

ABSTRACT

ELEVATOR HORIZONTAL SUSPENSIONS AND CONTROLS

A semi-active secondary suspension comprises a relatively large actuator for handling low-frequency forces such as those caused by uneven passenger distribution, etc., by means, for example, of a position control loop. A pair of such suspensions on opposite sides of the car or rail can be made to act in concert, for example, by actuating only one at a time. An inner loop can be added to the position control for each secondary suspension to restore its actuator to a selected preload position when not being used as an actuator. The semi-active secondary suspension is made fully active by adding a relatively small actuator for handling higher frequency dynamic forces. A roller guide embodiment has rollers pivotally mounted on links which are spring-biased toward the rail blades. The relatively large actuators are connected to the link springs to slowly increase or decrease the preload force on the spring acting on the links to counter low frequency disturbances. The relatively small actuators also act on the links to ensure that high frequency disturbances are quickly countered thereby ensuring a substantially vibration-free ride. Suspensions comprising slide guides, electromagnets, etc. are shown.

[Fig. 1]