(No Model.)

2 Sheets—Sheet 1.

C. J. APPLEQUIST.

FIRE ESCAPE.

No. 460,938. Patented Oct. 13, 1891.

Fig 1.

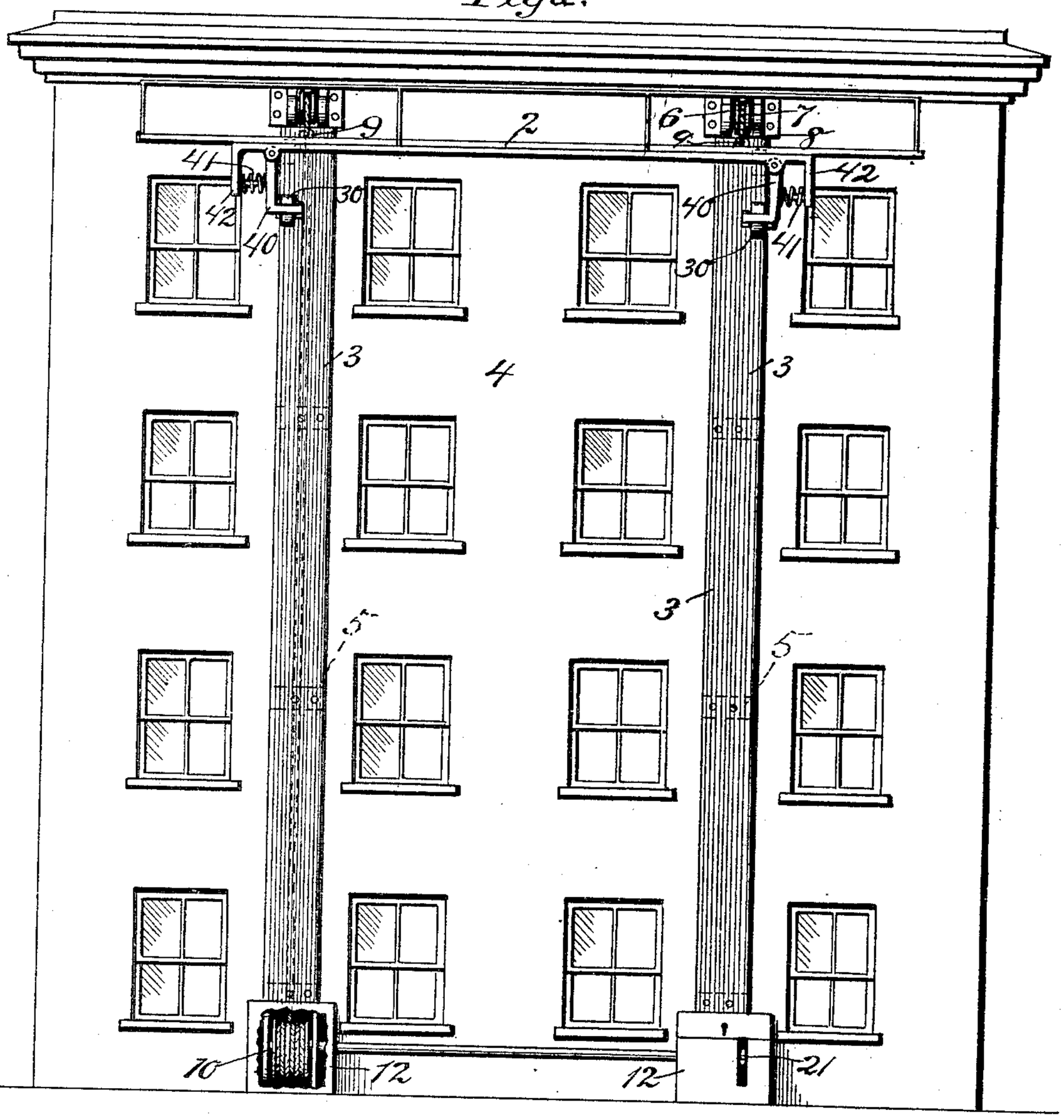
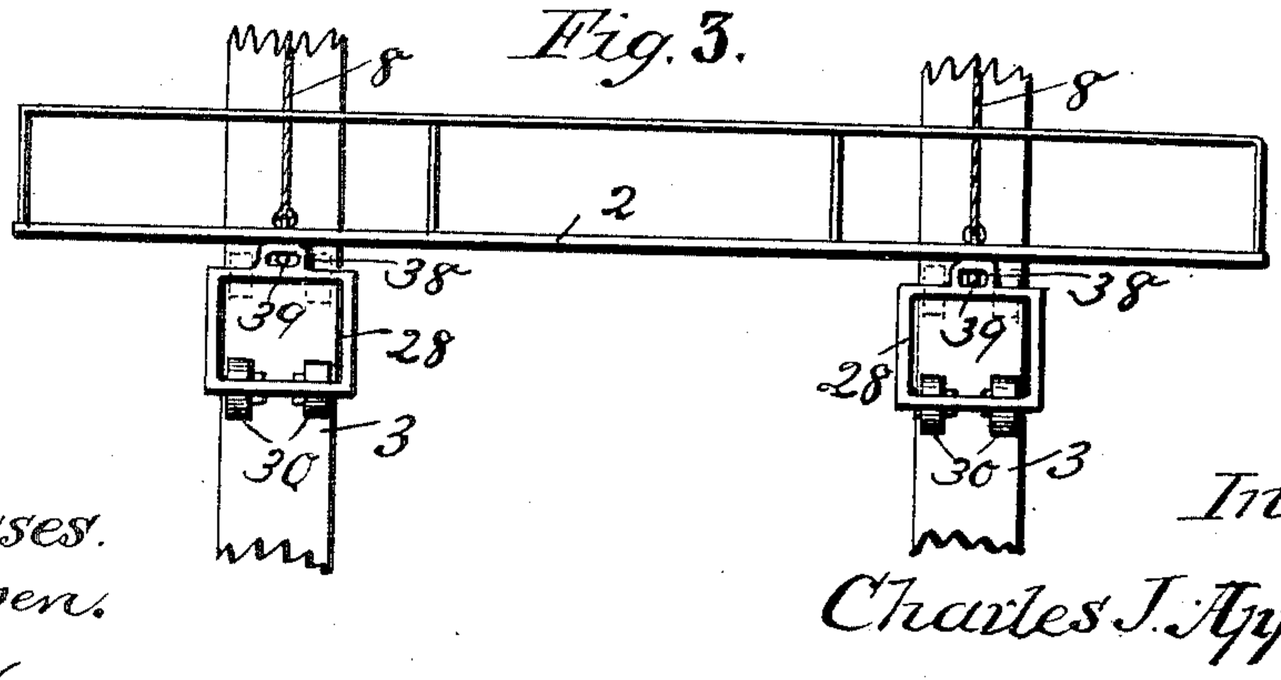


Fig. 3.



Witnesses.
J. Jevon.
O. G. Hawley.

Inventor.
Charles J. Applequist.
By Paul & Merriman Atty's.

(No Model.) 2 Sheets—Sheet 2.

C. J. APPLEQUIST.

FIRE ESCAPE.

No. 460,938. Patented Oct. 13, 1891.

Fig. 2.

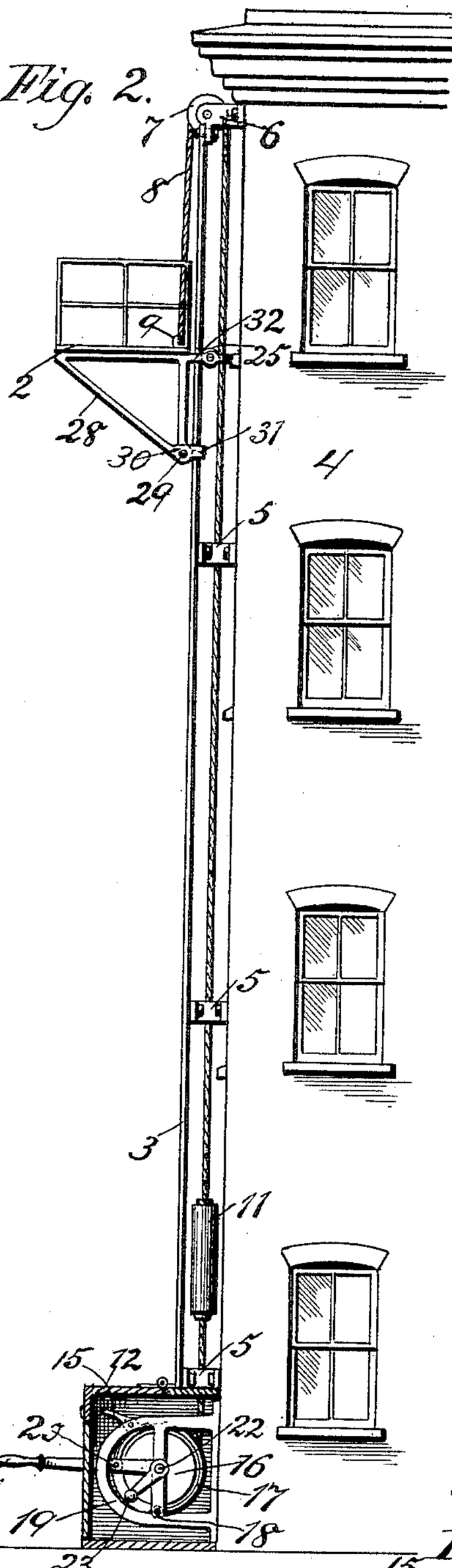


Fig. 4.

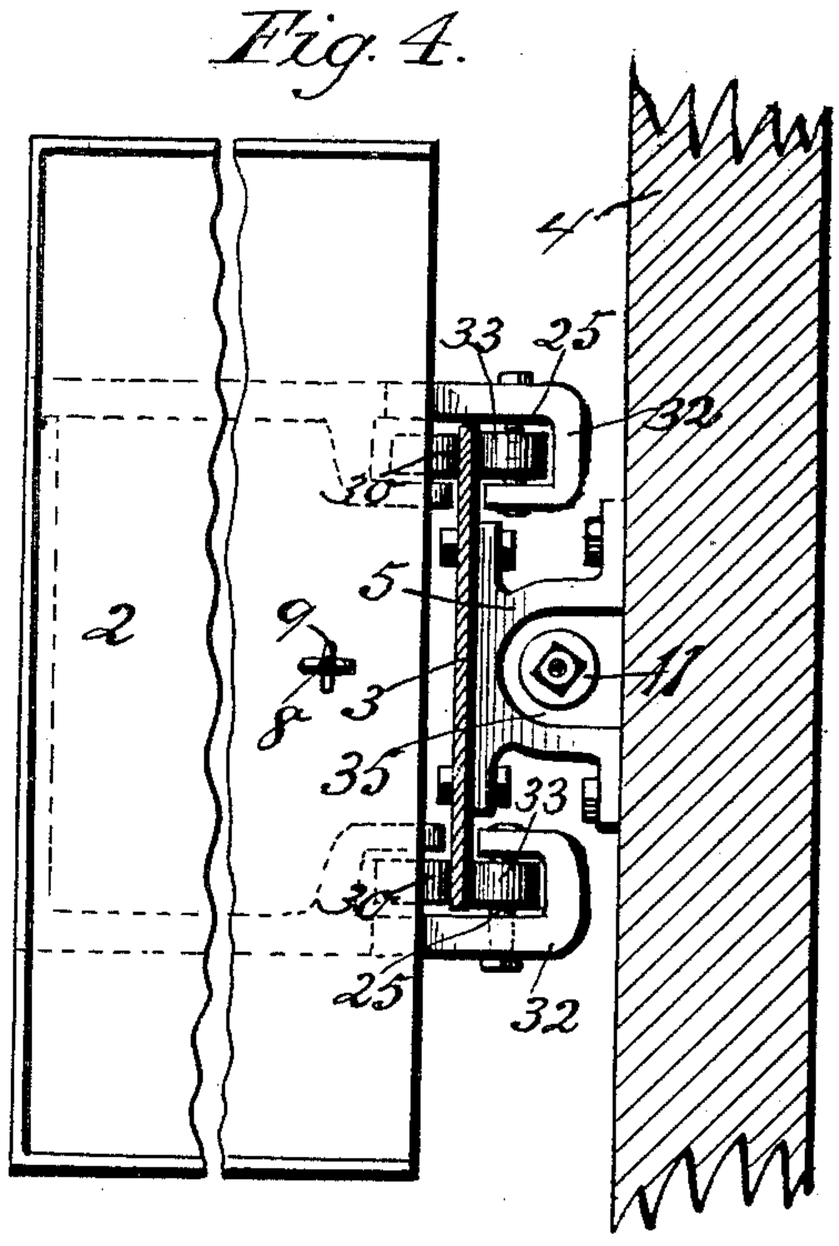


Fig. 5.

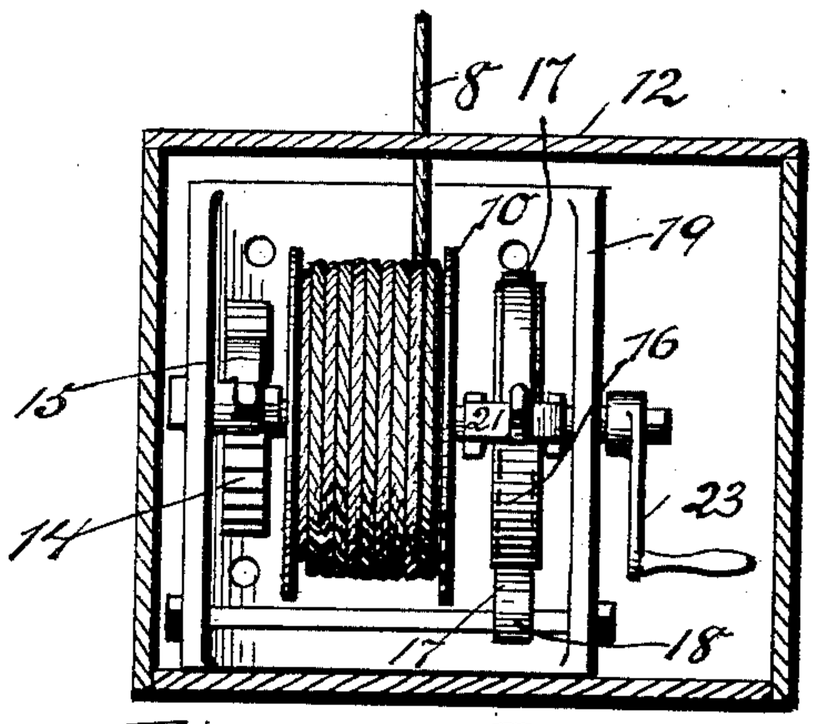


Fig. 6.

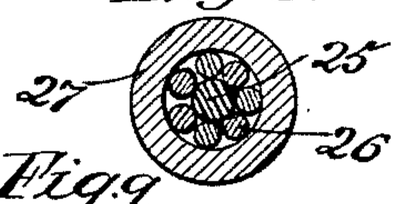


Fig. 7.

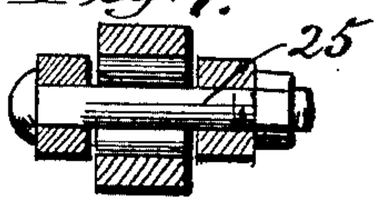
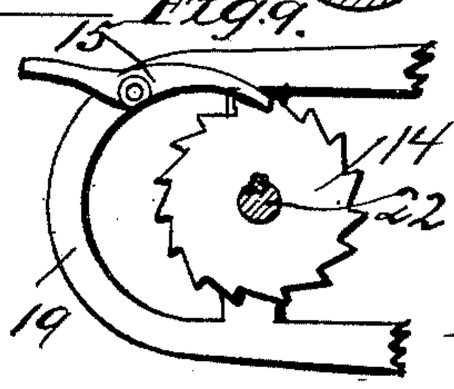
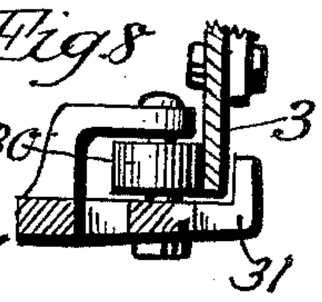


Fig. 9.



Witnesses.
J. Jessen.
C. G. Stanley

Fig. 8



Inventor.
Charles J. Applequist
By Paul & Merriam attys

UNITED STATES PATENT OFFICE.

CHARLES J. APPLEQUIST, OF ELLENDALE, NORTH DAKOTA, ASSIGNOR OF ONE-HALF TO JOHN D. SKONE, OF CARVER, MINNESOTA.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 460,938, dated October 13, 1891.

Application filed February 19, 1891. Serial No. 382,082. (No model.)

To all whom it may concern:

Be it known that I, CHARLES J. APPLEQUIST, of Ellendale, in the county of Dickey and State of North Dakota, have invented a certain Improved Fire-Escape, of which the following is a full, clear, and exact specification.

My invention relates to platform fire-escapes of the class in which all ladders are dispensed with and the platform or balcony made movable up and down with respect to the walls of the building.

The object of my invention is to provide a fire-escape adapted for use by a person on the ground in lowering people from the upper windows or roof of a building to the ground or sidewalk.

My invention consists in the constructions and combinations hereinafter described, and particularly pointed out in the claims.

My invention will be more readily understood by reference to the accompanying drawings, in which—

Figure 1 is a front elevation of a building provided with a fire-escape embodying my invention. Fig. 2 is a side view thereof. Fig. 3 is a detail of the balcony and the guides therefor. Fig. 4 is a detail showing a narrow platform provided in connection with a single guide. Fig. 5 is the front elevation of the winding-drum and the regulating or break device therefor. Figs. 6, 7, 8, and 9 are details.

As shown in Fig. 1, the platform or balcony 2 is raised to its upper limit beneath the cornice of the building, so as to be accessible from the roof. The guides or heavy vertical plates 3 are secured upon the wall 4 of the building, preferably between the windows therein, being firmly held in place by the brackets 5. The upper bracket 6 is provided with bearings for the sheave-block 7, over which the wire cable or rope 8 passes. The end of this cable is attached, as shown, to the top of the platform by a strong eye 9. The cable passes from thence over the pulley 7, and down behind the guide 3, to the winding-drum 10. A counter-balance 11, preferably of a weight slightly greater than that of the balcony is secured near the lower end of each cable 8, the winding drum or drums 10 are inclosed in the strong boxes 12, and the same are adapted to be locked, so that the drums may be operated only by a person provided with a key with which to open the box.

As shown in the detail, Figs. 5 and 9 and in Fig. 2, the shaft upon which the drum 8 is secured is provided with a ratchet-wheel 14, with which the stationary pawl 15 is adapted to engage to prevent the turning of the drum, so as to accidentally lower the balcony; also, provided upon the shaft 13 is the smooth pulley 16, with which friction-strap 17, passing from the point 18 on the iron frame 19 around to the point 20 on the brake-lever 21, is adapted to frictionally engage to prevent the too-rapid revolution of the drum when the pawl is disengaged from its ratchet-wheel. The brake-lever 21 is loosely pivoted on the cross-bar 22 of the frame 19. A crank 23 is provided in connection with the shaft 13, whereby the drum may be operated to rewind the cable 8 and raise the balcony.

In order to decrease to as great an extent as possible the friction between the balcony and the guide plate or plates 3, I fit all the bearings with friction-rollers, which rollers are in turn fitted with anti-friction hubs 25, as shown in Figs. 6 and 7. The short rolls 26 serve to greatly lessen the friction between the inner periphery of the pulley 27 and the hub proper.

In each of the Figs. 1, 2, and 3 I have shown slightly-different arraugements for supporting the platform 2 at right angles to the vertical guide therefor. In Figs. 2 and 4 I have shown a simple bracket 28, provided with roller-bearings 29 in its lower portions for the friction rollers or wheels 20. (Shown clearly in Fig. 8.) A lug extends behind the guide-plate 3 on each side thereof to prevent the pulling off of the bracket. The upper parts of the brackets 28 are provided with the arms 32, having the hook form shown in Fig. 4, and adapted to hold the friction-wheels 33, provided on the short shaft-hubs 25. The upper friction rolls or wheels bear on the inside of the guide-plate and the lower on the outside. Thus it will be seen that the two points of heavy bearing are strongly provided for and the brackets and platform held firmly at right angles to the guide or guides. As shown in Fig. 4, I provide the several brackets 5 with the

inner openings 35, through which the cable and the counterbalance-weight are adapted to pass, the legs of the brackets 5 at all times retaining the rope or cable in position.

Where two or more vertical guides are employed in connection with a long platform and as many cables, I construct the supporting-brackets for the platform, substantially as shown in either of the Figs. 1 or 3. In order to prevent binding of the brackets against the edges of the guides, owing to a slight tilting of the platform when one cable is slackened more rapidly than the other, I allow a slight freedom of movement between the brackets and guides, which is increased by pivoting the platform on the tops of the brackets and further increased by use of the slot-and-pin pivotal connection shown in Fig. 3, the sides of the slots 38, being adapted to engage the lugs 39. In Fig. 1 I have shown but two brackets 40, provided with friction-rolls adapted to engage the guides. These brackets are pivoted upon the bottom of the platform, and are constantly held against the edges of the guide by the coiled springs 41, provided between the depending lugs 42 on the platform and the sides of the brackets. If one end of the platform sinks slightly below the other, these brackets yield outwardly, so as not to bind on the guides. I may provide rollers to engage the edges of the guides.

In the operation of my device the platform is usually left in its upper or extreme position or may be lowered to a level of the sills of any of the windows, and there held in place by the pawl-and-ratchet device provided in connection with the winding drum or drums. In case of a fire the inmates of a building step upon the platform, which is held in place by said pawl any length of time sufficient to allow all to get on the balcony. The person or persons below having unlocked the boxes containing the drums or windlasses, throw the pawls out of engagement with the ratchet-wheels, at the same time bearing down on the long brake-levers 21 to prevent the sudden fall of the platform. By varying the pressure on the brake the speed at which the platform descends may be regulated. After the platform has been lowered it may be quickly raised again by means of the crank, the pawls 15 having first been thrown back onto the ratchet and the brake-arm released. Any convenient means may be employed to hold the pawl or pawls out of engagement with the ratchet-wheels while the platform is descending.

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

1. The combination, with the wall 4, of the recessed brackets 5, secured thereon, the guide-plate 3, secured thereto, a balcony, and brackets therefor, provided with anti-friction rollers 30 and 33, adapted to engage the front and rear sides of said guide-plate 3, said recessed brackets being guides for the supporting and hoisting cable 8, substantially as described.

2. The combination, with the wall 4, of the vertical guide or guides 3, secured thereon by brackets 5, platform-brackets 28, having rollers engaging the front and rear of said guide or guides, the sheaves 7, secured to the wall 4 and to the upper end of the guide 3 by a bracket 6, a winding-drum for the lower end of said cable and arranged in a box 12, said brackets 28 adapted to support the balcony and having feet or lugs 31 and a brake-strap 17, a lever 21, extending through said box, and a pawl-and-ratchet device for locking said drum, substantially as described.

3. The combination, with two vertical guides 3, secured on the wall 4 by suitable brackets, of the platform 2, secured on platform-brackets having friction-roller bearings and connections with said plates, cables 8, passing over sheaves 7, drums arranged on the ground and engaging the lower ends thereof, and adjustable pivot connections between the tops of said platform-brackets and the platform, whereby the brackets are prevented from binding on the guides, as described.

In testimony whereof I have set my hand this 11th day of February, 1891.

CHARLES J. APPLEQUIST.

In presence of—

EVERETT C. HARTLEY,

A. KNOBLANCH.