

(No Model.)

F. LANDGRAF.

FIRE ESCAPE.

No. 356,650.

Patented Jan. 25, 1887.

Fig. 1.

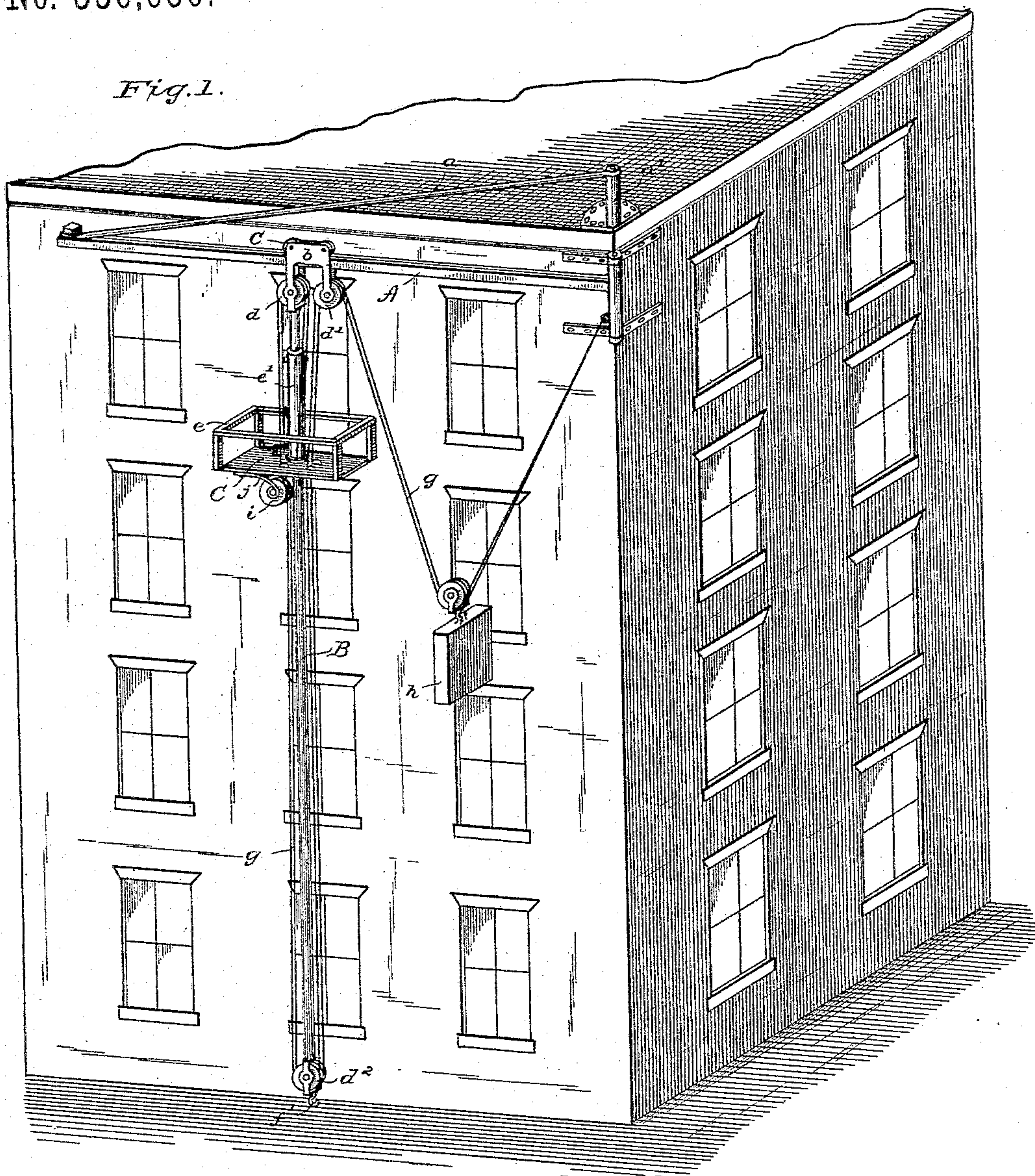
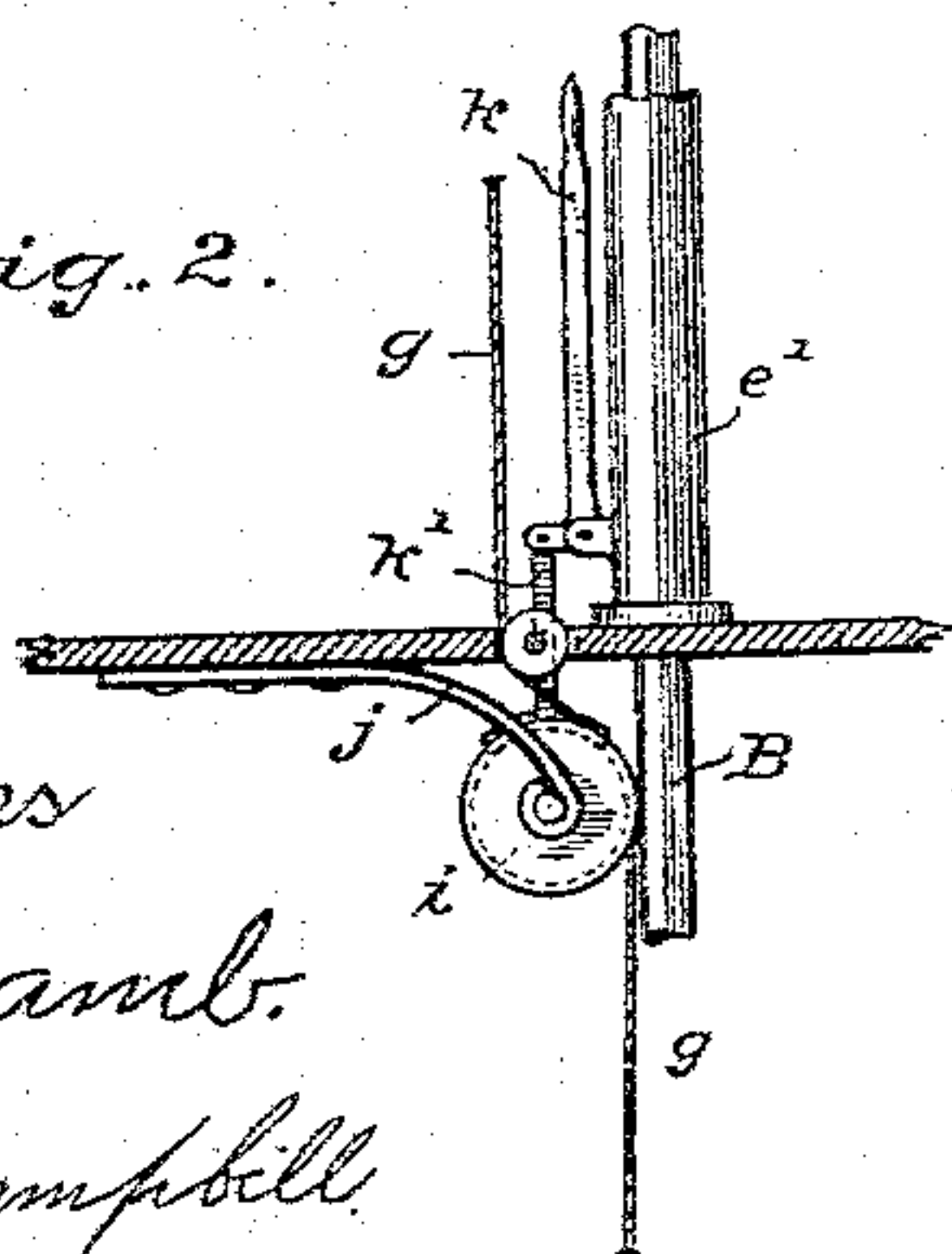
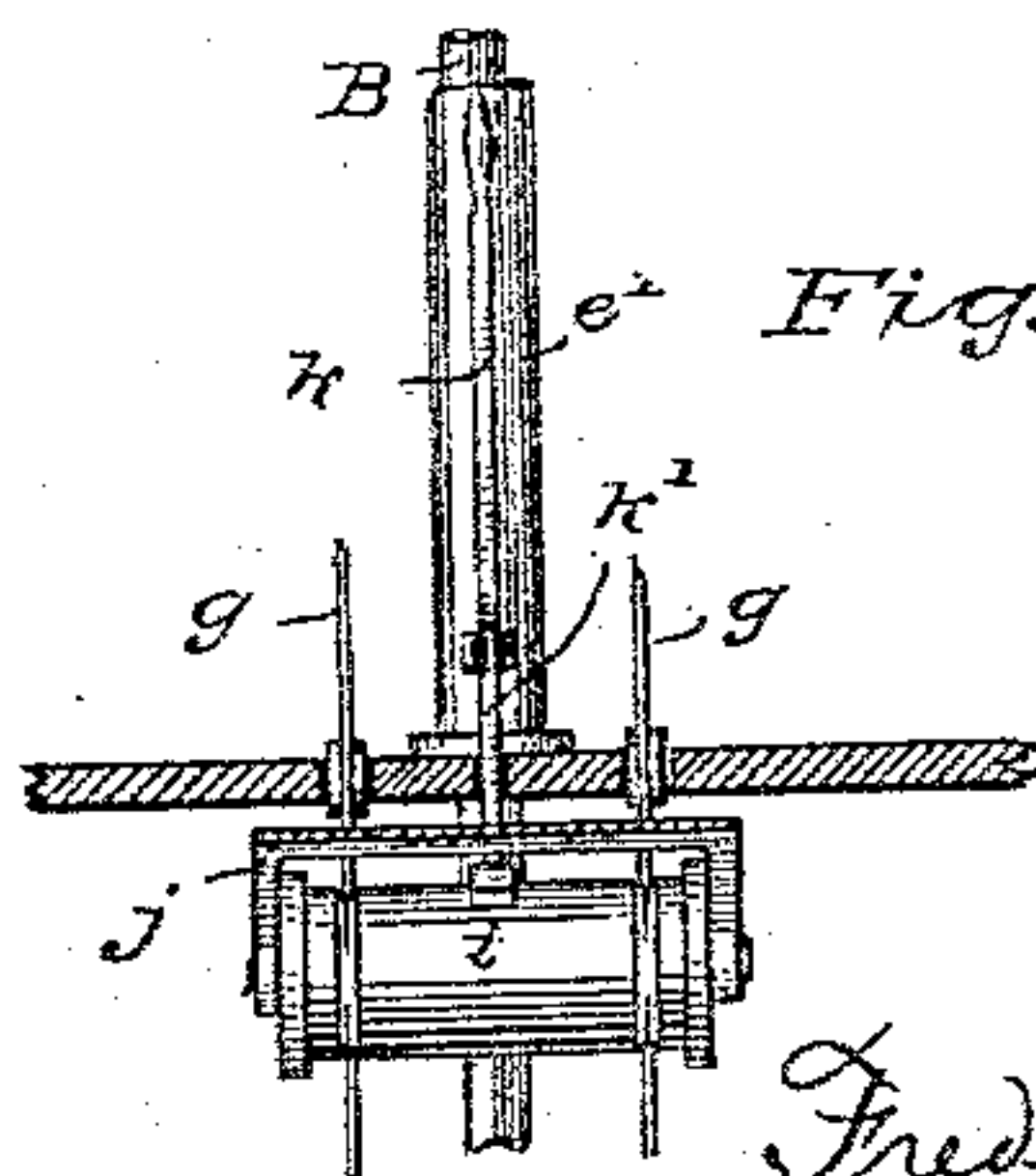


Fig. 2.



Witnesses
H. A. Lamb.
Geo. W. Campbell.

Fig. 3.



Inventor
Frederick Landgraf
By his Attorney
Geo. W. Finkel.

UNITED STATES PATENT OFFICE.

FREDERICK LANDGRAF, OF WASHINGTON, DISTRICT OF COLUMBIA.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 356,650, dated January 25, 1887.

Application filed September 23, 1886. Serial No. 214,373. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK LANDGRAF, a citizen of the United States, residing at Washington, in the District of Columbia, have
5 invented certain new and useful Improvements in Fire-Escapes, of which the following is a full, clear, and exact description.

As heretofore constructed fire-escapes have been objectionable for various reasons, among
10 which may be cited those of being too complicated, expensive, and unsafe for invalids or timid persons to use.

The object of my invention, therefore, is to overcome these objections, and consequently
15 to produce an apparatus of simple construction, small cost, and one which invalids or the most timid persons may use with complete safety and comfort.

My invention is embodied in the apparatus hereinafter particularly described and
20 claimed.

In the accompanying drawings, illustrating an embodiment of my invention, Figure 1 is a perspective view of a building with the apparatus applied thereto; Fig. 2, a detail view,
25 in side elevation, of the brake and the devices for operating the same, the whole being designed to regulate the descent of the car, a fragmentary portion of which latter is also
30 shown. Fig. 3 is a view of the parts shown in Fig. 2, looking in the direction indicated by the arrow, the section of the car-floor being taken in a plane at right angles to that in which the section of Fig. 2 is taken.

In the drawings, like letters of reference indicate corresponding parts in the different figures, and the letter A designates a horizontal arm or bar which is pivoted to the building near its top so as to swing in a horizontal
40 plane. I have shown one simple mode of doing this, which consists in securing or forming with the horizontal arm a vertically-extending rod having studs in its ends that fit and turn in eyes or sockets in suitable fastening-
45 brackets upon the building. A brace or stay rod, α , extending from the outer end of the horizontal arm A to a standard or projection, α' , upon the roof, may be added to increase the strength and safety of the support. To per-
50 mit the turning of this brace or stay rod, it is

provided with an eye fitting upon a pin on the end of the standard α' .

A rod, B, in length nearly equal to the height of the building to which the apparatus is applied, having formed with or attached to
55 it at its upper end a trolley or frame, b , is suspended from the arm A, rollers c in said trolley resting upon the upper edge of the arm to reduce friction, and thereby permit the easy and ready movement of the rod B from one
60 place on the arm A to another. In the trolley or frame b are also mounted suitable pulleys, d and d' , and at the lower extremity of this rod there is also secured a pulley, d'' , the purpose of all of which pulleys will be hereinafter ex-
65 plained.

At the lower end of the pulley d'' there may be secured a hook or eye, f , which, with the aid of some fixed object upon or near the ground, may be used to hold the rod B at any
70 desired place on the arm A. This will prevent the swinging or other undesirable movement of the car.

Upon the rod B the car C is mounted and slides. This car consists, essentially, of a floor
75 provided with a rail, e , extending around its outer edge, and a central tube, e' , secured at an opening in the floor near its middle. This tube fits upon the rod B and serves as a guide and means to retain the car in horizontal po-
80 sition. In the floor of the car are made suitable openings for the passage of ropes, and, if desirable, grooved rollers may be mounted in said openings to reduce friction that may result from the passage of the ropes there-
85 through. Rings or projections adapted to be grasped by the hand may be secured upon the tube e' , for the use of timid persons.

The means for supporting the car upon the rod consists of a rope or ropes, g , one end of
90 which is secured to the car, (in this instance in the floor near the base of the central tube,) passed upward over the pulley d , down through the before-described openings in the floor, under the pulley d'' at the lower end of the rod,
95 upward through the floor of the car again, over the pulley d' , and the other end made fast at any suitable point, sufficient slack being left between the pulley and the last-named fastening-point, in which a weight, h , may be
100

suspended to counteract what might be the too great weight of the car. It is obvious that many modifications of the manner of supporting the car upon the guide-rod B may be made.

- 5 I consider it best, though not absolutely necessary, that the weight of the car, plus its freight, shall exceed that of the weight h , so that the car, if not otherwise prevented, would descend by gravity. The object of having the
10 weight of the car exceed that of the weight h is that the brake may be operated automatically to lock the car to prevent its descent. In other words, the normal position of the brake is that assumed by it in locking the
15 car.

The brake consists of a roller or drum, i , suitably grooved at the points where the ropes pass over it, supported in the end of a spring or pivoted plate, j , secured at the under side
20 of the car. This drum or roller is so located with relation to the car that it will or can be made to bear against both the rope and the rod B, and at the same time cause a bend to be made in the rope or ropes, and thus produce
25 such great friction at that point that the car cannot descend. The means for releasing or operating this brake or roller consist of a bent hand-lever, k , pivoted upon the central tube, e , with a rod, k' , the lower end of which is produced as an arc, pivoted to the short arm of
30 said lever k . The arched end of the rod k' fits upon the surface of the drum or roller, and by properly operating the hand-lever k the rod k' is made to descend, thereby permitting the
35 rope to straighten, and consequently the car to descend. By this mechanism the car may be allowed to descend with any desired speed, and an accidental or a too rapid descent be precluded.

- 40 It is obvious that many details of the parts shown and described may be changed or modified without departing from the spirit of my invention.

Although I have shown my apparatus applied at the corner of a building, it is evident 45 that it can be applied with equal facility and advantage on a plane surface of a building.

When the plate carrying the brake-roller is pivoted at the under side of the car, that end of the plate opposite the roller may be weighted, 50 in order to hold the roller in position against the ropes.

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

1. The combination, with a rod or arm, A, 55 pivoted to move in a horizontal plane, of the vertical rod suspended from said rod or arm A, a car or basket, and a rope or ropes suspending and for operating said car upon the rod, in the manner set forth. 60

2. The combination, with a rod or arm, A, pivoted to move in a horizontal plane, of the vertical guide-rod B, suspended and movable upon said arm or rod A, a car or basket, and a rope or ropes suspending and for operating 65 the car, as set forth.

3. The combination, with the car and its suspending and operating ropes, of the herein-described brake, consisting of the roller or drum supported in the yielding plate, the said 70 roller or drum being held against said ropes to cause a bend to be made therein, as set forth.

4. The combination, with the car and its suspending and operating ropes, of the brake consisting of the roller or drum secured in a 75 yielding support, the said roller being adapted to be held against said ropes to cause a bend to be made therein, and means, substantially as described, for operating said roller or drum, in the manner set forth.

FREDERICK LANDGRAF.

Witnesses:

GEO. M. FINCKEL,
WM. J. LITTELL.