D. ANTONIELLA.

FIRE ESCAPE.

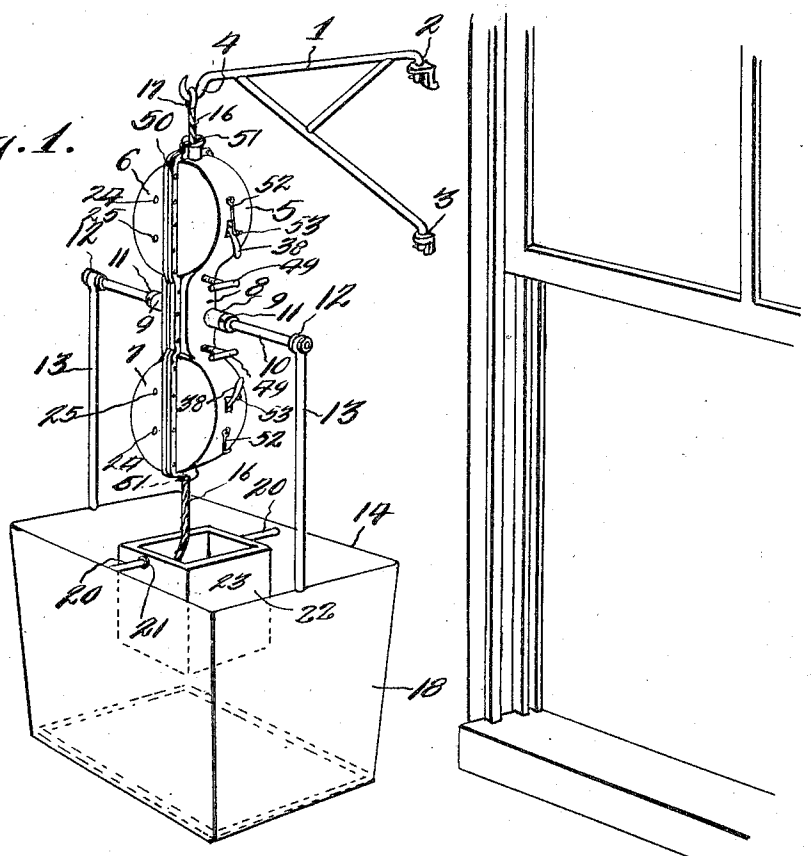
APPLICATION FILED DEC. 3, 1915.

1,179,886.

Patented Apr. 18, 1916.

2 SHEETS—SHEET 1.

Fig. 1.



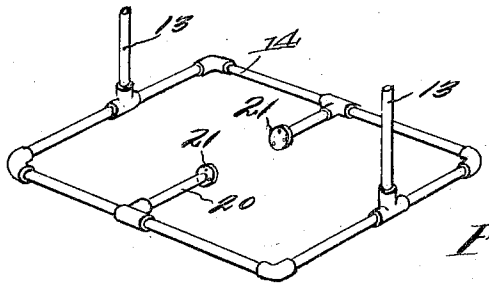


Fig. 5.

Witnesses

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2 SHEETS—SHEET 2.

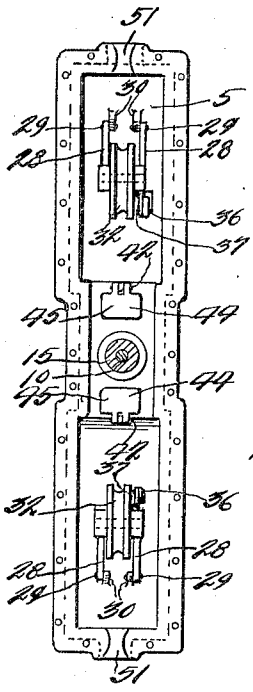


Fig. 3.

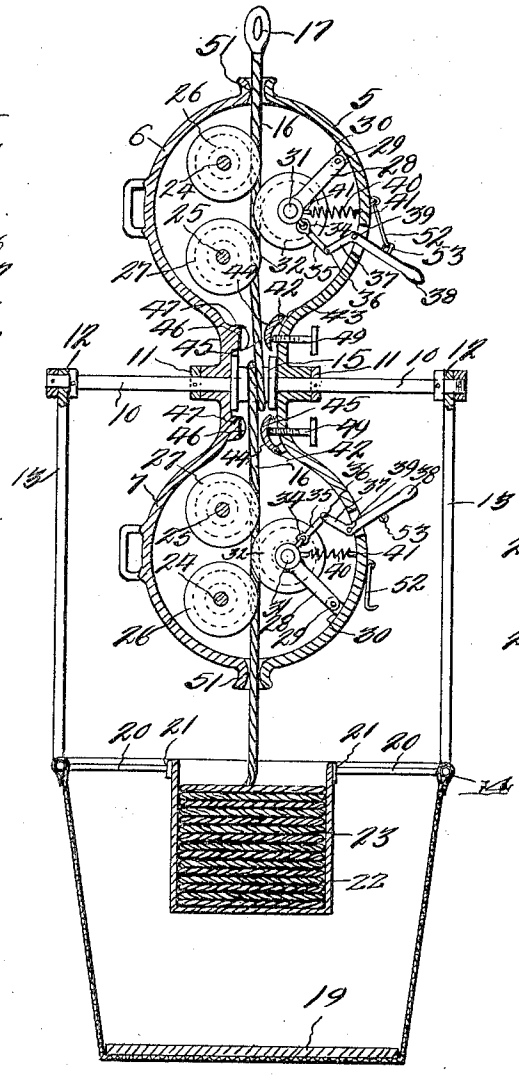


Fig. 2.

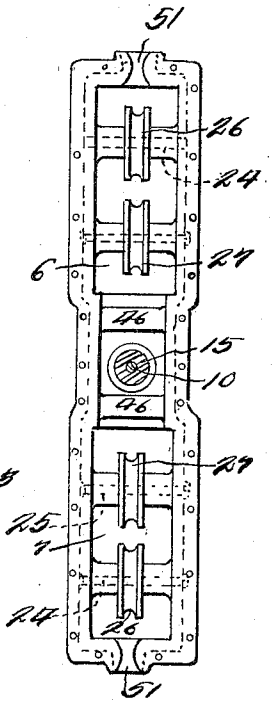


Fig. 4.

Witnesses

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UNITED STATES PATENT OFFICE.

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FIRE-ESCAPE.

1,179,886. Specification of Letters Patent. Patented Apr. 18, 1916.

Application filed December 3, 1915. Serial No. 64,837.

To all whom it may concern:

Be it known that I, DOMENICK ANTONIELLA, a citizen of the United States, residing at Leechburg, in the county of Armstrong, State of Pennsylvania, have invented a new and useful Fire-Escape; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to an improved fire escape apparatus.

One of the objects of the invention is to provide a device of this nature to feed by gravity upon a single rope.

Another object of the invention is the provision of a cage, or basket or sack having a superimposed frame including a casing mounted thereon, and in which casing improved means are arranged to govern the gravitation of the frame and its basket or the like.

Another object of the invention is to so mount the casing that it may be rotated to an inverted position, to avoid running the entire length of the rope through the casing, when using the fire escape the second or third time.

Another object of the invention is to provide a fire escape that may be lowered from an upper window to a window, one, two or three floors below, so as to be used by other persons.

In practical fields the details of construction may necessitate alterations, falling within the scope of what is claimed.

The invention comprises further features and combination of parts, as hereinafter set forth, shown in the drawings and claimed.

In the drawings: Figure 1 is a view in perspective of the improved fire escape as applied adjacent a window, and constructed in accordance with the invention. Fig. 2 is a vertical sectional view through the basket, cage or sack, and showing the frame and casing superimposed. Fig. 3 is a view in elevation of one half of the casing, looking toward the interior thereof. Fig. 4 is a view in elevation of the other half of the casing looking toward the interior thereof. Fig. 5 is a view of a rectangular frame, from which the basket, sack or cage is suspended.

Referring more especially to the drawings, 1 designates a bracket, which may be pivotally hung, as shown at 2 and 3 to the side of a building, and is provided with a hook 4. A casing 5 comprising the enlarged ends 6 and 7, and a narrow neck portion 8 is provided. The neck portion 8 is formed with laterally extending parts 9, through which and through the neck the shaft 10 extends, there being collars 11, to hold the casing disposed centrally upon the shaft, which is mounted in bearings 12 of the upwardly extending arm 13 of the rectangular frame 14. Mounted upon the shaft 10, and located in the neck is a flanged pulley or drum 15, once about which a cable or rope 16 is wound, which rope or cable extends vertically through the enlarged ends 6 and 7 of said casing. Each end of the rope or cable is provided with an eye 17, so that either end of the rope or cable may be connected to the hook 4 of the bracket 1. Suspended from the frame 14 is a sack, basket or cage 18 provided with a flooring 19. Extending from opposite sides of the frame 14 and alined with each other are arms 20, the inner ends of which terminate in plates 21, which are secured to opposite sides of a box or receptacle 22. When one end or the other of the cable or rope is connected to the hook 4, and the casing and the frame are arranged as shown in Fig. 1, the greater portion of the cable or rope is arranged in a coil as shown at 23 in Fig. 2 and supported in the box or receptacle 22.

Journaled in each of the enlargements 6 and 7 of the casing are the shafts 24 and 25, on which the pulleys 26 and 27 are mounted, one directly above the other, so as to be engaged by the cable or rope 16, as the fire escape apparatus moves by gravity upon the rope. Links 28 arranged in parallelism are pivoted at 29 upon the lugs 30, in each of the enlargements 6 and 7 of said casing. Journaled in the free ends of the links 28 of each enlargement is a shaft 31 having a pulley 32 rotatable therewith, which is designed to engage and bear against the cable or rope 16 oppositely to and between the pulleys 26 and 27, so as to substantially bind the rope or cable in contact with the pulleys 26 and 27.

The free end of one of the links 28 of each enlargement 6 and 7 of the casing has an eye 34 forming an integral part thereof, and to the eye a link 35 is pivoted, which link 35 is in turn pivoted at 36 to the short arm 37 of the bell crank lever 38, so that by

movement or oscillation of the lever 38 (which is pivoted at 39 to the inner face or circumference of the enlargement) in one direction or the other, the pulley will be forced toward and from the cable or rope. However, arranged between the free ends of the links 28 of each enlargement 6 and 7 of the casing and the inner circumference of each enlargement are coil springs 40, there being pins 41 to hold said springs in position, so that the springs will tend to press or force the pulley 32 toward the rope or cable. The springs 40 are strong enough to hold the pulley 32 against the rope or cable, which in turn is engaged by the pulleys 26 and 27, so that in conjunction with the single winding of the cable about the pulley 15, the casing and its frame and the basket will be supported in a raised or elevated position, as in Fig. 1. Pivoted at 42 upon the lugs 43, just where the neck 8 of the casing merges into said enlargements 6 and 7 are brake shoes 44, the inner faces of which are grooved as shown at 45, to arch the cable or rope, so as to hold the same in contact with the groove 46 of the lugs 47, which are integral with the inner wall of the neck portion of the casing. Screws 49 are threaded into the casing, to bear against the outer faces of the brake shoes 44. By turning either one or both of the screws 49 in one direction the brake shoes will be forced toward the rope or cable, thereby clamping the cable between the shoes and the lugs 47, thereby assisting very materially in holding the casing and its frame suspended therefrom in an elevated or raised position as disclosed in Fig. 1. It is to be observed that the casing is constructed in two parts, as clearly shown in the drawings, which parts are bolted or otherwise secured together as shown at 50, and through the openings 51 of the enlargement of said casing, the cable or rope 16 passes. The hooks 52 which are carried by the enlargements are used to engage the eyes 53 of the levers 38, so as to hold said levers in such positions as to cause the pulleys 32 to bear against the rope or cable with a limited degree of pressure. In the use of this improved fire escape, the person steps from the window into the basket or sack, first having made sure that the brake shoes are clamped thoroughly against the cable or rope. After having occupied the sack, the person grasps the lowermost lever 38, and operates the same to force the pulley 32 of the lowermost enlargement, so as to cause the pulleys 26 and 27 and 32 to coöperate, to hold the rope or cable frictionally bound. The occupant of the sack or basket then loosens the screws 49, after which the lever 38 is manipulated to gradually decrease the pressure of the pulley 32 toward the pulleys 26 and 27, and being that the screws 49 are loosened gradually, the gravitating speed of the fire escape may be easily governed, thereby allowing the occupant to easily descend comparatively without danger, and escape from the fire. It is to be noted that after the first person escapes by means of this improved appartus, a second person may haul the apparatus back to the window from which the rope is suspended, then the rope adjacent the previously attached or anchored end of the rope may be arranged in a coil and placed in the receptacle 22. In this case the casing is inverted or imparted a half revolution upon the shaft 10, so that the apparatus may descend from the other end of the cable or rope. If desired, a person upon one of the uppermost floors of a building may remove the coil 23 from the receptacle 22 and detach the anchored end of the rope or cable 4, and lower the apparatus by means of the rope, hand over hand to a person in one of the floors below, so as to permit a person to make an escape.

The invention having been set forth, what is claimed as new and useful is:—

In a fire escape, a frame having a carrier suspended therefrom, a shaft mounted in said frame, a pulley on said shaft, a casing having circular hollow enlargements at its end and a central neck connecting said enlargement, and in which neck said pulley is incased, said neck having bearings to receive the shaft, so that the casing may be partly rotated on the shaft, a pair of pulleys mounted in each hollow enlargement, one directly above the other, and against the corresponding grooved surfaces of which a vertically disposed cable engages, which cable passes about the pulley incased in said neck, a pair of links pivoted in each enlargement, a pulley mounted on the free ends of the links, and designed to be moved toward and from that portion of the cable between said pulleys, spring tensioning means for said links, and an angular lever pivoted in the enlargement and having a link connection with the lower free ends of the first links to move the pulley of the first links toward and from that portion of the cable between said pair of links.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

DOMENICK ANTONIELLA.

Witnesses:
ANTHONY PONSETTO,
DOMENICO BONOWIG.

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