(No Model.)

J. D. SINCLAIR.

ELEVATOR ATTACHMENT.

No. 285,437. Patented Sept. 25, 1883.

FIG. 1.

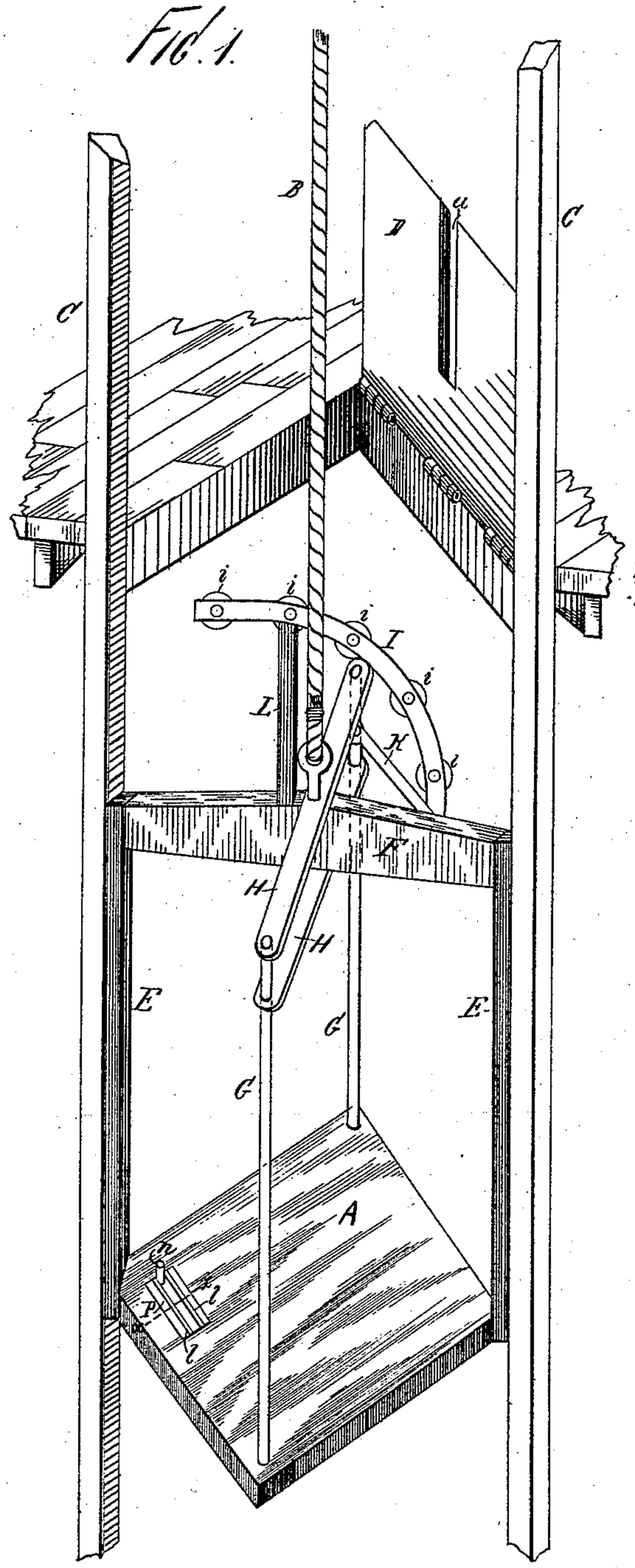


FIG. 2.

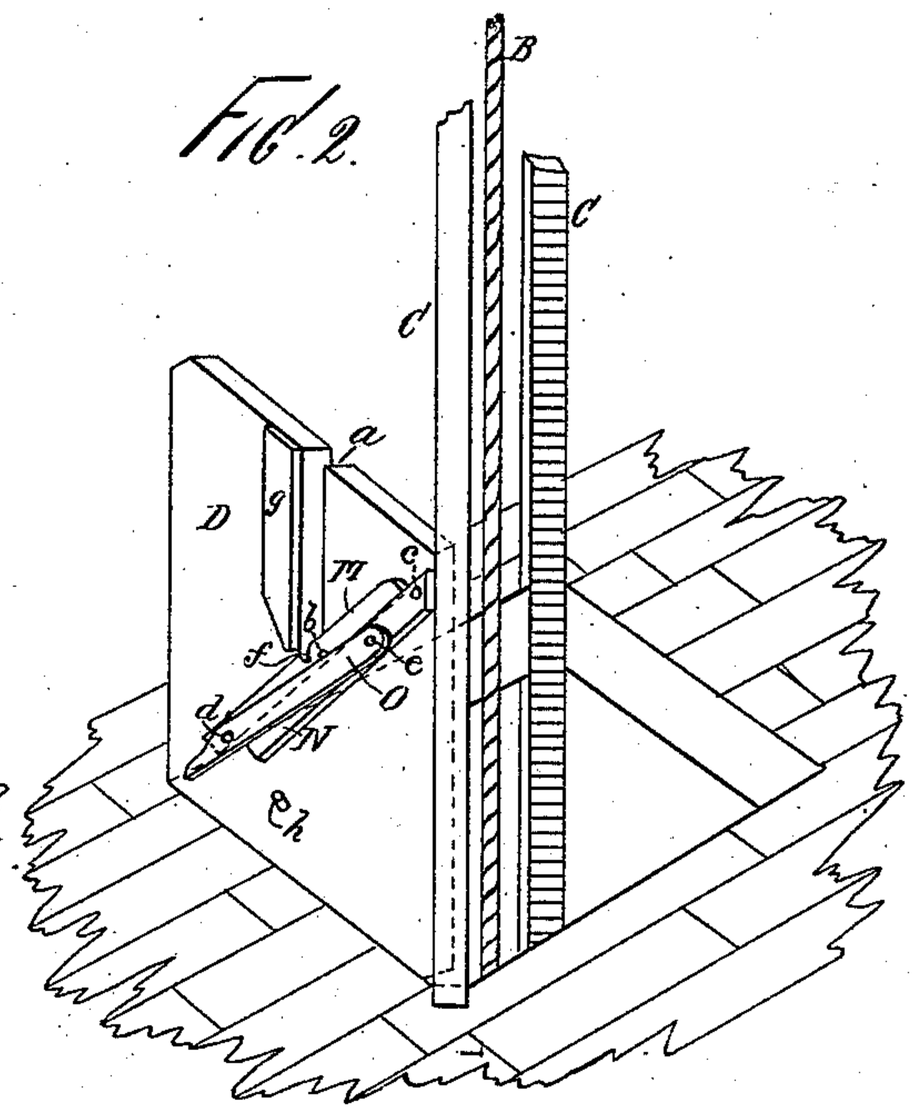


FIG. 3.

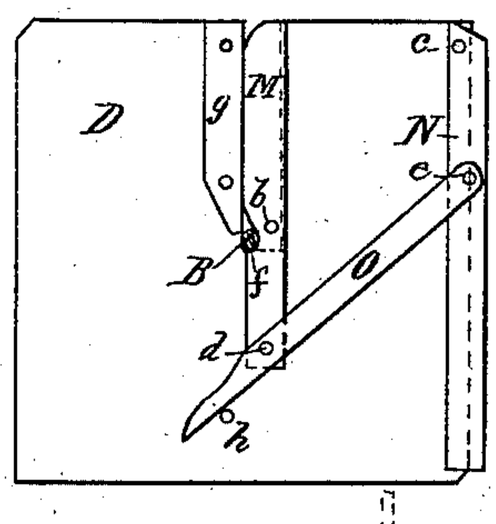


FIG. 4.

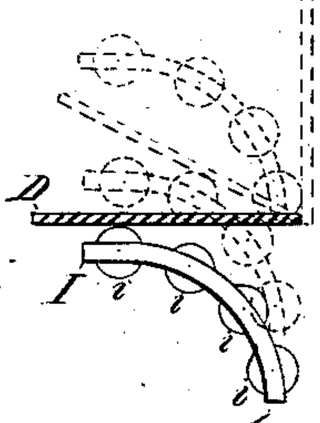
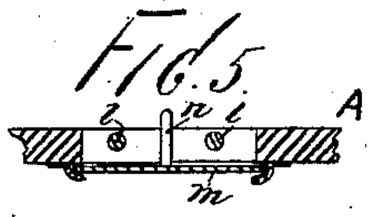


FIG. 5.



Witnesses—
John Buckler,
F. W. Stanford.

J. D. Sinclair.
Inventor—
By Worth Osgood
Attorney.

UNITED STATES PATENT OFFICE.

JAMES D. SINCLAIR, OF BROOKLYN, NEW YORK.

ELEVATOR ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 285,437, dated September 25, 1883.

Application filed September 8, 1882. (No model.)

To all whom it may concern:

Be it known that I, JAMES D. SINCLAIR, of Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in Elevator Attachments, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention has special relation to freight elevators or carriages and means for opening and closing the hatch-covers and operating the car, though, as will be readily understood, they may be applied in connection with passenger-elevators as well.

Among the chief objects of my invention are the provision of simple and efficient means for raising and lowering the hatch-covers, for closing the central opening therein, and for automatically closing the openings at the sides of the covers and the slits through which the car rope or cable must pass, and means for permitting the conductor to look down the shaft as the car is descending. To accomplish these objects my improvements involve certain novel and useful peculiarities of construction and relative arrangements or combinations of parts, all of which will be herein first fully described, and then pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is an isometric view, representing an elevator in its shaft, the elevator having my improvements applied thereto, and the hatch-cover being shown in open position. Fig. 2 is a perspective view, showing a hatch-cover in open position, and having appliances thereon in accordance with my improvements for closing the opening in the cover as well as the space at one side of the cover. Fig. 3 is a plan of the hatch-cover, illustrating the position which the covering-strips automatically assume when the hatch-cover is closed. Fig. 4 is a sectional elevation, showing the anti-friction segment bearing against the closed hatch-cover, and by dotted lines various relative positions assumed by the anti-friction segment and the cover as the former is carried up by the car and the latter being gradually opened. Fig. 5 is a sectional view (enlarged) upon a plane passing through the line *x x* of Fig. 1, showing the slide for covering the grated opening in the bottom of the car.

In all these figures like letters of reference, wherever they occur, indicate corresponding parts.

A is the platform of the car, and B is the hoisting rope, chain, or cable, connected therewith in any suitable manner or by any suitable means.

C C are two corner-posts, which, when the form of car shown in the drawings is employed, are usually provided with "safety-racks," for arresting the movement of the car in case the hoisting-cable parts.

The opening in each floor is provided with a hatch-cover, as D, the purpose of which is to close the hatchway and prevent upward drafts of air therethrough when the elevator stops running, (as for the night,) and to afford a platform to enable persons to walk across the elevator-shaft when necessary. There may be any number of these hatches and covers. Each hatchway is closed by a single cover hinged at one side, as illustrated.

E E are two corner-posts of the car, and F a cross-piece joining them at top. G G are other corner posts or rods joined by a cross-frame, H H. These parts of the car might be otherwise constructed and arranged.

At the upper part of the car I firmly secure a segment or arc, preferably of metal, as shown at I, the same being provided with rollers *i i*, for bearing against the under side of the hatch-covers. The lower end of the arc or segment rests upon any convenient cross-piece, as K, which joins two of the corner rods or posts of the car, and is supported by a standard, L, all of sufficient strength and firmness. The upper end of the segment projects beyond the central axis of the car, and the segment is so mounted that it will bear against the cover on one side of the slit or aperture necessary to be provided for the accommodation of the hoisting-line. The cover being down, as in Fig. 4, the first wheel of the series in the segment strikes it as the car comes to the proper position, raises the cover slightly when the next wheel comes into play, and so on gradually until the cover is made to assume a vertical position. This is all accomplished without shock or jar, and the several doors are opened in succession as the car passes from the bottom to the top of the shaft. The door or cover being hinged at one side and covering the entire hatchway, it will be observed that the projection of the segment beyond the axis of the

car is important in order to insure the easy movement of the cover when the segment comes in contact with it. As soon as the doors or covers are opened they may be so held by any hook or catch—as, for instance, one attached to one of the corner-posts of the shaft. This means of opening the series of hatch-covers dispenses with the pulleys, cords, and gearings heretofore employed for the purpose, and enables the conductor to attend to the covers without leaving the car and without manual exertion for the purpose of raising or lowering them. To close the covers, the conductor, commencing at the top, simply unhooks them one by one as the car passes downwardly. When the car is far enough below any one, it is gradually lowered to place by the arc or segment striking first against the lowermost anti-friction wheel, *i*, and so on through the series. This arc or segment I call an "anti-friction" appliance because of the employment of the small rollers therein to obviate friction, which would otherwise be produced. It can be readily mounted upon any of the elevator-cars now in use without the necessity of expensive changes and without interfering with the movements of the car.

The door or cover, being hung substantially as indicated, is provided with a slit, *a*, to cross the rope or cable, and can only be made to close the opening or hatchway perfectly on one side, the corner-post on the opposite side preventing it from shutting down if made as large as the hatchway. It is important to close the slit in the cover, and also the marginal opening (to effectually prevent drafts in case of fire,) and this should be accomplished automatically. To do this I employ a strip, M, for covering the central slit, the same being pivoted upon the upper side of the cover, as at *b*, and another strip, N, for closing the opening at the side, pivoted near one end, as at *c*. These two strips are connected by an inclined slat, O, pivoted to M, as at *d*, and to N, as at *e*, to compel both covering-strips to move together. The strip M has a notch, *f*, which, when the door is opened, as in Fig. 2, falls near the end of the central slit in the door or cover, and (as the door is near the closing-point) the hoisting-cable enters this notch and forces the strip M around to its closed position indicated in Fig. 3. At the same time the slat O thrusts the strip N into position to project beyond the edge of the door or cover. Thus both openings are closed at once. The strip M abuts against a narrow ledge, *g*, secured at the margin of the central slit, and a pin or stop, *h*, arrests the movement of the coupling-slat O, both the ledge and stop operating to insure a proper location of the parts when closed.

The notch *f* is inclined substantially as indicated, so that when the door is being raised the inclined part will bear against the rope or cable and force the strips into the position shown in Fig. 2, carrying the strip N back, so that it will entirely clear the corner-post of the shaft. All these movements are automatic, and the parts are so arranged as not to be likely to get out of order. They insure the perfect closing of the hatchway, and may be easily and quickly applied upon any of the ordinary forms of hatch-covers now in use.

In the class of elevators to which my improvements are specially applicable it is desirable that the conductor be enabled to look down the shaft as the car is traveling, for the reason that persons are liable to lean over the shaft, (to see where the elevator is,) and boxes and materials around the shaft are frequently left so as to project over the openings. Accidents which occur from these causes are quite numerous.

At any convenient part of the platform I make an opening, as at P, and provide the same with a grating or with rods *l l*, to prevent accidental falling of any material or thing through the opening. On the under side of this opening is a solid sliding cover, *m*, having a projecting piece, *n*, by which the cover may be moved back and forth, the conductor using his foot for the purpose. The opening being uncovered, the conductor is enabled at all times to see if anything be in the way of the movement of the car.

Being thus constructed and arranged, the improvements will be found to admirably answer the several purposes or objects of the invention, as previously stated.

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

1. In combination with the elevator-car, the metallic segment or arc, carrying a series of anti-friction rollers, the same being arranged substantially as shown, so that its upper end extends beyond the vertical axis of the car for the purpose of gradually raising and lowering the hinged hatch-covers, each cover having the aperture for accommodating the hoisting rope or cable and the movable slat for automatically closing the said aperture, substantially as set forth.

2. In combination with the hinged hatch-cover, having a central slit for accommodation of the hoisting-cable, the central and side covering-strips pivoted upon the cover, and connected with each other by the intervening slat, the whole combined and arranged to be automatically moved, substantially in the manner and for the purposes set forth.

3. In an elevator-car, the opening through the bottom, grated as explained, and provided with the sliding door, substantially as shown.

In testimony that I claim the foregoing I have hereunto set my hand in the presence of two witnesses.

JAMES D. SINCLAIR.

Witnesses:
JOHN BUCKLER,
WORTH OSGOOD.