S. F. ROLSTON.

FIRE ESCAPE.

APPLICATION FILED APR. 15, 1914.

1,145,923.

Patented July 13, 1915.

2 SHEETS—SHEET 1.

Fig. 1.

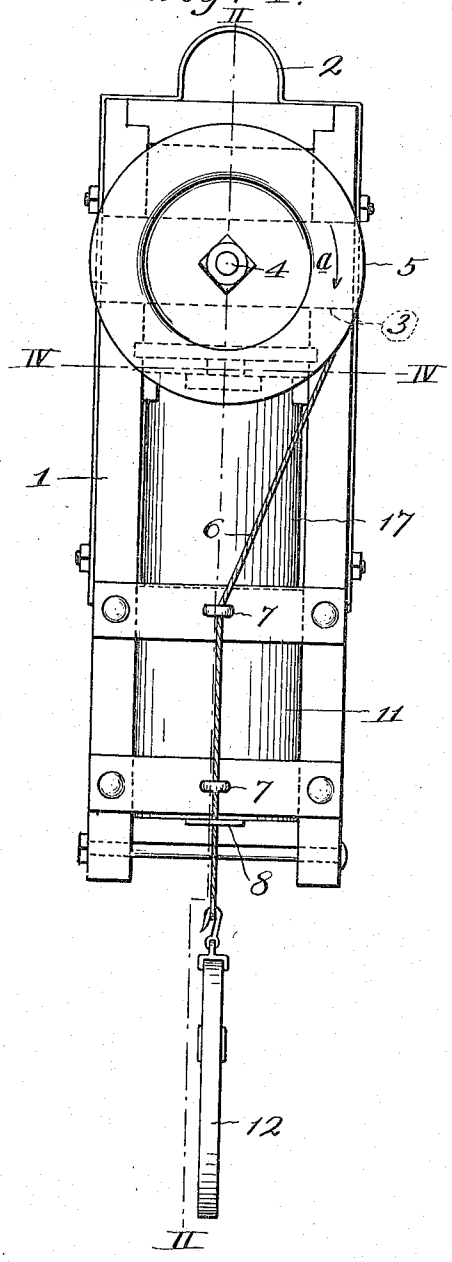
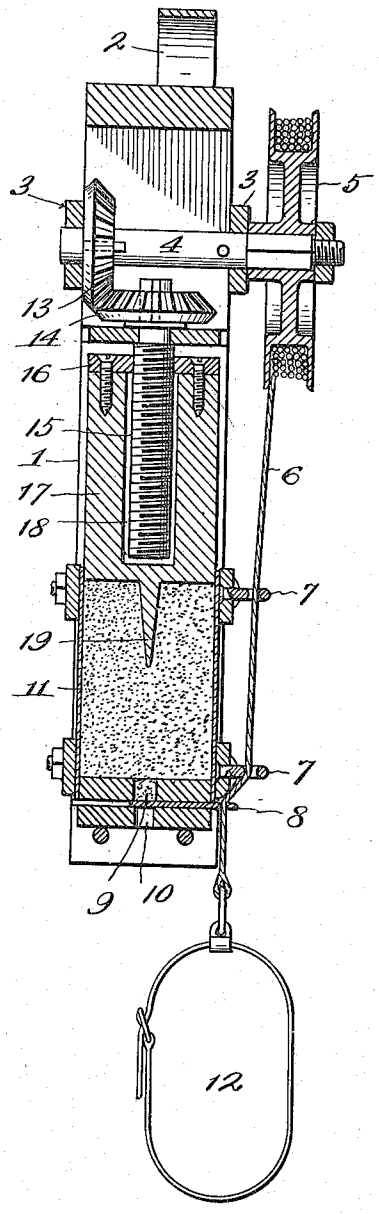


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

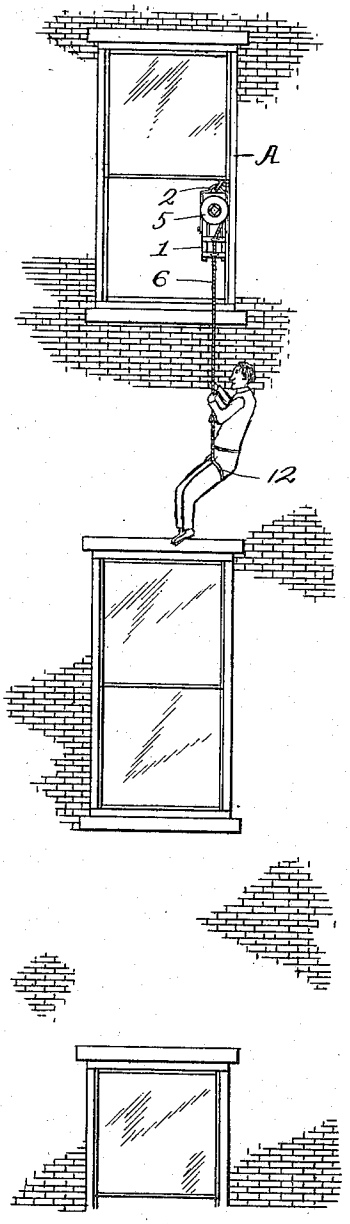


Fig. 4.

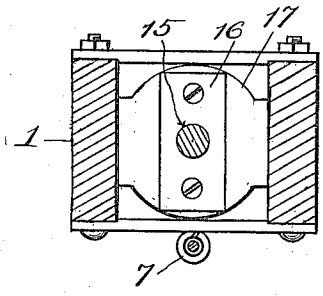
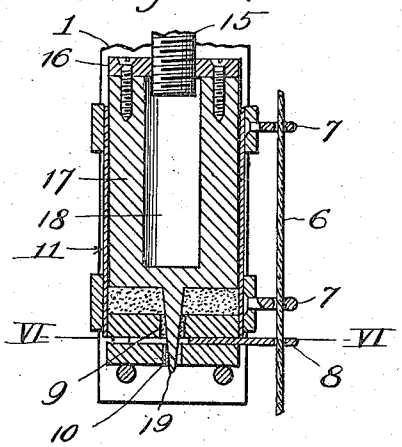


Fig. 5.



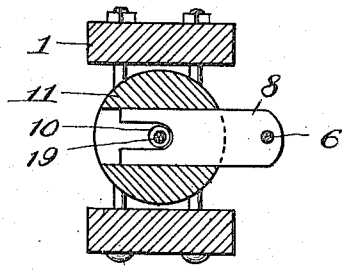


Fig. 6.

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UNITED STATES PATENT OFFICE.

SAMUEL F. ROLSTON, OF EDGERTON, MISSOURI.

FIRE-ESCAPE.

1,145,923. Specification of Letters Patent. Patented July 13, 1915.

Application filed April 15, 1914. Serial No. 831,991.

To all whom it may concern:

Be it known that I, SAMUEL F. ROLSTON, a citizen of the United States, residing at Edgerton, in the county of Platte and State of Missouri, have invented certain new and useful Improvements in Fire-Escapes, of which the following is a specification.

My invention relates to improvements in fire-escapes, and my object is to provide a simple, inexpensive apparatus of this character, which can be conveniently carried in a valise.

The inventin may also be used to advantage as regular equipment for hotels, tenement houses, fire departments, etc.

In order that the invention may be fully understood, reference will now be made to the accompanying drawings, in which:

Figure 1 is an elevation of the fire-escape complete. Fig. 2 is an irregular vertical section on line II—II of Fig. 1. Fig. 3 is an elevation showing the application of the invention. Fig. 4 is a detail cross section on line IV—IV of Fig. 1. Fig. 5 is a broken vertical section taken on the same plane as Fig. 2, except that the plunger is near the end of its downward stroke instead of at the end of its upward stroke, as shown on Fig. 2. Fig. 6 is a detail cross section on line VI—VI of Fig. 5.

In carrying out the invention, I employ a frame 1 provided with a yoke 2, whereby it may be suspended from a suitable support such as a window-frame A, as shown on Fig. 3. The upper portion of frame 1 is provided with bearings 3, in which a horizontal shaft 4 is journaled, said shaft being provided at one end with a rigidly mounted drum 5.

6 designates a cable wound upon the drum 5 to which the upper end of said cable is attached, the lower end of said cable being threaded through guides 7 and an eye in a slide valve 8. The eye in the slide valve 8 is out of vertical alinement with guides 7 when the valve is closed to bend the cable as shown on Fig. 2. Guides 7 project from one side of frame 1 while the slide valve 8 controls ports 9 and 10 in the bottom of a receptacle 11. The lower end of cable 6 is attached to a sling 12 which constitutes a seat for a person who uses the fire-escape, as shown on Fig. 3. If desired sling 12 may be made large enough to carry four or five people at the same time.

13 designates a bevel gear wheel rigidly mounted upon shaft 4 and intermeshing with a similar gear wheel 14 rigidly mounted upon the upper end of a worm or screw 15, threaded in a nut 16 secured to the upper end of a plunger 17 having a central bore 18 to receive said screw 15. Plunger 17 is reciprocably-mounted in the receptacle 11 and provided at its lower end with a centrally-disposed downwardly tapered stem 19, adapted to pass through the ports 9 and 10 and partly close the same. Receptacle 11 is filled, or partly filled, with water, sand, or other substance capable of flowing freely through the ports 9 and 10 when the slide valve 8 is opened and pressure is applied through the intermediacy of the plunger 17.

In practice, the apparatus is suspended by its yoke 2 a suitable distance above a window-sill, so that the user may become seated in the sling before leaving said window-sill. The weight of the user on the sling 12 straightens out the cable 17, which in turn opens the slide valve 8, so that the contents of the receptacle 11 may escape through the ports 9 and 10. The weight of the person on the capble 6 unwinds the same from the drum 5, which is thereby rotated in direction of arrow *a*, Fig. 1. As the drum 5 rotates, it rotates the shaft 4 therewith, which in turn rotates the bevel gear wheel 13, causing it to rotate the screw 15 through the intermediacy of the bevel gear wheel 14. The rotation of the screw 15 in the relatively stationary nut 16 forces the plunger 17 downward, causing it to force the material in the receptacle 11 out through the ports 9 and 10. As the material can only flow through the ports 9 and 10 at a predetermined rate, it acts as a governor in restraining the downward passage of the person sitting in the sling, so that said person may alight upon the ground below without injury. The speed of the downward passage is further retarded as the person approaches the ground by the entrance of stem 19 into the ports 9 and 10, which partly closes said ports and materially retards the flow of meterial from the receptacle through said ports. By lengthening the receptacle 11 and reducing the port or ports therein, the material in said receptacle may be omitted as the compression of the air therein by the descending plunger will retard the same sufficiently to insure the safe alighting upon the ground of the person using the apparatus. When air alone is depended upon as a retarding

means, the slide-valve 8 may be omitted, as the same is employed merely to retain the material in the receptacle 11 when the apparatus is not in use. Fire departments may be equipped to advantage with the apparatus, because on reaching a burning building fireman may ascend ladders and hang one or more apparatus at each floor of the building for the escape of the occupants. After one or more persons have descended, the drum 5 can be rotated backward to wind the cable thereon and raise the sling for further use.

Although I have shown and described the invention as a fire-escape, I have found by practice that it may be utilized to good advantage as a governor in regulating the speed of engines, pumps, and other machinery intended to run at a uniform speed, by attaching a weight or spring to the cable 6 or the sling 12.

While I have shown and described the preferred form of my invention, I of course, reserve the right to make such changes in the construction, combination and arrangement of parts as properly fall within the spirit and scope of the claim.

Having thus described my invention, what I claim and desire to secure by Letters Patent, is:

In a fire escape, a cylinder having a bore of uniform diameter through an otherwise closed end, a piston traveling in said cylinder, a tapering projection carried by the bottom of the piston and adapted to engage in said bore, to reduce the size thereof, a valve for controlling the bore, and means for driving the piston through the cylinder, said driving means adapted to operate the valve to open same, and said tapering projection adapted to engage in said bore to retard the action of the driving means.

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

SAMUEL F. ROLSTON.

Witnesses:
F. M. Dick,
W. T. Cook.

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