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(54) **Support for sliding rollers for sectional doors**

(57) The invention concerns a support (21) for the sliding rollers (20) of a sectional door (11) made up of several panels (12) connected to each other by means of hinges (13) and movable between a closed and an open position along lateral guide tracks (14) with a slanting arrangement with regards to the vertical position. The support (21) comprises a body (22) which has a base plane (23) provided with means to be applied to the panels of the sectional door and with at least a plurality of bores (26) parallel to each other, each at a different distance from said base plane (23) and each one designed to selectively receive a rotation pin of a sliding roller (20).

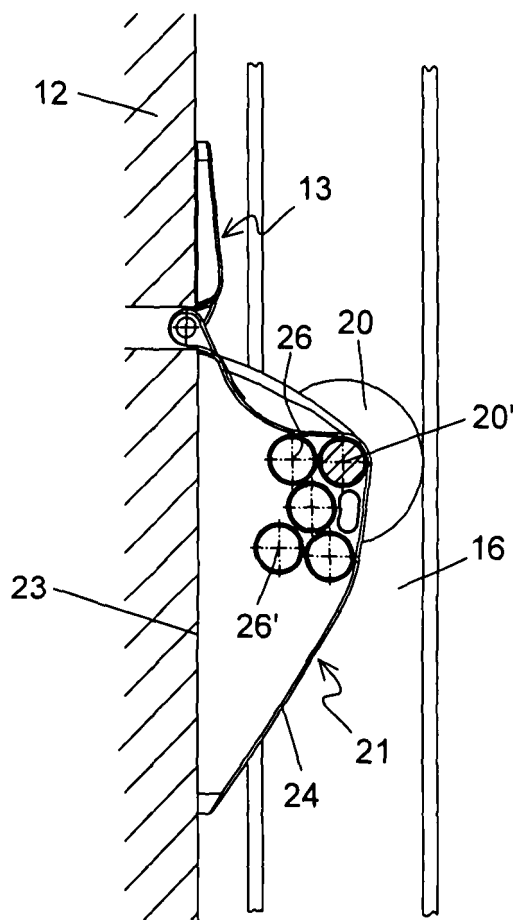


FIG. 3

Description

Field of the Invention

[0001] This invention refers in general to sectional doors which, for their opening and closing movements have sliding rollers guided along tracks. It concerns in particular, an improved support for the sliding rollers of said doors.

State of the Technique

[0002] Sectional doors are usually composed of a plurality of horizontal panels which are connected between them by hinges and they are able to follow a curved besides the usual rectilinear path.

[0003] Every sectional door is mounted and movable along lateral guide tracks on sliding rollers. These rollers are applied to the to the opposite ends of the door horizontal panels, each roller having a pin that fits in un bore or housing provided in a support, which can be formed of one of the hinge elements fixed to the internal face of the panel.

[0004] The track guides have a rectilinear segment, which extends upwards and which joins at the top to a horizontal segment by means of a curvilinear guide portion. Generally, when the door is closed, it is in a vertical position, whereas the segments of the guide tracks which extend upwards are slanting with respect to the vertical, gradually moving away from the vertical plane holding the door from the bottom towards the top. Given this layout of the guide tracks, and until the door, when it is closed is vertical, the sliding rollers must be supported at a variable distance from the internal face of the door, more precisely at an increasing distance starting from the bottom rollers up to the top ones, in line with the slant of the tracks with respect to the vertical.

[0005] Supports have already been proposed to be able to mount the sliding rollers at different distances from the internal face of the door, which however are relatively complex and expensive and besides which, require the use of adjusting means and, from time to time, the adjustment of such means.

Object and Summary of the Invention

[0006] The main object of this invention is, on the contrary, to provide a support for use in the sectional door field, which is simple and convenient to manufacture and prepared for mounting a roller in various and different positions so as to be able to choose and adapt without difficulty the distance of the roller from the internal face of the door, depending on the slant of the guide tracks and, furthermore, without the need for adjustments.

[0007] In accordance with the invention such an object is achieved, with a support for the sliding rollers of sectional doors, having a base plane with means for applying it to the panels of a sectional door and provided with at

least a plurality of parallel bores and with each bore at a different distance from the base plane of the support, each of said bores being assigned selectively to receive the rotation pin of a sliding roller.

[0008] Advantageously, the support can be provided both as a direct component of a hinge and as an element of its own to associate with a component of a hinge to connect between them the adjacent panels of sectional doors. Furthermore, the support proposed here can also comprise two pluralities of parallel bores in symmetric positions, where the bores of each plurality are either with a variable or constant distance between centres.

Brief Description of the Drawings

[0009] Further details of the invention will however become evident from the continuation of the description made in reference to the enclosed drawings, in which:

Fig. 1 is a vertical section of an example of a sectional door with relative guide means;

Fig. 2 is a view in perspective of a support, according to the invention;

Fig. 3 is a lateral view of a part of the door on a level with a support for rollers;

Fig. 4 is a front view of the complete item in Fig. 3;

Fig. 5 is a cross-section view according to the arrows A-A in Fig. 4; and

Fig. 6 is a similar view to Fig. 3, but with the support of a different configuration.

Detailed Description of the Invention

[0010] Said drawings show an example of a sectional door 11 that is composed of a plurality of horizontal panels 12 connected to each other by hinges 13. The door 11 is mounted between lateral guide tracks 14 and is movable between a vertical closed position, lowered, and a horizontal lifted, open position. As is well known, the movements of the door from one position to another can be carried out manually or controlled by a powered group with the help of balancing means- not shown.

[0011] The lateral guide tracks 14 are associated with respective supporting uprights 15 connect at the top by a front header to form the fixed framework of the door.

[0012] The guide uprights 14 each comprise a rectilinear segment 16 that extends upwards from the ground and connects at the top with a first horizontal guide segment 17 by means of a portion of curved conjunction 18. Above the first horizontal segment 17, each track then has a second horizontal guide segment 19 designed to receive the door 11 when it is open. Laterally, the door is guided along the guide tracks 14 by means of sliding rollers 20, applied and supported at the opposite ends of each panel on the internal face of the latter and each having a relative pin 20',

[0013] As shown in particular in Fig. 1, the sectional door when closed is positioned vertically. The rectilinear

segments 16 of the lateral guide tracks 14, which extend upwards, are on the contrary slanted compared to the upright position, forming an acute angle from the bottom upwards compared to the bottom of the door. Consequently, the sliding rollers 20, which have to follow the guide tracks 14, have to be mounted at different distances from the internal face of the door, distances increasing from the lower to the upper panel.

[0014] The support 21 according to this invention has been designed to allow and facilitate the differentiated mounting of each of the sliding rollers 20 of the door starting from the roller at the bottom level up to the one at the top level. Said support 21 has a supporting body 22, preferably a single piece, which can be made of a plastic material. The supporting body 22 has a base plane 23 and has a thickened intermediate portion 24 projecting frontally. The base plane 23 of the support is designed to rest against the internal face of a panel 12 of the door 11 and to be fixed to it by means of bolts or the like 25.

[0015] The support 21 can be configured to define one of the two components of a connecting hinge 13 of the panels of the door or, as an alternative, it can be conceived and made as an element on its own to be associated with one of the two components of a hinge.

[0016] In the first case, the supporting body 22 is positioned to be able to be coupled and pivoted to the other component of a hinge as shown in Figs 2-4. In the second case, that is to say, if the support 21 is to be associated with a component of a hinge 13 connecting as it were two consecutive panels of the door, its base plane 23 could be partially configured to mate and overlap with such a component and so as to be able to be constrained to the relative panel by fixing means in common -Fig 6.

[0017] In both cases, however, in the intermediate portion 24 of the supporting body 21 is provided with at least a plurality of horizontal bores 26 parallel between them and to the base plane 23, each bore being usable from time to time to receive the rotation pin 20' of a sliding roller 20 to be supported.

[0018] The number and the disposition of the bores 26 can be chosen at will. In particular said bores 26 can be with constant or variable distances between the centres, and each of them will be provided at a different distance compared to every other bore with respect, as a reference, to the base plane 23 of the supporting body 22. This is so that as in the assembly, said bores 26 define a plurality of different positions for the assembly of a sliding roller 20 on the support with an equal number of different distances from the internal face of the door, depending on the slant of the tracks compared to the vertical position.

[0019] For example, the bores 26 can be at increasing distances, in the order of 2-3 mm, from the base plane 23 of the supporting body 21, starting from a first bore 26' at a preset minimum distance, for example 15-20 mm, from said base plane. Therefore, a sliding roller 20 can be assembled on the same support 20 by choice in any one of a number of different positions as there are bores

26, 26', each at an increasing distance from the internal face of the door, starting from the first bore 26' nearest to the base plane of the support.

[0020] To be noted, however, that at least when the support 21 is made up of an element on its own to be associated with a hinge, its parallel bores 26 can also be distributed in one first group a in a top part and in a second group b in a lower part of its intermediate portion 24. As it is important for each sliding roller 20 to be much as possible on a level with the axis of the hinge connecting each two panels of the door, when the bores 26 of the support 21 are divided into two groups, they will be conveniently positioned, and the support can be rotated to position group a or group b high or low according to requirements.

Claims

1. A support (21) for the sliding rollers (20) of a sectional door (11) that comprises a number of panels (12) connected to each other by hinges (13) and is movable between a closed and open position along lateral guide tracks (14), where said tracks each have a rectilinear segment (16) that extends upwards with a slanting arrangement with regard to the vertical, diverging from the bottom towards the top compared to the plane of the door when it is in the closed position, **characterised in that** a supporting body (22) with a base plane (23) is provided with means for its application to the panels of the sectional door and **in that** at least a plurality of bores (26) parallel to each other are formed through said supporting body at a different distance from said base plane (23), each of said bores (26) being designed to receive selectively a rotation pin of a sliding roller (20).
2. Support according to claim 1, wherein the supporting body (22) is a single piece, in particular made of a plastic material, and said bores (26) are provided in an intermediate portion (24) of said body overhanging frontally from the base plane (23).
3. Support according to claim 1 or 2, wherein a first bore (26') of the plurality of bores (26) is at a preset distance from the base plane (23) of the supporting body (22) and the remaining bores of the same plurality of bores, are each at a different distance from said base plane and are correspondingly from said first bore (26') of the supporting body.
4. Support according to any of the previous claims, wherein said parallel bores (26) are divided into two groups of bores (a, b) positioned in two different parts of the intermediate portion (24) of the supporting body (21).
5. Support according to any of the previous claims,

wherein said bores (26, 26') have constant distance between centres.

6. Support according to any of the previous claims, wherein said bores (26, 26') have variable distance between centres. 5
7. Support according to any of the previous claims, wherein the supporting body forms a first of two components of a connecting hinge (13) of the panels of the sectional door, the supporting body being in this case configured to mate with a second component of the same hinge. 10
8. Support according to claims 1-6 wherein the supporting body is made up of an individual element connectable with one of two components of a connecting hinge (13) of the panels of the sectional door, the base plane of the supporting body being in this case shaped to mate with, and be fixed to, said element of the hinge. 15
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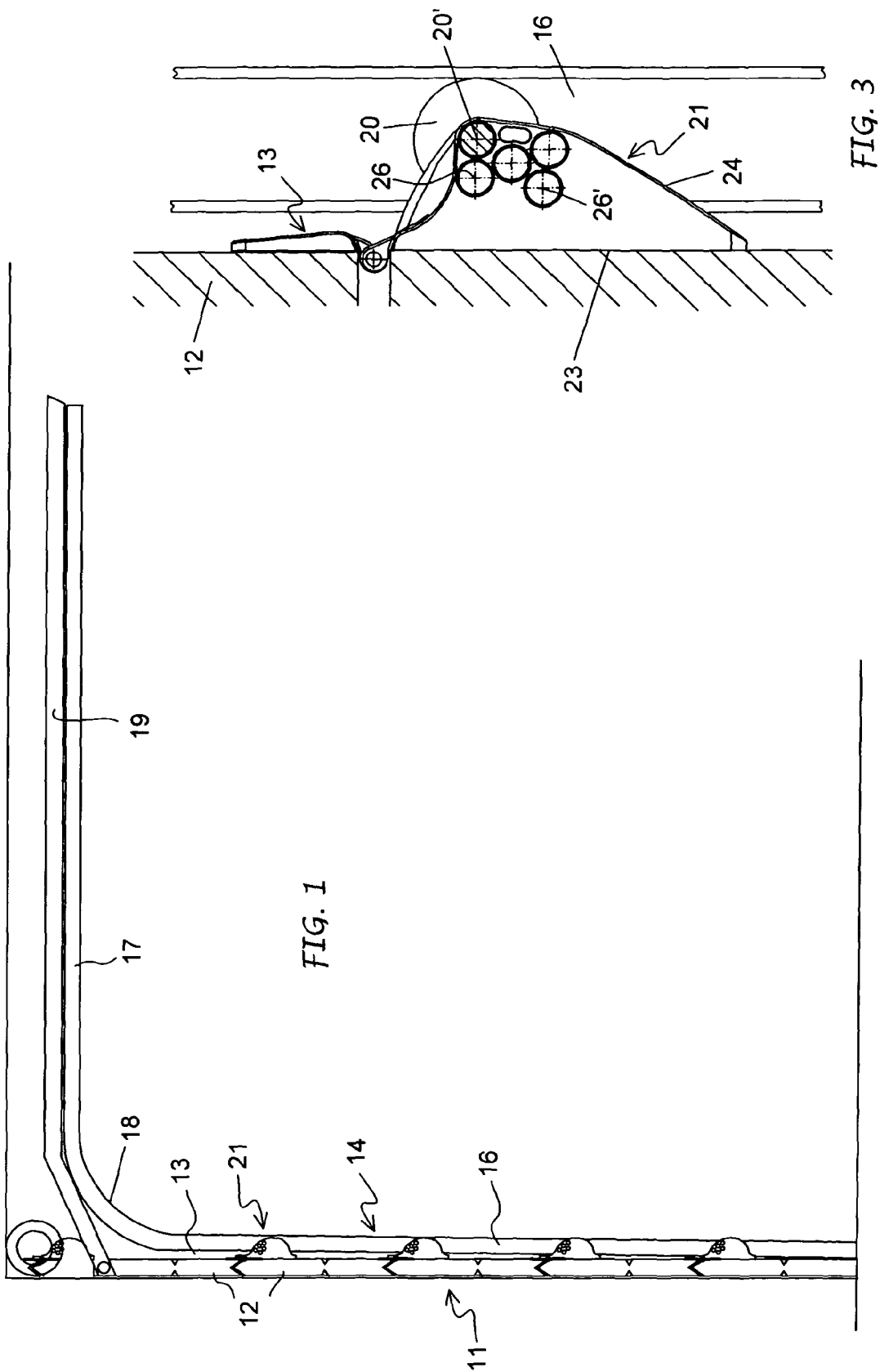


FIG. 2

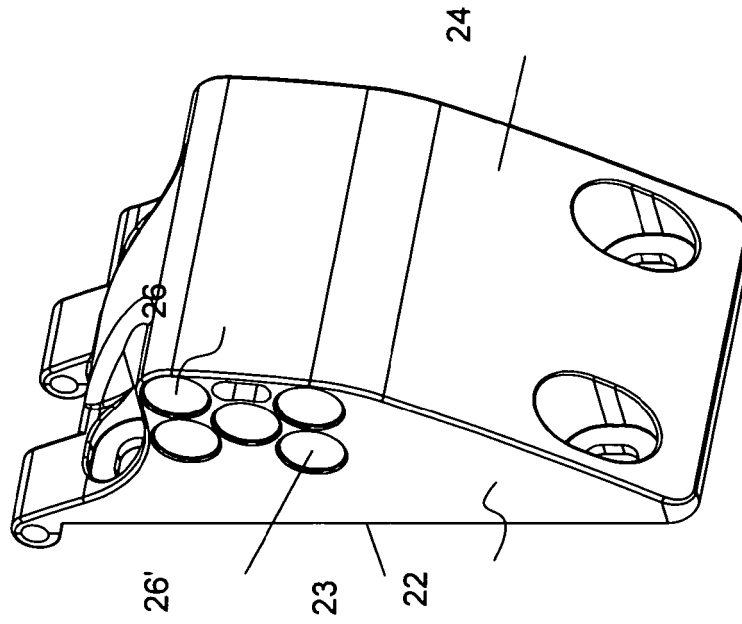


FIG. 6

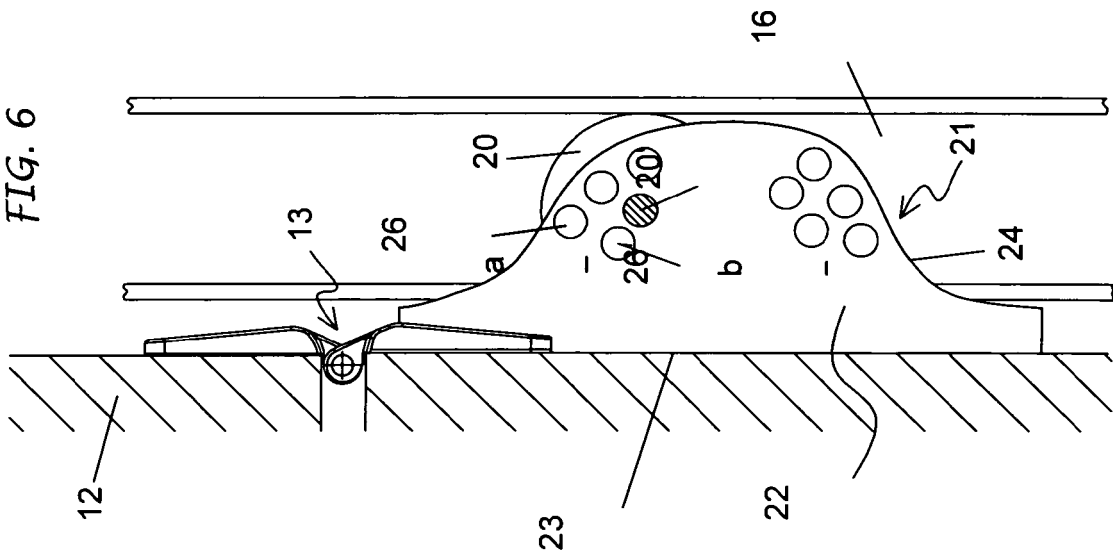


FIG. 4

