No. 662,243. Patented Nov. 20, 1900.

O. NELSON.

FIRE ESCAPE.

(Application filed Mar. 13, 1900.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

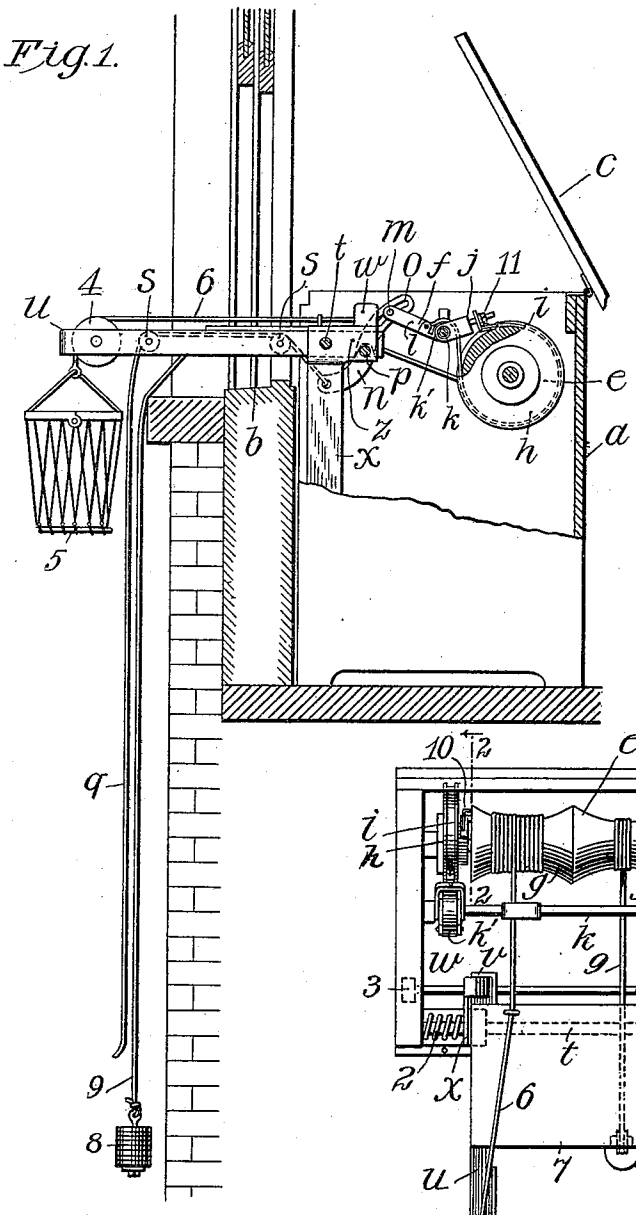


Fig. 7.

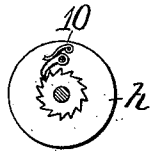
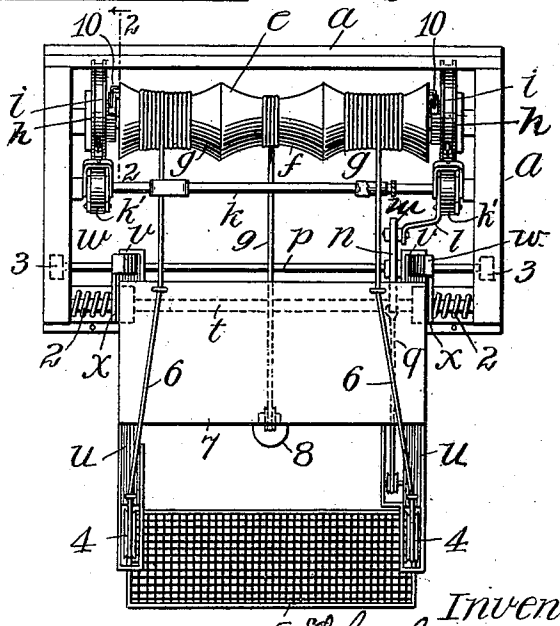


Fig. 2.



Witnesses:
C. L. Belcher
Sedgwick

Inventor
Olof Nelson
By
A. O. Thayer.
Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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Fig. 3.

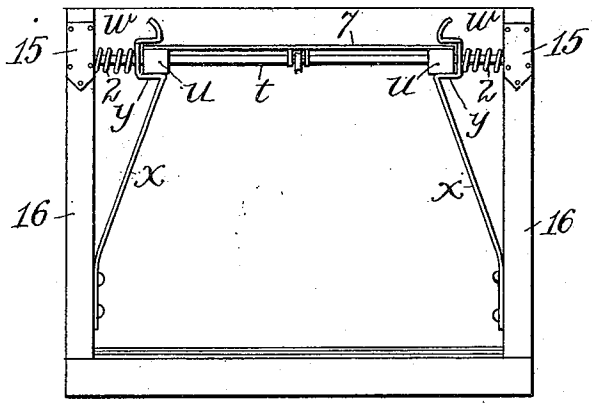


Fig. 4.

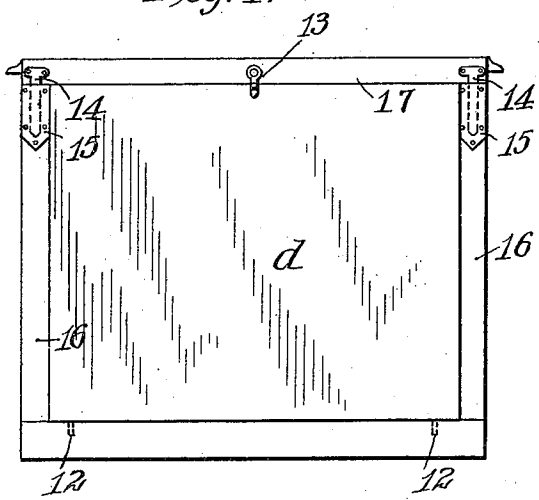


Fig. 6.

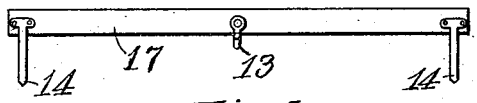
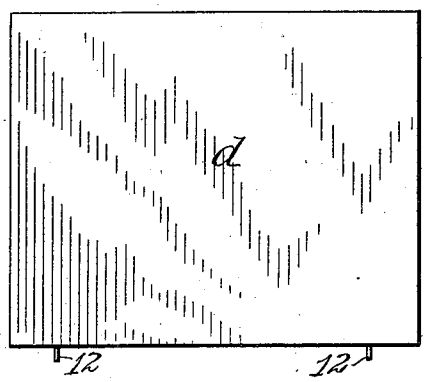


Fig. 5.



Witnesses:
C. L. Belcher
C. Sedgwick

Inventor
Olof Nelson
By
A. P. Thayer,
Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

OLOF NELSON, OF NAUGATUCK, CONNECTICUT.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 662,243, dated November 20, 1900.

Application filed March 13, 1900. Serial No. 8,532. (No model.)

To all whom it may concern:

Be it known that I, OLOF NELSON, a citizen of the United States of America, and a resident of Naugatuck, county of New Haven, State of Connecticut, have invented certain new and useful Improvements in Fire-Escapes, of which the following is a specification.

My invention comprises a simple and effective fire-escape apparatus arranged in a cabinet-case that may be readily placed in front of a window and parts of the apparatus extended outward through the window for use in an emergency, as hereinafter described, reference being made to the accompanying drawings, in which—

Figure 1 is partly a side elevation and partly a sectional elevation of the apparatus as adjusted for use through an open window. Fig. 2 is a plan view of the apparatus with its parts adjusted as in Fig. 1, the window being omitted. Fig. 3 is an elevation of that side of the cabinet that is presented to the window in use with the arms that reach out of the window set up as for use and their supporting-props. Fig. 4 is an elevation of the same side of the cabinet closed up, as when not in use. Fig. 5 is an elevation of the inclosing wall of said side. Fig. 6 is a side elevation of a fastening device for securing said wall at the top. Fig. 7 is a detail in section on line 2 2, Fig. 2.

In any suitable cabinet-case, as a, standing a little higher than the window-sill b and about as wide as the window and which may be the body of a writing-desk, dressing-case, or other article of furniture and being provided with a hinged or other readily-opening cover c and also a readily-removable side wall d, I arrange near the top and as distant from the removable wall d as may be a drum e on pivots, so as to rotate freely, said drum being preferably divided into a middle section f and two sections g intermediate of said middle section and the ends for different ropes, and at each end said drum is provided with a friction-disk h, whereon a friction-band i, preferably of steel, is applied, said band being attached at one end to a yoke j, supported on a shaft k, arranged parallel with the drum e in suitable bearings, so as to turn slightly, and having hubs k' fast on it, to which hubs the other ends of the friction-bands are attached, respectively. To one of these hubs a lever-arm l is applied, which connects by a stud-pin m with a rock-lever n by a slot o in said rock-lever. The rock-lever n is pivoted on a shaft p, parallel with shaft k and the drum, but located near the opening side of the cabinet. From the other end of this rock-lever a brake-controlling rope q passes over pulleys s to hang down in reach of the user to regulate the descent by means of the brakes. On another shaft t two arms u are pivoted, said shaft being located close to the opening side of the cabinet near the top and parallel with the drum and the other shafts. The length of these arms is such that when extended, as shown in Figs. 1 and 2, they will when the case stands close to the window, as in Fig. 1, reach out of the window and beyond the wall sufficiently to suspend a basket clear of the wall for being lowered and raised, and the height of the cabinet-case is such that the arms will swing down within it and be inclosed by the wall d when the apparatus is not in use. To support these arms when adjusted for use, the upper or inner ends are extended beyond the pivot-shaft t, so that their extremities v reach over and a little beyond shaft p when the arms are set up for use, and on said shaft p hooks w are arranged to slide forward and hook over the upper sides of said extremities when said arms rise to the working position. These hooks are parts of spring-props x, attached to the end walls of the cabinet and having shoulders y, which at the same time spring under the arms u, where they are pivoted on shaft t and sustain much of the down-thrust on said shaft, while the hooks sustain the upthrusts on the extremities of the arms. The hooks are laterally offset from the upper ends of the props to reach the extremities of the arms, as shown at z, Fig. 1, and the offset points z have the shaft fitted through them to reinforce the resisting power of the hooks against the upthrusts on the hooks. The shaft t is fitted through the upper ends of the props, and between said props and the sides of the cabinet coiled springs 2 are applied to the shaft to maintain the engagement of the hooks w and shoulders y with the arms for supporting them in the working position. The props x are made of spring-plates, and

they normally tend to spring outward by their own elasticity. The side walls of the cabinet are tied to prevent spreading apart by nuts 3 on shaft *p*, said nuts being preferably concealed in the substance of the walls, as indicated by the dotted lines in Fig. 2.

The arms *u* carry pulleys 4 at their outer ends, and a basket 5 is suspended by ropes 6, running from the drum *e* over said pulleys and which descends by the weight of the user, who enters the basket over the plate 7, applied to arms *u* and serving as a platform, affording safe access to the basket from the window. The basket is to some extent counterbalanced by a weight 8, suspended by a rope 9 from the middle section *f* of the drum, whereon it is wound oppositely to the windings of the ropes 6, so as to wind up when they unwind; but the control of the descent of the basket is to be mainly effected by the brakes through the instrumentality of the rope *q*.

The essential purpose of the weighted rope 9 is to raise the basket for the relief of others when more are to be rescued than may be accommodated at once.

The drum *e* is connected to the brake-disks *h* by ratchet devices 10, which allow the drum to run backward free of the disks to avoid the resistance of the brakes when returning the basket. The brake-disks are grooved on the face to retain the brake-bands, and the bands are adjustably connected to the yoke *j* at 11 to regulate their tension.

When not in use, the hooks *w* and props *x y* are released from the arms *u*, and the arms are swung down within the cabinet, with the basket and ropes packed in back of the arms, and the cabinet is closed by applying the side wall *d*, which has studs 12 of the lower edge that are entered in corresponding holes in the bottom, and the upper edge is fastened by a button 13 on a bar 17, secured by staples 14 in sockets 15, attached to the edges of side walls 16 of the cabinet, all in such contrivances that the cabinet may be opened quickly in time of need by lifting up bar 17 and lifting out wall *d*.

What I claim as my invention is—

1. In a fire-escape the combination of a portable inclosing case having the opening top and removable side, rotating drum, basket-suspending ropes on the drum, counterbalancing weighted rope wound on the drum reversely to the basket-suspending ropes, folding and outreaching basket-rope carrying arms pivoted in the case at the open side, pulleys for the basket-ropes, spring-actuated hooks and props for holding the arms in the outreaching position, friction-disks connected with the drum, brake-bands on the friction-disks, rock-shaft and rock-lever connected with the brake-bands and the brake-controlling rope suspended from the rock-lever.

2. In a fire-escape the combination of a portable inclosing case having the opening top and removable side, rotating drum, basket-suspending ropes on the drum, counterbalancing weighted rope wound on the drum reversely to the basket-suspending ropes, folding and outreaching basket-rope carrying arms pivoted in the case at the open side, spring-actuated hooks and props for holding the arms in the outreaching position, friction-disks connected with the drum with ratchet devices permitting the upwinding of the basket-ropes independently of the disks, brake-bands on the friction-disks, rock-shaft and rock-lever connected with the brake-bands and the brake-controlling rope suspended from the rock-lever.

3. The combination with the portable inclosing case, rotating drum, basket-suspending rope and folding arms, of the spring-actuated props, having the shoulders to lodge under the arms at their pivots, and the hooks to engage over the rear extremities of the arms.

4. The combination with the portable inclosing case, rotating drum, basket-suspending rope and folding arms, of the spring-actuated props having the shoulders to lodge under the arms at their pivots, and the hooks to engage over the inner extremities of the arms, said props perforated and having the arm pivot-shaft and the rock-shaft fitted through said perforations.

Signed by me at Naugatuck, Connecticut, this 21st day of December, 1899.

OLOF NELSON.

Witnesses:
WILLIAM P. J. KEILTY,
MICHAEL B. ZEIDY.