J. M. SHERMAN.

FIRE ESCAPE.

APPLICATION FILED MAR. 4, 1914.

1,117,098.

Patented Nov. 10, 1914.

2 SHEETS—SHEET 1.

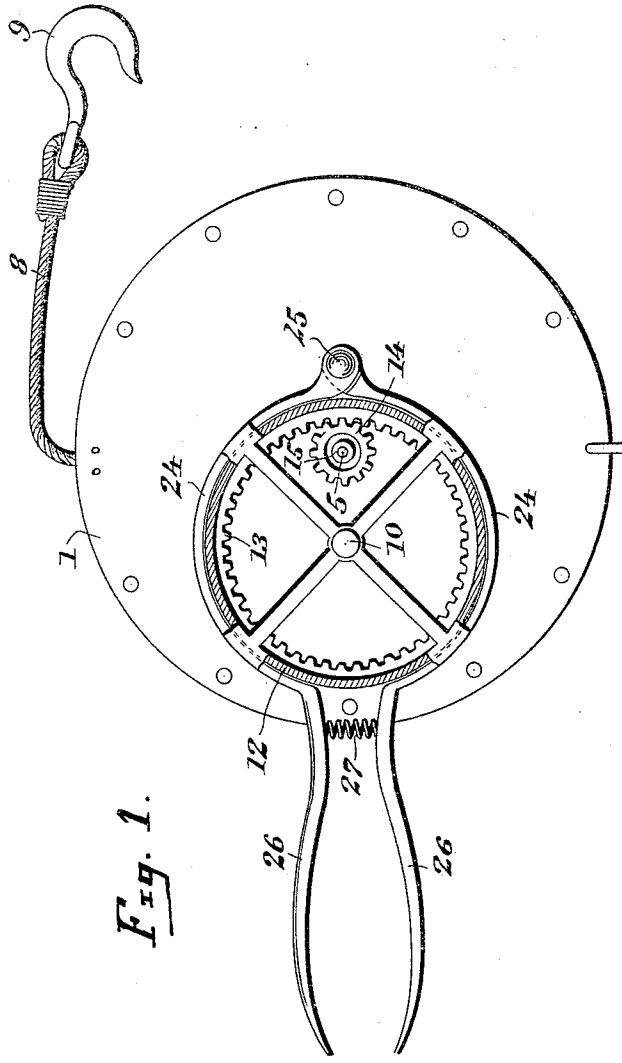


Fig. 1.

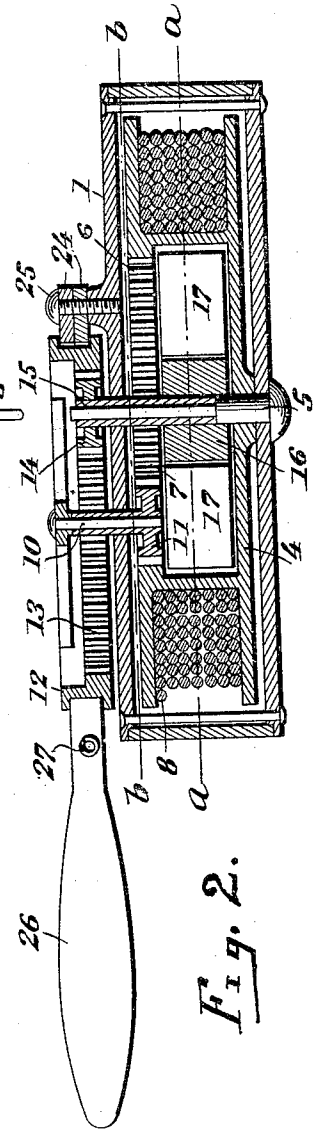


Fig. 2.

Witnesses

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2 SHEETS—SHEET 2.

Fig. 4.

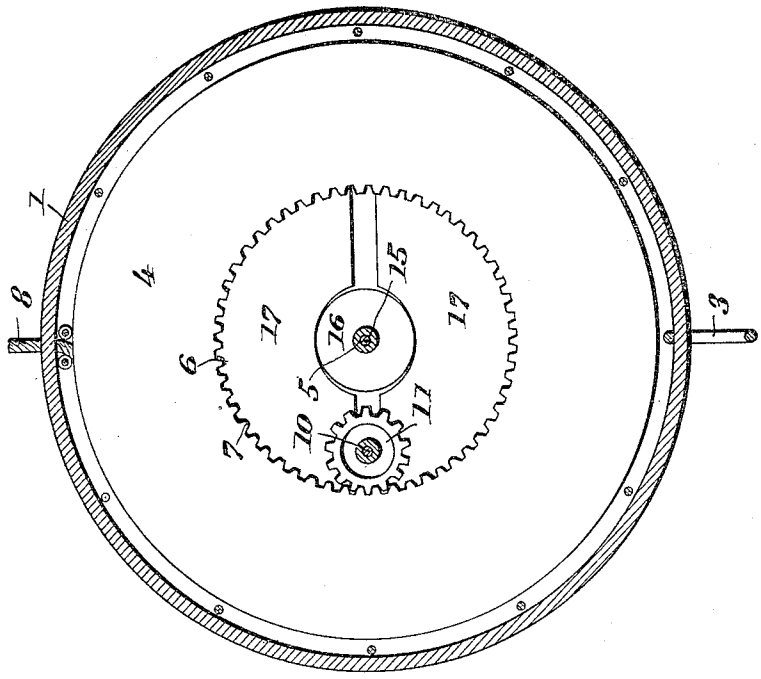
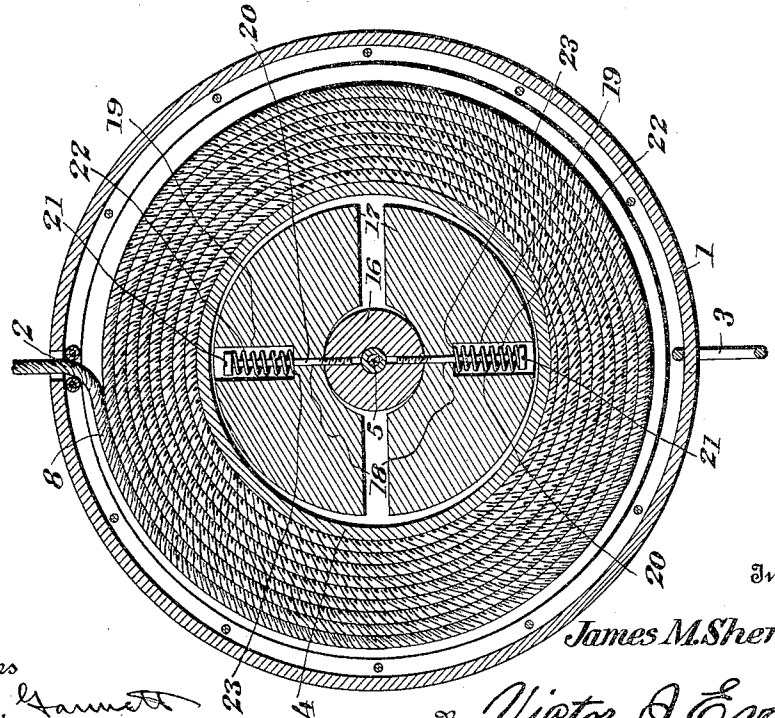


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

JAMES M. SHERMAN, OF SAN JACINTO, CALIFORNIA.

FIRE-ESCAPE.

1,117,098. Specification of Letters Patent. Patented Nov. 10, 1914.

Application filed March 4, 1914. Serial No. 822,466.

To all whom it may concern:

Be it known that I, JAMES M. SHERMAN, a citizen of the United States, residing at San Jacinto, in the county of Riverside and State of California, have invented new and useful Improvements in Fire-Escapes, of which the following is a specification.

This invention is an improved fire escape adapted for individual use by a person in escaping from a burning building and for lowering safely to the ground, the invention consisting in the construction, combination and arrangement of devices hereinafter described and claimed.

One object of the invention is to provide an improved fire escape of this class which is extremely cheap and simple, is strong and durable, is reliable in operation, is compact and readily portable and which is provided both with hand brake apparatus and with automatically actuating brake apparatus to regulate the descent when the device is in use.

In the accompanying drawings:—Figure 1 is a side elevation of a fire escape constructed in accordance with my invention. Fig. 2 is a vertical transverse sectional view of the same. Fig. 3 is a vertical sectional view on the plane indicated by the line *a*—*a* of Fig. 2. Fig. 4 is a detail sectional view on the plane indicated by the line *b*—*b* of Fig. 2.

In the construction of my improved fire escape I provide a casing 1 which is here shown as circular in form and which has a peripheral opening 2. Opposite the opening is a clevis 3 to enable a person to be attached to the casing as by means of a suitable belt or harness. A reel 4 is arranged within the casing, concentrically therewith and is mounted on a shaft 5. This reel is open on one side as at 6 and is provided with internal gear teeth 7 around the said opening. A suitable cable or lowering cord 8, which in practice is preferably a wire cable is wound on and attached to the reel and is passed outwardly through the opening 2 in the casing and is provided at its free end with a hook 9 which may be attached to a window sill or any sufficient heavy or bulky article in a room to support the fire escape and the person using the same and allow the person to lower himself to the ground out through the window.

A shaft 10 is mounted in a bearing opening in one side of the casing and is provided at its inner end with a spur gear 11 which engages the internal gear 7 of the reel. On the outer end of said shaft is a brake wheel 12 which is hollow, is open on its inner side and is provided with internal gear teeth 13. The gear teeth 13 engage a gear 14 on the outer end of a shaft 15 which is here shown as tubular and arranged for rotation on the shaft 5. A collar 16 which is arranged in the center of the casing and within the reel, is secured to the said shaft 15 for rotation therewith.

A pair of upwardly semi-circular centrifugally acting brake shoes 17 are arranged within the reel, to bear against the inner peripheral surface thereof and are provided each with a central transverse opening 18 having an enlarged outer portion 19. Radially arranged arms 20, which in practice may be screws secured to the collar 16 pass outwardly through the openings 18 and their heads are enlarged stops 21, at their outer ends, which are arranged in the enlarged portions 19 of the said openings. Coiled springs 22 are arranged on the said arms with their outer ends bearing against the stops or heads 21 and their inner ends bearing against the shoulders 23 formed by the said enlarged portions 19 of the openings. These springs exert their tension to normally move the centrifugally acting brake shoes or weights 17 toward each other and out of engagement with the reel.

When the fire escape is in use, the rotation of the wheel, occasioned by the tension of the lowering cord, causes the shaft 15 to be revolved, through the instrumentality of the gears 7—11, 13—14. The centrifugally acting weighted brake shoes 17 are also revolved with the shaft 15 and when the descent becomes too rapid these weights or brake shoes move outwardly by centrifugal force against the tension of the springs 22 and are applied frictionally against the inner periphery of the wheel, thereby automatically checking the rotation of the reel and hence regulating the speed of descent. I also provide a pair of hand brakes 24 which are substantially semi-circular in form, are arranged opposite each other and on opposite sides of the brake wheel 12 and are pivotally connected to the casing as at 25. These hand brakes are provided with handles 26, which may be readily grasped by one hand and hence the user of the fire escape by applying pressure to the handles

26 may cause the brakes 24 to frictionally grip the brake wheel 12 and thereby regulate the speed of descent. A spring 27 is arranged between the hand brakes to normally disengage them from the brake wheel 12.

Having thus described my invention, I claim:—

1. In a fire escape of the class described, a casing, a reel mounted for rotation in the casing, having its central portion open and provided with an inner periphery and an internal gear, a shaft mounted in the casing and having a gear at its inner end engaging the reel gear and also provided on its outer end at a point without the casing, with an internally geared brake wheel, a hand brake for engaging said brake wheel, a second shaft mounted in the casing and having a gear engaging that of the brake wheel, and a centrifugally actuating brake carried by the said second shaft and arranged in the casing and within the reel and adapted to engage the inner periphery of the latter.

2. In a fire escape of the class described, a casing, a reel mounted for rotation in the casing, having its central portion open and provided with an inner periphery and an internal gear, a shaft mounted in the casing and having a gear at its inner end engaging the reel gear and also provided on its outer end at a point without the casing, with an internally geared brake wheel, a hand brake for engaging said brake wheel, a second shaft mounted in the casing and having a gear engaging that of the brake wheel, and a centrifugally actuating brake carried by the said second shaft and arranged in the casing and within the reel and adapted to engage the inner periphery of the latter, said centrifugally actuating brake comprising radially arranged arms carried by the second shaft, weighted brake shoes having openings through which said arms extend and springs on said arms, connecting the brake shoes thereto and which exert their tension to normally move the brake shoes inwardly toward each other.

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

JAMES M. SHERMAN.

Witnesses:
F. F. Brooks,
G. W. Painter.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."