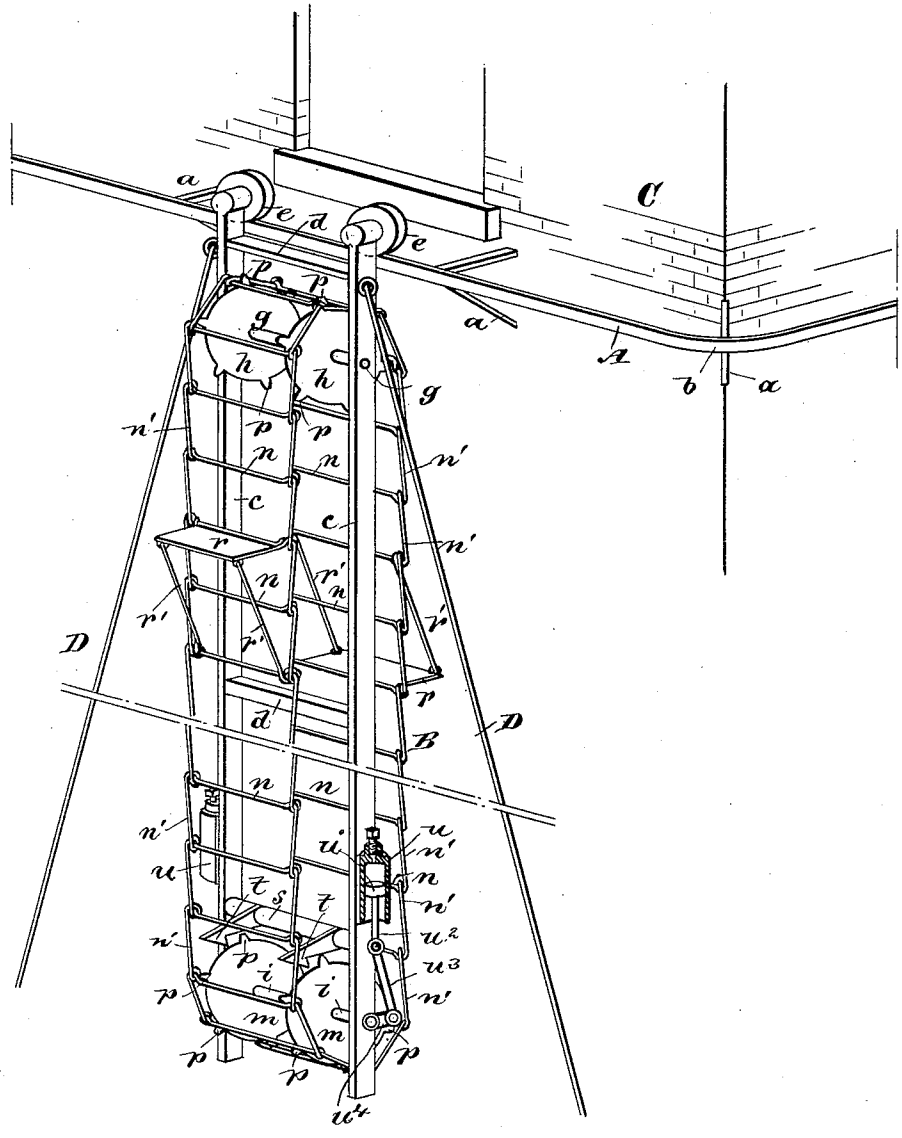
(No Model.)

G. L. ROBERTS.

FIRE ESCAPE FOR BUILDINGS.

No. 480,518. Patented Aug. 9, 1892.



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UNITED STATES PATENT OFFICE.

GEORGE L. ROBERTS, OF GRAND RAPIDS, MICHIGAN.

FIRE-ESCAPE FOR BUILDINGS.

SPECIFICATION forming part of Letters Patent No. 480,518, dated August 9, 1892.

Application filed April 15, 1892. Serial No. 429,313. (No model.)

To all whom it may concern:

Be it known that I, GEORGE L. ROBERTS, of Grand Rapids, in the county of Kent and State of Michigan, have invented a new and useful Fire-Escape for Buildings, of which the following is a full, clear, and exact description.

The object of my invention is to provide a safe and convenient fire-escape which will be adapted for suspension from the exterior of a building and that may be moved laterally to any preferred point thereon, affording means for the quick and easy descent of a large number of inmates of the building in case of fire and also at the same time provide a ladder for ascent of firemen to reach the conflagration.

To these ends my invention consists in the construction and combination of parts, as is hereinafter described and claimed.

Reference is to be had to the accompanying drawing, forming a part of this specification, in which the figure represents a perspective view of the improved fire-escape pendent from a building and broken away centrally.

A represents a horizontal rail held projected from the exterior of a building by the brackets *a*, so as to be adapted to sustain a heavy weight, and in case the building is located on a corner or stands alone the track-rail A should be extended around all sides that will permit and have easy curves *b* formed at the corners to facilitate the travel thereon of the fire-escape device, that is constructed as follows: Two parallel pendent side bars *c* are provided, that are held spaced apart by a suitable number of cross-bars *d*, said side bars having rollers *e*, sustained upon lateral supports that will permit them to rotate, which rollers rest upon the track-rail A and sustain the rectangular frame composed of the side bars *c* and cross-bars *d*. At a proper distance from the top cross-bar *d* a shaft *g* is journaled by its ends in opposite perforations formed in the side bars *c*, which shaft is provided with two sprocket-wheels *h*, of equal diameter, that are secured on the shaft near the side bars. Near the lower ends of the side bars *c* a second transverse shaft *i* is journaled in holes therein, so as to rotate in the same vertical plane and parallel with the top shaft *g*. Upon the shaft *i* two sprocket-wheels *m* are secured, so as to align their side faces in pairs with the upper sprocket-wheels *h*.

An endless ladder B is provided comprising a series of transverse metal stretcher-rods *n*, each having integral link-rods *n'*, formed by bending the stretcher-rod end portions in the same direction, so as to extend two links of equal length parallel to each other and at a right angle to the rod whereon they are formed. The ends of the link-bars *n'* are bent into ring-eyes that are loosely secured to the rods *n* where the links are joined thereto, so that a continuous flexible ladder is produced when all the links are loosely secured to the stretcher-rods, as stated.

The teeth *p* on the wheels *h* and *m* are spaced evenly apart, a distance about equal to the length of the link-rods *n'*, and the composite ladder of links and stretcher-bars is so placed upon the two sets of sprocket-wheels that the rods *n* will successively engage with an opposite pair of teeth when the shafts *g* and *i* are rotated simultaneously.

At proper intervals platforms *r* are secured to project from the stretcher-rods *n*, these being braced by prop-rods *r'* that engage their lower ends with other stretcher-rods. Said platforms are made of sheet metal, and have such proportionate dimensions as will afford foot rests or seats for those using the fire-escape.

Above the lower shaft *i* a rocking shaft *s* is journaled by its ends in the side bars *c*, which shaft has dog-hooks *t*, formed on projected arms, which are adapted to interlock with the sprocket-teeth and prevent the endless ladder from moving downwardly on the outer side or side farthest from the building C, the free upward movement of this side of the ladder, and consequent downward travel of the inner side of the ladder, being allowed.

In order to regulate the speed of progressive movement of the ladder, a pneumatic check is furnished for each side of the ladder, which check comprises two similar cylinders or dash-pots *u*, wherein pistons *u'* are each held to slide by a pivoted engagement of the rod u^2 with one end of a link-bar u^3, that has its lower end similarly connected with a crank-arm u^4, the latter being secured

on the projected end of the shaft *i*, it being understood that the same construction of parts is provided for each pneumatic device.

In service the inmates of the building that are to traverse the fire-escape can step on the stretcher-rods *n* upon the side of the ladder nearest to the building, and invalids, women, or children may be placed upon the platforms *r*, their weight causing a descent of the ladder, which may be checked if heavily loaded by reaching through and successively gripping the stretcher-rods on the outer side of the ladder, the dash-pots *u* and their connections assisting to equalize the rate of movement of the fire-escape.

It will be evident that the most timid person can be placed upon this improved fire-escape and by simply holding onto the rods *n* be lowered safely to the ground, the adaptability for upward travel on the outer side of the ladder being an important feature of advantage secured by the peculiar construction of parts.

Should it be necessary to move the structure along upon the track A, this can be readily effected by small wire ropes D, that may also be utilized to maintain the fire-escape at any desired point, if secured by their lower ends when they are in a stretched condition.

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

1. The combination, with a track-rail supported on a building, and a pendent movable ladder-supporting frame thereon, of spaced transverse shafts rotatable in the frame, having sprocket-wheels thereon, an endless ladder on the sprocket-wheels, a rock-shaft journaled in the ladder-frame above the lower pair of sprocket-wheels, detent-dogs thereon projected to engage the teeth of said wheels, and a pneumatic speed-check device connected to the lower shaft and actuated by its rotation, substantially as described.

2. The combination, with a horizontal track-rail supported on a building, a ladder-supporting frame hung from the track-rail and adapted to travel thereon, transverse shafts rotatable on the frame, and spaced sprocket-wheels on said shafts, of an endless ladder comprising transverse stretcher-bars having integral depending link-rods, a rock-shaft journaled in the ladder-frame above the lower pair of sprocket-wheels, and detent-dogs projected from the rock-shaft and adapted to engage with and lock the wheels from rotation in one direction, substantially as described.

3. The combination, with a horizontal track-rail, bracket-arms projecting from a house-wall and supporting the track-rail, and a pendent ladder-supporting frame having rollers adapted to travel on the track-rail, of transverse shafts rotatable in the said frame at its ends, sprocket-wheels on each of said shafts, an endless ladder on said wheels, a transverse rock-shaft on the ladder-frame above the lower pair of sprocket-wheels, and detent-dogs projected from the rock-shaft and adapted to engage with and lock the lower sprocket-wheels and prevent a progressive movement of the ladder in one direction, substantially as described.

GEORGE L. ROBERTS.

Witnesses:
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RICHARD L. WENNHAM.