No. 636,689.

Patented Nov. 7, 1899.

T. J. NICHOLS & H. N. TENNILLE.

FIRE ESCAPE.

(No Model.)

(Application filed May 12, 1899.)

Fig. 5

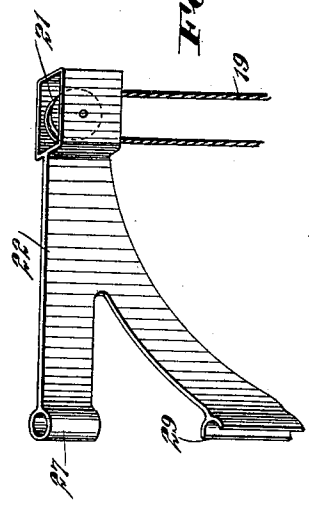


Fig. 4

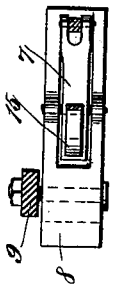


Fig. 3

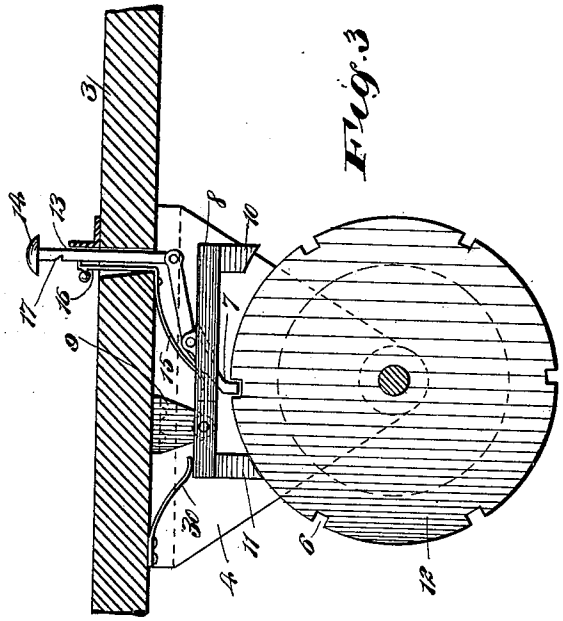


Fig. 2

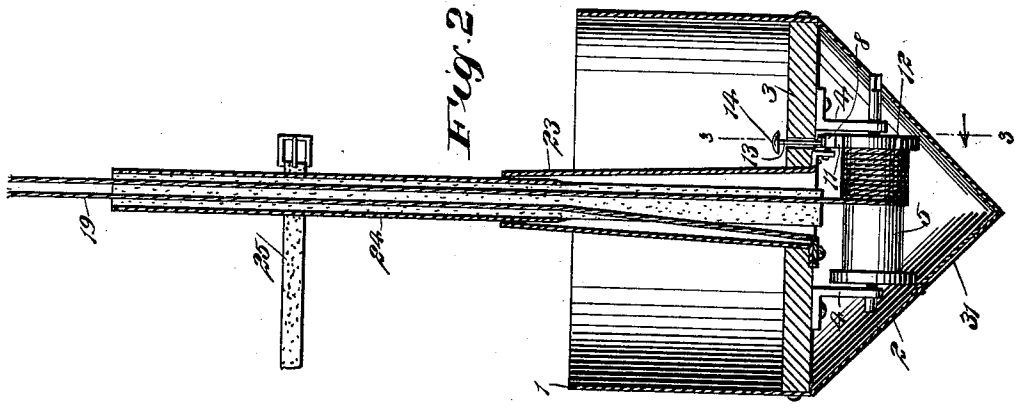
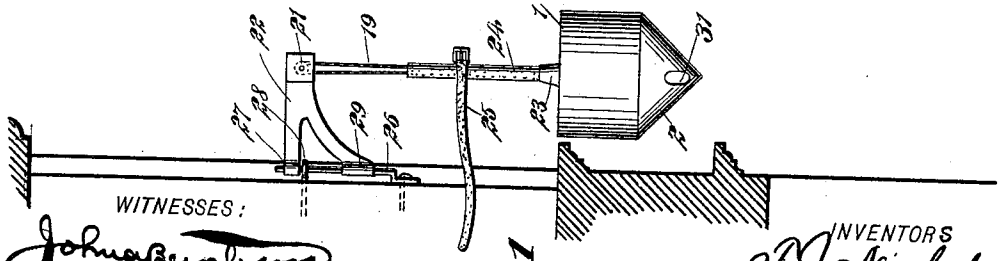


Fig. 1



WITNESSES:

John A. Berglund

C. R. Ferguson

INVENTORS

T. J. Nichols

BY H. N. Tennille

Munn

ATTORNEYS

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

UNITED STATES PATENT OFFICE.

THOMAS J. NICHOLS AND HARRY N. TENNILLE, OF MANCHESTER, VIRGINIA.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 636,689, dated November 7, 1899.

Application filed May 12, 1899. Serial No. 716,564. (No model.)

To all whom it may concern:

Be it known that we, THOMAS J. NICHOLS and HARRY N. TENNILLE, of Manchester, in the county of Chesterfield and State of Virginia, have invented a new and Improved Fire-Escape, of which the following is a full, clear, and exact description.

This invention relates to improvements in fire-escapes for buildings; and the object is to provide a fire-escape so simple in construction that it shall be under the control as to speed of the person descending in it from any height, thus making it absolutely safe and reliable.

We will describe a fire-escape embodying our invention and then point out the novel features in the appended claims.

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

Figure 1 is a side elevation of a fire-escape embodying our invention and shown as connected with a building. Fig. 2 is a sectional side elevation of the fire-escape. Fig. 3 is a section on the line 3 3 in Fig. 2 and on an enlarged scale. Fig. 4 is a sectional top view of a brake and locking mechanism employed, and Fig. 5 is a perspective view of a supporting-bracket employed.

The fire-escape comprises a carriage consisting of a casing 1, the lower part 2 of which is preferably made conical, as shown, so that in the descent of the fire-escape the inclined walls of said bottom by engaging with any possible obstructions—such, for instance, as blinds or window-sills—will deflect the carriage, so that it will not be impeded in its movement.

Arranged in the lower portion of the carriage is a flooring 3, and attached to the under side of this flooring are brackets or hangers 4, in which is journaled the shaft of a drum 5. One end of the shaft of this drum has an angular portion adapted to be engaged by a winding device, such as a crank, and this end projects through an opening in the bottom part of the casing 1. The drum 5 is provided at its ends with annular flanges, and one of these flanges 12 is provided in its periphery with notches 6, in either one of which a holding-dog 7 may engage. This holding-dog 7 is pivotally connected to a brake-bar 8, which is mounted to swing in a hanger 9, secured to the under side of the flooring 3. This brake-bar 8 has shoes 10 11 at its opposite ends, designed to be placed in engagement with the periphery of the flange 12, as will be hereinafter described, and said brake-bar is pressed on by a spring 30.

A push-rod 13 extends through an opening in the flooring 3 and at its upper end is provided with a knob 14, upon which the foot of a person may be placed to remove the dog from engagement with the flange. The dog is held yieldingly downward by means of a spring 15, and a spring 16 is provided which projects up through the opening in the flooring 3 and has a hook end to engage in a notch 17, formed in the rod 13, the upper wall of said notch being inclined upward and outward. A rope or cable 19 has one end secured to the carriage, here shown as to the flooring 3, and this rope or cable is extended upward and over a pulley 21, mounted on a bracket 22, adapted to be attached to the casing of a window or the like. From the pulley 21 the rope extends downward to a connection with the drum 5.

To prevent the rope or cable from catching in the clothing of a person descending in the carriage, we provide a tubular portion 23, which surrounds the said rope and extends upward from the flooring 3. Connected to this tubular portion or to the flooring, as may be desired, is a leather or similar flexible material tube 24, which also surrounds the rope. This flexible tube provides a hand-hold to prevent a person from grasping directly upon the rope. Attached to the tube 24 is a strap 25, which may be secured around the body of the person descending in the carriage. Attached to the window or other casing is a rod 26, with which the bracket 22 is designed to be engaged. This bracket 22, at its upper portion, has a sleeve 27, designed to be passed over the upper end of the rod 26 and to rest upon a shoulder 28, and the lower portion of the bracket is provided with a semi-cylindrical portion 29, within which the lower portion of the rod 26 may be engaged.

In operation in case of a fire the bracket 22 is to be placed upon the rod 26, and then the fire-escape carriage may be swung out of the window, as indicated in Fig. 1, and it will be

held from downward movement by means of the dog 7 engaging in one of the notches 6 in the flange 12. After placing a person in the carriage and, if necessary, placing the strap 25 around the waist or body the person within the carriage by placing a foot upon the knob 14 and pressing the rod 13 downward will remove the dog 7 from engagement with the notch in the flange. A continued downward movement of the rod 13 will swing the brake-rod 8 against the resistance of its holding-spring 30 to move the shoe 11 out of engagement with the periphery of the flange 12, so that the rope or cable 19 may unwind from the drum 5, allowing the carriage to descend, and the speed of the movement may be regulated by pressing the rod 13 sufficiently downward to engage with the end of the brake-bar 8 and move the shoe 10 into engagement with the periphery of the flange 12. If a full speed of the downward movement is desired, the hook end of the spring 16, by engaging in the notch 17, will hold the rod 13 in such a position as to disengage the dog 7 from the flange 12; but the shoe 11 will be held yieldingly in engagement with said flange. The inclined upper wall of the notch 17 permits the rod to be moved downward and out of engagement with the spring 16 when it is desired to place the shoe 10 in engagement with the flange. When the carriage reaches the ground or other place of safety, it may be returned upward by a person opening a door 31 in the bottom 2 and passing his hand through the opening and catching hold of and pulling upon the rope 19, and when the carriage is in its upper position the person may rewind the rope upon the drum by means of a crank engaged with the angular end of the drum-shaft.

This device will not only prove serviceable in rescuing people from burning buildings, but it will also be found of use to firemen in carrying up hose or ascending to any part of a building.

Having thus fully described our invention, we claim as new and desire to secure by Letters Patent—

1. A fire-escape, comprising a carriage, a winding-drum mounted in said carriage, a holding-dog for said drum, a rod extended upward from the holding-dog through the floor of the carriage, a bracket adapted to be attached to a building, a pulley in said bracket, a rope or cable having one end attached to the drum and the other end attached to the carriage, said rope or cable passing over the pulley in the bracket, and a retarding device for the drum.

2. A fire-escape, comprising a carriage, a winding-drum in said carriage, a holding device for the carriage and adapted to be controlled by the person in the carriage, a bracket adapted to be secured to a building, a pulley in said bracket, a rope or cable having one end attached to the drum and the other end to the carriage, said rope or cable passing over the pulley in the bracket, and a flexible tube surrounding the rope above the carriage.

3. A fire-escape, comprising a carriage, a winding-drum arranged in the carriage, a holding device for said drum, a retarding or braking device for the drum, a bracket adapted to be secured to a building, a rope or cable having one end attached to the drum and the other end attached to the carriage, said rope or cable passing over a pulley in the bracket, a tube of yielding material surrounding the rope above the carriage, and a device on said tube for attachment to the person in the carriage.

4. A fire-escape, comprising a carriage having a conical lower end, a floor in said carriage at the upper end conical portion, a drum supported in hangers on said floor, a holding-dog for engaging with the drum, a brake-bar pivoted to a hanger on the floor and to which the holding-dog is pivoted, a shoe on each end of said brake-bar, a spring for holding the dog yieldingly in engagement with the drum, a push-rod extended upward from the dog and having a notch, a spring having a hook end for engaging in said notch, a bracket adapted to be secured to a window-frame or the like, a pulley supported in said bracket, and a cable engaging at one end with the drum and at the other end with the carriage, said cable passing over the pulley in the bracket.

THOMAS J. NICHOLS.
HARRY N. TENNILLE.

Witnesses:
J. H. PATERSON,
LEROY M. ROWE.