(No Model.)

F. HUTCHINSON.

FIRE ESCAPE.

No. 545,428. Patented Aug. 27, 1895.

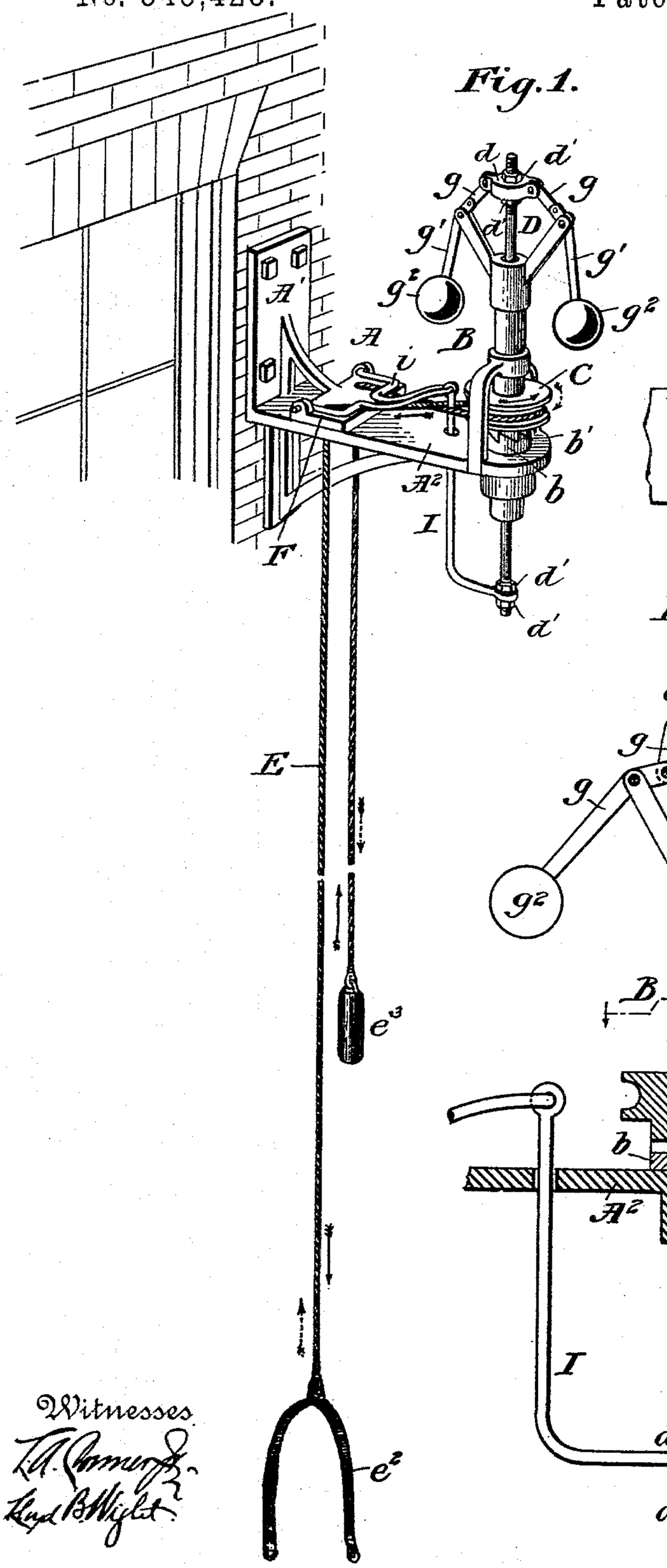


Fig. 1.

Fig. 2.

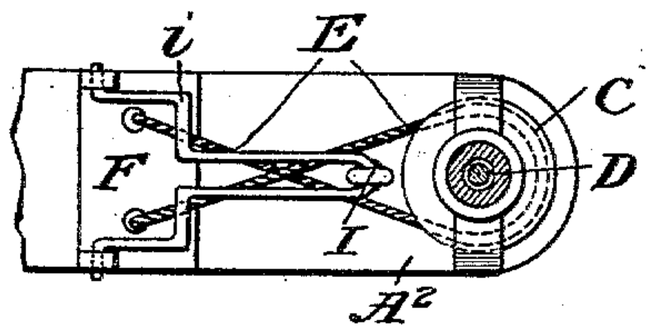
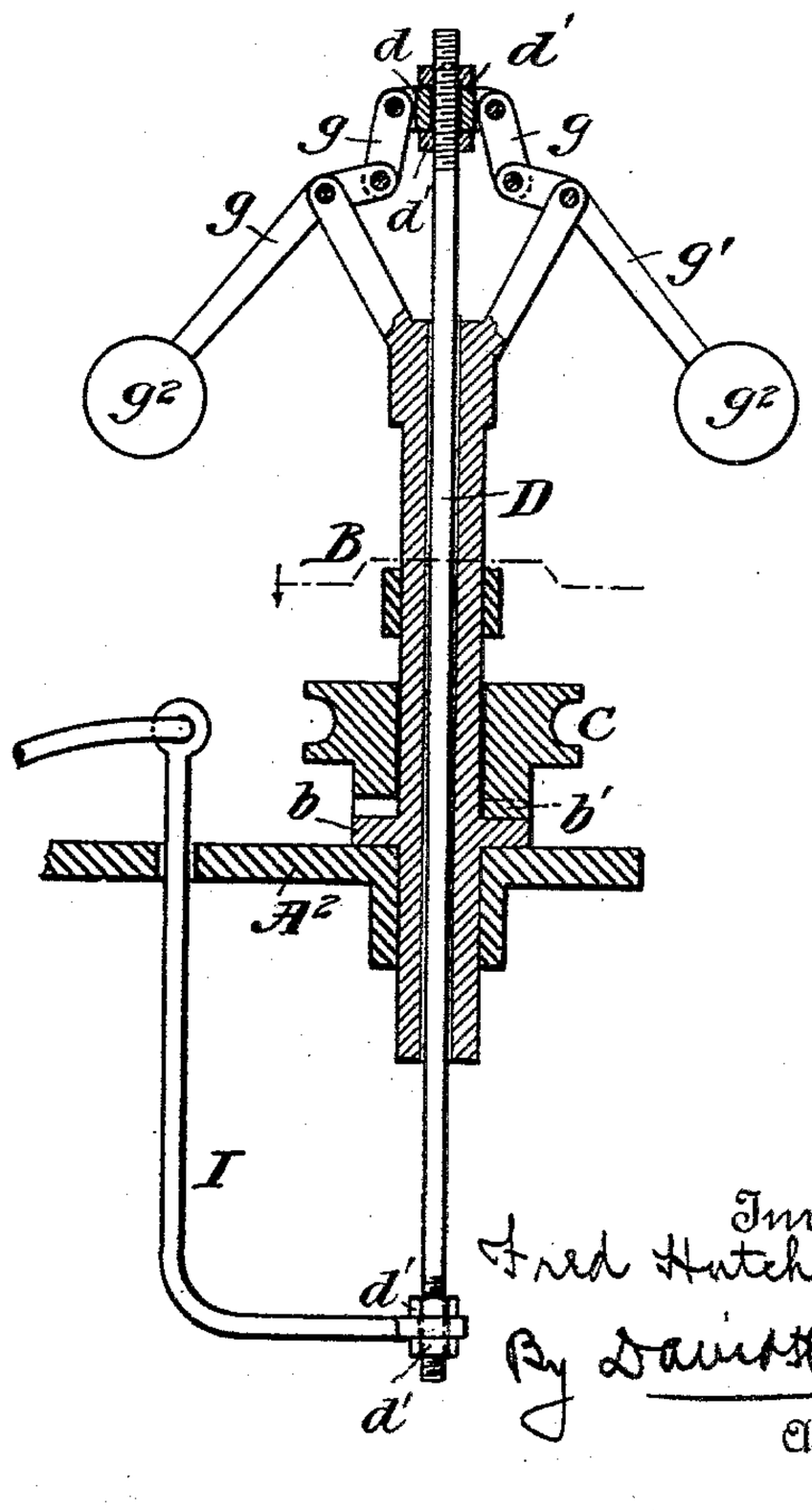


Fig. 3.



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UNITED STATES PATENT OFFICE.

FRED HUTCHINSON, OF BIRD CITY, KANSAS.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 545,428, dated August 27, 1895.

Application filed January 9, 1895. Serial No. 534,294. (No model.)

To all whom it may concern:

Be it known that I, FRED HUTCHINSON, a citizen of the United States, residing at Bird City, in the county of Cheyenne and State of Kansas, 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.

This invention relates to fire-escapes.

The object of the invention is to produce a fire-escape of such construction that a person or other body attached to a rope or the like, forming part of the device, will be lowered to the ground at a uniform rate of speed throughout its descent, irrespective of the weight of the body.

The object of the invention is, further, to produce a fire-escape of such construction that a person or other body will be lowered from a window in a building or other elevated position at a uniform rate of speed irrespective of the weight of the body and without requiring any manipulation of the device on the part of the operator.

The object of the invention is, further, to produce a fire-escape having as part thereof a rope or the like to which a person or other body may be attached, and by which it will be automatically lowered at a uniform rate of speed, and having means for returning the rope to its original position after lowering a a body.

With these objects in view the invention consists of a fire-escape of the novel construction substantially as hereinafter described and claimed.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a fire-escape constructed in accordance with my invention, the parts being shown in position ready for use. Fig. 2 is a plan view, and Fig. 3 is a sectional view, of the drum around which the rope passes and of the parts adjacent thereto.

In the drawings, A represents the main portion of the frame of the device, which is made in the general form of a bracket. The portion A′ of the frame is provided with openings for the reception of screws or nails for attachment to the frame of a window or in any other desired position, and the portion A^2 thereof is provided with an opening for the reception of a portion of the movable parts of the device.

B represents the main vertical portion of the device, and upon this vertical portion is mounted a drum C, around which passes the rope or the like, to which the body to be lowered is attached.

The portion B is attached to the frame A by a bracket *a* in such manner as to allow it to revolve, and at the same time to prevent its having longitudinal movement. The drum C, which may be of wood or other suitable material, is loosely mounted on the vertical portion B, and so arranged as to have free rotation independent of the vertical portion in one direction, and to be caused to rotate with the portion B in the other direction. This is accomplished by providing the portion B with a ring *b*, having upward-projecting teeth *b′*, and by providing the lower portion of the drum with corresponding teeth. The teeth, both on the ring and on the drum, are straight on one face and inclined on the other, permitting independent rotation in one direction and causing them to turn together in the other direction.

E represents a rope, preferably of wire, to which is to be attached a person or other body to be lowered. One end of the rope is provided with a belt e^2, or the like, for convenience in attaching the body to be lowered, and the other end of the rope is provided with a weight e^3. The rope is passed around the drum, as shown, in a direction to cause the engagement of the teeth on the portion B and on the drum C when the end of the rope to which the belt is attached pays out, causing the parts to move together, and to allow the parts to turn independently when the other end of the rope, that bearing the weight, pays out. A rod D extends through the vertical portion B and is capable of lateral movement independent thereof. The rod D extends through a cross-piece *d* at its upper end and the cross-piece and rod are connected by the nuts *d′ d′*, which cause the rod and the cross-piece to move vertically together. The opening in

the cross-piece is of such a shape as to allow the cross-piece to rotate independently of the rod. Levers g', bearing the weights g^2 at their outer ends, are pivoted in the upper part of the portion B, and these levers are connected to the cross-piece d by links g.

F represents a plate attached to the frame of the device and having openings through which the ends of the rope pass and through which they slide in the use of the device. A brake I is rigidly attached to the lower end of the rod D by a connection i, and it is pivoted to the plate F at a point where the rope passes over the plate.

In the operation of the device, the parts being in the positions shown in Fig. 1 of the drawings, a person or other body is attached to the end of the rope by the belt or otherwise and its weight is imposed upon the rope. As the rope pays out, the drum C is revolved, and a corresponding movement is communicated to the portion B and to the ball-governor, resulting in causing the balls to rise by centrifugal force, and through the connection forcing down the rod D and thus causing the brake to be pressed upon the rope and preventing too rapid paying out of the rope. It will be apparent that the greater the weight imposed upon the rope the greater will be the speed of the ball-governor at the outset, and consequently the greater the pressure of the brake on the rope, resulting in checking and regulating the speed with which the rope passes over the plate F. When the body reaches the ground and is released from the rope, the latter will be returned to its original position by the weight, the weight being of a specific gravity corresponding to that of the length of rope necessary to reach from the frame A to the ground and of the belt or the like use to attach a person or other body to the rope.

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

1. A fire escape comprising a frame, a drum mounted on the frame a rope provided with a belt or the like passed around the drum, a plate over which the rope passes, a reciprocating rod, a brake attached to the rod and adapted to bear on the rope, and a ball governor attached to the reciprocating rod, substantially as described.

2. A fire escape comprising a frame, a drum mounted on the frame a rope passing around the drum, one end of the rope being provided with a belt or the like, and the other end being provided with a weight, a plate over which the rope passes, a reciprocating rod, a brake attached to the rod and bearing on the rope, and a ball governor attached to the rod, substantially as described.

3. A fire escape comprising a frame provided with means for attaching it to a window frame or the like, a drum mounted on the frame and provided with teeth, a vertical revoluble portion having teeth engaging those on the drum, a rope passed around the drum, a plate on the frame over which the rope passes, a reciprocating bar, a brake attached to the rod and adapted to bear on the rope where it passes over the plate, and a ball governor connected to the bar and receiving motion from the drum, substantially as described.

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

FRED HUTCHINSON.

Witnesses:
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