

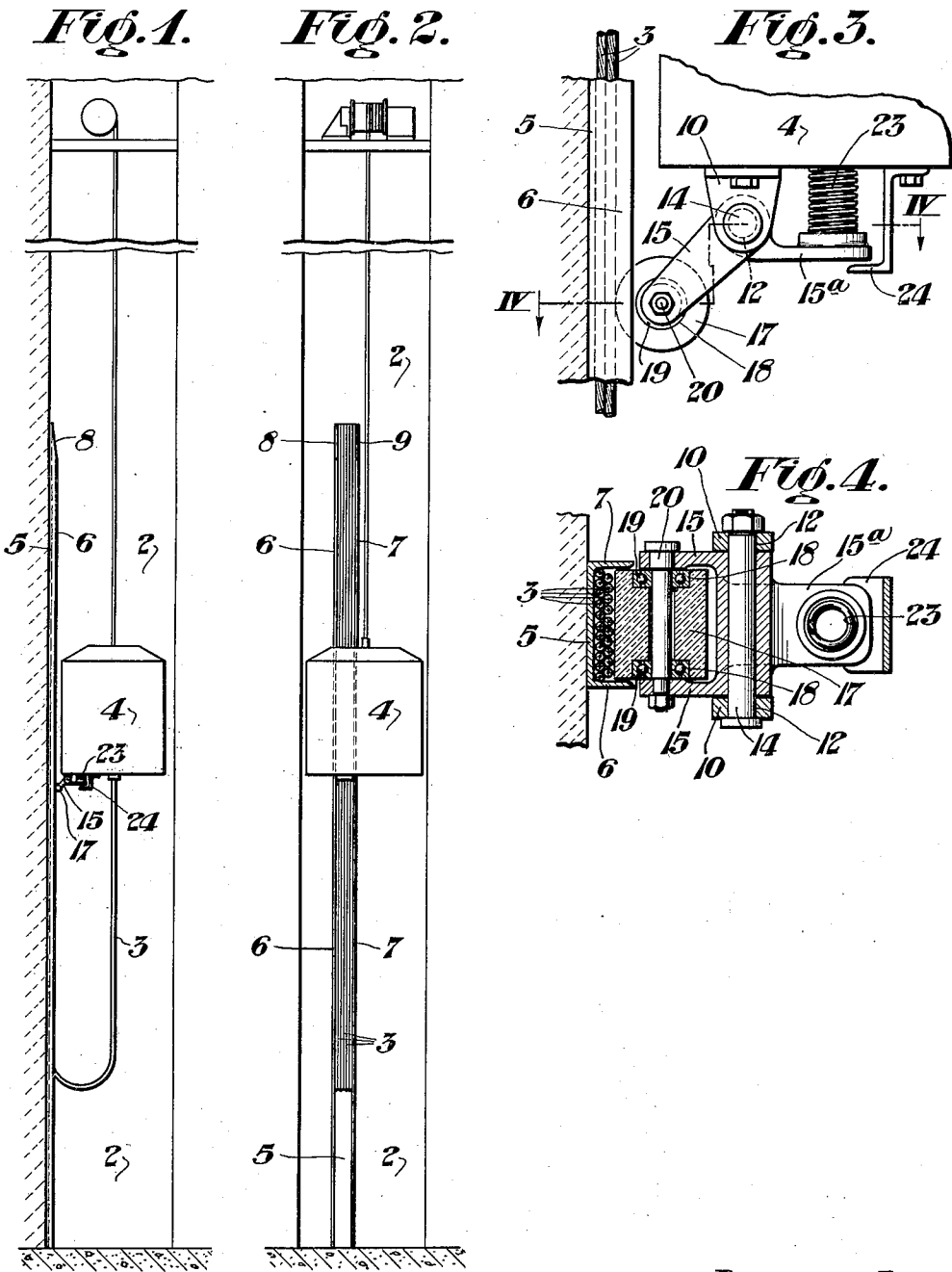
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GUIDEWAY

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GUIDEWAY

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2 Claims. (Cl. 187—1)

This invention relates to a novel guideway for elevators and the like, and more particularly to means for obviating the usual difficulties resulting from the great length and substantial weight of the control cables, and the high speed of the operation of the elevator car.

It is customary to install elevator control cables by suspending one end of each from a point slightly above the center line of the hatch. The other end is suspended from the bottom of the elevator car, so that a loop may be formed immediately below the car when at the ground floor position, such loop traveling upward with the upward travel of the car, but dropping back due to the difference in the speed of travel of the loop as compared with that of the car. In this way the loop will be below the hatch suspension point when the car is at the top floor position. These cables, being almost entirely free of movement except at the ends, are subject to the effects of the speed of the car, particularly when the car is accelerating or decelerating, and they are influenced in many cases by the peculiar air conditions which may be set up in the hatches, and particularly when more than one car is operating in the same enclosed space. These conditions have been decidedly complicated in the past few years by the higher speeds and the increased heights to which elevators operate.

The cables, for perfect operation, should be extremely flexible, entirely free from any inequalities of torsion, and so constructed that they will hang "dead" in the hatch beneath the car, regardless of the speed, length of travel, or air conditions. Such conditions are extremely difficult to obtain, particularly as different sizes and weights of cables are used in parallel on the same car.

One object of the present invention is the provision of a novel guideway for elevators, and the like, which will positively prevent the various control cables from coming into rubbing contact with the elevator car, or otherwise deviate from the path they are intended to prescribe.

Another object is to provide a novel guideway for elevator cables together with a novel anti-friction element carried by the elevator car for maintaining the cables in the guideway without subjecting them to undue friction.

A further object is to provide a device of the class described which may be easily and cheaply installed on existing types of elevator equipment, and one which will not require attention or replacement.

The foregoing and still further objects will be

apparent after referring to the drawing, in which:

Figure 1 is a rear elevation of an elevator employing the novel device of the invention.

Figure 2 is a side elevation taken 90 degrees from the view of Figure 1.

Figure 3 is an enlarged sectional detail of a part of the apparatus.

Figure 4 is a sectional view on the line IV—IV of Figure 3.

Referring more particularly to the drawing, the numeral 2 designates an elevator hatch in which there is disposed a plurality of elevator control cables 3 which are suitably connected to the usual elevator car 4.

According to the teaching of the present invention, the novel guideway comprises a trough adapted to extend vertically along the side wall of the hatch 2 for a considerable portion of its height, and at least over that distance through which the car travels on the lower half of its run. The guideway trough is composed of a channel web 5 having outwardly extending side flanges 6 and 7.

The trough, composed of the web 5 and flanges 6 and 7, is of such size and cross-section as to readily accommodate all of the cables necessary for the operation of the elevator.

In order to maintain the cables 3 in the trough, the bottom of the elevator car 4 is provided, adjacent its sideward edge, with a pair of ears 10, each having an aperture 12. A shaft 14 is suitably mounted in the apertures 12 and carries a pair of arms 15.

The novel antifriction element of the invention comprises a roller 17 of a length slightly shorter than the distance between the inner sides of the flanges 6 and 7 of the trough and which is composed of steel, bakelite, or other hard material. The ends of the roller 17 are counterbored, as at 18, in such manner that each may receive a ball bearing 19. A shaft 20 is connected between the arms 15 and extended through the roller 17 and its bearings 19.

As the elevator car should practically "float" in its vertical movement along the usual rails, it is desirable to tension the roller 17 against the cables 3 which are between the flanges 6 and 7 of the trough. Accordingly, a compression spring 23 is provided for biasing each of the arms 15 outwardly from the elevator, and in this manner resiliently maintain the roller 17 between the flanges 6 and 7. In order to prevent the excessive outward movement of the arms 15 after the elevator car has moved upwardly beyond the up-

per end of the trough, a keeper **24** is disposed in the path of the arms **15**.

While I have shown and described one specific embodiment of my invention, it will be understood that I do not wish to be limited exactly thereto, since various modifications may be made without departing from the scope of my invention, as defined in the following claims.

I claim:

10 1. A cable guideway for elevators comprising an elongated vertical trough disposed in the elevator hatch, resilient means carried by the elevator car for maintaining the cables in said trough, said resilient means being movable out-
15 wardly from said elevator car, and means for

preventing excessive outward movement of said resilient means.

2. A cable guideway for elevators comprising an elongated vertical trough disposed in the elevator hatch, a horizontal shaft carried by the elevator car, at least one arm pivotally mounted on the shaft, a shaft carried by said arm, an anti-friction roller mounted on said shaft, resilient means for biasing said arm outwardly from said car to cause said anti-friction roller to engage the cables between the sides of said trough, and means for restraining the excessive outward movement of said arm.

JAMES J. MORRISON. 15