(No Model.)

2 Sheets—Sheet 1.

J. HORNBY.

FIRE ESCAPE.

No. 380,284. Patented Mar. 27, 1888.

Fig. 1.

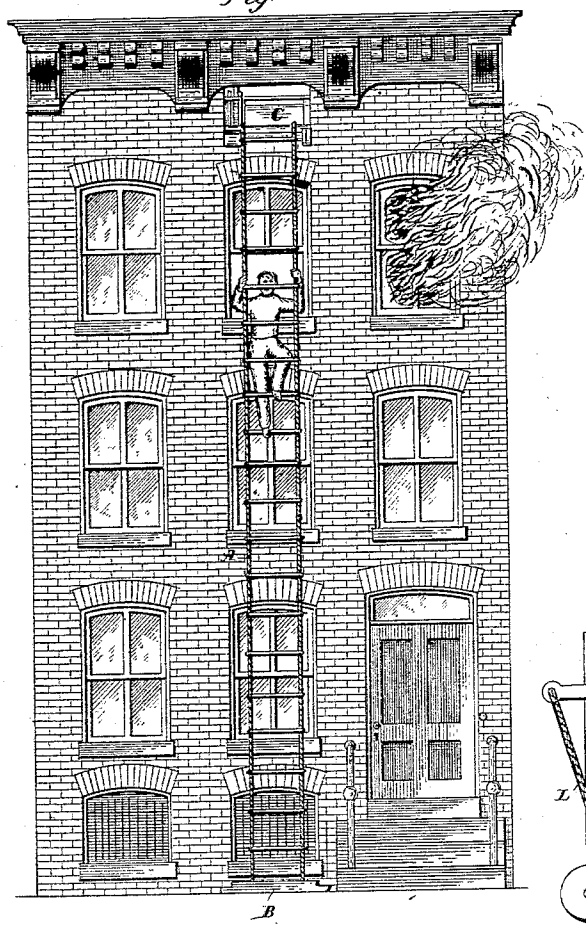


Fig. 2.

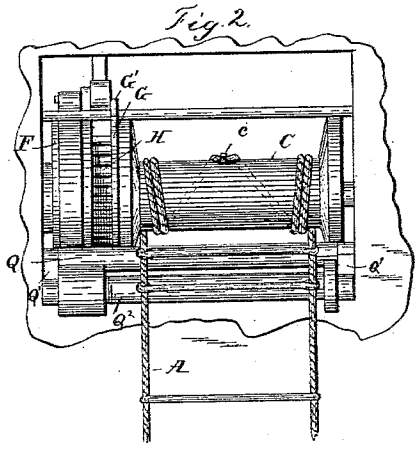


Fig. 3.

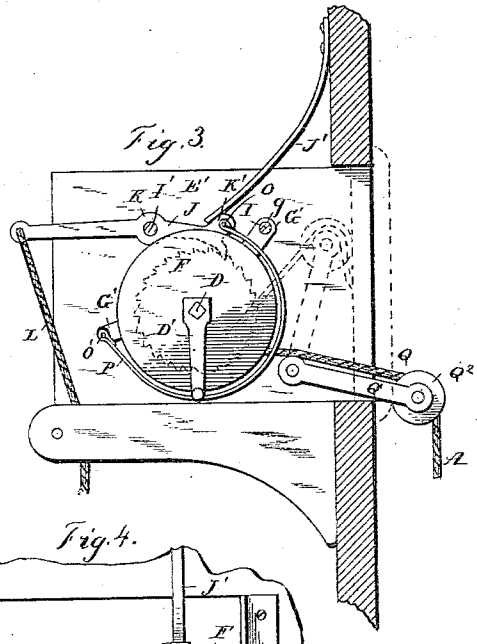


Fig. 4.

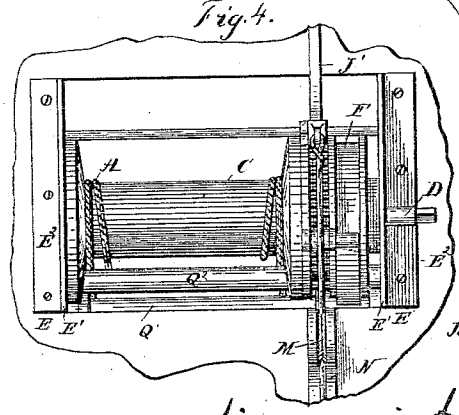
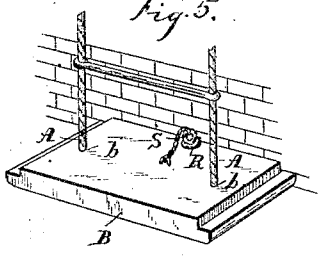


Fig. 5.



Witnesses.
Edwin L. Bradford.
Charles J. Stockman.

Inventor
James Hornby

By his Attorney in fact
Charles E. Barker

N. PETERS, Photo-Lithographer, Washington, D. C.

(No Model.)

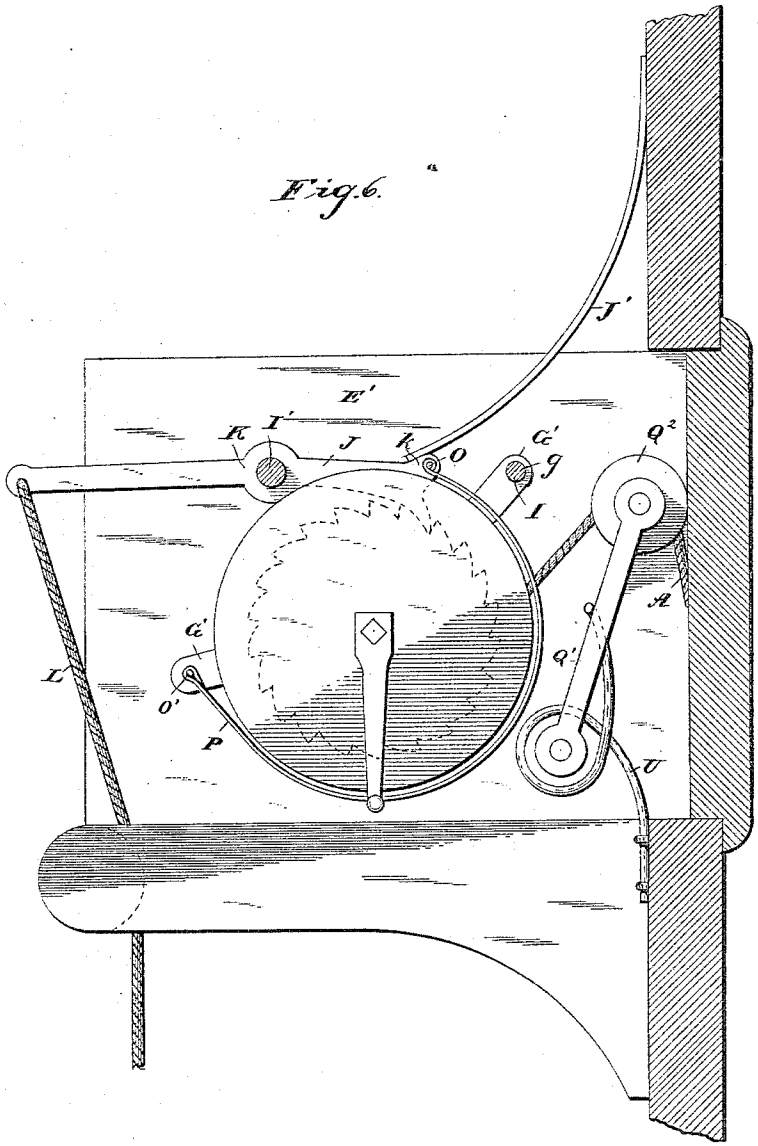
2 Sheets—Sheet 2.

J. HORNBY.

FIRE ESCAPE.

No. 380,284. Patented Mar. 27, 1888.

Fig. 6.



Witnesses.
Edwin L. Bradford.
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Chas. E. Barber

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UNITED STATES PATENT OFFICE.

JAMES HORNBY, OF SAN ANTONIO, TEXAS.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 380,284, dated March 27, 1888.

Application filed October 14, 1887. Serial No. 252,380. (No model.)

To all whom it may concern:

Be it known that I, JAMES HORNBY, a citizen of the United States, residing at San Antonio, in the county of Bexar and State of Texas, have invented a certain new and useful Improvement in Fire-Escapes, of which the following is so full, clear, and exact a description as will enable others skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawings.

This invention relates to an improvement in fire-escapes, the object being to construct a device of this character, adapted for attachment to buildings, which may be folded up out of the way when not in use, and which can be lowered to the ground and secured in position for use in an emergency in the shortest possible space of time and with the least expense of physical force.

Another object of my invention is to construct a fire-escape ladder which when released will fall to the ground by force of gravity and immediately be in position for use.

Another object of my invention is to construct a device of the above character which will be capable of being operated from a room in the lower part of the building in which it is situated.

Still another object of my invention is to construct a device of the above character capable of being folded up out of the way when not in use and which will not mar the appearance of the building to the slightest extent.

The object, further, of my invention is to construct a device of the character set forth, the descent of the ladder of which can be regulated or stopped by the same cable which releases it and permits it to descend.

The objects, generally, of my invention are to simplify the construction, decrease the cost of manufacture, and improve the operation of devices of this character, and to construct one which, by reason of its advantages, will readily recommend itself to the great masses of people requiring such a device.

To these ends my invention consists in certain peculiarities in the construction, arrangement, and combination of parts, substantially as will be hereinafter described, and particularly pointed out in the claims at the end of the specification.

In the accompanying drawings, illustrating my invention, Figure 1 is a front plan of a building, showing my improved fire-escape attached thereto and in position for use. Fig. 2 is a detail plan of the supporting and operating parts of my invention. Fig. 3 is a side plan of the same with one side of the supporting-frame removed. Fig. 4 is a rear elevation of the same. Fig. 5 is a detail perspective of the foot-board, showing it as secured to the building. Fig. 6 is an enlarged view showing the spring U in place.

Similar letters of reference denote corresponding parts in the several figures.

A represents a ladder, and B the foot board or plate. The sides and rungs of this ladder are preferably formed of wire rope and iron bars, respectively, and the foot-board of metal, in order to make them of sufficient weight to overcome the tension of the supporting mechanism and permit the ladder to fall by force of gravity. The foot-board B is constructed with perforations *b b*, for the reception of the extremities of the ladder A, in order to secure them together. This ladder A when not in use is adapted to be wound around a drum, C, having a pin or projection, *c*, to which the upper extremities of the ladder are secured to keep the said ladder upon the drum. This drum C is mounted on a shaft, D, having its bearings in a supporting-frame, E, and its outer extremities are squared for the reception of a crank-handle, D′, by means of which the drum is revolved to wind or unwind the ladder. This frame E is preferably secured to the interior of the building, and consists of the plates E′ E′, having flanges E^2 E^2 at their extremities perforated for the reception of screws, by means of which the frame is secured to the building; but I do not wish to be understood as limiting myself to this exact construction of the frame, as any other suitable form may be used without departing from the spirit of my invention or in any manner interfering with its usefulness. The shaft D also carries a ratchet, H, situated at the extremity of the drum C. Adjacent to this ratchet H is a pulley, F, and between the drum and

the ratchet is a plate, G, having lugs or projections G′, formed with perforations *g*, for the purpose hereinafter set forth.

Immediately above the drum and extending transversely across the frame are rods I I′, the extremities of which are situated in perforations *i i*, formed in the said supporting-frame. These rods I I′ serve to strengthen the frame, keeping the plates from lateral displacement, and one of them, as I′, serves as a pivotal bearing for a pawl, J, and on their passage across the frame they pass through the perforated lugs G′ of the plate G. The pawl is formed with a lug, K, having a perforation for the reception of the rod I′, which forms a pivotal bearing for the same, as before explained, and the outer free end of the pawl is formed with a perforation for the reception of a cable or rope, L, by which it can be lifted out of engagement with the ratchet H, in order to permit the ladder to be wound upon or cause it to unwind from the drum.

It will be obvious that the cable L may only extend to the garret or top floor of the building, and the device be operated from there; but I prefer to extend it to the lower rooms of the building, or, in the event of its being situated in a hotel, to the office, the object and advantages of which will be readily comprehended. This cable passes over a friction-pulley, M, which may be supported by the bifurcated arm N, or in any other suitable manner, without departing from the spirit of my invention. A spring, J′, is preferably situated above the frame E, and the lower free end presses against the projection K′ of the pawl and keeps the said pawl normally in engagement with the ratchet H. Within the perforation of the lug K′ the extremity of a pin, O, is situated, to which is secured one end of a brake-shoe, P, the other end of the said shoe being secured to a pin, O′, projecting from one of the lugs G′ of the plate G.

From the foregoing it will be obvious that in order to provide an escape on the exterior of a dwelling for the inmates all that is necessary is to pull upon the cable L, when the pawl J will be disengaged from the ratchet H and the ladder will immediately be impelled to the ground by the force of gravity, and the device will be in position for use, and in the event of the ladder's descending too rapidly a stronger pull upon the cable will cause the brake-shoe P to come into frictional contact with the pulley F, and the descent of the ladder stopped or its rapidity lessened, as desired. When the cable is released, the spring will force the pawl into engagement with the ratchet.

Situated at or near the lower front corner of the frame E is an oscillating guide-rack, Q, consisting of the arms Q′ Q′, having friction-rollers Q^2 Q^2 journaled therein. This guide-rack, when the device is not in use, is adapted to be situated in an upright position in order to be out of the way. A spring, U, may or may not be provided to cause this oscillating rack to fall when the ladder falls.

The device is preferably located at or near the top of a dwelling, and a space may be excavated for its reception, as shown in Fig. 1; but the foot-board will be of such a size as to entirely conceal this space, so that when the device is not in use the appearance of the dwelling will be the same as if it were not provided with my improved escape, and nothing will be presented to view to mar the appearance of the dwelling.

A ring, R, is located at or near the bottom of the dwelling for the reception of the pin S, which may or may not be secured to the said foot-board, and which passes through the said ring and through a perforation in the foot-board, so that the device will thus be held securely to the dwelling against lateral displacement.

It will be obvious that when a number of escapes are used in a building they may be operated simultaneously, and by one effort, by connecting their cables to one general cable, which will extend to the desired room of the building.

It will doubtless be found, in the practical construction of this device, that many of the details might advantageously be varied, and I do not wish to be understood as limiting myself to the exact construction of parts herein shown and described, but reserve the liberty of varying these details without departing from the spirit of my invention.

Having now described the construction, objects, and advantages of my invention, what I believe to be new and desire to secure by Letters Patent, and what I therefore claim, is—

1. In a fire-escape, the combination, with a supporting-frame, a drum, a shaft having its bearings in the said supporting-frame, and a ratchet, of a ladder, a metallic foot-board, a pawl for engagement with said ratchet, having a projection, a spring having its free end pressing against the said projection, and a cable at the outer end of the said pawl for operating the same.

2. In a fire-escape, the combination, with a supporting-frame, a shaft journaled therein, a drum, ratchet, and friction-pulley mounted on the same shaft, of a ladder, its foot-board, a pivoted pawl, and a brake-shoe secured to and carried by the said pawl, substantially as described, whereby the ladder will be permitted to descend and its speed regulated by the same cable.

3. In a device of the character described, a supporting-frame, a shaft journaled therein, a drum, ratchet, and friction-pulley mounted on the said shaft, and a plate having a perforated lug or projection carrying a pin, in combination with a ladder, a foot-board, a pivoted pawl having a perforated lug or projection and a pin situated therein, a brake-shoe

having its extremities secured to the pins of the pawl and the plate, and a cable for operating the said pawl.

4. In a fire-escape, the combination of a ladder and its metallic foot-board having a perforation, a ring secured to the building, a pin adapted to pass through the said ring and the perforation in the foot-board and serving to keep the said ladder in position for use, substantially as shown and described.

In testimony whereof I affix my signature in the presence of two witnesses.

JAMES HORNBY.

Witnesses:
M. JACKSON,
LOUIS HEUERMANN.