(No Model.) 2 Sheets—Sheet 1.

A. VAN WAGNER.

FIRE ESCAPE.

No. 267,286. Patented Nov. 7, 1882.

Fig. 1.

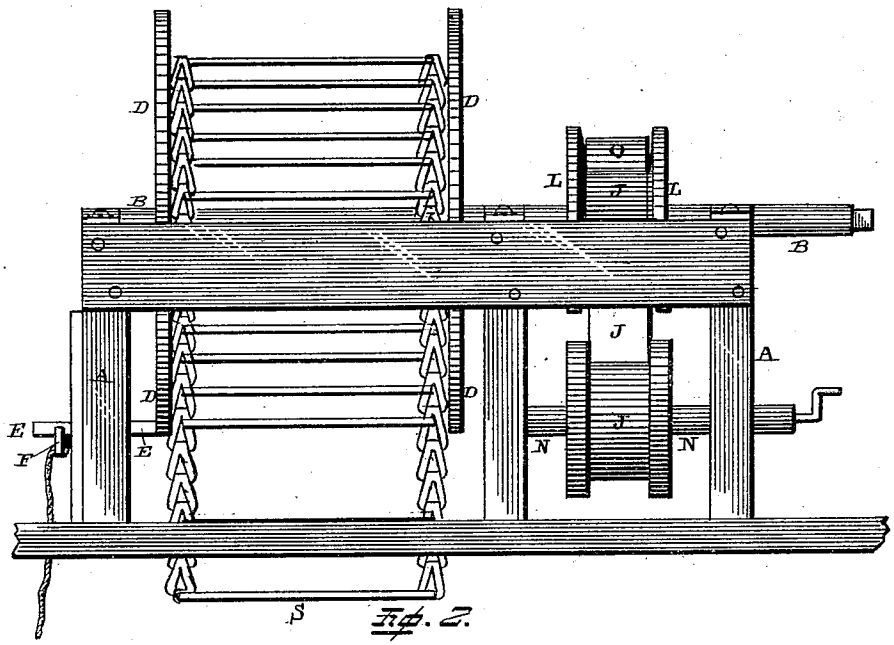
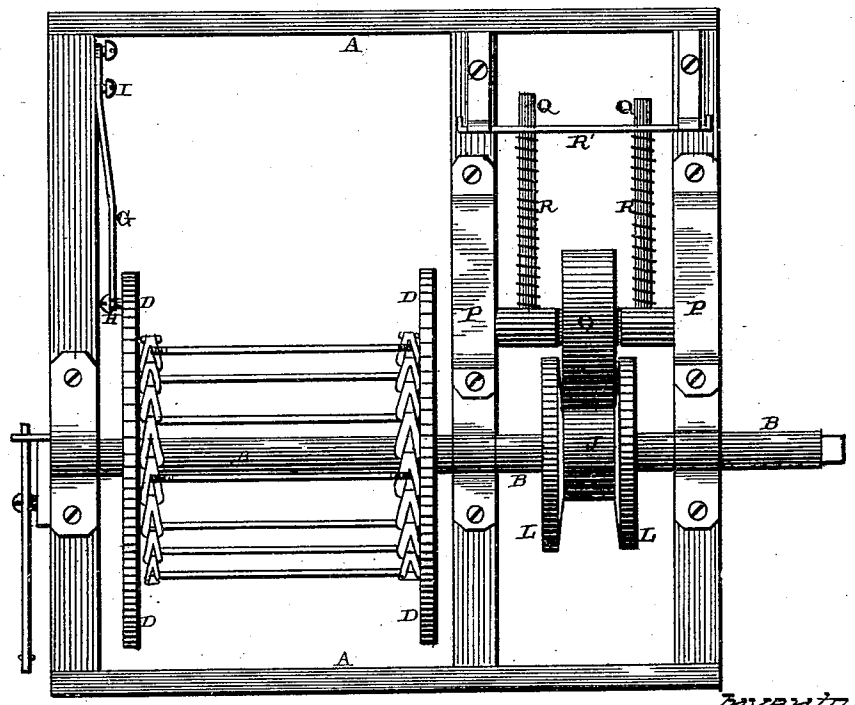


Fig. 2.



Witnesses.

Wm. H. Mogtimer

J. C. McKeever

Inventor.

A. Van Wagner,

per

F. A. Lehmann, atty

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

(No Model.) 2 Sheets—Sheet 2.

A. VAN WAGNER.

FIRE ESCAPE.

No. 267,286. Patented Nov. 7, 1882.

Fig. 3.

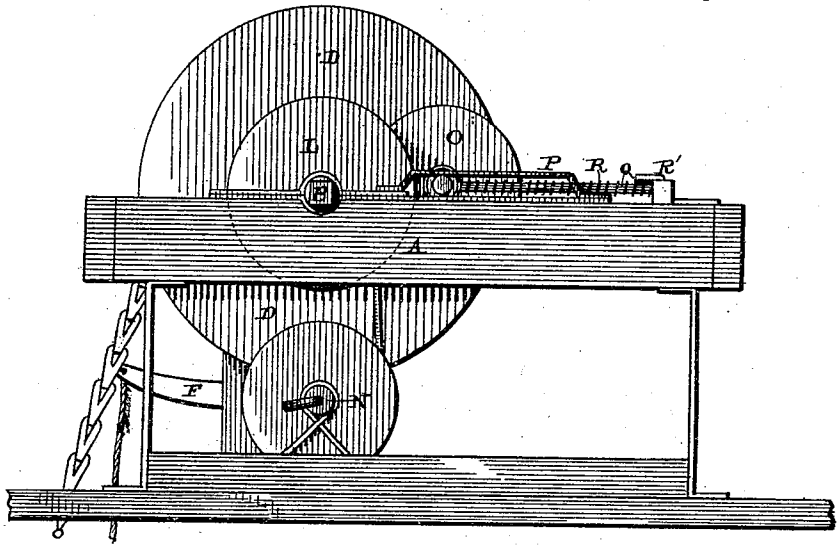
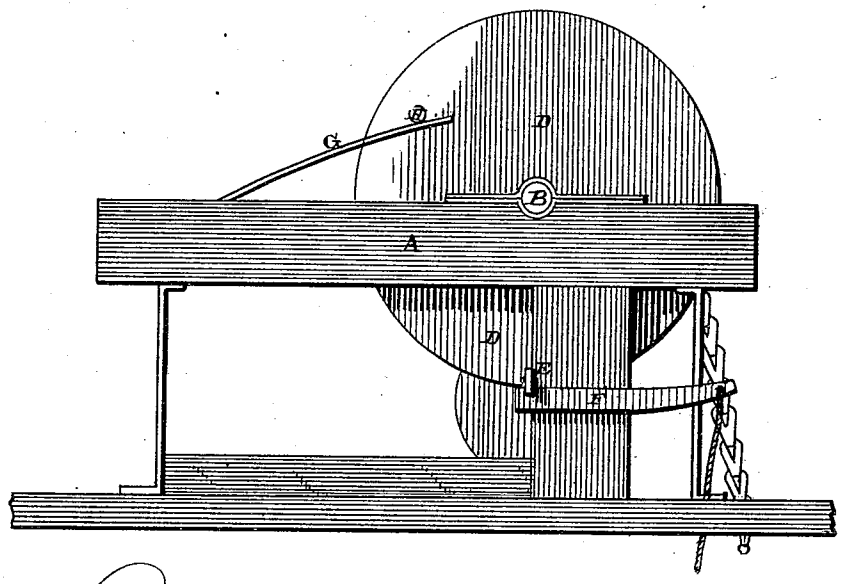


Fig. 4.



Witnesses:
William H. Mortimer
James C. McKeever

Inventor:
A. Van Wagner
per
F. A. Lehmann,
Atty.

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

UNITED STATES PATENT OFFICE.

ABRAMHAM VAN WAGNER, OF NEW YORK, N. Y., ASSIGNOR OF ONE-FOURTH TO CHARLES W. DICKEL & CO., OF SAME PLACE.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 267,286, dated November 7, 1882.

Application filed May 29, 1882. (No model.)

To all whom it may concern:

Be it known that I, ABRAMHAM VAN WAGNER, of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Fire-Escapes; and I do hereby 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in fire-escapes; and it consists in the combination of a shaft, to which a flexible ladder is fastened with a spring, which is made to exert its power upon an arm or guide secured to the shaft for the purpose of starting the ladder downward as soon as the shaft is released.

It further consists in the combination, with the ladder-shaft, of a belt which is wrapped around the shaft at one end, and which has its other wrapped around a drum on a smaller shaft, having a crank attached to one end, and a spring friction-roller, which bears against the belt where it is wrapped around the ladder-shaft, as will be more fully described hereinafter.

The object of my invention is to provide a fire-escape which may be placed either upon the top of the house or in one of the rooms of the house, and which is provided with a flexible ladder, which, as soon as it is left free to do so, will unwrap and descend from its own weight, and which will either allow persons to descend from a burning building or to climb up upon it for the purpose of removing persons and property.

Figure 1 is a front view of my invention complete. Fig. 2 is a plan view of the same. Figs. 3 and 4 are views taken from opposite ends.

A represents a suitable rectangular frame, which may be raised any suitable distance from the floor or above the top of the house, and upon the top of which is journaled the ladder-shaft B. To this shaft, at suitable distances apart, are secured the two guides D, between which the ladder, which is made of chain, rope, wire, or any other flexible material, is guided into place as it is being wound up. One of these guides has a notch made in one of its edges, and in which the pivoted lever E is made to catch, for the purpose of holding the ladder in any desired position. Pivoted upon the outer side of the supporting-frame, and at an angle to this locking-lever E, is the tripping-lever F, which has a cord or wire running from its outer end down along the side of the house, so that the ladder can be set in motion at any time in case of a fire. By pulling down upon the wire or cord the inner end of the lever is raised upward, and by forcing upward the outer end of the locking-lever the chain-shaft is at once released.

In order that the chain may at once descend as soon as the tripping cord or wire is pulled, a spring rod, wire, or other appliance, G, is made to exert its power upon one of the guides, and thus set it in motion as soon as the tripping cord or wire is pulled. In the present case the spring consists of a rod, which is pivoted at its inner end to the frame A, and which, after passing over the fulcrum I, has its outer end made to catch under the projection H upon the outer side of the guide. This spring or device will be forced downward in turning the guide into position, so that the locking-lever will hold it, and thus when the lever is released the whole force of the spring will be exerted in giving the ladder-shaft a rotary motion. The chain-ladder, when once started, will descend from its own weight. The end of the ladder-shaft is shaped so that a crank or lever can be applied to it at any time for hauling up the ladder. For the purpose of regulating the descent of the ladder a belt, J, has one end secured to the shaft and wrapped around it between the two guides, L. The other end of this strap is wound around a small shaft, or the drum formed upon the shaft N, which is provided with a small crank at one end, so that the belt can be wrapped upon it, and by means of which the ladder can also be raised into position. The belt being wound upon this shaft N will cause the belt to unwind from the ladder-shaft, and thus raise the ladder upward. This shaft can also be used by a person who happens to be near the fire-escape at the time to regulate the descent of the ladder, in case a person should be upon it.

In order to prevent the ladder from going down with such a rush as would likely injure the machine, the friction-roller O is used, which

is placed upon a shaft which slides freely back and forth in the bearing P. To this shaft are fastened the two arms or rods Q, which have the springs R wrapped around them. These springs have their rear ends to bear against the plate or rod R′, which acts as a stop, and against which the springs bear in forcing the roller-shaft forward. The roller-shaft must necessarily move back and forth, so as to adjust itself to the amount of the strap that is wrapped upon the shaft. When the ladder is wound upon its shaft there will be but a small amount of the belt wound around it, and as the ladder descends the belt is wound rapidly upon the shaft, so that the roller must move back and forth if it is to exert a constant pressure upon the belt. By this constant pressure upon the belt the shaft is prevented from turning too rapidly, and thus the descent of the ladder is regulated so that it will not injure the machine. To the lower end of the ladder is secured a strong iron rod, S, by means of which the end of the ladder can be secured to the end of the sidewalk or to any other suitable support, so as to hold it steady while persons are descending upon it. After the ladder has been once lowered it can be used either for persons to descend from the burning building, or upon which persons can ascend for the purpose of removing property and persons from the burning building.

The frame of this fire-escape will be so constructed as to form a suitable ornamental front on the top of the cornice or may be constructed as a part of the cornice itself. The trip cord or wire may be made to extend down to the pavement or to any of the windows of the house, so that it can be operated from any point.

Having thus described my invention, I claim—

1. The combination of a suitable frame, a ladder-shaft, and ladder with a spring which is made to exert its power upon an arm or guide secured to the shaft, for the purpose of starting the ladder downward as soon as the shaft is released, substantially as shown.

2. The combination of the ladder-shaft and ladder with suitable guides secured to the shaft, between which the ladder is wound, and a spring which is made to catch against the guide, so that when the tripping-lever is operated the spring will exert its power in starting the ladder downward, substantially as described.

3. The combination of the ladder, the shaft around which the ladder is wound, the guides, one of which has a notch in its side, a tripping mechanism, and a spring for starting the ladder into motion, whereby, when the tripping mechanism is released, the ladder will be made to descend, substantially as set forth.

4. The combination of the ladder-shaft, a belt which is wrapped around this shaft, a counter-shaft around which the other end of the belt is wrapped, and a spring-actuated friction device, substantially as shown.

5. The combination of the ladder-shaft, the belt which is wrapped around it, the friction-pulley, the two arms connected to its shaft, the bearings in which the shaft slides back and forth, the springs, and the rod or stop against which the rear ends of the springs bear, substantially as described.

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

ABRAMHAM VAN WAGNER.

Witnesses:
R. B. CHAMBERLIN,
WM. H. RIBLET.