No. 831,462. PATENTED SEPT. 18, 1906.

J. N. NOYER.

FIRE ESCAPE.

APPLICATION FILED APR. 2, 1906.

2 SHEETS—SHEET 1.

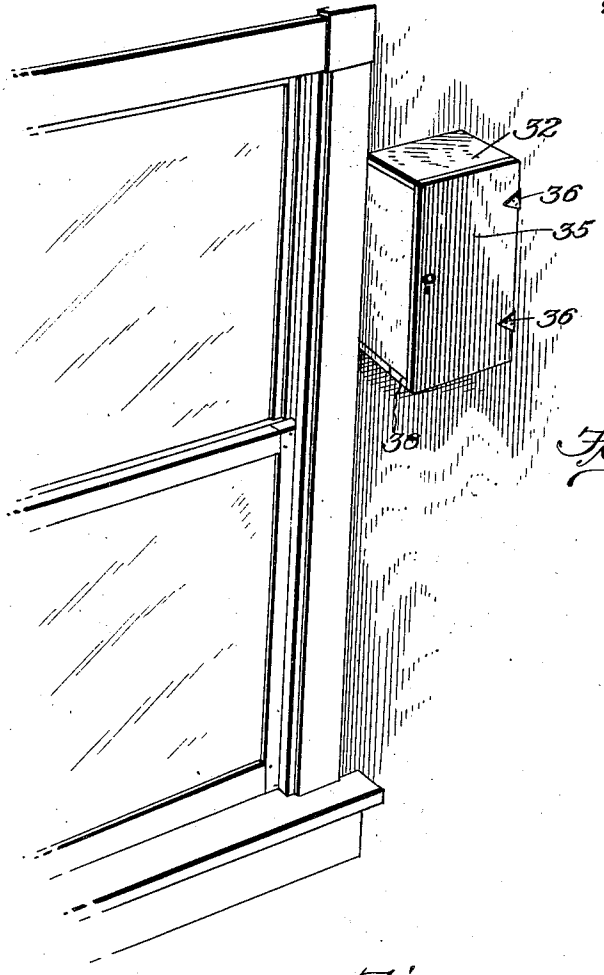
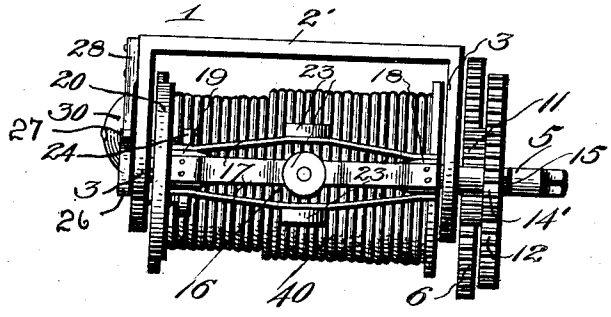


Fig. 1.

Fig. 5.



Witnesses
C. E. Hunt.
C. N. Griesbauer.

Inventor
Joseph N. Noyer
by A. B. Williamson & Co
Attorneys

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2 SHEETS—SHEET 2.

Fig. 2.

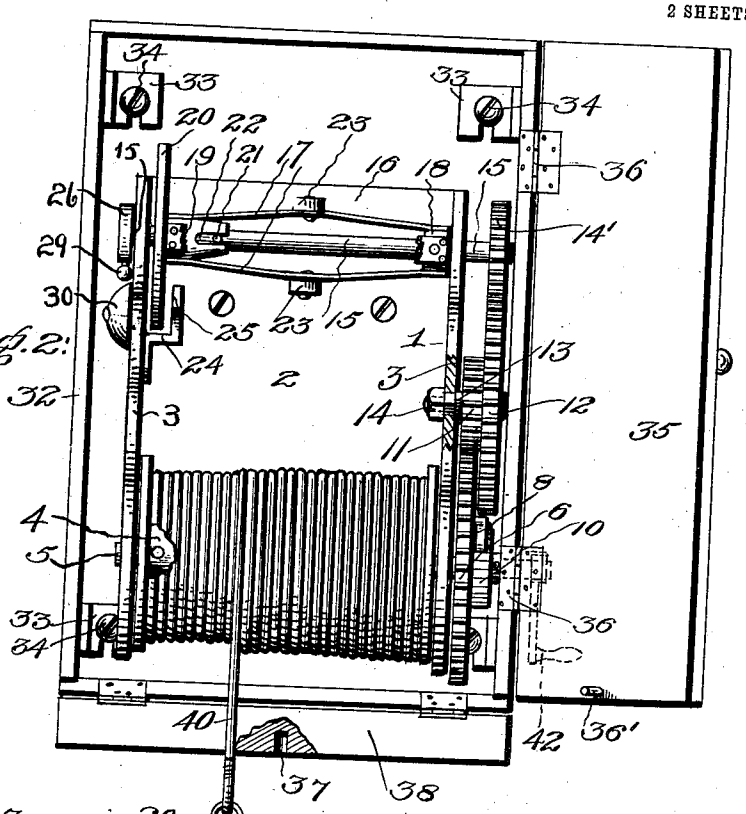


Fig. 3.

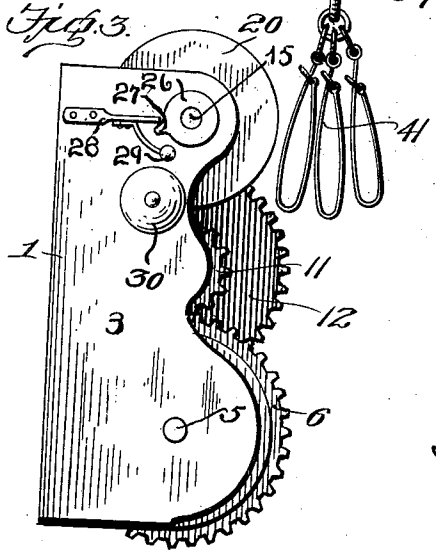
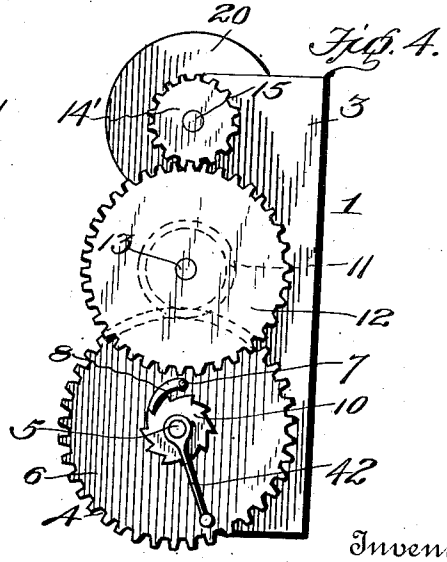


Fig. 4.



Witnesses
C. E. Hunt.
C. N. Griesbauer.

Inventor
Joseph N. Noyer.
by A. R. Wilson & Co
Attorneys

UNITED STATES PATENT OFFICE.

JOSEPH N. NOYER, OF GOULD CITY, WASHINGTON.

FIRE-ESCAPE.

No. 831,462. Specification of Letters Patent. Patented Sept. 18, 1906.

Application filed April 2, 1906. Serial No. 309,446.

To all whom it may concern:

Be it known that I, JOSEPH N. NOYER, a citizen of the United States, residing at Gould City, in the county of Garfield and State of Washington, have invented certain new and useful Improvements in Fire-Escapes; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in automatic fire-escapes by means of which persons may lower themselves in safety from a burning building.

One object of the invention is to provide a device of this character which may be conveniently mounted within a building and which will be entirely automatic in operation.

Another object of the invention is to provide a device of this character with an alarm mechanism which will be set in operation as one of the inmates of the building uses the fire-escape, so that others will be notified of the danger.

A further object of the invention is to improve and simplify the construction and operation of devices of this character, and thereby render the same more efficient, safe, and durable in use and less expensive to manufacture.

With the above and other objects in view my invention consists of certain novel features of construction, combination, and arrangement of devices hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a perspective view of the box or casing in which my improved fire-escape is inclosed. Fig. 2 is a front elevation of the fire-escape, the door of the box or casing being open. Figs. 3 and 4 are elevations of the opposite sides of the mechanism, and Fig. 5 is a top plan or end view of the mechanism.

Referring to the drawings by numeral, 1 denotes a suitable supporting-frame for the mechanism of my improved fire-escape, which frame may be secured by screws, bolts, or other fastenings upon the wall or ceiling of a building adjacent to a window or upon any other suitable support. As shown, this frame 1 consists of a vertically-disposed base-plate 2, having its vertical edges bent upwardly to form parallel sides 3. Mounted between the sides 3, adjacent to their lower ends, is a winding-drum 4, which is secured by a cross-pin to a shaft 5. The latter has its ends extending through bearing-openings in the sides 3, and upon one of said ends is loosely mounted a gear-wheel 6. This gear-wheel 6 has pivoted upon its outer face, as at 7, an automatic dog or pawl 8, which engages and coacts with a ratchet-wheel 10. The latter has its hub secured to the end of the shaft 5 by a cross-pin or the like, as shown. The gear-wheel 6 meshes with a smaller gear or pinion 11, secured to or formed integral with a gear 12. The wheels or gears 11 12 are mounted to rotate upon a stub-shaft 13, which has a polygonal portion at its end to engage a similar opening in one of the sides 3 and also a screw-threaded portion at said end to receive a nut 14, which secures it upon said side 3. The wheel or gear 12 meshes with a pinion 14′, secured upon one of the outer ends of a shaft 15, which extends through bearing-openings formed in the upper portion of the sides 3. This shaft 15 carries a governing and braking device 16, which consists of two or more longitudinally-extending springs 17, each of which has one of its ends secured to a fixed collar or hub 18 upon the shaft 15 and its opposite end similarly secured to the collar or hub 19, which is adapted to slide longitudinally on the shaft 15, and which carries a brake wheel or disk 20. The sliding hub or collar 19 is caused to rotate with the shaft 15, but is free to slide longitudinally on the same by providing a cross-pin 21 in the shaft 15 and having the ends of said pin project through slots or openings 22. Upon the central portions of the springs 17 are secured weights 23, which are adapted to fly outwardly as the shaft 15 is rotated and move the collar 19 and its brake-disk 20 longitudinally on the shaft. The brake-disk 20 is secured to the outer end of the collar 19 and is disposed adjacent to one of the sides 3, upon which latter is secured by bolts, rivets, or the like a bracket 24, which is formed with a segmental-shaped brake-surface 25. The latter is spaced from the side 3 and is in the path of the inner face of the brake disk or wheel 20, so that as the latter is moved inwardly when the shaft 15 rotates rapidly the inner surface or face of said disk will engage the stationary brake-surface 25 of the bracket, as will be readily seen upon reference to Fig. 2 of the drawings.

In order to sound a fire-alarm to warn the occupants of a building while the device is in operation, I provide upon one end of the shaft 15 a cam-wheel 26. The cam 27 upon this wheel is adapted to strike and operate a

spring-arm 28 as the shaft 15 rotates. This arm 28 is secured upon the outer face of one of the sides 3 and carries a bell-hammer 29, which strikes a bell 30, also secured upon said side 3. The resiliency of the spring-arm 28 holds the hammer normally away from the bell and its upper end in the path of the cam 27, so that as the shaft 15 rotates the hammer will strike the bell upon each rotation.

I preferably inclose the above-described mechanism in a box or casing 32, which is open at its back and adapted to fit over and to be removably secured upon the mechanism. This box is thus supported by providing upon the inner faces of the sides of the box forked brackets 33, which are adapted to fit over headed screws or studs 34, provided in the support upon which the frame 1 is mounted. The front of the box is closed by a door 35, which is hinged along one side, as at 36, and has upon the center of the inner face of its bottom an inwardly-projecting pin or stud 36′, which is adapted to enter a similarly-arranged opening 37 in a swinging forward section 38 of the bottom of the box. The bottom of the box consists of a rear stationary section and the swinging forward section 38, which is hinged to the stationary section, so as to swing downwardly by gravity when the door 35 is opened and the pin 36 disengaged from the opening 37. This swinging bottom section is provided to permit of a direct pull upon the rope, cable, chain, or other flexible connection 40, which is wound upon the drum 4. Said rope 40 has connected to its free end one or more belts, baskets, or other suitable devices adapted to support one or more persons. As shown, the rope 40 has attached to its free end slip loops or belts 41, which may be passed around the bodies of the persons who are to use the fire-escape. In order to permit the device to be used repeatedly, I provide a crank-handle 42, by means of which the drum 4 may be rotated to rewind the rope upon it. The crank-handle 42 is disposed upon the outside of the box or casing and has one of its ends secured to the projecting end of the shaft 5 in any suitable manner. The provision of the pawl-and-ratchet connection between the gear 5 and the shaft permits the latter, and hence the drum 4, to rotate without operating the gearing between the shaft 5 and the brake-shaft 15, as will be readily understood.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention as defined by the appended claims.

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

1. A fire-escape apparatus comprising a frame or support, a windlass mounted therein, a shaft journaled in said frame, a train of gearing between the latter and said windlass, a collar or sleeve slidably but non-rotatably mounted upon said shaft, spring-strips connected to said collar and to said shaft, centrifugal weights upon said strips, a friction-disk carried by said sleeve or collar, and a stationary friction brake device carried by said frame and spaced therefrom to coact with said friction-disk, substantially as described.

2. A fire-escape apparatus comprising a supporting-frame consisting of a base and parallel sides, a shaft journaled in the sides of said frame, a drum secured to said shaft, a flexible connection wound upon said drum, a gear upon said shaft, a pawl and ratchet between said gear and said shaft, a second shaft in the sides of said frame, gearing between the second shaft and said gear, a collar or sleeve slidably but non-rotatably mounted upon said second shaft, spring-strips secured to said collar or sleeve and said second shaft, centrifugal weights upon said spring-strips, a friction-disk carried by said collar or sleeve, a bracket attached to one side of said frame and having a segmental friction brake-surface in the path of said friction-disk, substantially as described.

3. A fire-escape apparatus comprising a frame or support, a windlass mounted therein, a shaft journaled in said frame, a train of gearing between the latter and said windlass, a collar or sleeve slidably but non-rotatably mounted upon said shaft, spring-strips connected to said collar and to said shaft, centrifugal weights upon said strips, a friction-disk carried by said sleeve or collar, a stationary friction brake device carried by said frame and spaced therefrom to coact with said friction-disk, and an alarm device actuated by said shaft, substantially as described.

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

JOSEPH N. NOYER.

Witnesses:
ATTWOOD A. KIRBY,
FRANK MESSENGER.