

(No Model.)

J. F. GUTHRIE.
FIRE ESCAPE.

No. 407,200.

Patented July 16, 1889.

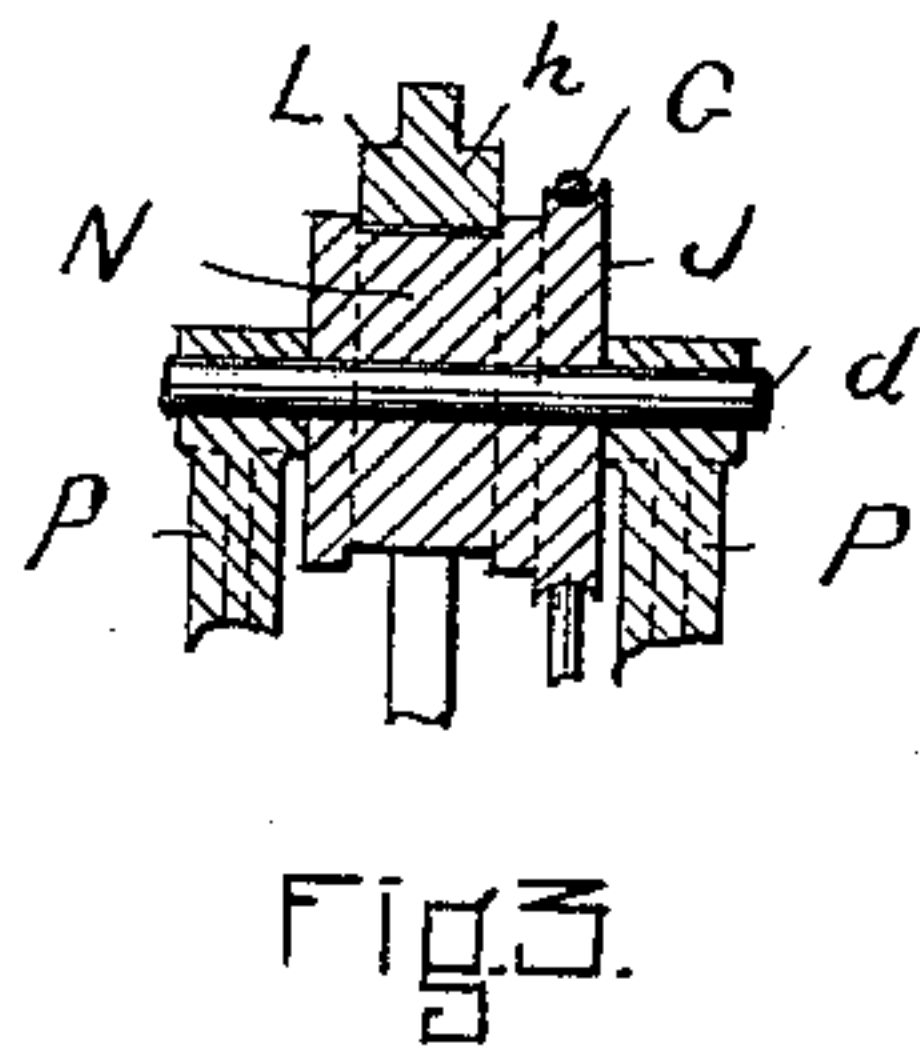
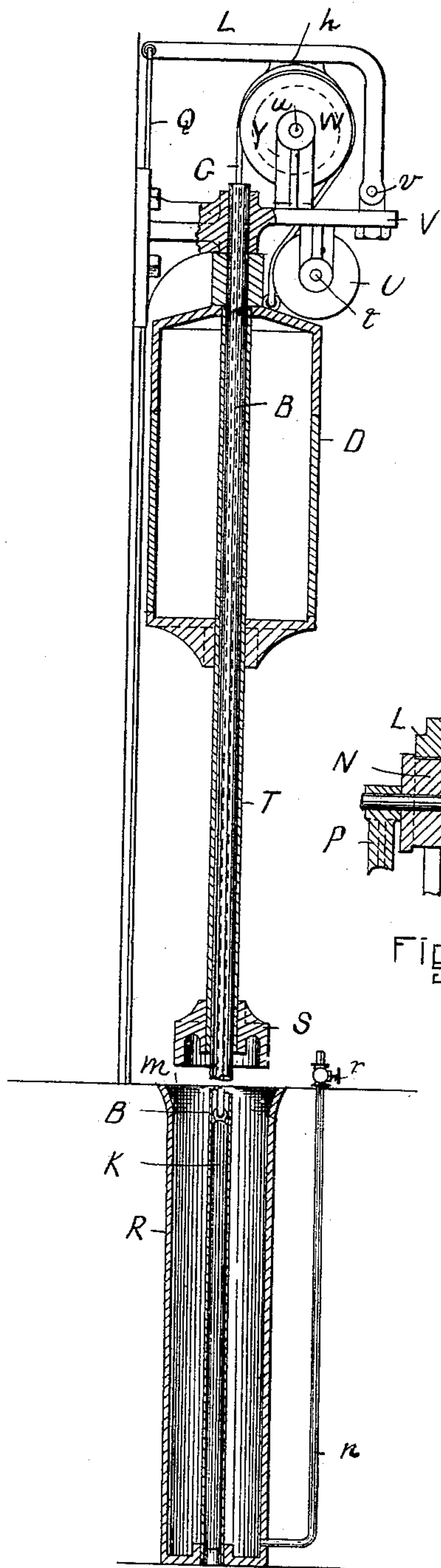


FIG. 3.

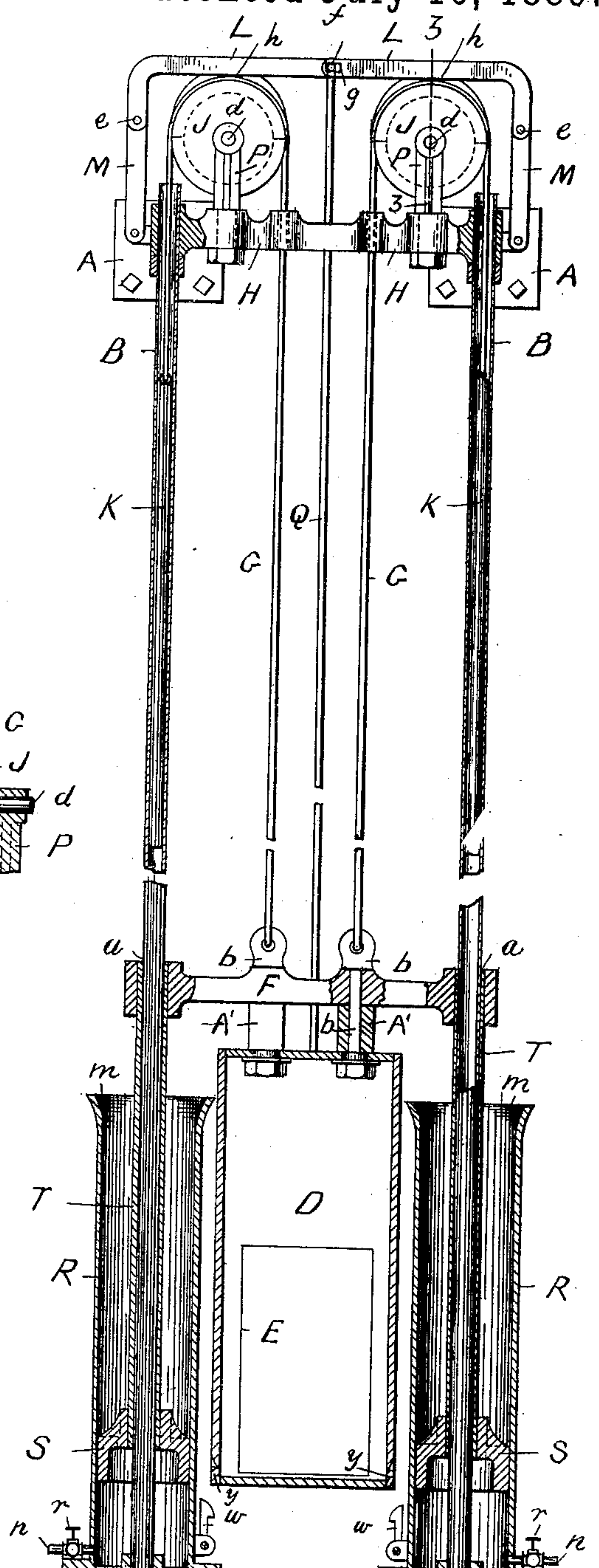


FIG. 1.

WITNESSES

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JAMES F. GUTHRIE, OF SOMERVILLE, MASSACHUSETTS.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 407,200, dated July 16, 1889.

Application filed June 21, 1888. Serial No. 277,734. (No model.)

To all whom it may concern:

Be it known that I, JAMES F. GUTHRIE, of Somerville, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Fire-Escapes, of which the following is a full, clear, and exact description.

This invention relates to a fire-escape for buildings, &c.; and the invention consists of a fire-escape constructed and arranged for operation, all substantially as hereinafter fully described, reference being had to the accompanying sheet of drawings, in which—

Figure 1 represents in front view and part vertical central section a fire-escape constructed and arranged for operation in accordance with this invention, having the parts doubled. Fig. 2 is a vertical central section of a fire-escape with the parts single; and Fig. 3 is a detail cross-section on line 3 3, Fig. 1.

In the drawings, A A represent brackets secured to the wall of a building or house, preferably outside and at or near the top of the same. Each of these brackets supports at its upper end a vertical tube or pipe B, which extends down to the ground, and is there secured at its lower end in the base C, or in any suitable manner.

D is the cage or car of a size to hold one or more persons, as desired, and constructed of any suitable material and shape and having a door E in its side, and it is attached at its upper end to a cross bar or head F, which is adapted to slide up and down by sockets *a* on the tubes or pipes B. Connected to screw-bolts *b b* of this cross-head F by one end are ropes G, which ropes extend up to and over pulleys J, respectively adapted to revolve on journals *d* of uprights P, secured to the cross-arm H of the brackets A in any suitable manner, each rope G running over its pulley and having attached to its other end a weight K, which weight is within its respective tube or pipe B, and is of a diameter small enough to freely move up and down therein, and the two weights combined are preferably heavier than the cage or car D, so that if the car is left free the weights will raise the car.

To control the car in its upward and downward movements, brakes L are used, each secured by a pivot *e* to bar M, pivoted to the cross-bar K, and connected together by a pin

f, secured to the end of one brake and passing through a slot *g* in the other, each brake arranged to bear by its portion *h* on a pulley or wheel N, rigidly secured to the journal *d* and the side of its rope-pulley J, so that bearing down on the brakes L they will bear on the pulley-wheels N and create sufficient friction thereon to control the movements of the pulleys J, and thus the rising or falling of the cage or car, as desired. These brakes are controlled by a rope Q, attached to the pin *f*, and extending down either outside of or through the car, as desired, into proper position to be handled by the occupants of the car or by persons on the ground.

R are vertical hollow cylinders, one to each tube B at the bottom and concentrically surrounding the same, and secured to the floor or ground in any suitable manner, its upper end *m* being open and adapted to move up and down. In each is a piston-head S, which is rigidly attached to the lower end of a tube or sleeve T, adapted to slide up and down over and on its guide-tube B, and rigidly secured to the cross-head F.

In the use of this fire-escape, if the car is not up to the proper place it is allowed to rise as high as desired, and, being there held by the brakes or in any suitable manner, the persons desiring to escape from the building enter the car, when it is allowed to descend at the proper speed by operating the brakes in the right manner, and when down the persons can leave the car and the car again be allowed to rise for others to be removed from the building in a similar manner.

Provided the brakes should not fully control the car in its descent, or provided the car should descend without control, as it approaches the lowermost place or ground, the piston-heads S enter their respective cylinders R, compressing the air therein, which by such compression gradually arrests the downward movement of the car, whereby it will slowly come to a rest or standstill, and without injury to itself or the persons in it, the movement being also controlled by the air in the cylinders below the piston-heads slowly escaping therefrom by pipes *n* at the bottom, which can be also controlled by the valves *v*.

In Fig. 2 is shown in section a single-tube fire-escape for use with a smaller car, it hav-

ing only one guiding-tube B, one cylinder R, one piston-head S, and weight K. The rope Q is connected to the car on its top near its center, and thence over a pulley U, turning
 5 on a journal *t* of the bracket V, thence over a pulley W, turning on a journal in an upright Y of the bracket V, and connected by its other end to the weight K, which is adapted to freely move up and down within the guide-
 10 tube B. In this case the tube B passes up through the center of the car, and is secured at its upper end in the bracket V and at its lower end to the ground, as before, the piston S and its sliding or guiding tube T being con-
 15 nected to the car direct.

Z is the brake, pivoted at *v* to the bracket V, and bearing at *h* on a wheel attached to the pulley in a similar manner to Fig. 3, and having the rope Q attached to its end for op-
 20 eration of the same.

In Fig. 1 is shown a catch *w*, one on each cylinder, which, when the car is down, each engages with a notch *y* in the side of the car and holds it down in place, and when desired
 25 to raise it release the catches and the car then is free to rise.

In the use of this invention as a fire-escape it can be attached to the outside of a building in any desirable place and secured thereto
 30 in any suitable manner for the proper operation of the parts and located so that the persons in the building can enter the car from the windows; or doors can be arranged at the different floors instead; or the fire-escape can
 35 be arranged inside of the buildings, as desired. It is preferable, however, to have it outside of the building. The car can have a covering of suitable fire-proof material—such as asbestos—to prevent injury from the fire to
 40 it or the persons in it. The descent of the

car can be controlled by persons below in the street or by the persons in the car, as may be. A fire-escape such as described is simple, easy of construction and operation, and perfectly safe to use and especially desirable for
 45 timid persons; and the stopping of the car, if it should fall or get beyond the control of the brakes, would be so gradual on account of the use of the cylinder-chamber and piston
 50 that no serious consequences would result.

A' is a washer or bumper of india-rubber or any suitable and elastic yielding material on the screw-bolt *b*, between the car and cross-head, to make a yielding connection of
 55 the car with the cross-head.

The invention can be used double or single, as shown, according to the desired size of the car. For a large car, however, it is preferable to double the operating parts.

By the pulley U the rope G is brought over, 60 or nearly over, the center of the car for its better operation.

Having thus described my invention, what I claim is—

A fire-escape consisting of a cage or car 65 adapted to be moved up and down and guided by a tube or chambered guideway and having a weight secured to it by a rope or cord running over a pulley, which weight moves up and down in said tube or guideway, and
 70 a piston-head or plunger arranged to slide up and down in a cylinder or casing, for the purpose specified.

In testimony whereof I have hereunto set my hand in the presence of two subscribing
 75 witnesses.

JAMES F. GUTHRIE.

Witnesses:

EDWIN W. BROWN,
 C. E. NICHOLS.