

No. 648,404.

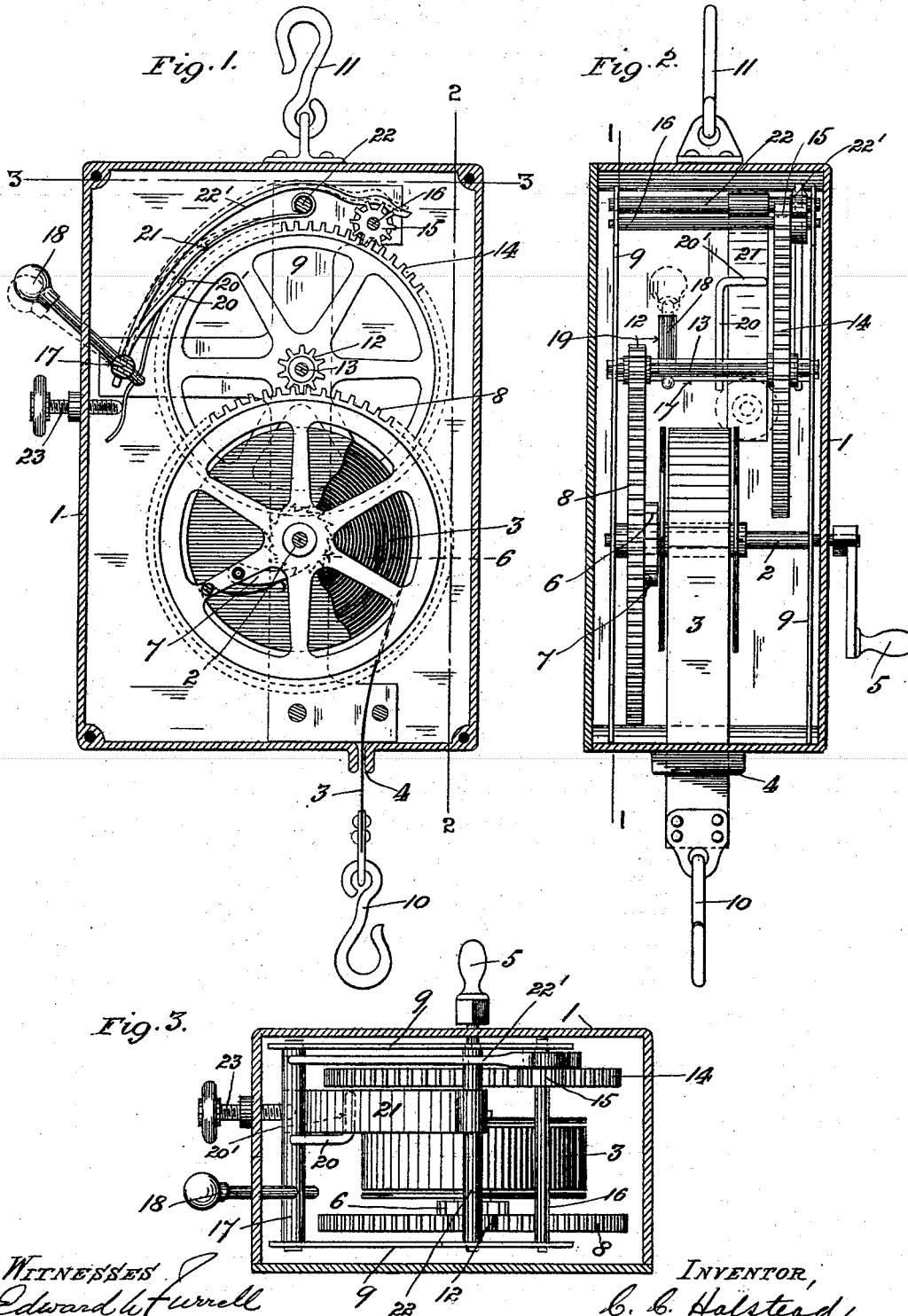
Patented May 1, 1900.

C. C. HALSTEAD.
FIRE ESCAPE.

(Application filed Aug. 28, 1899.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES
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(Application filed Aug. 26, 1899.)

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2 Sheets—Sheet 2.

Fig. 4.

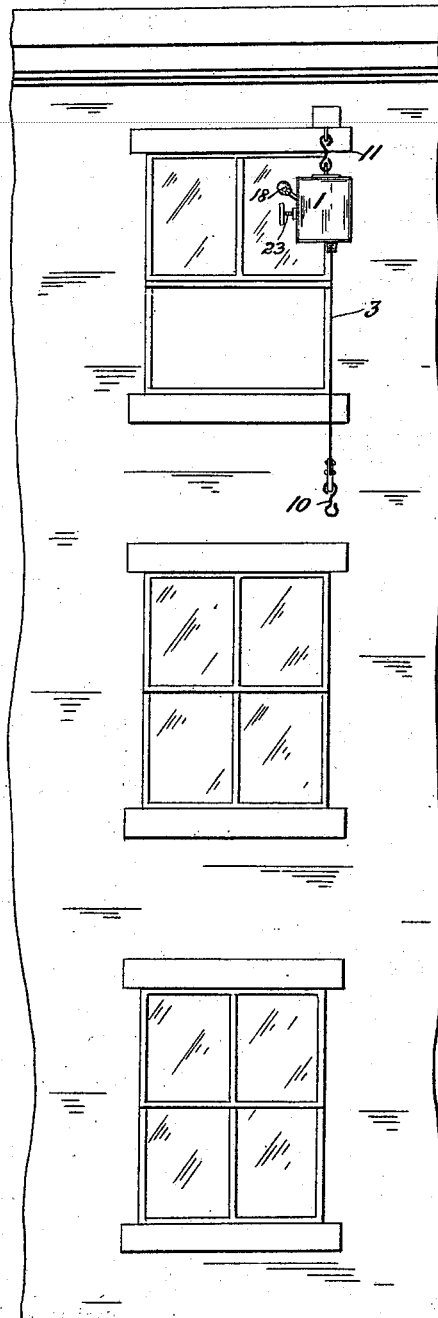
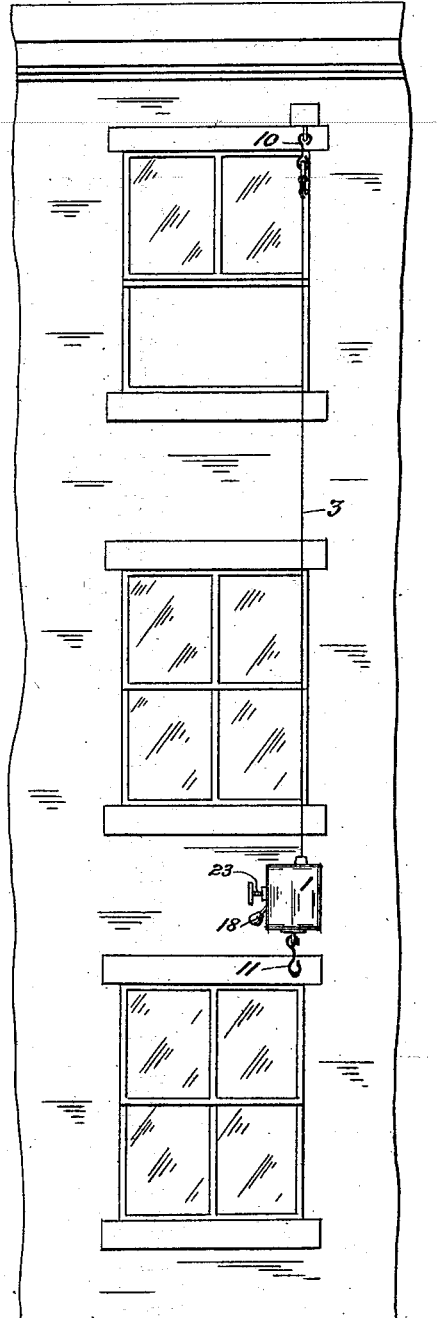


Fig. 5.



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UNITED STATES PATENT OFFICE.

CHARLES COLOSSE HALSTEAD, OF BLODGETT, MISSOURI.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 648,404, dated May 1, 1900.

Application filed August 26, 1899. Serial No. 728,620. (No model.)

To all whom it may concern:

Be it known that I, CHARLES COLOSSE HALSTEAD, a citizen of the United States, residing at Blodgett, in the county of Scott and State of Missouri, have invented certain new and useful Improvements in Fire-Escapes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention has relation to improvements in fire-escapes; and it consists in the novel construction and arrangement of parts more fully set forth in the specification and pointed out in the claims.

In the drawings, Figure 1 is a side elevation of the operating parts of the mechanism, the side wall of the casing being removed, the view being virtually a section on line 1 1 of Fig. 2. Fig. 2 is a vertical section on line 2 2 of Fig. 1. Fig. 3 is a horizontal section on line 3 3 of Fig. 1. Fig. 4 is a front elevation of a building, showing one application of my invention; and Fig. 5 is a similar view showing another application of the device.

The object of my invention is to construct a fire-escape in which shall be brought into requisition a metallic tape or ribbon for the support of the person lowered from any story of the building, the unwinding or paying out of the ribbon being under perfect control either of the parties lowering any person or the person himself, as will more fully herein-after appear.

In detail the device may be described as follows:

Referring to the drawings, 1 represents a casing in which the several operating parts are mounted. Mounted between the side walls of the casing is a spindle or arbor 2, about which is adapted to be wound a metallic tape or ribbon 3, the inner end of the ribbon being secured to the spindle and the outer end passing through a mouth or slit 4 in the bottom wall of the casing. The spindle is turned by a key or crank 5 from the outside of the casing, the winding up of the tape being like in an ordinary clock mechanism, in the present instance the spindle carrying a ratchet 6, which coöperates with a spring-actuated pawl 7, pivotally secured at one end to the gear-wheel 8, loosely mounted on the spindle, adjacent to one end thereof, the several parts

being mounted in a frame 9, located within the casing. It is obvious that as the spindle is turned to the left in Fig. 1 the tape will be wound up in the manner of the mainspring of any clock mechanism. As the tape is unwound by drawing on the same the spindle and gear-wheel 8 will revolve in the opposite direction. The outer end of the tape is provided with a hook 10, from which can be suspended a basket (not shown) for the convenience of persons being lowered from any floor of a building in case of fire, the casing being suspended under the circumstances from a hook 11.

Meshing with the teeth of the gear-wheel 8 is a pinion 12 at one end of a rotatable shaft 13, to which is keyed or secured a second gear-wheel 14, the latter having its teeth meshing with a second pinion 15, mounted at the top of the frame 9 on a shaft 16.

In lowering a person by the unwinding of the tape, as above indicated, it becomes necessary to carefully control the speed of unwinding thereof. This controlling mechanism is as follows: Mounted at the front of the frame, adjacent to the front wall of the casing, is a rock-shaft 17, which can be controlled by a lever or handle 18, projecting through an elongated slot 19, formed in the wall of the casing. Rigidly carried by said rock-shaft is an arm 20, having a deflected terminal portion 20', which normally bears against the rear surface of a resilient spring or plate 21, rigidly secured to a bar 22, carried at the top of the frame 9. The tendency of the spring 21 is to tilt the arm 20 to the right, (see Fig. 1,) thus throwing the lever 18 to its highest position. The rock-shaft is also provided with a brake-arm 22', whose free end normally bears (under the influence of the spring 21) against the hub portion of the pinion 15, the friction between the brake-arm and said hub portion being sufficient to prevent the tape from unwinding under the tension of an ordinary load. When a person suspended from the end of the tape is to be lowered, an operator stationed at the window from which the casing is suspended tilts the lever 18 downward, thus rocking the shaft against the resiliency of the spring 21, (see Fig. 1, dotted lines,) and thereby relieving the pressure of the brake-lever 22' against the hub of the

pinion 15. The train of gear-wheels is now free to revolve under the action of the weight carried by the tape, and the person is thus lowered. To prevent a too-sudden descent of the person thus lowered, the operator causes the brake-lever to more or less frictionally engage the hub of the rotating pinion 15 by turning a regulating-screw 23, mounted in the casing below the lever 18, the inner end of the screw bearing against the free end of the spring 21 and in a measure forcing it in the direction from which it was tilted by the rocking of the rock-shaft as a result of the downward movement of the lever 18. Thus while the downward movement of the lever 18 disengages the brake 22' from the pinion 15, allowing the train of gearing to revolve, the screw 23 regulates the amount or degree of such disengagement by forcing the brake-lever against the hub of the pinion 15 after the latter has once been set in motion.

The foregoing sets forth the normal operation of the device, but it does not provide for the escape of the last person to descend. The last person takes the casing and hangs it up by the hook carried by the tape, when, as seen in Fig. 5, he seizes the casing and travels down with it, the speed of the descent being regulated in the manner already indicated.

It is apparent that minor changes might be made in the device without departing from the spirit of my invention. While a steel tape is preferable, it is to be understood that any metallic tape will answer the purpose, so long as it can stand the strain.

Having described my invention, what I claim is—

1. A fire-escape comprising a suitable casing, a spindle mounted in the same, a tape adapted to be wound around or unwound from, the spindle, a gear-wheel carried by the spindle and adapted to rotate therewith during the unwinding of the tape therefrom, a pinion meshing with said gear-wheel, a second gear-wheel actuated by said pinion, a second pinion actuated by said second gear-wheel, a rock-shaft, a brake-lever extending from said shaft and bearing against the hub of the second pinion, an arm carried by the rock-shaft, a spring bearing against said arm and rocking the shaft in a direction to cause the brake-lever to frictionally engage the hub of the second pinion, a regulating-screw controlling the spring, and a lever or operating-handle projecting through the casing, for rocking the rock-shaft, the parts operating substantially as and for the purpose set forth.

2. In a fire-escape, a suitable casing, a train of gearing confined within the same, a tape adapted to set said gearing into motion when under tension, a spring-controlled brake for normally holding the gear mechanism against movement, means for releasing the brake mechanism, and devices for regulating the frictional contact between the brake mechanism and gearing after the latter has once been set in motion, substantially as set forth.

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

CHARLES COLOSSE HALSTEAD.

Witnesses:

W. H. ALLEN,
J. M. ADAMS.