No. 624,293. Patented May 2, 1899.

A. V. CALLAHAN.

FIRE ESCAPE.

(Application filed June 23, 1898.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

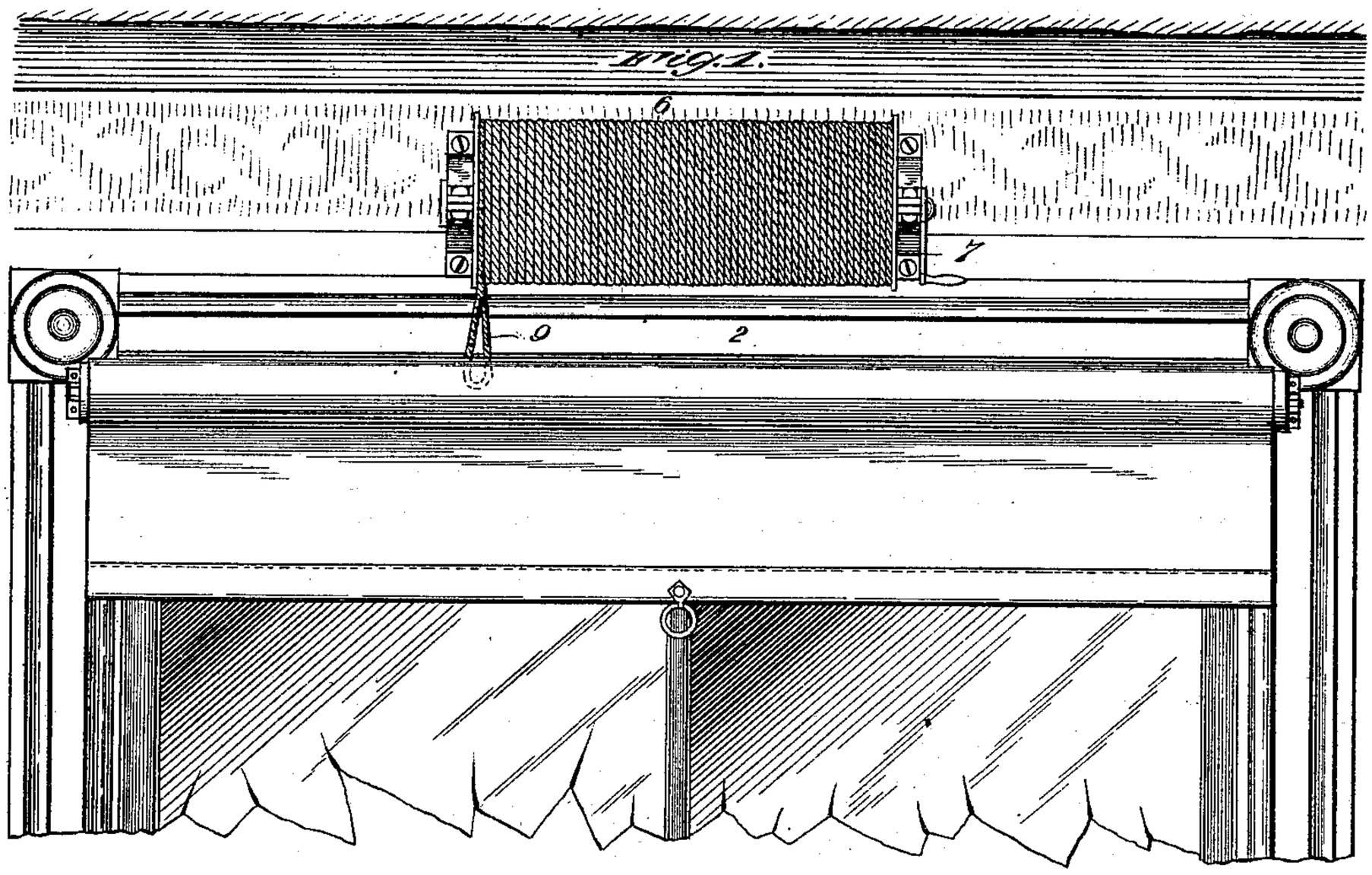


Fig. 3.

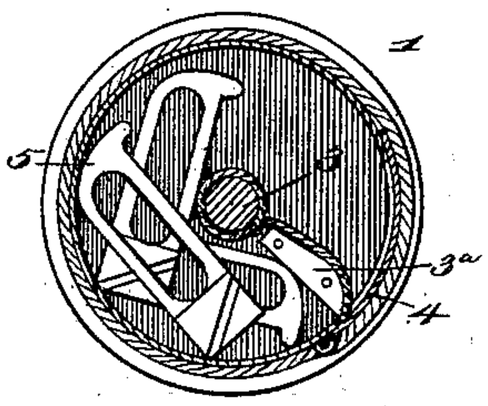


Fig. 6.

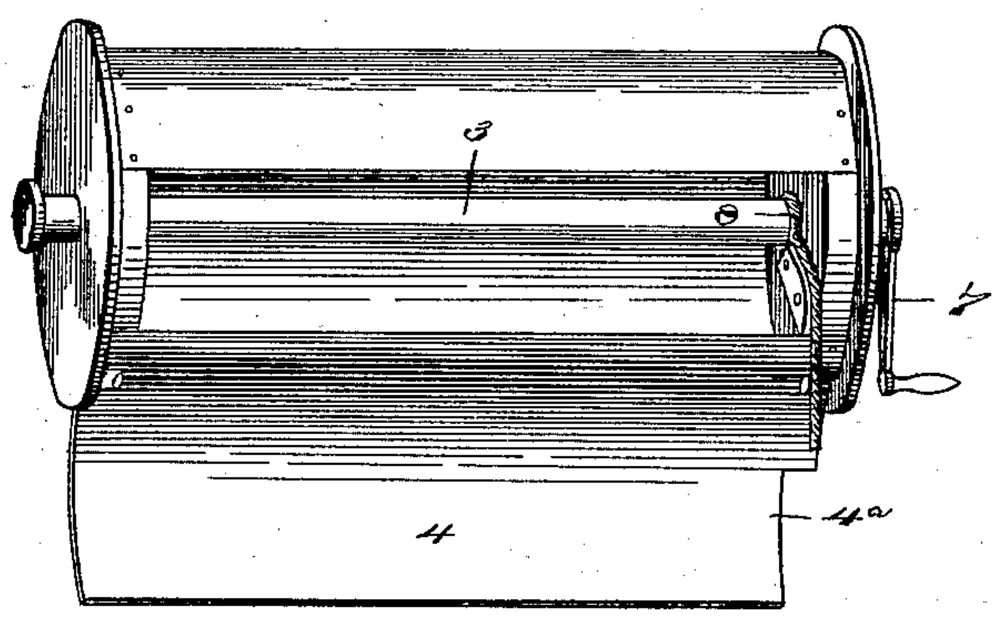


Fig. 4.

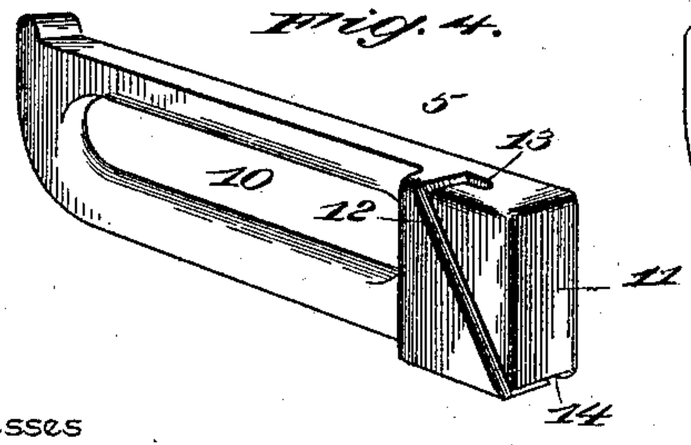
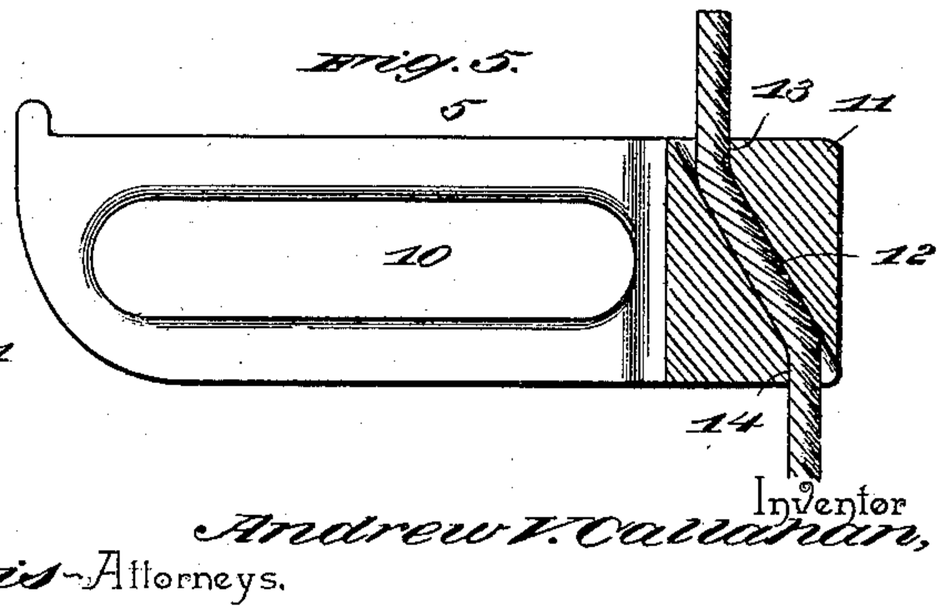


Fig. 5.



Witnesses
Wm. H. Doyle.
H. C. Riley

Inventor
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By his Attorneys.
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FIRE ESCAPE.

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(No Model.) 2 Sheets—Sheet 2.

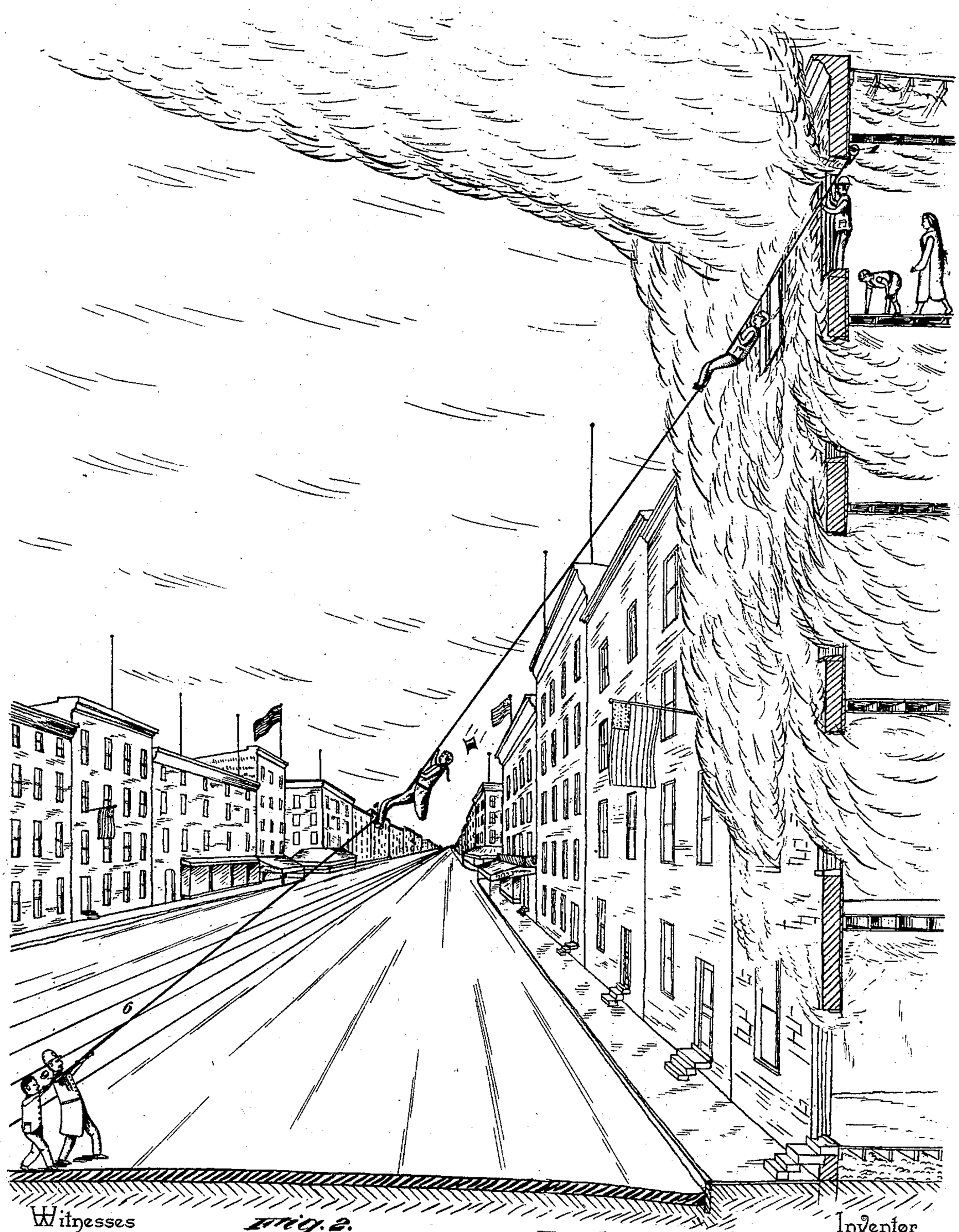

Fig. 2.

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UNITED STATES PATENT OFFICE.

ANDREW VERNON CALLAHAN, OF CHICAGO, ILLINOIS.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 624,293, dated May 2, 1899.

Application filed June 23, 1898. Serial No. 684,285. (No model.)

To all whom it may concern:

Be it known that I, ANDREW VERNON CALLAHAN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Fire-Escape, of which the following is a specification.

The invention relates to improvements in fire-escapes.

The object of the present invention is to improve the construction of fire-escapes and to provide an exceedingly-inexpensive one of great simplicity, which will always be ready for instant use and which will enable the occupants of a building to descend without danger to themselves to the middle of the street, and thereby avoid the flames of windows and other places beneath the point where the fire-escape is mounted.

A further object of the invention is to provide a fire-escape which will permit a series of persons to descend practically simultaneously and to enable the various individuals to regulate their descent.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is an elevation of a fire-escape constructed in accordance with this invention and arranged at the top of a window. Fig. 2 is a similar view, partly in section, the fire-escape being arranged for use with the cable extending from the window to the middle of the street. Fig. 3 is a transverse sectional view of the drum, the parts being arranged as shown in Fig. 1. Fig. 4 is a detail perspective view of one of the friction devices for controlling the descent of a person. Fig. 5 is a plan view, partly in section, showing one of the friction devices applied to a portion of the cable. Fig. 6 is a perspective view of the drum, the hinged section being open.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates a drum constructed of suitable metal and journaled in suitable bearings at the top of the window 2, the journals being preferably formed by a shaft 3, extending through the ends or heads of the drum. The drum, which is hollow, constitutes a casing or receptacle and is provided with a door or section 4, extending longitudinally of the drum and hinged to the same at one of its side edges. Within the drum is designed to be housed a series of friction devices 5, adapted to engage a cable 6 or the like, which is normally wound around the drum, as clearly shown in Fig. 1 of the accompanying drawings, and which is designed to be unwound and arranged, as shown in Fig. 2, to permit persons to descend from a building in the event of fire or any other danger which might be avoided by the use of a fire-escape.

The hinged door 4 is closed preparatory to rewinding the cable on the drum, and when the cable is wound up, as shown in Fig. 1, the door cannot open; but when the cable is unwound from the drum the door is released and being carried to the bottom of the drum it is opened by the action of the cable and maintained in its open position by gravity.

One end of the shaft 3 is provided with a crank-handle 7, by which the drum is rotated for winding up the cable, and when the latter is wound on the drum it serves to hold the hinged section or door closed. The inner end of the cable is attached to the shaft within the drum at 8, and the outer or free end of the cable is provided with a loop 9, which enables the cable to be conveniently grasped and held. The cable is designed to be of sufficient length to extend from a window to the middle of the street below, so that persons descending will avoid the frames of windows below that having the fire-escape, and the diameter of the cable will vary with its length, the buildings of greater height requiring heavier cables.

The fire-escape when arranged as shown in Fig. 1 of the drawings is ready for instant use, and the cable is unwound by drawing down upon it, and the unwinding of the cable automatically opens the hinged section or door and causes the friction devices to fall upon the floor, so that they can be readily secured by the occupants. Each friction device is provided with a longitudinal opening 10 of sufficient length to receive either the hand or the foot of a person, the device being adapted to be used either as a handle or a

foot-rest. One end, 11, of the friction device is enlarged, as shown, and is provided with a diagonal slot or kerf 12, extending inward from one of the side faces and extended or deepened slightly adjacent to the inner wall, and the extended portions 13 and 14 are disposed in opposite directions longitudinally of the device to form a passage or way for the cable at an angle to the kerf or slot to prevent the cable from becoming accidentally disengaged therefrom. By drawing downward on the outer portion of the friction device and moving the same toward the lower portion of the cable the said device is caused to bind upon and frictionally engage the cable, and thereby enable a person to control his descent. One end of the door 4 is cut away to form a recess 4^a and to provide a passage for the cable, which is supported adjacent to the door by a block 3^a, mounted on the inner face of one of the ends or heads of the drum.

The cable when extended as shown in Fig. 2 provides an inclined way or chute for the passage of persons, and it is adapted to be used as rapidly as people get out of the window and attach themselves to it, it being designed to enable a number of persons to descend at the same time, they being arranged at short intervals along the cable.

The invention has the following advantages: The fire-escape, while being exceedingly simple and inexpensive in construction, is protected from the weather by being arranged within a building, and as it is constructed of metal it is practically indestructible and will always be ready for instant use. The cable, which is wound around a drum, serves to hold the hinged section or door closed and to automatically open the same and causes the friction devices, which are housed within the drum, to be discharged upon the floor, so that they may be conveniently obtained by the occupants. The cable is adapted to support a number of persons at the same time, and the fire-escape may be continuously used as rapidly as people can get out of the window and attach themselves to it. There is no possible danger in descending, and as it lands the rescued persons in the middle of the street they descend an incline, making the descent easier to regulate and avoiding the flames from windows beneath the point of attachment of the fire-escape. The friction device which controls the descent is simple, strong, and durable, and while it may be readily attached to the cable at a point between the ends thereof it cannot become accidentally detached, and it may be operated by either the hand or foot. The fire-escape can also be used for rescuing persons from the floors below the one for which it is provided, and in practice one fire-escape to every third floor will be found sufficient.

Changes in the form, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

What I claim is—

1. A fire-escape comprising a hollow drum having a door or section adapted to open, a cable wound around the drum and connected with the same, and holding the door or section closed, and a friction device adapted to engage the cable for controlling the descent of a person, said friction device being housed within the drum when the fire-escape is not in use, substantially as described.

2. A fire-escape comprising a hollow drum designed to be journaled adjacent to a window and provided with a door, a cable wound around the drum and having one end attached to the interior of the drum and extending through the door-opening, whereby the cable is adapted to hold the door closed when the fire-escape is not in use, and is capable of automatically opening the door when the same is being arranged for use, and a friction device adapted to engage the cable and housed within the drum, said friction device being adapted to be discharged through the opening of the door when the latter is released by the cable, substantially as described.

3. In a fire-escape, the combination with a cable, of a friction device provided at one end with a slot or kerf extending inward from one of the faces of the device and adapted to receive a cable, said slot or kerf having its ends extended in opposite directions to provide a passage or way out of alinement with the slot or kerf, whereby the cable is prevented from leaving the same when under tension, substantially as described.

4. In a fire-escape, a friction device having a longitudinal opening for the reception of the hand or foot of the operator and provided at one end with a transverse kerf, adapted to receive a rope or cable and having its end portions extended in opposite directions, substantially as and for the purpose described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ANDREW VERNON CALLAHAN.

Witnesses:
S. A. JENNINGS,
W. W. LITTLE.