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(54) MOUNTING BASE FOR AN ELEVATOR MACHINE

GRUNDRAHMEN FÜR EINE AUFZUGSMASCHINE

BASE DE MONTAGE DESTINÉE À UNE MACHINE D'ASCENSEUR

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(56) References cited:

EP-A1- 1 555 232	EP-B1- 0 918 915
DE-U1- 20 304 111	JP-A- 04 020 480
US-A- 1 788 081	US-A- 5 957 242
US-A1- 2003 155 188	US-A1- 2003 155 480

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Description

[0001] The present invention relates to an adjustable mounting base for an elevator machine as defined in the preamble of claim 1.

[0002] The present invention concerns in the first place an elevator provided with a machine room or a corresponding space, the elevator hoisting machine and at least some of the diverting pulleys being mounted on a base or equivalent fitted in place in the machine room or in the elevator shaft.

[0003] In prior-art solutions, these elements are typically placed on a fixed machine mounting base, which is provided with mounting holes or equivalent fixing points specifically for each case according to the size of the machine and the dimensions of the elevator car and counterweight. The machine mounting base may consist of e.g. two I-beams or U-beams placed side by side, on which all the required components, such as the hoisting machine, diverting pulleys and rope-end fastening solutions are secured separately.

[0004] A problem with these prior-art solutions is a time-consuming and complicated installation involving a great deal of dimensioning and adjusting work. An additional problem is a large number of installation errors, which is due to the complicated nature of the installation and the large amount of dimensioning and adjusting work. In addition, prior-art solutions require extensive delivery-specific designing of the elevator as well as delivery-specific manufacturing, which again adds to the costs and requires time.

[0005] Japanese patent specification JP7061744 (Otis Elevator Co) represents a prior-art method of placing the elevator hoisting machine and some of the diverting pulleys in the elevator machine room. In this solution, the topmost component is the traction sheave, from which the first end of the elevator rope goes to the elevator car. Correspondingly, the second end of the elevator rope goes down by the upper side of a diverting pulley to the counterweight. The diverting pulley is secured to the machine mounting base below the level of the traction sheave by means of two beams whose vertical web portion is provided with an elongated adjusting hole extending in a substantially horizontal plane, the diverting pulley being mounted in this hole. The diverting pulley can thus be moved horizontally relative to the position of the traction sheave. In addition, the solution comprises a tensioning pulley, which is placed in both vertical and horizontal directions between the traction sheave and the diverting pulley, above the hoisting rope. The function of the tensioning pulley is to tension the hoisting ropes in the direction of the traction sheave to prevent slipping of the hoisting ropes.

[0006] A problem with the above-mentioned solution is that the tensioning pulley is placed at such an elevated position relative to the traction sheave that the hoisting rope portion between the tensioning pulley and the traction sheave is in an oblique position. Therefore, the angle

of this rope portion changes according to the lateral position of the diverting pulley, with the result that especially the adjusting work during installation becomes more difficult. A further problem is encountered in preserving friction between the traction sheave and the hoisting ropes.

[0007] Elevator hoisting ropes of smaller and smaller thickness and greater and greater structural strength have been developed, thus also allowing traction sheaves and diverting pulleys of smaller diameters to be used than before. As a consequence of this, it has become possible to implement higher suspension ratios than before, e.g. 3:1-7:1 or even greater. A high suspension ratio correspondingly leads to a need to assist the suspension by the use of a number of diverting pulleys, whose optimal layout has been difficult in many solutions. For example, in so-called double-wrap solutions, wherein the elevator ropes are passed at least twice around the traction sheave, the roping comprises an auxiliary diverting pulley, which, in prior-art hoisting machine arrangements secured to the elevator guide rails, is difficult to set in exactly the right angle relative to the position of the traction sheave. A double-wrap solution is needed e.g., in traction sheave mechanisms provided with coatings to increase the frictional grip between the traction sheave and the elevator ropes. Due to the use of a plurality of diverting pulleys, the installation work has become more complicated because the amount of measuring and adjusting work during installation has increased. Prior-art arrangements provide no viable solution to this problem.

[0008] The EP 1 555 232 as well as the US 5,957,242 disclose a machine mounting base according to the preamble of claim 1.

[0009] The object of the present invention is to overcome the above-mentioned drawbacks and to create an adjustable machine mounting base that is economical in cost and allows fast and as faultless an installation as possible and that also enables easy installation in structures already completed, e.g. in conjunction with modernization, while ensuring a sufficient frictional grip between the hoisting ropes and the traction sheave.

[0010] One of the advantages of the adjustable elevator machine mounting base of the invention is that the adjustment of the rope distance can be performed reliably, easily and quickly, because the rope angles do not change during the adjustment. Therefore, the structure associated with the ropes in the machine arrangement is always identical regardless of the horizontal distance between the elevator car and the counterweight. Another advantage is a fastening solution of a standard nature that is suited for installation even in old machine rooms in conjunction with modernization of elevators. In addition, the machine mounting base of the invention can be used with elevator cars and counterweights of several different sizes. The adjustable machine mounting base of the invention is characterized by what is disclosed in the characterization part of claim 1. Correspondingly, other embodiments of the invention are characterized by what is disclosed in the other claims.

[0011] Inventive embodiments are also presented in the description part of the present application.

[0012] In the following, the invention will be described in detail with reference to an embodiment example and the attached drawings, wherein

- Fig. 1 presents a partially sectioned side view of the machine mounting base of the invention
- Fig. 2 presents the machine mounting base of Fig. 1 in top view,
- Fig. 3 presents the frame structure of the machine mounting base of the invention in side view,
- Fig. 4 presents the frame structure of Fig. 3 in top view
- Fig. 5 presents a side view of the counterweight section of the machine mounting base of the invention,
- Fig. 6 presents a side view of the machine section of the machine mounting base of the invention
- Fig. 7 presents a side view of the machine mounting base of the invention in a second adjusting position,
- Fig. 8 presents the machine mounting base of Fig. 7 in top view,
- Fig. 9 presents a diagrammatic and simplified side view of the machine mounting base and rope arrangement of the invention in an elevator with a suspension ratio of 4:1.

[0013] Figures 1 and 2 present an adjustable mounting base 5 for an elevator machine according to the invention, in side view and partially sectioned. The machine mounting base 5 is placed in the elevator machine room 1 and secured in position to the floor 2 of the machine room 1, said floor being provided with at least passage holes 3 and 4 for the hoisting ropes 18 of the elevator. The adjustable machine mounting base 5 is of modular construction such that the machine mounting base 5 comprises at least three main modular components, viz. a frame structure 6, a machine section 7 and a counterweight section 8. All these main components 6-8 are so designed that they are of as highly standardized construction as possible to enable them to be fitted to as many differently sized elevator constructions as possible. The machine section 7 and the counterweight section 8 can be secured in correct positions to the frame structure 6 by means of fastening bolts. The fastening is preferably so implemented that the counterweight section 8 is always secured to the first end of the frame structure 6 or in its immediate vicinity while the machine section 7 is secured to the frame structure at a required horizontal distance from the counterweight section 8 at the second end of the frame structure or to a suitable point between the second end and the counterweight section 8. The aforesaid horizontal distance is determined by the mutual horizontal distance, i.e. rope distance, between the counterweight and the elevator car.

[0014] Besides Fig. 1 and 2, the frame structure 6 of the machine mounting base is also illustrated in Fig. 3

and 4. The frame structure 6 is a rectangular frame mainly consisting of e.g. U-shaped profiled beams with their web plate in a substantially vertical position. In Fig. 1, the forward side beam 26 of the frame structure is partially sectioned so as to show the structures located behind the beam. The inward bent upper flange of each side beam 26 of the frame structure 6 is provided with a row of fastening holes 21, which are placed in the upper flange at regular distances to allow the machine section 7 and the counterweight section 5 to be secured to the frame structure. The side beams 26 are connected to each other by transverse members 27 and 28 at the ends of the side beams.

[0015] Besides Fig. 1 and 2, the structure of the modular machine section 7 is also illustrated in Fig. 6. The frame of the machine section 7 consists of side plates 24 in the lower part and transverse beams 20 connecting the side plates. In front profile, the side plates 24 have the shape of an inverted letter L with the shorter projection pointing upwards. The width of the frame of the machine section 7 is so dimensioned that the frame can be placed between the side beams 26 of the frame structure 6 of the machine mounting base so that the outward bent flanges of the side plates 24 will rest on the holed upper surface of the side beams 26. The outward bent flanges of the side plates 24 are also provided with fastening holes 25 disposed in a row with substantially even spacing, some of which holes may be round and some may be elongated to make it easier to find an appropriate fastening position for the machine section 7. The size and spacing of the fastening holes 25 corresponds to the size and spacing of the fastening holes 21 in the frame of the machine mounting base.

[0016] Secured to the second side of the frame of the machine section 7 is a vertical beam 31, the drive machine of the elevator being mounted on the upper end of this beam. Besides a motor, the drive machine comprises at least a traction sheave and, in many embodiments, also a diverting pulley 13 located directly below the traction sheave. In the figure in question, the traction sheave remains behind the motor, so it is not visible in the other figures except Fig. 9, where it is indicated by reference numeral 35.

[0017] Secured to the first end of the frame of the machine section 7, i.e. to that part of the frame which is adjacent to the counterweight section 8, is a machine section diverting pulley 11 via its mounting base 32. The mounting of the diverting pulley 11 is so implemented that the elevator rope 18 coming downwards from the traction sheave, in reality comprising a plurality of thin parallel ropes, descends substantially vertically to the rope grooves of the diverting pulley 11 from the side of the machine section 7 and passes around the diverting pulley 11 by its lower side and runs further in a substantially horizontal plane towards the counterweight section 8.

[0018] Similarly, secured via its mounting frame to the second end of the frame of the machine section 7 is an

auxiliary diverting pulley 15 needed for 4:1 suspension. The mounting frame of the auxiliary diverting pulley consists of two vertical beams 34 and an overhead beam 33 connecting these, the auxiliary diverting pulley 15 being suspended on this overhead beam 33. As seen from above, the mounting frame of the auxiliary diverting pulley is in an oblique position relative to the longitudinal direction of the frame 6 of the machine section 7 to allow the plane of rotation of the auxiliary diverting pulley 15 to be more easily adjusted even to an oblique position so as to facilitate rope passage.

[0019] In addition, the first ends of the elevator hoisting ropes 18 are secured to the overhead beam 33 of the mounting frame of the auxiliary diverting pulley of the machine section in a conventional manner by means of rope anchorages 17.

[0020] All the above-mentioned main components of the machine section 7, i.e. the hoisting machine 9, the diverting pulley 11, the auxiliary diverting pulley 15 and the seats of the rope anchorages 17 are fixedly secured in position to the frame of the machine section 7 relative to each other and the frame. Thus, the machine section forms a modular, integrated structure that can be secured as a single unit in its proper mounting position.

[0021] Besides Fig. 1 and 2, the structure of the counterweight section 8 is illustrated in Fig. 5. The frame of the counterweight section 8 consists of side plates 22 in the lower part and a cross-member 19 connecting the side plates. The side plates 22 of the counterweight section 8 substantially correspond in structure and shape to the side plates 24 of the machine section 7. Thus, in front profile, the side plates 22 of the counterweight section 8 also have the shape of an inverted letter L with the shorter projection pointing outwards. The width of the frame of the counterweight section 8 is likewise so dimensioned that the frame can be placed between the side beams 26 of the frame structure 6 of the machine mounting base so that the outward bent flanges of the side plates 22 will rest on the holed upper surface of the side beams 26. The outward bent flanges of the side plates 22 are also provided with fastening holes 23 disposed in a row with substantially even spacing, the size and spacing of said holes corresponding to the fastening holes 21 in the frame of the machine mounting base.

[0022] Secured via the cross-member 19 to that end of the frame of the counterweight section 8 which is adjacent to the machine section 7 is a counterweight section diverting pulley 12. The mounting and disposition of the diverting pulley 12 are so implemented that the elevator rope 18 coming from the machine section diverting pulley 11 passes around diverting pulley 12 by its upper side and descends towards the counterweight. It is essential to the invention that between the diverting pulleys 11 and 12 the elevator rope 18 runs horizontally, so that when the mutual distance between the diverting pulleys changes, the rope angles on the diverting pulleys 11 and 12 remain unchanged.

[0023] Secured via its mounting frame to the frame of

the counterweight section 8 is also an auxiliary diverting pulley 14, which is needed for 4:1 suspension. The mounting frame of the auxiliary diverting pulley 14 consists of two vertical beams 30 and an overhead beam 29 connecting these, the auxiliary diverting pulley 14 being suspended on this overhead beam 29. As seen from above, the mounting frame of the auxiliary diverting pulley 14 is in a position substantially perpendicular to the longitudinal direction of the frame 6 of the machine section 7. In addition, the second ends of the elevator hoisting ropes 18 are secured to the overhead beam 29 of the mounting frame of the auxiliary diverting pulley 14 of the counterweight section in a conventional manner by means of rope anchorages 16.

[0024] All the above-mentioned main components of the counterweight section 8, i.e. the diverting pulley 12, the auxiliary diverting pulley 14 and the seats of the rope anchorages 16 are secured fixedly in position to the frame of the counterweight section 8 relative to each other and the frame. Thus, the counterweight section forms a modular, integrated structure that can be secured in its proper mounting position as a single unit.

[0025] Fig. 7 and 8 present the machine mounting base of the invention placed in an elevator in which the horizontal distance between the counterweight and the elevator car is smaller than in the solution illustrated in Fig. 1 and 2.

[0026] In this case, the counterweight section 8 is located in the same place with respect to the frame structure 6 as in the solution according to Fig. 1 and 2, but the machine section 7 has been brought closer to the counterweight section 8 and secured to a suitable frame structure by means of fastening bolts. Installing the machine room components is easy because the rope angles and rope directions remain constant regardless of the position of the machine section 7. The mutual position of the counterweight section 8 and machine section 7 is not changed in any other respects except in respect of the horizontal distance between them, and this change involves no changes in the rope angles.

[0027] Fig. 9 presents a diagrammatic and simplified view of an elevator suspension arrangement that can be implemented using an adjustable machine mounting base 5 according to the invention. The figure 9 is not depicted in scale nor e.g. in a correct height ratio, so the position of the counterweight 37 in relation to the position of the elevator car 40 is not necessarily correct. The elevator is preferably a traction sheave elevator with machine room, provided with a counterweight and running along guide rails 43, wherein the set of hoisting ropes consists of a plurality of substantially strong hoisting ropes 18 of small diameter placed side by side. In addition, the diverting pulleys and the traction sheave used are substantially small in diameter, so the preferably gearless hoisting machine 9 is substantially small and light.

[0028] If Fig. 9, the hoisting ropes of the elevator run as follows. At one end the hoisting ropes 18 are secured

to a fixed anchorage point 17 on the overhead beam 33 of the mounting frame of the auxiliary diverting pulley of the machine section 7 placed on the machine mounting base 5. From the anchorage point 17 the ropes go downwards to a diverting pulley 38 fitted on the car frame 39 of the elevator car 40, pass around it by its lower side and go further upwards to the auxiliary diverting pulley 15 of the machine section. Having passed around the auxiliary diverting pulley 15 by its upper side, the hoisting ropes return downwards to a diverting pulley 41 fitted in position on the car frame 39 of the elevator car, pass around it by the lower side and go further upwards to the traction sheave 35 of the hoisting machine 9, which is fitted in position in the machine room, running in tangential contact with a diverting pulley 13 placed below the traction sheave 35, preferably near and/or in conjunction with the hoisting machine 9.

[0029] Between diverting pulley 13 and the traction sheave 35 of the hoisting machine 9, the figure shows Double-wrap roping, wherein the hoisting ropes 18 run upwards in tangential contact with the diverting pulley 13 to the traction sheave 35 and, having passed around the traction sheave 35, return back to the diverting pulley 13, pass around it and return to the traction sheave 35. In Double-Wrap roping, when the diverting pulley 13 is substantially the same size with the traction sheave 35, the diverting pulley 13 can also function as a damping pulley. In this case, the ropes going from the traction sheave 35 to the elevator car 40 run via the rope grooves of the diverting pulley 13, and the rope deflection caused by the diverting pulley is very small. It could be said that the ropes going from the traction sheave 35 to the elevator car and the ropes coming to the traction sheave run only in "tangential contact" with the diverting pulley 13. Such "tangential contact" serves as a solution damping the vibrations of the outgoing ropes and it can also be applied in other roping solutions.

[0030] An example of other roping solutions is Single Wrap (SW) roping, where the diverting pulley is substantially of the same size with the traction sheave of the hoisting machine and the use of a diverting pulley is applied as a "tangential contact wheel" as described above. In SW roping according to the example, the ropes are passed around the traction sheave only once, the contact angle between the rope and the traction sheave being about 180°. In this case, the diverting pulley is utilized only for "tangential contact" of the rope in the manner described above, with the diverting pulley functioning as a rope guide and as a damping pulley for damping rope vibrations.

[0031] From the traction sheave 35, the ropes run further downwards in tangential contact with diverting pulley 13 to the machine section diverting pulley 11, which is fitted in position on the machine section 7 secured to the machine mounting base 5. Having passed around diverting pulley 11 by its lower side, the ropes 18 run horizontally further to the diverting pulley 12 of the counterweight section secured to the machine mounting base 5. Having

passed around diverting pulley 12, the ropes run further downwards to a diverting pulley 42 preferably fitted in position on the counterweight 37, and having passed around diverting pulley 42 by its lower side the ropes 18 run further upwards to the auxiliary diverting pulley 14 of the counterweight section, pass around it by its upper side and go further downwards to a diverting pulley 36 mounted on the counterweight 37. Having passed around diverting pulley 36 by its lower side, the ropes finally go up to the fixed anchorage point 16 in the counterweight section 8, to which anchorage point the second end of the set of hoisting ropes 18 is secured.

[0032] It is obvious to the person skilled in the art that different embodiments of the invention are not limited to the example described above, but that they may be varied within the scope of the claims presented below. Thus, for example, the machine mounting base of the invention may have a different construction to implement different suspension variations and suspension ratios.

[0033] Likewise, it is obvious to the skilled person that the size and disposition and number of the diverting pulleys mounted on the machine mounting base 5 may differ from the above description. The essential point is that the machine mounting base is of standardized construction, preferably comprising e.g. three main components, i.e. a frame structure 6, a machine section 7 and a counterweight section 8, which are so fitted with respect to each other that the mutual horizontal distance between the machine section and the counterweight section can be adjusted to different lengths according to the need in each case so that the rope angles remain unchanged regardless of the rope distance.

[0034] It is additionally obvious to the skilled person that the invention or its preferred embodiments can just as well be used in elevators with other suspension ratios and other types of suspension and other roping solutions between the traction sheave and diverting pulley 13 than those described in the example.

Claims

1. An adjustable machine mounting base (5) for an elevator provided with a hoisting machine (9) and hoisting ropes (18), in which elevator the hoisting ropes (18) move an elevator car (40) along guide rails (43), wherein the machine mounting base (5) consists of at least a modular frame structure (6) and a machine section (7) that can be secured in more than one mounting position in relation to the frame structure (6), which machine section is an integrated unit of modular construction and comprises at least the hoisting machine (9) of the elevator and at least one diverting pulley (11), **characterized in that** the machine mounting base comprises in addition to the frame structure (6) and the machine section (7) at least a counterweight section (8) that can be secured in more than one mounting position in relation to the

frame structure (6) depending on the rope suspension, whereby the counterweight section (8) is an integrated unit of modular construction comprising at least one diverting pulley (12) and additionally comprises at least one or more auxiliary diverting pulleys (14) secured in position to the overhead beam (29) of their mounting frame, to which overhead beam are additionally secured the second ends of the hoisting ropes (18).

2. A machine mounting base (5) according to claim 1, **characterized in that** diverting pulley (11) is placed in the machine section (7) and correspondingly diverting pulley (12) is placed in the counterweight section (8) in such manner that the elevator hoisting rope (18) passing around and under diverting pulley (11) runs substantially horizontally from diverting pulley (11) to diverting pulley (12), the hoisting rope being fitted to pass around and over said diverting pulley (12) .
3. A machine mounting base (5) according to any one of the preceding claims, **characterized in that** the frame structure (6) is provided with a series of fastening holes (21) and that both the machine section (7) and the counterweight section (8) are provided with fastening holes (23 and 25) substantially corresponding to the size of and mutual distance between fastening holes (21) .
4. A machine mounting base (5) according to any one of the preceding claims, **characterized in that** the counterweight section (8) can be secured preferably to the end of the frame structure (6), and that the machine section (7) can be secured to the upper surface of the frame structure (6) at a horizontal distance from the counterweight section (8) equal to the rope distance in each case.
5. A machine mounting base (5) according to any one of the preceding claims, **characterized in that** depending on the rope suspension, the machine section (7) additionally comprises at least one or more auxiliary diverting pulleys (15) secured in position to the overhead beam (33) of their mounting frame, to which overhead beam are additionally secured the first ends of the hoisting ropes (18).
6. An elevator provided with a machine room, an elevator hoisting machine and at least some diverting pulleys being mounted on a base fitted in the machine room, which base is a machine mounting base according to one of the preceding claims.

Patentansprüche

1. Einstellbare Maschinenmontagebasis (5) für einen

Aufzug, der mit einer Hebemaschine (9) und Hebe-seilen (18) versehen ist, in welchem Aufzug die Hebe-seile (18) eine Aufzugskabine (40) entlang von Führungsschienen (43) bewegt, wobei die Maschinenmontagebasis (5) aus wenigstens einer modularen Rahmenstruktur (6) und einem Maschinenabschnitt (7) besteht, der in mehr als einer Montageposition relativ zur Rahmenstruktur (6) festgelegt werden kann, welcher Maschinenabschnitt eine integrierte Einheit modularer Konstruktion ist und wenigstens die Hebemaschine (9) des Aufzugs und wenigstens eine Umlenkrolle (11) enthält, **dadurch gekennzeichnet, dass** die Maschinenmontagebasis zusätzlich zu der Rahmenstruktur (6) und dem Maschinenabschnitt (7) wenigstens einen Gegengewichtsabschnitt (8) enthält, der in mehr als einer Montageposition relativ zur Rahmenstruktur (6) in Abhängigkeit von der Seilaufhängung festgelegt werden kann, wobei der Gegengewichtsabschnitt (8) eine integrierte Einheit modularer Konstruktion ist, die wenigstens eine Umlenkrolle (12) und zusätzlich wenigstens eine oder mehrere Hilfs-umlenkrollen (14) aufweist, die in ihrer Position an der Kopfstrebe (29) ihres Montagerahmens festgelegt sind, an welcher Kopfstrebe zusätzlich die zweiten Enden der Hebe-seile (18) befestigt sind.

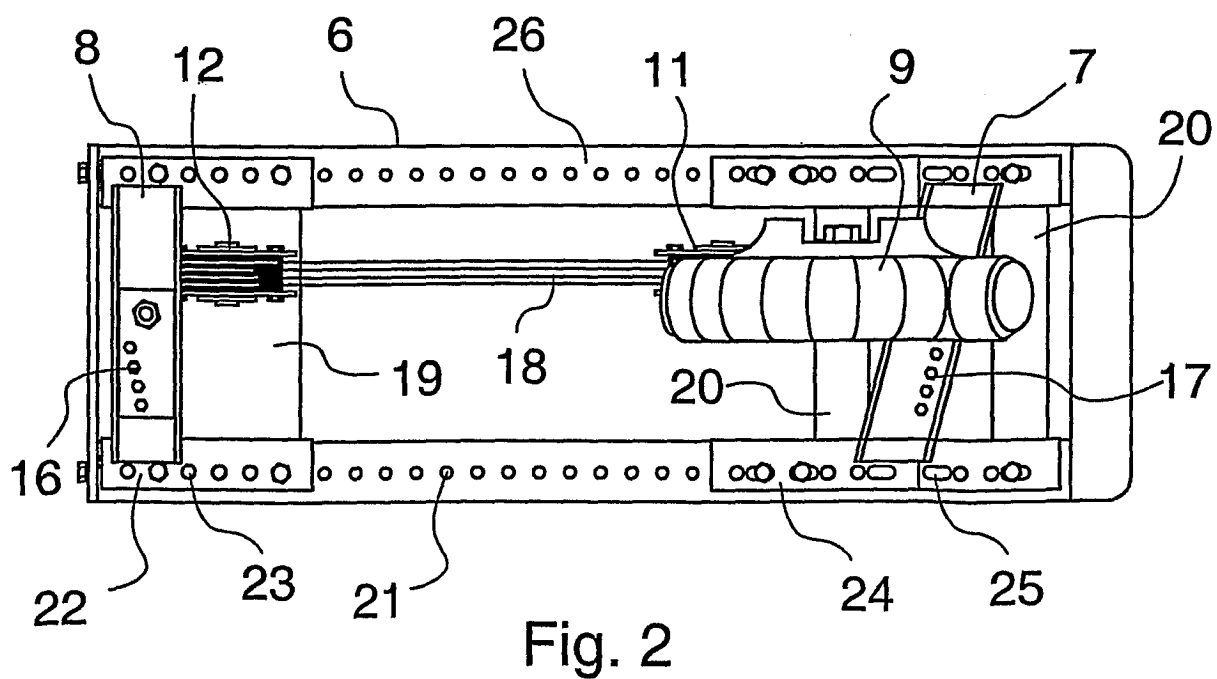
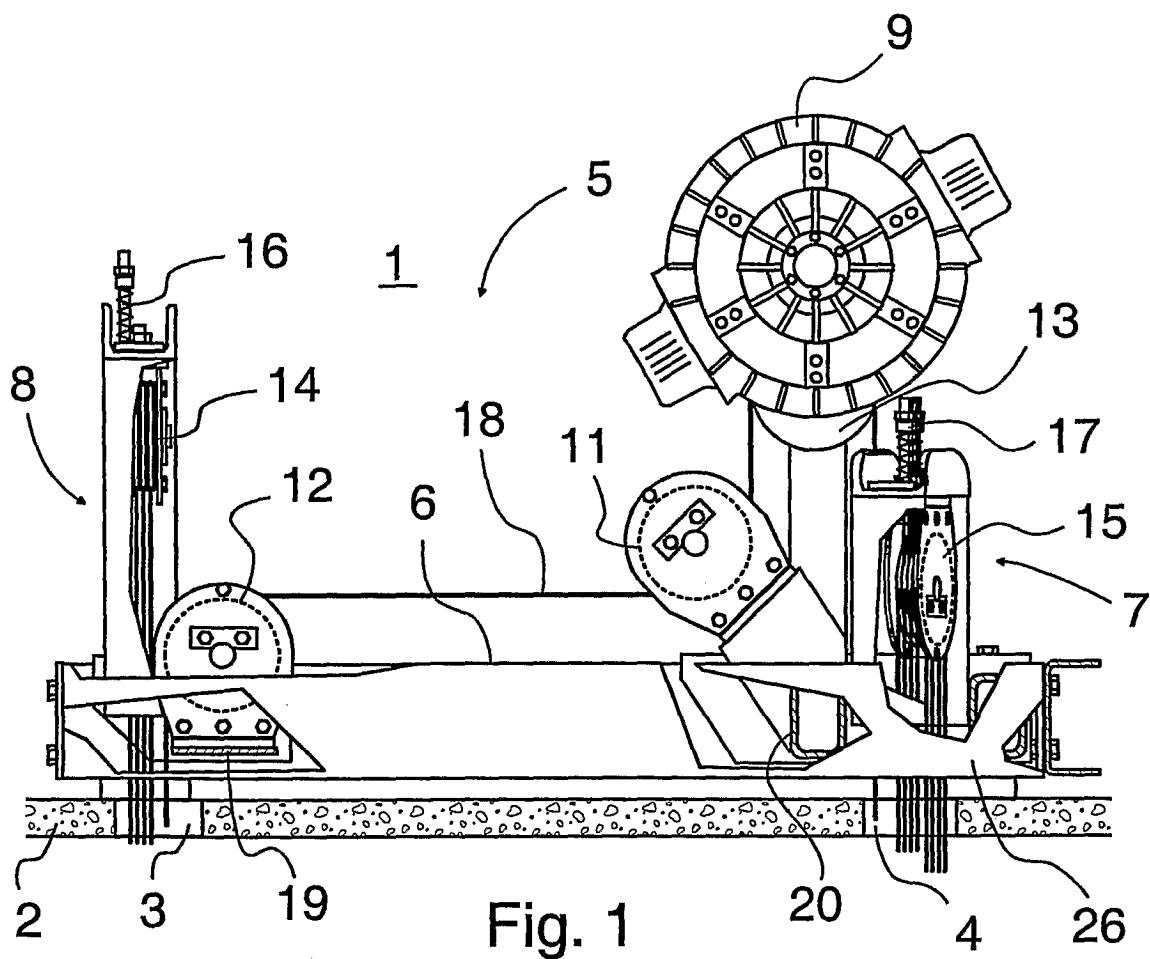
2. Maschinenmontagebasis (5) nach Anspruch 1, **dadurch gekennzeichnet, dass** die Umlenkrolle (11) in dem Maschinenabschnitt (7) angeordnet ist und entsprechend die Umlenkrolle (12) in dem Gegengewichtsabschnitt (8) derart angeordnet ist, dass das Aufzughebe-seil (18), welches um und unter die Umlenkrolle (11) geführt ist, im Wesentlichen horizontal von der Umlenkrolle (11) zu der Umlenkrolle (12) läuft, wobei das Hebe-seil dazu konzipiert ist, um und über die Umlenkrolle (12) zu laufen.
3. Maschinenmontagebasis (5) nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** die Rahmenstruktur (6) mit einer Reihe von Befestigungslöchern (21) versehen ist, und dass sowohl der Maschinenabschnitt (7) als auch der Gegengewichtsabschnitt (8) mit Befestigungslöchern (23 und 25) versehen sind, welche im Wesentlichen mit der Größe und dem gegenseitigen Abstand zwischen den Befestigungslöchern (21) korrespondieren.
4. Maschinenmontagebasis (5) nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** der Gegengewichtsabschnitt (8) vorzugsweise an dem Ende der Rahmenstruktur (6) festgelegt werden kann, und dass der Maschinenabschnitt (7) an der oberen Fläche der Rahmenstruktur (6) in einem horizontalen Abstand von dem Gegengewichtsabschnitt (8) entsprechend der Seildistanz in jedem Fall festgelegt werden kann.

5. Maschinenmontagebasis (5) nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** in Abhängigkeit von der Seilaufhängung der Maschinenabschnitt (7) zusätzlich eine oder mehrere Hilfsumlenkrollen (15) aufweist, die in ihrer Position an der Kopfstrebe (33) ihres Montagerahmens festgelegt sind, an welcher Kopfstrebe zusätzlich die ersten Enden der Hebeseile (18) befestigt sind.
6. Aufzug mit einem Maschinenraum, einer Aufzughebemaschine und wenigstens einigen Umlenkrollen, die an einer Basis in dem Maschinenraum befestigt sind, welche Basis eine Maschinenmontagebasis nach einem der vorhergehenden Ansprüche ist.

Revendications

1. Base de montage de machine réglable (5) pour un ascenseur équipé d'une machine de levage (9) et de câbles de levage (18), dans lequel ascenseur les câbles de levage (18) déplacent une cabine d'ascenseur (40) le long de rails-guides (43), dans laquelle la base de montage de machine (5) se compose d'au moins une structure de bâti modulaire (6) et d'une section de machine (7) qui peut être fixée dans plus d'une position de montage par rapport à la structure de bâti (6), ladite section de machine étant une unité intégrée de construction modulaire et comprend au moins la machine de levage (9) de l'ascenseur et au moins une poulie de détour (11), **caractérisée en ce que** la base de montage de machine comprend, outre la structure de bâti (6) et la section de machine (7), au moins une section de contrepoids (8) qui peut être fixée dans plus d'une position de montage par rapport à la structure de bâti (6) en fonction de la suspension de câble, la section de contrepoids (8) étant une unité intégrée de construction modulaire comprenant au moins une poulie de détour (12) et comprenant de plus au moins une ou plusieurs poulies de détour auxiliaires (14) fixées en position à la poutre de traverse (29) de leur bâti de montage, à laquelle poutre de traverse sont de plus fixées les secondes extrémités des câbles de levage (18).
2. Base de montage de machine (5) selon la revendication 1, **caractérisée en ce que** la poulie de détour (11) est placée dans la section de machine (7) et de manière correspondante la poulie de détour (12) est placée dans la section de contrepoids (8) de telle sorte que le câble de levage d'ascenseur (18) passant autour et en-dessous de la poulie de détour (11) s'étend sensiblement horizontalement de la poulie de détour (11) vers la poulie de détour (12), le câble de levage étant agencé pour passer autour et au-dessus de ladite poulie de détour (12).

3. Base de montage de machine (5) selon une quelconque des revendications précédentes, **caractérisée en ce que** la structure de bâti (6) est équipée d'une série de trous de fixation (21) et qu'à la fois la section de machine (7) et la section de contrepoids (8) sont équipées de trous de fixation (23 et 25) correspondant sensiblement aux dimensions des trous de fixation (21) et à une distance réciproque entre ces trous de fixation (21).
4. Base de montage de machine (5) selon une quelconque des revendications précédentes, **caractérisée en ce que** la section de contrepoids (8) peut être fixée de préférence à l'extrémité de la structure de bâti (6), et **en ce que** la section de machine (7) peut être fixée à la surface supérieure de la structure de bâti (6) à une distance horizontale par rapport à la section de contrepoids (8) égale à la distance de câble dans chaque cas.
5. Base de montage de machine (5) selon une quelconque des revendications précédentes, **caractérisée en ce que**, en fonction de la suspension de câble, la section de machine (7) comprend de plus au moins une ou plusieurs poulies de détour auxiliaires (15) fixées en position à la poutre de traverse (33) de leur bâti de montage, à laquelle poutre de traverse sont de plus fixées les premières extrémités des câbles de levage (18).
6. Ascenseur équipé d'un local des machines, d'une machine de levage d'ascenseur et au moins de poulies de détour agencées sur une base installée dans le local des machines, ladite base étant une base de montage de machine selon une des revendications précédentes.



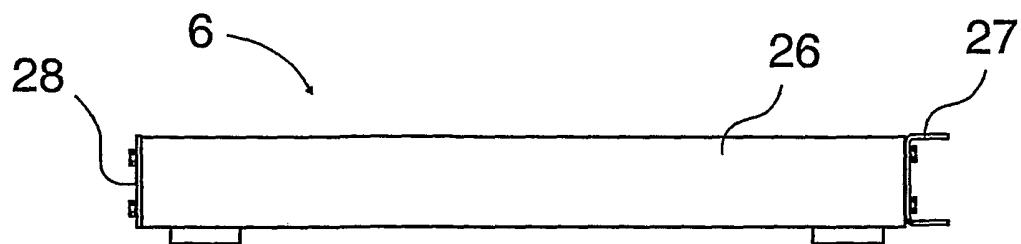


Fig. 3

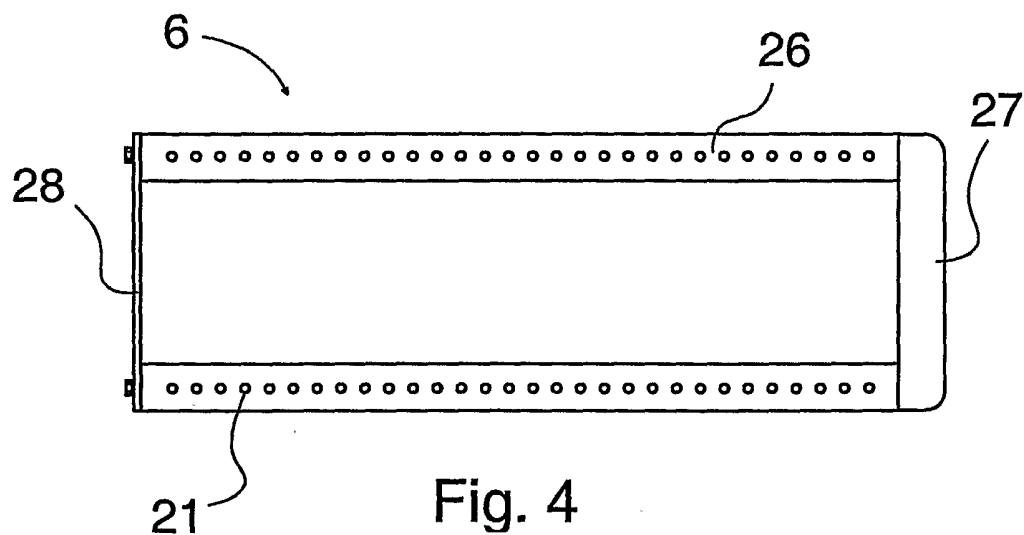


Fig. 4

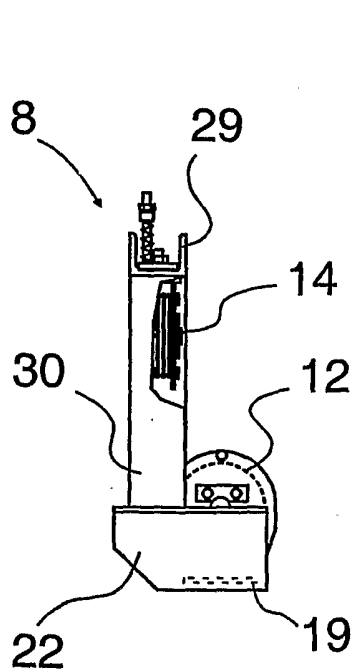


Fig. 5

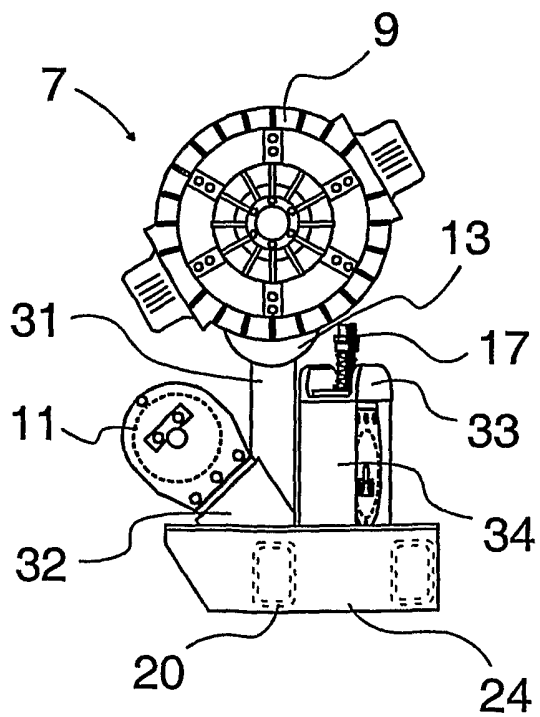
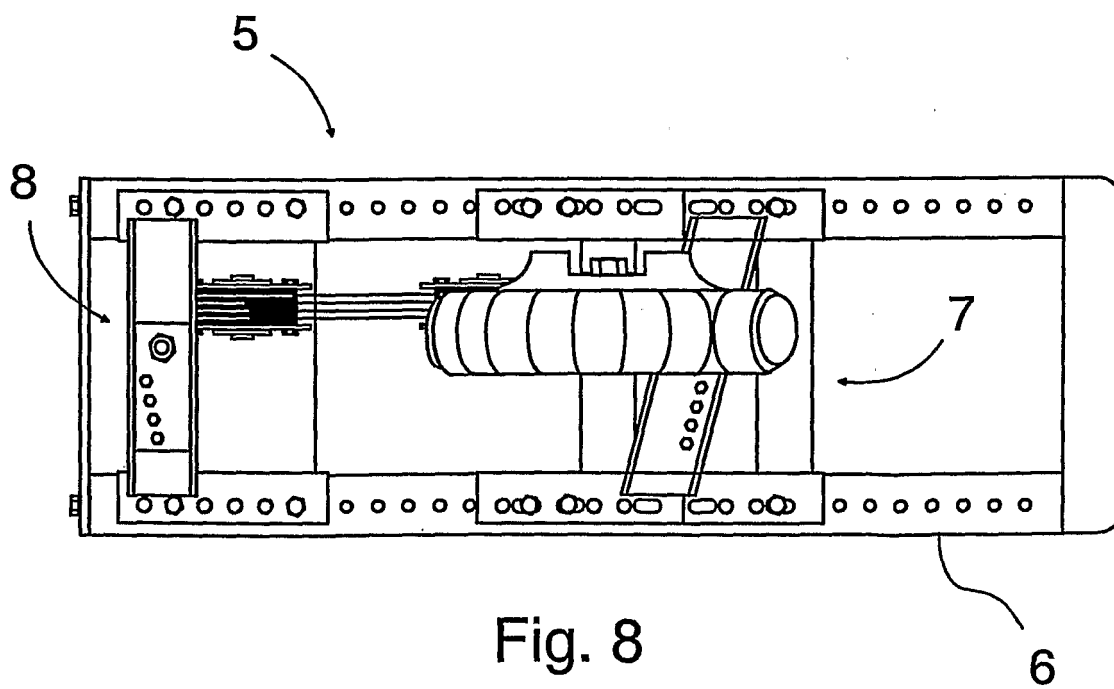
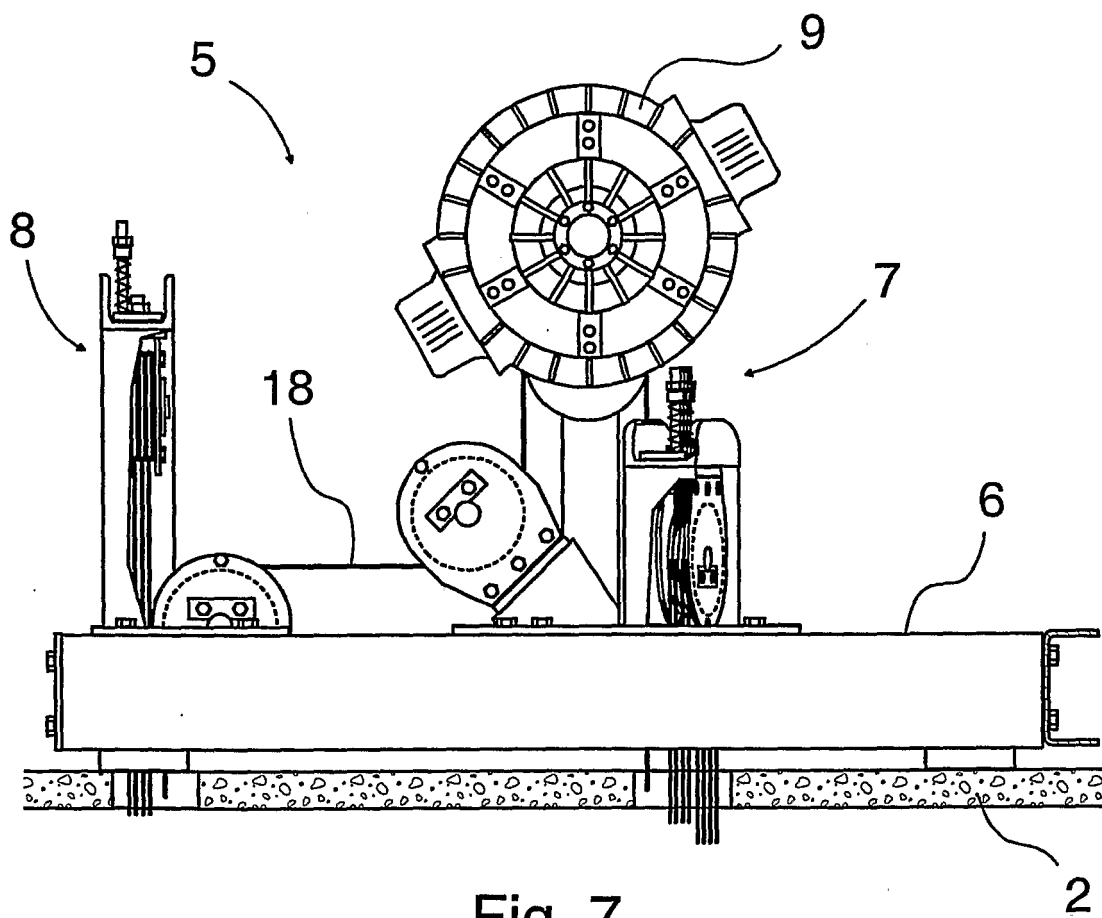


Fig. 6



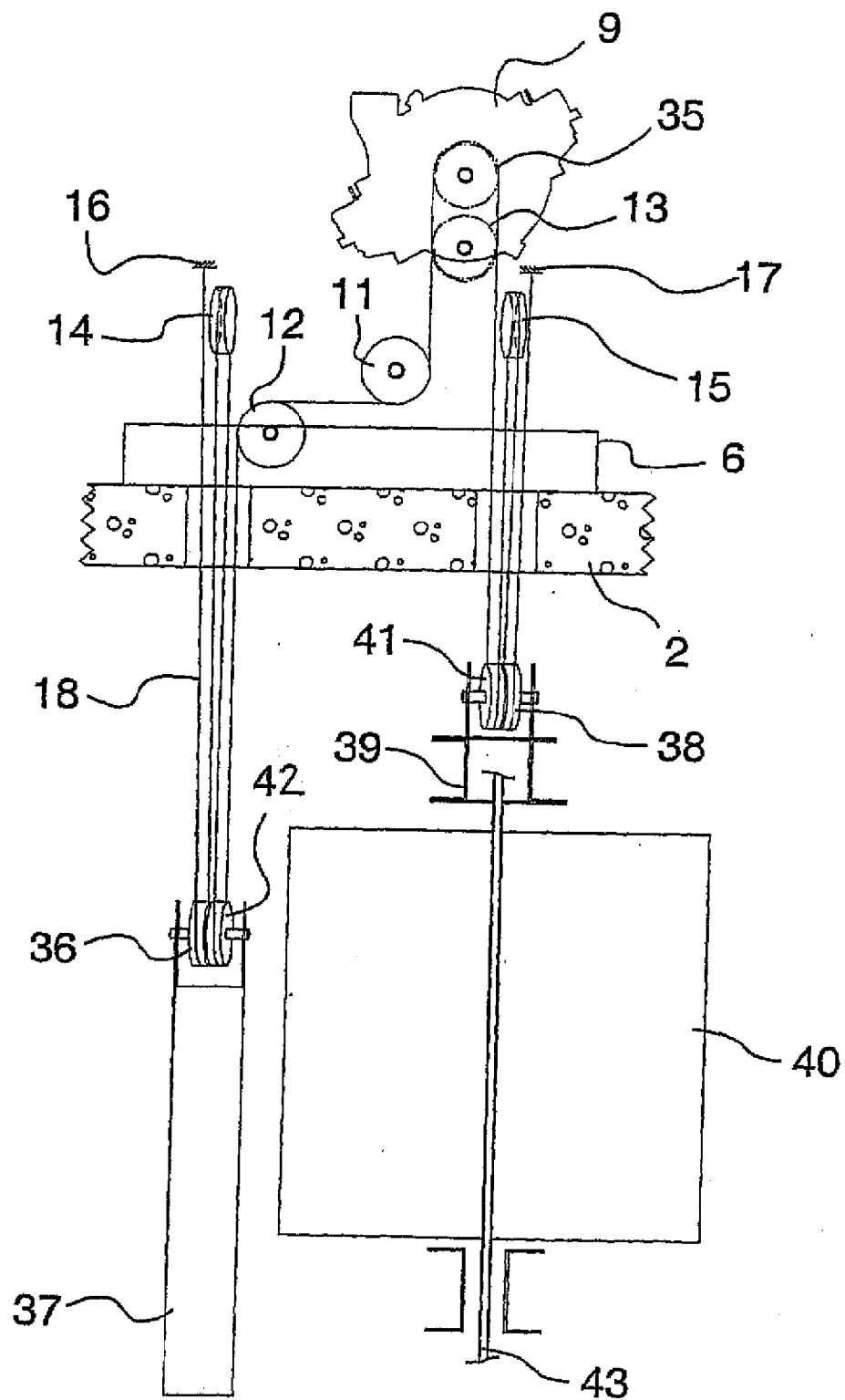


Fig. 9

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- JP 7061744 B [0005]
- EP 1555232 A [0008]
- US 5957242 A [0008]