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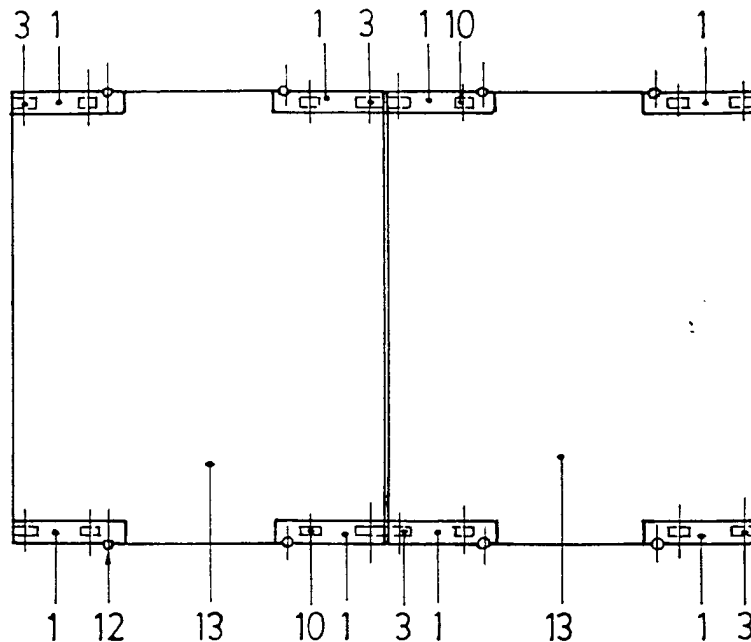
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(54) **Coplanar sliding doors or windows**

(57) Sliding doors and windows in a slipping system of the type which comprises an enclosure made up with two doorleaves(13) or more laterally movable between a top guide (15) and a lower guide (14), each doorleaf (13) having at its four corners respective sliding supports provided with a tubular profile (8) having at its end a vertically-shafted guide wheel (3) supported on a

spring-loaded (6) pivoting bushing (5), at a center point providing a resting ball bearing (12) with the guide bottom (14, 15) and a spring-loaded (11) tangential movable arm (9) having at its end a forced-contact bearing (10) against the guide rear portion (14, 15). Said arms (9) of the supports being suitable to keep forwardly coplanar the doors (13) in a shut threshold position or overlapped in an open threshold position.

FIGURA .1.



Description

OBJECT OF THE INVENTION

[0001] The present application refers to the registration of sliding doors and windows in a slipping system incorporating remarkable innovations and advantages in front of the prior art sliding doors and windows.

[0002] More particularly, a system has been devised by assuring a perfect slippery and levelling of sliding doors and windows obtained by their adjustable bearings and supports system, by providing them with an excellent aesthetic appearance.

BACKGROUND OF THE INVENTION

[0003] A large plurality of sliding doors and windows with different slipping systems with guides and the like are presently found in the market. Generally these doors are made up with two guides or U-shaped rails, one at the top and another at the bottom, between which the doorleaf is located. In another system, the doorleaf is hung from two pulleys inserted into a rail and having a channel tying down a projecting stop at the door lower portion. In most cases, due to its use, these doors tend to be off-level, and in a short time adjustable and slipping problems are arisen which revert to a difficult operation of the doors, these problems can be avoided by using this new system. Further, when a door or a window are made with two or more leaves, a groove is found at the area where they overlapped, air can circulate and dust penetrate, which area might be reduced by improving the adjustment between the leaves, but always with the risk that leaves rubbing each other and therefore damaging its surface.

DESCRIPTION OF THE INVENTION

[0004] The sliding doors and windows in a slipping system object of the present registration are mainly characterized in that the following specifications are provided. The two leaves coplanar when the door or window are shut provide therefore a high-quality aesthetic appearance, removing of the overlapping and of the groove existing in a conventional sliding seal, so a better isolation is achieved between the spaces related to the opening locked up. Levelling of sealing leaves can manually be adjusted so its installation comes to be more accurate and lengthened and even any failures in the alignment of the frame construction can rightly be corrected.

[0005] The system comprises four parts located at the four corners of the door's sliding leaf. All parts are similar and symmetrical two to two. The parts having on a nesting profile into the doorleaf, a bearing at its end with a vertical shaft and a diameter slightly over the thickness of said doorleaf. Its function is to facilitate door motion along the guide. A second bearing, this one in turn of

the ball type, is height-adjustable by a screw or a thread arising from the profile lower and upper parts and therefore from the door, which function consists of carrying the door weight, the lower balls and to prevent the upper balls clogging the door. Lastly, each part are having a wheel which shaft is vertical at the end of a pivoted arm at said corner part. This spring-operated arm is biased towards the outside and it has a double-operating function. It has been envisaged that when the door is shut the leaf is squeezed towards the front part by keeping it in the resting position and when the door is opened, the pressure exerted there is capable of overcoming the spring biasing by backwardly moving the door and placing it in a proper position to be moved behind the door located at its side.

[0006] In a typical two-leaf door enclosure, the leaves comprise two sheets of reinforced-construction, wood, plastics or metallic with some thickness available to the parts of the present invention at their four corners. These leaves are positioned secured between two simple rails, one at the top and another U-shaped at the bottom. Being this the recess wherein the leaves of a size slightly double over the leaves thickness are inserted thereinto. The leaves, when the enclosure is sealed, are seen visually coplanar and adjusted to the rails' front edge. This is due to the spring-loaded arm existing at each of the parts located at the corners which is forwardly pushing the door by causing thereby its shutting and adjustment.

[0007] To open one of the leaves is sufficient to press on the near edge to the central door, thus overcoming the opposition of the springs of the inside parts. When the springs are already overcome, this edge moves rearwardly and can be inserted between behind the other leaf when moving the door by pushing at the opposed side edge. In its motion by the rear part of the side door also the arms of this door are pushed so that it is then only necessary to draw the door located behind by moving it laterally. The spring-operated arms would then automatically locate the door at its coplanar and resting positions when catching the latter.

[0008] To complete the description hereinafter to be made and to help in the better understanding of its characteristics the present invention is accompanied by a set of drawings which illustrative and non-exhaustive figures showed the invention's most relevant details.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] Figure 1 shows an elevation view of the doors or windows with the sliding supports.

[0010] Figure 2 shows a sectioned view of the doors or windows on guides.

[0011] Figure 3 shows a plan view of doors or windows with all their members.

[0012] Figure 4 shows a detail of the sliding support unit with all its members.

[0013] Figure 5 shows a sectioned detail of the side

guide wheel fixed on the door or window.

DESCRIPTION OF A PREFERRED EMBODIMENT

[0014] In view of the cited figures and according with the numbering adopted, it can be seen there a preferred although non-exhaustive embodiment of the invention, quite suitable for the making up of sliding doors or windows, which comprises a door provided with two leaves (13) or sheets of some thickness between a top guide (15) and another lower guide (14), the recess of the guides being of a higher width double the thickness of each leaf (13). Each doorleaf (13) incorporating a four supports unit.

[0015] Said supports are fixed to the corners and provided each with a squared tubular profile (8) horizontally arranged at the doorleaf (13) corner. At the square profile (8) external end a laterally-moving support (2) which carry the guide wheel (3) already fitted is inserted thereinto. Said wheel (3) is having a larger diameter than the door or window leaf (13) thickness to prevent whole door rubbing when being moved. Said support (2) is received and inserted into a support-holder bushing (5) which carries inside an extendable spring (6) which operation is to facilitate the support (2) motion after being fixed, and with this purpose a groove (8) has been provided allowing said motion, all this bushing unit (2,5) is fixed inside the profile (8) by remaining secured and fixed to the hole (16) by means of a through screw. Inside said profile (6) the bearing (10) with its support (9) is fixed and a return spring (11) is laterally arising from the profile (8) at the doorleaf (13) rear portion until abutting on the guide (14, 15). To perform the work of levelling and facilitate the motion, the profile (8) is having at the opposing part to the doorleaf (13), a height-adjustable ball bearing (12) directly resting on the guide (14,15) internal face carrying the doorleaf (13) weight or keeping a contact with said doorleaf (13) with the top guide (15).

(14,15); and in that the guide wheel (3) is larger in diameter than the thickness of the doorleaf (13) and is found fixed in a support (2) provided with a securing side hole (4), this support in turn is found inserted into a support-holder bushing (5) having at its two side faces, a groove (7) and at its inside, an extendable spring (6) and remaining facing a hole (16) at the profile (8) wherein an adjusting screw of the wheel motion (3) is threaded.

Claims

1. SLIDING DOORS AND WINDOWS IN A SLIPPING SYSTEM of the type which comprises an enclosure made up with two doorleaves(13) or more laterally movable between a top guide (15) and a lower guide (14) characterized in that each doorleaf (13) having at its four corners four sliding supports (1), said supports (1) being provided with a squared tubular profile (8) which at the external end is having a guide wheel (3) and a motion with the vertical shaft, the tubular profile (8) having at its inside, a bearing (10) on a support arm (9) and provided with a return spring (11) laterally arising from the profile (8) by the rear portion of the doorleaf (13) until abutting on the guide (14,15) rear wall, also having on the profile (8) external face, a height-adjustable ball being (12) in ongoing contact with the guide bottom

FIGURA .1.

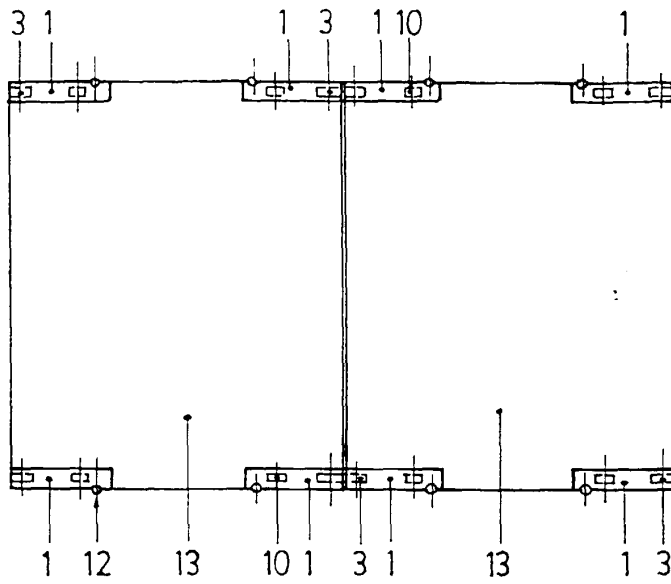


FIGURA .2.

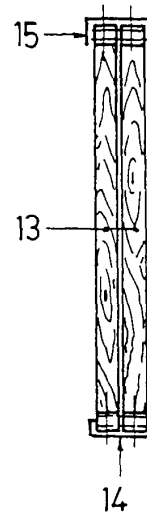


FIGURA .3.

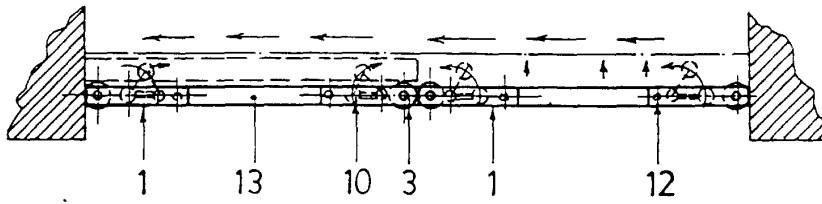


FIGURA .4.

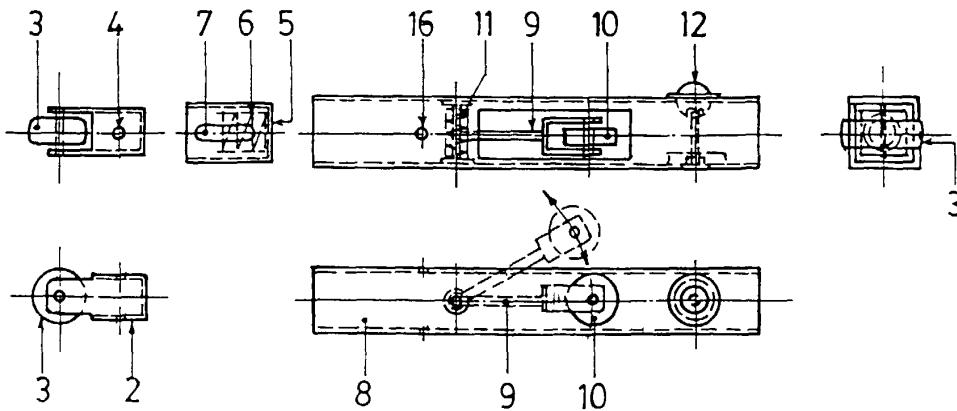


FIGURA .5.

