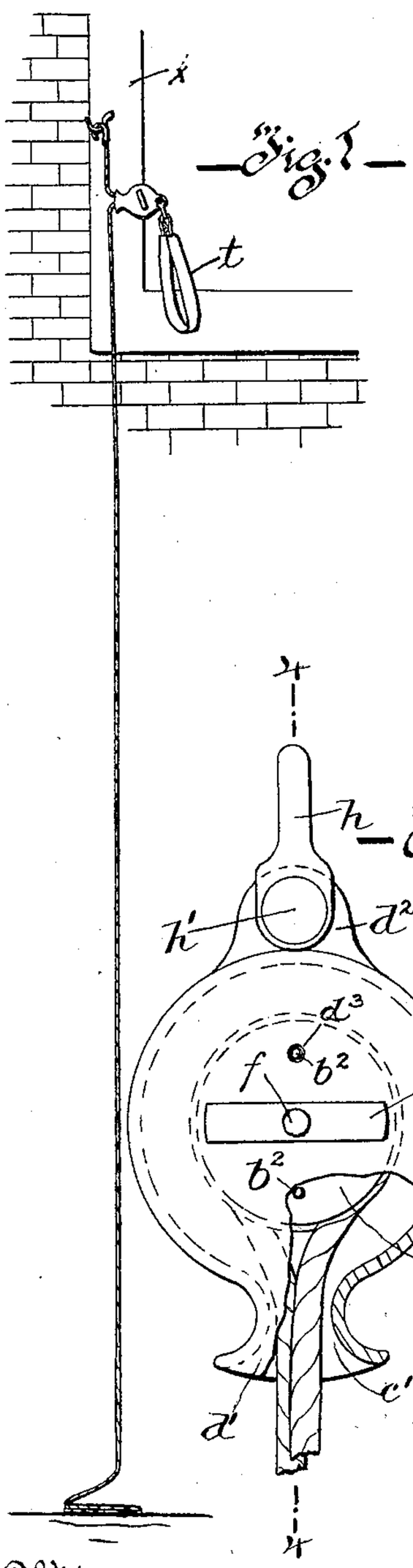
(No Model.)

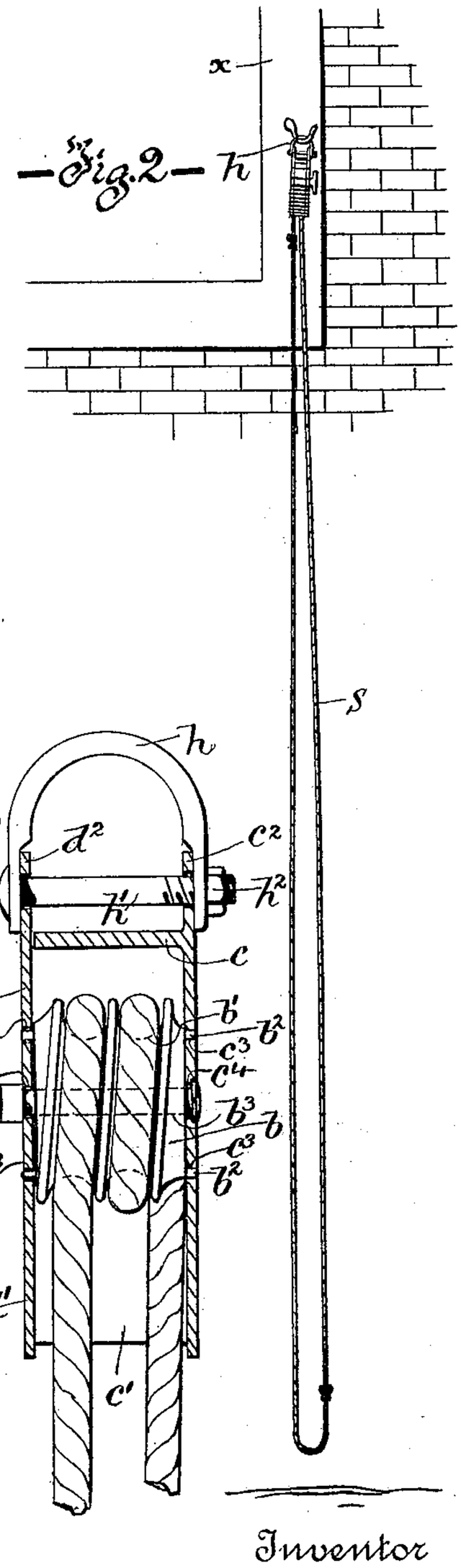
C. E. HARVEY.

FIRE ESCAPE.

No. 589,428. Patented Sept. 7, 1897.



—Fig. 1—



—Fig. 2—

—Fig. 3—

—Fig. 4—

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CYRUS ELECTUS HARVEY, OF WATERLOO, CANADA.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 589,428, dated September 7, 1897.

Application filed November 17, 1896. Serial No. 612,530. (No model.)

To all whom it may concern:

Be it known that I, CYRUS ELECTUS HARVEY, of the town of Waterloo, in the county of Shefford and Province of Quebec, Canada, have invented certain new and useful Improvements in Fire-Escapes; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention relates particularly to fire-escapes of the class illustrated in Letters Patent No. 518,920, granted to me on the 24th of April, 1894; and it has for its object to improve the device therein illustrated and described and thereby produce a more reliable and more effective fire-escape.

The invention may be said, briefly, to consist in a friction device comprising a friction-block inclosed within a casing having a single flared opening, the friction-block having either a length of rope or a loop or endless rope given a full turn about same and extending out through the single flared opening, the casing and rope being each provided with means of suspension from a window-sill or other desired point. For full comprehension, however, of the above and of other advantageous features of novelty embodied in my invention reference must be had to the accompanying drawings, forming a part of this specification, wherein—

Figure 1 is a general view of my improved fire-escape shown ready for operation in connection with a length of rope that is attached to a window-frame; Fig. 2, a similar view, but ready for operation in connection with a loop or endless rope; Fig. 3, a detail side elevation, partly broken away, of my improved friction device; and Fig. 4, a transverse vertical sectional view taken on line 4 4, Fig. 3.

The friction-block is preferably constructed of metal and consists of a cylindrical block b, formed with a worm-recess b' and having a pair of laterally-projecting lugs b^2 upon each end, while a perforation b^3 extends longitudinally through the center thereof. This block is inclosed within an open-ended cylindrical casing c of slightly-larger diameter than the circumference of the block and provided with a flared opening c' and a perforated wing-section c^2 and perforations c^3 c^3 and c^4 to receive the projecting lugs b^2 and register with the perforation b^3, respectively. A cover d for the open end of the casing is provided and has an extension d' to correspond with the flared opening c', a perforated wing-section d^2 corresponding with the wing-section c^2, and perforations d^3 d^3 and d^4 corresponding with the respective openings c^3 c^3 and c^4.

The cover-block and casing are held together by a screw-bolt f, passed through the perforations c^4, b^3, and d^4 and adapted to have a cleat-like nut g screwed thereon, while a staple h, having its ends flattened and perforated, is pivotally secured through such perforated ends to the wing-sections c^2 and d^2 by a bolt h', retained in place by a nut h^2.

When the device is adapted for use in connection with a building containing a great many people, then a loop or endless rope s should be used, a portion being given a complete turn about the block and in the worm-groove thereof and the remainder of the loop passed out of the flared opening in the casing, and when it is desired to put the escape in operation under such circumstances the friction device should be attached to, say, a window-frame x by suspending it by means of the staple h, preferably as shown in Fig. 2, when it will remain in place for any number to descend. A great number of people may thus be lowered either one after another or a couple at a time by the rope being preferably knotted for that purpose in two places, as shown, and in such a manner that when one knot is at the lower end of the loop the other will be near the friction device. The usual straps (indicated at t) will be passed around the person to be lowered and the ends thereof hooked over the rope just above the upper knot. The lowering of this person will raise the other knot, and the above can be repeated without any loss of time, thus allowing every inmate to escape from a burning building in very short time. The speed of descent may be regulated by the person descending gripping and retarding the ascending portion of the rope.

When the device is to be used as an individual escape, the rope should be attached, preferably, as shown in Fig. 1 and the ends of the strap t hooked to the staple h, or the staple could be dispensed with and the strap ends hooked in the perforations in the wing-

sections c^2 and d^2, the person descending in a similar manner as described, and the person can also stop himself at any time during his descent by simply giving the free portion of the rope one or more turns about the cleat g.

It is obvious that many changes in the precise construction as described and shown may be made without departing from the spirit of my invention.

What I claim is as follows:

A fire-escape consisting of a rope, a friction device comprising a cylindrical block b, formed with a worm-recess b' adapted to have a portion of the rope coiled about same, a pair of laterally-projecting lugs, b^2 formed upon each end of said block and a central longitudinal perforation, b^3, therethrough; an open-ended cylindrical casing c, of slightly-larger diameter than the circumference of the block, and provided with a flared opening, c', in the side thereof, a perforated wing-section, c^2 and perforations, c^3, c^3 in the closed end thereof to receive the laterally-projecting lugs b^2 upon the adjacent side of the friction-block, and a perforation, c^4, concentric of said closed end to register with the perforation b^3 through the friction-block; a cover d for the open end of said casing, said cover having an extension, d' corresponding in contour to the longitudinal section of the flared opening, c', a perforated wing-section corresponding to the wing-section, c^2, and perforations d^3, d^3 adapted to receive the projections b^2, upon the adjacent side of the friction, and a perforation, d^4 adapted to register with the perforation, b^3; a screw-threaded bolt, f, adapted to be passed through the perforations, b^3, c^4 and d^4; a cleat-like nut, g screwed upon said bolt, a staple h having its ends flattened and perforated; and a bolt h' adapted to be passed through the perforation in said staple and said perforated wing-sections, and receive a retaining-nut, h^2, as and for the purpose set forth.

Montreal, Quebec, November 6, 1896.

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Witnesses:

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