

No. 628,736.

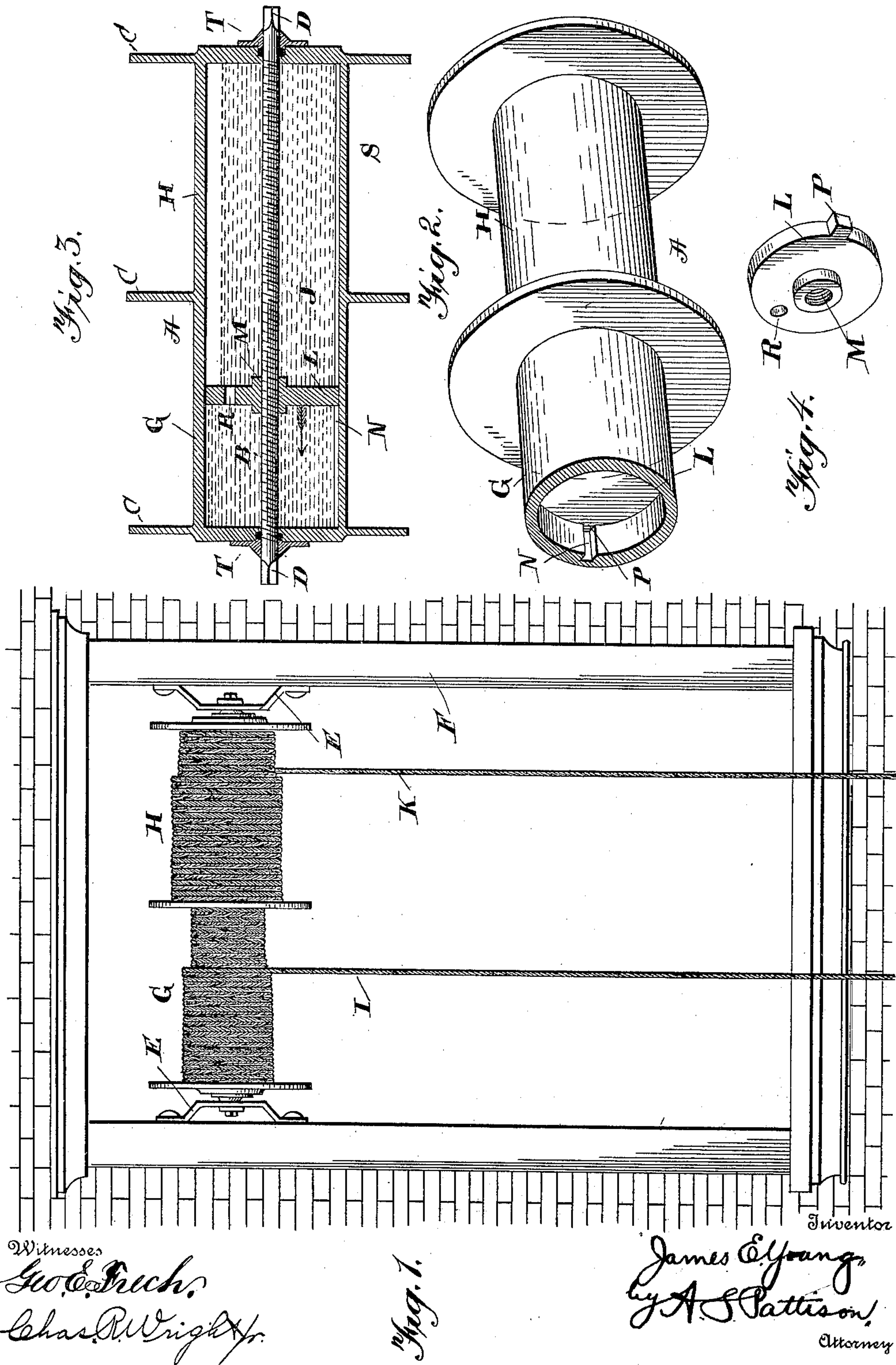
Patented July 11, 1899.

J. E. YOUNG.

FIRE ESCAPE.

(Application filed June 1, 1899.)

No Model.)



UNITED STATES PATENT OFFICE.

JAMES E. YOUNG, OF WAYLAND, NEW YORK.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 628,736, dated July 11, 1899.

Application filed June 1, 1899. Serial No. 718,989. (No model.)

To all whom it may concern:

Be it known that I, JAMES E. YOUNG, a citizen of the United States, residing at Wayland, in the county of Steuben and State of New York, have invented new and useful Improvements in Fire-Escapes, of which the following is a specification.

My invention relates to improvements in fire-escapes, and pertains to a mechanism involving a revolving cylinder carrying a piston or disk fitting tightly therein and a supporting-shaft for the cylinder, which is screw-threaded to receive the disk, the cylinder being filled with oil or other liquid, whereby the descent of the person escaping is regulated by the movement of the disk or piston against the fluid-pressure within the cylinder, all of which will be fully described hereinafter and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of my invention, showing it attached to a window. Fig. 2 is a detached end perspective view of the cylinder, showing the disk or piston near one end thereof. Fig. 3 is a central longitudinal sectional view. Fig. 4 is a detached perspective view of the piston or disk.

Referring now to the drawings, A indicates a revolving cylinder, through which passes a supporting-shaft B. This supporting-shaft B has its ends D made angular and fitting in corresponding openings formed in the brackets E, which are attached to opposite sides of the window-frame F, as illustrated. This cylinder A is provided with three peripheral flanges C, which form the cylinder A into two reels G and H, around which the escape-ropes I and K are wound. These ropes I and K are wound around the reels G and H in opposite directions, whereby when one rope is being drawn downward by the weight of a person escaping the other rope is being drawn upward and wound around the other reel for the use of another person desiring to escape from the burning building.

The shaft B is provided with a longitudinally-arranged screw-thread J, extending throughout the length of the cylinder A, and placed within and fitting tightly the cylinder is a disk or piston L. This piston or disk L is provided with a central internally-screw-

threaded opening M, which receives the screw-threaded portion J of the shaft B.

The cylinder is provided with a longitudinal internally-arranged groove N, into which a fin or projection P upon the disk or piston L extends for the purpose of causing the disk or piston to revolve with the cylinder. This disk or piston is provided with a passage-way R for the escape of the liquid S, situated within the cylinder A, through this opening and to either side of the piston as it is being forced endwise within the cylinder A.

The openings Q in the ends of the cylinder, through which the shaft B passes, are preferably provided with stuffing-boxes T' of the usual form to constitute a perfectly tight joint between the shaft and the said openings to prevent the escape of the oil or other liquid S.

In operation when the cylinder A is revolved by pulling downward upon either of the ropes I or K the disk or piston L is correspondingly revolved owing to the projection P fitting within the groove M of the cylinder, and owing to the screw-threaded portion J of the stationary shaft B the disk or piston L is moved endwise within the cylinder, as will be readily understood, and the movement of the piston, and consequently the revolution of the cylinder A and the speed of the descent of the escaping person, is regulated by the liquid within the cylinder A, which is being compressed by the piston or disk L and which is allowed to escape through the passage-way R within the disk.

It will be readily understood that the speed at which the cylinder A, and consequently at which the escaping person, shall descend is regulated by the passage-way R and that this passage-way R has both of its ends freely open for the passage of the liquid in opposite directions, whereby when the piston or disk has been forced to one end of the cylinder by the unwinding of one of the ropes around one of the reels G or H it will be moved to the opposite end of the cylinder by the drawing downward of the other rope, and thus effecting a continuous fire-escape, whereby the escaping of one person winds up the rope for the escaping of another person.

While I prefer to use a piston or disk which

fits tightly within the cylinder, and this is provided with an escape-opening, it will be readily understood that instead of having an escape-opening the disk or piston could be
5 made sufficiently loose within the cylinder to afford the proper escape of the liquid there-around instead of through a passage, as R, formed directly through the piston or disk L.

An escape of this construction is simple and
10 effective and is practically a continuous escape, in that the escape of one person sets it for the escape of another.

The escape-ropes, which are wound around the reel of the cylinder, will be covered with
15 a winding of asbestos and then cross-wound with small wires, making the ropes thoroughly and perfectly fireproof, whereby they will not be burned by flame from the building or windows thereof.

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

1. An improved fire-escape comprising a non-rotatable shaft, a cylinder surrounding
25 and supported by the said shaft, the cylinder provided with projecting flanges forming reels, ropes wound around the said cylinder, a piston or disk within the cylinder and longitudinally movable therein but held against
30 relative rotation in respect thereto, the shaft having a screw-threaded portion engaging the said disk for moving it within the cylinder as the cylinder is being revolved, substantially as described.

35 2. A fire-escape comprising a non-rotatable supporting-shaft, a cylinder surrounding and supported by the shaft, a liquid practically filling the said cylinder, the shaft provided with a longitudinally-arranged screw-thread-
40 ed portion within the cylinder, a piston or disk having a concentric screw-threaded opening for the screw-threaded portion of the shaft and longitudinally movable upon the cylinder, the disk and cylinder having respectively
45 a projection and a groove to prevent relative rotation of the disk and cylinder, the parts adapted to operate substantially as described.

3. A fire-escape comprising a revolving cylinder, a non-rotatable supporting-shaft there-
50 for, the cylinder provided with a plurality of

rope-spaces, ropes wound in opposite directions upon said spaces and constituting reels, the shaft having an intermediate screw-threaded portion extending from end to end within the cylinder, a liquid within the cyl- 55
inder, a piston fitting the cylinder and having a central opening to receive the screw-threaded portion of the shaft, the piston and the cylinder having respectively a groove and a projection to prevent relative rotation there- 60
of, substantially as described.

4. A fire-escape comprising a non-rotatable supporting-shaft, a cylinder surrounding and supported thereby, the shaft having a screw-
65 threaded portion from end to end of the cylinder, a rope wound around the cylinder, a piston or disk within the cylinder and having a central opening receiving the screw-threaded portion of said shaft, the cylinder provided with a longitudinal groove and the piston 70
with a projection fitting the said groove, the piston constructed to allow a slight escape of the liquid thereby as it is being moved longitudinally within the cylinder, substantially
75 as described.

5. A fire-escape comprising a non-rotatable supporting-shaft, a cylinder inclosing and supported by the said shaft, the shaft having a longitudinally-arranged screw-threaded
80 portion within the cylinder and extending practically from end to end thereof, a piston or disk fitting tightly the said cylinder, and having a central opening receiving the screw-threaded portion of the shaft, the cylinder
85 having a longitudinal groove and the piston or disk a projection fitting therein, the piston having a pressure-escape opening extending therethrough and through which the liquid
90 may freely escape in opposite directions, and ropes wound around the cylinder in opposite directions the parts constructed and arranged to operate, substantially as described.

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

JAMES E. YOUNG.

Witnesses:

H. J. LOVELAND,
H. V. PRATT.