J. W. WILSON.

Improvement in Hoisting-Protector.

No. 131,923. Patented Oct. 1, 1872.

Fig: 1.

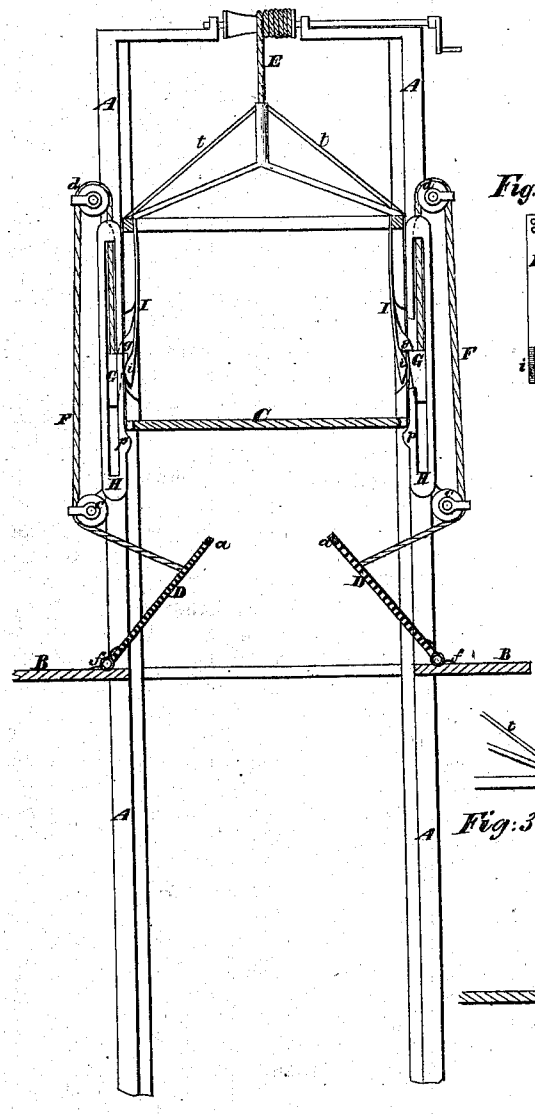

Fig: 4.

Fig: 2.

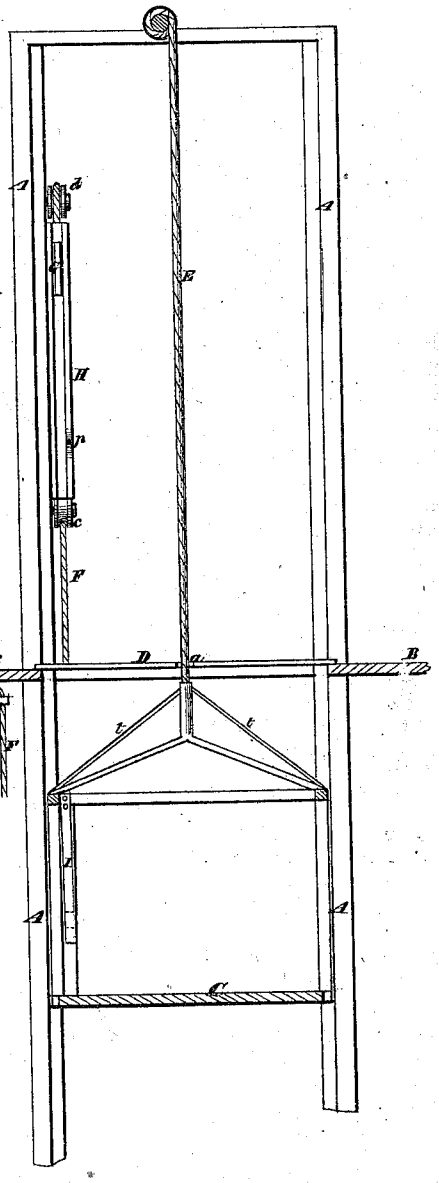

Fig: 3.

Witnesses:

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J. WALL WILSON, OF NEW YORK, N. Y.

IMPROVEMENT IN HOISTING-PROTECTORS.

Specification forming part of Letters Patent No. **131,923**, dated October 1, 1872.

To all whom it may concern:

Be it known that I, J. WALL WILSON, of the city, county, and State of New York, have invented an Improved Hoistway-Protector, of which the following is a specification:

The object of this invention is to keep a hoistway closed on each or any floor of a building at all times except while the hoisting platform or car is passing that floor, and also to produce its automatic opening by the passage of the car. I use for closing the hoistway on each floor one or more flaps or traps hinged thereto on one or more sides of the hoistway, such flap or flaps closing automatically by gravitation or otherwise when the platform or car is out of their way. The invention consists in means, hereinafter described, by which the platform or car is made to open the said traps or flaps during and by the act of its descent.

In the accompanying drawing, Figure 1 is a vertical section of a hoistway and contiguous portions of a floor of a building in which my invention is applied, representing the car in the act of descending; Fig. 2 is a similar section taken at right angles to Fig. 1; Fig. 3 is a sectional view, corresponding with Fig. 1, of a portion of the car and hoistway; and Fig. 4 is a face view of one of the spring-catches.

Similar letters of reference indicate corresponding parts in all four figures.

A A are the corner posts or guides of the hoistway; B, a floor in the building in which said hoistway is situated; and C, the elevator-car. All of these are or may be of ordinary construction, except that the upper part of the car C has inclined surfaces or bars *t t* provided on it for the purpose of opening the hatches or flaps in its upward passage. D D are the hatches or flaps forming the protector, hinged to the floor B on opposite sides of the hoistway. These may be solid or grated, as represented; but I consider the grated construction preferable, as in the warm weather of summer provision is made for a thorough circulation of air through the hoistway, and in cold weather this may easily be prevented by simply covering the grating with canvas or other suitable material. To the pivots of these flaps there are applied small springs *f f* for giving a starting impulse for closing them, these being necessary as the flaps are, when open, nearly in an upright position, so that their weight cannot act with full effect. In the middle portions of their meeting edges there are notches *a a*, which together, when the traps are closed, form a hole for the passage of the hoisting rope or chain E, by which the car C is suspended. When more than one hoisting rope or chain is used other holes similarly formed may be provided for their reception. To each there is secured one end of one of two ropes or chains, F F, each of which passes under and round the back of a stationary pulley, *c*, and over another, *d*, some distance above the former, said pulleys being attached to one of the corner posts or guides A or other fixed part of the hoistway. The other end of each of said ropes or chains has suspended from it a wedge-shaped or ratchet-toothed-like catch, G, which slides in a suitable guide, H, attached to the post, the beveled side of said catch inclining backward and downward from the hoistway. These guides are arranged vertically on the posts, and are open or slotted on the side next the hoistway to permit the toothed or inclined side of the contained catches to project through them. On the lower portions of their adjacent sides there are projections *p p*. The catches G G consist of pieces of iron made heavy enough to counterbalance the weight of the flap, with which it is connected by the intervening rope or chain. Formed on or attached to springs I I, which are secured at one end to those sides of the car adjacent to the guides H H, are pawl-like catches *g g* arranged reversely to the catches G G, and below and a little to one side of them on the same springs are cam-like projections *i i*. These springs I I are so arranged that their catches *g g* and projections *i i* will act, respectively, in conjunction with the catches G G and with liberating projections *p p* on their guides.

In cases when the platform is to be loaded or the car approached from three sides of the hatchway I may provide but one flap, which will be hinged to the unused side.

Two ropes or chains, F F, may be provided for each flap—one connected with each side, and having its respective pulleys *c* and *d* and catch G—and in such case there will be corresponding springs I I fitted with pawl-like catches *g g* and cam-like projections *i i* on the adjacent portions of the elevator.

The operation is as follows: As the car ascends, the inclined bars *t t* or other inclined surfaces at its top will push up and open the flaps D D, which, after the passage of the car, will close gradually, their dropping being checked by the nearly-counterbalancing weight of the catches G G. As the car descends, the tooth-pawl-like catches *g g* on the springs I I will come in contact with the tooth-like projecting portion of the catches G G, as shown in Fig. 1, and force the latter downward in their guides H H, and thereby, through the medium of the ropes connecting them with the flaps D D, the latter will be raised to permit the passage of the car through the floor. When the car arrives at or near the floor the cam-like projections *i i* on the springs I I below the catches *g g* come in contact with the projections *p p* on the guides, and are by them pushed back, as shown in Fig. 3, so that the catches G G are liberated from those *g g*, and are free to slide up in their guides to permit the descent and closing of the flaps D D, which is effected very gradually, owing the counterpoising effect of said catches and to their resting on the inclined top of the car as it passes under them.

When two flaps or hatches are used their meeting-line may be diagonal to the hoistway and to the axes of their hinges.

Claims.

1. The arrangement of a catch or catches, G G, suspended from one or more ropes passing over pulleys attached to the flap or flaps D D of catches *g g* attached to the car C for operation, substantially as shown and described.

2. The combination, with the flap or flaps D D, of one or more counter-balances G G to the flap or flaps, when constructed and arranged to form catches for operation, substantially as specified.

3. The combination, with a projection or projections *i i* on the catch or catches *g g*, of one or more stationary liberating projections *p p*, essentially as and for the purpose described.

4. The arrangement of the springs *f f* applied to the hinges of the flaps or hatches, substantially as shown and described, and for the purpose herein specified.

J. WALL WILSON.

Witnesses:
HENRY T. BROWN,
EDWIN H. BROWN.