

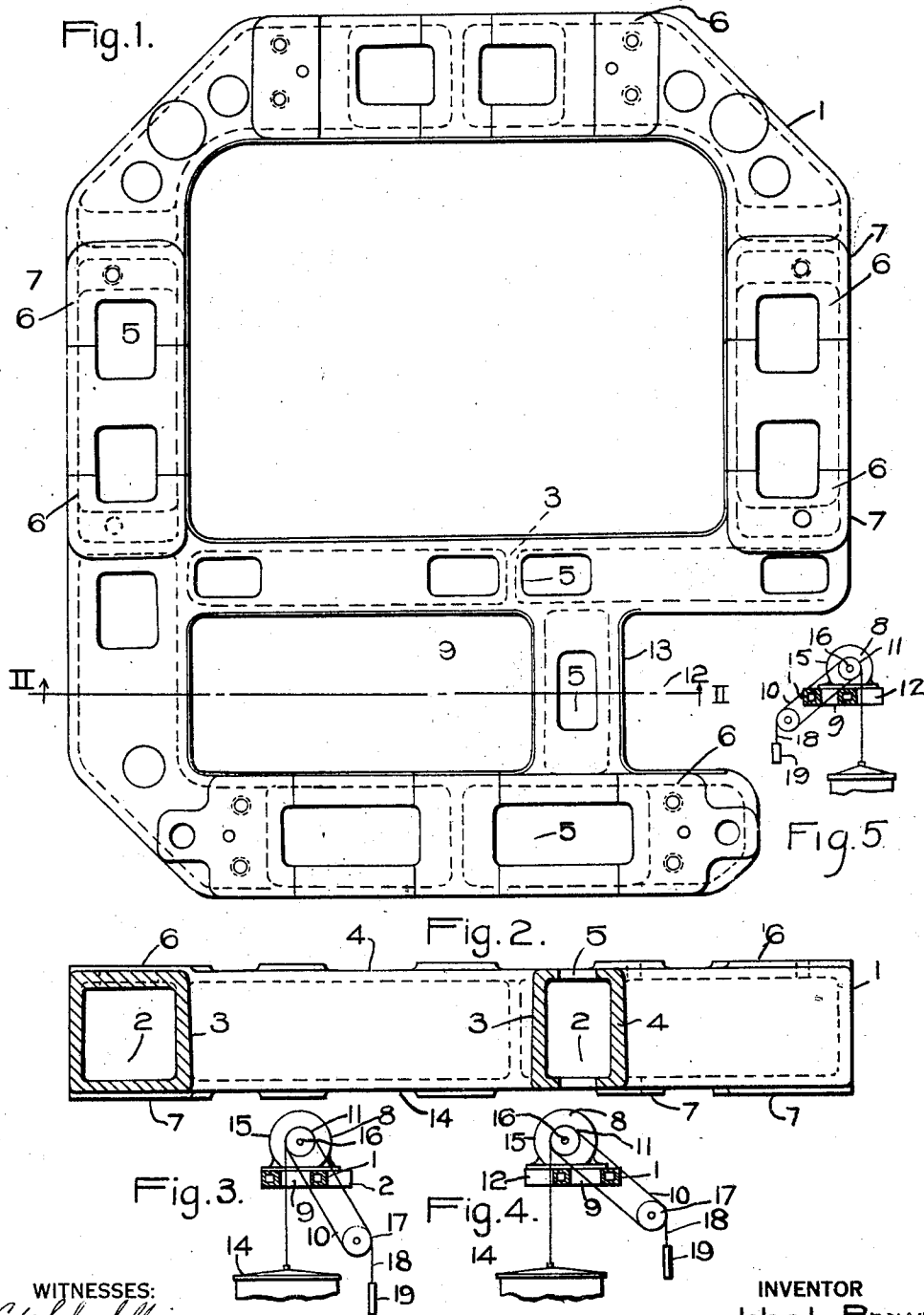
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MOTOR BEDPLATE

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MOTOR BEDPLATE

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My invention relates to motor bedplates and especially to bedplates which are reversible and which are applicable in any one of a great variety of installations.

More particularly, my invention relates to elevator-motor bedplates which are reversible and have unsymmetrically disposed openings therein for the purpose of adapting the same to practically all conditions of installation, as will be hereinafter described.

The object of my invention is to provide a strong light-weight bedplate for elevator motors which may be utilized with substantially any one of the roping conditions met in systems of operating elevators known as "gearless traction drives".

In the accompanying drawings,

Fig. 1 is a plan view of a bedplate embodying my invention,

Fig. 2 is a sectional view of the bed plate on the line II—II of Fig. 1,

Fig. 3 is a view, partly in elevation and partly in section, of a portion of an elevator installation embodying my invention,

Fig. 4 is a similar view showing another application of the bedplate shown in Fig. 3, and

Fig. 5 is also a similar view showing another arrangement which may be obtained by reversing the bedplate from the position shown in Fig. 4 to allow for disposal of roping mechanism to the left thereof.

My cast-metal bedplate 1 is hollow, having chambers 2 formed by transverse webs or partitions 3, which reinforce the side, top and bottom walls 4 thereof.

During the casting of the bedplate, a plurality of baked-sand cores, (not shown), having projecting and supporting portions, are provided to form the chambers 2. The projecting portions of the cores form alining windows or openings 5 in the top and bottom walls of the bedplate, through which the cores may be dug out when the casting operation is completed.

It is apparent that the windows 5 are necessary in order that the cores may be removed from the chambers, but in addition, the windows materially facilitate handling and installing the bedplate.

Projecting from the upper face of the bedplate, are a plurality of bosses or raised machined surfaces 6, upon which a motor 8 is mounted, as shown in Fig. 3.

A similar set of bosses is provided on the lower face of the bedplate, so that it may be inverted and the motor 8 may be mounted on it, as shown in Fig. 4.

A substantially rectangular opening 9, bounded on four sides by portions of the casting, is disposed near one end of the bedplate to accommodate the cables 10 which pass over the motor sheave 11. A second substantially rectangular slot-like opening 12, bounded on three sides by portions of the bedplate, is disposed in alinement with the first opening and separated therefrom by a bracing portion or web 13.

A "gearless traction drive" operating mechanism for an elevator is shown in Fig. 3. An elevator car or platform 14 is suspended at the ends of a plurality of parallel ropes or cables 10.

The cables 10 pass over the sheave 11 of a motor 15; the motor shaft being indicated at 16. The cables extend from the motor sheave to an idler sheave 17 which is disposed laterally from, below, and axially parallel to, the motor sheave 11. From the idler sheave 17, the cables extend to the motor sheave which they encircle a second time and then return to the idler sheave, thereby forming a closed loop within the ends of which the two sheaves 16 and 17 are disposed.

The cable ends 18 which depend vertically from the idler sheave 17, are attached to a counterweight 19, while the elevator car 14 is carried by the cable ends depending from the motor sheave 11.

In Fig. 4, the same bedplate is shown in an inverted position whereby, as will be evident from the drawing, the idler sheave may be displaced a greater lateral distance from the motor sheave. Thus, the cables must pass through the bedplate at different angles and in different places than those shown in Fig. 3.

In order that a roping system similar to that just described may be utilized, it is necessary to provide openings in the bedplate

through which the cables may be passed. Since the relative positions or displacement of the elevator car and the counterweights and the diameters of the sheaves vary with each application of the system, the ropes may extend downwardly at different angles to either the right or the left and from different sizes of sheaves, so that the rope may have to pass through the bedplate at different distances from the axial center-line and on either side thereof.

A bed plate of an intermediate size, such as is shown in the accompanying drawing, measures about four feet by six feet and weighs approximately 1500 pounds. It is imperative, therefore, that such device shall be as light in weight as is consistent with the strength and rigidity necessary to the operation of the elevator system of which it is a part.

It has been necessary for manufacturers to have available a great variety of designs of bedplates to meet the demands of different applications, and it has not been possible to build a bedplate for any particular application until the exigencies of the customer's particular requirements were known as to the elevator speed, or sheave diameter, the size of the elevator shaft, the distance between the ropes, and the disposition of the counterweight on the right or left-hand side.

Heretofore, it has been necessary to provide either separate bedplates for right and left-handed throws, on bedplates which are symmetrical, so that they may be used with either right or left-handed throws, but have very limited ranges of applicability. This has been a handicap for the manufacturer, but it has been a still more serious handicap for the customer, who was limited in the flexibility with which he could rearrange his installation according to requirements.

By utilizing openings 9 and 12, which are disposed non-symmetrically or at different distances from the axial centerline of the bedplate, one of the openings being a slot and the other being an enclosed hole, and by making the bedplate reversible, I have provided a single design that will accommodate all of the variations in the angular throws of the ropes and in the sheave sizes that are ordinarily met with in practice, as is illustrated in Figs. 3, 4, and 5. At the same time, the same angular throws and sheave sizes may be accommodated, with equal facility, for either left-hand throws or right-hand throws, as will be obvious.

My novel construction saves money for the manufacturer, also, because, although each bedplate is more expensive than the prior-art devices, the saving in the number of different types of bedplate to be carried, the ability to manufacture and stock the bedplates in large numbers, and the ease with

which orders may be filled for the varying needs of customers, more than offset the slight increase in the cost of the individual units and makes my invention a very important contribution to the art of elevator motors and installations, from the standpoint of the manufacturer as well as from that of the customer, as has been pointed out.

I claim as my invention:

1. A hollow cast-metal bedplate having top and bottom faces connected by vertical webs and flanges providing hollow enclosed spaces, each of the hollow enclosed spaces within the bedplate being joined with the space outside of the bedplate by means of openings in the opposite sides of the enclosure, the top and bottom faces being provided with a vertically extending hole having an oblong cross-section extending transversely of the bedplate and being provided with a vertically extending slot in the side of the bedplate and in alignment with said oblong hole.

2. For use in an elevator system comprising a car, a counterweight, a motor, a motor sheave, a counterweight sheave, and ropes operatively connecting them, a reversible bedplate for supporting the motor, and having a vertically extending hole of elongated cross-section extending transversely thereof and a vertically extending slot in the side thereof in substantial alignment with the elongated axis of said hole, said bedplate being adapted, in one position, for the passage of the car-carrying rope-portion through the hole, and for the passage of a rope-portion between the two sheaves through the slot, and being adapted, in the reverse position, for the passage of the car-carrying rope-portion through the slot, and for the passage of a rope-portion between the two sheaves through the hole.

3. A reversible bedplate susceptible of use with either surface uppermost and having a vertically extending hole of oblong cross-section extending transversely thereof and a vertically extending slot in the side thereof in alignment with said oblong hole.

4. For use in an elevator system comprising a car, a counter-balancing means, a rope carrying the elevator car at one end and the counterbalancing means at the other end, two sheaves supporting the respective ends of the rope, and a motor driving the sheave for the car end of the rope, a novel reversible bedplate for supporting said sheaves and motor, said bedplate having a vertically extending hole having an oblong cross-section extending transversely thereof and a vertically extending slot in the side thereof in alignment with said oblong hole, said hole and slot being adapted, in one position of the bedplate, for the passage of the car-carrying rope through the hole, and for the passage of the counterbalance-carrying rope

through the slot, and in the reverse position of the bedplate adapted for a different passage of the several ropes.

In testimony whereof, I have hereunto subscribed my name this 11th day of February, 1927.

JOHN L. BROWN.

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