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(54) **SLIDING GUIDE SHOE FOR ELEVATORS AND AN ELEVATOR COMPRISING SAID SLIDING SHOE**

(57) The sliding guide shoe for elevators comprises a base (1) defining a housing for the placement of an insert (2), and being characterized in that it further comprises fastening means (3) movable between a closing position, in which the insert (2) may not be removed from the housing thereof, and an opening position, in which

the insert (2) may be removed from the housing thereof.

It makes it possible to extract and place the insert without dismounting the sliding guide shoe from the elevator, by simply loosening the fastening means, thus preventing said fastening element from accidentally falling while the insert is being replaced.

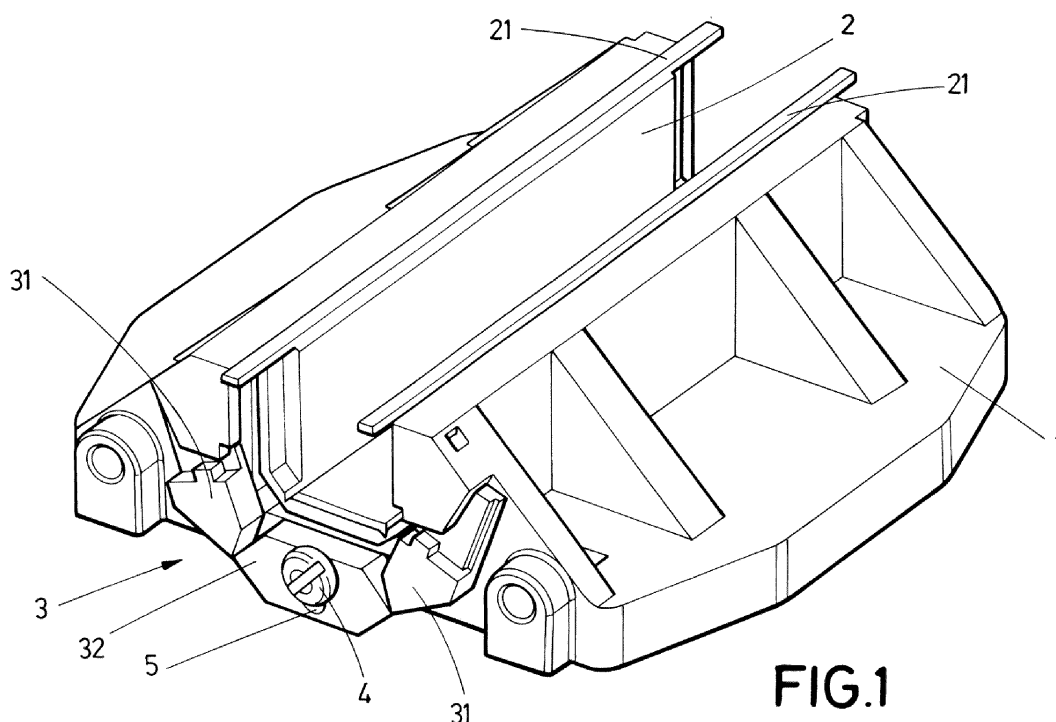


FIG.1

Description

[0001] The present invention relates to a sliding guide shoe for elevators and to an elevator comprising said sliding guide shoe.

Background of the invention

[0002] Typically, elevators have vertical guides arranged in the elevator shaft, which guide the upward and downward movement of the car of the elevator itself. To guide the elevator car along the guide rails usually four roller guide shoes or sliding guide shoes are used, one for each upper and lower corner of the car or the frame.

[0003] The roller guide shoes are provided with wheels, which roll on the faces of the guide rails and the sliding guide shoes use materials with anti-friction properties so they can slide over the guide rails. In general, the roller guide shoes, compared with the sliding guide shoes, provide better comfort and less consumption during the traveling, but have a higher cost and are less compact, which negatively affects the general cost and the performance of the useful space of the elevator shaft.

[0004] The sliding guide shoes for elevators comprise an insert, which experience prolonged wear over their lifetime due to the fact that it is an element that slides against the elevator guide rails and is continuously subjected to friction against the guide rail when the elevator is moving. The wear experienced determines the useful life of the insert, and may vary between one year and a decade, depending on the elevator type and the use thereof.

[0005] When the compact sliding guide shoes reach the end of their life and they are replaced, the entire assembly of each sliding guide shoe, is dismantled from the elevator, and after removing the old insert and mounting the new one, they are remounted.

[0006] This is because it is usually not possible to mechanically dismount an insert from a compact sliding guide shoe (which should be fastened to the base in the longitudinal direction of the guide rails) with the sliding guide shoe fastened to the car, car frame and/or counterweight.

[0007] In order to partially solve these problems, sliding guide shoes have been designed which make it possible to remove the insert without having to completely dismount the sliding guide shoe.

[0008] For example, document US 2013/0098714 describes a compact sliding guide shoe that allows the insert to be removed in the longitudinal direction, but to this end, it is necessary to dismount a cover.

[0009] Document EP-A1-1880968 also describes a compact sliding guide shoe with a cover (two covers, on both sides of the sliding guide shoe). In this case, a cover is also used, which has to be dismantled.

[0010] Therefore, the need for a sliding guide shoe in which the insert may be replaced without having to dismount the components thereof is obvious.

Description of the invention

[0011] With the sliding guide shoe for elevators of the invention, the aforementioned problems are solved, in addition to having further advantages, which will be, describe below.

[0012] The sliding guide shoe for elevators according to the present invention comprises a base defining a housing wherein an insert is placed, and is characterized in that it further comprises fastening means, movable between a closing position, in which the insert cannot be removed from the housing thereof, and an opening position, in which the insert can be removed from the housing thereof.

[0013] According to a preferred embodiment, said fastening means comprise a movable part, which moves relative to the base and at least one oscillating part which oscillates relative to the movable part of the fastening means.

[0014] Advantageously, said fastening means comprise two oscillating parts mounted on both sides of the movable part.

[0015] In addition, the fastening means, or the base, preferably comprise at least one elongated through-hole that determines the positions of said fastening means in their closing and opening positions, and a retention element, for example a screw, housed in said elongated through-hole, so as to retain the closing position and the opening position of said fastening means.

[0016] In addition, the screw is preferably housed in an elongated through-hole of the fastening means.

[0017] Advantageously, the oscillating parts may oscillate in both directions relative to the movable part.

[0018] If desired, the fastening means may advantageously be reversible, and in the closing position thereof, it is possible to use two different sizes of inserts.

[0019] In addition, the insert advantageously comprises tabs on the outer portion thereof that is more accessible for the maintenance technician, so as to facilitate the removal of the insert from the housing.

[0020] With the sliding guide shoe according to the present invention, at least the following advantages are obtained:

- It enables the insert to be extracted and placed without dismantling the sliding guide shoe from the elevator, by simply loosening the fastening means, thus preventing said fastening means from accidentally falling (for example, into the elevator shaft) during the insert replacement, and the subsequent trip the technician must make in order to recover said fastening means.
- It prevents security risks as a result of the fall of the fastening means into the elevator shaft.
- It reduces insert replacement time.
- It makes it possible to design elevators with sliding guide shoes having low accessibility from the shaft.

Brief description of the drawings

[0021] For a better understanding of all the foregoing, a set of drawings is attached therein, in which a practical embodiment is schematically represented only by way of non-limiting example.

Figure 1 is a perspective view of the sliding guide shoe according to the present invention;

Figure 2 is a plan frontal view of the sliding guide shoe according to the present invention in the closing position of the fastening mean; and

Figure 3 is a plan frontal view of the sliding guide shoe according to the present invention in the closing position of the opening mean.

Description of a preferred embodiment

[0022] In figure 1 a sliding guide shoe according to the present invention is shown, which comprises a base (1) defining a housing wherein an insert (2) is placed.

[0023] This insert 2 is placed in said housing defining a U shape and is subjected to contact wear with the guide rails, such that it must be removed when it is excessively worn in order to work correctly. To facilitate its removal from and placement into the housing thereof, the insert 2 preferably comprises tabs 21 at the outer ends of the insert 2.

[0024] To fasten the insert 2 inside the housing thereof, the sliding guide shoe also comprises fastening means 3 fastened to said base 1. Said fastening means 3 can move between a closing position, in which the insert (2) cannot be removed from the housing thereof, and an opening position, in which the insert (2) can be removed from the housing thereof,

[0025] Said fastening means are made up of various oscillating parts 31 and a movable part 32, said oscillating parts 31 oscillating relative to said movable part 32, and said movable part 32 being movable relative to the base 1.

[0026] As can be observed in the figures, the oscillating parts 31 are mounted on the sides of said movable part 32 and, in the closing position (represented in figure 2) the oscillating parts 31 close an end of the housing and prevent the insert 2 from being removed, while in the opening position (represented in figure 3), the oscillating parts 31 release said end from the housing and make it possible for the insert 2 to be removed.

[0027] The fastening means 3 or the base 1, comprise an elongated through-hole 5, which determines the position of said fastening means 31, 32 in their closing position and in their opening position and a retention element 4, for example a screw, housed in said elongated through-hole 5, so as to retain the closing position and the opening position of said fastening means 31, 32, as can be observed in figures 2 and 3.

[0028] It should also be noted that the oscillating parts 31 and the movable part 32 comprise stops 4' by way of

additional retaining means to retain their opening or closing position, as can be observed in figures 2 and 3.

[0029] If desired, the oscillating parts 31 may oscillate in both directions relative to the movable part 32, such that the fastening means 3 may be reversible, and in the closing position thereof, it is possible to use it with two different insert sizes corresponding to two different guide rail sizes.

[0030] When the insert 2 is worn down and must be replaced with a new insert 2, it is only necessary to loosen the screw 4, making the movable part 32 move downwards (according to the position shown in the figures) thanks to the elongated through-hole 5, and the oscillating parts 31 will oscillate to their opening position.

[0031] With the oscillating parts 31 in the opening position, the insert 2 can be easily removed without having to dismount the sliding guide shoe components, facilitating said removal due to the presence of the tabs 21 in the insert 2.

[0032] Once the worn down insert 2 has been removed and a new insert 2 has been placed into the housing, the oscillating parts 31 have to be moved to their closing position and the movable part 32 has to be moved to its closing position, and then, the screw 4 is tightened, preventing the insert 2 from coming out its housing.

[0033] Although reference has been made to a specific embodiment of the invention, it is obvious for a person skilled in the art that the sliding guide shoe for elevators described may be the object of numerous variants and modifications, and that all the details mentioned may be suitably substituted with others, which are technically equivalent without departing from the scope of protection defined by the attached claims.

Claims

1. A sliding guide shoe for elevators, which comprises a base (1) defining a housing for the placement of an insert (2), **characterized in that** it further comprises fastening means (3) movable between a closing position, in which the insert (2) cannot be removed from the housing thereof, and an opening position, in which the insert (2) can be removed from the housing thereof,
2. The sliding guide shoe for elevators according to claim 1, wherein said fastening means (3) comprise at least one movable part (32) which moves relative to the base (1).
3. The sliding guide shoe for elevators according to claim 2, wherein the fastening means (31, 32) or the base (1) comprise an elongated through-hole (5) which determines the closing and opening positions of the fastening means (3).
4. The sliding guide shoe for elevators according to

claim 2, wherein said fastening means comprise at least one oscillating part (31) that oscillates relative to the movable part (32).

5. The sliding guide shoe for elevators according to claim 4, wherein said fastening means comprise two oscillating parts (31) mounted on both sides of the movable part (32). 5
6. The sliding guide shoe for elevators according to any preceding claim, wherein the fastening means (3) comprise retaining means (4, 4') to retain the position of said fastening means (3). 10
7. The sliding guide shoe for elevators according to claim 5, wherein the oscillating parts (31) oscillate in both directions relative to the movable part (32). 15
8. The sliding guide shoe for elevators according to any preceding claim, wherein the fastening means (3) may be mounted in both directions so as to adapt to different guide rail dimensions. 20
9. The sliding guide shoe for elevators according to claim 1, wherein the insert comprises tabs (21) on the outer portion thereof. 25
10. An elevator that comprises a sliding guide shoe according to any one of claims 1 to 9. 30

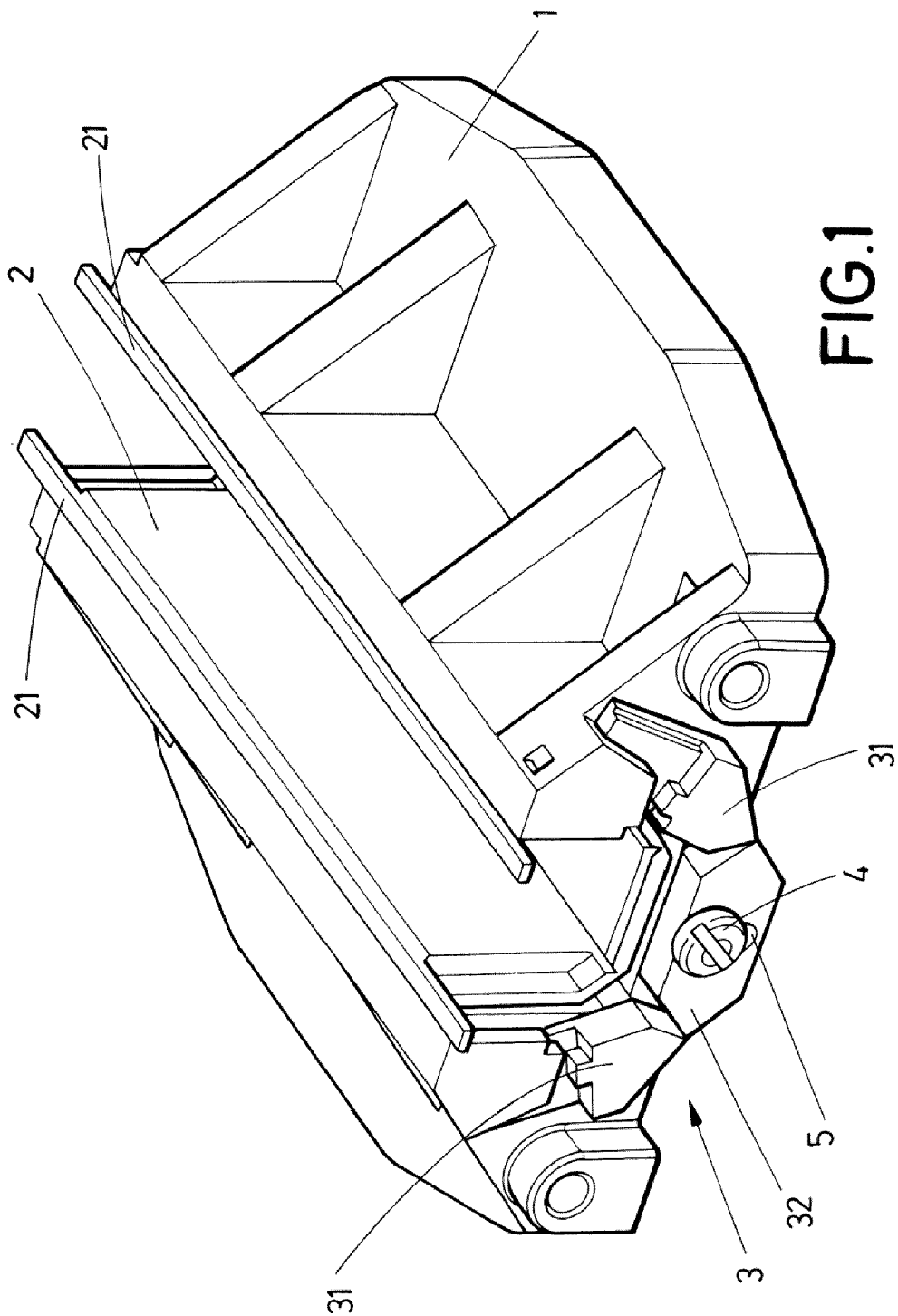
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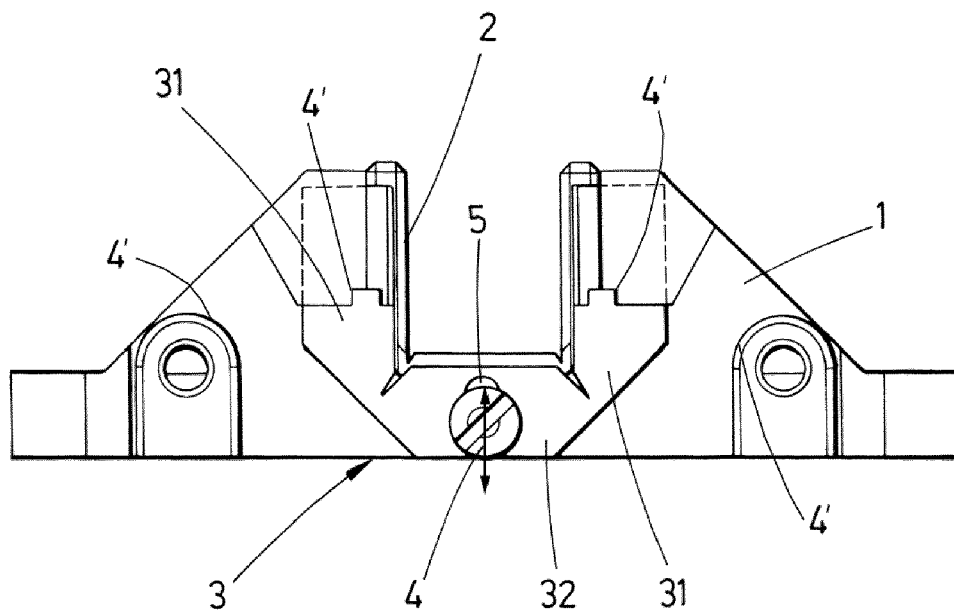


FIG.2

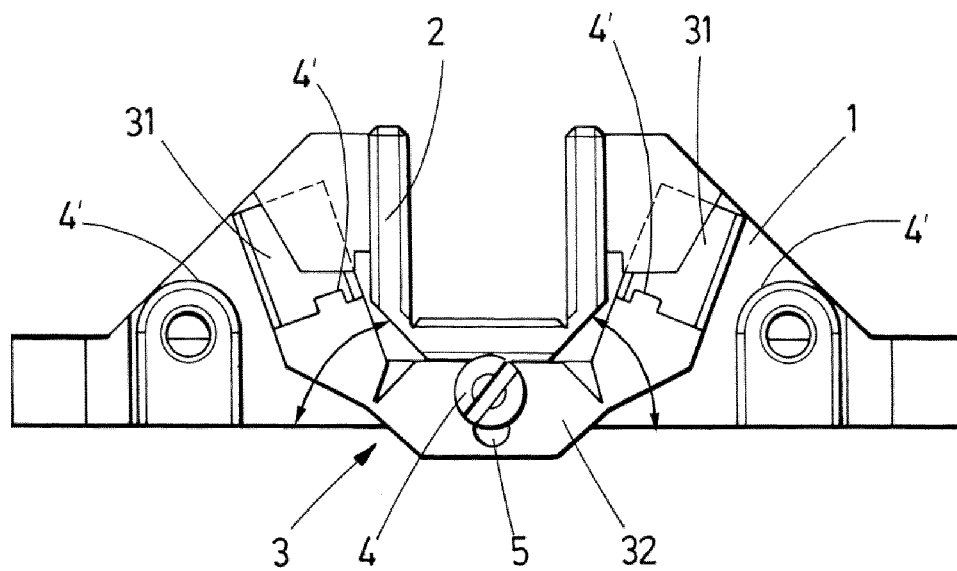


FIG.3



EUROPEAN SEARCH REPORT

Application Number
EP 15 38 2576

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EPO FORM 1503 03.82 (P04C01)

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Y	US 2008/017457 A1 (ACH ERNST [CH] ET AL) 24 January 2008 (2008-01-24) * paragraph [0036]; figures 1-5 * * paragraph [0041] * * paragraph [0053] * -----	9	
A,P	WO 2015/015614 A1 (HITACHI LTD [JP]) 5 February 2015 (2015-02-05) * abstract; figures 1-4 * -----	1-10	
			TECHNICAL FIELDS SEARCHED (IPC)
			B66B
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 18 April 2016	Examiner Lenoir, Xavier
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ON EUROPEAN PATENT APPLICATION NO.**

EP 15 38 2576

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18-04-2016

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