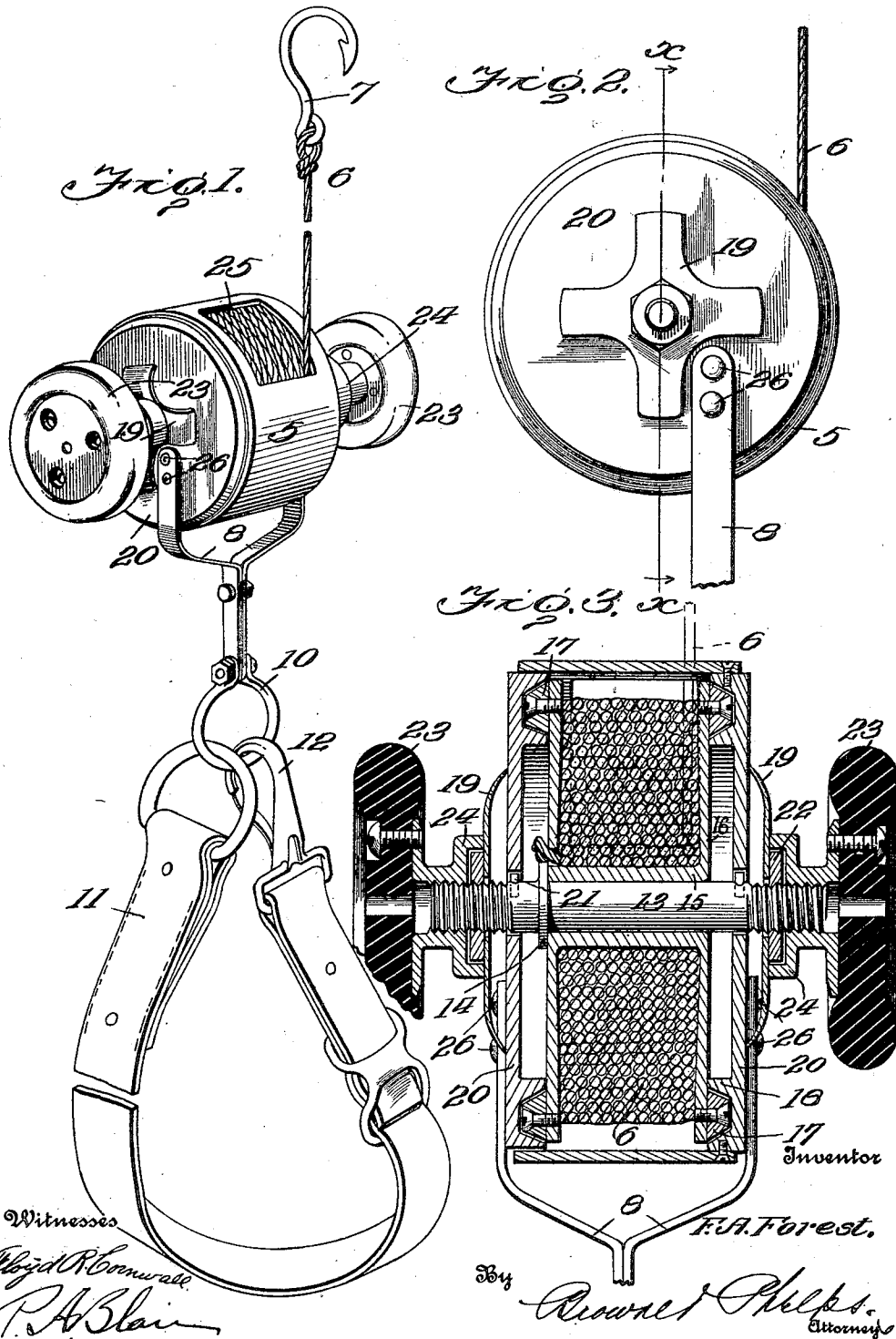


F. A. FOREST.
 PORTABLE FIRE ESCAPE.
 APPLICATION FILED JULY 14, 1914.

1,144,702.

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UNITED STATES PATENT OFFICE.

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PORTABLE FIRE-ESCAPE.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FRANCIS A. FOREST, a citizen of the United States, residing at Sault Ste. Marie, in the county of Chippewa and State of Michigan, have invented certain new and useful Improvements in Portable Fire-Escapes, of which the following is a specification.

This invention relates to fire escapes and with regard to certain more specific features thereof to fire escapes of portable type comprising in brief a cable and a reel to permit the lowering of a person from the upper floors of a building.

One of the objects of the present invention is to provide a simple and practical fire escape of the above character which will be inexpensive to manufacture.

Another object is to provide a fire escape which will be efficient and reliable in use and capable of convenient adjustment according to variations in load.

A further object is to provide a fire escape or device of the above character which will at all times be under the control of the operator.

A further object is to provide a device which will be safe and protect the operator from electrical influences.

Other objects will be in part obvious and in part hereinafter pointed out.

The present invention accordingly consists in such features of construction, arrangement of parts and relation of one part to another as will hereinafter be pointed out and the scope of the application of which will be indicated in the appended claims.

In the accompanying drawing wherein is shown one of various possible embodiments of the present invention: Figure 1 is a perspective view of the complete device; Fig. 2 is a side elevation with certain parts removed for the sake of clearness; Fig. 3 is a transverse sectional view taken on the line $x-x$ of Fig. 2.

Similar reference characters denote corresponding parts in the several views.

Referring now to the drawing in detail and more particularly to Fig. 1 wherein is shown the complete device 5 denotes broadly the winding drum upon which a cable 6 is adapted to be wound. The free end of this cable is provided with a hook 7 or other

suitable attaching means adapted to be secured to any fixed object such, for example, as a radiator in a room, when the device is in operation. The drum 5 is provided at its lower side with downwardly extending links 8 having at their lower part an insulated ring 10 to which a body strap 11 is adapted to be secured as by means of snap hooks 12 or the like, after the strap has been passed around the body.

As shown more clearly in Fig. 3, the winding drum comprises a transversely positioned shaft 13 having a fixed collar 14 thereon adjacent which is loosely mounted a winding drum 15. The sleeve of this drum is provided with outwardly extending flanges 16 near each end which are tapered in the manner shown, that is the walls forming the flanges are thinner nearer the sleeve 15 than at their periphery whereby as the cable 6 is wound about the drum the periphery of the flanges will be forced outwardly away from each other to carry fiber clutch rings 17 into contact with coacting clutch rings of metal or the like 18 carried by the end walls 20 of the drum. These end walls are rigidly secured against rotary movement by means of keys 21 to the shaft 13. One of the objects of this construction is to provide an automatic uniform rate of travel of the descending person. The winding of the cable 6 near the periphery of the drum forces the fiber rings 17 into closer contact with the coacting clutch rings 18. Thus when the device is in operation, the rate of rotation constantly increases due to the lessening of the pressure between the coacting clutch rings 17 and 18, but as the windings of the drum constantly decrease in diameter to make up for this increase in rate of rotation the result is accomplished that the person or operator descends at a substantially uniform speed. The degree of friction with which the coacting clutch members engage one another may be initially regulated by means of regulating check nuts 22 bearing upon concave radial springs 19 as shown more clearly in Fig. 2. These springs urge the end walls 20 of the drum longitudinally with respect to the shaft 13 into engagement with the fiber ring 17 with the desired amount of pressure according to the weight to which the device is tested. By loosening these nuts 20, or one

of them for the device is capable of independent adjustment by reason of the collars 14, the friction may be increased or decreased as desired. Inclosing these adjusting nuts 22 are provided manually adjusting means comprising handles of rubber or insulating fiber 23 having a threaded engagement with the shaft 13 and provided at their inner sides with cup-shaped members 24 loosely surrounding and inclosing the check nuts or adjusting nuts 22, the periphery of which engages the outer arms of the spring 19. By means of these handles the pressure of the springs 19 upon the end walls 20 of the drum may be increased to such an extent as to completely stop the device at any desired point in its downward travel as, for example, if it is desired to pick up another person on a lower floor. On releasing the pressure by rotating the handles in the opposite direction the device will again permit descent of the passengers or operators.

It is to be noted that the cable 6 passes through an opening 25 in the side wall of the drum 5 at a point tangential thereto and substantially vertically above downwardly projecting arms 8 which are preferably secured at two points 26 to prevent relative rotation or swiveling of the parts. It will also be noted that by insulating the handles of the manually controlled adjusting devices as well as the supporting ring 10 the operator is insured against shocks if the cable 6 should come in contact with electrical wires adjacent the building.

It is thought that the method of using and operation of a device of this character should be clear from the above. A brief statement, however, is substantially as follows: Inasmuch as the device is portable and may be conveniently carried about in one's suit case, it weighing but a few pounds, the hook 7 is secured to any relatively fixed part or heavy article of furniture in a room. The strap 11 is secured about the waist or under the arms of the operator and securely attached by means of the snap hooks 12 to the insulated ring 10. The operator then lowers himself and the device from the window sill or railing and grasping the insulated handles 23 allows himself to descend to the ground. If he is going too fast a slight rotation of either handle 23 will increase the friction on the driving drum to reduce the speed. If desired, a further turning of the handle will completely stop the device at one of the lower floors.

It is thus seen that the present invention provides a simple and practical device which is cheap to manufacture, reliable and efficient in use and substantially automatic in its operation. In short, the device is believed to accomplish among others all of the advantages and objects above set forth.

As many changes could be made in the above construction and many apparently widely different embodiments of my invention could be made, without departing from the scope thereof, I intend that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

What I claim is:

1. In a device of the character described, in combination, a shaft having a collar near one end thereof, a flanged drum mounted on said shaft adjacent said collar, a separate friction member adjacent the opposite side of said drum adapted to coact with the adjacent flange, means for initially adjusting the friction between said parts and manually operated means at each side of the device for increasing the friction between said parts, the relative position of said first mentioned means and collar preventing a reduction of the friction beyond a predetermined point.

2. In a device of the character described in combination a drum, a cable adapted to be wound thereon, a body supporting member secured to the drum, means adapted to secure the operator to said body supporting member, means insulating said members one from the other, and manually controlled insulated means for regulating the rate of rotation of said drum.

3. In a device of the character described in combination a drum, a cable adapted to be wound thereon, a body supporting member secured to the drum, means adapted to secure the operator to said body supporting member, means insulating said members one from the other, and manually controlled means for regulating the rate of rotation of said drum, said means having insulating operating handles.

4. In a device of the character described, in combination a drum, a cable adapted to be wound thereon, the flanges of said drum increasing in thickness as they approach the periphery and coacting friction members adapted to engage the flanges of said drum with a decreasing pressure as the cable is unwound from said drum.

5. In a device of the character described in combination a drum, a cable adapted to be wound thereon, the flanges of said drum increasing in thickness as they approach the periphery to permit radially variable lateral movement, friction devices near the periphery of said flanges and friction devices adapted to coact therewith.

6. In a device of the character described in combination a drum, a cable adapted to be wound thereon, the flanges of said drum increasing in thickness as they approach the periphery to permit radially variable lateral movement, friction devices near the periph-

ery of said flanges, friction devices adapted to coact therewith, and means for moving said friction devices toward and from each other.

5 7. In a device of the character described in combination a drum upon which a cable is adapted to be wound having friction surfaces, a shaft upon which said drum is mounted, coacting friction members slidably mounted on said shaft, means for initially adjusting the pressure with which said friction members coact, and means at each side of the device for manually adjusting said pressure independent of said first mentioned means.

10 8. In a device of the character described in combination a transverse shaft, a winding drum mounted upon said shaft, a fixed collar upon said shaft to prevent longitudinal movement of said drum in one direction, friction members coacting with the flanges of said drum slidably mounted on said shaft,

and spring means holding said members in contact with the flanges of said drum.

9. In a device of the character described 25 in combination a transverse shaft, a winding drum mounted upon said shaft, a fixed collar upon said shaft to prevent longitudinal movement of said drum, friction members coacting with the flanges of said drum 30 slidably mounted on said shaft spring means holding said members in contact with the flanges of said drum, and means for independently moving said members longitudinally along said shaft with respect to said 35 drum to vary the pressure with which said friction members coact.

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

FRANCIS A. FOREST.

Witnesses:

J. K. MOORE,
R. A. BLAIR.

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