

(No Model.)

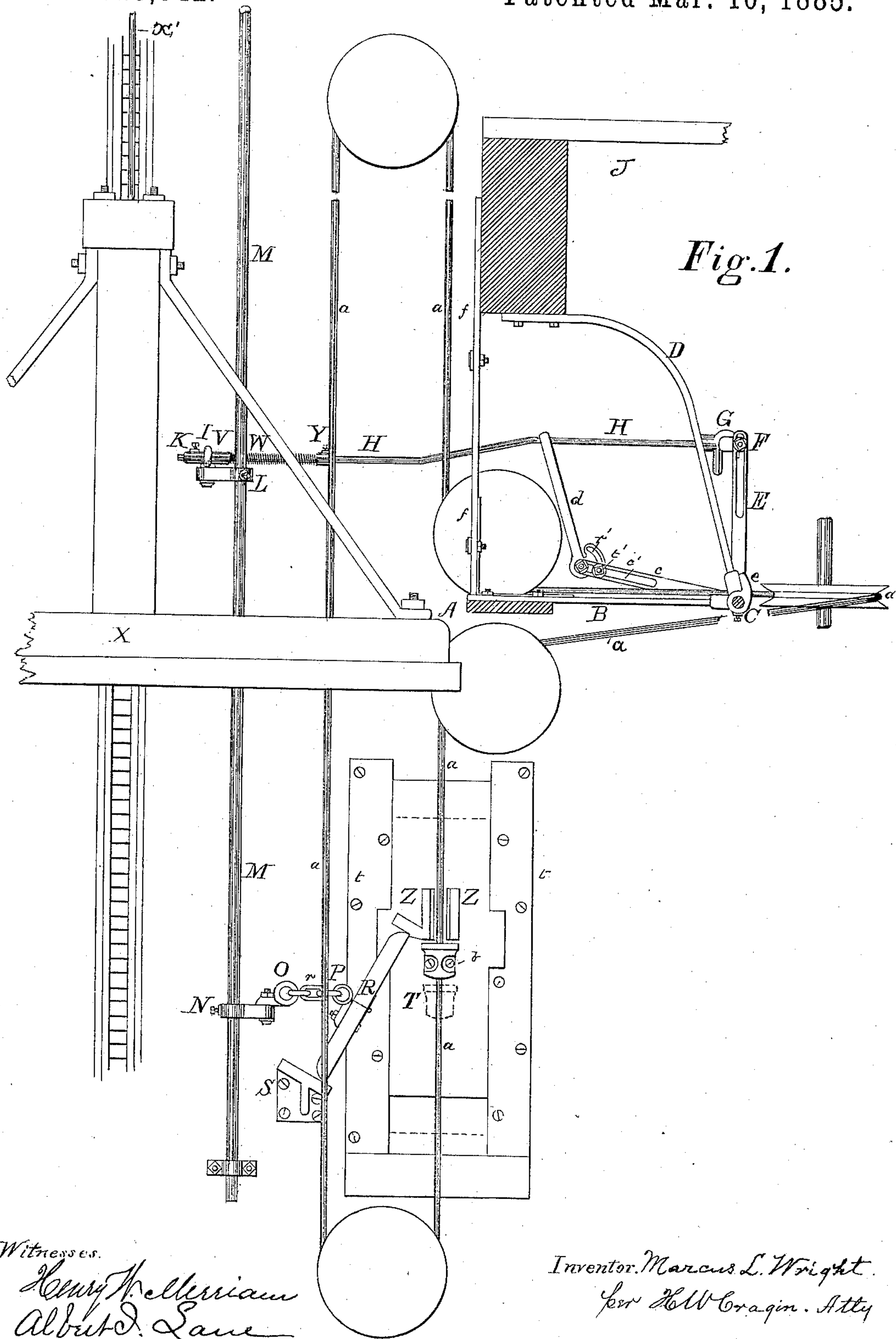
3 Sheets—Sheet 1.

M. L. WRIGHT.

DEVICE FOR PREVENTING ACCIDENTS IN ELEVATORS.

No. 313,842.

Patented Mar. 10, 1885.



Witnesses.

Henry H. Merriam  
Albert D. Lane

Inventor, Marcus L. Wright.  
per H. W. Cragin, Atty

(No Model.)

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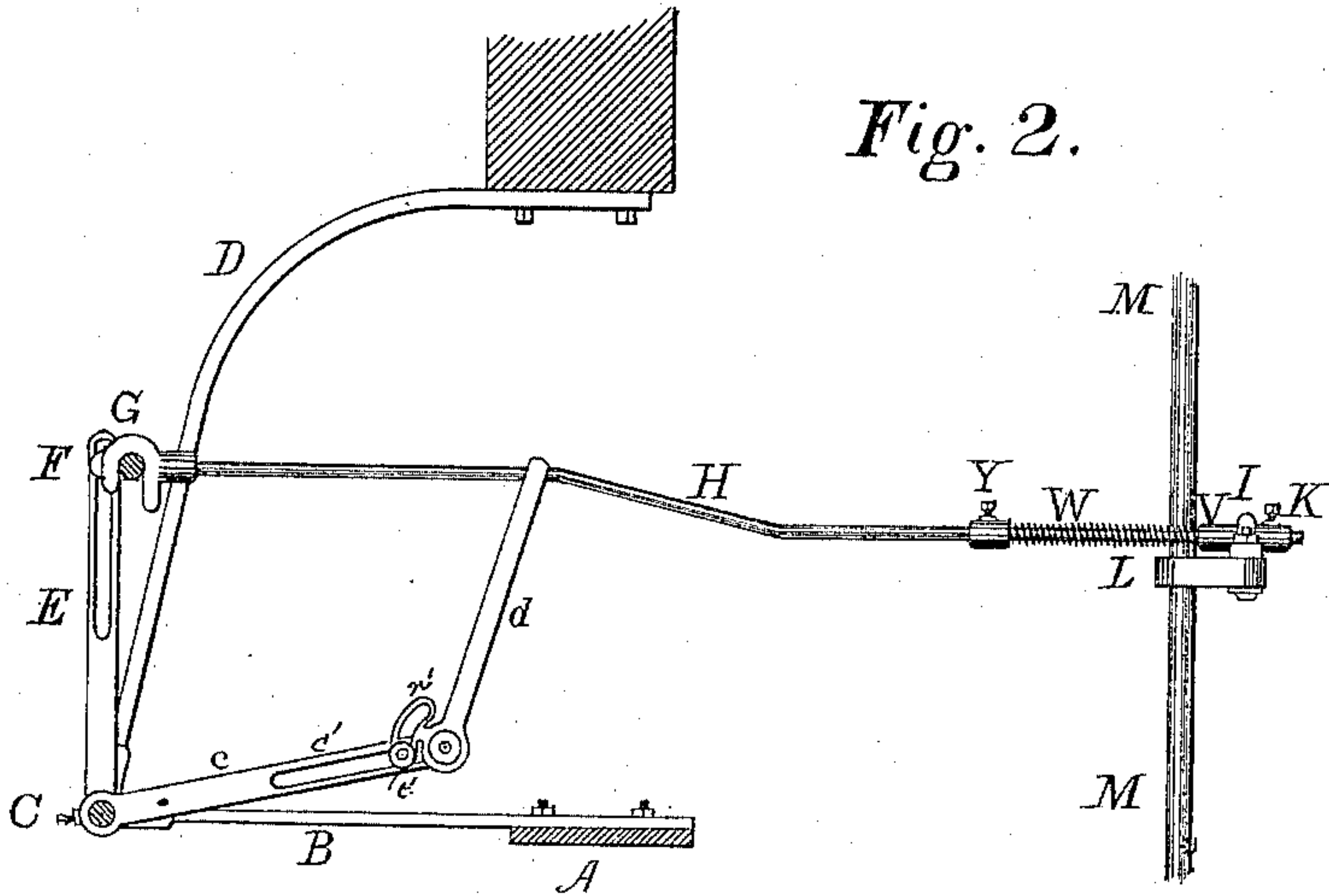
M. L. WRIGHT.

# DEVICE FOR PREVENTING ACCIDENTS IN ELEVATORS.

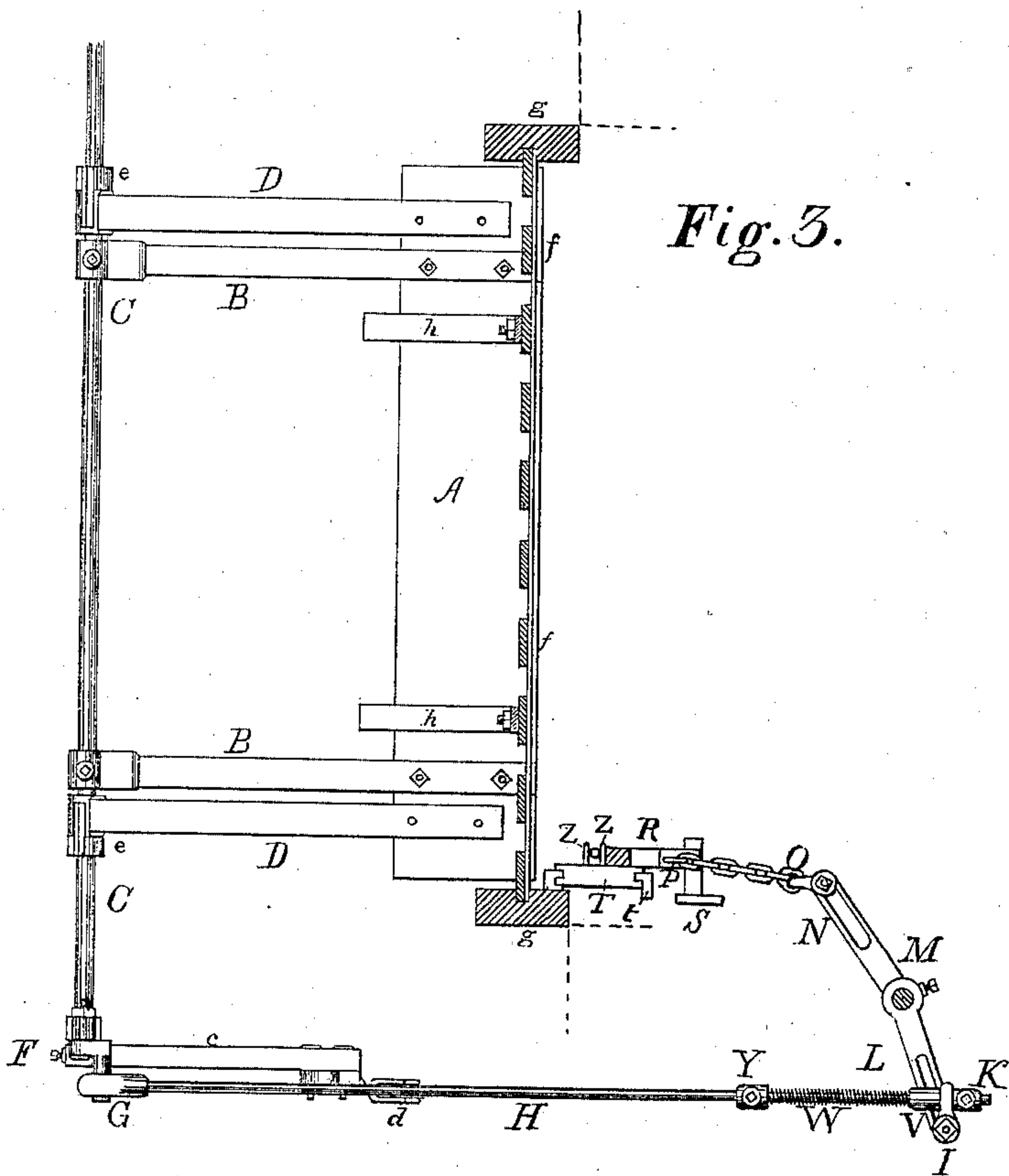
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*Fig. 2.*



*Fig. 3.*



*Inventor*

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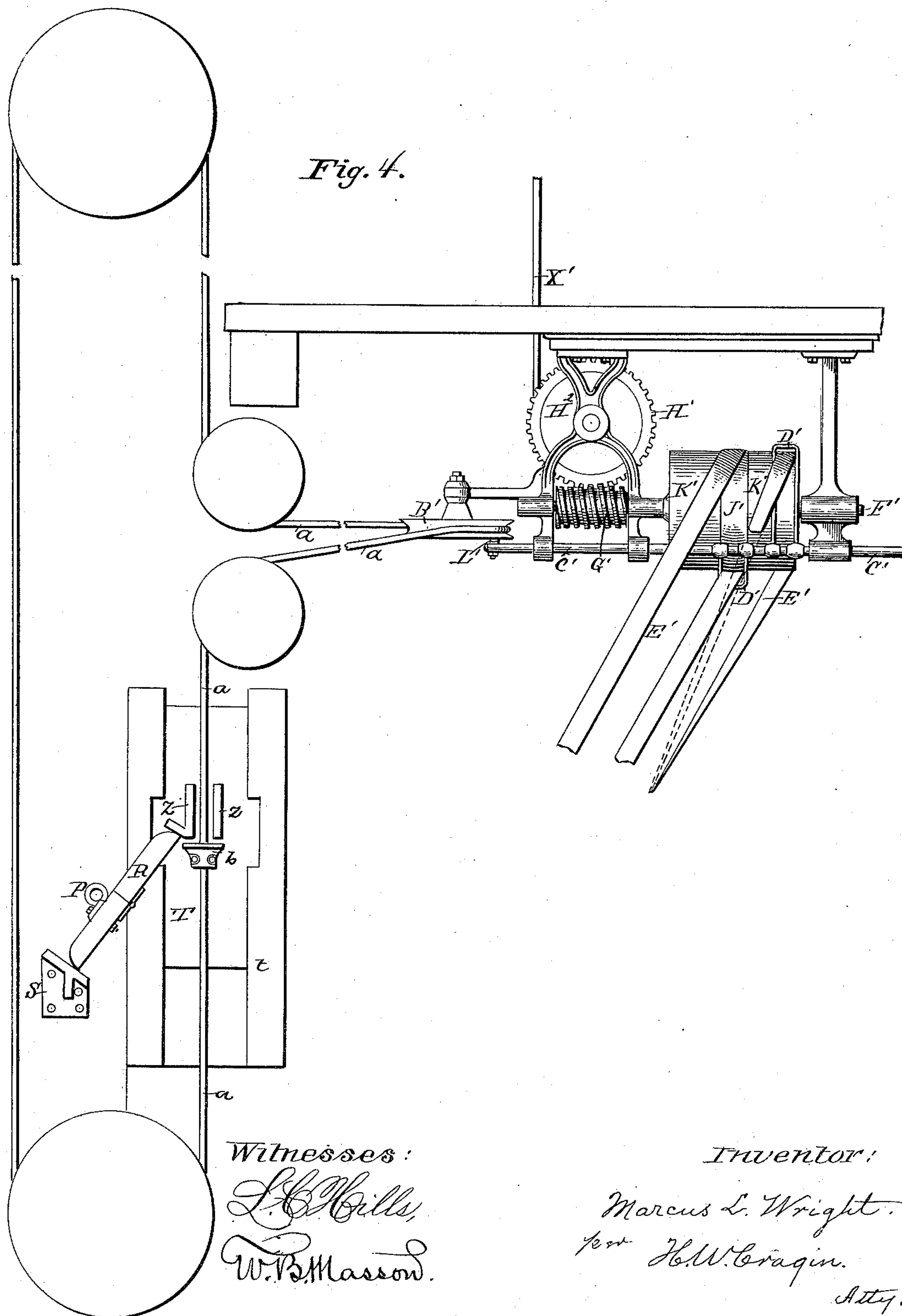
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# UNITED STATES PATENT OFFICE.

MARCUS L. WRIGHT, OF NEWTON, NEW JERSEY.

## DEVICE FOR PREVENTING ACCIDENTS IN ELEVATORS.

SPECIFICATION forming part of Letters Patent No. 313,842, dated March 10, 1885.

Application filed November 18, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, MARCUS L. WRIGHT, a citizen of the United States, residing at Newton, in the county of Sussex and State of New Jersey, have invented a new and useful Improvement in Devices for Preventing Accidents on Elevators, of which the following is 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

The object of my invention is to prevent accidents which occur where anything projects beyond the edges of the elevator-car, by causing the said car to be automatically and instantaneously stopped.

My invention consists in the combination of a movable platform with a system of arms, shafts, and levers, a trip, and a weight, the latter being so arranged in connection with the trip and the guide-rope that when the trip is released the falling weight pulls on the rope and stops the elevator-car, said guide-rope being connected with a suitable combination of devices for shutting off further action of the motive power upon the hoisting-rope.

My invention further consists in providing, in connection with the platform and floor-landing, a sliding screen for closing the space between them.

In the drawings, Figure 1 is a side view, partly in section, showing an elevator in connection with the movable platform, the screen, and the devices for transmitting the action of the platform to the weight and guide-rope. Fig. 2 is a detail side view, the screen removed, showing the connection of the platform with the landing above and with the vertical or main operating-shaft. Fig. 3 is a detail plan view showing the platform and screen and the connection of the former with the weight below. Fig. 4 is a side view, partly in broken section, showing, chiefly, the connection of the weight and guide-rope with means for shutting off further action of the motor from the hoisting-rope.

Like letters refer to like parts.

X represents the elevator-car, and *a* the guide-rope, arranged and operated in an or-

dinary manner, and they need not be further described at present.

A short distance below each floor-landing J is placed a movable wooden platform, A. This may be across the side or completely around the elevator-well, and its size and shape will depend on the situation, &c., of the elevator. A rod, chain, or rope could be arranged to be the equivalent of the platform; but it is not deemed necessary to illustrate more than one form. The platform A is securely fastened by two arms, B B, to a horizontal shaft, C, which is suspended from the ceiling by hangers D D. When the platform is raised by anything projecting from the moving car, it turns shaft C. Attached to this is the slotted lever E, and in the slot is a screw-bolt engaging with a right-angular pin, F, which latter is therefore adjustable in regard to said lever. This connects with hook G on the rod H. (See Figs. 1, 2, and 3 for different views.) Rod H is bent as shown, and extends some distance, finally passing through a ring, I, and a collar, K, the latter being fastened to the rod by a set-screw. The ring I is fastened in the short lever L below rod H, and said lever is attached to the vertical or main shaft M by a set-screw also; hence it will be seen how rod H and collar K turn shaft M through lever L. This shaft may run from the upper landing to the lower floor, and may be inside or outside of the elevator-well, as convenience dictates. The rod H is held in position by a loose or sliding collar, V, acting in conjunction with spring W, the other end of which bears against a collar, Y, attached to said rod by a set-screw. By this construction, when the platform of any one floor is moved, the parts at any other are not affected by the turning of shaft M, as the loose collar V will slide back on rod H at all the other floors. As the shaft M is turned by lever L a lever, N, attached by a set-screw to said shaft some distance below, retracts an inclined trip, R, supporting a weight, T, by means of a chain, *r*, which extends between eyes O and P, bolted to lever N and trip R, respectively, thus allowing the weight T to fall. The trip is hinged in the center, and its lower end rests on an inclined bracket, S. Its upper end comes under one of the lugs Z, cast upon the weight T. The weight moves up or



down in grooves or guides *t t*. The guide-rope *a* passes between lugs *ZZ*, and just below them has fastened to it a shelf or bracket, *b*, so that when the lugs or the weight strike this shelf the rope *a* is pulled to stop the car. The shelf *b* should be placed so as to just strike the lugs of the weight when the car is ascending, and the weight should be arranged to fall sufficiently to pull the guide-rope enough to stop the car. As a spring is generally the equivalent of a weight, the former might be arranged to be held in check by the trip and to act on the rope when released.

In order that the rope *a* shall stop the car when pulled on by the weight, it is evident that the rope must transmit its action directly to whatever motor is used, or to devices between the motor and hoisting-rope. So many simple ways of doing either will suggest themselves that I do not wish to limit myself in this regard, and it is of minor importance to other parts of the invention. However, as one means to accomplish this result, a belt-shifter, &c., is shown in Fig. 4, and will be briefly described. When the falling weight pulls rope *a*, the latter turns a grooved cam-pulley, *B'*, engaging with a roller, *L'*, attached to shifter-rod *C'*. This draws the latter and the belt-shifters *D' D'*, carrying the belts *E'* from the fast pulley *J'* to the loose pulley *K'*, thus shutting off further action of the motor used from pulley *J'*, which operates, through shaft *F'* and worm *G'*, the cog-rim *H'*, drum *H'*, and hoisting-rope *X'*, which latter may extend and be attached to the car in the ordinary way. When the platform has been lifted far enough to trip the weight, it is desirable to disconnect its operation from the main shaft *M*. To this end there is arranged between the rod *H* and shaft *C* a lever, *e*, slotted at *e'*, and a forked arm, *d*. The lower end of arm *d* has a slotted extension, *r'*. By means of a screw-bolt, *t'*, passing through both slots, the arm *d* may be adjustably inclined to act more or less quickly on the rod *H*. The object is to lift rod *H* and disengage hook *G* from the pin *F*, thus preventing the platform from further acting on shaft *M*, and allowing any obstruction on the car *X* to be removed. To prevent the platform from falling below a horizontal position, stops *e e* are fastened on shaft *C*, which strike against the hangers, as shown.

In order to close the space between the platform and the landing above, a screen, *f*, is arranged to slide in guides or grooves *g g*, arranged at either side of the platform, and secured to the sides of the elevator-well. The arms *h h* at the bottom of the screen are not fastened to the platform, but simply rest thereon. Therefore when the screen is raised by the latter it will not incline into the elevator-well, as the arms will slide along the edges of the platform, the guides compelling the screen to move vertically. (See Fig. 3.)

Having fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination of the movable platform or the equivalent with the shaft turned by the former, devices, substantially as described, for transmitting the action of the platform and its shaft to release a weight, the said weight, suspended by a hinged trip in guides and adapted in falling to pull directly on the guide-rope, and the said guide-rope, adapted to receive the action of the weight, as set forth.

2. The combination of the movable platform or its equivalent with the shaft turned by the former, devices, substantially as described, for transmitting the action of the platform and its shaft to release a weight, the said weight suspended by a hinged trip in guides, and adapted in falling to pull directly on the guide-rope, the said guide-rope adapted to receive the action of the weight, and devices, substantially as shown, for transmitting the pull of the guide-rope to shut off the action of the motor from the hoisting-rope, as set forth.

3. The combination, with the movable platform and its shaft, of devices, substantially as shown, for breaking the connection between the main shaft and the lever on the platform-shaft when the platform has moved sufficiently to release the weight, as set forth.

4. The combination, with the movable platform *A*, of the arms *B B*, the hangers *D D*, the shaft *C*, lever *E* and its adjustable pin *F*, the hook *G* and rod *H*, the collar *K*, ring *I*, lever *L*, shaft *M*, lever *N*, the eyes and chain *O r r P*, the trip *R*, weight *T*, having lugs *ZZ*, guides *t t*, and the guide-rope *a*, having shelf *b*, as set forth.

5. The sliding screen *f*, having arms *h h*, combined with the platform *A* and the guides *g g*, as set forth.

6. The combination of the platform *A* and its shaft *C* with the slotted lever *e*, screw-bolt *t'*, forked arm *d*, having slotted extension *r'*, and the rod *H*, having hook *G*, as set forth.

7. The rod *H*, combined with the collar *Y*, spring *W*, loose collar *V*, ring *I*, lever *L*, and shaft *M*, as set forth.

8. The combination of the inclined bracket *S* with the trip *R*, weight *T*, having lugs *ZZ*, the guides *t t*, and the rope *a*, as set forth.

9. The combination, with the weight *T* and guide-rope *a*, operated substantially as described, of the cam-pulley *B'*, roller *L'* and shifter-rod *C'*, the shifters *D'* and belts *E'*, the fixed pulley *J'* and loose pulleys *K'*, the shaft *F'* and worm *G'*, the cog-rim *H'* and drum *H'*, and the hoisting-rope *X'*, as set forth.

MARCUS L. WRIGHT.

Witnesses:

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ALBERT I. LANE.