

No. 612,811.

Patented Oct. 25, 1898.

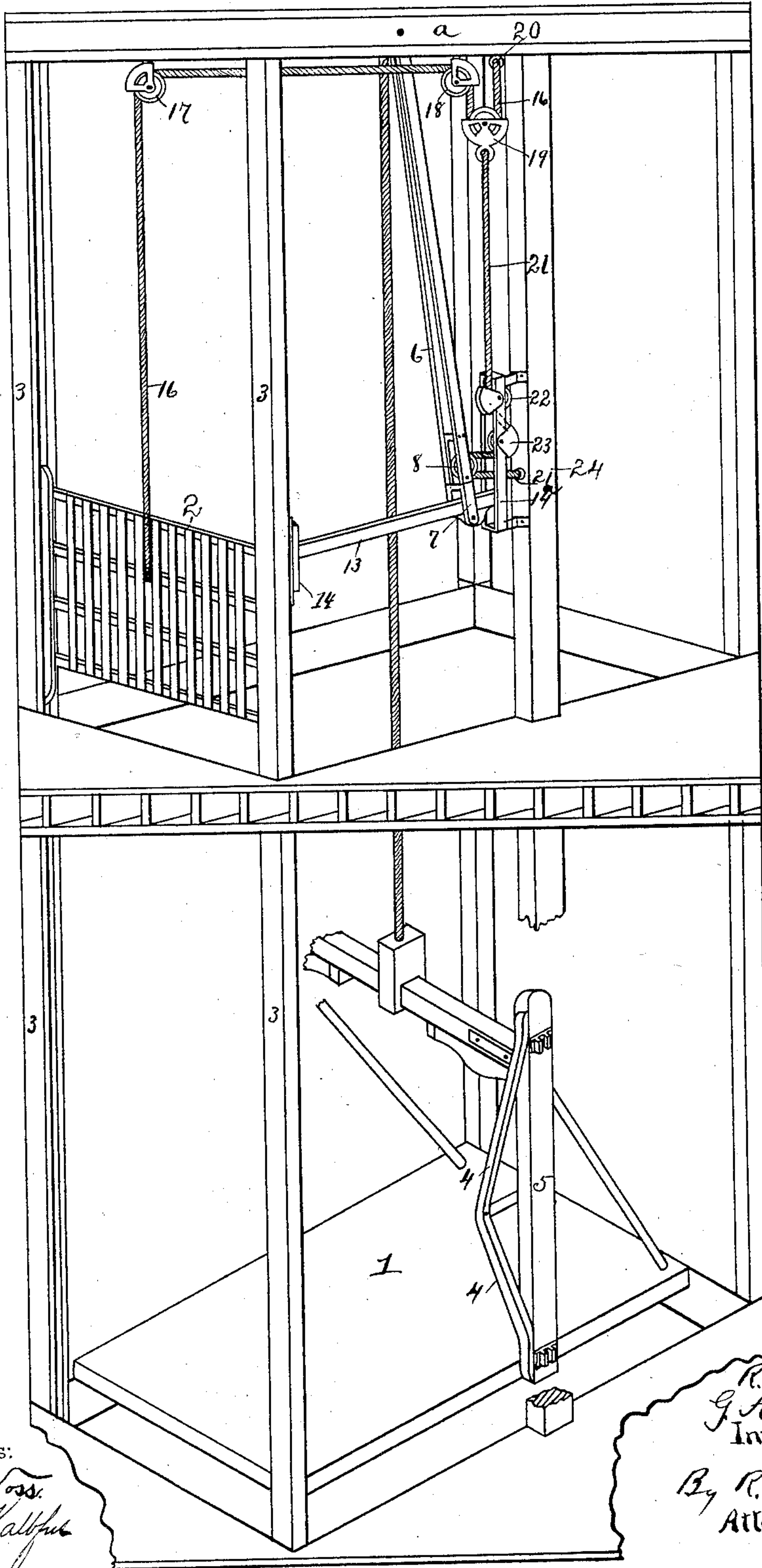
R. O. BELLES & G. A. HESS.  
ELEVATOR GATE.

(Application filed May 18, 1898.)

2 Sheets—Sheet 1.

(No Model.)

Fig 1.



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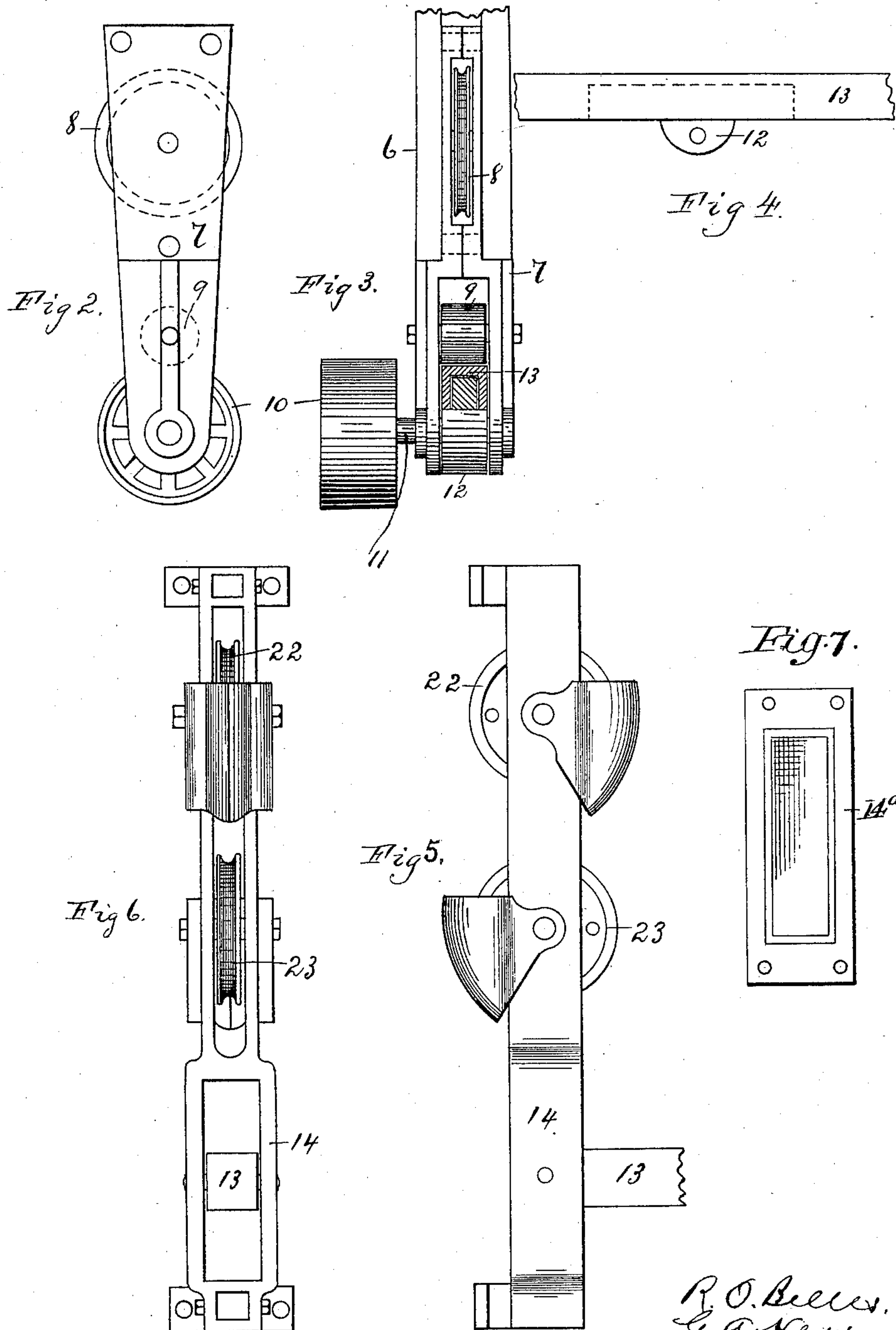
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# UNITED STATES PATENT OFFICE.

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## ELEVATOR-GATE.

SPECIFICATION forming part of Letters Patent No. 612,811, dated October 25, 1898.

Application filed May 18, 1898. Serial No. 681,007. (No model.)

*To all whom it may concern:*

Be it known that we, REUB O. BELLES, residing at Pittsburg, and GEORGE A. HESS, residing at Allegheny, in the county of Allegheny, State of Pennsylvania, citizens of the United States, have invented certain new and useful Improvements in Elevator-Gates; and we do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures and letters of reference marked thereon, which form a part of this specification.

Our invention relates to improvements in elevator-gates.

The object of the invention is to obtain the multiplication in the movement of the rope through which the elevator-gate is raised and lowered by means of traveling sheaves instead of gearing and whereby the frictional resistance is greatly lessened.

In a detailed description of the invention reference is made to the accompanying drawings, of which—

Figure 1 is a perspective view showing the hatchway, elevator-car, and gate-operating mechanism. Figs. 2 and 3 are side and edge views of the bracket detached from the lower end of the vibrating bar. Fig. 4 is a side elevation of a portion of the transverse bar that guides the movement of the vibrating bar. Figs. 5 and 6 are side and front elevations of the sheave frame or housing. Fig. 7 is an elevation of the frame in which the free end of the guide-bar is confined.

Similar reference characters indicate corresponding parts in the several views.

1 designates the platform of an elevator-car, 2 the gate, and 3 3 gate-posts.

4 designates a double-inclined plane rigidly secured to the stile 5 of the elevator. The vibrating bar 6 is pivoted at its upper end to the trimmer *a*.

7 is a metallic housing or bearing secured to the lower end of the vibrating bar and upon which are mounted a multiplying-sheave 8, guide-roller 9, and roller 10. The shaft 11,

upon which the roller 10 is mounted, also supports between the lower sides of the housing 7 a guide-block 12, which travels back and forth with the vibrating bar 6. The horizontal or elongated portion of said guide-block is inclosed in a channel-bar 13, as shown in Figs. 3 and 4. The said channel-bar 13 forms a transverse guide for the lower end of the vibrating bar. It is pivoted at one end to a metallic frame 14 and has its opposite end loosely confined in a metallic frame 14<sup>a</sup>, secured to one of the gate-posts. As the vibrating bar is moved out from the position shown in Fig. 1 the free end of the guide-bar 13 is permitted to move sufficiently, but is confined within said frame 14<sup>a</sup>. The movement is imparted to move the vibrating bar in either direction by the double-inclined plane 4 riding against the roller 10.

16 designates the gate-rope passing over sheaves 17 18, depending from the trimmer *a* of the hatchway. The said rope 16 further passes around a traveling or multiplying sheave 19 and has its end secured to an eye 20 in the hatchway-trimmer. 21 is another section of the gate-rope, having one end attached to the housing of the traveling sheave 19 and passing inwardly and outwardly around sheaves 22 and 23, thence around the sheave 8 on the vibrating bar 6, and has its end made fast to an upright or post 24. The sheaves 22 and 23 are mounted in the metallic frame or housing 14, which is also secured to said post or upright 24.

It will be noted from the foregoing description, in connection with the drawings referred to therein, that one section of the gate-rope has a movable connection with the gate and a fixed connection at 20 and the other section of said rope has a movable connection with the traveling sheave 19 and a fixed connection to the upright 24. It is therefore clear that the movement imparted to the gate by the traveling sheave 19 is twice that of the latter, while the movement imparted to the sheave 19 by the movement of the vibrating bar is similarly multiplied. Therefore the gate is moved four feet for each foot of movement imparted to the vibrating bar.



Having described our invention, we claim—

1. In an elevator, the combination with a hatchway-gate, and double-inclined plane, of a vibrating bar actuated by said double-inclined plane, a sheave mounted on said vibrating bar, a vertically-traveling sheave, a gate-rope in two sections one of said sections passing around said vertically-traveling sheave, with one end attached to the gate, and the other end immovably attached at a point above the traveling sheave, the other section of said rope having one end attached to said traveling sheave, passing around the sheave on the vibrating bar, and its other end immovably attached to one of the uprights, and supporting-sheaves for said rope, substantially as and for the purposes specified.

2. In an elevator, the combination with a hatchway-gate, and double-inclined plane, of a vibrating bar actuated by said double-inclined plane, a guide-block and a sheave mounted on said vibrating bar, a vertically-

traveling sheave, a gate-rope in two sections, one of said sections passing around said vertically-traveling sheave with one end connected to the gate and the other end connected to a fixed point above said vertically-traveling sheave; the other section of said rope having one end connected to said vertically-traveling sheave, passing around the sheave on the vibrating bar, and its other end connected to a fixed point on one of the uprights, a transverse guide-bar in which the guide-block on the vibrating bar moves, and supporting-sheaves for the rope, all combined and operating substantially in the manner described.

In testimony that we claim the foregoing as our own we hereto affix our signatures in presence of two witnesses.

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GEO. A. HESS.

Witnesses:

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WILLIAM A. C. BROWN.