May 15, 1951 J. L. HOLLEY 2,553,090

FIRE ESCAPE DRUM AND CABLE AND HYDRAULIC GOVERNOR MEANS THEREFOR

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Fig. 1.

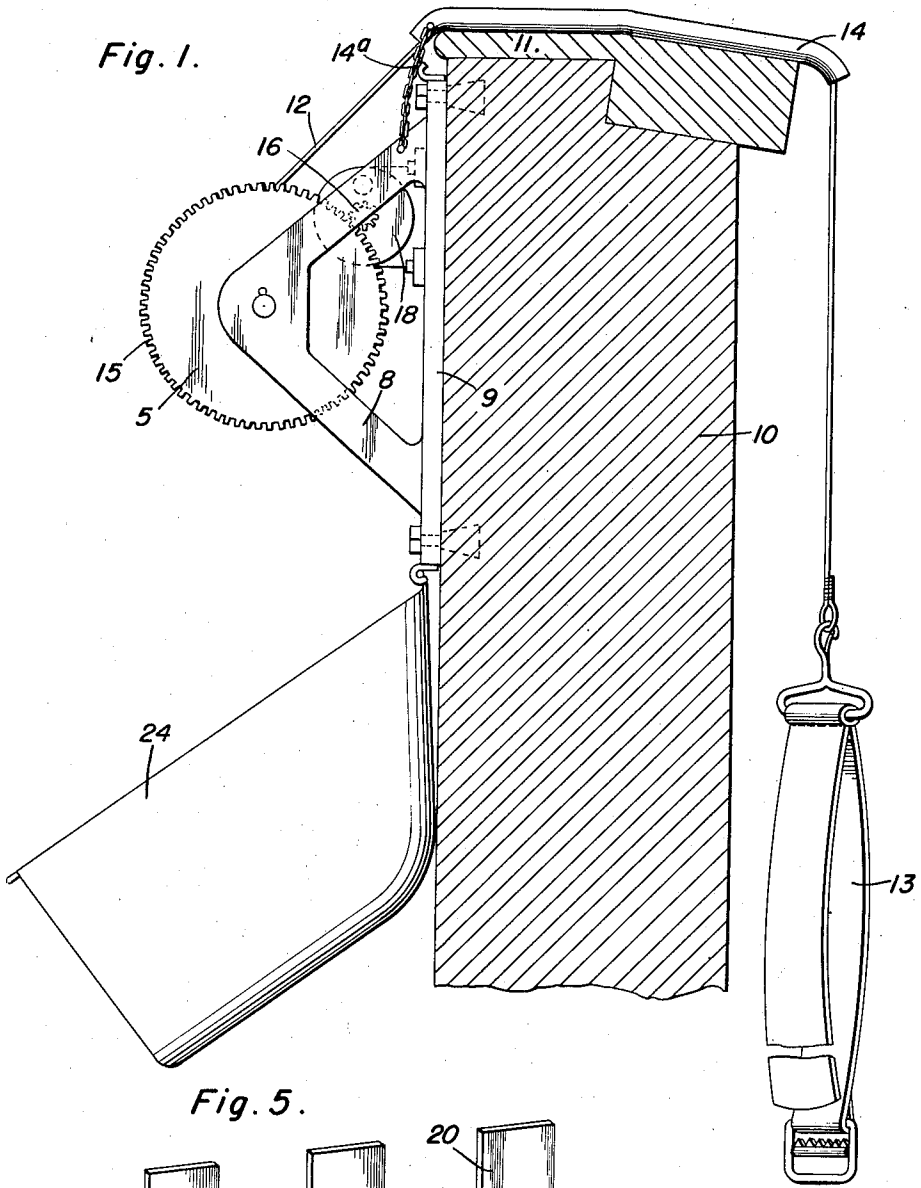
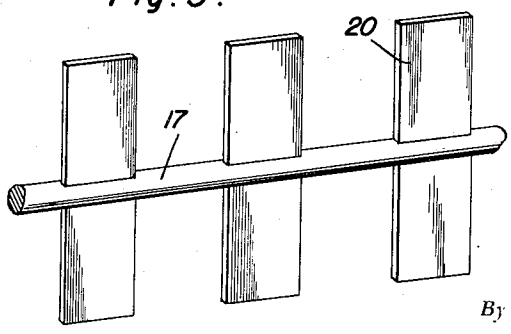


Fig. 5.



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Fig. 2.

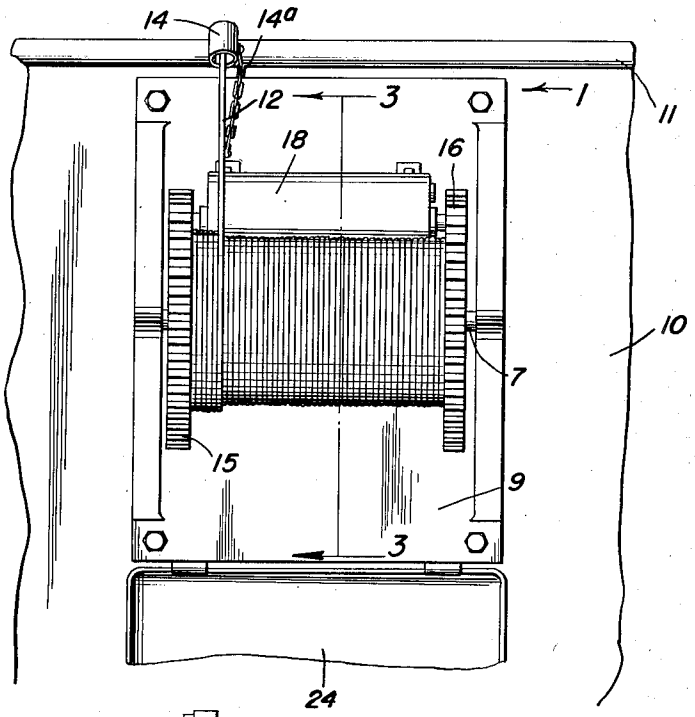


Fig. 3.

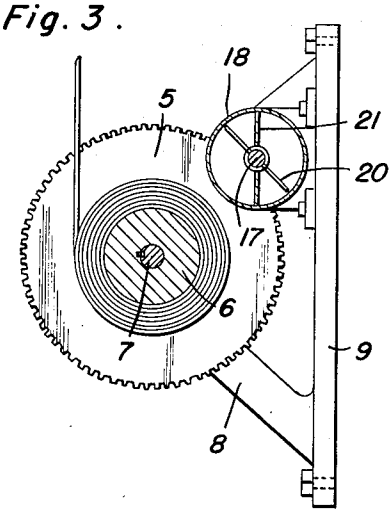


Fig. 4.

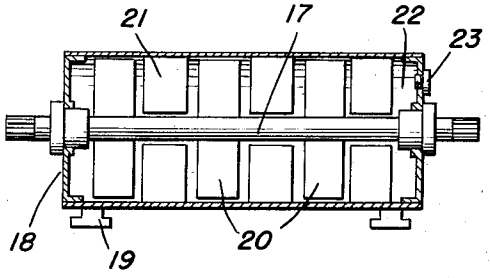
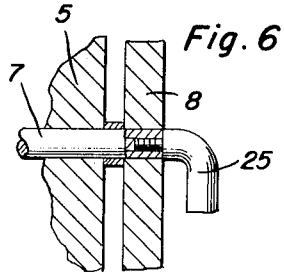


Fig. 6.



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FIRE ESCAPE DRUM AND CABLE AND HYDRAULIC GOVERNOR MEANS THEREFOR

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Application October 20, 1947, Serial No. 780,850

1 Claim. (Cl. 254—160)

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The present invention relates to new and useful improvements in fire escapes and more particularly to a device of this character embodying the use of a drum and cable for lowering a person from the window of a burning building.

An important object of the present invention is to provide a fire escape of this character wherein the lowering of a person by the cable is automatically controlled at a predetermined speed so that a person may be safely lowered without effort or attention on his part.

More specifically, the invention embodies the provision of a drum mounted under a window and on which a cable is wound to be unwound by a person lowering himself from the window together with fluid brake means controlling the unwinding of the cable and comprising a chamber having a shaft journalled therein and provided with blades or paddles to retard rotation of the shaft.

An important object of the invention is to provide a fire escape device of this character in which the drum is mounted on the inside of a building under a window thereof and providing a flexible tubular guide for the cable to prevent chafing or injury to the cable by the window sill.

A still further object is to provide a device of this character of simple and practical construction, which is efficient and reliable in operation, relatively inexpensive to manufacture and otherwise well adapted for the purposes for which the same is intended.

Other objects and advantages reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is an end elevational view showing the fire escape mounted in position under a window sill, the latter being shown in section.

Figure 2 is a front elevation.

Figure 3 is a vertical transverse sectional view taken on a line 3—3 of Figure 2.

Figure 4 is a longitudinal sectional view of the fluid brake.

Figure 5 is an enlarged fragmentary perspective view of the paddles carried by the shaft of the brake, and

Figure 6 is an enlarged fragmentary sectional view of one end of the shaft of the drum constructed for attaching a crank handle thereto.

Referring now to the drawings in detail wherein for the purpose of illustration I have disclosed a preferred embodiment of the invention, the numeral 5 designates a drum including a hub 6 keyed to a shaft 7 having its ends journalled in brackets 8 projecting horizontally outwardly from an attaching plate 9 which is suitably secured to the inner wall 10 of a building under a window sill 11.

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A cable 12 is wound on the hub 6 of the drum and to the free end of the cable is attached a sling or strap 13 for securing about the body of a person under the arms thereof.

The cable 12 freely extends through a flexible tubular guide 14 which is self-lubricating and self-conforming to the window sill 11 for resting thereon, when the strap 13 is placed outwardly of the window for lowering a person on the outside of a building, the guide 14 projecting the cable from chafing on the edges of the window sill. A chain 14a connects the guide 14 to the bracket 8 to keep the guide from being pulled over the sill by the action of the cable.

Each end of the drum 5 is provided with a ring gear 15 having pinions 16 engaged therewith, the pinions being suitably secured on the end of a shaft 17 which is journalled in the end of a cylindrical hydraulic brake housing 18 and which is secured to the attaching plate 9 by attaching brackets 19.

The shaft 17 is provided with a plurality of radially extending paddles or blades 20 arranged in pairs at diametrically opposite sides of the shaft and at longitudinally spaced intervals on the shaft. Between each pair of paddles or blades 20 are stationary blades 21 suitably secured on the inside of the housing 18 radially thereof.

In the operation of the device, the housing 18 is filled with a quantity of oil of predetermined viscosity, or other suitable liquid 22 by means of a filler plug 23 at one end of the housing.

The drum 5 is mounted in position under a window sill 11 as shown in Figure 1, and the flexible cable guide 14 is placed on the window sill for pulling the cable 12 therethrough when unwinding from the drum.

The sling or strap 13 is attached to the body of a person for lowering from the window and the unwinding action is retarded to a predetermined speed by the paddles 20 carried by shaft 17 which is rotated by the drum, the paddles working in the liquid 22 in opposition to the stationary paddles 21 to function as a fluid brake for the drum.

When the device is not in use, the drum and cable are enclosed in a hinged cover 24 and the strap 13 and flexible cable guide 14 are also folded

in the cover. The cable is wound on the drum for further use by a crank handle **25** attached to the shaft **7**.

In view of the foregoing description taken in conjunction with the accompanying drawings it is believed that a clear understanding of the construction, operation and advantages of the device will be quite apparent to those skilled in this art. A more detailed description is accordingly deemed unnecessary.

It is to be understood, however, that even though there is herein shown and described a preferred embodiment of the invention the same is susceptible to certain changes fully comprehended by the spirit of the invention as herein described and the scope of the appended claim.

Having described the invention what is claimed as new is:

A fire escape comprising an attaching plate, brackets mounted on said attaching plate, a shaft journalled for rotation on said brackets, a cable drum supported on said shaft, gears on the ends of said shaft and automatic hydraulic brake means responsive solely to the rotation of the drum for retarding unwinding of a cable from the drum comprising a closed fluid chamber having a supporting shaft journalled therein, the ends of said supporting shaft being exposed from the chamber, pinions on the ends of said supporting shaft and engaging said gears, said chamber being confined between said pinions and said gears, stationary paddles in the chamber, movable paddles carried by the supporting shaft within the chamber, said stationary paddles opposing the action of said movable paddles.

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