(No Model.)

P. A. BURGESS.

FIRE ESCAPE.

No. 491,405. Patented Feb. 7, 1893.

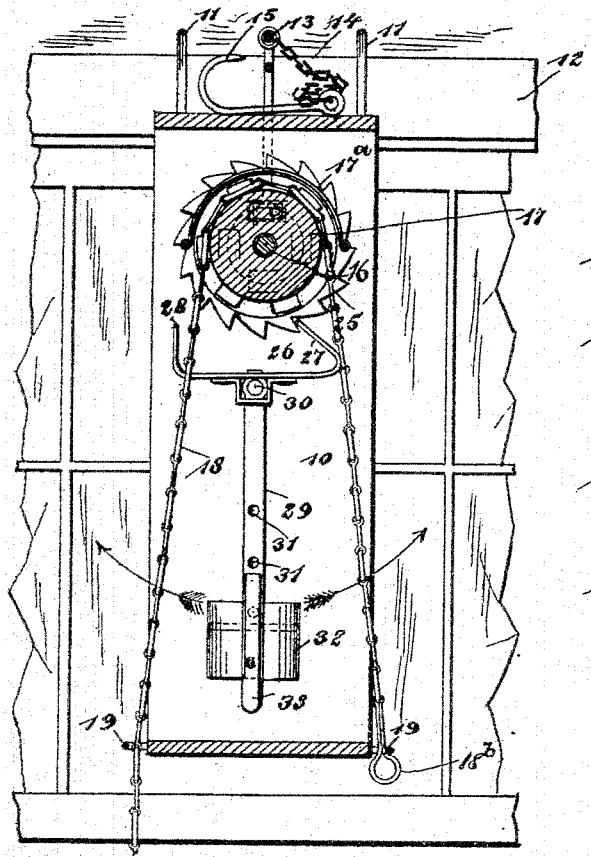

Fig. 1.

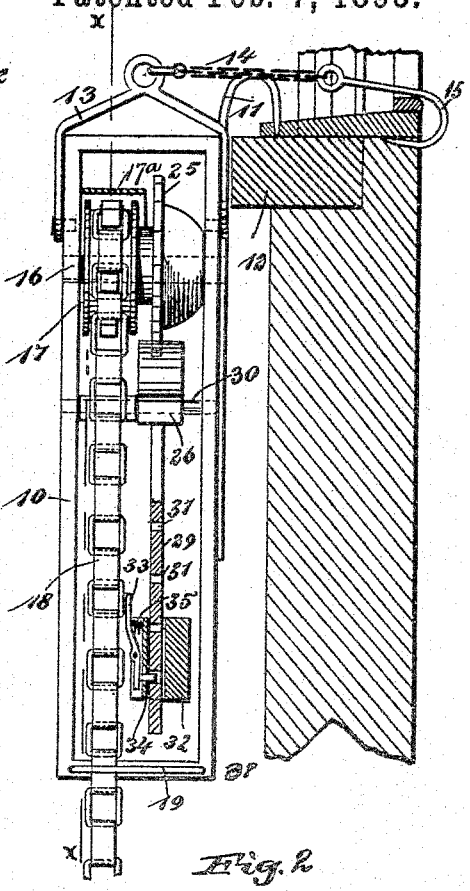

Fig. 2.

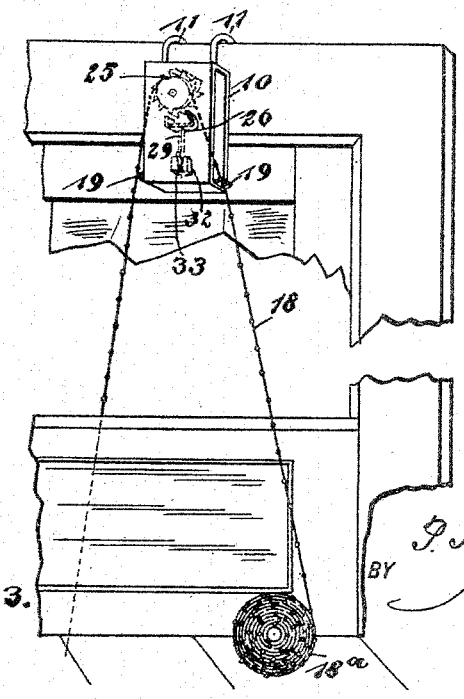

Fig. 3.

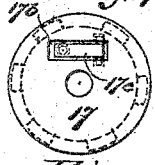

Fig. 4.

Fig. 5.

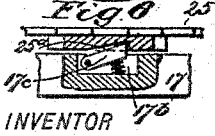

Fig. 6.

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FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 491,405, dated February 7, 1893.

Application filed June 9, 1892. Serial No. 436,032. (No model.)

To all whom it may concern:

Be it known that I, PERRY A. BURGESS, of Steamboat Springs, in the county of Routt and State of Colorado, have invented a new and Improved Fire-Escape, of which the following is a full, clear, and exact description.

My invention is a cheap, simple and portable fire escape which is so compactly constructed that it may be conveniently carried in a person's luggage, and yet adapted to be arranged permanently in a room by attachment to some firm projection such as a window sill.

To this end my invention consists in certain features of construction and combinations of parts, which will be hereinafter described and claimed.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a front sectional elevation of the fire escape as applied to a building, taken on the line *x*—*x* in Fig. 2; Fig. 2 is a side elevation of the same with the harness removed and with the building and the pendulum in section; Fig. 3 is a perspective view of the apparatus on a reduced scale, and showing a convenient way of coiling the main chain within a room; Fig. 4 is a detail elevation of one side of the sprocket wheel; Fig. 5 is a broken side elevation of the ratchet wheel; and Fig. 6 is a broken detail sectional view showing the ratchet connection between the ratchet wheel and sprocket wheel.

The device is provided with a light open frame 10, which is preferably rectangular, as shown, and this has at the top and on one side a pair of hooks 11, which are adapted to suspend the frame from the projecting portion, as 12, of a building. The frame has also a bail 13, at the top to which is secured a short chain 14, carrying a hook 15, which may be thrown over a window-sill or other convenient part of the building to still further secure the frame.

Near the top of the frame is a transverse shaft 16, which is journaled therein, and on this is a sprocket wheel 17, carrying a flat chain 18, having alternate open links adapted to fit over the teeth of the sprocket wheel. The chain is held to slide through guides 19, on opposite sides and at the lower end of the frame, the chain being made to go through either guide, as desired. At one end of the chain is a stop 18^b which is too large to go through the guides 19 and by striking a guide as in Fig. 1, it prevents the chain from dropping off the sprocket wheel. At the opposite end of the chain is a snap hook 20, which is adapted to engage and support the harness 21, this being for the purpose of easily suspending the body of a person.

The harness comprises a strap 22, provided with a buckle and adapted to extend around the body beneath the arms, and a strap 23, is also provided with a buckle and arranged at right angles to the strap 22, the strap having loops 24, through which the strap 22 extends. This arrangement of the strap enables a person to sit upon the strap 23, and be held in place by a strap 22, and with the hands the person may grasp the chain to steady himself.

Supported above the sprocket wheel 17 is a curved guard 17^a, which prevents the chain from slipping off the sprocket teeth. On the shaft 16 at one side of the sprocket wheel is a ratchet wheel 25. On one side of the ratchet wheel is a series of ratchet notches 25^a which are arranged circumferentially around its center, and these engage a spring pressed pawl 17^c which is pivoted in a recess 17^b in the hub of the sprocket wheel 17. The notches have inclined back walls and the arrangement of the notches and pawl is such that when a person is descending on the chain 18, the ratchet wheel 25 and sprocket wheel 17 are locked together and the speed is regulated by the escapement described below, which engages the ratchet wheel, but when the chain is pulled back the movement of the sprocket wheel does not affect the ratchet wheel, and consequently the apparatus may be used quickly and often without excessive wear.

Beneath the ratchet wheel is an escapement 26, having the end pawls 27 and 28, which are adapted to alternately engage the teeth of the ratchet wheel in a common and well known way. The escapement is carried by a pendulum rod 29, which is pivoted at its upper end on a stud 30, and the rod has near its lower

end a series of perforations 31, arranged one above the other. The pendulum rod carries a pendulum 32, which is held to slide on the rod, and pivoted in a longitudinal recess in one side of the pendulum is a latch 33, having near one end a stud 34, which is adapted to project through the wall of the pendulum and into one of the perforations 31. The stud is normally held in engagement with the perforated pendulum rod by a spring 35, and which presses outward upon one end of the latch 33.

It will be seen that when weight is applied to the chain 18, the escapement will swing back and forth so as to permit the ratchet wheel to turn tooth by tooth, and the person, or other burden on the chain, will thus descend slowly and steadily. The object of having the vertically adjustable pendulum is to provide for different weights, as a heavy weight will naturally impart a quicker movement to the escapement than a lighter one, and consequently when a light weight is to be lowered the pendulum is fixed relatively high on the rod.

In practice the chain 18 may be passed over the sprocket wheel, as shown in Fig. 1, or its inner end may be arranged in a coil and held within the room, as shown at 18^a in Fig. 3, or if desired, the upper end of the chain may be secured to a common form of reel which may be attached to any convenient support, so that the chain may run down all right, as described, and may be easily wound up. It will be readily understood that all that is necessary is to have a chain of sufficient length which will pass over the sprocket wheel and reach from it to the ground.

The operation of the escape is as follows:—When it is to be used, the frame 10 is hung to the most convenient part of the building and the person to be lowered adjusts the harness 21, or has it adjusted for him, and then simply steps out of the window or other part of the building; this will cause the sprocket wheel and ratchet wheel to be turned, and the movement of the ratchet wheel will actuate the escapement, which takes the place of a brake, and permits the person to descend safely to the ground. It will also be understood that the escape forms a convenient means for lowering valuable packages. After the weight or person has been lowered, the chain 18 is drawn back to place and the device is ready for another operation.

The harness shown and described forms a convenient means of securing a person or other object, but other carrying devices may be secured to the chain if desired.

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

1. A fire escape, comprising an open sided frame having suspending hooks at the top and on one side and keepers at its lower end opposite its open side, a bail secured to the top and having a fastening chain and hook connected therewith, a sprocket wheel journaled in the frame, a chain carried by the sprocket wheel and held to slide through the keepers, a load-securing harness arranged at one end of the chain, a ratchet wheel held to turn with the sprocket wheel, and a pendulum escapement to limit the speed of the ratchet wheel, substantially as described.

2. The combination of the frame having keepers thereon, the sprocket wheel journaled in the frame, speed controlling mechanism for the sprocket wheel, and a chain extending over the sprocket-wheel, and having a load securing device at one end and a stop to engage the keeper at the other, substantially as described.

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Witnesses:
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