No. 759,335. PATENTED MAY 10, 1904.

C. G. WHEELAND.

FIRE ESCAPE.

APPLICATION FILED OCT. 8, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

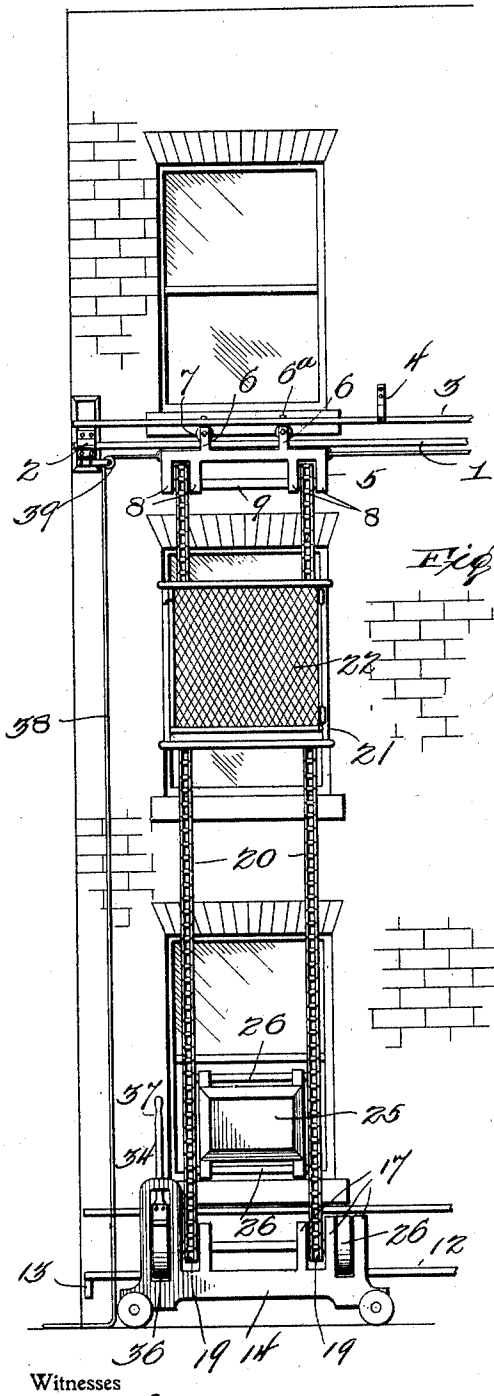


Fig. 1.

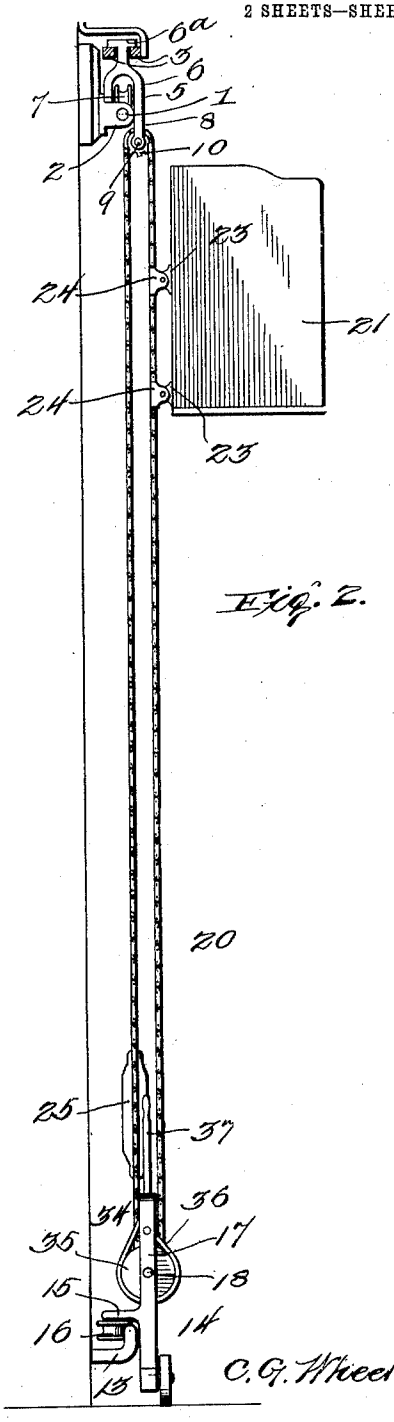


Fig. 2.

Witnesses

J. L. Morrison

Inventor

C. G. Wheeland

By A. B. Wilson

Attorney

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

No. 759,335. PATENTED MAY 10, 1904.

C. G. WHEELAND.

FIRE ESCAPE.

APPLICATION FILED OCT. 8, 1903.

NO MODEL. 2 SHEETS—SHEET 2.

Fig. 3.

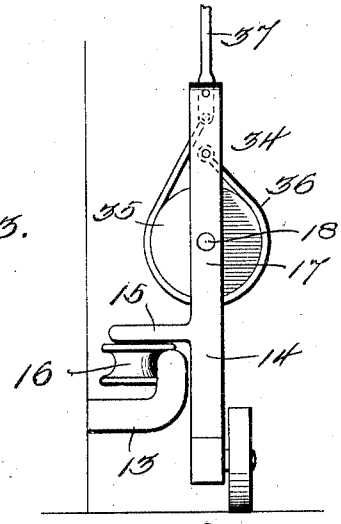


Fig. 4.

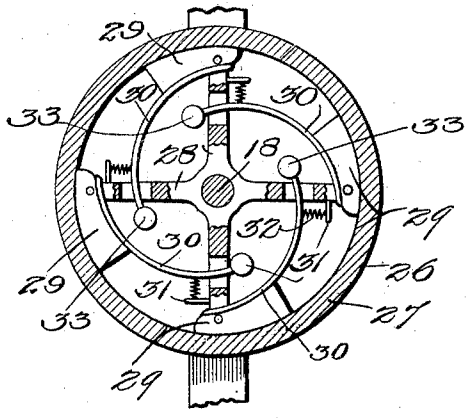
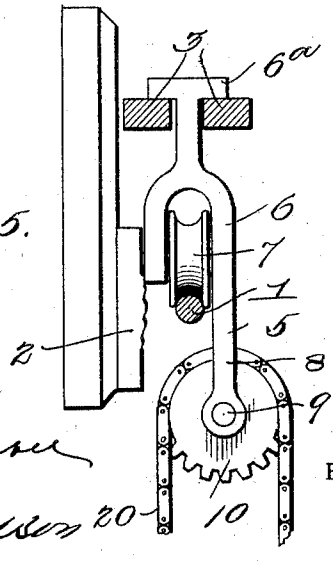


Fig. 5.



Witnesses

J. L. Morrison

Inventor

C. G. Wheeland

By H. B. Wilson

Attorney

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

No. 759,335. Patented May 10, 1904.

UNITED STATES PATENT OFFICE.

CHARLES GRIER WHEELAND, OF ARLINGTON, IOWA.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 759,335, dated May 10, 1904.

Application filed October 8, 1903. Serial No. 176,276. (No model.)

To all whom it may concern:

Be it known that I, CHARLES GRIER WHEELAND, a citizen of the United States, residing at Arlington, in the county of Fayette and State of Iowa, 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.

This invention relates to improvements in fire-escapes.

The object of the invention is to provide a fire-escape which is automatically controlled, but which may at the same time be also positively controlled without interfering with the automatic controlling mechanism.

Another object is to provide a fire-escape which may be quickly moved across the front of a house and stopped at any window.

A further object is to provide a fire-escape which will be simple in construction, efficient, and capable of carrying one person or a number of persons safely to the ground.

With these and other objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts, as will be more fully described, and particularly pointed out in the appended claims.

In the drawings, Figure 1 is a front elevation of a portion of a building, showing the application of the device. Fig. 2 is a side elevation of the same. Fig. 3 is an enlarged end view of the lower carriage or truck. Fig. 4 is an enlarged vertical cross-sectional view through the same, illustrating the construction of the governor. Fig. 5 is an end elevation of the upper carriage, showing the track-rail and guide-bars in section.

Referring more particularly to the drawings, 1 denotes a track-rail mounted in brackets 2, secured to the wall of a building. The track-rail 1 may be arranged at any level on the building, but is shown in the drawings as being arranged immediately below the sills of the upper row of windows. Immediately above the track-rail 1 are arranged two parallel bars or rods 3, supported at intervals along their length by brackets or hangers 4.

5 denotes a carriage having upwardly-projecting brackets 6, in which are journaled grooved rollers 7, which are adapted to engage and to run on the track-rail 1. The brackets 6 are extended upwardly and have their ends projecting between the bars 3 and having formed thereon a head 6^a, which prevents the withdrawal of the end of the bracket from between the bars 3. This construction serves to prevent the rollers from leaving the track-rail and also prevents the carriage 5 from swinging or having any lateral movement.

8 denotes two pairs of downwardly-projecting ears or lugs formed on the carriage and in which is journaled a shaft 9. Between each pair of lugs 8 is arranged a sprocket-wheel 10, which is fixed on the shaft 9.

12 denotes a track-trail arranged near the ground at the base of the building and supported by brackets 13.

14 denotes a lower carriage or truck having supporting wheels or rollers which are adapted to run on the ground. On the rear side of the truck 14 are laterally-projecting brackets 15, in which are journaled horizontally-disposed guide-rollers 16, that are adapted to engage the track-rail 12 to prevent outward movement of the lower truck, as will be understood.

17 denotes upwardly-projecting lugs or standards arranged at each end of the truck 14, and in said standards is journaled a shaft 18, on which and between the inner pair of standards 17 at each end of the truck is mounted a spocket-wheel 19.

20 denotes two endless sprocket-chains, which connect the sprocket-wheels 10 and 19, and to the outer or front stretches of the chains is fastened a car or cage 21, which is preferably in the shape of a rectangular metal box, open at its upper end and formed solid on three of its sides, but having a network or grated front side in the form of a door 22. The car may be connected to the chains in any suitable manner, but is here shown as provided at each inner corner with two rearwardly-projecting lugs or ears 23, which are riveted or bolted to two similar lugs 24, formed on two of the links of each chain.

25 denotes a weight arranged between the rear or inner stretches of the chains and connected to the upper and lower cross-bars 26, which are connected at their ends to each of the rear stretches of the chain, as shown. The weight 25 is sufficiently heavy to just overbalance the car when the latter is empty. Consequently as soon as the load is removed from the car the weight will descend on the rear stretches of chain, causing the car to ascend on the front stretches, as will be understood.

26 denotes the automatic centrifugal governor, consisting of a cylindrical rim or band 27, fixed between the outer pair of standards 17 at one end of the truck 14 and arranged concentrically to the shaft 18, the end of which projects through the rim and into the outer standard 17. On this end of the shaft are fixed laterally-projecting arms 28, to the ends of which are pivotally connected brake-shoes 29, to which are connected curved arms 30. The opposite ends of the curved arms 29 project through elongated guideways formed in or on the arms 28, as shown.

On the arms 28 are formed lugs 31, to which are connected one end of light coiled springs 32, the opposite ends of which are connected to the curved arms 30 to support and hold the same in place. On the inner ends of the arms are fixed governor-balls 33, which as the shaft turns will be thrown outwardly from the center by centrifugal force, which will cause the shoes 29 to frictionally engage the inner side of the rim 27, and thereby retard the revolution of the shaft 18, causing the car or cage to descend slowly and easily to the ground. The greater the load carried by the car the more rapid would be the descent, which would cause a more rapid revolution of the shaft 18 and a consequent increase in the centrifugal motion, which would throw the balls 33 out with greater force and cause the brake-shoes to more tightly engage the rim 27. Thus it will be seen that a heavily or a lightly loaded car will be equally restrained by the governor and the descent of either will be automatically controlled.

34 denotes a positive brake arranged at the opposite end of the truck 14 and consisting of a band-wheel 35, fixed to the shaft 18. Between the outer pair of standards 17 at this end of the truck around the wheel 35 is arranged a band 36, having one end connected to the cross-bar on the upper ends of the standards and the opposite end connected to the lower end of a lever 37, pivoted to the standards 17 and which when operated will tighten the band 36 on the wheel 35 and stop the rotation of the same and the shaft 18, which will of course stop the ascent or descent of the car opposite any window or at any point desired.

In order to shift the fire-escape across the side of the building, cables 38 are provided, one end of each being connected to the ends of the upper carriage 5 and passing through guide-pulleys 39, fixed to the brackets 2 at the ends of the building, and from thence running to the ground, where they may be grasped and the apparatus drawn along to the position wanted.

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.

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

1. In a fire-escape, the combination with upper and lower carriages or trucks, having grooved rollers, shafts rotatably mounted in said carriages and sprocket-wheels fixed to said shafts, of endless chains connecting said sprocket-wheels, a car carried by one stretch of said chain, and an overbalancing-weight carried by the other stretch, whereby said car will be raised when empty, a track-rail for supporting said upper carriage, means for retaining said rollers on said track-rail and preventing lateral swinging of said carriage, a track-rail for guiding said lower carriage, means for shifting the fire-escape along said rails, means for automatically controlling the descent of said car and means for positively controlling both the ascent and descent of the same, substantially as described.

2. In a fire-escape the combination with upper and lower carriages or trucks having grooved rollers, shafts rotatably mounted in said carriages and sprocket-wheels fixed to said shafts, of endless chains connecting said sprocket-wheels, a car carried by one stretch of said chain, and an overbalancing-weight carried by the other stretch, whereby said car will be raised when empty, a track-rail for supporting said upper carriage, guide-bars arranged above said track-rail, brackets projecting upwardly from said upper carriage and engaging said guide-bars whereby said carriage is prevented from swinging laterally, a track-rail engaged by the grooved rollers of said lower carriage whereby said lower carriage is guided, and held in place, cables connected to each end of said upper carriage and passing over guide-pulleys to the ground, the pulling of which will shift the fire-escape along said track and guide-rails, means for automatically controlling the descent and means for positively controlling both the ascent and descent of said car, substantially as described.

3. In a fire-escape, the combination with upper and lower carriages or trucks having grooved rollers, shafts rotatably mounted in said carriages and sprocket-wheels fixed to

said shafts, of endless chains connecting said sprocket-wheels, a car carried by one stretch of said chain, and an overbalancing-weight carried by the other stretch, whereby said car will be raised when empty, a track-rail for supporting said upper carriage, means for slidingly supporting said upper carriage and means for shifting the fire-escape along said support, a centrifugal governor arranged on the shaft of said lower truck or carriage whereby the descent of said car is automatically controlled, and means for positive controlling both the ascent and descent of said car, substantially as described.

4. In a fire-escape, the combination with upper and lower carriages or trucks having grooved rollers, shafts rotatably mounted in said carriages and sprocket-wheels fixed to said shafts, of endless chains connecting said sprocket-wheels, a car carried by one stretch of said chain, and an overbalancing-weight carried by the other stretch, whereby said car will be raised when empty, a track-rail for supporting said upper carriage, means for slidingly supporting said upper carriage and means for shifting the fire-escape along said support, a centrifugal governor arranged on the shaft of said lower track or carriage whereby the descent of said car is automatically controlled, and a friction-brake also arranged on said lower shaft whereby both the ascent and descent of said car may be positively controlled, substantially as described.

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

CHARLES GRIER WHEELAND.

Witnesses:
HENRY NUS,
CLARA MEISGEIER.