

No. 635,524.

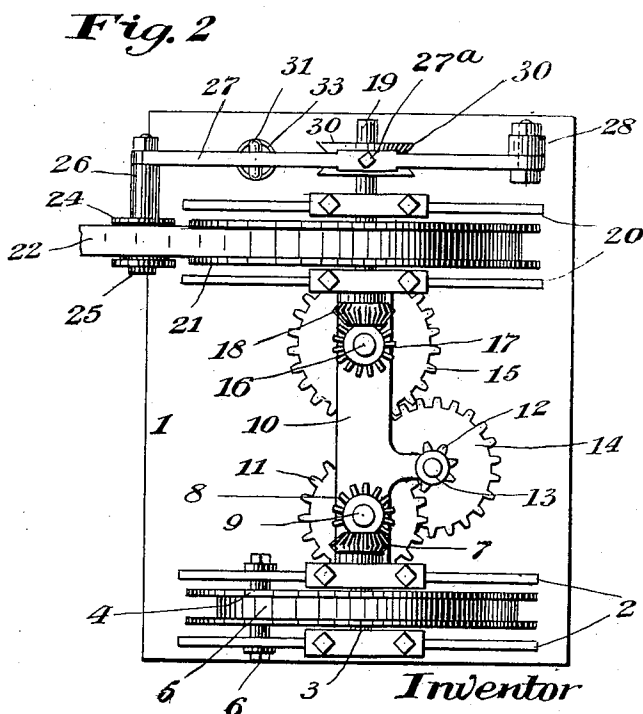
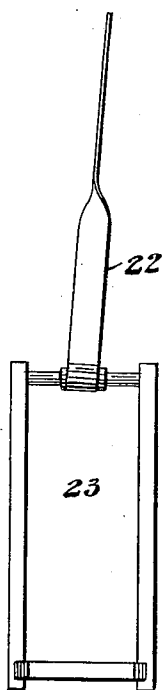
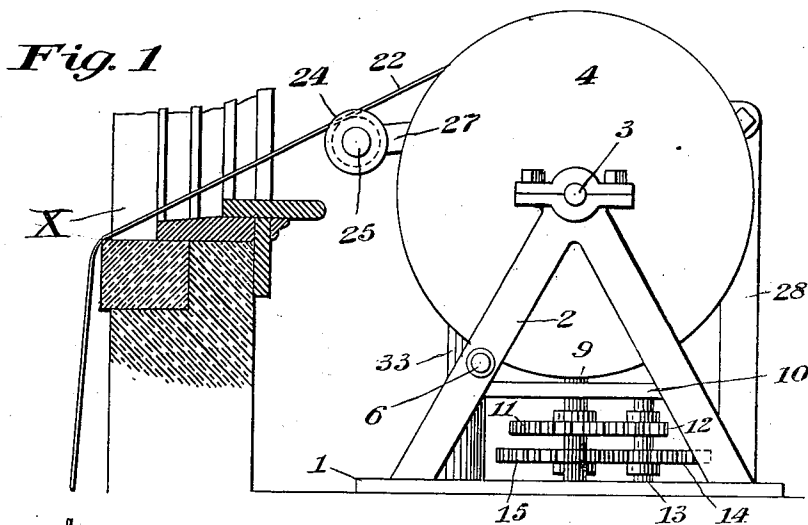
Patented Oct. 24, 1899.

E. B. TERDOEST.
FIRE ESCAPE.

(Application filed May 22, 1899.)

(No Model.)

2 Sheets—Sheet 1.



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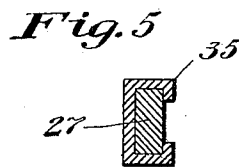
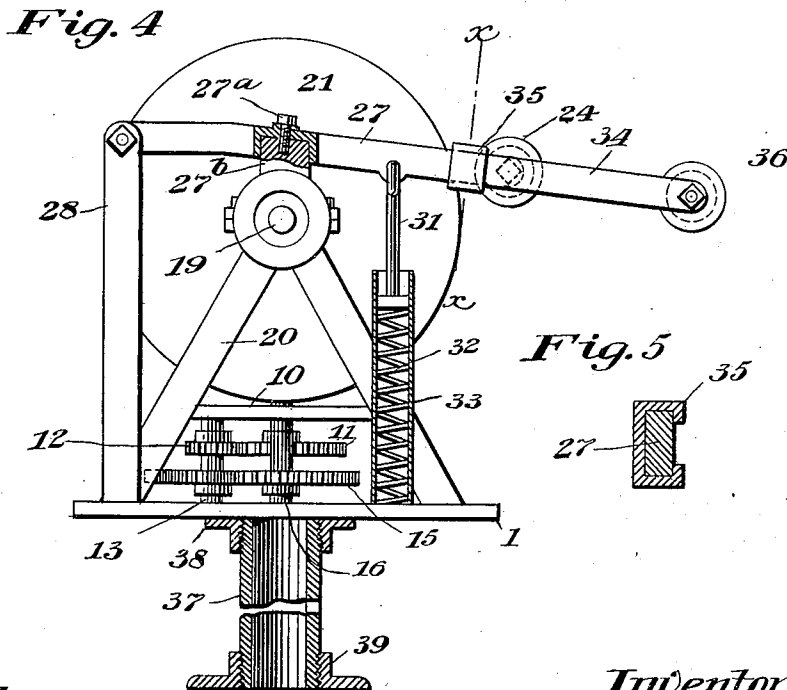
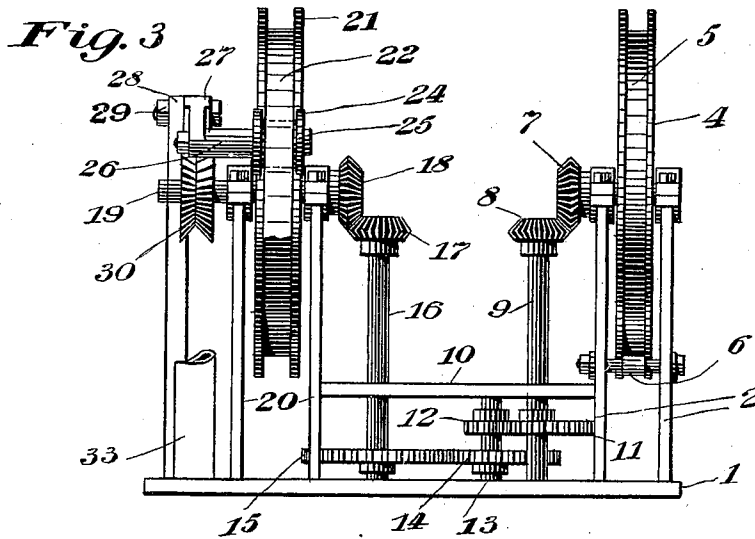
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UNITED STATES PATENT OFFICE.

EGBERT B. TERDOEST, OF CINCINNATI, OHIO.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 635,524, dated October 24, 1899.

Application filed May 22, 1899. Serial No. 717,803. (No model.)

To all whom it may concern:

Be it known that I, EGBERT B. TERDOEST, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Fire-Escapes, of which the following is a specification.

My invention relates to certain improvements in fire-escapes, and has for its object to provide a device of this character of a simple and inexpensive nature and of a strong, compact, and durable construction which shall be adapted for use in carrying the occupants of a burning building from the upper stories to the ground and shall be so constructed as to automatically return after one person has safely reached the ground to the story on which it is mounted in order to receive other persons in the building.

My invention consists in certain novel features of the construction, combination, and arrangement of the various parts of the improved fire-escape whereby certain important advantages are attained and the device is made simpler, cheaper, and otherwise better adapted and more convenient for use, all as will be hereinafter fully set forth.

The novel features of the invention will be carefully defined in the claims.

In the accompanying drawings, which serve to illustrate my invention, Figure 1 is a side view showing a fire-escape constructed according to my invention, and Fig. 2 is a plan view thereof. Fig. 3 is a front elevation of the device, the spring-casing and spring for releasing the brake being broken away to show the parts behind. Fig. 4 is an end view of the device, showing the brake and actuating means therefor. Fig. 5 is a detailed sectional view taken in the plane indicated by line *xx* in Fig. 4 and showing the joint between the brake-lever and its extension.

In the views, 1 indicates the bed-plate, on which the mechanism of the improved fire-escape is mounted, said bed-plate having at one end a pair of uprights or standards 2, having journaled in their upper ends a horizontal shaft 3. The standards 2 are spaced apart to receive between them a spring-barrel 4, fixed on shaft 3 and having coiled on it a helical spring 5, one end of which is secured to the barrel, while the opposite end thereof

is secured to a stud 6, extending between the standards 2, as shown in Fig. 3. The shaft 3 carries a bevel gear-wheel 7, which meshes with a bevel-pinion 8 on a vertical shaft 9, which extends down and is journaled or stepped in the bed-plate 1 and is also journaled in a bearing-plate 10, extending across the device. The shaft 9 carries beneath the plate 10 a gear-wheel 11, which meshes with a pinion 12 on another vertical shaft 13, also journaled in plates 1 and 10 and carrying a spur-gear 14, which meshes with a gear 15 on a vertical shaft 16, journaled in plates 1 and 10 and extending up above plate 10 similarly to shaft 9. The upper end of shaft 16 carries a bevel-gear 17, which meshes with a bevel-gear 18 on a horizontal shaft 19, aligned axially with shaft 3, but at the opposite end of the frame, said shaft 19 being journaled in uprights or standards 20, similar to the standards 2, and also spaced apart to receive between them a drum 21, held on said shaft 19 and having wound on it a flexible metal tape or ribbon 22, preferably made from steel or other material of suitable strength and serving to carry on its outer end a suitable support 23 for the descending person. The support 23 may be of any kind, such as a basket, step, or sling. The tape or ribbon 22 is arranged to pass over an idler 24, held on a bolt 25 at the end of an arm 26, which extends laterally from the end of the brake-lever 27, which latter is pivoted at its rear end on an arm or standard 28, extending up from the bed-plate 1. The brake-lever 27 carries a shoe 27^b, held in a suitable socket by means of screw 27^a and arranged to bear frictionally on the periphery of a grooved friction wheel or pulley 30, held on the shaft 19, as clearly shown in Figs. 3 and 4. To the lever 27 is secured the upper end of a rod 31, which extends down into a sleeve or housing 33 and has an enlarged end bearing on a spiral spring 32, held in said housing, the tension of the spring 32 being exerted to normally hold the brake-lever, with its shoe, out of operative engagement with the friction-wheel 30.

The fire-escape will ordinarily be placed in the room near a window and may be secured to the floor or to the wall, so as to give it suitable stability, and in use the support 23 is placed outside the window X in position to

receive the person about to descend. As the weight of the person is applied to the tape 22 it is unwound from the drum 21 and also draws downward on the idler 24, so as to move the brake-lever 27 pivotally to press the brake-shoe 27^b on friction-wheel 30, whereby the speed of rotation of the shaft 19 and drum 21 and the consequent unwinding of the tape 22 and lowering of the support 23 are checked.

At the same time the rotative movement of the shaft 19 is communicated through the gearing above described to shafts 16, 13, 9, and 3, so as to turn the spring-barrel 4 and wind up the helical spring 5 thereon. When the support 23 has been lowered to the ground and the person therein has alighted, the tension of the springs 5 and 32 will be exerted to raise the brake-lever 27 and release the friction-wheel 30 from the shoe of said lever and also to turn the shaft 3 in the direction opposite to that in which it was turned in winding up said spring and lowering said support 23, the rotative movement of said shaft being communicated through the gearing to shafts 9, 13, 16, and 19, so as to wind up the tape or ribbon 22 on drum 21 and to again raise the support 23 to the window X in position to receive another person to be lowered to the ground.

If desired, the brake-lever 27 may be provided with an adjustable extension 34, having a yoke 35 to slide on said lever, as shown in Figs. 4 and 5, and provided with an idler 36 at its end and over which the flexible tape or ribbon 22 passes. By this means the extension 34 may be arranged to extend over the window-sill to relieve the wear of the tape or ribbon thereon and also to permit of adjusting the leverage exerted on the shoe of friction-wheel. Also where desired the escape may be mounted, as shown in Fig. 4, upon a piece of metal tubing 37, screwed in a socket 38 on the under side of a bed-plate 1 and also screwing on a socket 39, secured to the floor.

From the above description it will be seen that my improved fire-escape is of an extremely simple and inexpensive construction and is especially well adapted for use, since it is perfectly safe and automatic in its operation, and it will also be obvious that the device is capable of some modification without material departure from the principles and spirit of the invention, and for this reason I do not wish to be understood as limiting myself to the precise form and arrangement of the several parts herein set forth.

Having thus described my invention, I claim—

1. In a fire-escape, the combination of a drum, a tape arranged to wind thereon, and adapted to carry a support, a shaft, a friction-wheel on the shaft, a brake device engaging with said friction-wheel controlled by said tape and arranged to check the rotation of said drum, and a spring connected to said drum and arranged to be placed under tension when the drum is turned to lower said support and also arranged when under tension and released to drive the drum in the opposite direction to wind said tape thereon and a spring to automatically release the brake from the friction-wheel, substantially as set forth.

2. In a fire-escape, the combination of a shaft, a drum thereon, a tape wound on the drum, a support carried by the tape, a friction-wheel on the shaft, a brake-lever controlled by the tape and having a shoe engaging said friction-wheel, a spring to hold said lever with its shoe out of operative engagement with the friction-wheel and means actuated by the rotation of said drum in unwinding said tape to turn said drum in the opposite direction, to wind the tape thereon, substantially as set forth.

3. In a fire-escape the combination of a shaft, a drum thereon, a tape wound on the drum, a support carried by the tape, a friction-wheel carried by the shaft, a brake-lever having a shoe engaging said friction-wheel a spring to hold said lever with its shoe out of operative engagement with the friction-wheel, an idler carried by the brake-lever and over which the tape passes and means actuated by the rotation of said drum in unwinding said tape to turn said drum in the opposite direction to wind up the tape thereon, substantially as set forth.

4. In a fire-escape the combination of two shafts gearing connecting the shafts, a drum on one shaft, a tape wound on the drum, a support carried by the tape, a brake device controlled by said tape and arranged to check the rotation of said drum, and a spring connected to the other shaft and arranged to be put under tension by the rotation of the drum in unwinding said tape and also arranged when under tension to drive the drum in the opposite direction, to wind the tape thereon, substantially as set forth.

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