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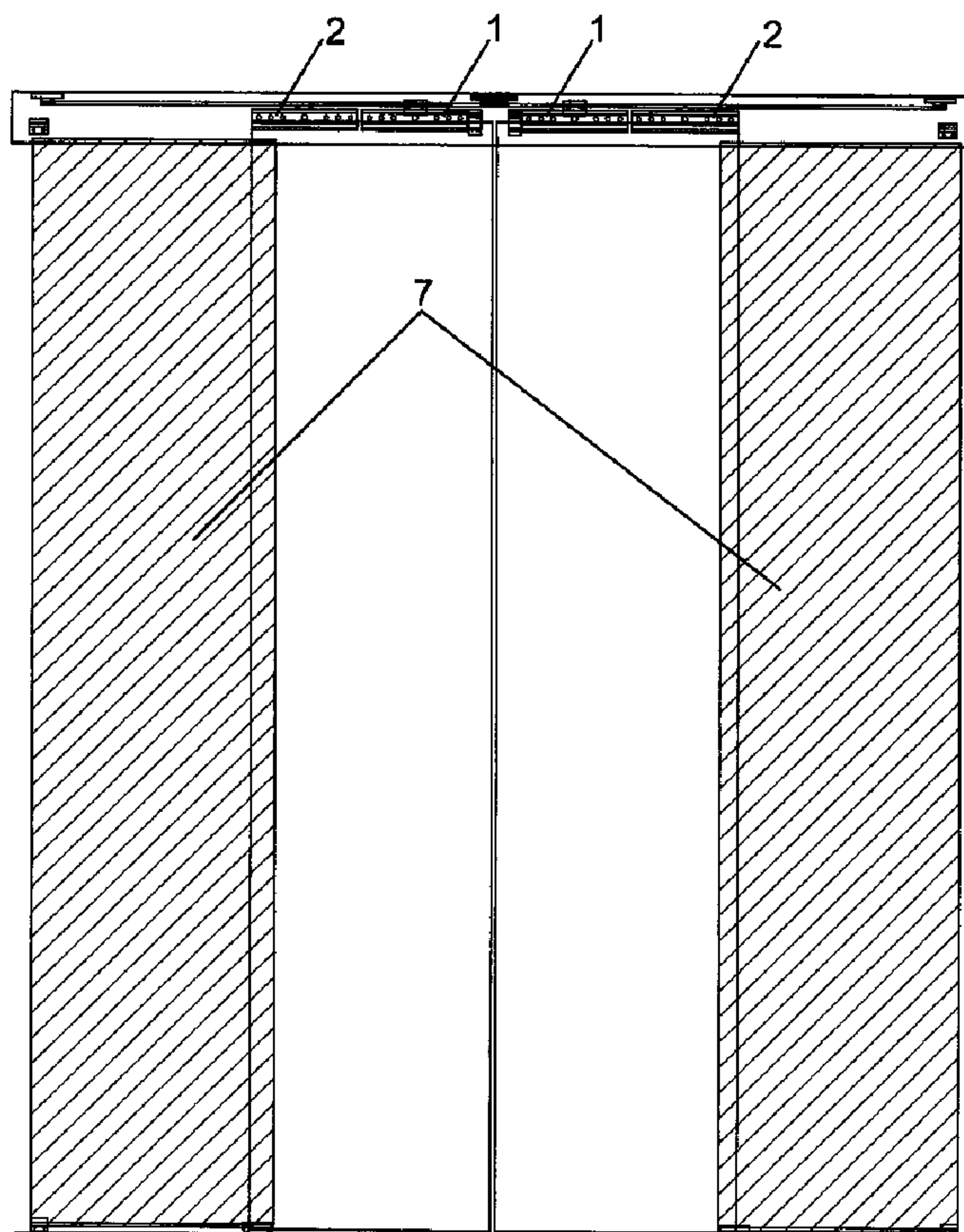
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(54) Titre : SYSTÈME D'ACTIONNEMENT SYNCHRONISÉ POUR PORTES COULISSANTES

(54) Title: SYNCHRONIZED ACTUATION SYSTEM FOR SLIDING DOORS



(57) Abrégé/Abstract:

The invention relates to a synchronized actuation system for sliding doors, of the type of those formed, in which the improvements consist of the fact that the pulling grip (1) and the free grip (2) have flanges (12) and in that the belt (4) and free (2) and pulling (1) grips are joined by means of a connecting shoe (3). With this configuration it is possible to carry out assembly and maintenance operations vertically and therefore in situ, this being a substantial improvement of the main patent.

ABSTRACT

The invention relates to a synchronized actuation system for sliding doors, of the type of those formed, in which the improvements consist of the fact that the pulling grip (1) and the free grip (2) have flanges (12) and in that the belt (4) and free (2) and pulling (1) grips are joined by means of a connecting shoe (3). With this configuration it is possible to carry out assembly and maintenance operations vertically and therefore in situ, this being a substantial improvement of the main patent.

SYNCHRONIZED ACTUATION SYSTEM FOR SLIDING DOORS

Object of the Invention

The object of this specification is to perfect and improve synchronized actuation systems for sliding doors, consisting of the use of a connecting shoe in the synchronic actuation mechanism.

The invention is especially suitable to be applied to sliding doors, which can move with respect to fixed panels framing the practicable passage area assisted by said doors.

Background of the Invention

The applicant is the proprietor of invention patent ES 2246673, the object of which is to present a device for the synchronized actuation of sliding doors with two connecting grips and their corresponding connection parts. The applicant is also the proprietor of invention patent P200502261, a mechanism for a sliding glass leaf, in which the suspension grip of the sliding door is improved.

Nevertheless, in both systems, the access to the internal components of the mechanism (suspension device) is carried out through a lid consisting of a gallery profile, and always horizontally. This arrangement of the elements makes it necessary to always leave a clearance allowing the installation of the system and future maintenance such as, for example, adjustments, substitution of parts, etc.

Description of the Invention

The improved synchronized actuation system for sliding doors, object of this invention patent, is designed to palliate, or where appropriate, eliminate the technical drawbacks considered.

The introduced improvement consists of the use of a connecting shoe joined to the pulling grip or suspension device by means of screws. The suspension devices have also been modified with respect to that claimed in the main patent so as to provide it with a flange and holes suitable joining it to the connecting shoe.

The operation of the invention is as follows. The grips holding the door, both the pulling grip and the free grip (both are suspension devices), are first centered. Once the grips are in place, the connecting shoe is fixed to the pulling grip. To that end, the connecting shoe is moved along the transmission belt, until the holes of the shoe are opposite to the holes of the pulling grip, both elements being fixed by screws. Finally, the suspension device – connecting shoe assembly is fixed to the transmission belt by means of screws, each of them being fixed between two teeth of the mentioned belt.

In accordance with an aspect of the present invention, there is provided a synchronized actuation system for sliding doors, of the type formed by a free grip and a pulling grip joined to the panels of the doors, wherein the transmission belt enables the movement of the grips and on a guide wherein the pulling grip and the free grip have flanges; and wherein the belt and pulling grip are joined by means of a connecting shoe that is not integrated in the structure of the actual pulling grip.

In accordance with another aspect of the present invention, there is provided a synchronized actuation system for sliding doors, comprising a free grip and a pulling grip holding the panels of a door, wherein a transmission belt enables the movement of the grips on a guide, comprising furthermore a connecting shoe, a first pair of screws and a second pair of screws, and wherein the belt and pulling grip are joined by means of the connecting shoe, wherein the pulling grip and the free grip have a horizontal rib on one of their flanges; and wherein a first pair of holes suitable for the passage of the first pair of vertically oriented screws for the joining between the shoe and the transmission belt have been made in the horizontal rib of the pulling grip, and in that the second pair of vertically oriented screws, for the joining between the shoe and pulling grip, screwed in the horizontal rib of the pulling grip cooperates with a second pair of holes; and wherein the connecting shoe is formed by a horizontal base in which the second pair of holes, for the joining with the pulling grip, is made and from which the first pair of vertically oriented screws for the joining with the belt emerges, and wherein a wall extends vertically from said horizontal base, from which wall there emerges in turn an upper cover, leaving a gap through which the belt passes and is trapped by the first pair of vertically oriented screws between this cover and a horizontal intermediate base, the first pair of vertically oriented screws being screwed in the horizontal intermediate base.

The following advantages are obtained with respect to the arrangement used in the current state of the art by means of using the connecting shoe:

- Access to the suspension device can be carried out vertically, the horizontal clearance disappears, the system becoming more compact and multipurpose because it allows installation in any place.
- Any handling, either due to repair or due to assembly, is simplified with respect to that claimed in the main patent.

Brief Description of the Drawings

A series of drawings is very briefly described below, which aid in better understanding the invention and are expressly related to an embodiment of said

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invention, presented as a non-limiting example thereof.

- Figure 1 is a view of the free and pulling grips integrating the actuation system object of this invention patent.
- Figure 2 is a view of the connecting shoe.
- 5 - Figure 3 is a view of the connecting shoe joined to the pulling grip and to the transmission belt.
- Figure 4 is a view of the actuation system assembled in respective sliding doors.

Preferred Embodiment of the Invention

10 As can be observed in the attached figures, both the pulling grip (1) and the free grip (2) have been modified, with respect to the main patent, with flanges (12). Holes (11) suitable for the passage of the screws (32) for the joining between the shoe (3) and the transmission belt (4) have been made in the pulling grip (1) in the flange (12). In the same manner, there are two screws (5) for the joining between the shoe (3) and
15 pulling grip (1) in the pulling grip (1).

 The formation of the connecting shoe (3) can be observed in Figure 2. Describing it from its lower part to its upper part, the connecting shoe (3) is formed by a base (35) in which the holes (31) for the joining with the pulling grip (1) are made and from which respective screws (32) for the joining with the belt (4) emerge. A wall (33)
20 extends vertically from the base, from which wall there emerges in turn an upper cover (34), leaving a gap through which the belt (4) will pass and be trapped by the screws (32) between this cover (34) and an intermediate base (35).

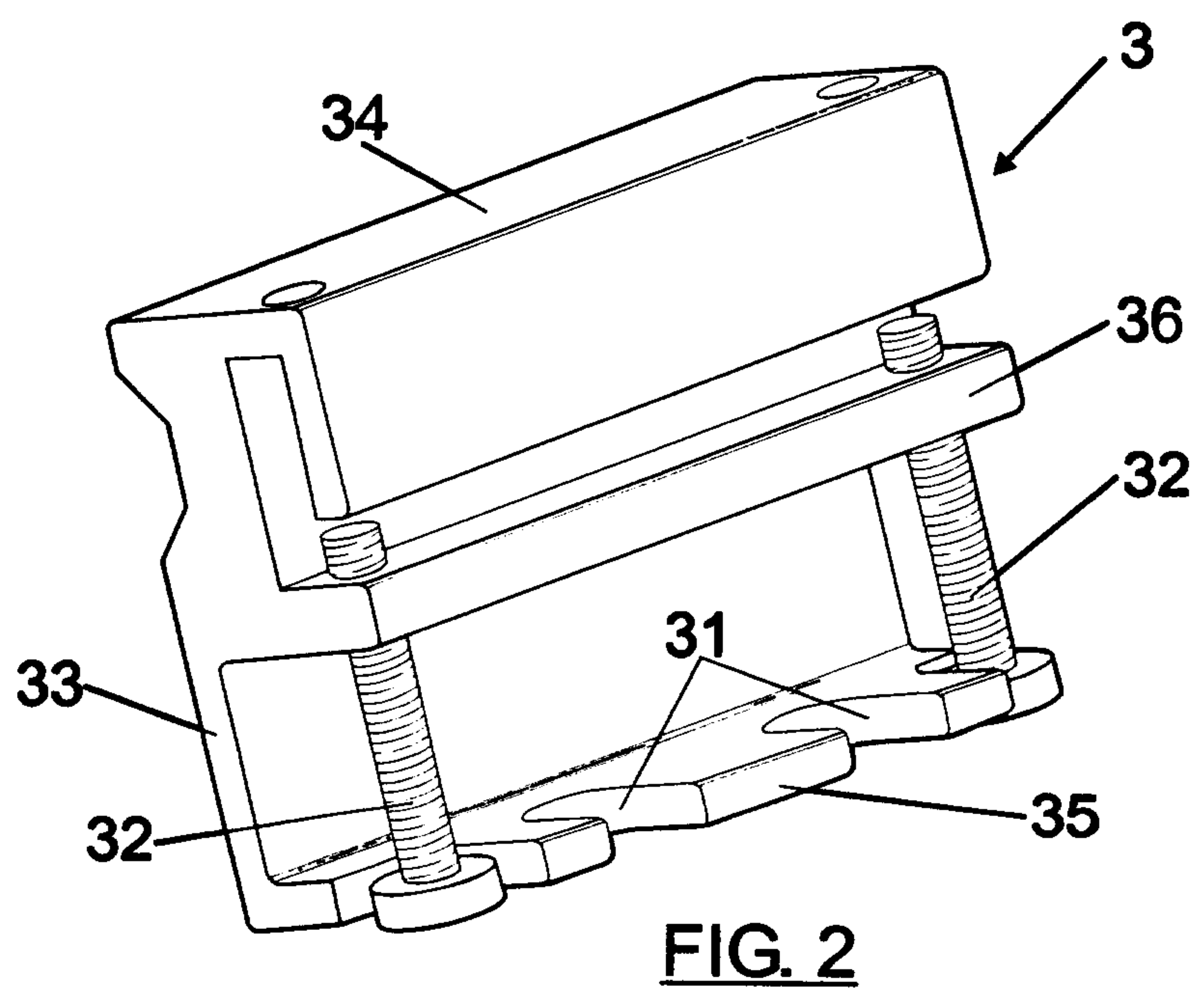
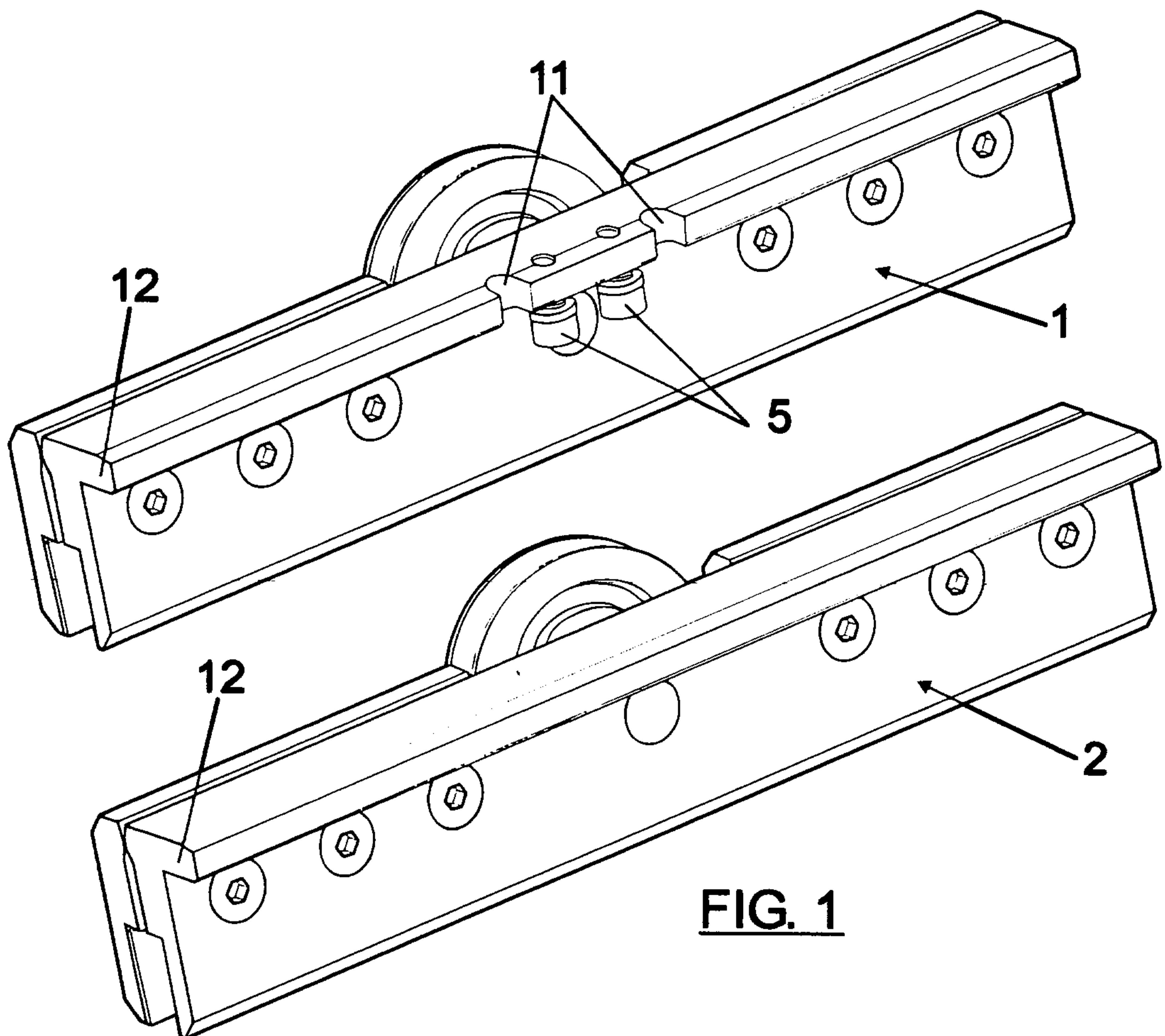
 Figure 3 shows how the connecting shoe (3) is joined to the transmission belt (4) in the pulling grip (1) and how the latter rests on the guide (6) thanks to the wheel of
25 the pulling grip (1).

Figure 4 shows the assembly of the system object of the invention in the panels (7) of the doors.

Having sufficiently described the nature of this invention patent, it must only be added that the invention can undergo certain variations in shape and materials such
5 that said alterations do not substantially modify the features claimed below.

CLAIMS

1. A synchronized actuation system for sliding doors, comprising a free grip and a pulling grip holding the panels of a door, wherein a transmission belt enables the movement of the grips on a guide, comprising furthermore a connecting shoe, a first pair of screws and a second pair of screws, and wherein the belt and pulling grip are joined by means of the connecting shoe, wherein the pulling grip and the free grip have a horizontal rib on one of their flanges; and wherein a first pair of holes suitable for the passage of the first pair of vertically oriented screws for the joining between the shoe and the transmission belt have been made in the horizontal rib of the pulling grip, and in that the second pair of vertically oriented screws, for the joining between the shoe and pulling grip, screwed in the horizontal rib of the pulling grip cooperates with a second pair of holes; and wherein the connecting shoe is formed by a horizontal base in which the second pair of holes, for the joining with the pulling grip, is made and from which the first pair of vertically oriented screws for the joining with the belt emerges, and wherein a wall extends vertically from said horizontal base, from which wall there emerges in turn an upper cover, leaving a gap through which the belt passes and is trapped by the first pair of vertically oriented screws between this cover and a horizontal intermediate base, the first pair of vertically oriented screws being screwed in the horizontal intermediate base.



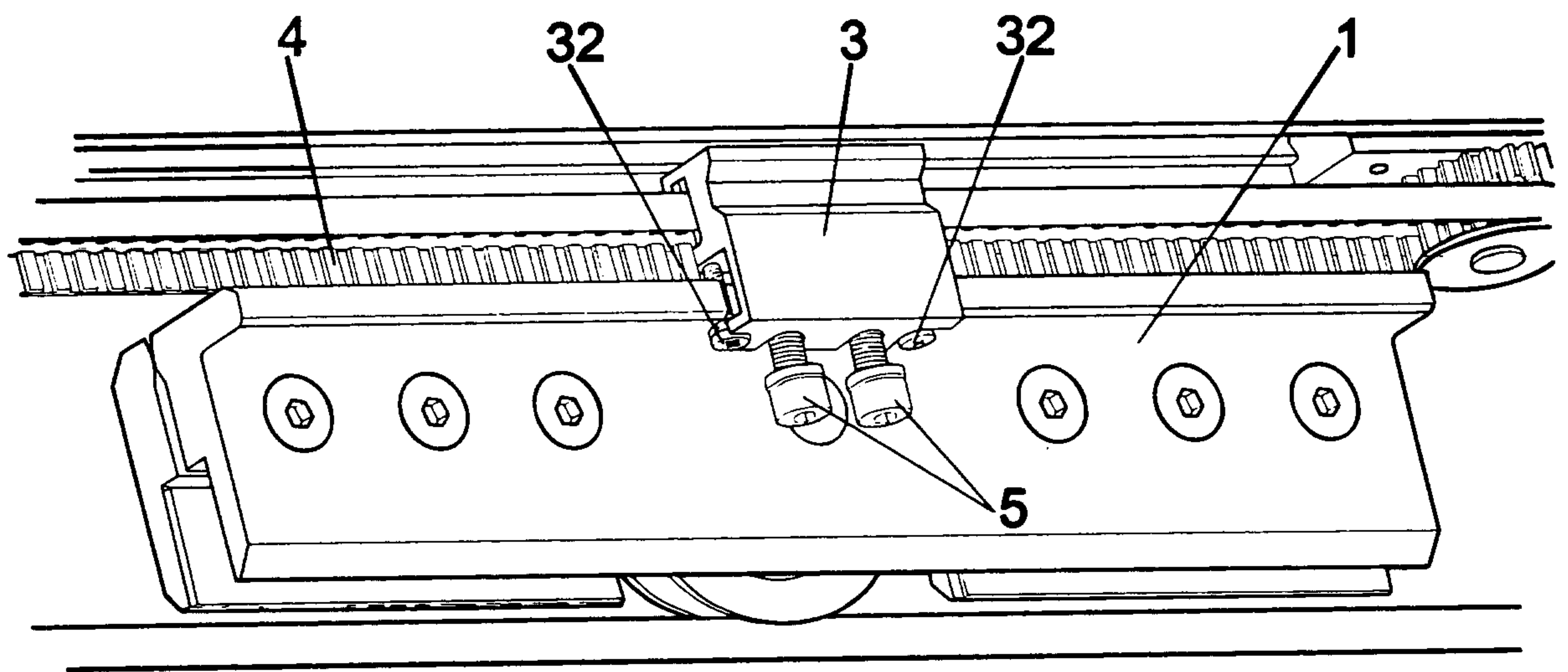


FIG. 3

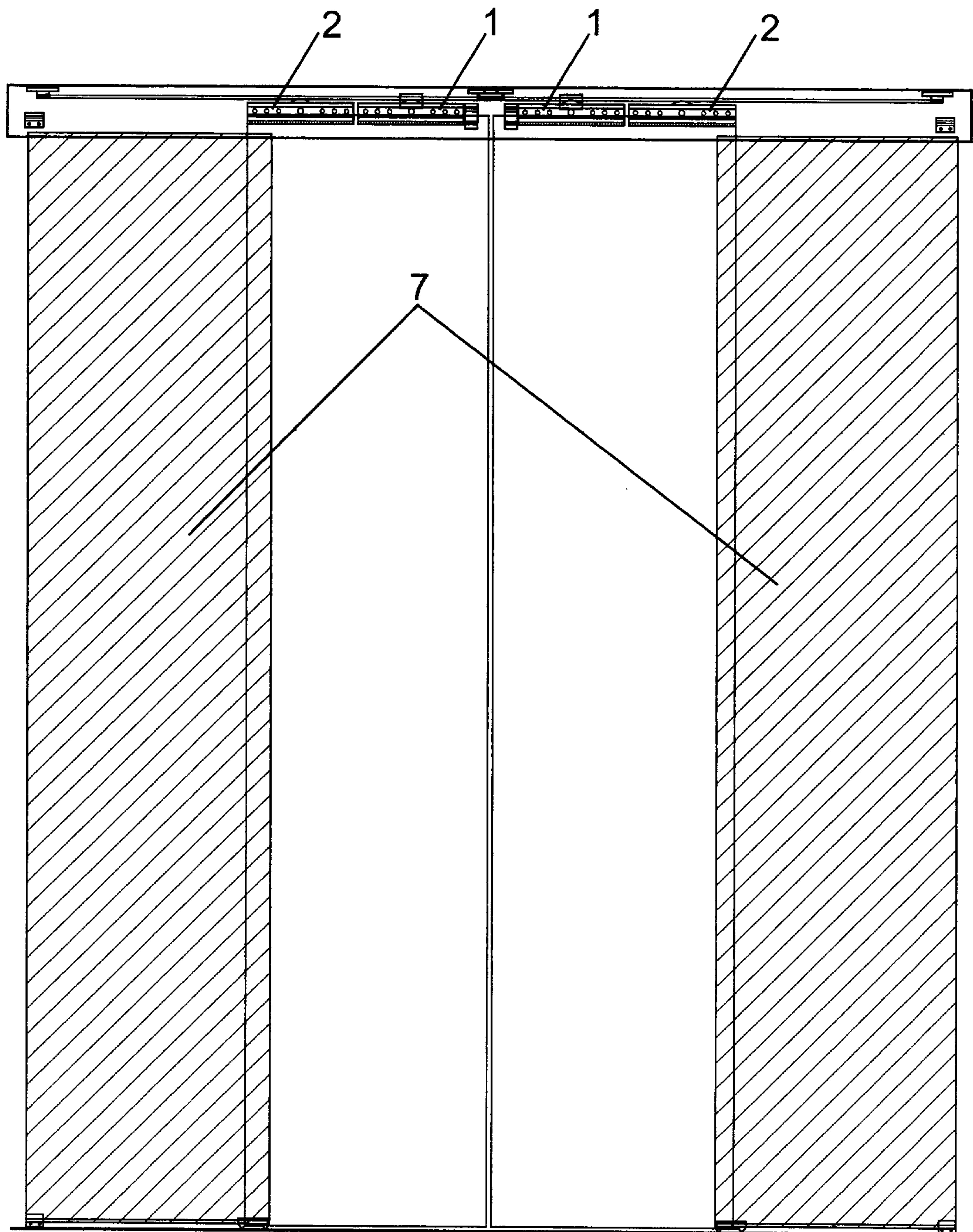


FIG. 4

