

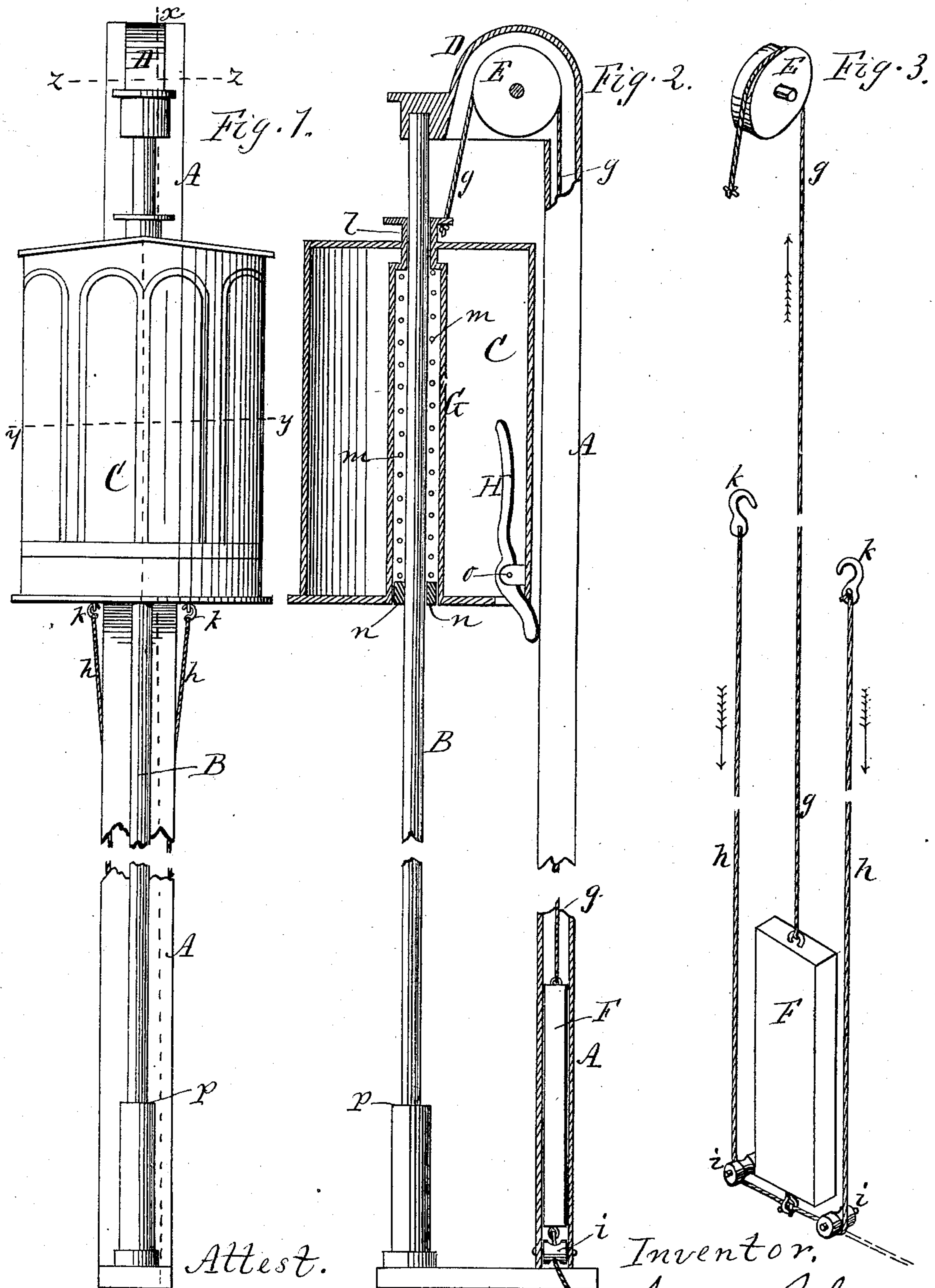
(No Model.)

2 Sheets—Sheet 1.

A. PALMER.
FIRE ESCAPE.

No. 280,231.

Patented June 26, 1883.



Attest.

Paris Clark
R. E. White

Inventor,
Aaron Palmer
by *R. F. Osgood*,
Att'y.

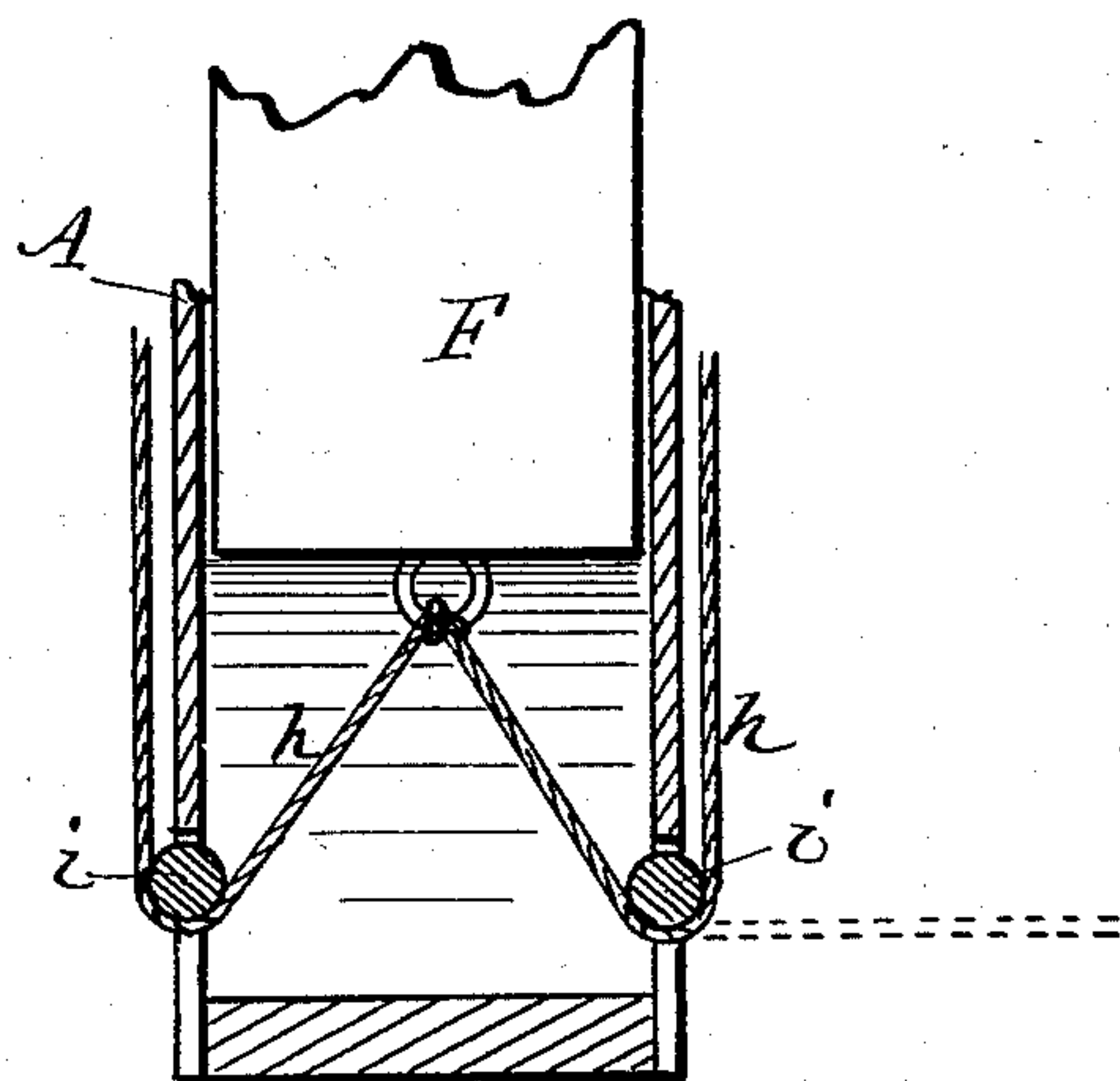
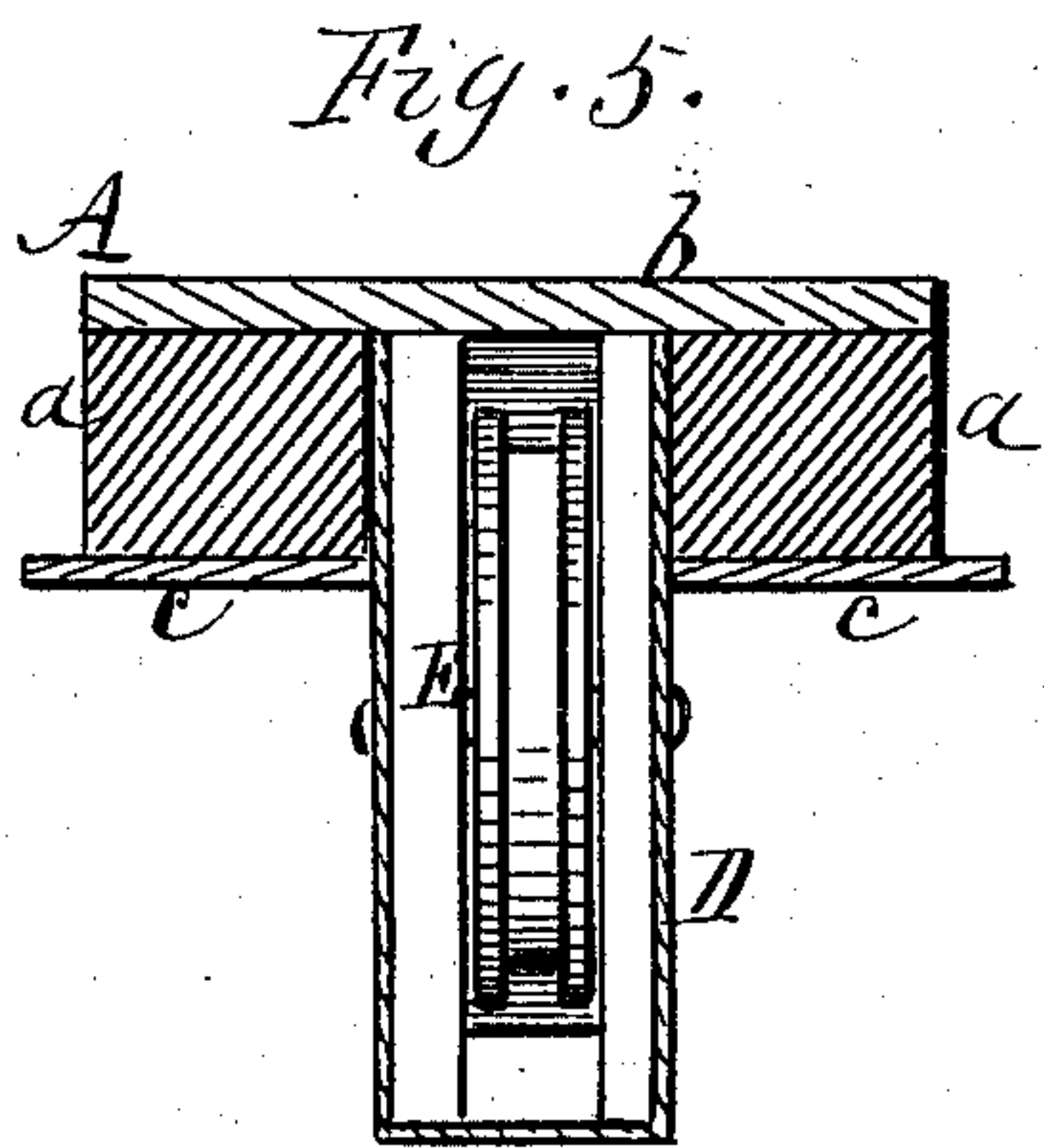
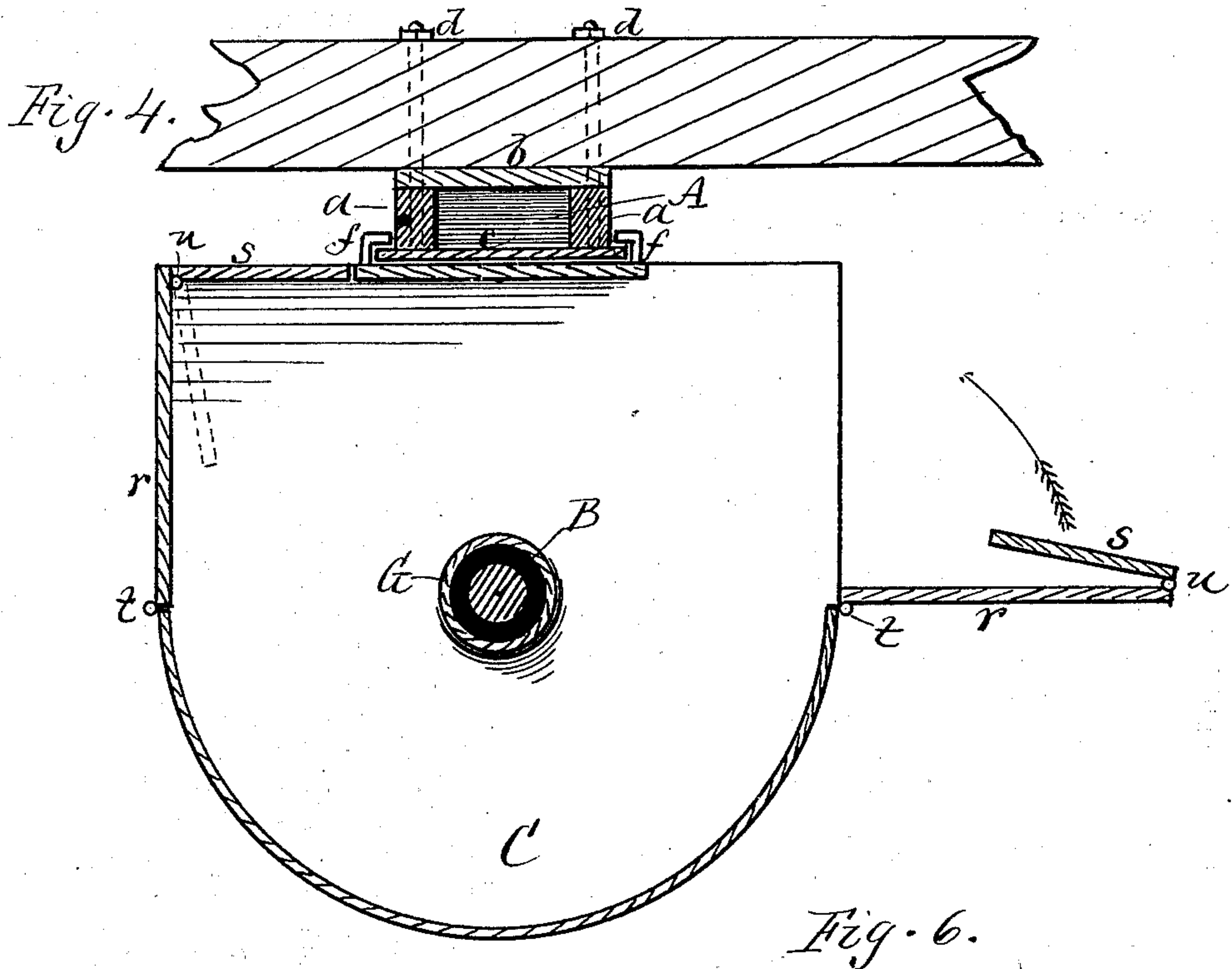
(No Model.)

2 Sheets—Sheet 2.

A. PALMER.
FIRE ESCAPE.

No. 280,231.

Patented June 26, 1883.



Attest.

Paris Clark
R. E. White

Inventor.

Aaron Palmer
 per R. F. Cogard,
 atty.

UNITED STATES PATENT OFFICE.

AARON PALMER, OF ROCHESTER, NEW YORK.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 280,231, dated June 26, 1883.

Application filed April 13, 1883. (No model.)

To all whom it may concern:

Be it known that I, AARON PALMER, of Rochester, Monroe county, New York, have invented a certain new and useful Improvement in Fire-Escapes; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a front elevation of my improved fire-escape, a portion being broken away. Fig. 2 is a vertical section of the same in line *x x* of Fig. 1. Fig. 3 is a diagram in perspective, showing the arrangement of the chains, cables, or cords. Fig. 4 is a cross-section in line *y y*, showing the car enlarged. Fig. 5 is a cross-section in line *z z*, Fig. 1. Fig. 6 is a section of the lower end of the runway enlarged.

My improvement relates to that class of fire-escapes in which a car runs up and down on a fixed way on the outside of a building, and in which a weight is used which slightly overbalances the car, so that when the car is released it will always ascend and will stand elevated ready for use at the highest windows.

The invention consists in the combination of parts hereinafter more definitely described and claimed.

In the drawings, A shows a runway or trunk, which is secured to the face of the building in a vertical position, and is located between the tiers of windows. It is made hollow to allow a weight to run up and down therein, and is constructed as follows: *a a* are two joists or scantlings of wood, set up endwise and standing the widest side outward, at right angles to the wall of the building. *b* is a plank in the rear, and *c* is a metallic plate in front, the edges of which project beyond the sides of the trunk and form ways upon which the car runs. The whole trunk is thus made of wood, except the front plate, and is therefore very cheap, and it incloses a hollow space of sufficient size to allow free passage of the counter-weight from bottom to top. It is attached to the wall by bolts *d d*, which pass through the scantlings, thus fastening the parts together, as well as attaching the trunk to the wall.

B is a vertical rod or pipe, which stands out some distance in front of the runway, and also extends vertically the same height as the runway. This rod or tube forms the way upon which the car travels.

C is the car or cage which moves up and down on the rod, and is designed to contain the persons descending. It may be made of any desired form, but preferably in the shape of a bay-window or balcony, so that when elevated on the face of a building it will present an ornamental appearance. At the back it has two bent hooks or claws, *f f*, which embrace the edges of the plate *c* and hold the car to the runway.

D is a cap or hood at the top of the runway, in which is located a pulley, E. A chain, cable, or cord, *g*, is attached to the top of the car, thence it extends over the pulley, thence passes down through the runway, and is attached to a counter-weight, F, which runs freely in the runway. When the car is elevated to the top, the weight is at the bottom, and vice versa.

h h are two chains, cables, or cords attached to the bottom of the weight, thence extending outward around small pulleys *i i* at the bottom of the runway, and thence extending upward and provided with hooks *k k*, which engage with eyes in the bottom of the car.

It will be seen that as the car ascends and descends on the rod the chains will make a circuit to the weight and will preserve the connection at all times, allowing the parts to work automatically.

The car is provided with a tube, G, which encircles the rod B and slides freely thereon. At the top the tube has a close bearing, as shown at *l*. Below this the body of the tube is enlarged, leaving a space between it and the rod, and in this space is located a spiral spring, *m*, which rests at the top against the shoulder, and at the bottom is attached to a ring, *m*, sliding loosely on the rod, but resting loosely in the mouth of the tube, as shown in Fig. 2.

At the bottom of the rod B is an enlarged shoulder, P, of such size, however, as to enter the end of tube G when the car is down.

Inside of the car is a lever, H, pivoted in a bearing, *o*, its lower end passing through a hole in the car and forming a brake which bears upon the smooth face of the plate *c*.

In descending with one or more occupants in the car, the weight of the car overbalances the counter-weight, and to graduate the descent the brake is applied to the plate with suitable force; but in case of accident or overweight, if the car should fall with force, the

ring *n* will strike on top of the shoulder *p*, and will be driven up into the tube *G*, compressing the spiral spring *m* therein, and thereby breaking the shock. The spring and ring, being inclosed in the tube, are out of the way, and do not endanger the occupants of the car.

r and *s* are double doors on each side of the car. The door *r* is hinged at *t* so as to open sidewise, leaving a side opening in the car. The door *s* is hinged at *u* to the back or outer edge of the side door, and opens inward away from the wall of the building toward the interior of the car. In Fig. 4 the two doors are shown closed at the left and both thrown open at the right.

In entering the car from a window the doors *s s* are opened inward, and in emerging at the bottom the door *r* is opened outsidewise, which is necessary, as no exit can be made through the door *s*, owing to its proximity to the wall. By this means ingress and exit are provided, and the car can be closed during the descent, so that the occupants are shielded against fire and smoke below.

When the fire-escape is not in use, the overbalance of the counter-weight will carry the car to the top, where it will remain and form an ornament to the building.

If desired, an escape may be located between all the tiers of windows, and be ready at all times for emergencies.

In case of fire, firemen and apparatus can be elevated by detaching the upper hook of one of the chains *h*, then lowering the car, which draws said chain *h* up in the runway with the weight, then, when the load is in the car, drawing by force on the free end of the chain *h*, as indicated by the dotted lines in Figs. 3 and 6, which draws the weight back and elevates the car. If desired, both chains *h h* may be used in this way at once. If desired, also, the car may be lowered by persons on the outside holding the chains *h* and allowing said chains to slip around the pul-

leys, which may sometimes be necessary where the car is heavily loaded or where infirm or injured persons are to be lowered, and where they are not competent to control the brake in the car.

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

1. In a fire-escape, the combination of the runway *A*, secured to the side of a building and made hollow for the passage of a counter-weight, and a rod or tube, *B*, standing outward and away from the runway and forming a way for the car, the car sliding up and down on the rod or tube and engaging with the runway by hooks or claws which preserve the connection, as herein shown and described.

2. In a fire-escape, the runway *A*, constructed of two side pieces, *a a*, a back piece, *b*, and a front plate, *c*, with projecting edges which form the ways for the hooks or claws of the car, said runway being hollow for the passage of the counter-weight, as described.

3. In a fire-escape, the combination, with the rod *B* and car *C*, of the stop *p* at the bottom of the rod, the enlarged tube *G* inside the car and surrounding the rod, the coiled spring *m* inside the tube, and the ring-follower *n* at the bottom of the tube, as shown and described, and for the purpose specified.

4. In a fire-escape, the combination, with the car *G*, of the door *r*, hinged to swing outward sidewise from the car, and the door *s*, hinged to the door *r*, so as to swing inward toward the interior of the car and away from the wall of the building, as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

AARON PALMER.

Witnesses:

R. F. OSGOOD,

W. MARTIN JONES.