

(No Model.)

2 Sheets—Sheet 1.

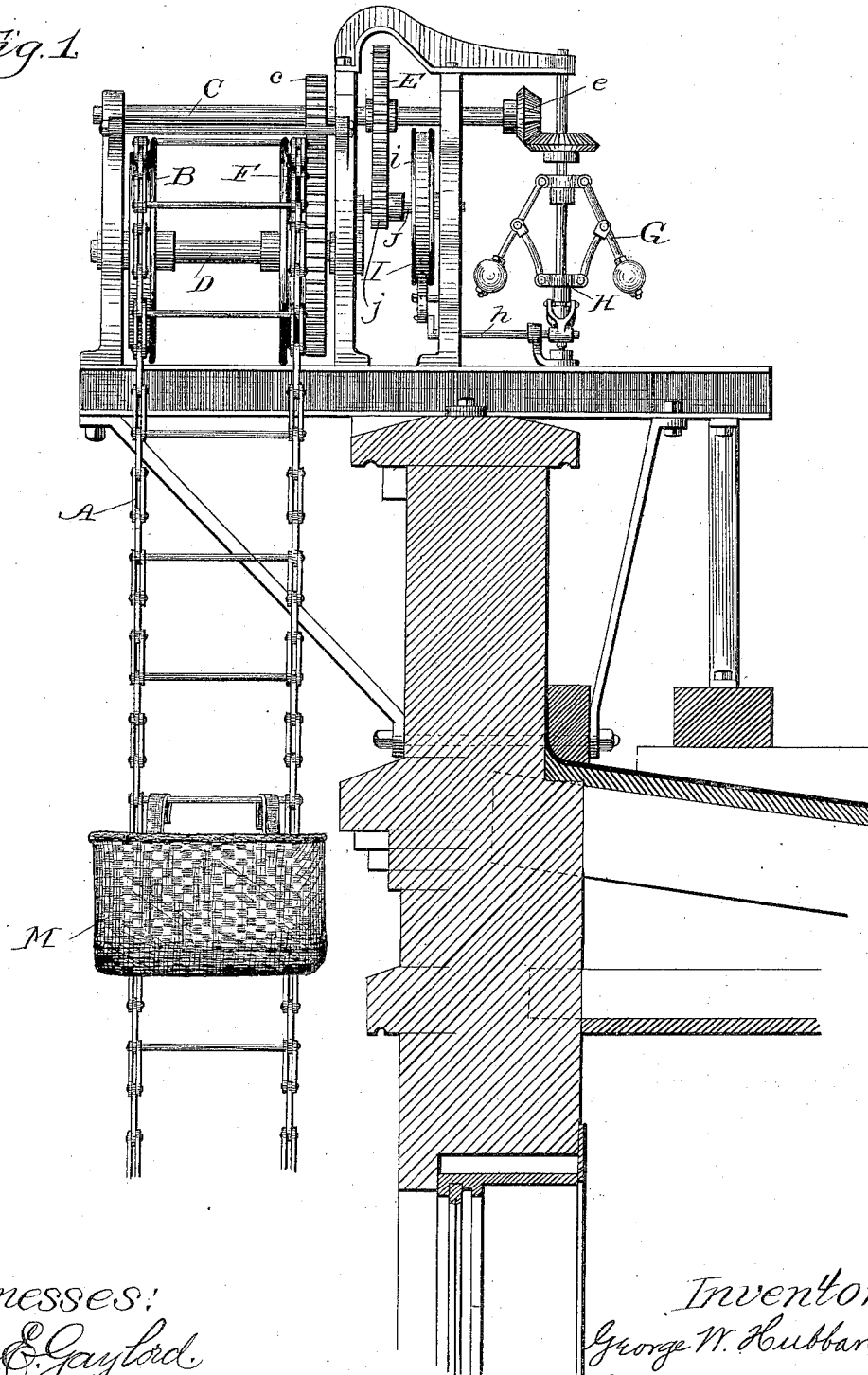
G. W. HUBBARD.

FIRE ESCAPE.

No. 306,489.

Patented Oct. 14, 1884.

*Fig. 1*



*Witnesses:*  
*Chas. E. Gaylord.*  
*Charles Luthium.*

*Inventor:*  
*George W. Hubbard*  
*By Banning & Banning.*

(No Model.)

2 Sheets—Sheet 2.

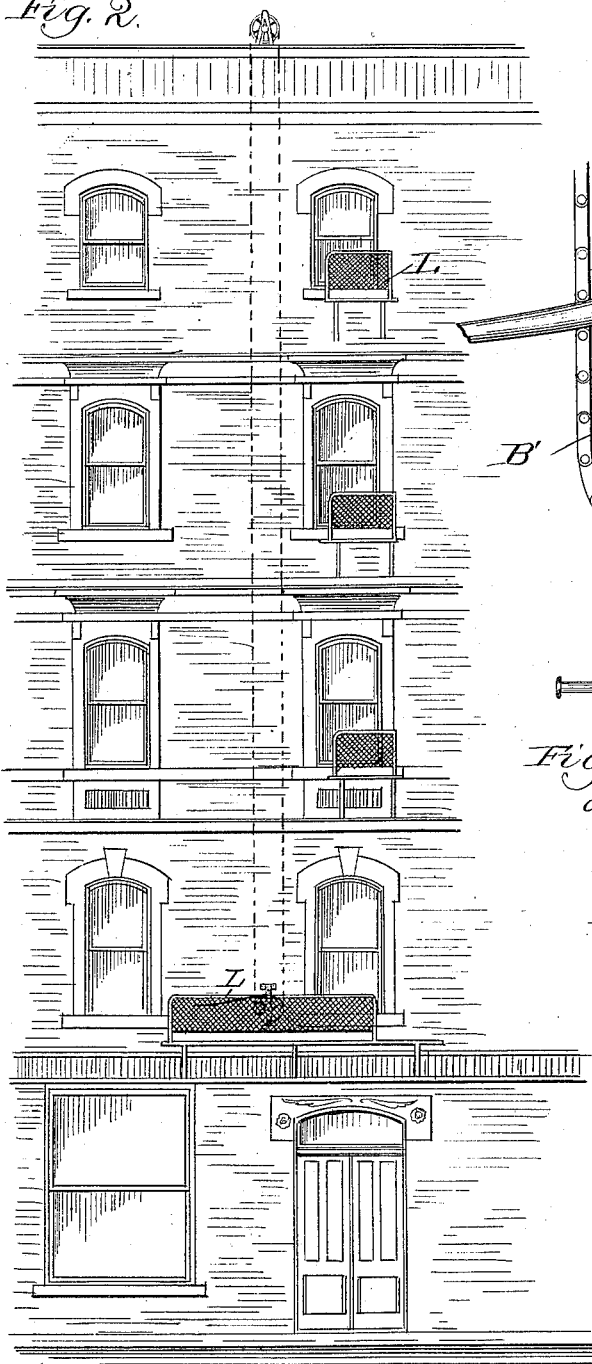
G. W. HUBBARD.

FIRE ESCAPE.

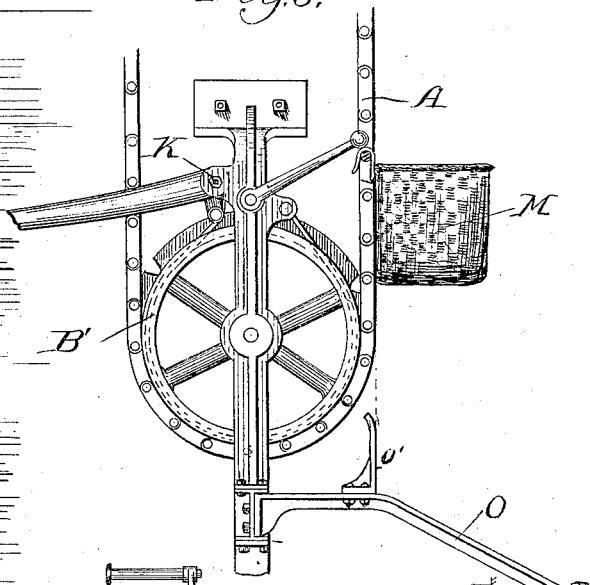
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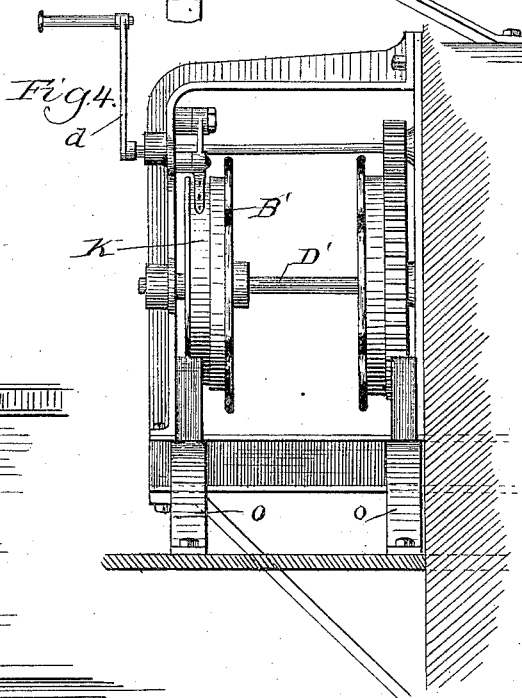
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



Witnesses:

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# UNITED STATES PATENT OFFICE.

GEORGE W. HUBBARD, OF CHICAGO, ILLINOIS.

## FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 306,489, dated October 14, 1884.

Application filed April 25, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE W. HUBBARD, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Fire-Escapes, of which the following is a specification.

My invention relates to the construction of an automatic brake for fire-escapes, consisting of extensible or revolving ladders, and in the construction of devices for the purpose of detaching automatically the carriers or baskets with which said ladder is provided.

In the accompanying drawings, Figure 1 is a side elevation of a portion of a revolving ladder and showing my improved brake mechanism, also in side elevation, applied thereto. Fig. 2 is a front elevation of the ladder, showing its relative position to the wall of the building and to the windows. Fig. 3 is a side elevation of the bottom portion of the ladder, showing the carrier attached thereto and the means for disengaging said carrier; and Fig. 4 is a side elevation of the bottom of the ladder, showing the means for revolving it and also a hand-brake to be used in connection with the ladder.

My improvements are designed to be used in connection with a revolving or extensible ladder, A, which may be made in any suitable way. The ladder is carried by sprocket-wheels B B', the former being mounted upon a shaft, D, and the latter upon a shaft, D'. Shaft D may be carried in a suitable frame-work mounted on the edge of the roof or the top of the fire-wall of the building, and shaft D' in a suitable frame-work in convenient proximity to the ground. Shaft D' may be provided with a crank, d, for the purpose of operating the ladder to carry up a person or article. A shaft, C, parallel to shaft D, is mounted above the sprocket B, and carries first a pinion, e, next a gear-wheel, E, and upon its outer end a bevel-pinion, e. A gear-wheel, F, mounted on the shaft D, meshes with pinion e, thus rotating shaft C. This shaft C, through the medium of bevel-pinion e, revolves the vertical shaft of the governor G. As the velocity of said shaft increases the balls of the governor swing outward and raise, through the medium of links, a sliding sleeve, H, on

the spindle of the governor. To this sleeve is connected the end of the lever-arm h, which is made to apply a friction band or belt, I, to the surface of the friction-wheel i. Friction-wheel i is mounted on a shaft, J. Shaft J carries a pinion, j, which meshes with gear-wheel E.

When the ladder is in use and begins to descend rapidly under the weight of a person or article, the friction-belt I is applied through the means of the governor, as before described, thus checking automatically the too rapid descent of the ladder. A hand-brake, K, may also be used in conjunction with the automatic brake heretofore described. This brake is shown in the drawings, Figs. 3 and 4.

I prefer to so place the ladder that the rounds or steps shall be at right angles to the wall of the building, and so that the descending side shall pass in close proximity to the windows.

I provide suitable landings, L, at the different windows, and also one at the top of the ladder for the use of the firemen in getting off the ladder.

I provide cages or carriers M, provided with hooks, so that they may be readily attached or detached. These carriers should be kept upon the different landings, or in some other easily-accessible place, so that children or persons overcome by smoke or otherwise can be placed therein and lowered to the ground without danger.

When it is desired to carry firemen or apparatus to any point on the building reached by the ladder, this may be accomplished by elevating the ladder by means of the crank at the bottom.

I provide means whereby the cages or carriers M are automatically detached when they reach the bottom of the ladder. To facilitate this, the carrier should be made, preferably, rectangular in form, and its sides project beyond the ladder at either side. Projecting arms O extend out from the frame-work at the bottom of the ladder far enough to engage with the inner edge of the carrier. The outer ends of these arms may be inclined, as shown. As the ladder descends, and the carrier comes in contact with these arms O, it is arrested, its

hooks are disengaged from the rounds of the ladder by the uprights O' of the arms O, and it falls away by its own weight, sliding down the inclined portion of the arms O.

5 I claim—

1. In a fire-escape, the combination, with shafts D C, connected through suitable gearing with a governor, G, of the sliding sleeve H, arm h, friction-belt I, friction-wheel i, and  
10 shaft J, carrying gear-wheel j, which latter engages with the gearing carried by shaft C, whereby the speed of the ladder will be auto-

matically controlled, substantially as described, and for the purpose set forth.

2. In a fire-escape, the combination, with a 1. revolving or extensible ladder and a detachable carrier, of projecting arms adapted to disengage said carrier, substantially as described, and for the purpose set forth.

GEO. W. HUBBARD.

Witnesses:

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