

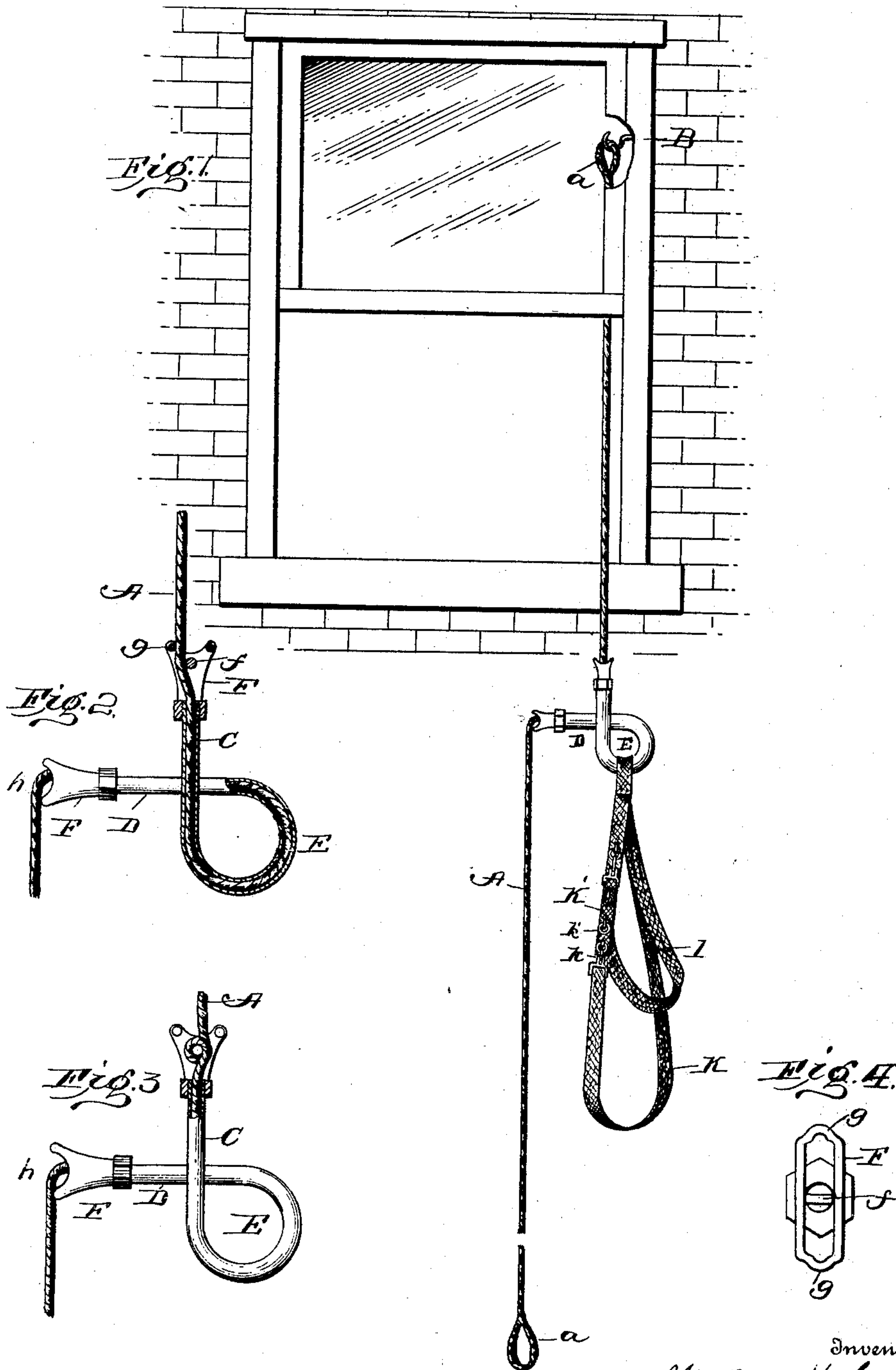
No. 660,732.

W. H. NEWMAN.  
FIRE ESCAPE.

Patented Oct. 30, 1900.

(Application filed May 4, 1900.)

(No Model.)



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# UNITED STATES PATENT OFFICE.

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## FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 660,732, dated October 30, 1900.

Application filed May 4, 1900. Serial No. 15,533. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM HENRY NEWMAN, a citizen of the United States, residing at Marlborough, in the county of Ulster, State of New York, 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 same, reference being had to the accompanying drawings, forming a part of this specification, and to the letters of reference marked thereon.

This invention relates to improvements in fire-escapes of that class which are adapted to facilitate the descent of a person from the upper portion of a building by means of a rope or flexible support, one end of which may be suitably attached to the upper portion of the building; and it has for its object to provide a device which will be simple and cheap in construction, not complicated in its operation, and which will effectually control the speed of descent, so as to prevent injury to the person descending, and the construction being such that the speed of descent may be controlled either by the descending person or by persons on the ground below and within reach of the lower end of the rope or flexible support.

Referring to the accompanying drawings, Figure 1 is a front elevation showing one window of a building with a fire-escape constructed in accordance with my present improvement. Fig. 2 is an elevation, on an enlarged scale, of the brake or controlling device, with a portion in section. Fig. 3 is a similar view illustrating the manner of increasing the power of the controlling device. Fig. 4 is a front or end elevation of one end of the controlling device.

Like letters of reference in the several figures indicate the same parts.

As in other devices of this general class, the descent of the occupant from the upper portion of the building is accomplished through the instrumentality of a rope or flexible support A, which, as heretofore, may be a plain Manila rope or a rope rendered fireproof or having fireproof strands embodied in its construction, such rope being preferably provided with a means at each end for attachment, such as a loop *a*, to a hook or similar device B, which latter may be and is prefer-

ably located at the upper left-hand side of the window or opening through which the occupant of the building is to escape. This position of the supporting-hook is preferred, inasmuch as it affords the best opportunity for placing the harness or sling about the body prior to inaugurating the descent.

The device for controlling the rapidity of the descent consists, primarily, of a pipe, through which the rope is passed, the ends of said pipe being extended at right angles to each other and the point of attachment of the harness or sling being located in rear of the crossing-point of the two ends of the pipe, whereby the rope is caused to make an angular bend on the entering side of the controlling device, and by grasping the rope below the device the friction may be greatly increased and proportioned to the weight without undue effort on the part of the person descending. This friction is caused in part by the primary angular bend and in part by the tendency of such pressure to tilt the device and cause an angular bend at the outgoing end of the pipe, as well as to increase the friction around the whole interior surface, and consequently a person standing on the ground and grasping the lower end of the rope may by simple draft or pressure on the rope cause an increased amount of friction and so accurately control the rate of descent of the escaping person.

Referring to the drawings again, it will be seen that the pipe of the controlling device has its two ends C and D projecting at right angles to each other, while the intermediate portion E is bent in the form of a loop, preferably a single coil, although, if so desired, more than one coil may be employed, and at each end of the pipe there is provided a guiding and friction head F. This head F is preferably a casting screwed on the end of the pipe and having a central bar *f*, over which the rope passes and around which one or more turns of the rope may be made should it be desired to increase the frictional resistance of the controlling device, as illustrated, for instance, in Fig. 3. Beyond the bar F in each head there is also provided a pair of guides *g*, over which the rope is caused to make an angular bend whenever the line of the rope is not coincident with that of that end of the pipe. In the preferred construction (illustrated in



Fig. 4) these guides *g* are made with grooves or V-shaped in order to center the rope and so prevent it from working up to the side of the head of the controlling device, and with  
 5 a like object in view the sides of said head are preferably concaved, as at *h*, thus tending to guide the rope back upon the guides *g* under all conditions.

The coil *E* of the controlling device affords  
 10 a convenient and ready means for the attachment of the harness or sling, and thus the load is supported in rear of the crossing-point of the two ends of the pipe, and the horizontal portion of the pipe thus operates as a lever when the lower end of the rope is drawn  
 15 down, tending to elevate the harness or sling with its load, and the degree of such elevation to a certain extent controls the friction of the rope passing through the controlling  
 20 device. The harness or sling is preferably made of webbing, having a loop *I*, adapted to pass from the front around beneath the arms of the person, and an adjustable loop *K*, in which the person may sit during the descent. The loop *K* is preferably attached to  
 25 the loop *I* by snaps *k* and is provided with a supplemental strap *K'* for the purpose of adjustment, having a series of rings *k'*, into any one of which the snap *k* may be caught.

30 Obviously a net or sling of any ordinary type may be provided for carrying goods or children to the ground, or, in fact, any load may be suspended from the loop of the controlling device and its rate of descent governed by a person standing on the ground  
 35 and having hold of the lower end of the rope.

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

1. In a fire-escape the combination with a 40 flexible support or rope adapted to be attached at one end to the upper portion of a building or structure, of a controlling device consisting of a pipe having its ends extended at substantially right angles to each other, 45 and its intermediate portion in the form of a loop projecting from the apex of the angle formed by the ends and through which pipe said flexible connection is passed, and a harness or sling suspended from said loop in rear 50 of the crossing-point of the two ends of the pipe whereby when tension is applied to the lower end of the support the weight in the harness or sling is lifted thereby increasing the friction between the controlling device 55 and rope; substantially as described.

2. In a fire-escape the combination with a flexible support or rope one end of which is adapted to be attached to the upper portion of a building or structure, of a controlling 60 device consisting of a pipe having its two ends projected at substantially right angles, its intermediate portion in the form of a loop and heads secured to the ends of said pipe each having a cross-bar over which the rope 65 is adapted to travel; substantially as described.

3. In a controlling device for fire-escapes, the combination with a pipe having its two ends projected at substantially right angles 70 and its intermediate portion in the form of a loop with heads on each end of said pipe each having a central cross-bar and a guiding-bar; substantially as described.

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