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E. L. DUNN

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ELEVATOR GUIDE

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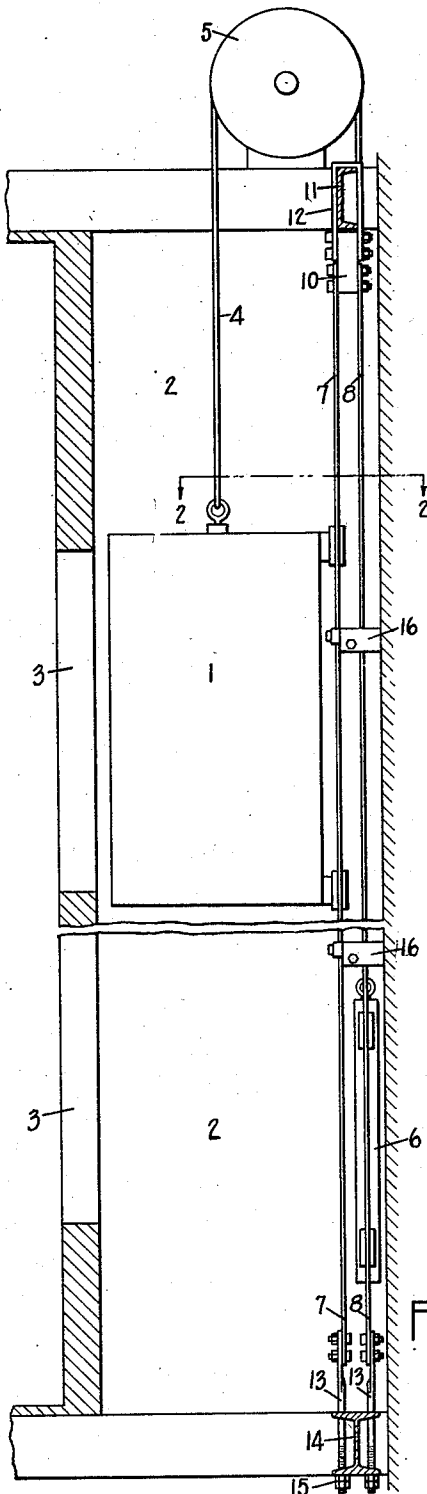


FIG. 1

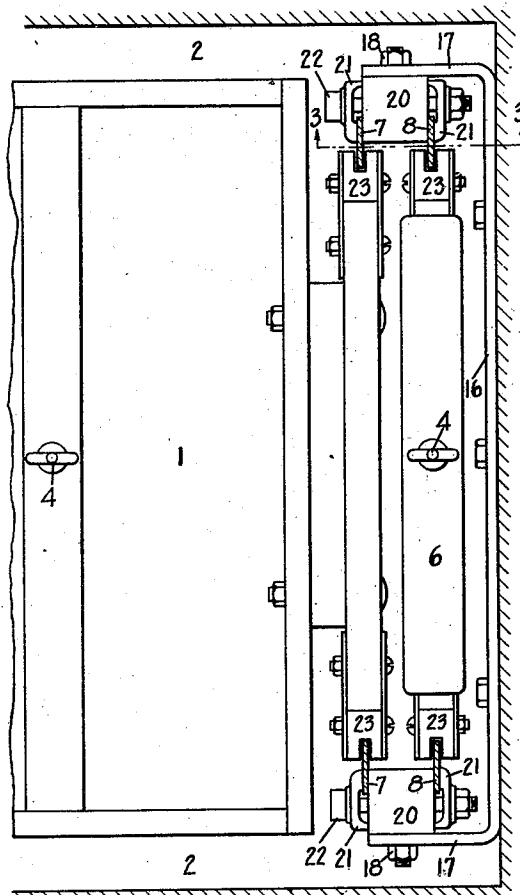


FIG. 2

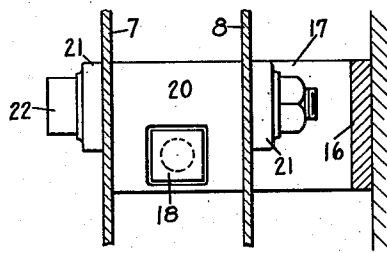


FIG. 3

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ELEVATOR GUIDE

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This invention relates to improvements in guides for the moving bodies in elevator and dumbwaiter systems.

In present day elevator and dumbwaiter installations, the car and counterweight are provided with guides extending the length of the hatchway. These guides are usually constructed of steel channels or of T-rails and consist of a plurality of lengths of a number depending upon the requirements of the particular installation. The resulting joints between adjacent lengths should be perfect so that the shoes on the car and counterweight may ride over them smoothly. Furthermore, the guides should be absolutely straight and vertical, and the spacing therebetween should be constant. These requirements add to the labor and cost of the installation.

A feature of this invention is the provision of a guide for a moving body in an elevator or dumbwaiter system that is simple and that is readily and cheaply installed. To this end a continuous metallic tape is provided, which tape extends from the top to the bottom of the hatchway and is suitably secured therein. This tape may be fastened at both ends under sufficient tension to maintain it straight and vertical. Suitable brackets may be secured to the hatchway at points intermediate the ends of the tape to prevent displacement.

Other features and advantages will become apparent from the following description and appended claims.

The invention will be described as embodied in a power dumbwaiter system, suitable, for example, for apartment houses. For simplicity the control of the hoisting motor, and other non-essentials to the understanding of this invention, are omitted. It is to be understood that the invention is applicable to any type of dumbwaiter or elevator system.

In the drawings:—

Figure 1 is a schematic representation of a power dumbwaiter system illustrating guides for the moving bodies thereof constructed in accordance with this invention;

Figure 2 is an enlarged horizontal section thereof along the line 2—2 of Figure 1; and

Figure 3 is an enlarged vertical section thereof along the line 3—3 of Figure 2.

Referring to the drawings, dumbwaiter car 1 is arranged to travel in the hatchway 2 to serve a plurality of openings 3. The hoisting rope 4 runs over a sheave 5 and is connected at one end to the top of the car 1 and at the other end to a counterweight 6. The two car guides 7 and the two counterweight guides 8 are each formed of a continuous flexible metallic strip held in tension in the hatchway. In the preferred construction, these guide strips are made of cold rolled steel of the desired gauge and width. According to the construction illustrated, the upper end of each car guide strip 7 and the corresponding counterweight guide strip 8 is fastened to an end block 10 which is appropriately secured to the beam 11 as by the U-strap 12. The lower end of the guide strips, both for the car and the counterweight, are secured to tensioning bolts 13 which extend through holes in the flanges of the I-beam 14 to the underside thereof. Nuts 15 on the ends of the tensioning bolts are screwed up against the underside of the I-beam 14 to secure the guide strips to the I-beam. It is to be noted at this point that the tension in the guide strips may be regulated by these nuts 15.

At one or more places between the upper and lower ends of the guide strips there are provided U-frames 16. These U-frames are suitably secured along the rear hatchway wall so that the ends 17 thereof extend outward from the wall. To each of these ends 17, and on the inner side thereof, there is fastened, as by a bolt 18, a spacer block 20. Each block is arranged to fit between a car guide strip 7 and the adjacent counterweight guide strip 8. These guide strips are clamped to the blocks 20 by means of clamping plates 21 which are held in place by bolts 22. In this manner the guide strips are stabilized, excessive movement prevented, and the spacing between guide strips maintained constant.

The car and the counterweight are each provided with guide shoes 23 suitably secured thereto. These shoes may be of any

desired type or construction. For the dumbwaiter installation shown, it is preferred to use an oil-less type formed of wood or porous metal impregnated with a suitable lubricant.

Attention is directed to the simplicity with which the guide strips may be installed. The guide strips may be quickly stretched between and secured to the upper beam 11 and the lower I-beam 14. The proper tension in the strips may be obtained promptly by the adjustment of the nuts 15. The strips may then be clamped to the spacer blocks 20 on the U-frames 16 which have been installed along the hatchway. It is to be noted that there are no joints to be fitted or filed smooth in order to get straight guides.

As many changes could be made in the above construction and many apparently widely different embodiments of this invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

What is claimed is:

1. In an elevator system, a guide rail formed of a flexible strip, and securing means positioned along the elevator hatchway to prevent movement of said strip.

2. In an elevator system, a guide rail formed of a continuous piece of metallic tape extending the height of the elevator hatchway, and a plurality of adjustable clamps positioned along said hatchway to maintain the tape in place throughout the height of the hatchway.

3. In an elevator system, a guide rail formed of steel tape, and means secured to the side of the hatchway to clamp the tape on the flat faces thereof across a portion of their width, said clamping means being arranged to project the remaining width of the flat faces and the edge of the tape included therebetween into the hatchway as the guiding faces of the guide rail.

4. In an elevator system, a guide rail formed of a flexible strip, means secured to the ends thereof to stretch said strip vertically in the elevator hatchway and at a predetermined spacing from the hatchway wall, and means positioned between the ends of said strip to maintain said spacing of said strip from the hatchway wall.

5. An elevator system comprising a car guide rail and a counterweight guide rail, each guide rail being formed of a continuous flexible strip in tension, spacing blocks between said guide rails at a plurality of points intermediate the ends thereof, means to secure said guide rails to said blocks, and means to support said blocks on the hatchway wall.

6. Guiding means for the car and counterweight of a dumbwaiter comprising, pairs of metallic tapes extending the height of the dumbwaiter hatchway, means secured to the ends of the tapes mounting them in tension in said hatchway, said tapes being arranged so that the two tapes of each pair of tapes is adapted to guide respectively the dumbwaiter car and the counterweight therefor, means disposed along the hatchway to clamp the two tapes of each pair of tapes and to maintain the spacing therebetween, and means to secure said clamping means to the hatchway wall.

7. Guiding means for the car and counterweight of a dumbwaiter comprising, two pairs of metallic tapes extending the height of the dumbwaiter hatchway, means secured to the ends of the tapes mounting them in tension in said hatchway, said tapes being arranged so that the corresponding tapes of the pairs thereof are spaced and positioned to guide respectively the dumbwaiter car and the counterweight, a plurality of spacing blocks clamped between the two tapes of each pair, a plurality of U-frames mounted in said hatchway, and means to secure said spacing blocks to the ends of said U-frames.

In testimony whereof, I have signed my name to this specification.

EDWARD LEE DUNN.