexible specification of the lateral dimension of the skyrail, simplifying the operation procedure, without having to take precise dimensions before execution, in short making
80 the operation more flexible than ever.

- A further advantage is that it can provide such vertical venetian blind skyrail permitting lateral adjustments, whereof the side lids of both sides of the skyrail are complete with
85 foot bumper devices provided by extension, to serve to increase the hanging amplitude of the spacers, thereby providing increased latitude of the transverse dimension thereof.

- Still another advantage is that it can provide
90 such vertical venetian blind skyrail permitting lateral adjustments, whereof extension is made of the frontal sleeving of the rotary sleeving, and provision has been made of locking teeth on the lateral side of the sleeving, which, together with additionally provided spacers in
95 hanging over the foot bumper as extended from the interior of the side lid, serve to adjust the horizontal length of the skyrail.

- There now follows a description of an embodiment of the invention given by way of illustration, but not in any way limiting, with reference to the accompanying drawings in which:

- Fig. 1 is an exploded view of a blind according to the invention;

- Fig. 2A is a sectional view through the blind of Fig. 1 whereof lengthwise extension has not been made, and

- Fig. 2B is a sectional view through the blind of Fig. 1 whereof lengthwise extension has been accomplished.

- Referring first of all to Fig. 1, an illustration of the main parts of the invention structure in regard of the lengthwise adjustments, it is
115 seen that the invention comprises:

- a pi-shaped skyrail 2, of which the interior is provided with foot bumper spanning channels 21, 22, 23, 24 executed in two pairs opposite each other, to account for two side
120 faces of the skyrail 2, prolonged foot bumpers 31, 32, 33, 34 as provided projectingly on the interior side of each side lid 3 is respectively engaged with the opening ends on the side face of skyrail 2, to permit advance
125 provision of a plurality of spacers 4 for hanging on the foot bumpers 31, 32, 33, 34 before the interior section of each foot bumper 31, 32, 33, 34 is introduced into the spanning channels 21, 22, 23, 24, for clinging inside
130 the side lid 3, thereby holding the skyrail 2

apart from the side lid 3, which can be construed as serving to increase the lengthwise length of the skyrail.

The spacer 4 is approx equal in area to the
5 inside face of the side lid 3, at least four corners are provided to facilitate the foot bumpers 31, 32, 33, 34 being passed in pairs into the helical mandrel 5 in the middle of the access ports 41, 42, 43, 44 and the access
10 hole 45 for the enlargement of other horizontal components; the part passing the underside of the access port 45 may be cut into a hollow section 46, so that the spacer 4 is rendered into a pi-shaped piece member, serving primarily to facilitate passing across mandrel 5 downwards straight, only to be
15 checked upon by hanging foot bumpers 31, 32, 33, 34. As to the quantity of the spacers 4 for superposition, it depends largely upon the width to be lengthened, the overall thickness of respective spacers 4 required to achieve optimum superposition, and by taking into account the operating position.

The helical mandrel 5 is laid horizontally inside the skyrail 2, such that while one end is being bung, the shaft hole 35 facilitating penetration of the middle point of one side lid 3 will bring the terminal end exposed to permit the snap-on positioning by an external C
30 shaped snap ring 6; the other end permitting hanging by the central hole 72 of the rotary sleeving 7 setting on coupling hole 36 provided in the centre of the exposed side lid 3 by virtue of passing of a frontal extended
35 sleeving 71 sleeved into the outward side of the side lid 3; the frontal section of the rotary sleeving 7 provided with a screwing hole 711, so as to facilitate an external locking bolt 712 lock in from the external side, the terminal end
40 of the bolt bearing against the side of the mandrel 5, so as to compress into locking position, so that, with the locking bolt 712 being both releasable and lockable, the mandrel 5 is able to slide inside the central shaft hole 72 and execute fixed locking, so that with an
45 increase of the spacers 4 backout adjustment is made possible, thereby achieving lengthwise adjustments. As that the coupling 71 is installed in a forward extending trend, so that
50 the prolongation for the central hole 72 suffices to bring the mandrel 5 immune to, that is, refrained from getting rid of the holding effects due to central hole 72 in conjunction with a receding of the side lid 3, realizing
55 fixed locking by the locking bolt 712, so that the after part residing in the sleeving 7 outside the side lid 3, executed in the form of an annular bead coulisse 73, accepts to heavy hanging and pull-about rotation by the annular
60 bead chain 74, whereupon the mandrel 5 is driven to rotation, thereby controlling the orientation adjustment of the curtain drapery indoors, the shifting adjustment under the command of a pull rope, not relevant to the case,
65 and is omitted from further description.

A comparison of Fig. 2A with Fig. 2B gives to understand that once spacing member 4 is introduced between side lids 3 on both sides and the skyrail 2, for superposition in-between
70 each foot bumpers 31, 32, 33, 34, the thickness 'A' as produced as a result of such a superposition serves to release the lock bolt 712, that while the side lid 3 is receded by an amplitude 'A' outwardly, the rotary sleeving 7 will in the meantime kick back a like
75 distance 'A' before acting upon the lock bolt 712 to a fixed setting, thereby achieving lengthwise adjustment of the skyrail 2 by means of the addition of a distance 'A', with a view to meet job execution requirements.

The disclosure going thus far should prove that the invention structure truly achieves flexible latitude for job operation of the skyrail, and in making possible skyrail dimension free
85 of specificational restrictions, it is therefore considered a truly worthwhile piece of invention.

CLAIMS

90 1. Apparatus for mounting a vertical blind, comprising an elongate frame of inverted channel-shaped cross-section, a mandrel, means mounting the mandrel for rotation relative to the frame, and means of imparting rotation to the mandrel, the mounting means
95 comprising end covers which are fittable onto the ends of the frame, in which spacers are provided that are interposable between the end covers and the frame whereby to enable the overall length of the apparatus to be ad-
100 justed.

2. Apparatus as claimed in Claim 1 wherein the means for imparting rotation to the mandrel is releasably connected to the mandrel to
105 allow its position along the mandrel to be adjusted.

3. Apparatus as claimed in Claim 2 wherein the means for imparting rotation to the mandrel is connectable to the mandrel via access
110 from below the frame when the apparatus is in position.

4. Apparatus substantially as hereinbefore described with reference to the accompanying
115 drawings.

5. Vertical Venetian Blind Skyrail permitting lateral adjustments, comprising:

a skyrail body: structured like an oblong rail of which the cross-section looks like the Greek alphabet pi, and having foot bumper
120 channels executed in two pairs opposite each other;

a pair of opposite side lid, one of them whereof the middle point is provided with a round, penetrating shaft hole, the other one
125 having a round penetrating hole of a larger size, both side lids having four interior corners provided projectingly complete with extended foot bumpers, just permit alignment for interpolation into the foot bumper spanning coulisse on both ends of the skyrail, to account
130

- for the cover for the lateral side of the skyrail;
a rotary sleeving, structured like a two-section sleeving having enlarged rear section, the frontal section as an extension of the forward
- 5 section, the centre having a central hole for penetration throughout the entire entity, whereby it is possible to insert inwardly from a point outside the central coupling hole on one side lid, the extension, so that the enlarged rear section that remains for rotating
- 10 purposes is maintained outside, whilst the extended coupling section is penetrated outside the coupling hole and has the central hole of the sleeving formed into a counterpart provision in conjunction with the central hole of the other side lid, so as to provide for two ends of which the inside is processed to be a helically shaped mandrel, the fore section of the extension provided with a screwing hole,
- 20 to permit bolting executed from an outside point, to exert compressive bolting relative to the helically shaped mandrel from a lateral point, for projection out the terminal end of the mandrel outside the axial hole on the other
- 25 side lid, the fitting finally executed by a C shaped snap ring;
spacing members, of which the area is approx. equal to the inside of the side lid, having at least four corners together with foot
- 30 bumpers on symmetrical positions for passing across the middle, enlarged access port, to facilitate the intromission of a number of spacing members as required for operation, in superposition inside the foot bumper on the side
- 35 lid, whereby lengthwise adjustment is made.
6. Vertical Venetian Blind Skyrail permitting lateral adjustments according to claim 5, whereof the under section passing the enlarged middle section of the spacing member
- 40 may be treated hollow to facilitate straddling downwards in front of the skyrail, straight hanging upon the foot bumper on the side lid.