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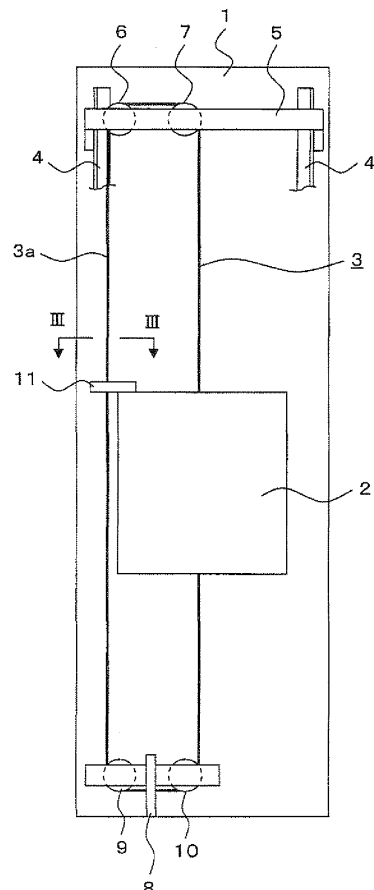
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(54) **CWT-LESS ELEVATOR**

(57) Provided is a car (2) provided inside a hoistway (1); a rope (3) for suspending the car (2), the rope having one end portion connected to a top of the car (2) and the other end portion connected to a bottom of the car (2), the rope including a wall-side hanging-down portion (3a) hanging down between the car (2) and a wall of the hoistway (1) in an intermediate portion; and movement restriction means (11) provided around the wall-side hanging-down portion (3a), the movement restriction means being brought into contact with the wall-side hanging-down portion (3a) to restrict horizontal movement of a portion of the wall-side hanging-down portion (3a), which is in contact therewith.

FIG.1



Description

Technical Field

[0001] The present invention relates to a CWT-less elevator including a car and suspension means which suspends the car and has one end portion connected to a top of the car and the other end portion connected to a bottom of the car.

Background Art

[0002] Conventionally, a CWT-less elevator including a car provided inside a hoistway and a rope which suspends the car and includes a wall-side hanging down portion and has one end portion connected to a top of the car and the other end portion connected to a bottom of the car, the wall-side hanging-down portion being provided in an intermediation portion to hang down between the car and a wall of the hoistway, is known (for example, see Patent Document 1).

[0003] Patent Document 1: JP 2006-16184 A

Disclosure of the Invention

Problem to be solved by the Invention

[0004] In the case of the aforementioned CWT-less elevator, however, the wall-side hanging-down portion horizontally swings as a result of application of a horizontal force to the wall-side hanging-down portion of the rope due to, for example, an earthquake or the like. Thus, the CWT-less elevator has the problem of having a fear in that a part of the wall-side hanging-down portion may be caught on a device provided inside the hoistway.

[0005] The present invention has been made to solve the problem described above, and therefore has an object to provide a CWT-less elevator capable of preventing a wall-side hanging-down portion of a rope from horizontally swinging even when a horizontal force is applied to the wall-side hanging-down portion.

Means for solving the Problem

[0006] A CWT-less elevator according to the present invention includes: a car provided inside a hoistway; suspension means for suspending the car, the suspension means having one end portion connected to a top of the car and the other end portion connected to a bottom of the car, the suspension means including a wall-side hanging-down portion hanging down between the car and a wall of the hoistway in an intermediate portion; and movement restriction means provided around the wall-side hanging-down portion, the movement restriction means being brought into contact with the wall-side hanging-down portion to restrict horizontal movement of the wall-side hanging-down portion.

Effects of the Invention

[0007] According to the CWT-less elevator of the present invention, even when a horizontal force is applied to the wall-side hanging-down portion of a rope, the movement restriction means comes into contact with the wall-side hanging-down portion to restrict horizontal movement of the wall-side hanging-down portion. Therefore, the wall-side hanging-down portion can be prevented from horizontally swinging.

Brief Description of the Drawings

[0008] FIG. 1 is a longitudinal sectional view illustrating a CWT-less elevator according to Embodiment 1 of the present invention.

FIG. 2 is an interior plan view illustrating the CWT-less elevator illustrated in FIG. 1.

FIG. 3 is a sectional view taken along the line III-III of FIG. 1.

FIG. 4 is a plan view illustrating movement restriction means and wall-side hanging-down portions of ropes of a CWT-less elevator according to Embodiment 2 of the present invention.

FIG. 5 is a side view illustrating a state where one of the wall-side hanging-down portions of the ropes illustrated in FIG. 4 is caught on a device provided inside a hoistway.

FIG. 6 is a plan view illustrating movement restriction means and wall-side hanging-down portions of ropes of a CWT-less elevator according to Embodiment 3 of the present invention.

FIG. 7 is a side view illustrating the movement restriction means and the wall-side hanging-down portions of the ropes illustrated in FIG. 6.

FIG. 8 is a plan view illustrating movement restriction means and wall-side hanging-down portions of ropes of a CWT-less elevator according to Embodiment 4 of the present invention.

FIG. 9 is a side view illustrating the movement restriction means and the wall-side hanging-down portions of the ropes illustrated in FIG. 8.

FIG. 10 is an enlarged view of a portion A of each of the ropes illustrated in FIG. 9.

FIG. 11 is an enlarged view illustrating a variation of each of the wall-side hanging-down portions of the ropes illustrated in FIG. 9.

Best Mode for carrying out the Invention

[0009] Embodiment 1

FIG. 1 is a longitudinal sectional view illustrating a CWT-less elevator according to this embodiment, and FIG. 2 is an interior plan view illustrating the CWT-less elevator illustrated in FIG. 1.

The CWT-less elevator according to this embodiment includes a car 2 provided inside a hoistway 1 and three

ropes 3 corresponding to suspension means which suspends the car 2.

Vertically extending guide rails 4 are respectively fixed onto a pair of walls of the hoistway 1, which are opposed to each other, so that each of the guide rails 4 is separated by a gap from a corresponding wall surface.

A machine table 5 is fixed onto an upper part of each of the guide rails 4 so as to extend between the guide rails 4. A driving sheave 6 of a hoisting machine driven by a control section (not shown) and a rotatable return sheave 7 are mounted to the machine table 5.

Onto a bottom surface of the hoistway 1, a first tension sheave 9 and a second tension sheave 10 are rotatably mounted through an intermediation of a support member 8.

[0010] The return sheave 7 and the second tension sheave 10 are located on the same vertical line passing through the vicinity of a center of the car 2.

The driving sheave 6 and the first tension sheave 9 are located on the same vertical line passing through the vicinity of one side wall of the car 2.

One end portion of each of the ropes 3 is connected to a top of the car 2 to extend upward from the top of the car 2 so as to be looped around the return sheave 7 and the driving sheave 6 in this order.

The other end portion of each of the ropes 3 is connected to a bottom of the car 2 to extend downward from the bottom of the car 2 so as to be looped around the second tension sheave 10 and the first tension sheave 9 in this order.

Each of the ropes 3 has a wall-side hanging-down portion 3a provided in an intermediate portion, which hangs down between the car 2 and the wall of the hoistway 1. The wall-side hanging-down portions 3a are located to extend between the driving sheave 6 and the first tension sheave 9.

[0011] The CWT-less elevator also includes movement restriction means 11 provided around the wall-side hanging-down portions 3a of the ropes 3.

FIG. 3 is a sectional view taken along the line III-III of FIG. 1.

A through hole 11a is formed through the movement restriction means 11. The wall-side hanging-down portions 3a of the three ropes 3 pass through the through hole 11a. The movement restriction means 11 is fixed onto an upper surface of the car 2 by fastening means (not shown). When a horizontal force is not applied to the wall-side hanging-down portions 3a of the ropes 3, the movement restriction means 11 and the wall-side hanging-down portions 3a are in a non-contact state.

[0012] In this CWT-less elevator, when the horizontal force is applied to the wall-side hanging-down portions 3a of the ropes 3 due to, for example, an earthquake or the like, the wall-side hanging-down portions 3a start horizontally swinging to be brought into contact with the movement restriction means 11.

The horizontal movement of a portion of each of the wall-side hanging-down portions 3a, which is brought into con-

tact with the movement restriction means 11, is restricted by the movement restriction means 11.

As a result, the horizontal swing of the wall-side hanging-down portions 3a can be reduced.

[0013] As described above, according to the CWT-less elevator of this embodiment, even when the horizontal force is applied to the wall-side hanging-down portions 3a of the ropes 3, the wall-side hanging-down portions 3a and the movement restriction means 11 come into contact with each other so that the horizontal movement of the wall-side hanging-down portions 3a is restricted by the movement restriction means 11. Therefore, the horizontal swing of the wall-side hanging-down portions 3 can be reduced.

[0014] Although the movement restriction means 11 mounted to the car 2 has been described in this embodiment, it is apparent that the movement restriction means 11 is not limited thereto. The movement restriction means 11 may be mounted to, for example, a wall of the hoistway 11.

[0015] Moreover, although the movement restriction means 11 having the through hole 11a, through which the wall-side hanging-down portions 3a of the ropes 3 pass, has been described in this embodiment, it is apparent that the movement restriction means 11 is not limited thereto. For example, the movement restriction means 11 may have a groove through which the wall-side hanging-down portions 3a of the ropes 3 can pass. Alternatively, the movement restriction means 11 may be composed of a plurality of components to have the through hole 11a formed by combining the components, through which the wall-side hanging-down portions 3a of the ropes 3 pass.

As a result, the movement restriction means 11 may be mounted to the car 2 or to the wall of the hoistway after the car 2 and the ropes 3 are installed inside the hoistway 1. Therefore, the installation of the movement restriction means 11 is facilitated.

[0016] Furthermore, although the CWT-less elevator including the single movement restriction means 11 has been described in this embodiment, the CWT-less elevator may include a plurality of the movement restriction means 11.

In such a case, the plurality of movement restriction means 11 are arranged at a distance from each other. As a result, the horizontal swing of the wall-side hanging-down portions 3a can be further reduced.

[0017] Embodiment 2

FIG. 4 is a plan view illustrating movement restriction means 12 and the wall-side hanging-down portions 3a of the ropes 3 of the CWT-less elevator according to this embodiment.

The movement restriction means 12 of the CWT-less elevator according to this embodiment includes a contact body 12a which is brought into contact with the wall-side hanging-down portions 3a of the ropes 3 and an electric resistance measuring device 12b mounted to both end portions of the contact body 12a.

When the horizontal force is not applied to the wall-side hanging-down portions 3a of the ropes 3, the contact body 12a and the wall-side hanging-down portions 3a are in a non-contact state.

The contact body 12a is supported by the electric resistance measuring device 12b. The electric resistance measuring device 12b is supported on a base 12c fixed onto the upper surface of the car 2.

The electric resistance measuring device 12b includes a timer (not shown) for time measurement.

Further, the electric resistance measuring device 12b is electrically connected to the control section (not shown) of the CWT-less elevator so as to be able to transmit an electric signal to the control section.

When the horizontal force is applied to the wall-side hanging-down portions 3a of the ropes 3, the wall-side hanging-down portions 3a start horizontally swinging to be brought into contact with the contact body 12a.

The horizontal movement of a portion of each of the wall-side hanging-down portions 3a, which is brought into contact with the contact body 12a, is restricted by the contact body 12a.

[0018] The contact body 12a is formed to have a C-like shape so as to surround the three ropes 3.

The electric resistance measuring device 12b applies a predetermined voltage between the both end portions of the contact body 12a, and measures an electric resistance between the both end portions from a value of a current flowing between the both end portions.

The electric resistance between the both end portions of the contact body 12a is an electric resistance of the contact body 12a alone when the wall-side hanging-down portions 3a are not in contact with the contact body 12a, while the electric resistance between the both end portions of the contact body 12a is an electric resistance obtained by adding the electric resistance of the contact body 12a and an electric resistance of the portions of the wall-side hanging-down portions 3a, which are brought into contact with the contact body 12a, when the wall-side hanging-down portions 3a are brought into contact with the contact body 12a.

The electric resistance measuring device 12b detects the contact of the wall-side hanging-down portions 3a with the contact body 12a based on a change in electric resistance between the both end portions of the contact body 12a.

The remaining structure is the same as that of Embodiment 1.

[0019] Next, the case where at least one of the wall-side hanging-down portions 3a is caught on a device provided inside the hoistway 1 as a result of the application of the horizontal force to the wall-side hanging-down portions 3a of the CWT-less elevator according to this embodiment is described.

FIG. 5 is a side view illustrating a state where one of the wall-side hanging-down portions 3a of the ropes 3 illustrated in 4 is caught on the device provided inside the hoistway 1.

In this CWT-less elevator, as a result of the application of the horizontal force to the wall-side hanging-down portions 3a due to, for example, an earthquake or the like, the wall-side hanging-down portions 3a start horizontally swinging. Thus, in some cases, the wall-side hanging-down portions 3a may be caught on the device provided inside the hoistway 1.

By the ascent and descent of the car 2 in this state, the movement restriction means 12 comes closer to a portion of one of the wall-side hanging-down portions 3a, which is caught on the device provided inside the hoistway 1. When the movement restriction means 12 comes closer to the portion of one of the wall-side hanging-down portion 3a, which is caught on the device provided inside the hoistway 1, the caught one of the wall-side hanging-down portions 3a is brought into contact with the contact body 12a. In this manner, the electric resistance measuring device 12b detects the contact between the caught one of the wall-side hanging-down portions 3a and the contact body 12a.

The electric resistance measuring device 12b measures a time during which the caught one of the wall-side hanging-down portions 3a and the contact body 12a are continuously held in contact with each other. When the measured time exceeds a predetermined amount of time, the electric resistance measuring device 12b determines that at least one of the wall-side hanging-down portions 3a is caught on the device provided inside the hoistway 1 and transmits the determination to the control section of the CWT-less elevator. The control section stops the ascent and descent of the car 2.

[0020] As described above, according to the CWT-less elevator of this embodiment, the movement restriction means 12 includes the contact body 12a which comes into contact with the wall-side hanging-down portions 3a of the ropes 3 and the electric resistance measuring device 12a which measures the electric resistance between both end portions of the contact body 12a. Therefore, when at least one of the wall-side hanging-down portions 3a is caught on the device provided inside the hoistway 1, it can be detected that at least one of the wall-side hanging-down portions 3a is caught on the device provided inside the hoistway 1.

[0021] Moreover, the movement restriction means 12 is mounted to the car 2. Therefore, the movement restriction means 12 ascends and descends with the car 2 so as to be able to detect that at least one of the wall-side hanging-down portions 3a is caught on the device provided inside the hoistway 1 over the range from an upper end portion to a lower end portion of each of the wall-side hanging-down portions 3a.

Moreover, the car 2 is automatically moved from a top floor to a bottom floor to detect whether or not at least one of the wall-side hanging-down portions 3a is caught on the device provided inside the hoistway 1. In this manner, the auto-recovery of the CWT-less elevator can be performed after the occurrence of the earthquake.

[0022] Embodiment 3

FIG. 6 is a plan view illustrating movement restriction means 13 and the wall-side hanging-down portions 3a of the ropes 3 of the CWT-less elevator according to this embodiment, and FIG. 7 is a side view illustrating the movement restriction means 13 and the wall-side hanging-down portions 3a of the ropes 3 illustrated in FIG. 6. The movement restriction means 13 of the CWT-less elevator according to this embodiment includes a gripper body 13a which slidably grips the wall-side hanging-down portions 3a of the ropes 3 and movement detectors 13b which detect horizontal movement of a position, at which the gripper body 13 performs gripping, over a predetermined distance.

Although the wall-side hanging-down portions 3a and the gripper body 13a are illustrated in FIGS. 6 and 7 as being separated from each other, the wall-side hanging-down portions 3a and the gripper body 13a are actually held in contact with each other even when the horizontal force is not applied to the wall-side hanging-down portion 3a. The movement detectors 13b are mounted to the gripper body 13a. The gripper body 13a is supported on a base 13c fixed onto the upper surface of the car 2.

Although the movement detector 13b is mounted only to the car 2 side of the gripper body 13a in FIGS. 6 and 7, the other one of the movement detector 13b is also mounted to the gripper body 13a on the side of the wall of the hoistway 1.

In this manner, the movement detectors 13b detect the movement of the gripper body 13a in both a direction toward the car 2 and a direction toward the wall of the hoistway 1.

Determination means 13d for detecting that at least one of the wall-side hanging-down portions 3a is caught by the device provided in the hoistway 1 in response to a signal from the movement detectors 13b is electrically connected to the movement detectors 13b.

The determination means 13d includes a timer (not shown) for time measurement.

The determination means 13d is also electrically connected to the control section of the CWT-less elevator so as to be able to transmit an electric signal to the control section.

[0023] The gripper body 13a, which is in the form of a pair of opposed pantographs, grips the three wall-side hanging-down portions 3a respectively in predetermined positions.

In this CWT-less elevator, when a horizontal force in a direction of coming closer to and separating from the car 2 is applied to the wall-side hanging-down portions 3a of the ropes 3 due to, for example, the earthquake or the like, the movement of the wall-side hanging-down portions 3a is restricted with a pressing force of the gripper body 13a.

[0024] When the position, at which the gripper body 13a performs gripping, is moved in the horizontal direction of coming closer to and separating from the car 2 over a predetermined distance, a gripping portion of the gripper body 13a comes into contact with the movement

detectors 13b.

The contact of the gripping portion of the gripper body 13a with the movement detectors 13b prevents the further movement of the position, at which the gripper body 13a performs gripping, in the horizontal direction of coming closer to and separating from the car 2.

As a result, the horizontal movement of a portion of each of the wall-side hanging-down portions 3a gripped by the gripper body 13a is restricted.

Upon contact with the gripping portion of the gripper body 13a, the movement detectors 13b transmit a signal to the determination means 13d.

The determination means 13d measures a time during which the gripping portion of the gripper body 13a is continuously held in contact with the movement detectors 13b. When the measured time exceeds a predetermined amount of time, the determination means 13d determines that at least one of the wall-side hanging-down portions 3a of the ropes 3 is caught on the device provided inside the hoistway 1 and transmits the determination to the control section of the CWT-less elevator. The control section stops the ascent and descent of the car 2.

The remaining structure is the same as that of Embodiment 1.

[0025] As describe above, according to the CWT-less elevator of this embodiment, the movement restriction means 13 includes the gripper body 13a which slidably grips the wall-side hanging-down portions 3a of the ropes 3 and the movement detectors 13b which detect the horizontal movement of the position, at which the gripper body 13a performs gripping, over the predetermined distance. Therefore, when at least one of the wall-side hanging-down portions 3a of the ropes 3 is caught on the device provided inside the hoistway 1, it can be detected that at least one of the wall-side hanging-down portions 3a is caught on the device provided inside the hoistway 1.

[0026] In the CWT-less elevator according to this embodiment, the ropes 3 and the gripper body 13a may be formed of an iron and a steel. In this manner, electric power may be transferred between the ropes 3 and the movement restriction means 13.

In particular, by mounting the movement restriction means 13 on the wall of the hoistway 1, the electric power can be supplied from the exterior of the car 2 to the car 2 through the ropes 3 in a simple structure.

[0027] Embodiment 4

FIG. 8 is a plan view illustrating movement restriction means 14 and the wall-side hanging-down portions 3a of the ropes 3 of the CWT-less elevator according to this embodiment, and FIG. 9 is a side view illustrating the movement restriction means 14 and the wall-side hanging-down portions 3a of the ropes 3 illustrated in FIG. 8. The movement restriction means 14 of the CWT-less elevator according to this embodiment includes a coil 14a, through which the wall-side hanging-down portions 3a of the ropes 3 pass, and a current measuring device 14b for measuring a current generated in the coil 14a.

The coil 14a and the current measuring device 14b are

supported on a base 14c fixed onto the upper surface of the car 2.

A through-hole 15, through which the wall-side hanging-down portions 3a of the ropes 3 pass, is formed through the base 14c.

The current measuring device 14b is electrically connected to the control section of the CWT-less elevator so as to be able to transmit an electric signal to the control section.

The coil 14a and the base 14c are brought into contact with the wall-side hanging-down portions 3a of the ropes 3 to restrict the horizontal movement of a portion of each of the wall-side hanging-down portions 3a, which is in contact therewith.

[0028] FIG. 10 is an enlarged view of a portion A illustrated in FIG. 9.

Magnets 16 are mounted on each of the wall-side hanging-down portions 3a of the ropes 3 at predetermined intervals.

As illustrated in Fig. 11, the magnets 16 may be mounted in a layer located inside a surface of each of the wall-side hanging-down portions 3a of the ropes 3.

With the ascent and descent of the car 2, the movement restriction means 14 ascends and descends in conjunction. Furthermore, the wall-side hanging-down portions 3a of the ropes 3 vertically move in conjunction therewith. As a result, a relative position between the coil 14a and the magnets 16 changes. Therefore, a current is generated in the coil 14a.

The current measuring device 14b measures the current generated in the coil 14a and transmits a value of the measured current to the control section of the CWT-less elevator. The control section calculates a traveling speed of the car 2.

[0029] As described above, according to the CWT-less elevator of this embodiment, the movement restriction means 14 includes the coil 14a through which the wall-side hanging-down portions 3a of the ropes 3 pass and the current detecting device 14b which measures the current generated in the coil 14a. The magnets 16 are mounted on each of the wall-side hanging-down portions 3a of the ropes 3. Thus, the traveling speed of the car 2 can be calculated.

[0030] Although the CWT-less elevator including the movement restriction means 14 having the coil 14a and the current measuring device 14b has been described in this embodiment, the CWT-less elevator is not limited thereto. For example, the CWT-less elevator described in any one of Embodiments 1 to 3 may further include the coil 14a and the current measuring device 14b independently of the movement restriction means 14.

[0031] Moreover, although the ropes 3 have been described as an example of the suspension means in each of the embodiments described above, the suspension means is not limited thereto. The suspension means may be, for example, a belt.

Claims

1. A CWT-less elevator comprising:

5 a car provided inside a hoistway;
suspension means for suspending the car, the suspension means having one end portion connected to a top of the car and the other end portion connected to a bottom of the car, the suspension means including a wall-side hanging-down portion hanging down between the car and a wall of the hoistway in an intermediate portion; and
10 movement restriction means provided around the wall-side hanging-down portion, the movement restriction means being brought into contact with the wall-side hanging-down portion to restrict horizontal movement of the wall-side hanging-down portion.

2. A CWT-less elevator according to claim 1, wherein the movement restriction means is mounted to the car.

25 3. A CWT-less elevator according to claim 1 or 2, wherein the movement restriction means includes: a contact body being brought into contact with the wall-side hanging-down portion; and an electric resistance measuring device provided to both end portions of the contact body, the electric resistance measuring device being for measuring an electric resistance between the both end portions.

30 4. A CWT-less elevator according to 1 or 2, wherein the movement restriction means comprises: a gripper body for slidably gripping the wall-side hanging-down portion; and a movement detector for detecting horizontal movement of a position, at which the gripper body performs gripping, over a predetermined distance.

5. A CWT-less elevator according to claim 1 or 2, wherein:

45 the movement restriction means comprises : a coil through which the wall-side hanging-down portion passes; and a current measuring device for measuring a current generated in the coil;
a magnet is provided to the wall-side hanging-down portion; and
50 the magnet moves vertically along with the wall-side hanging-down portion to change a relative position between the magnet and the coil to generate the current in the coil so that a traveling speed of the car is calculated from a value of the current measured by the current measuring device.

6. A CWT-less elevator according to any one of claims 1 to 4, further comprising: a coil provided around the wall-side hanging-down portion, the coil being for generating a current by a change in magnetic field; and a current measuring device for measuring the current generated in the coil, wherein: 5

a magnet is provided to the wall-side hanging-down portion; and
the magnet moves vertically along with the wall-side hanging-down portion to change a relative position between the magnet and the coil to generate the current in the coil so that a traveling speed of the car is calculated from a value of the current measured by the current measuring device. 10 15

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FIG.1

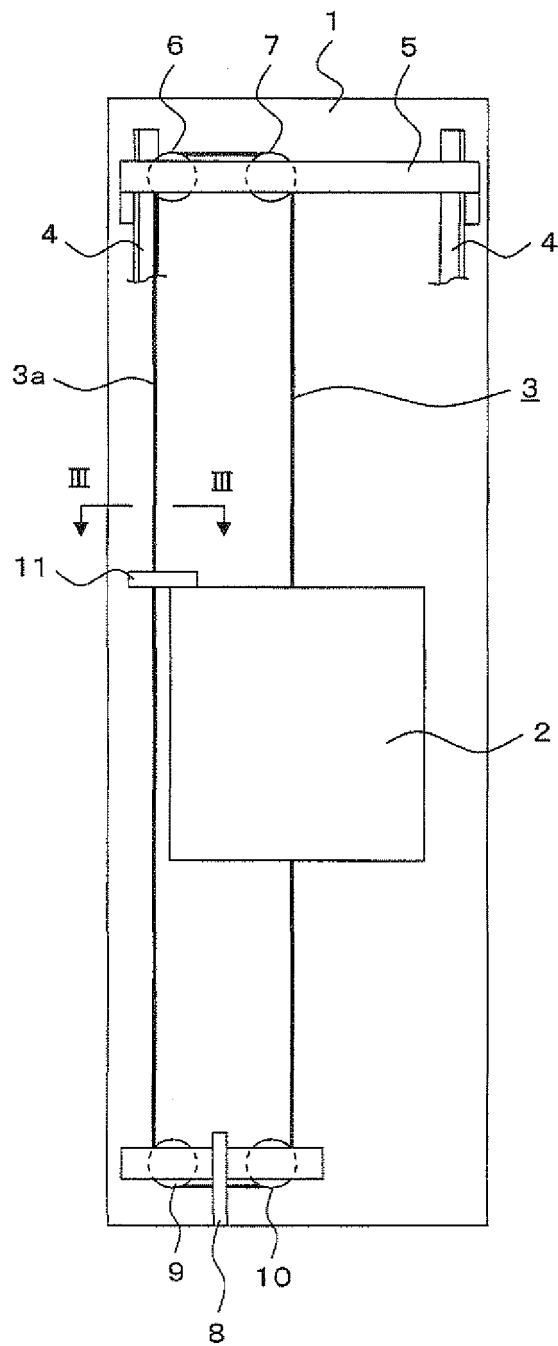


FIG.2

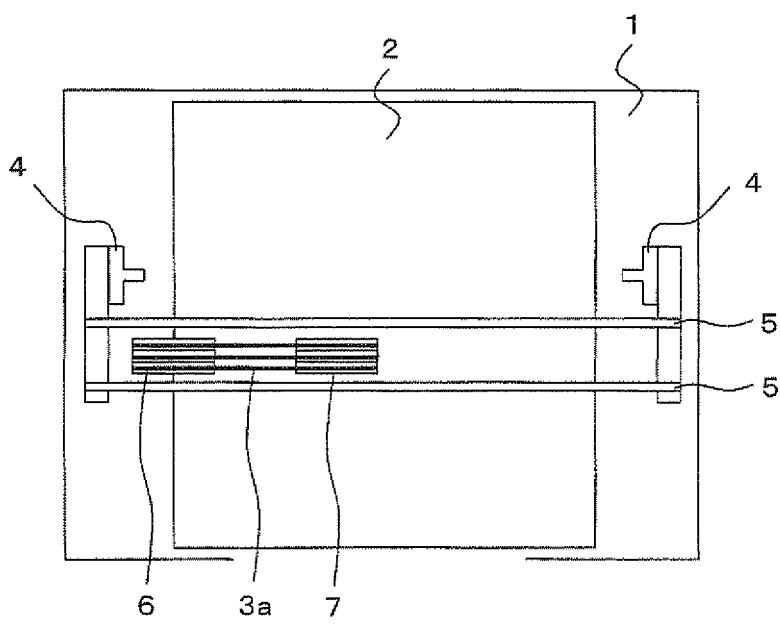


FIG.3

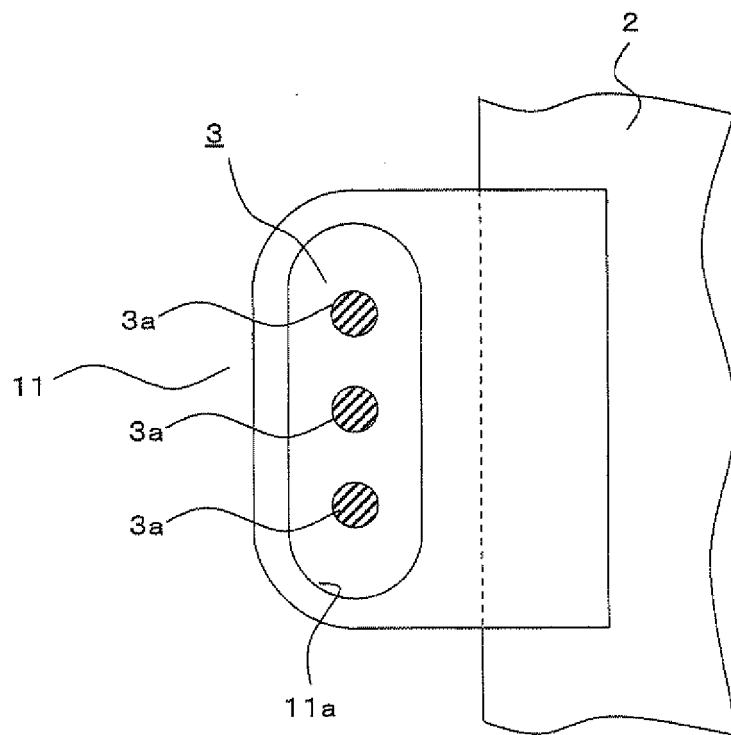


FIG.4

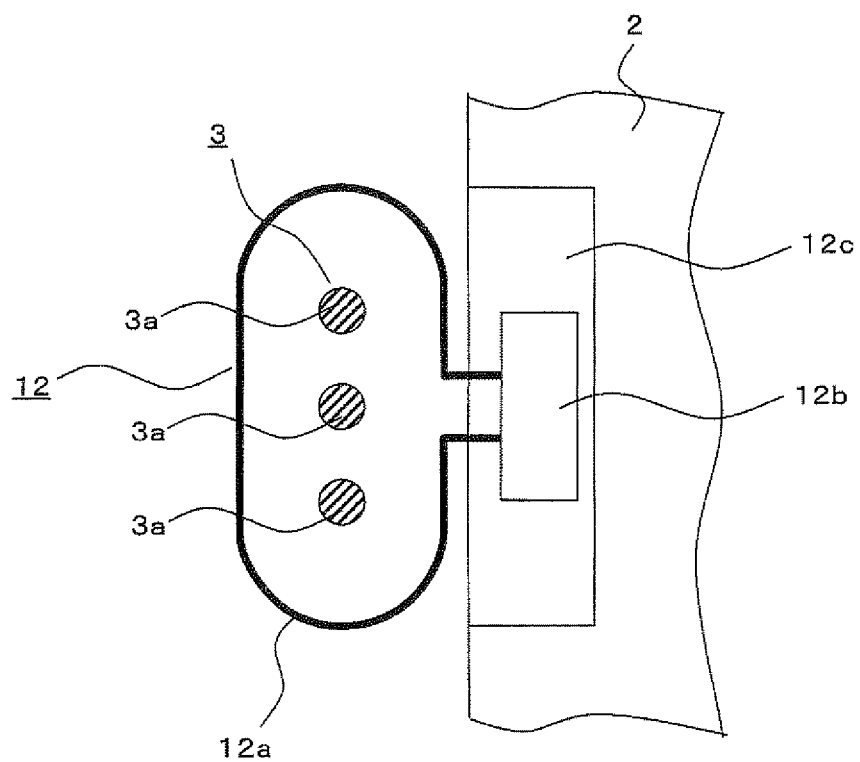


FIG.5

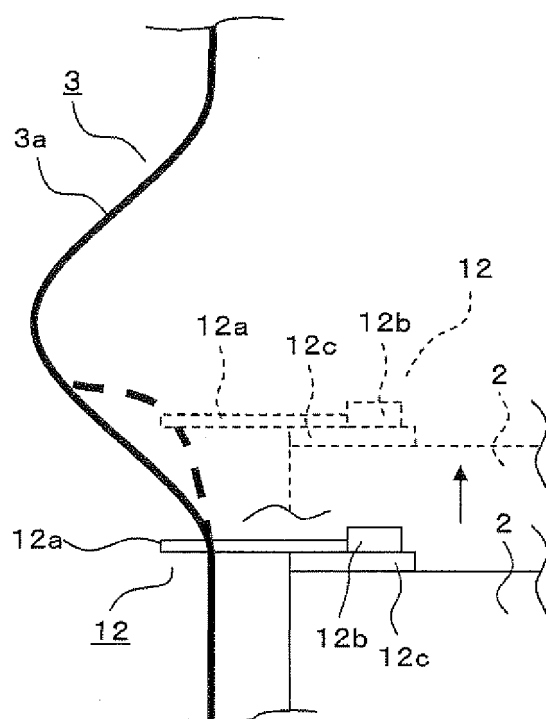


FIG.6

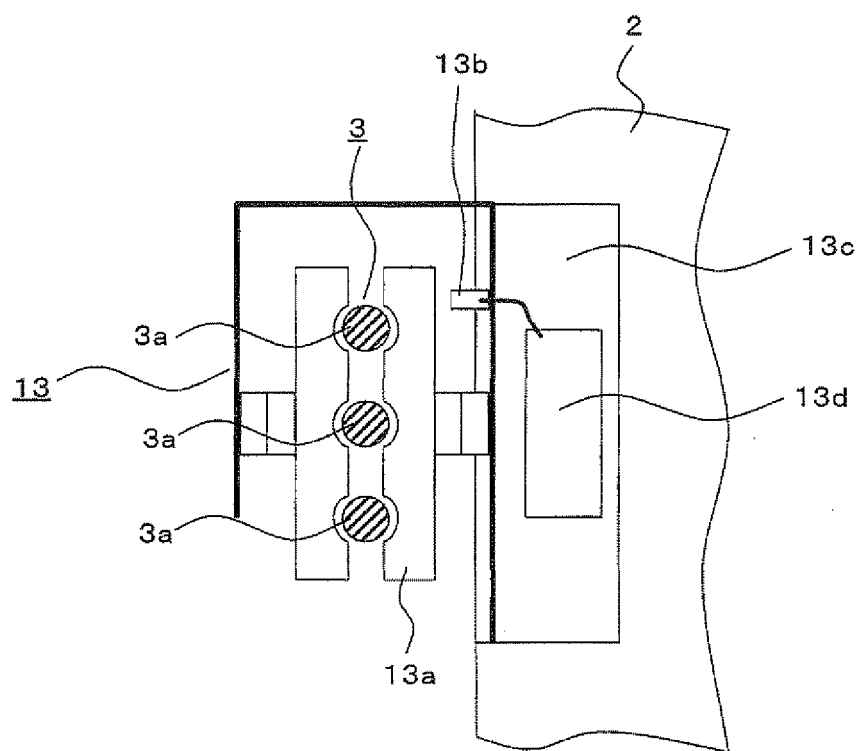


FIG.7

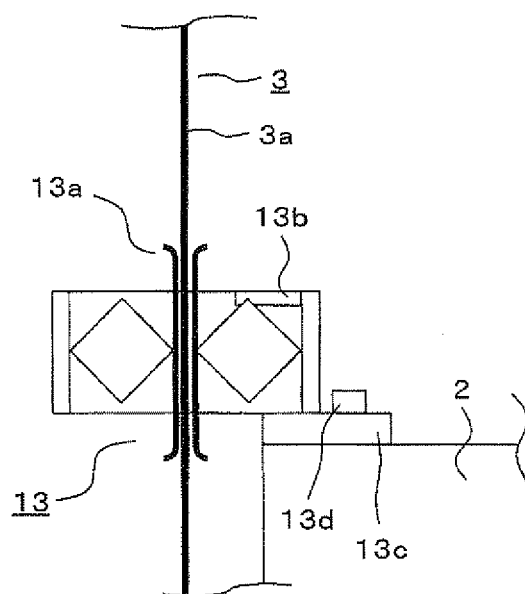


FIG.8

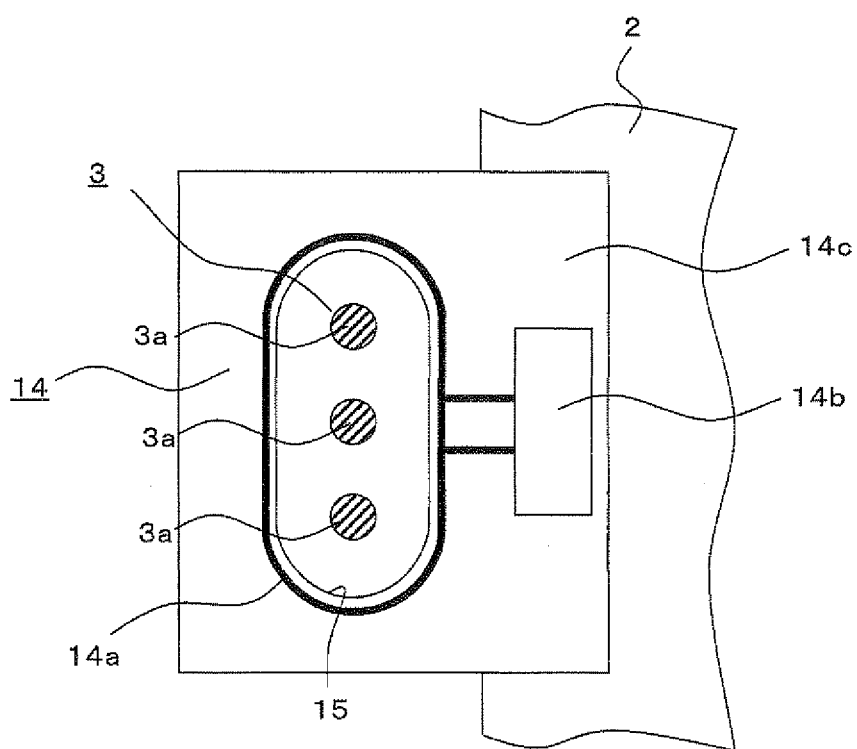


FIG.9

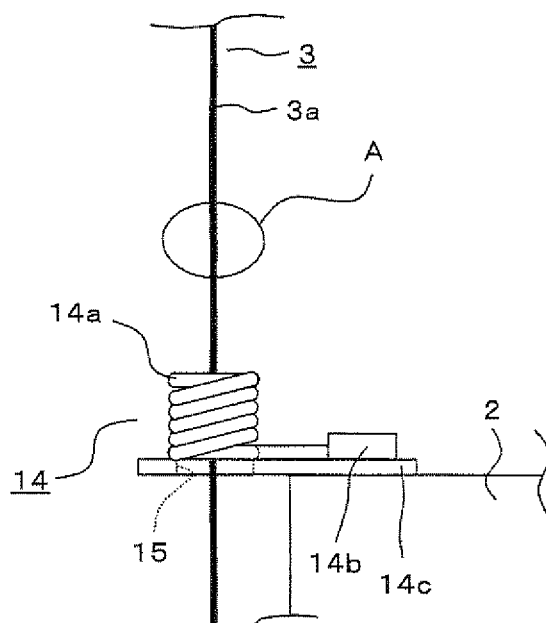


FIG.10

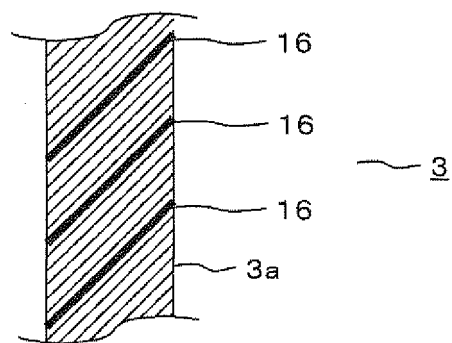
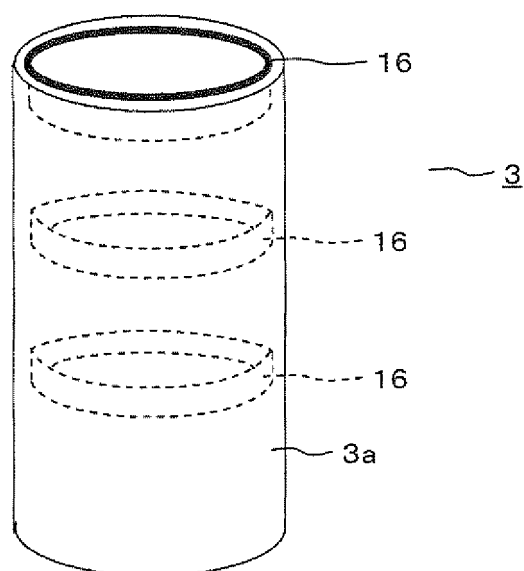


FIG.11



INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2008/066729

A. CLASSIFICATION OF SUBJECT MATTER B66B7/06 (2006.01) i		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols) B66B7/06		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Jitsuyo Shinan Koho 1922-1996 Jitsuyo Shinan Toroku Koho 1996-2009 Kokai Jitsuyo Shinan Koho 1971-2009 Toroku Jitsuyo Shinan Koho 1994-2009		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y	JP 2006-16184 A (Mitsubishi Electric Corp.), 19 January, 2006 (19.01.06), Par. Nos. [0012] to [0014]; Figs. 1 to 4 (Family: none)	1 2-6
Y	JP 2003-118949 A (Mitsubishi Electric Corp.), 23 April, 2003 (23.04.03), Par. Nos. [0019] to [0023]; Fig. 2 (Family: none)	2-6
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INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2008/066729

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
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