

W. H. SMITH.

FIRE ESCAPE.

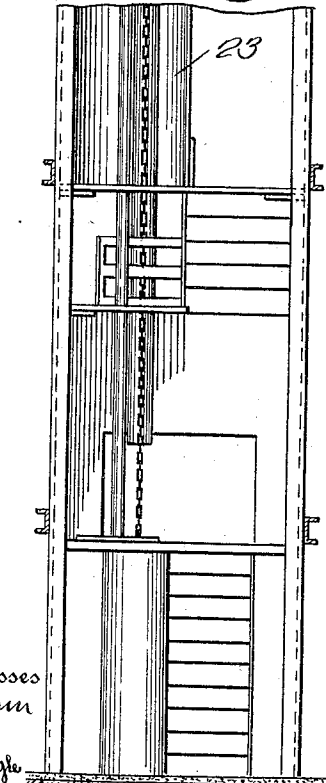
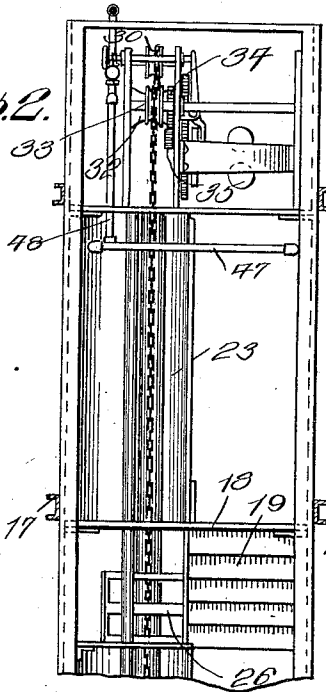
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Patented Mar. 18, 1913.

1,056,747.

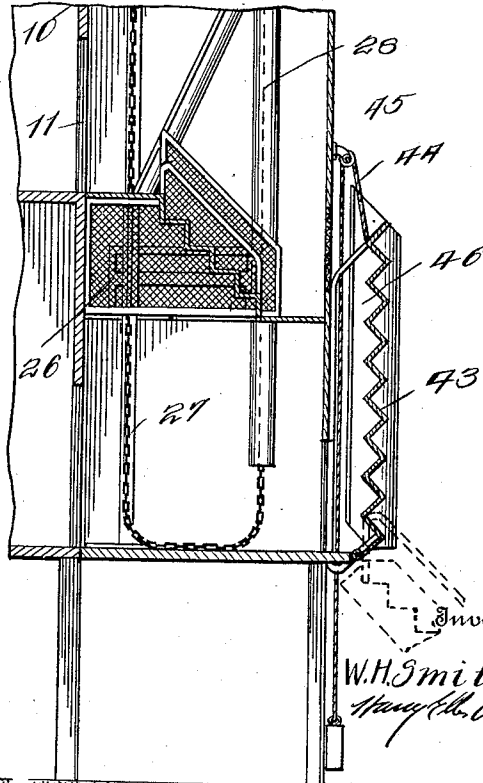
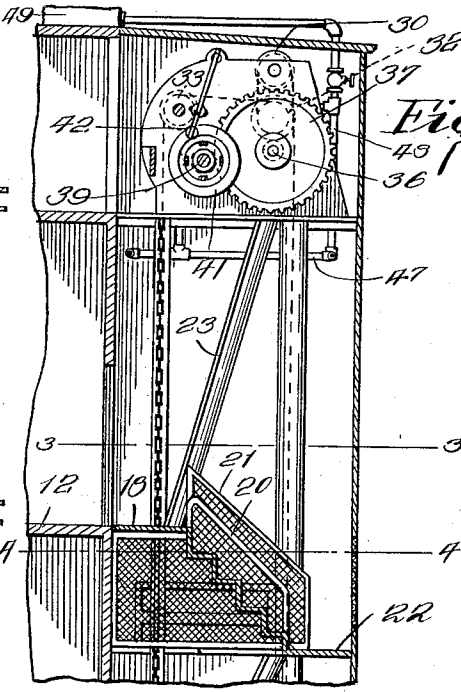
2 SHEETS-SHEET 1.

Fig. 2.



Witnesses
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Fig. 1.



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2 SHEETS-SHEET 2.

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Fig. 3.

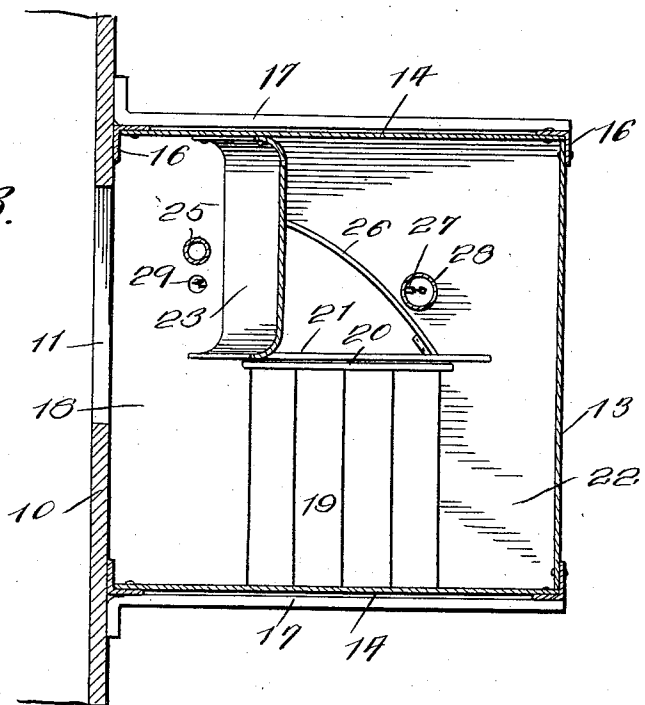
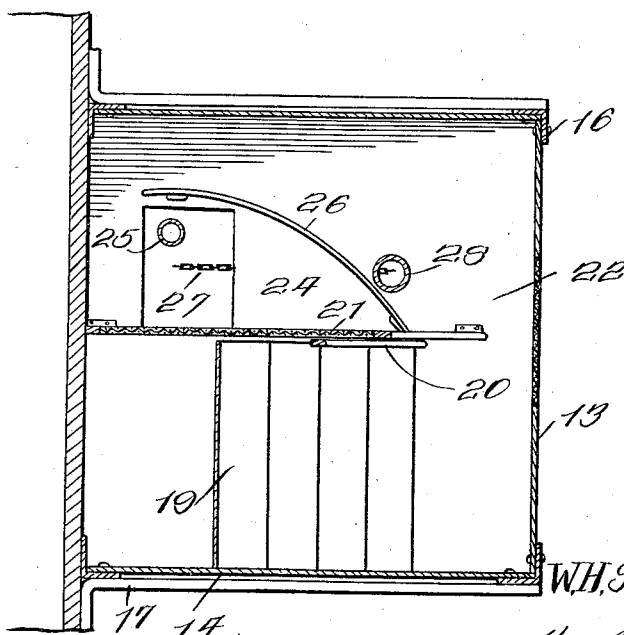


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

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FIRE-ESCAPE.

1,056,747.

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To all whom it may concern:

Be it known that I, WILLIAM H. SMITH, a citizen of the United States, residing at Gayhead, in the county of Greene and State of New York, have invented certain new and useful Improvements in Fire-Escapes, of which the following is a specification.

This invention relates to fire escapes and has for an object to provide a fire escape in the nature of a casing having a slide pole and a plurality of internal landings so arranged as to catch and prevent a person from falling to the bottom of the casing should they loose their hold upon the slide pole.

A second object of the invention is to provide novel gates on the landings to prevent more than one person at a time gaining access to the slide pole whereby to eliminate jamming and crowding.

A third object of the invention is to provide novel inclined guard troughs extending from landing to landing and serving to catch persons who may loose their hold upon the slide pole.

With the above objects in view the invention consists of certain novel details of construction and combination of parts herein-after fully described and claimed, it being understood that various modifications may be made in the minor details of construction within the scope of the appended claim.

In the accompanying drawings forming part of this specification:—Figure 1 is a longitudinal sectional view through the fire escape. Fig. 2 is a longitudinal sectional view taken on the line 2—2 Fig. 1. Fig. 3 is a cross sectional view taken on the line 3—3 Fig. 1. Fig. 4 is a cross sectional view taken on the line 4—4 Fig. 1.

Referring now to the drawings in which like characters of reference designate similar parts, the fire escape is shown attached to a building side, designated in general by the numeral 10, there being doors 11 opening through the side and facilitating entry from the various floors 12 to the fire escape comprising the subject-matter of this invention.

The fire escape consists of an upright metal casing including a front wall 13, and side walls 14 secured to the front wall by angle irons 15 arranged at the corners, angle irons 16 being secured to the side walls and fixed to the wall of the building in any preferred

manner. Angular brace rods 17 are secured to the sides of the casing and to the building and rigidly secure the casing thereto.

Arranged at intervals within the casing are short landings 18 which extend from side to side of the casing. Leading downward from each of these landings is a short flight of stairs 19 of about one half the width of the landing, one side of the flight being secured to the side of the casing, and a hand rail 20 and protecting screen 21 being secured to the free side of the flight. The flight terminates in a second short L-shaped landing 22 a portion of which underlies the platform 18.

The stair structure described may be said to consist of an upper landing, a lower landing and a short flight of stairs connecting both landings, the upper landing extending entirely across the casing from side to side while the lower landing is L-shaped and has a portion underlying one end of the upper landing. By referring now to Figs. 1 and 2 it will be seen that extending from each lower landing of one stair structure to the upper landing of the next underlying stair structure is an inclined trough 23. This trough performs the function of a guard to catch persons falling from the slide pole intermediate the landings and directing the persons to the foot of the slide pole on the next underlying upper landing.

Formed in each L-shaped landing 22 in that portion thereof underlying the related upper landing is a manhole 24. Extending vertically from top to bottom of the casing is a slide pole 25 which extends through suitable openings formed in all of the upper landings 18 and extends through the manholes 24 of all of the lower or L-shaped landings 22. The pole is disposed within convenient reach of the door openings, it being understood that the latter will be fitted with doors that swing into the casing to facilitate access in minimum time to the pole. It can now be seen that a person entering the fire escape on any one of the landings 18, may run down the related flight of stairs to the related L-shaped landing 22 at the foot of the stairs, turn to the left on this landing and advance to the pole. The person may slide down the pole through the manhole to the next underlying upper landing 18, this procedure being continued until the foot of the casing is reached. In this manner the escape of a person from the

building will be divided into alternate stages of sliding down the pole and running down the steps from landing to landing of each stair structure. Thus crowding of the pole is prevented with resultant avoidance of jamming of persons in the bottom of the casing when great numbers are endeavoring to escape by the fire escape. The stair structures need not be placed at every floor of the building, it being only necessary to dispose any particular number of the stair structures within the casing that will attain the desired end.

For preventing access of more than one person at a time to the pole, I arrange a gate 26 on each L-shaped landing, one end of the gate being secured to the screen of the landing, and the free end extending between the pole and adjacent side of the casing, and being spaced from the latter sufficiently to permit of but one person passing between the free end of the gate and the wall at a time. By virtue of this novel arrangement of stairs, landings at the top and bottom thereof, and gates on the bottom landings, crowding and jamming of persons about the pole on the landings is positively prevented.

For promoting uniform gravitating of a person on the pole, I provide an endless chain 27 one side of which is housed by a pipe 28 which extends vertically within the casing, and the opposite side of which is loosely engaged through openings 29 formed in all of the upper landings 18 and through the man-holes of the L-shaped landings 23. The bight at the upper end of the chain is trained over an idler 30 arranged between the spaced sides 31 of a governor frame which will be presently described, the bight thence being trained over a drum 32 and thence over an idler 33 as clearly shown in Figs. 1 and 2. A person sliding the pole grasps the chain in the hands and during the resultant downward pull upon the chain as the person gravitates down the pole, the drum 32 will be rotated. The drum is equipped with a gear 34 which meshes with a pinion 35 carried upon a stub shaft 36 which is equipped with a gear 37. The latter meshes with a gear 38 carried upon a governor shaft 39, the governor being of a bell variety and operating to shift a flange friction disk 40 longitudinally upon the shaft. A brake rod 41 is rigidly fixed to the outer side of the governor frame and is equipped with a shoe 42. During excessive weight upon the exposed side of the chain, the governor balls will tend to spread and draw the friction disk into operative en-

gagement with the brake shoe, the friction thus increasing as the weight upon the chain increases so that the chain has uniform movement regardless of the weight thereupon.

As a means of exit from the fire escape, I hingedly secure a flight of stairs 43 to the outer or front wall of the casing near the lower end thereof, a weighted cable 44 being attached to the stairs and trained over a sheave 45 arranged on the front wall of the casing, this cable normally holding the stairs rocked upwardly into released position but permitting of the stairs being manually moved to operative position in a minimum time and with minimum labor. In emergencies, where it is not possible to use the stairs, a supplementary exit is provided in the nature of a U-shaped trough 46 which is secured to one side of the stairs, and into which a person may jump and slide to the ground when desired.

For cooling the casing during hot fires, I provide a spray pipe 47 having a valve controlled feed pipe 48 which leads to a reservoir 49, the spray pipe being adapted to sprinkle and dampen the walls of the casing upon the valve of the feed pipe being opened.

What is claimed, is:—

A fire escape including a vertical casing, a slide pole within and extending approximately from top to bottom of said casing, a plurality of short flights of steps arranged in superposed position on one side of said casing, a substantially L-shaped landing at the bottom of each flight coacting with the flight in forming a closure in the casing, all of said L-shaped landings being formed with alined manholes receiving said slide pole, a landing at the top of each flight extending from side to side of the casing and receiving said slide pole, and preventing continuous passage of a person down said slide pole from the L-shaped landing next above to the L-shaped landing next below said landing, and a gate on each L-shaped landing extending from the foot of the related flight of steps toward said slide pole and having the free end so spaced from the side of said casing nearest to said pole as to prevent the passage of but one person at a time around the free end of the gate to said pole.

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

WILLIAM H. SMITH.

Witnesses:

LEWIS BETTS,

EDWIN C. HALLENBECK.