No. 652,247. Patented June 26, 1900.

E. M. CHRIST.

FIRE ESCAPE.

(Application filed Feb. 16, 1900.)

(No Model.)

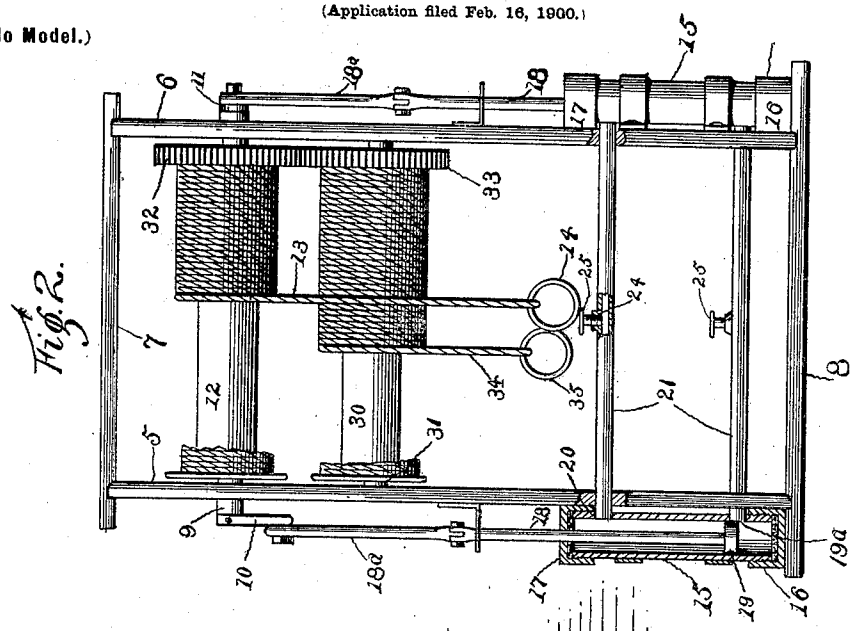

Fig. 2.

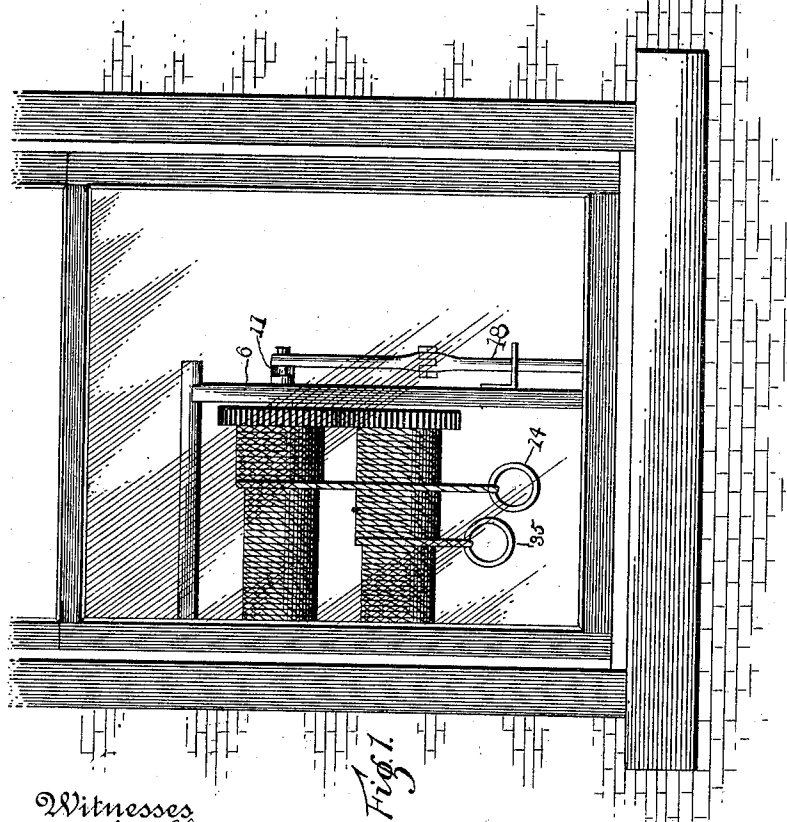

Fig. 1.

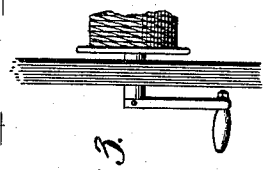

Fig. 3.

Witnesses
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UNITED STATES PATENT OFFICE.

EDWARD M. CHRIST, OF PINE GROVE, PENNSYLVANIA.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 652,247, dated June 26, 1900.

Application filed February 16, 1900. Serial No. 5,441. (No model.)

To all whom it may concern:

Be it known that I, EDWARD M. CHRIST, a citizen of the United States, residing at Pine Grove, in the county of Schuylkill, State of Pennsylvania, 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 appertains to make and use the same.

This invention relates to fire-escapes, and more particularly to that class comprising a rope and drum upon which the rope is adapted to be wound in readiness for use.

The object of the invention is to provide a simple and economical structure in which the speed of unwinding the rope will be regular and free from jerks and which, moreover, will be ready for use at all times.

In the drawings forming a portion of this specification like numerals of reference indicate similar parts in the several views.

Figure 1 is a view showing a window in the rear of which is mounted a fire-escape made in accordance with my invention. Fig. 2 is a front elevation showing the apparatus with the ropes rolled up and ready for use. Fig. 3 is a detail view of a portion of one of the drums, to the shaft of which is secured a handle which may be used in connection with my invention.

Referring now to the drawings, the present invention comprises a rectangular frame including side uprights 5 and 6, an upper cross-piece 7, and a lower cross-piece 8. In the uprights 5 and 6 and adjacent their upper ends is journaled a shaft the ends of which project through the uprights and to which are fastened cranks 10 and 11. Upon the shaft 9 is fixed a drum 12, upon which is wound a rope 13, one end of which is fixed to the drum to prevent slipping, and to the opposite end of which is attached a ring 14, with which may be engaged a hook of any form carried by a suitable belt. A cylinder 15 is fixed upon the outer face of each upright and has its lower end closed by a head or cap 16, a similar cap 17 being fixed upon the upper end of each cylinder and having a central perforation through which is passed a piston-rod 18 of a piston 19, which latter is fitted snugly within the cylinder, each of the rods 18 being attached to the cranks 10 and 11 by means of connecting-rods 18^a. The opening in each cap is suitably packed, as is also the piston. Each of the cylinders is filled with oil, and to permit the escape of this oil under pressure from each end of each cylinder as the piston therein is reciprocated an opening 19^a is made in the side of each cylinder adjacent its lower end and a second opening 20, adjacent its upper end. Connecting the openings of one cylinder with the corresponding openings of the other are pipes 21, and in each pipe, and preferably midway of its ends, is a threaded perforation 24, with which is engaged a set-screw 25, which may be turned inwardly or outwardly to regulate the flow of oil back and forth from one of the cylinders to the other and correspondingly vary the resistance of the reciprocation of the pistons.

The cranks 10 and 11 are set on the quarter, so that there is practically constant resistance to the rotation of the roller and a corresponding constant speed when the apparatus is in use.

A shaft 31 is journaled in the uprights 5 and 6 below the drum 12, and fixed thereon is a second drum 30, and fixed upon the shafts 9 and 31 are intermeshing gears 32 and 33, through the medium of which motion may be transferred from one to the other of the drums. To the drum 30 is fixed one end of a secured rope 34, which is wound thereon in such a direction that it will wind up as the rope 13 is unwound, and vice versa. Should it at any time be necessary to place a new rope upon either of the drums 12 or 30, the crank 10 may be detached from the end of the shaft 9 and a right-angular handle may be substituted therefor, through the medium of which the two drums may be revolved. This action may also take place should either of the ropes at any time become unwound from its drum.

In practice the ropes are both wound upon their respective drums, and when the operator is ready to descend he adjusts the valves in the pipe connecting the ends of the cylinders, and after grasping the ring 14 or attaching himself thereto in any suitable manner, as through the medium of a belt, he drops from the window. The unwinding of the rope 13 is retarded by the cylinders and the opera-

tor descends slowly, the drum 30 meanwhile rotating idly with its rope. The next passenger to descend grasps or attaches himself to the ring 35 at the end of the rope 34 and drops, when the drum 30 will rotate in an opposite direction, and the operator will thus be slowly lowered. At this time, however, the drum 12 is rotated in a reverse direction from its unwinding movement, and the rope 13 is wound up ready for another passenger, whose descent will wind up the rope 34 in a manner which will be readily understood. It will thus be seen that a number of persons may be successively lowered without injury and that any desired materials or proportions may be observed in the manufacture of the device without departing from the spirit of the invention.

Having thus described my invention, what I claim is—

In a fire-escape, the combination with a frame comprising uprights and cross-pieces, of a shaft journaled in the uprights and having cranks at its ends exteriorly of the frame, a cylinder upon the outer face of each upright, a piston in each cylinder connected with the adjacent crank for reciprocation thereby, pipes connecting the corresponding ends of the cylinders beyond the strokes of the pistons, a regulating-valve in each pipe, a drum fixed upon the shaft, a rope fixed at one end to the drum and adapted to be wound thereon, said rope having a ring at its free end, a second shaft journaled below the first shaft, a drum upon the second shaft, a rope fixed at one end of the second shaft and adapted to be wound thereon, and intermeshing gears carried by the drums, whereby one rope will be wound when the other is unwound.

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

E. M. CHRIST.

Witnesses:
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RUDY LEISER.