

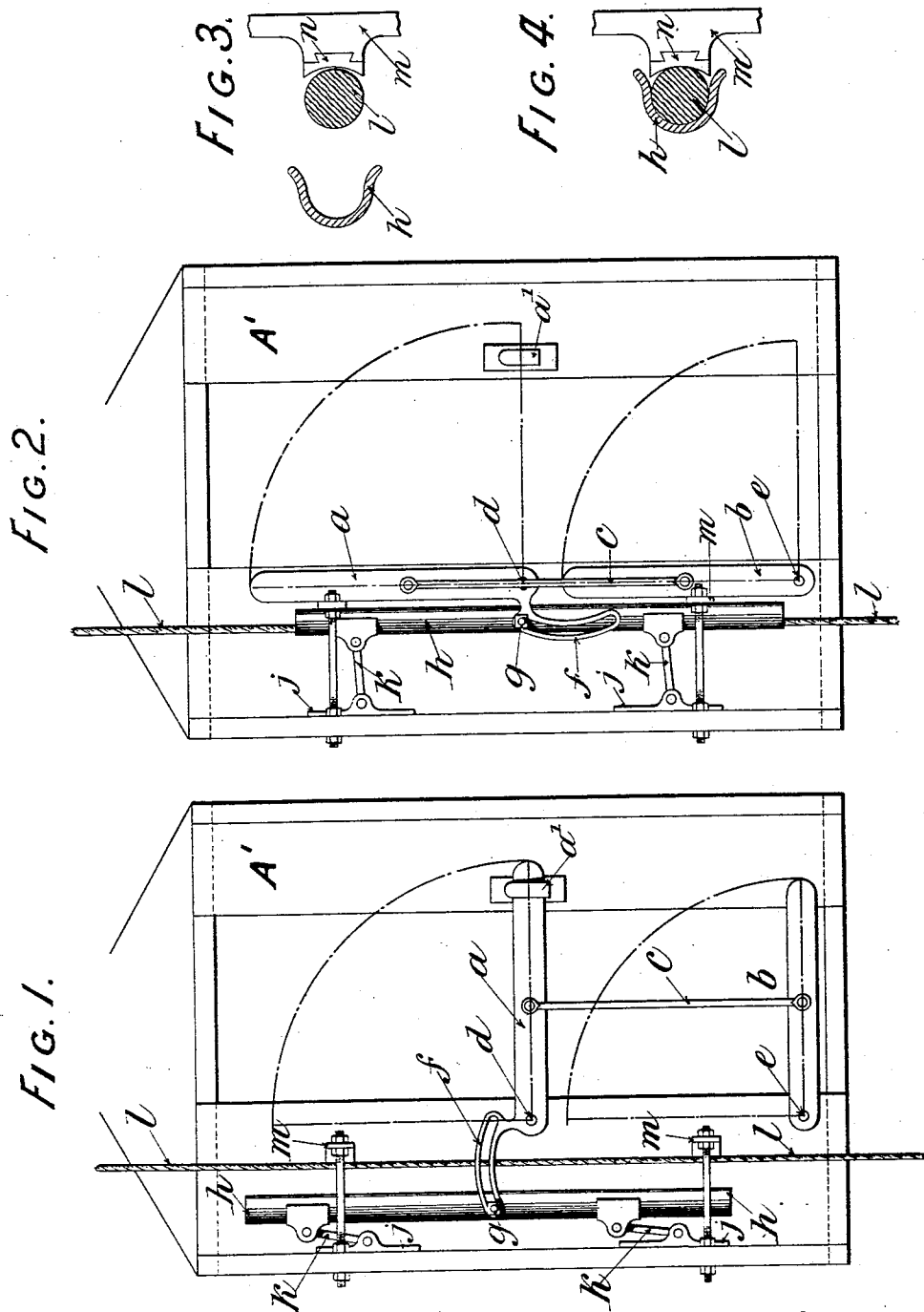
(No Model.)

3 Sheets—Sheet 1.

J. W. MARTIN.
HOIST, &c.

No. 573,678.

Patented Dec. 22, 1896.



WITNESSES.

S. E. Zimmerman
W. J. Nelson

INVENTOR

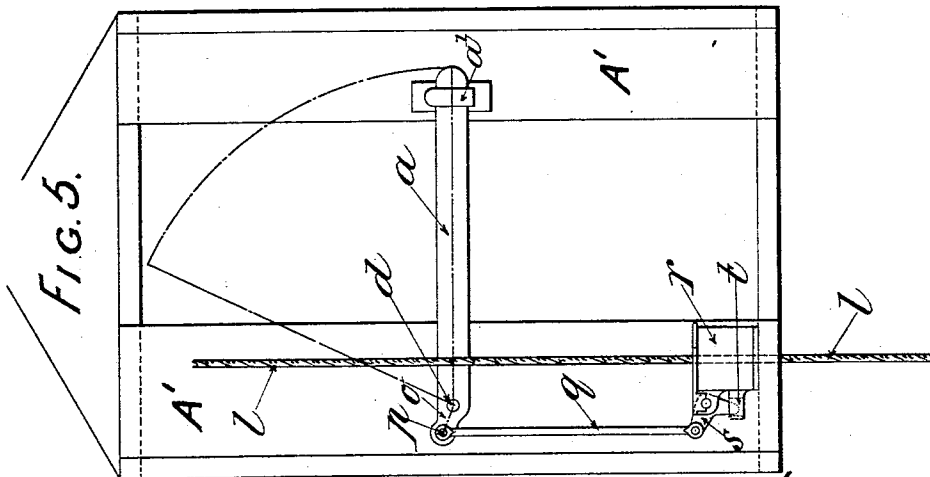
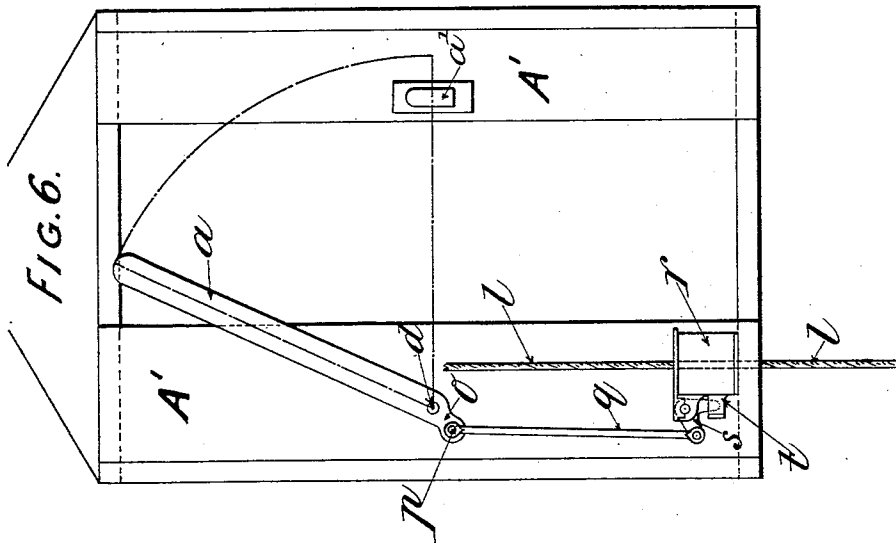
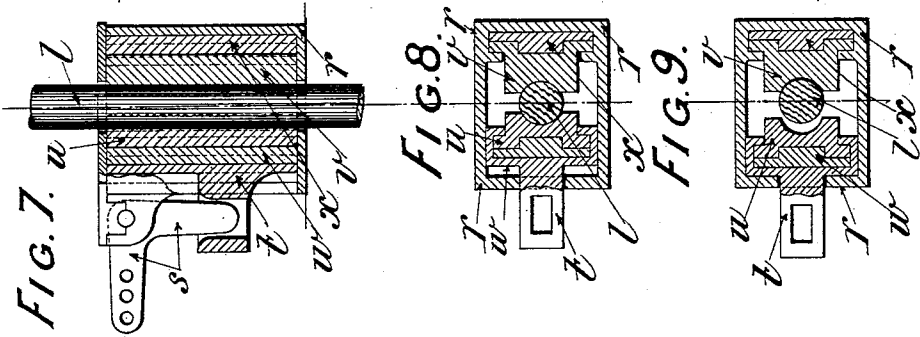
James Willson Martin
By *J. F. Clawson*
his attorney

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By *J. P. Brown*
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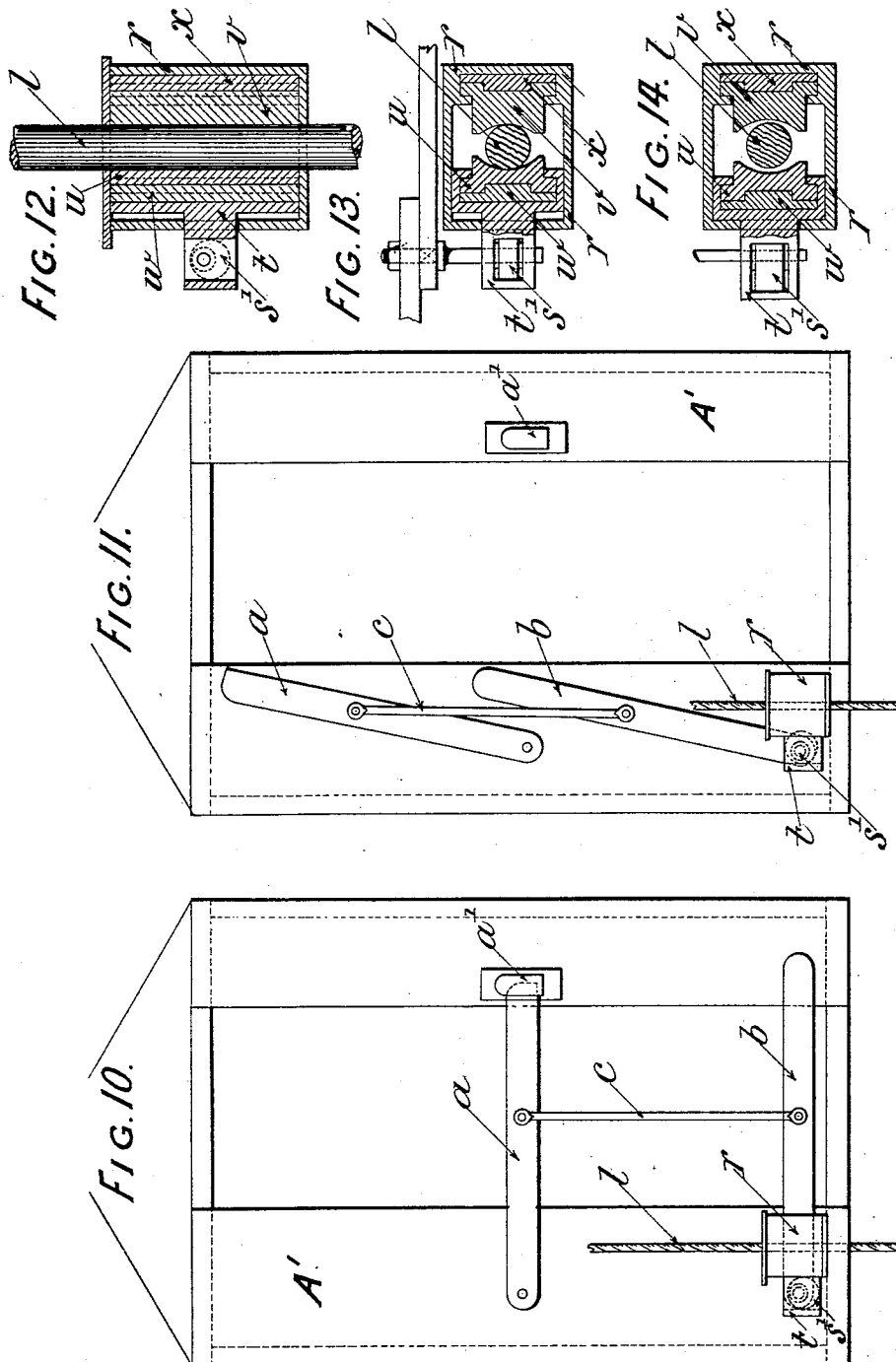
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3 Sheets—Sheet 3.

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W. J. Norton

INVENTOR

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UNITED STATES PATENT OFFICE.

JAMES WILSON MARTIN, OF MANCHESTER, ENGLAND.

HOIST, &c.

SPECIFICATION forming part of Letters Patent No. 573,673, dated December 22, 1896.

Application filed November 4, 1895. Serial No. 567,909. (No model.) Patented in England February 18, 1895, No. 3,451.

To all whom it may concern:

Be it known that I, JAMES WILSON MARTIN, a subject of the Queen of Great Britain, residing at Manchester, in the county of Lancaster, England, have invented certain new and useful Improvements in and Relating to Hoists and the Like, (for which I have obtained a patent in Great Britain, No. 3,451, dated February 18, 1895;) and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in hoists and the like wherein one or more hand-rails or a safety-gate placed across the entrance to the hoist-cage when the same is in motion is lifted to a vertical position when the cage is stopped at a stage or landing and thereby causes one or more grippers attached to the hand-rail to firmly hold the hand-rope controlling the action of the hoist from being operated upon; and the objects of my improvements are, first, to render it impossible to set the hoist-cage in motion while goods or passengers are entering or leaving the cage; second, to prevent accidents arising therefrom. I attain these objects by the mechanism illustrated in the accompanying drawings, in which the same letters of reference indicate the same parts throughout the several views, in which—

Figure 1 is an elevation of one arrangement of my invention, showing the gripper out of contact with the hand-rope, as when the cage is in motion. Fig. 2 is an elevation of the same arrangement, showing the gripper in contact with and firmly holding the hand-rope when the cage is stationary. Fig. 3 is a section of the gripper when in the position indicated in Fig. 1. Fig. 4 is a section of the same gripper when in the position indicated in Fig. 2. Fig. 5 is an elevation of another arrangement of my invention as when the cage is in motion. Fig. 6 is an elevation of the same arrangement as when the cage is stationary. Fig. 7 is a longitudinal section through the form of gripper used in this arrangement. Fig. 8 is a transverse section of the same gripper when in the position indicated in Fig. 6. Fig. 9 is a transverse section of the same gripper when in the position in-

dicated in Fig. 5. Fig. 10 is an elevation of another arrangement of my invention as when the cage is in motion. Fig. 11 is an elevation of the same arrangement as when the cage is stationary. Fig. 12 is a longitudinal section through the form of gripper used in this arrangement. Fig. 13 is a transverse section of the same gripper when in the position indicated in Fig. 11. Fig. 14 is a transverse section of the same gripper when in the position indicated in Fig. 10.

In the views, A' is the cage, to which are pivoted at *d e* two or more safety-bars *a b*, connected together by rod *c*. One end of the upper bar falls into an open staple *a'*, fixed on the cage, and the other end is formed in the shape of a slotted quadrant *f*, in which slides the stud *g*, attached to the long U-shaped shield or gripper *h*, which is connected by the links *k k* to hinges *j j*, attached to the cage A'. At one side of the hand-rope *l*, which controls the motion of the cage A', I fix by brackets *m m* and stay-bolts two or more grippers *n n*, formed of india-rubber or other suitable material and suitably recessed to receive the hand-rope *l*. The action of this arrangement is as follows: When the cage A' is in motion, the safety bars or gate *a b* is put across the entrance to the cage, and the action of so doing carries the shield-gripper *h* away from the india-rubber clips *n n*, thus leaving the hand-rope *l* quite free for action. When the cage is arrested at a landing, before the passengers in the cage can leave the same or goods can be taken therefrom it is necessary that the safety-bars *a b* be raised to the position shown in Fig. 2.

The act of turning the bars *a b* on the pivots *d e* lowers the slotted quadrant *f*, pulls inward the stud *g* and the shield-gripper *h*, which latter by this means forces the hand-rope *l* firmly against the india-rubber *n n*, and thus securely grips and holds fast the hand-rope *l*, so that the cage cannot be set in motion again until the safety-bars *a b* have been again placed in the position shown in Fig. 1.

In Figs. 5 to 9, inclusive, instead of using a slotted quadrant at one end of bar *a*, I connect this end *p* by a rod *q* to a bell-cranked lever *s*, pivoted to the gripper box or casing *r*, through which the hand-rope passes. This

box may be fixed to the bottom of the cage, as shown, or in any other desired and convenient position on the walls, top, or other part of the cage.

5 *w x* are two india-rubber cushions or buffers to the gripping-plates *u v*, which are suitably recessed, as shown, to embrace the hand-rope *l*. The gripping-plate *u* and buffer *w* fit into the box *t*, which slides freely in casing *r* and is formed, as shown, with a slotted branch to receive one end of the lever *s*. The action of this arrangement is such that when the cage *A'* is in motion and the safety-bar *a* is across the entrance the end *p* of the safety-bar, the rod *q*, and lever *s* draw the sliding box *t* and gripper-plate *u* away from the hand-rope *l*, which thus is left quite free for action, as shown in Figs. 5 and 9.

The act of raising the bar *a* depresses end *p* and rod *q*, turns lever *s*, and so slides the box *t* forward and forces the gripper-plate *u* and hand-rope *l* against the other gripper-plate *v*, by which means the hand-rope is firmly gripped between the two gripping-plates.

Figs. 10 to 14 show another arrangement of

my invention nearly similar to the preceding arrangement, but in this case two or more safety-bars are used, and the eccentric or cam *s'*, fixed on bar *b*, actuates the sliding box *t* and gripper-plate *u* in place of lever *s* in the preceding arrangement. The action is the same in both arrangements.

In the constructions illustrated on Sheets 1 and 3 the bar *a* may be held to constitute the hand-rail or gate and the bar *b* an intermediate lever connected to the hand-rope.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination of the hand-rope-gripping device, the hand-rail or gate, the intermediate lever-and-rod connection, and the rubber or elastic buffers arranged in connection with said hand-rope-gripping device, all as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES WILSON MARTIN.

Witnesses:

LEONARD IMLEDON,
NORMAN WANSTALL.