E. R. MORRISON.

Fire-Escapes.

No. 135,354. Patented Jan. 28, 1873.

Fig. 1.

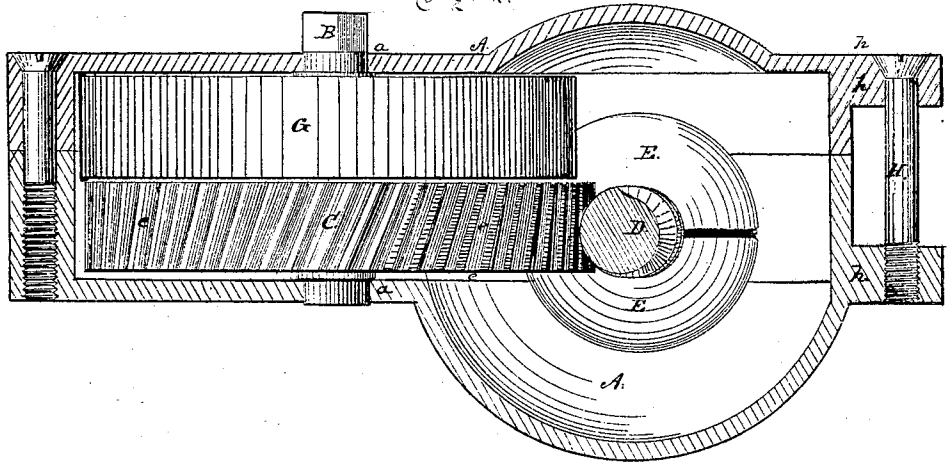
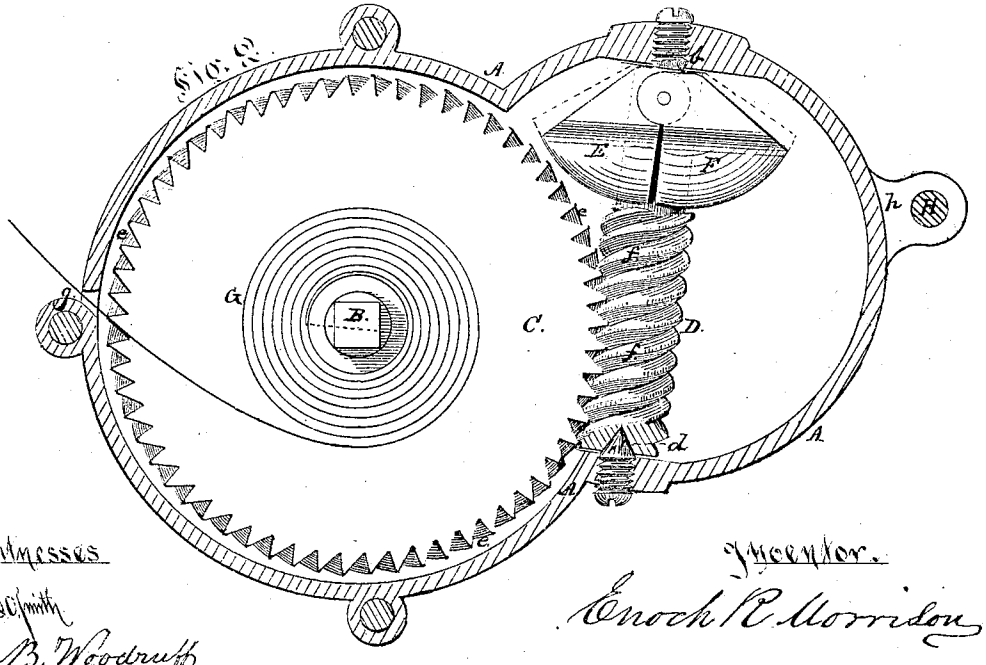


Fig. 2.



Witnesses
R. B. Smith
J. B. Woodruff

Inventor.
Enoch R. Morrison

UNITED STATES PATENT OFFICE.

ENOCH R. MORRISON, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR TO HIMSELF AND JOHN S. STITES, OF SAME PLACE.

IMPROVEMENT IN FIRE-ESCAPES.

Specification forming part of Letters Patent No. **135,354**, dated January 28, 1873.

To all whom it may concern:

Be it known that I, ENOCH R. MORRISON, of Washington city, in the District of Columbia, have invented certain new and useful Improvements in Fire-Escapes, of which the following is a specification:

My invention relates to that class of fire-escapes in which the person escaping is attached to one end of a rope, the other end of which is wound upon a windlass having a friction apparatus to retard the too rapid descent of the person escaping, and thus prevent injury.

The subject-matter claimed is hereinafter specified.

In the accompanying drawing, Figure 1 is an edge view, and Fig. 2 a face view, of my improved apparatus, the casing in each view being removed to show the mechanism within.

A compact case, A, of suitable form, dimensions, and material, forms a bearing, in which an arbor, B, freely turns. A cord or unwinding-rope, G, by preference made in the form of a flat band of metal, is securely fastened at one end to this arbor, and is wound helically upon it, its other end passing out through the side of the casing, and being provided with means for attaching it securely to the person, the building, or the furniture. A spirally-cut gear-wheel, C, secured upon and turning with this arbor, meshes into a worm-wheel, D, turning upon adjustable friction-screws *b d* in the casing, in order to secure easy motion and perfect adjustment. This gearing will, when power is applied to it, cause the worm-wheel to revolve with high velocity. Governor-weights E are pivoted on this spindle, on an axis transverse thereto, so as to fly out by centrifugal force, like the balls of a governor. Instead, however, of hinging these weights, so as to press with their outer faces on the inner periphery of a drum outside the case, as has heretofore been done, I cause the ends of the shorter arms of the levers to press directly against the inner side of the casing itself, thus not only getting great leverage, but causing an end-thrust on the bearings and gearing of the worm-wheel, which end-thrust increases the friction, and materially aids in retarding the descent of the falling body. A loop, H, is provided for the attachment of a strap or other device for securely fastening it to the body or to the building.

The device is so simple and compact as easily to be carried about the person.

In case but one individual has to escape from a building, he can attach the band G to the building or furniture, and secure the machine to his person. If time permits he can let himself down gradually with his feet against the wall, keeping full control of the machine; but should the danger be imminent, he could fearlessly drop from the window, his rapid descent at the start being gradually checked by the friction-gearing above described. If more than one person is to escape, the machine may be secured in the room while the person attaches himself to the strap and descends, as before, the strap being wound up by the person left behind, (a crank being fitted to the arbor for that purpose,) who escapes in turn. As the band unwinds the leverage of the windlass diminishes, and this also aids in diminishing the rapidity of the latter part of the descent.

I do not broadly claim arresting the descent of a weight by multiplying gearing and a friction-brake, as such devices are old.

I claim—

In a fire-escape, the combination of the flat band wound helically upon an arbor, the gear-wheel C, and the worm-wheel D, carrying the radially-expanding friction-governor E E, all arranged within the portable and compact case, substantially as described, said case being adapted to be attached either to the person or to the building, as specified.

ENOCH R. MORRISON.

Witnesses:

E. C. DAVIDSON,

BALTIS DE LONG.