(No Model.)

G. A. BIDWELL.

FIRE ESCAPE.

No. 475,175. Patented May 17, 1892.

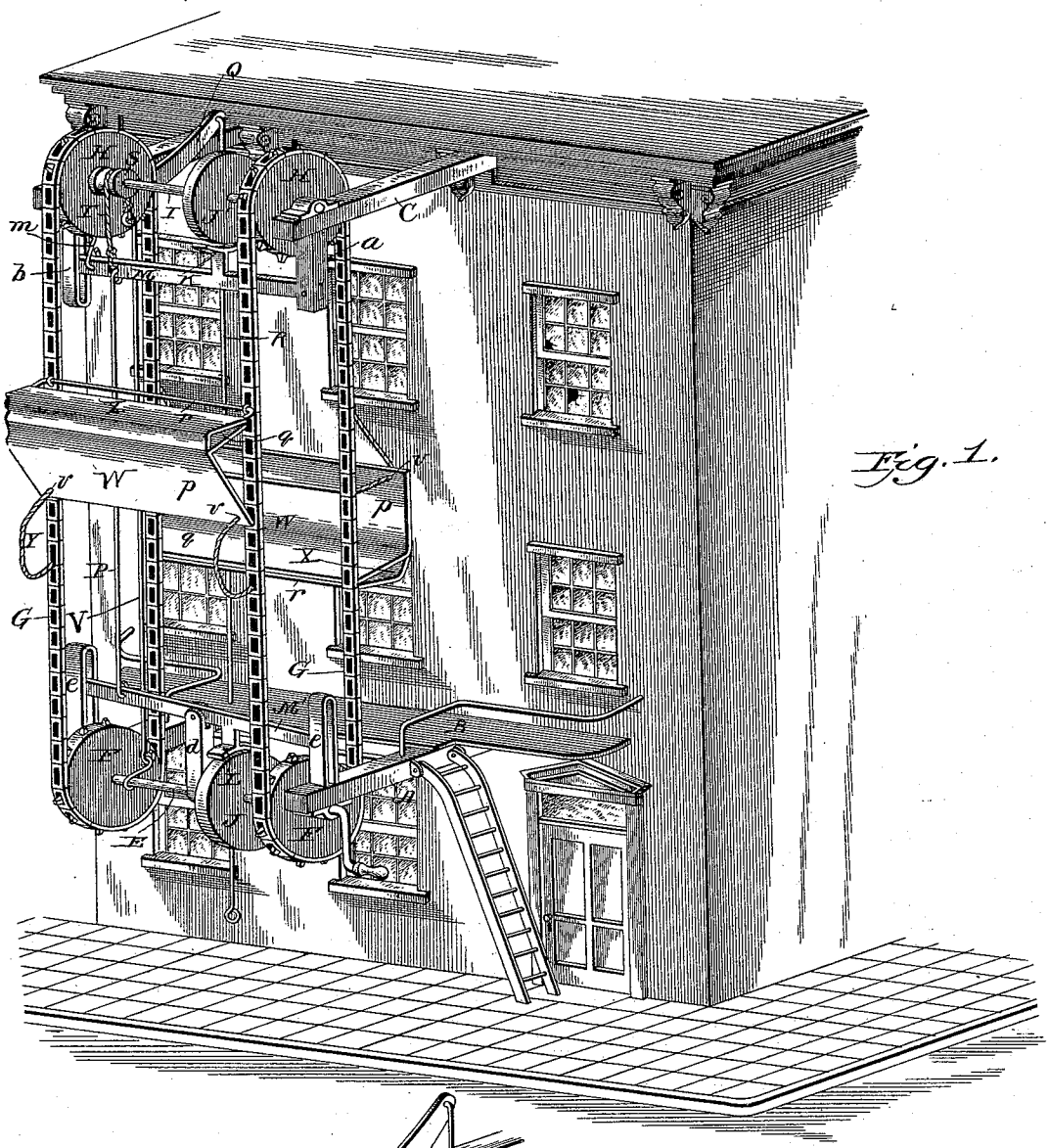

Fig. 1.

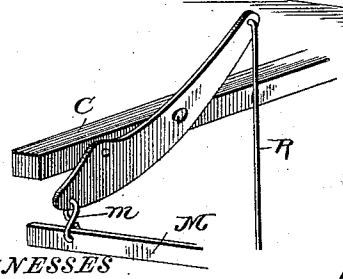

Fig. 2.

WITNESSES

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FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 475,175, dated May 17, 1892.

Application filed January 30, 1892. Serial No. 419,800. (No model.)

To all whom it may concern:

Be it known that I, GEORGE A. BIDWELL, a citizen of the United States, residing at Pittsfield, in the county of Berkshire and State of Massachusetts, 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.

My invention has relation to improvements in fire-escapes; and it consists in the peculiar construction, certain novel combinations, and the adaptation of parts hereinafter described, and particularly pointed out in the claims appended.

In the accompanying drawings, Figure 1 is a perspective view of my improved fire-escape attached to the wall of a building, and Fig. 2 is a detail perspective view.

In the said drawings similar letters designate corresponding parts in both views, referring to which—

A indicates the lower hangers of my improved escape, which are suitably secured to or in the wall of a building and serve to support a platform or landing B, onto which a person may step from one of the carriages of the endless belts presently to be described, and C indicate the upper hangers of my escape, which are secured to the wall or upon the roof of a building, as illustrated. Journaled in suitable bearings connected to the lower hangers A is a rotary shaft E, which may be turned through the medium of a crank, as illustrated, or other suitable means.

Fixedly mounted upon the shaft E, at a suitable distance apart, are sprocket-wheels F, around which take the endless sprocket-belts G, which also take around the sprocket-wheels H, carried by the rotary shaft I, which is journaled in suitable bearings upon the upper hangers C, before described.

Fixed upon the lower and upper shafts E and I are brake-wheels J J′, which are preferably arranged in the same vertical plane, as illustrated in Figure 1 of the drawing. Pivotally connected at one end to an arm *a*, depending from one of the upper hangers C, is a brake-lever M, which is guided at its free end in a slotted arm *b*, depending from the other hanger C, whereby it will be seen that it will be prevented from lateral play. This lever M carries a suitable brake-shoe, as K, which is arranged in vertical alignment with the brake-wheel J′, whereby it will be seen that when the free end of said lever M is raised the brake-shoe will be brought to bear against the periphery of the said brake-wheel, so as to decrease the speed or stop the endless belts G. Pivotally connected at an intermediate point in its length to a standard *d*, which is loosely mounted upon the lower shaft E, is a lever M′, which is guided at its free ends in slotted standards *e*, rising from the lower hangers A. Connected to this lever M′, between the pivotal point and one end thereof, is a brake-shoe L, which is placed in alignment with the brake-wheel J, for a purpose presently to be described.

Connected at one end to the upper lever M, adjacent to its free end, and at its opposite end to the lower lever M′ on the opposite side of the pivotal point thereof to the brake-shoe L, is a link P, whereby it will be readily perceived that when the free end of one lever is raised to throw its brake-shoe against the brake-wheel the free end of the other lever will be simultaneously raised for the same purpose.

Pivotally mounted at an intermediate point in its length upon a stud extending laterally from one of the upper standards C is a lever Q, which has its forward end connected by a link *m* with the free end of the upper brake-lever M, whereby it will be seen that when the rear end of the said lever Q is depressed the levers M M′ will be raised and their brake-shoes brought to bear against the brake-wheels J J′. Connected to the rear end of the lever Q and depending therefrom to a point adjacent to the ground is an operating-rod R, through the medium of which a person upon the ground may actuate the brake-levers for the purpose stated.

Loosely mounted upon the upper shaft I is a pulley S, over which takes a cord or chain T, which has one of its ends connected to the upper brake-lever M and its opposite end connecting to a depending rod V, which is preferably connected in a loose manner to the

lower shaft E and is so placed that it may be conveniently reached by a person in one of the descending carriages. By pulling downwardly upon the said rod V a person in a descending carriage is enabled to apply the brakes when the speed of the traveling belts becomes too great.

W indicates the carriages of my improved escape, of which any desired number may be employed. These carriages W, which are preferably formed of suitable metal, comprise two walls *p* and *q*, which are arranged at right angles to each other, for a purpose presently perceived. Fixedly connected to the bottom wall *q* of the carriages are the angular branches of a bail-rod *r*, which takes through one link of each chain belt and serves to pivotally connect the carriage thereto, whereby it will be seen that when the carriage goes around the lower sprocket-wheels and up toward the upper sprocket-wheels the lower wall *q* will rest uppermost, the wall *p* bearing against the chains and serving to hold said wall *q* at an angle thereto. Fixedly connected to the lower side of the bottom wall *q* of the carriages is an angular plate X, which serves, when the carriages are traveling upward and the wall *q* is uppermost, to afford a horizontal support upon which a fireman or other person may stand and be carried to the top of the building.

Connected at its ends to the chain belts G and taking through eyes *v* upon the upper edge of the carriage-walls *p* are chain or rope loops Y, which serve in practice to hold the carriages in the position illustrated while the same are descending.

From the foregoing description it will be readily perceived that I have provided a cheap, simple, and efficient fire-escape through the medium of which persons may safely escape from a burning building and firemen may be safely elevated to the roof or other point of vantage.

Although I have specifically described the construction and relative arrangement of the several elements of my improved fire-escape, I do not desire to be confined to the same, as such changes or modifications may be made as fairly fall within the scope of my invention.

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

1. In a fire-escape substantially as described, the combination, with the upper and lower hangers, the upper and lower rotary shafts carrying sprocket-wheels, the endless belts taking around the sprocket-wheels and carrying carriages, the brake-wheels fixed on the rotary shafts, and a suitable means for rotating one of said shafts, of the upper brake-lever pivotally connected at one end to an arm depending from one of the upper hangers, a shoe carried by said brake-lever and adapted to bear against the upper brake-wheel, the lower brake-lever fulcrumed at an intermediate point in its length and guided in standards rising from the lower hangers, a shoe carried by said lever and adapted to bear against the lower brake-wheel, a link connecting the free ends of the upper and lower brake-levers, and a suitable means for applying and releasing one of said levers, substantially as specified.

2. In a fire-escape substantially as described, the combination, with the upper and lower hangers, the upper and lower rotary shafts carrying sprocket-wheels, the endless belts taking around the sprocket-wheels and carrying carriages, the brake-wheels fixed on the rotary shafts, and a suitable means for rotating one of said shafts, of the upper brake-lever pivotally connected at one end to an arm depending from one of the upper hangers, a shoe carried by said brake-lever and adapted to bear against the upper brake-wheel, the lower brake-lever fulcrumed at an intermediate point in its length and guided in standards rising from the lower hangers, a shoe carried by said lever and adapted to bear against the lower brake-wheel, a link connecting the free end of the upper and lower brake-levers, the lever Q, pivotally connected to one of the upper hangers, a link connecting the forward end of said lever and the upper brake-lever, an operating-rod connected to the rear end of the lever Q and depending to a point adjacent to the ground, the depending rod V, and the chain or cord taking loosely over the upper shaft and having one end connected to the upper brake-lever and its opposite end connected to the upper end of the rod V, substantially as specified.

3. In a fire-escape substantially as described, the combination, with the endless chains, of a carriage comprising the lower wall *q*, pivotally connected to the chain belts, the upper wall *p*, arranged at an approximate right angle to the lower wall and having eyes at its upper edge, and the angular plate X, connected to the under side of the bottom wall and the chain or rope taking through the eyes carried by the wall *p* and having their ends connected to the chain belts, substantially as and for the purpose set forth.

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

GEORGE A. BIDWELL.

Witnesses:
HERMAN C. MORRIS,
WILLIAM C. MOULTON.