

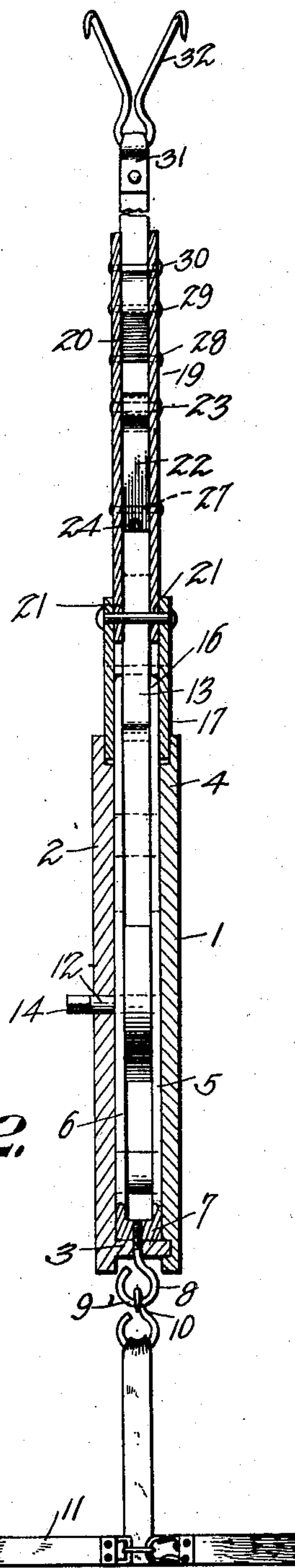
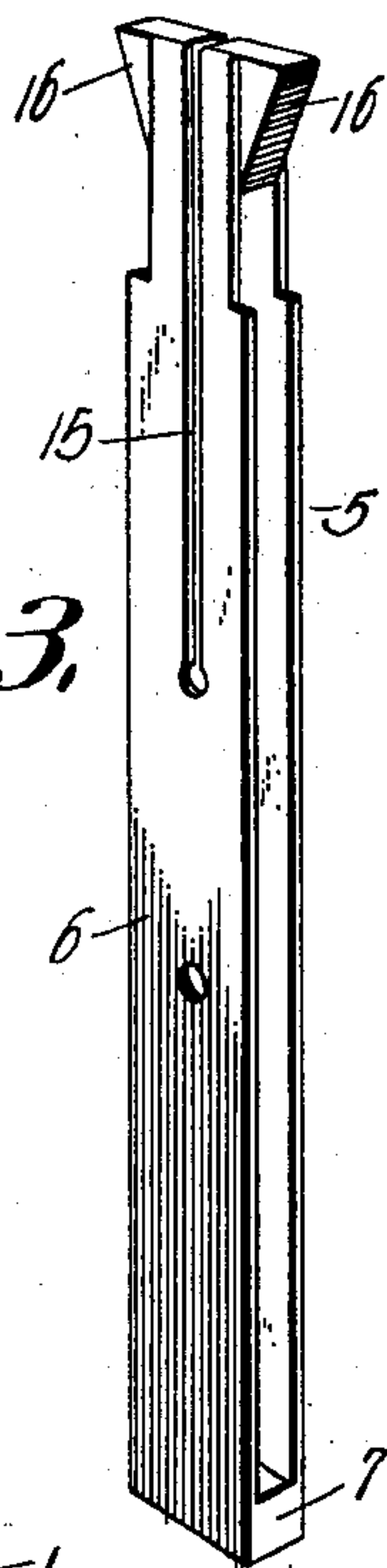
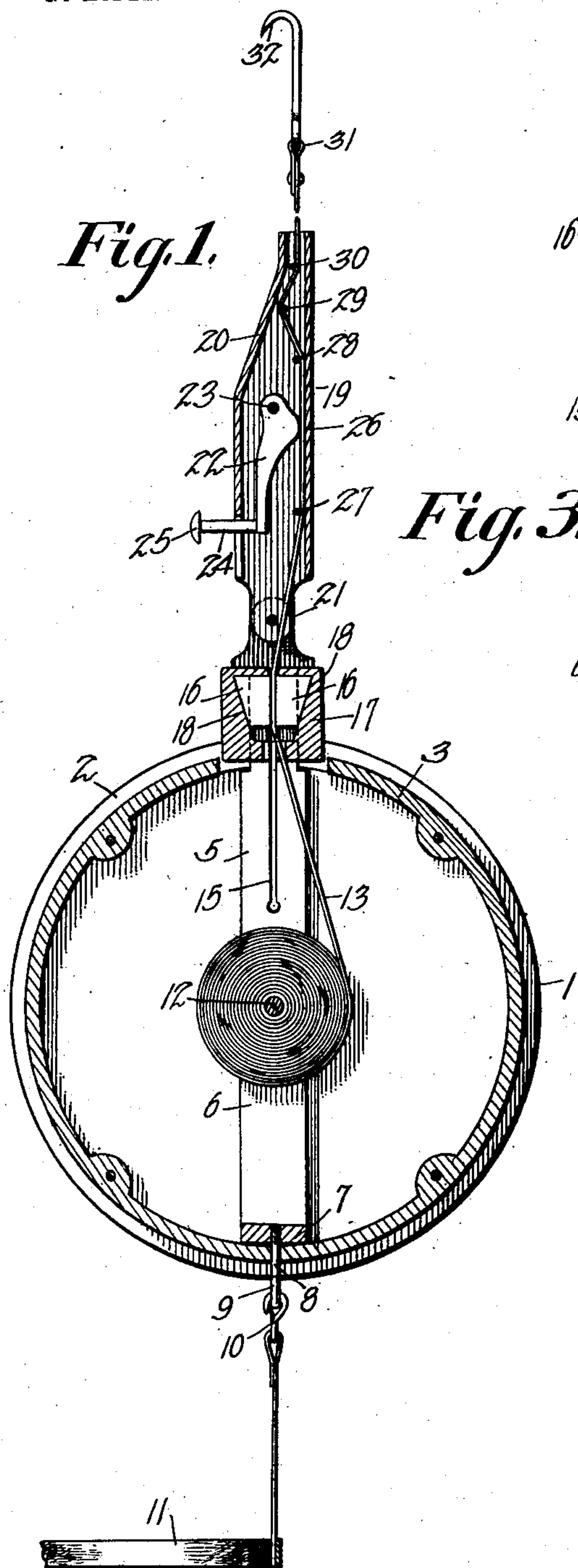
No. 737,145.

PATENTED AUG. 25, 1903.

A. W. RICHES.
FIRE ESCAPE.

APPLICATION FILED FEB. 16, 1903.

NO MODEL.



Witnesses

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UNITED STATES PATENT OFFICE.

ARTHUR W. RICHES, OF DENVER, COLORADO, ASSIGNOR OF ONE-HALF TO
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FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 737,145, dated August 25, 1903.

Application filed February 16, 1903. Serial No. 143,609. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR W. RICHES, a citizen of the United States, residing at Denver, in the county of Arapahoe and State of Colorado, have invented a new and useful Fire-Escape, of which the following is a specification.

This invention relates to fire-escapes, and has for its objects to produce a device of this character which will be simple of construction, efficient in operation, and which will be light and portable, thus adapting it to be readily packed in a grip to be transported from place to place by a traveler.

To these ends the invention comprises, in a fire-escape, the combination, with a casing, of a clutch member carried thereby and provided at its end with inclined heads, a shell having inclined faces engaging the inclined heads, and a tape wound in the casing and passed outward between the inclined heads and adapted to be unwound by the weight of the operator, the inclined faces being also actuated by the operator's weight to cause the inclined heads to frictionally engage the tape.

The invention further comprises the details of construction and combination of parts more fully hereinafter described.

In the accompanying drawings, Figure 1 is a vertical sectional elevation through the device. Fig. 2 is a vertical transverse sectional elevation. Fig. 3 is a detailed perspective of the clutch member.

Referring to the drawings, 1 indicates a hollow casing composed, preferably, of aluminium and comprises an annular side wall 2, having a flange 3 projecting therefrom and preferably formed integral therewith, and a removable annular side wall 4, secured in place by means of bolts or the like engaging with suitable lugs formed on the interior of the casing.

5 indicates the clutch member, having an extension 6 mounted in the casing 1, this extended portion of the clutch member comprising flat parallel plates connected at their lower end by a block 7, adapted to be engaged by a screw 8, passed through the peripheral wall of the casing and provided at its outer end with an eye 9 for the attachment of a

snap-hook 10 on the end of a strap attached to the belt 11, which is applied around the body of the operator. The screw 8 serves the additional function of securely attaching the clutch member to the casing to prevent relative movement of the parts.

12 is a horizontal shaft or axis mounted centrally in the extended portion 6 of the clutch member.

13 is a flat steel tape wound upon the shaft 12 and contained normally within the casing, with one of its ends extended outward through the side of the same for the purpose to be presently explained. The shaft 12 projects beyond one of the side walls of the casing and has its ends square, as at 14, for the reception of a suitable crank for winding the tape.

The side plates of the clutch member have central longitudinal slits 15 formed therein, and these slitted ends are provided with integral inclined heads 16, extended beyond the peripheral walls of the casing and diverging outwardly from the same.

17 indicates a shell mounted around the heads 16 and provided on its interior with oppositely-inclined faces 18, adapted to be engaged by the heads for the purpose hereinafter explained.

19 indicates the hand-brake, comprising a tubular member 20, provided at its lower end with ears 21, adapted to be pivotally connected with similar ears projecting upwardly from the shell 17. Mounted in the tubular member 20 is a brake member 22, pivoted, as at 23, and provided with a lateral finger 24, extended through a suitable orifice in the transverse wall of the tubular member and provided with a head 25.

26 indicates a fixed friction-surface or brake member mounted in the tubular member 20 and suitably secured to the transverse wall of the same in position to cooperate with the pivoted brake member.

27, 28, 29, and 30 indicate transverse pins mounted in the side walls of the member 20 for the purpose hereinafter described.

The tape 13 is led from the casing outward between the inclined heads 16, thence through the tubular member of the hand-brake 19, in its passage through which it lies beneath the

pins 27 and 28, by which it is maintained close to the surface of the fixed brake member, thence upward over the pin 29 and downward beneath the pin 30 and out through the end of the casing, where it is provided with a suitable loop 31, adapted to engage the hook 32, by which it is secured to the window-sill or the like when in use.

The operation of the device is as follows:
 10 Supposing the tape 13 to be wound upon the shaft, if it is desired to use the device the hook at the free end of the tape is engaged with the window-sill or other convenient place and the operator fastens the belt around
 15 his body and attaches the snap-hook 10 into the eye 9. Under these conditions the weight of the person descending will unwind the tape and will also cause the shell 17 to pull upward, thus engaging the inclined faces 18
 20 with the inclined heads or clutch members 16, between which the tape passes and which will, owing to their springy nature, due to the slits 15, formed in the plates, be pressed together and frictionally engage the tape be-
 25 tween them, thus preventing its unwinding too rapidly. Under these conditions if the user finds that he is descending too rapidly he may by pressing on the head 25 of the movable clutch member press said member
 30 downward against the fixed clutch member, thus clamping the tape between them and entirely preventing unwinding of the same.

It is to be observed that owing to the clutch member having the extended portion 6 within
 35 which the tape is wound and also owing to the fact that the hand-grip is connected to the clutch member there will be absolutely no strain exerted upon the casing.

From the foregoing it will be seen that a
 40 very light, strong, and durable fire-escape is produced which may be readily packed for transportation from place to place and one that will be thoroughly efficient in operation. In attaining these ends I do not limit or con-
 45 fine myself to the precise details herein shown and described, as various changes may be made therein without departing from the spirit or scope of my invention. While I prefer to employ a flat steel tape such as herein

shown and described, owing to its extreme lightness and the compact manner into which it may be wound, it is to be understood that I may employ a wire rope or the like.

Having thus described the invention, what is claimed is—

1. In a fire-escape, the combination with a casing, of a clutch member carried thereby and provided at its end with inclined heads, a shell having inclined faces engaging the inclined heads, and a tape wound in the casing and passed outward between the inclined heads and adapted to be unwound by the weight of the operator, the inclined faces being also actuated by the operator's weight to cause the inclined heads to frictionally en-
 65 gage the tape.

2. In a fire-escape, the combination with a clutch member having an extended portion, of a casing mounted upon the same, a shaft extending through the casing and extended
 70 portion of the member, a tape wound upon the shaft within the casing and extended outward through the clutch member, means actuated by the weight of the operator for operating the clutch member to frictionally en-
 75 gage the tape, and a hand-brake connected with the clutch member and operable for clamping the tape.

3. In a fire-escape, the combination with a clutch member having an extended portion
 80 and inclined heads, of a casing mounted upon the extended portion of the member, a shaft extending through the casing, a shell surrounding the inclined heads and having in-
 85 clined faces engaging the same, a tubular member connected with the shell, a tape wound upon the shaft within the casing and extended outward between the inclined heads and through the tubular member, and a brake
 90 member mounted within the tubular member and operable by hand for clamping the tape.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ARTHUR W. RICHES.

Witnesses:

GEORGE H. THOMPSON,
 H. LAMBORN.