March 16, 1948. E. B. STALEY 2,437,864

FIRE ESCAPE

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Fig. 2.

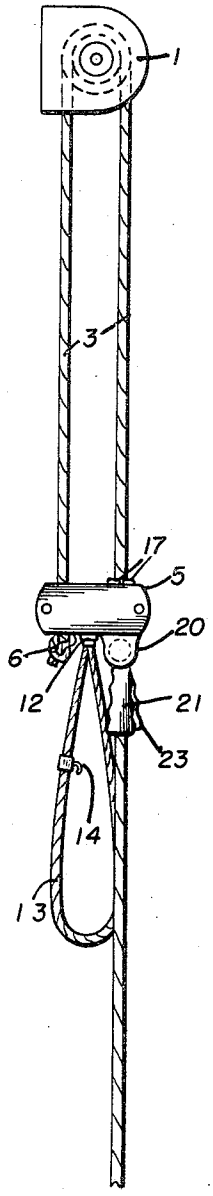
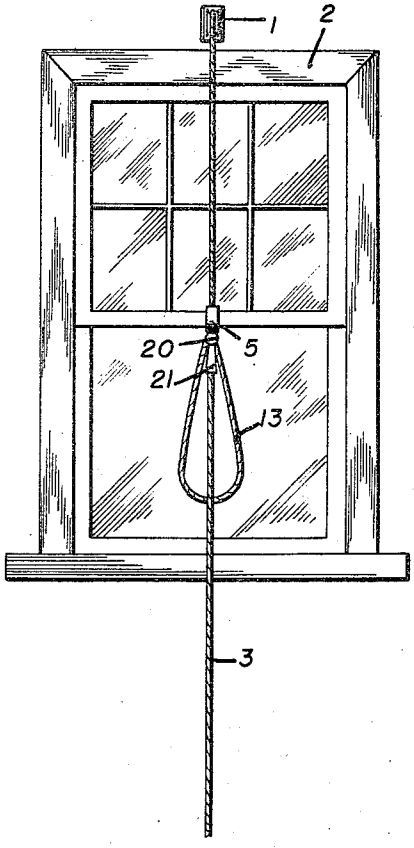


Fig. 1.



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Fig. 3.

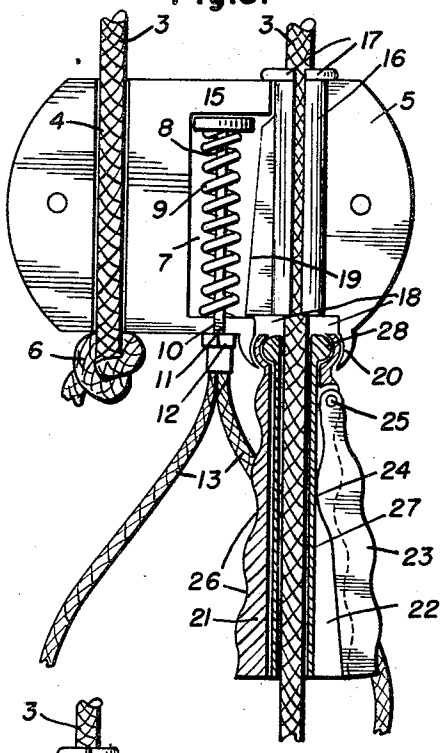


Fig. 4.

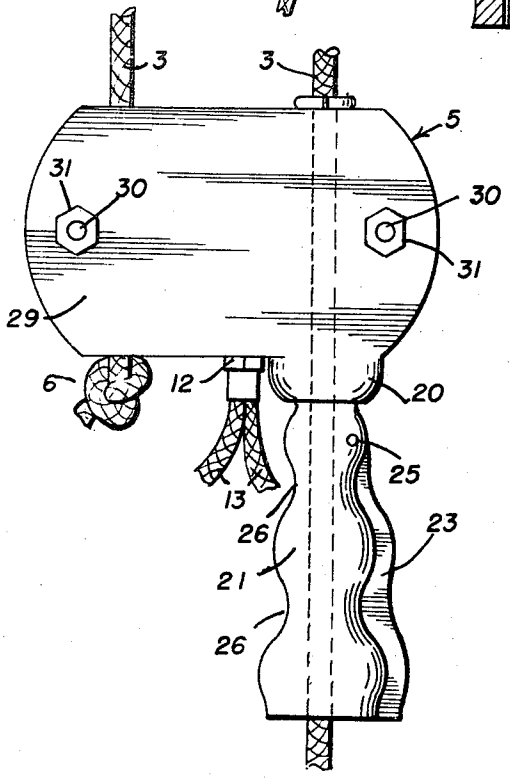
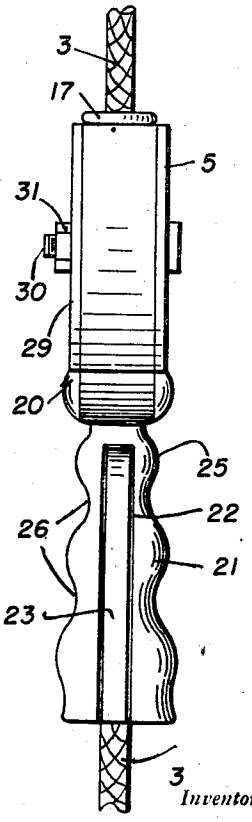


Fig. 5.



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UNITED STATES PATENT OFFICE

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FIRE ESCAPE

Elmer B. Staley, Natrona Heights, Pa.

Application December 10, 1946, Serial No. 715,266

5 Claims. (Cl. 227—30)

1

This invention relates to improvements in fire escape mechanisms and devices.

An object of the invention is to provide an improved form of fire escape device for attaching to the outside of a building over a window opening or in any other desired position, including a fixed pulley and a rope or cable disposed thereover having a housing secured to one end of the rope or cable with a body encircling loop attached to the housing, and having means incorporated in said housing for frictionally engaging the rope or cable as the housing and the body encircling loop with its supported load moved downwardly as the device is operated.

Another object of the invention is to provide an improved fire scape device which may be secured to the outside of a building, preferably over a window opening, said device including a fixed pulley and a rope or cable disposed thereover, one end of said rope or cable being attached to a housing with its other end slidable through said housing, together with a body encircling loop adjustably and resiliently supported by said housing, said device being combined with automatically controlled means for checking and controlling the speed of descent when the device is in operation.

Another object of the invention is to provide an improved cable and pulley-type of fire escape having automatic means and also manual means for controlling the speed of descent by the person using the fire escape.

A still further object of the invention is to provide an improved friction controlled rope or cable and pulley type of fire escape which will be highly efficient in operation, and relatively inexpensive to manufacture and produce.

Other objects will appear as the description proceeds.

In the accompanying drawings which form a part of this application:

Figure 1 is a front elevation of the improved fire escape device shown attached over a window and window frame;

Figure 2 is a side elevation of the improved fire escape device and supporting pulley therefor;

Figure 3 is a longitudinal sectional view through the fire escape housing and friction operated control means with the housing cover plate removed;

Figure 4 is a side elevation of the improved fire escape housing with its cover plate in position, and

Figure 5 is an end view of the improved fire escape housing with manually operated friction means for controlling the operation thereof.

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Like characters of reference are used throughout the following specification and the accompanying drawings to designate corresponding parts.

In carrying out the invention, there is provided an improved rope or cable and pulley type of fire escape which will include a pulley or sheath 1 which will be secured in fixed position in any desired manner above a window frame 2 as clearly illustrated in Figure 1 of the drawings, or in any other desired location.

A rope or cable 3 will be disposed over the pulley 1, and will have an end thereof adapted to lie in a groove or slot 4 formed in the fire escape housing 5, and said end will be knotted as at 6.

The housing 5 is recessed at 7 adjacent its central portion to receive the T-head bolt 8 over which the coil spring 9 is disposed between the head of said bolt and the bottom of the housing 5. The housing 5 is apertured at 10 to permit the bolt 8 to slide vertically therethrough against the tension of the coil spring 9, and the bolt 8 is threaded at 11 on its lower end to adjustably receive and support the nut 12 which, in turn, supports the body encircling rope or cable loop 13 with a hook 14 slidably mounted upon said loop.

A pair of arcuate vertically extending rope or cable clamping jaws 15 and 16 are loosely disposed within the housing 5, being formed with the positioning and securing flanges 17 and 18 formed respectively on their upper and lower ends, said jaws being slidably movable toward and away from each other. A jaw 15 will be integrally formed with the downwardly and outwardly extending lateral operating cam or shoulder 19 which will be engaged by the T-head of the bolt 8 as weight is applied to the loop 13, thereby pulling the T-head downwardly against the tension of the coil spring 9 to ride on the cam or shoulder 19, forcing the jaws 15 and 16 into frictional engagement with the rope or cable 3 which extends from the pulley or sheath 1 to and through said jaws 15 and 16, and said rope being of a sufficient length to reach the ground when said housing 5 is in its lowermost position.

The fire escape housing 5 will be formed with a socket jaw 20 lying directly below the jaws 15 and 16, and will swivelly support the flanged upper end of the hand gripping member 21 which is vertically slotted at 22 to receive the clamping bar 23 formed with the inwardly directed nose or cam 24, said bar 23 being pivoted upon the

pivot pin 25 mounted transversely of the upper end of said slot 22.

The gripping member 21 will be formed on its exterior surface with a plurality of vertically spaced circumferentially disposed finger engaging seats 26, and will be provided with the hollow ball head which will be swivelly supported in the socket jaw 20. A rope or cable surrounding insert 27 will be disposed within the gripping member 21 and will be provided with the ball flange 28 on its upper end adapted to be swivelly supported in the flange at the upper end of the hand gripping member 21, whereby when the clamping bar 23 is compressed by the user of the fire escape, the insert 27 will be caused to frictionally engage the rope or cable 3 to control the speed of descent or to stop the descent completely.

It will be understood that the nut 12 may be tightened or loosened upon the threaded lower end 11 of the T-head bolt 8 to provide the desired adjustment for controlling the operation of the fire escape device for use by either large or small persons, and for providing either slow or rapid descent.

A removable cover plate 29 will be secured to the fire escape housing 5 by means of the bolts 30 and nuts 31, whereby access may be had to the interior of said housing.

In operation, a person desiring to use the fire escape will pull the housing 5 within the building and will place the loop 13 about their waist, and will then step through the window and by grasping the gripping member 21 may vary the frictional tension upon the rope or cable to vary the speed of his descent to the ground.

In the event that a person on the ground wishes to control the descent of a person using the fire escape, as for example, when a child is using the fire escape, it is only necessary for the person upon the ground to grasp hold of the depending end of the rope and to move the same laterally of the fire escape housing 5, thus variably controlling the frictional tension upon the rope or cable, permitting the fire escape to be lowered either slowly or rapidly, or to be stopped altogether when desired.

From the foregoing description, it will be apparent that there has been devised and provided a highly efficient form of rope or cable and pulley type fire escape which will be highly efficient in operation, and relatively inexpensive to manufacture and produce.

While the preferred embodiment of the instant invention has been illustrated and described, it will be understood that it is not intended to limit the scope of the invention thereto, as many minor changes in detail of construction may be resorted to without departure from the spirit of the invention.

Having thus described my invention, what I

claim as new and desire to secure by Letters Patent of the United States is:

1. A rope or cable and pulley type fire escape including a supporting pulley, a rope or cable supported thereby, a housing secured to one end of said rope or cable, rope clamping jaws in said housing, said rope or cable extending between said jaws, a body supporting loop attached to said housing, a cam shoulder on one of said jaws, and means on said loop engageable therewith when a body is in said loop for controlling the operation of said fire escape.

2. The subject matter as claimed in claim 1, and a resiliently tensioned actuator bolt in said housing attached to said body encircling loop for engaging said cam shoulder for controlling the operation of said fire escape.

3. The subject matter as claimed in claim 1, a resiliently tensioned actuator bolt in said housing attached to said body encircling loop for engaging said cam shoulder for controlling the operation of said fire escape, and means for selectively varying the resilient tension on said actuator bolt for adapting the fire escape for use by persons of different weight.

4. The subject matter as claimed in claim 2, a resiliently tensioned actuator bolt in said housing attached to said body encircling loop for engaging said cam shoulder for controlling the operation of said fire escape, means for selectively varying the resilient tension on said actuator bolt for adapting the fire escape for use by persons of different weight, and manually compressible cable engaging and checking means supported on said fire escape housing.

5. The subject matter as claimed in claim 1, a resiliently tensioned actuator bolt in said housing attached to said body encircling loop for engaging said cam shoulder for controlling the operation of said fire escape, means for selectively varying the resilient tension on said actuator bolt for adapting the fire escape for use by persons of different weight, manually compressible cable engaging and checking means supported on said fire escape housing, and swivelly mounted manually compressible cable engaging and checking means supported on said fire escape housing including an insert about said rope or cable and a pivoted clamping bar engageable with said insert.

ELMER B. STALEY.

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The following references are of record in the file of this patent:

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