

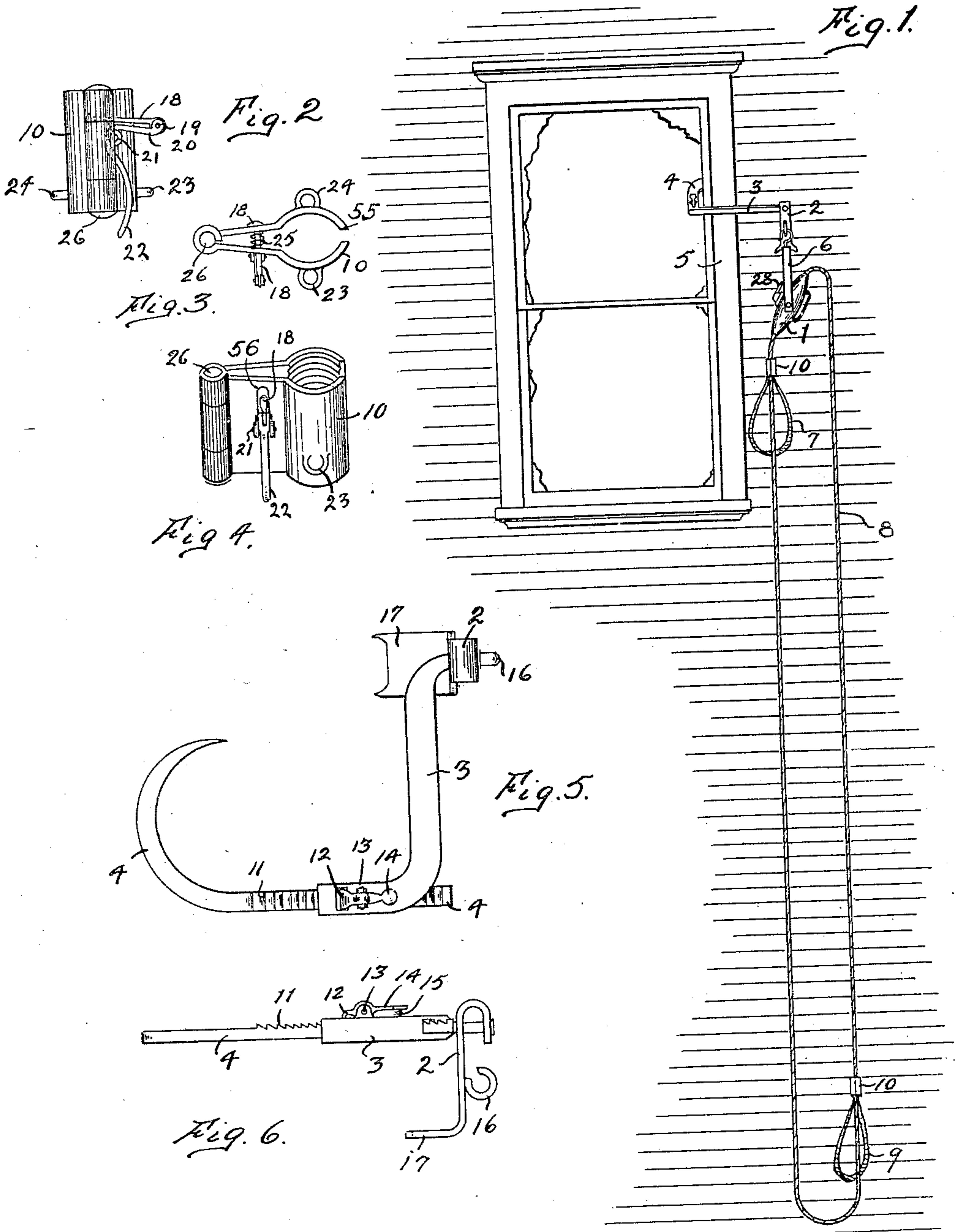
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FIRE ESCAPE.

APPLICATION FILED APR. 12, 1909.

Patented Apr. 19, 1910.

2 SHEETS--SHEET 1.

955,243.



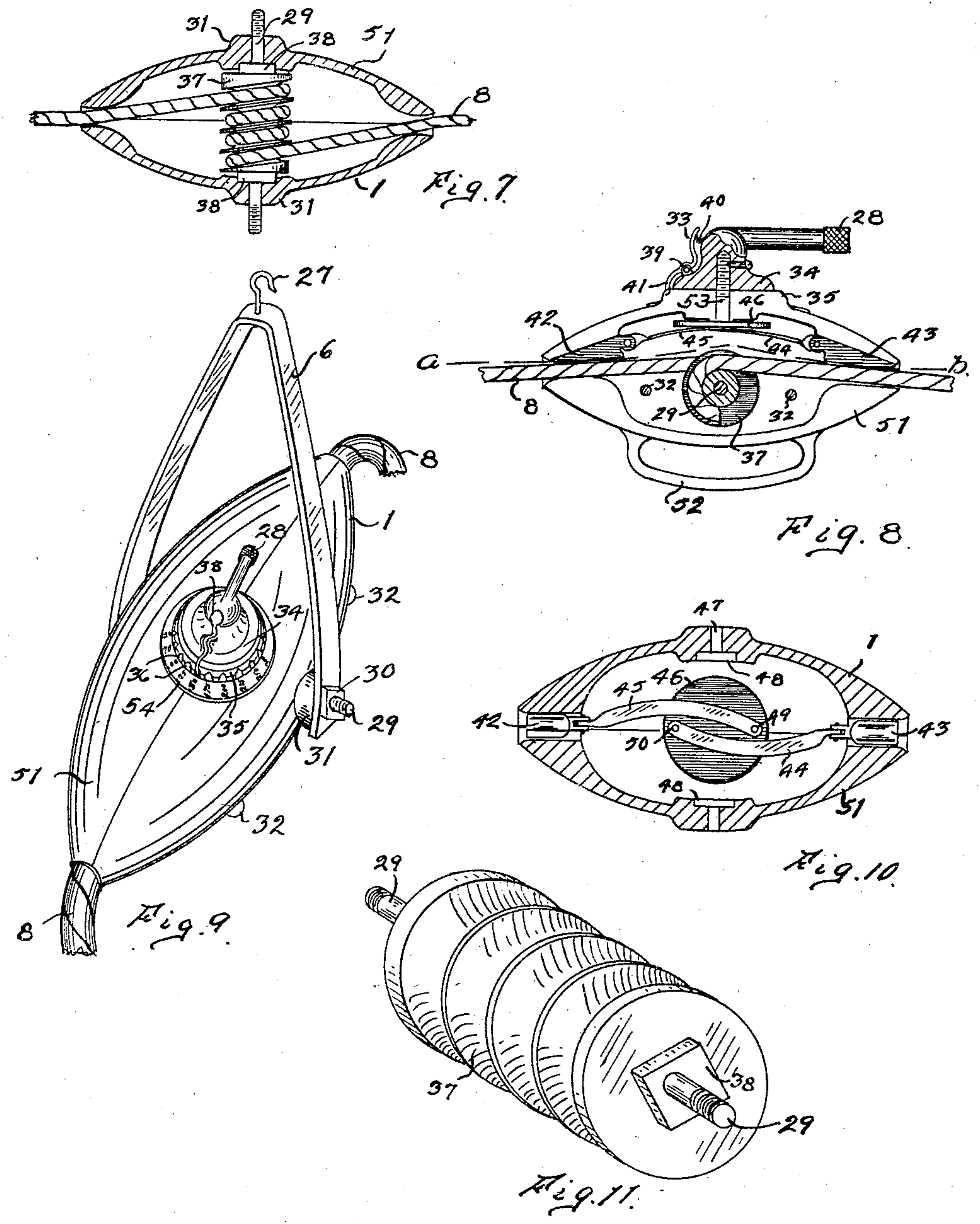
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G. B. Burr.  
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INVENTOR  
George R. Witt,  
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# UNITED STATES PATENT OFFICE.

GEORGE R. WITT, OF WATERLOO, IOWA.

## FIRE-ESCAPE.

955,243.

Specification of Letters Patent.

Patented Apr. 19, 1910.

Application filed April 12, 1909. Serial No. 489,460.

*To all whom it may concern:*

Be it known that I, GEORGE R. WITT, a citizen of the United States of America, and a resident of Waterloo, Blackhawk county, Iowa, 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 the object of my improvements is to furnish a portable, compact device, strongly and safely constructed, and which is designed to be readily and rapidly assembled, and also capable of continuous service in use, without halts or delays in operation.

Another object is to supply adjustable means for securing the fire-escape supports to a window, so as to remove the path of an escaping person from the location of the vertical alinement of any plurality of windows or other openings in a burning building.

These objects I have accomplished by the means which are hereinafter fully described and claimed, and which are illustrated in the accompanying drawings, in which:

Figure 1 is an elevation of a portion of a building, with one window to whose casings the adjustable bracket-support of my improved fire-escape is secured. Fig. 2 is an elevation of the grapple used to removably secure one of the slings to the endless rope of said fire-escape. Fig. 3 is a plan view of said grapple. Fig. 4 is a perspective view of said grapple. Fig. 5 is an upper plan view of the adjustable bracket-support for the fire-escape block. Fig. 6 is a side elevation of said bracket-support. Fig. 7 is a central horizontal section of the friction-block or controlling-device for varying the speed of movement of the endless cable under the strain of different loads. Fig. 8 is an elevation of one of the parts of said block, showing the contained mechanisms and their relations to the endless cable reeved therethrough. Fig. 9 is a perspective view of said block or controlling-device for the fire-escape rope or cable. Fig. 10 is a section of said controlling device taken along the line *a-b* in Fig. 8. Fig. 11 is an enlarged perspective view of the friction worm of said controlling-device.

Similar characters of reference denote similar parts throughout the several views.

My improved fire-escape is supported and

suspended from an adjustable bracket, and the latter may be readily fitted and secured to the side of a window-casing as shown in Fig. 1. This bracket is composed of a hook 4 whose shank has a plurality of transverse serrations directed toward the curved part of the hook. The shank of this hook is fitted in a hollow boxing on a bar 3 bent in rectangular form and is slidable therein. A movable detent 12 has pintles 13 pivoted in studs on the upper surface of said boxing, said detent working through a slot in said boxing to engage the roots of teeth on said hook 4, while a compression-spring 15 is seated between the boxing and the disk-like projection 14 of said pivoted detent and acts to ordinarily keep the detent-point in engagement with the said roots of teeth on the shank of the hook 4.

By the above described means the hook may be adjusted in its distance from the bar 3, so as to be readily accommodated to window-casings 5 of different thicknesses. A grappling-foot 17 is furnished with points or prongs adapted to engage the outside of the sill or the outside surface of the building adjacent to the sill. This grappling-foot is horizontally extended from an upright body 2, the upper end of the latter being curved to depend as shown, and the outwardly turned end of the bar 3 is passed through registering apertures in the curved part of said upright and secured fixedly therein. A hook 16 is fixed to the outer side of the upright 2 to removably support the hook 27 on the bail 6 whose depending ends are pivoted on a shaft 29, and secured thereon by nuts 30. The shaft 29 passes transversely through the middle of the block 51 of the rope-controlling device, and on it within said block is mounted a worm 37, the latter however, being prevented from turning by reason of square bosses 38 on its ends being fitted into squared seats in the inner surface of said block. The hollow block 51 is made in two parts, 1 and 51 separably connected together by means of screws or bolts 32. Choked-bore openings are placed in the ends of said block to permit of the passage therethrough of the endless cable 8, said cable being reeved about the spiral root of the worm 37 which effects a frictional contact which tends to diminish the speed of movement of the rope in running through the block. The choked open-



ings in the ends of the block are widened above to provide inclined slideways for the movement therein of friction-pawls 42 and 43 respectively, the latter being adapted to be moved out to various distances by means of the mechanism about to be described, in order to bring more or less frictional pressure against the cable 8 to differently retard its speed of movement through the block.

10 A disk 46 in the interior hollow of the block, and located to rock adjacent to the upper inner wall thereof, has an upwardly-projecting threaded pin 53 which extends through a bearing in the block and into a nut 34 on the top of the block. A link or connecting-rod 45 has its outer end pivoted to the shank of the wedge-shaped friction-pawl 42, while its inner end is pivoted on a stud 49 projecting from the under surface of the disk 46. In a similar way, a link 44 has its outer end pivoted to the shank of the other friction-pawl 43 and its inner end pivoted to a stud 50 on the under side of said disk, said studs 49 and 50 being located opposite to each other to afford the maximum throw to the said pawls. The nut 34 has a horizontally-projecting handle or lever 28, whereby it, with its connected disk 46 may be rocked to impart a greater or less scope of play to the friction-pawls 42 and 43. The nut 34 rests upon a circular boss 35 integral with the upper part of the block, and this boss is surrounded by a ring 54 having a scale of increasing weights marked on its upper surface with each scale number placed adjacent to one of a plurality of notches, V-shaped, on the circumferential edge of said nut. A detent 41 has pintles 39 pivoted in bearing studs on said nut 34, the point of the detent being adapted to enter any one of the notches 36 on the boss 35. A compression spring 40 interposed between the nut 34 and the projection 33 of said detent keeps the latter yieldingly in engagement with a notch 36 in which it may have been set, but the detent may be lifted out of the notch by pressing down upon the projection 33, when it is desired to vary the tension of the friction-pawls 42 and 43 upon the cable 8. The friction-pawls act upon the cable by being pushed down upon it frictionally, and thus more or less retard the movement of the cable through the block as may be necessary in order to secure a safe degree of speed. The frictional contact of said cable with the threads of the fixed worm 37 is only sufficient to render the appliance useful when used to carry a certain predetermined weight on the cable, a heavier weight of more considerable mass tending to move the cable at an enhanced and unsafe speed.

By means of the detent and notches above described, the friction-pawls 42 and 43 may be set, before a person descends upon

said cable, to carry a weight which will not cause an unsafe enhancement of the speed. The operator knowing approximately the weight of the person about to descend, may therefore easily and quickly set the device for the proper weight as indicated upon the scale-ring 54. The friction-pawls are frictionally thrust by this means against the cable 8, and brake the latter safely. The block is provided with a wide handle or hand-hold 52, which serves as a support for a person while the latter is in the act of being seated in the sling 7 on one side of the cable 8 or in the other sling 9 as the case may be.

The cable 8 is endless, and may have the slings 7 and 9 removably secured to it at suitable places, so that when a passenger has reached the ground in one sling the other sling will have moved up to the block in readiness to take on a passenger. A sling may be removably secured to said cable by any convenient grapple, such as that shown in Figs. 2 to 4 inclusive. This grapple is composed of the opposed clutch-members 10 and 55 hinged on a pintle 26, and having finger-holds 23 and 24 respectively. The clutch-members are interiorly corrugated to afford a better grip upon the cable 8, and are secured together by the following means. A headed pin 18 is passed through registering openings in said members, a coiled compression-spring 25 being seated about the pin between said members. The aperture 56 in the member 10 is in the form of a lengthened slot to permit of a certain amount of play to the pin 18. An angularly formed lever is pivoted at its angle on pintles 21 in a pair of lugs below said aperture 56, and the upper end 20 of said lever is pivoted at 19 to the end of the pin 18. When the lever 22 is pushed over against the member 10, the pin 18 is drawn through the aperture 56, and the dead center being passed, the members 10 and 55 are held with the cable 8 tightly held between them. When the lever 22 is lifted, the pin 18 is pushed back, which separates the members.

It will be observed that the bracket shown in Fig. 5 may be secured to the side of the window-casing, which permits a person to descend without being in line with windows below, through which flames may be issuing. It will also be observed that the cable 8 is endless, which permits a person to descend on one side immediately after another person has descended on the other side of the cable. Priceless time is thus saved. Adjustment of tension may also be made to carry two persons. A person may, while sitting in one of the slings and while grasping the hand-hold 52, adjust the tension-device on the block before descending. The last person descending, may cast loose the block from the hook 16, place the cable over



said hook, enter the sling and descend safely with the block, thus saving the latter from destruction in the event that the building is destroyed.

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

1. In combination, a hollow block choke-bored at each end, an endless cable reeved  
10 through said block and its said choked-bore ends, a slide movable into each choke-bored end of said block and adapted to frictionally engage said cable therein, and means for moving said slides simultaneously into said  
15 choked-bore ends to frictionally engage said cable.

2. In combination, a hollow block choke-bored at each end, an endless cable reeved through said block and its said choked-bore  
20 ends, a slide movable into each choke-bore of said block to frictionally engage said cable therein, means for shifting said slides simultaneously into engagement with said cable, and means for detachably securing  
25 said shifting-means in a desired position of adjustment to permit of variation of pressure of said slides upon said cable.

3. In combination, a hollow block choke-bored at each end and containing a fixed  
30 worm, an endless cable reeved through said block and through its choked-bore ends and about said worm, a slide movable into each choke-bore of said block to frictionally engage said cable therein, and means for moving  
35 said slides simultaneously into engagement with said cable.

4. In combination, a hollow block choke-bored at each end, a cable reeved through  
40 said block and its said choked-bore ends, a slide movable into each choke-bored end of said block and adapted to frictionally engage said cable therein, and means for moving said slides into said choked-bore ends to frictionally engage said cable.

45 5. In combination, a hollow block choke-bored at each end, a cable reeved through said block and its said choked-bore ends, a slide movable into each choke-bored end of said block and adapted to frictionally engage said cable therein, and means for detachably connecting said block to some supporting body.

55 6. In combination, a hollow block having open ends, a cable reeved through said block and the openings in its ends, a slide movable into each of said openings to frictionally engage said cable between itself and the opposite wall of the opening, and means

for holding said slides in positions of frictional adjustment against said cable. 60

7. In combination, a hollow block having open ends, a cable reeved through said block and the said openings in its ends, means within said block for frictionally engaging  
65 said cable therein, and a contact body movable into each of said openings to press upon the cable at these points to frictionally retard its movement therethrough.

8. In combination, a hollow block formed of two similar halves detachably connected  
70 together, a cable reeved therethrough, a brake movable within each end of said hollow block against said cable to frictionally retard its movement therethrough, means for simultaneously shifting said brakes into  
75 or out of braking contact with said cable, means for adjusting the amount of pressure of said brakes against said cable, and means for detachably securing said brakes in a desired position of frictional adjustment against  
80 said cable.

9. In combination, a hollow block formed of two similar halves detachably connected together, a cable reeved therethrough, a  
85 brake movable within each end of said hollow block against said cable to frictionally retard its movement therethrough, a body mounted within the hollow of said block to rock therein, a link connected between one extremity of said body and one of said  
90 brakes, a link connected between the opposite extremity of said body and the other of said brakes, and means for adjustably rocking said body to vary the amount of frictional pressure of said brakes against said  
95 cable.

10. In combination, a hollow block, a cable reeved therethrough, a fixed worm extending across the middle of said hollow, a cable reeved through said block and being  
100 passed about the root of said worm, a brake in each end of said hollow adapted to move frictionally against said cable to engage it between itself and said block, a body mounted within the hollow of said block to rock  
105 therein, links between said body and said brakes adapted to simultaneously shift the latter into or out of contact with said cable, and means for detachably securing said brakes in a desired position of adjustment. 110

Signed at Waterloo, Iowa, this 26th day of March, 1909.

GEORGE R. WITT.

Witnesses:

O. D. YOUNG,

G. C. KENNEDY.