

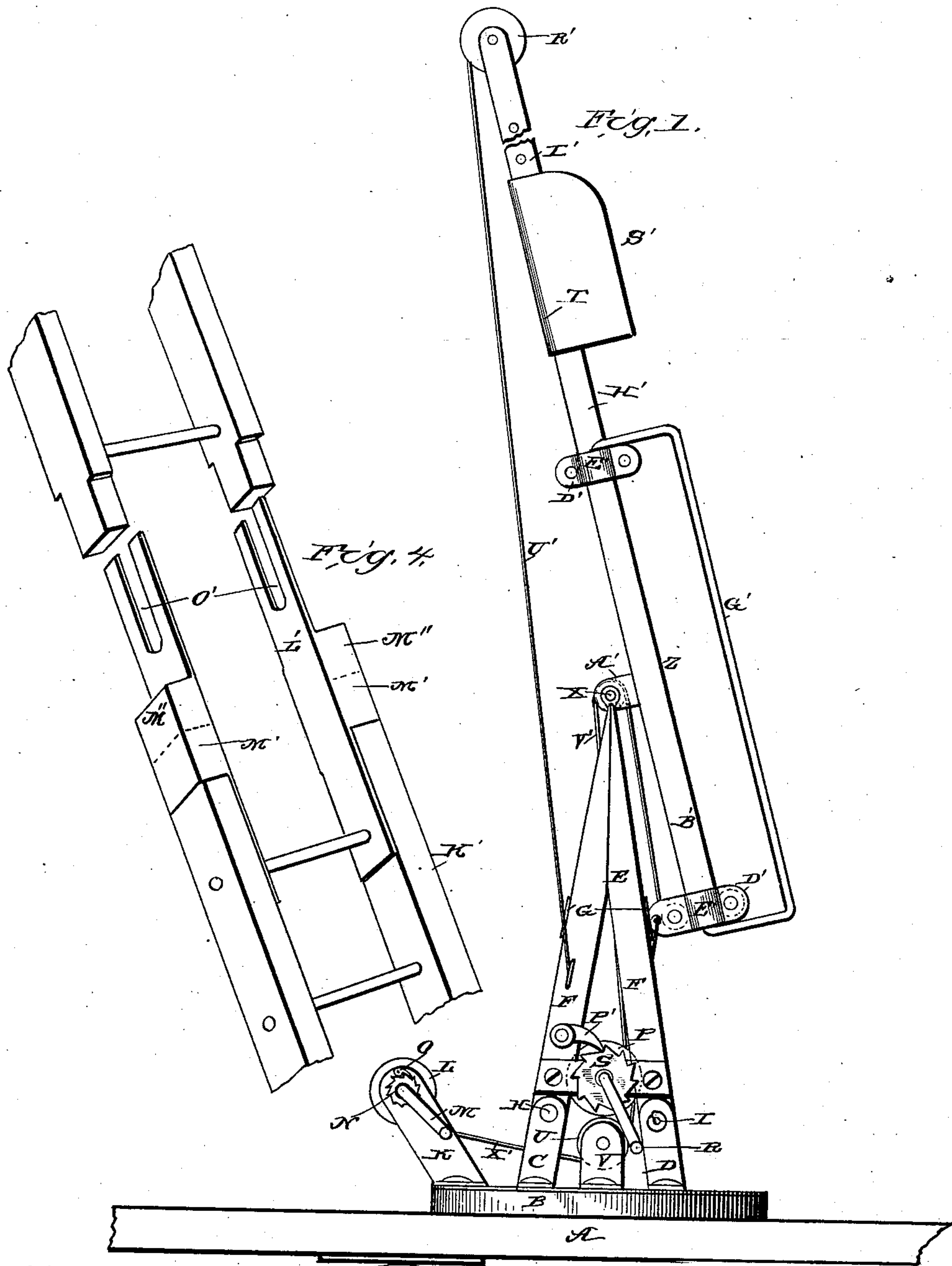
(No Model.)

3 Sheets—Sheet 1.

D. D. DECKER.  
FIRE ESCAPE LADDER.

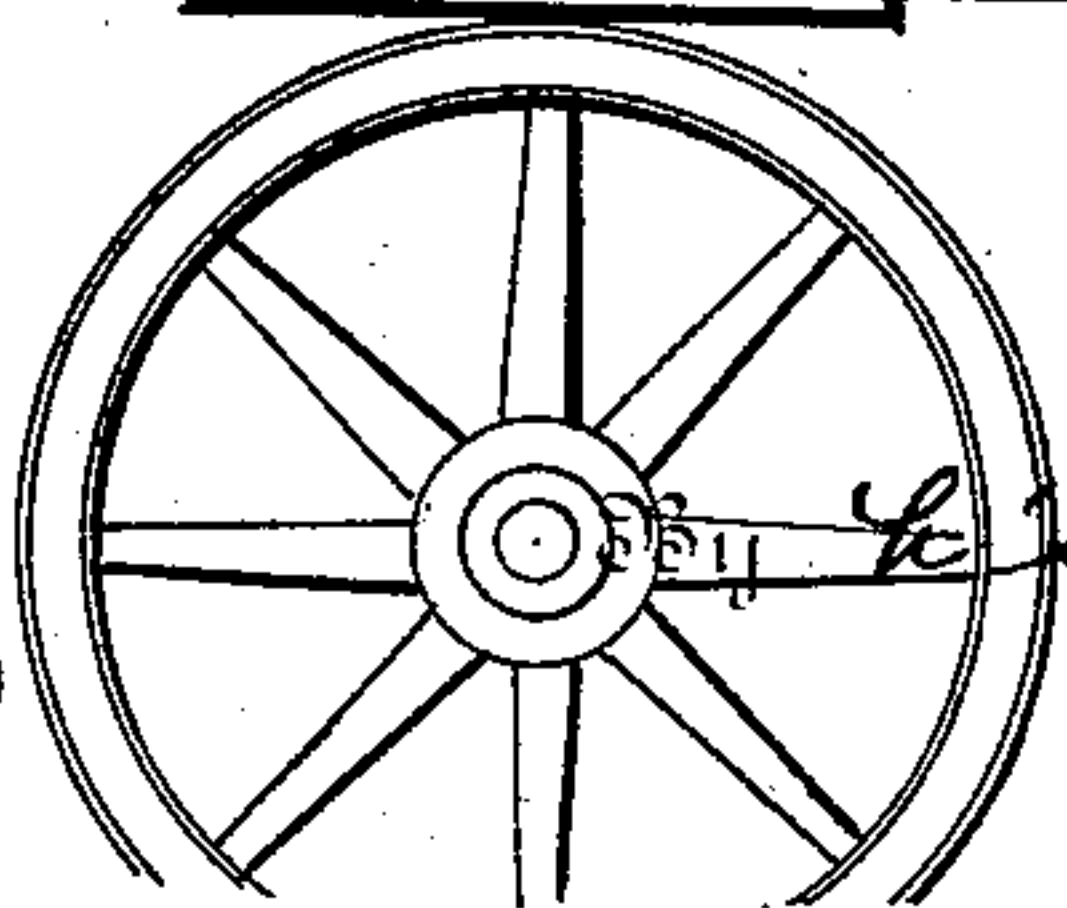
No. 363,950.

Patented May 31, 1887.



Witnesses

Jos. A. Ryan  
J. W. Garner



Attorneys,

C. A. Howells

Inventor

D. D. Decker

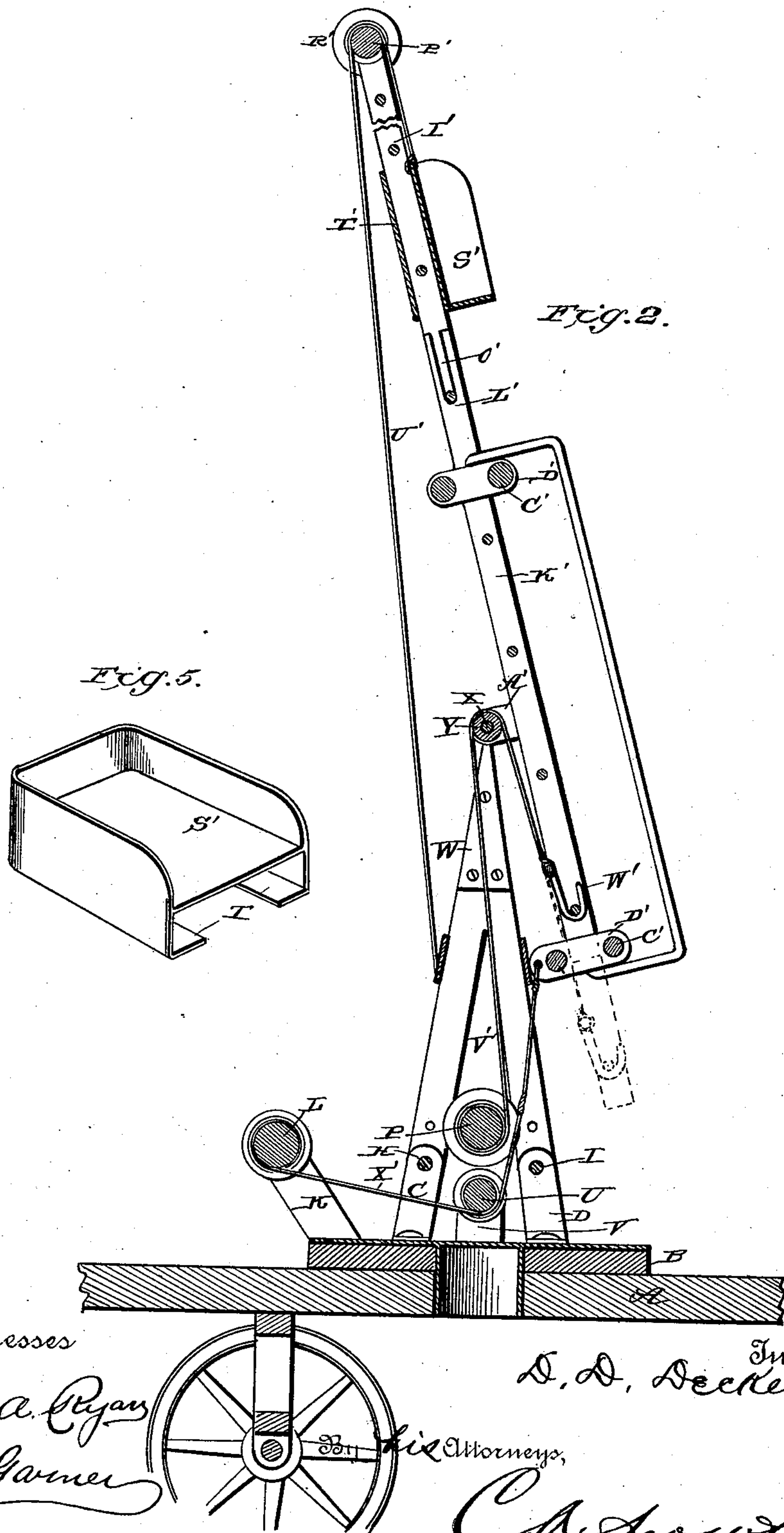
(No Model.)

3 Sheets—Sheet 2.

D. D. DECKER.  
FIRE ESCAPE LADDER.

No. 363,950.

Patented May 31, 1887.



Witnesses  
Jos. A. Ryan  
Geo. Warner

Inventor  
D. D. Decker

By his Attorneys,  
C. A. Howells

(No Model.)

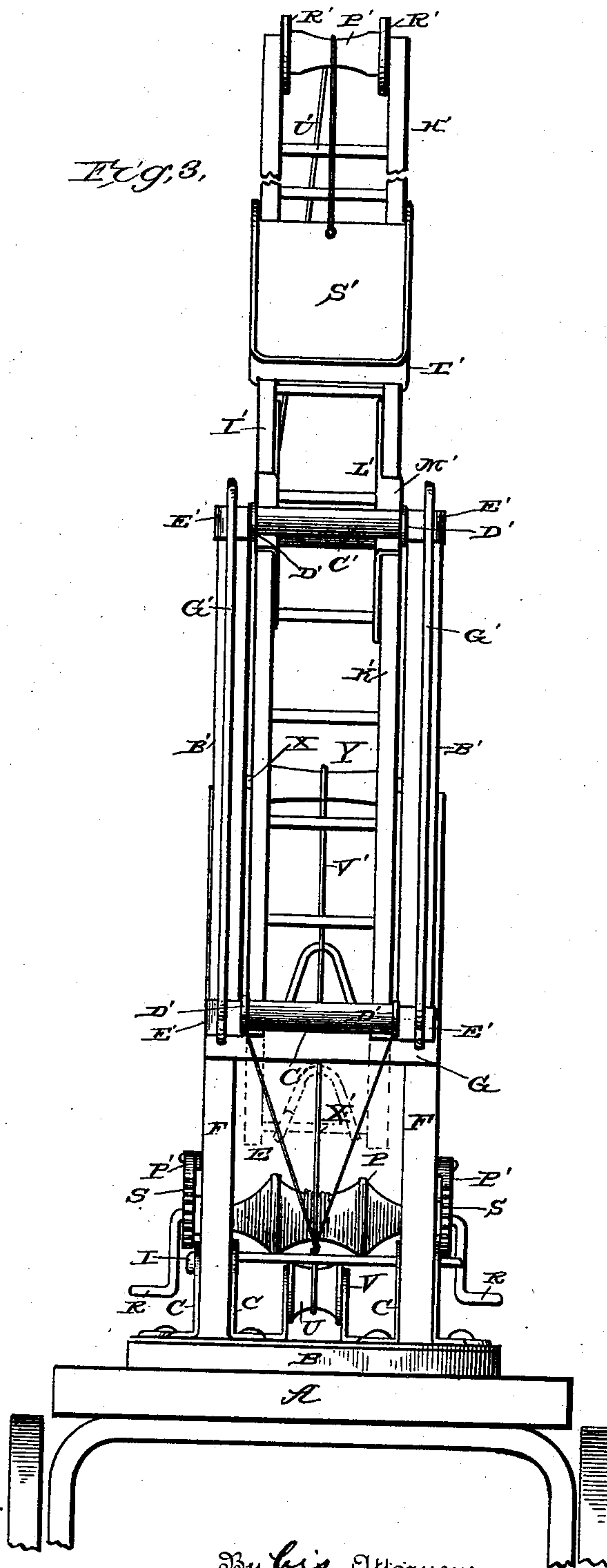
3 Sheets—Sheet 3.

D. D. DECKER.  
FIRE ESCAPE LADDER.

No. 363,950.

Patented May 31, 1887.

Fig. 3.



Witnesses  
Jos. A. Ryan

J. W. Warner

Inventor  
D. D. Decker

By his Attorneys,

C. A. Howard



# UNITED STATES PATENT OFFICE.

DANIEL DEYOE DECKER, OF BROOKFIELD, MISSOURI, ASSIGNOR TO THE  
DECKER LADDER COMPANY, OF SAME PLACE.

## FIRE-ESCAPE LADDER.

SPECIFICATION forming part of Letters Patent No. 363,950, dated May 31, 1887.

Application filed March 29, 1887. Serial No. 222,887. (No model.)

*To all whom it may concern:*

Be it known that I, DANIEL DEYOE DECKER, a citizen of the United States, residing at Brookfield, in the county of Linn and State of Missouri, have invented a new and useful Improvement in Fire-Escape Ladders, of which the following is a specification.

My invention relates to an improvement in fire-escape ladders; and it consists in the peculiar construction and combination of devices, that will be more fully set forth hereinafter, and particularly pointed out in the claims.

In the drawings, Figure 1 is a side elevation of a fire-escape ladder embodying my improvement. Fig. 2 is a vertical sectional view of the same. Fig. 3 is a front elevation. Fig. 4 is a detailed view showing the devices for coupling the sections of the ladder together. Fig. 5 is a detail view of the car or elevator.

A represents a bed or platform, which is mounted on wheels, and thereby adapted to be readily transported from one place to another. On one end of the said platform is pivoted a circular turn-table, B. From the upper side of the said turn-table project two pairs of ears or lugs, C, and opposite the said lugs or ears are similar pairs of lugs or ears, D.

E represents a vertical frame, comprising two inverted-V-shaped sides, F, which are connected on opposite sides by means of cross-bars G. The sides F have their lower inner corners pivoted to the ears C by means of a pivotal bolt or rod, H, and the outer corners of the said sides, at their lower ends, are adapted to enter the spaces between the ears D when the frame is in a vertical position, and are secured thereto by means of a pivotal rod, I, which passes through aligned openings made in the ears and in the sides of the frame. From one side of the turn-table project a pair of upwardly and outwardly inclined standards, K, between the upper ends of which is journaled a drum, L, that is provided with a crank, M, and a ratchet-wheel, N, and pawl O to engage the ratchet-wheel, and thereby prevent retrograde rotation of the drum.

P represents a drum or windlass, which is journaled horizontally in the sides of the hinged frame E and extends transversely across the

same. One end of the said windlass is provided with a crank, R, by means of which it may be rotated, and with a ratchet-wheel, S, which is engaged by a pawl, P', that is pivoted to one side of the frame and prevents retrograde rotation of the windlass.

U represents a guiding-pulley, which is journaled between vertical standards V, that rise from the center of the turn-table.

On the inner sides of the frame E, at the upper end thereof, are secured metallic plates W, the upper ends of which project above the upper ends of the frame, and are provided with horizontal aligned openings adapted to receive a transverse bolt, X. On the said bolt is journaled a roller, Y.

Z represents a guiding-frame, which is provided at its center, on its under side, with depending ears A', that are provided with openings through which the pivotal rod X extends, and thereby the said frame Z is pivoted on the upper end of the vertical frame E and is balanced thereon. This frame Z comprises a pair of side bars, B', the ends of which are connected by transverse bearing-rollers C'. The said rollers are journaled in projecting ears D', which are formed on the ends of keepers E', in which the ends of the side bars are secured. The ears project beyond the upper and lower sides of the side bars, and thereby the rollers C' are supported above and below the pivoted frame, thus leaving an unobstructed space between the opposing sides of the side bars.

G' represents a pair of truss-rods, which form the sides of the supporting-frame Z, and have their ends bent downward and secured to the ends of the side bars, B', as shown.

H' represents a ladder, which is adapted to fit in the frame Z between the opposing sides of the side bars, B', thereof, and between the two pairs of friction-rollers C' at the ends of the said frame. This ladder is made in a number of detachable sections, I' and K'. The upper ends of the lower sections, K', are provided with metallic plates L', which are secured to the inner sides of the side bars of the sections and project outwardly therefrom to form extensions of the lower sections. These plates are provided on opposite sides with project-



ing wings M', which are bent around the outer sides of the side bars of the lower sections of the ladder, and thereby form sockets M'' at the upper ends of the lower sections of the ladder, 5 which sockets are adapted to receive the lower reduced ends of the upper section of the ladder. The upper ends of the plates are provided with longitudinal open slots O', which are adapted to receive the lower rung of the upper section of the ladder, and thereby the sections of the ladder are adapted to be securely coupled together. At the top of the upper section of the ladder is a roller, P', which extends entirely across the ladder, and at the 15 ends of the said roller are journaled friction-wheels R', which are adapted to travel against the side of the building and reduce friction when the ladder is being elevated against the building.

S' represents a car or elevator, which is adapted to slide on the upper section of the ladder, and is secured thereto by means of keepers T', which depend from its lower sides and are bent around the lower and outer sides 25 of the upper section of the ladder. To this car or elevator is attached a rope or chain, U', which passes over the roller P'.

V' represents a rope or chain, which has one end attached to the windlass or drum P. The said rope or chain then passes over the roller Y at the upper end of the frame E, and is provided at its outer end with a hook, W', adapted to engage the lower rung of the ladder.

X' represents a rope, which has one end attached to the drum L. The said rope then passes under the pulley U and has its outer end attached to the outer end of the pivoted frame Z. 35

The operation of my invention is as follows: 40 The upper section of the ladder is normally arranged in the frame Z, and the lower sections of the ladder are detached and are placed upon the top rollers of the frame Z, and the frame E is tilted to a horizontal position, so as to lower the ladders to within a slight distance 45 above the bed or platform A. In order to raise the ladder, the lower sections, K', are taken from the frame Z, and the frame E is turned to a vertical position, as shown in the drawings, and secured in that position by means of the bolt or rod I. The frame Z is then turned to the proper inclination on the upper end of the frame E by turning the drum L so as to wind up the rope X'. The 50 hook W' of the rope V' is then attached to the lower rung of the upper section of the ladder, and the drum or windlass P is turned in the direction indicated by the arrow in Fig. 1, which causes the said drum or windlass to 60 wind up the rope V, and thereby move the upper section of the ladder upwardly in the frame Z. When the said upper section of the ladder is raised a suitable distance, the lower section of the ladder is coupled thereto, as before described, and the hook W' is then detached from the upper section of the ladder and is attached

to the lower rung of the lower section of the ladder. The windlass or drum P is then turned, as before, thereby continuing to raise the ladder, and the ladder is directed, by turning the turn-table, to cause the upper end of the ladder to bear against the side of the building to which it is to be applied, and as the ladder continues to move outward its free end runs up the side of the building, as will be very readily understood, until it reaches the window 70 from which the escape of the occupants of the building is to be effected. As soon as the drums cease to rotate, the pawls or detents engage their friction-wheels, and thereby prevent them from turning in a retrograde direction, and thus cause the ladder to be firmly supported when raised. After the ladder is erected, persons on the ground catch hold of the rope attached to the car or elevator and 85 raise the latter by drawing downward on the outer end of the rope. When the car or elevator reaches the window of the burning building, persons in the building step into the said car or elevator, and the latter is then lowered 90 on the ladder, and thus escape is effected from the burning building.

Men or agile persons may descend to the ground by means of the ladder and without using the car or elevator; but the latter will be found useful for lowering women, children, and valuables to the ground. 95

Having thus described my invention, I claim—

1. The combination of the supporting bed or base, the turn-table thereon, the frame E on the turn-table and adapted to fold longitudinally thereon, the frame Z, hinged or pivoted to the upper end of the said frame E, the ladder guided by the frame E, and the windlass to hoist the ladder, substantially as described. 100 105

2. The combination of the supporting bed or base, the turn-table thereon, having the windlass L at one side and guiding-sheave U, the frame E on the turn-table and provided with the windlass P, the frame Z, pivoted on the frame E, the ladder made in detachable sections and guided in the frame Z, the rope X', connecting the windlass L and the frame Z and passing under the sheave U, for the purpose set forth, and the rope V', attached to the windlass P, passed over a guiding-sheave at the upper end of the frame E, and having the hooks to engage the ladder, 110 115 120 substantially as described.

3. The combination of the supporting base or bed, the turn-table thereon, the frame E, hinged to the said turn-table and adapted to be raised to a vertical position, the frame pivoted centrally to the upper end of frame E and having its guiding-rollers C', the sheave X at the upper end of frame E, the windlass journaled to said frame, the rope attached to the said windlass and passed over the sheave X, and the extensible ladder made in detachable sections and guided between the rollers 125 130



C' of the frame Z, the rope being adapted to be attached to the said ladder to elevate the same, substantially as described.

4. The combination of the base or support  
5 A, the turn-table pivoted thereon, the frame  
E, hinged to the said turn-table and adapted to  
be raised to a vertical position, the guiding-  
frame Z, pivoted or hinged to the upper end  
of the frame E, and the ladder secured in the  
10 said guiding-frame and adapted to be moved

longitudinally therein, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

DANIEL DEYOE DECKER.

Witnesses:

HARRY LANDER,  
O. C. TRICE.