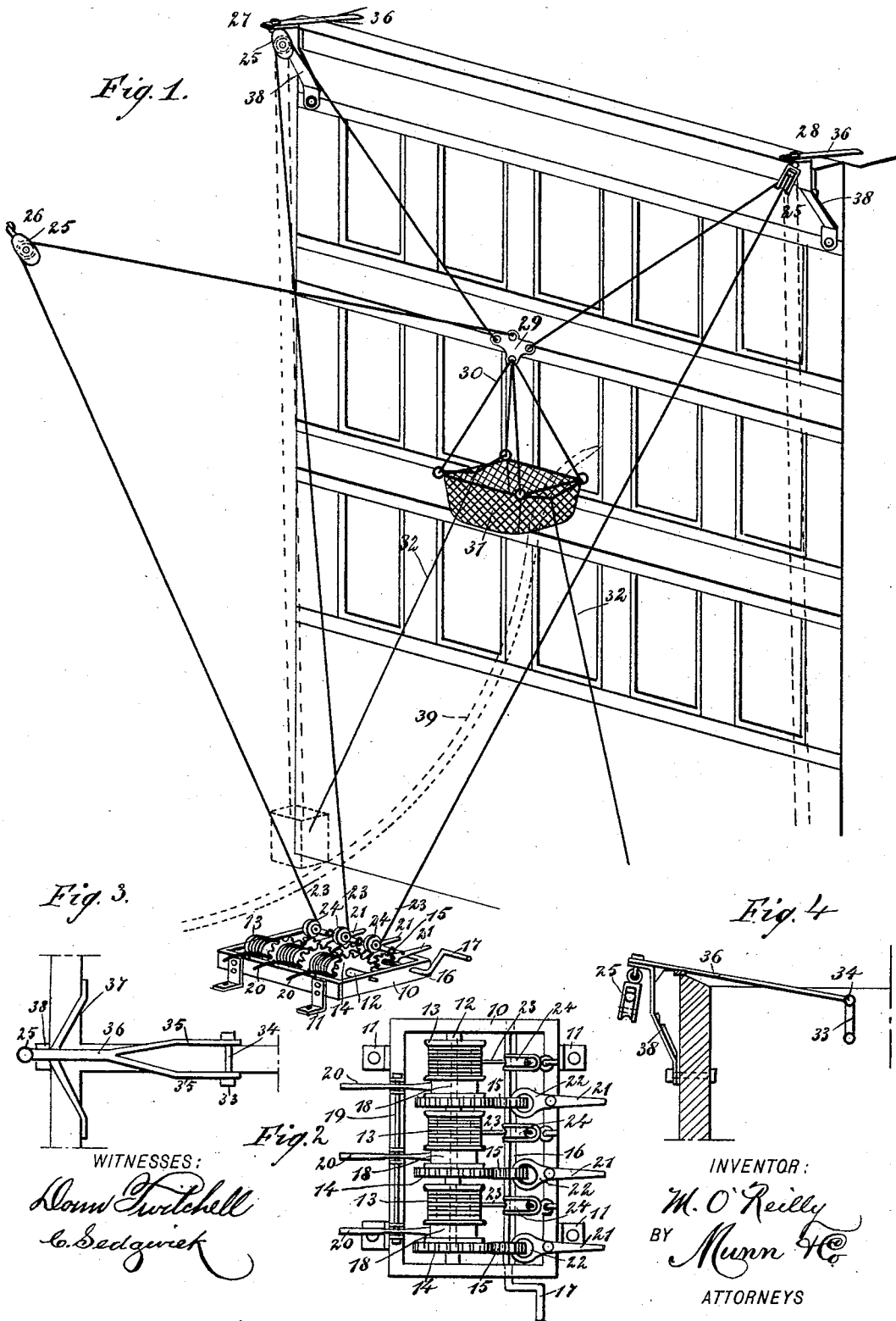


M. O'REILLY.
FIRE ESCAPE.

No. 459,304.

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UNITED STATES PATENT OFFICE.

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FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 459,304, dated September 8, 1891.

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To all whom it may concern:

Be it known that I, MICHAEL O'REILLY, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and Improved Fire-Escape, of which the following is a full, clear, and exact description.

My invention relates to improvements in fire-escapes; and the object of my invention is to produce a fire-escape which may be quickly and easily applied to a burning building, which may be brought opposite any desired part of the building, which is adapted to carry people safely from the building and deliver them upon the ground, which is also well adapted for carrying firemen and holding them in position to direct a stream of water upon a desired point, and which may be used to carry a hose, and may be operated from the ground so as to point the hose in the desired direction.

To this end my invention consists in a fire-escape constructed substantially as herein-after described and claimed.

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

Figure 1 is a perspective view showing the fire-escape as applied to a building. Fig. 2 is a plan view of the hoisting apparatus. Fig. 3 is a plan view of one of the supports, which is secured to a building; and Fig. 4 is a vertical section of the same.

The hoisting apparatus is carried by a main frame 10, which is provided with flanged feet 11 to enable it to be secured to a truck or portable device; but the frame may, if desired, rest upon any convenient support. On a common shaft 12, extending longitudinally through the frame, is a series of similar drums 13, each of which is provided with a gear-wheel 14, which meshes with a pinion 15 on a square shaft 16, mounted in the frame parallel with the shaft 12, and this shaft is provided at one end with a crank 17, by means of which it may be turned. The drums 13 are mounted loosely on the shaft 12, so that they may be turned independently of one another, and the pinions 15 are held to slide on the shaft 16, so that, if desired, one of the drums may at any time be thrown out of gear, or all may if necessary. Each drum

is provided in one end with an annular recess 18, and pivoted on a rod 19, which is mounted upon the top of a frame opposite the drums, is a series of brakes 20, the handles of which project above the frame, and the lower ends of which are shaped to fit in the recesses 18 of the drums, and it will thus be seen that when the drums are being unwound the brakes may be easily applied by simply pressing upon the handles so as to enable the speed of the drums to be regulated.

On the side of the frame 10 opposite the brakes 20 is a series of levers 21, which are pivoted to the frame, and the inner ends of which are formed into forks 22, which embrace the pinions 15, and by moving the levers the pinions may be thrown into or out of engagement with the gear-wheels 14 of the drums. The side of the frame which carries the levers 21 is also provided with a series of sheave-pulleys 24, and each drum is provided with a cable 23, which extends up over a pulley 24. The cables run upon sheaves 25, which are adapted to be secured to points upon a building, as shown at 26, 27, and 28 in Fig. 1. One of the pulleys 25 is adapted to be supported on one side of a street and the other two pulleys on the opposite side, as hereinafter described. The free ends of the cables 23 are secured to a common center plate 29, the lower end of which is provided with a series of ropes 30, which support a car 31, and the car is provided with depending guy-ropes 32, which may be grasped by the people in the street and which serve to hold the car steady.

The pulley-supports upon a building are adapted to be secured at the corners, as shown at 27 and 28; but if the building is very long the supports may be placed at intervals along the top of the building. Each support is provided with an anchor 33, which is secured to a side wall or other support of the building, as shown in Figs 3 and 4, and to a cross-bolt 34 at the top of the anchor are secured the members 35 of a main arm 36, which projects beyond the eaves of a building and supports one of the sheave-pulleys 25, the arm being stayed by braces 37 and a bracket 38, the braces being secured to the top of the building and the bracket being secured to the front wall of the same. A hose 39 (indicated by

dotted lines in the drawings) may be carried by the car 31, and the car may be brought into a desired position, so that the firemen carrying the hose may play advantageously upon the fire. In some cases it will not be necessary to use the car, and the hose may be secured in any convenient way to the center plate 29, and by means of the cables supporting the center plate it may be guided so as to direct the stream in the right direction.

The operation of the fire-escape is as follows: Two of the pulleys 25, which carry the cables 23, are secured to the supports 27 and 28, and another pulley is carried across the street and secured to any convenient support at 26. The drums 13 are unwound sufficiently for the center plate 29 to be brought to the ground, and the car 31 is secured to it, as described. The pinions 15 are then moved upon the shaft 16, so that they will engage the gear-wheels 14, and then by turning the crank 17 the drums will be wound up and the cables 23 shortened so as to raise the car. It is obvious that if all the drums are simultaneously wound the car will be raised centrally between the three points of its support; but if it is desired to bring the car near to the building which is on fire the drum carrying the pulley, which is supported at 26, may be thrown out of gear by means of one of the levers 21, as described, and the other two cables will serve to raise the car and will bring it adjacent to the building, and a drum carrying one of these cables may be temporarily thrown out of gear, if desired, so as to bring the car opposite a desired window. The movements of the car may be also directed in a measure by the guy-ropes 32, and it will be readily seen that the car may be very nicely guided. When the car is to be let down, the drums 13 are thrown out of gear, thus allowing the car to drop of its own weight, and to prevent it from dropping too fast the brakes 20 are applied and the movement of the car regulated. The sheave-pulleys 25 may left upon the supports at 27 and 28, and the cables may be hoisted up by means of a light rope passing through the sheave-pulleys. This rope is allowed to hang to within easy reach of the ground, and its ends are secured in a box, as shown in dotted lines in Fig. 1, to prevent it from being tampered with.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A fire-escape comprising a series of independent drums mounted loosely on a common shaft and provided with cables which

extend over suitable guide-pulleys and have their free ends arranged to support a car, a gear mechanism for revolving the drums, and sheave-pulleys to carry the cables and adapted to be secured to supports upon a building, substantially as described.

2. A fire-escape comprising a series of drums mounted loosely upon a common shaft and provided with gear-wheels, a revoluble shaft arranged opposite the drum-shaft and provided with sliding pinions adapted to engage the drum-gears, cables extending over suitable guide-pulleys and having their free ends arranged to support a car, and sheave-pulleys to carry the cables and adapted to be secured to a support, substantially as described.

3. In a fire-escape, a hoisting apparatus consisting of a frame, a series of drums mounted loosely on a common shaft within the frame, each drum being provided with a gear-wheel and with a bearing-surface to engage a brake, a series of guide-pulleys secured to the frame, cables extending from the drums over the guide-pulleys, a series of brakes pivoted on the frame and adapted to bear against the drums, a crank-shaft pivoted in the frame opposite the drum-shaft, sliding pinions mounted on the crank-shaft and adapted to engage the gear-wheels of the drums, and levers for moving the pinions, substantially as described.

4. A fire-escape comprising a frame, a series of drums mounted loosely on a common shaft within the frame, each drum being provided with a gear-wheel, cables extending from the drums over suitable guide-pulleys and having their inner ends secured to a center plate adapted to support a car, sheave-pulleys to support the cables, a crank-shaft mounted in the frame and geared to the drums, means for throwing a desired drum out of gear, and a brake for each drum, substantially as described.

5. In a fire-escape of the character described, the combination, with the hoisting-cables and the sheave-pulleys thereon, of supports for the pulleys, each support comprising a forked arm secured upon the top of a building and projecting beyond its eaves, said arm being suitably braced, and a bracket secured to the wall of the building and adapted to support the arm, substantially as described.

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Witnesses:

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