

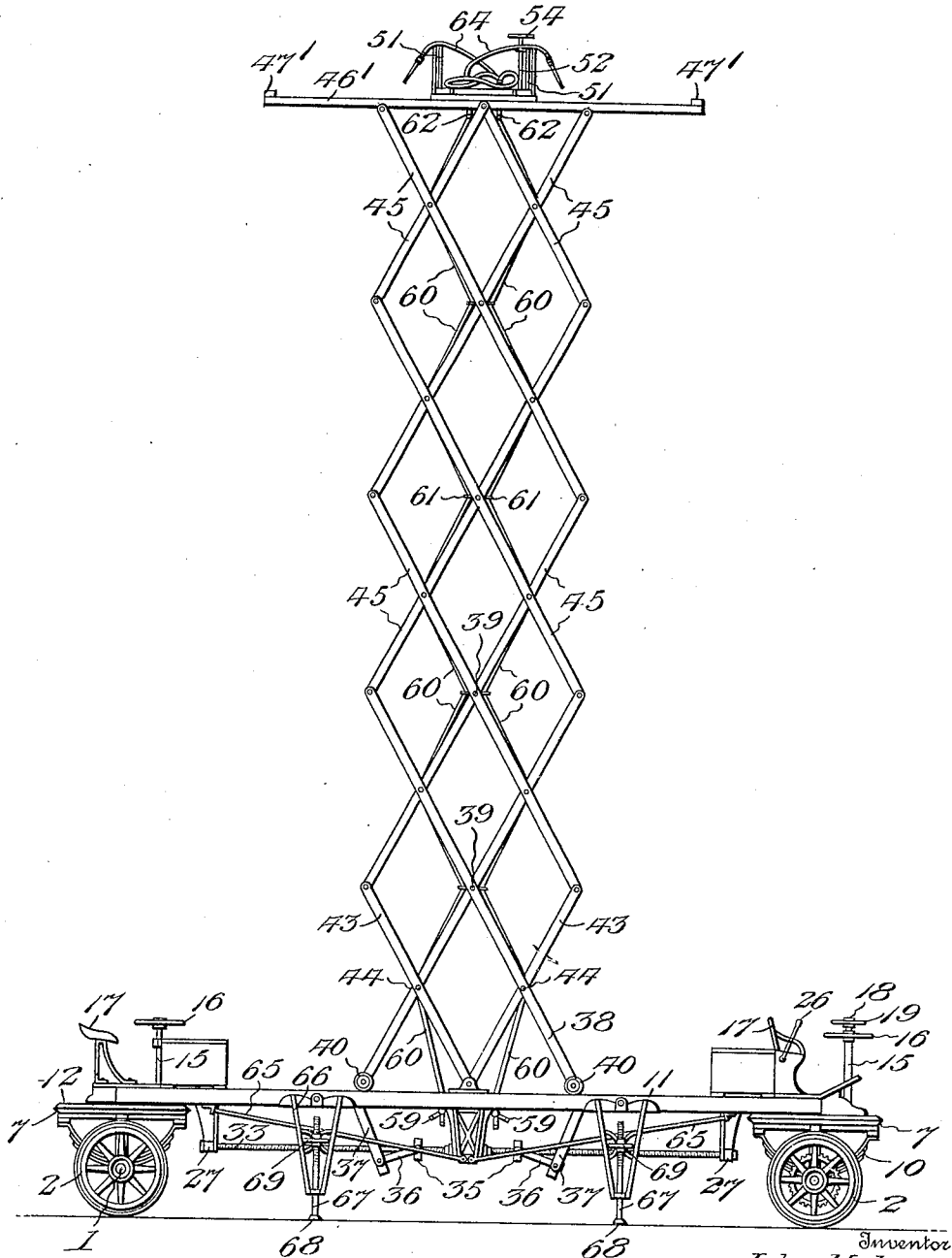
No. 822,842.

PATENTED JUNE 5, 1906.

J. HOLM.
FIRE EXTINGUISHING APPARATUS.
APPLICATION FILED AUG. 22, 1903.

5 SHEETS—SHEET 1.

Fig. 1.



Witnesses

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5 SHEETS—SHEET 2.

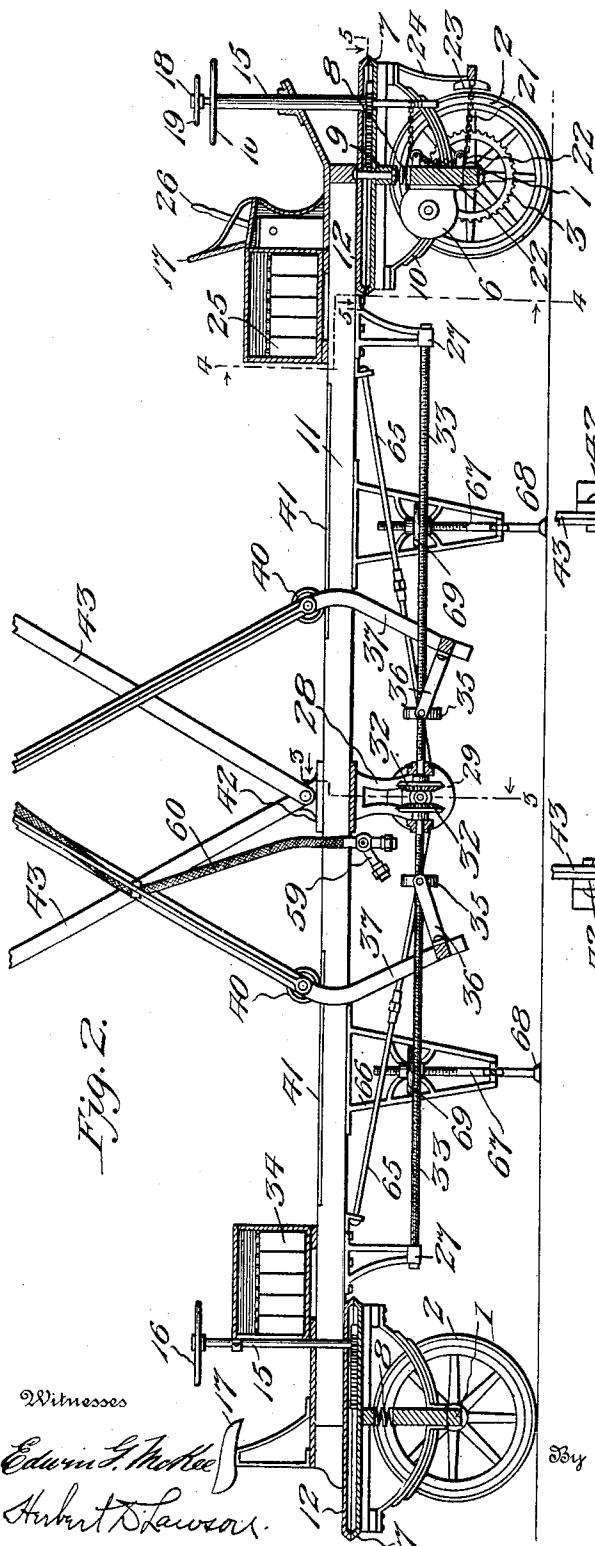


Fig. 2.

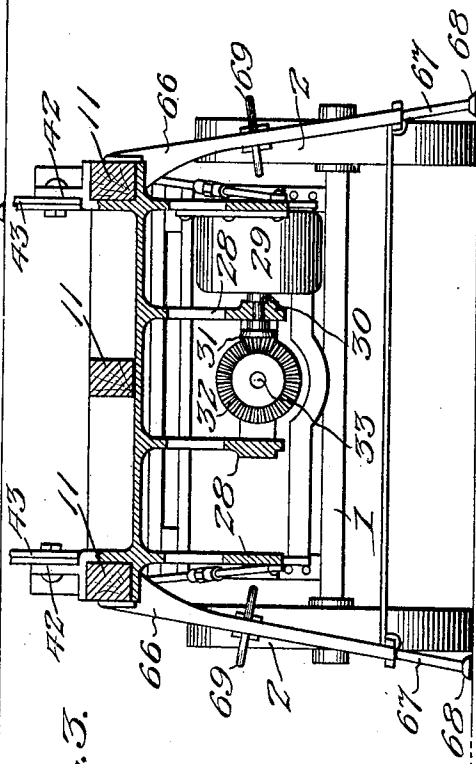


Fig. 3.

Witnesses

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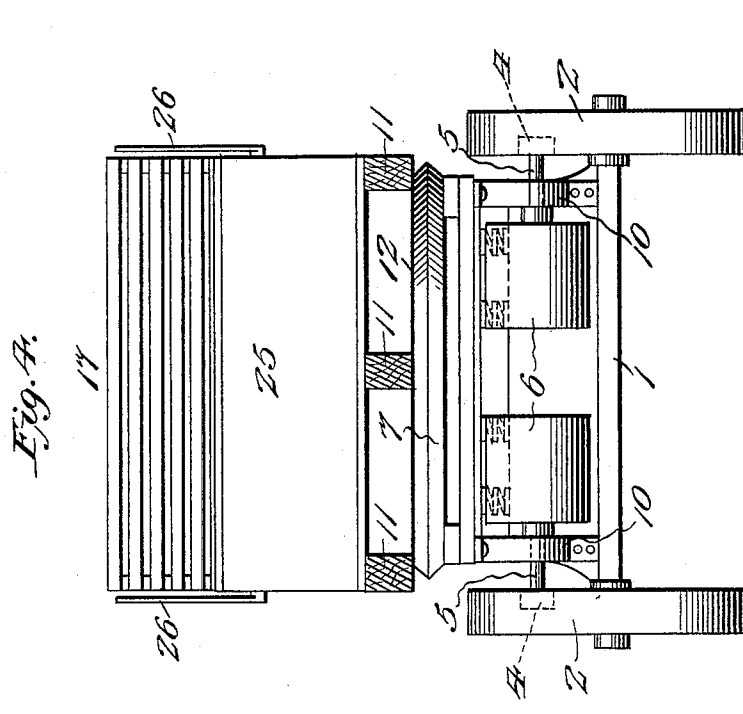
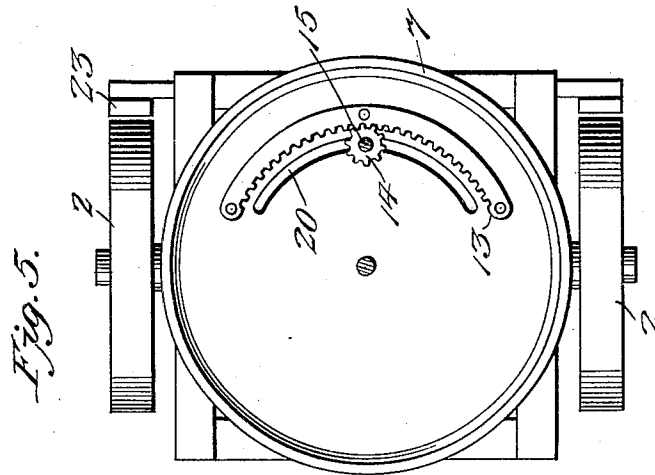
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5 SHEETS—SHEET 3.



Witnesses

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5 SHEETS—SHEET 4.

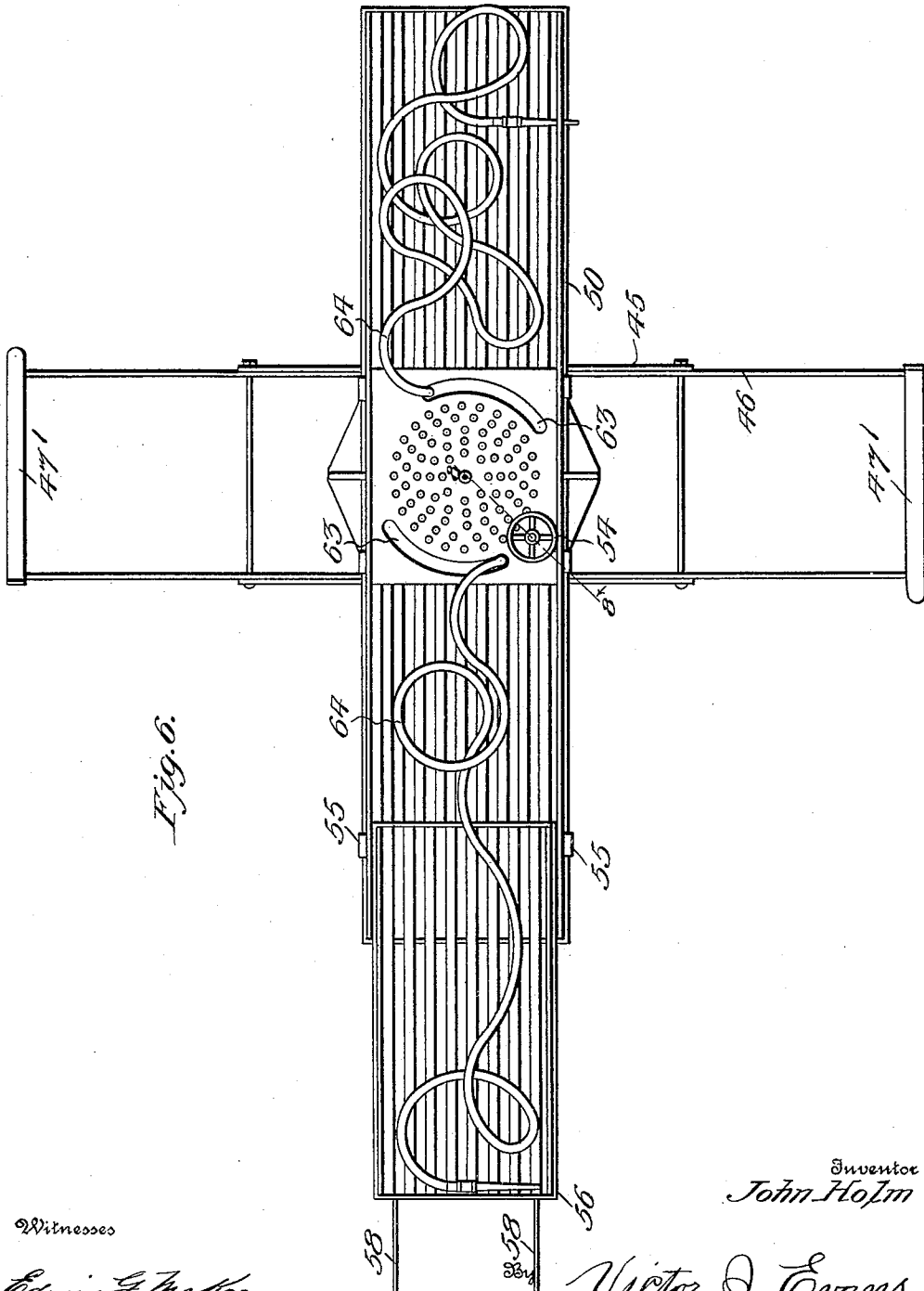


Fig. 6.

Witnesses

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5 SHEETS—SHEET 5.

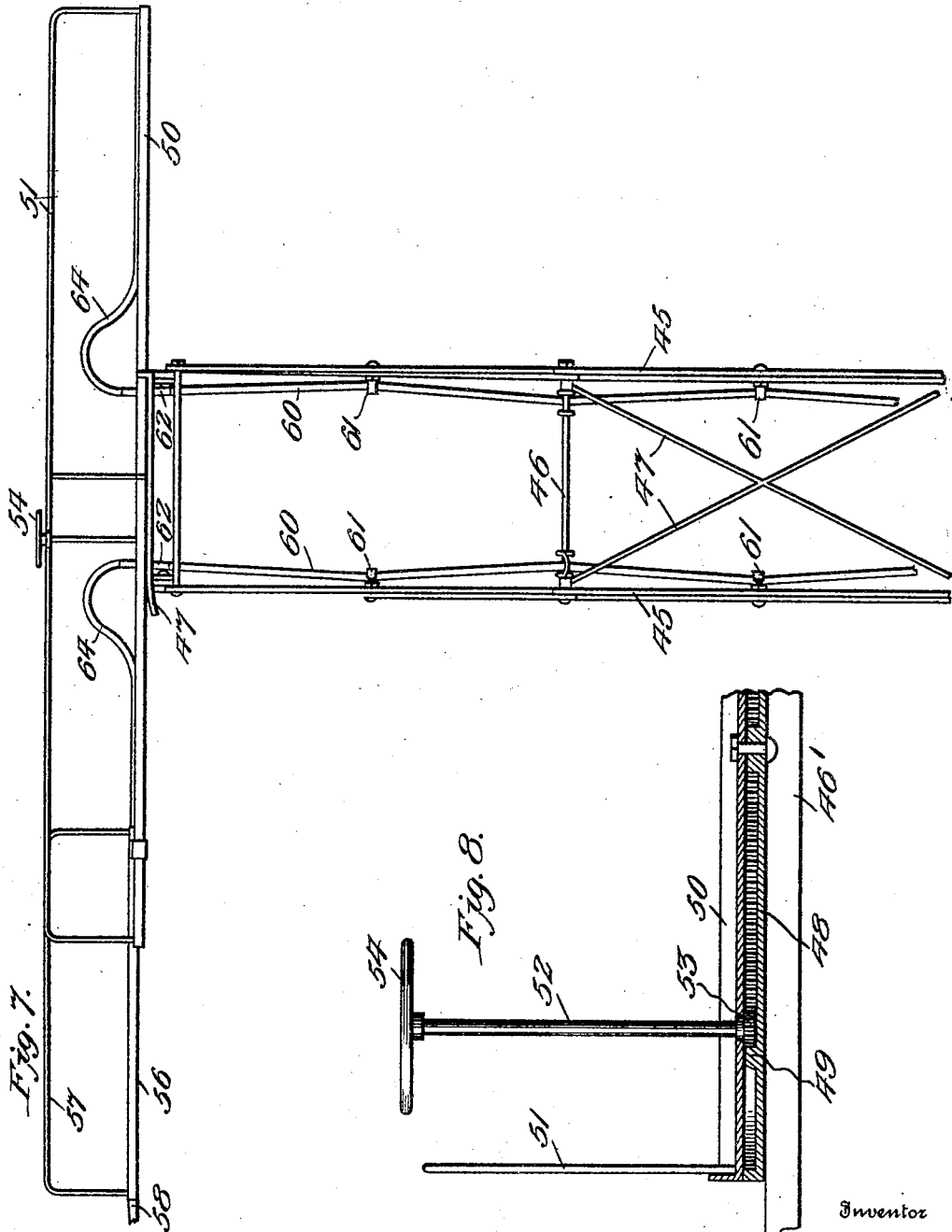


Fig. 7.



Witnesses

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UNITED STATES PATENT OFFICE.

JOHN HOLM, OF NEW YORK, N. Y.

FIRE-EXTINGUISHING APPARATUS.

No. 822,842.

Specification of Letters Patent.

Patented June 5, 1906.

Application filed August 22, 1903. Serial No. 170,479.

To all whom it may concern:

Be it known that I, JOHN HOLM, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented new and useful Improvements in Fire-Extinguishing Apparatus, of which the following is a specification.

My invention relates to new and useful improvements in fire-extinguishing apparatus; and its object is to provide a combined water-tower and fire-escape which is mounted upon a suitable truck provided therefor, whereby it can be readily transported from place to place.

A further object is to employ a durable and compact apparatus occupying the minimum amount of space and which is provided with a collapsible tower having mechanism whereby the same may be rapidly raised into operative position or lowered, as desired. Another object is to employ novel means for hoisting the tower to a desired height.

A further object is to employ a platform upon the tower adapted to be rotated so as to be brought into position within a window or other place of exit within a burning building.

Other objects are to employ adjustable braces for supporting the truck of the apparatus when in operation and to provide mechanism for manually rotating the platform of the tower from a position thereon.

With the above and other objects in view the invention consists in the novel construction and combination of parts hereinafter more fully described and claimed, and illustrated in the accompanying drawings, showing the preferred form of my invention, and in which—

Figure 1 is a side elevation of the apparatus with the tower extended into operative position. Fig. 2 is an enlarged longitudinal section through the truck and showing the lower portion of the extended tower. Fig. 3 is a section on line 3 3, Fig. 2. Fig. 4 is a section on line 4 4, Fig. 2. Fig. 5 is a section on line 5 5, Fig. 2. Fig. 6 is a top plan view of the tower and showing the platform thereon swung at an angle thereto. Fig. 7 is an end elevation of the upper portion of the tower with the parts in the positions illustrated in Fig. 6; and Fig. 8 is an enlarged section on line 8 8, Fig. 6.

Referring to the figures by numerals of reference, 1 1 are the axles of the apparatus, and traction-wheels 2 are mounted thereon, the front wheels being provided with gears 3,

which are secured to the inner faces thereof and mesh with smaller gears 4 (shown in dotted lines in Fig. 4) and which are arranged on the ends of shafts 5, adapted to be rotated by suitable electric motors 6, fastened in any suitable manner to the axle 1 adjacent thereto. A fifth-wheel 7 is supported upon each axle 1 by coiled springs 8, which are interposed between the axle and a cross-beam 9, fastened to the lower face of the fifth-wheel. Bow-springs 10 also serve to support the fifth-wheel upon the axle. The body 11 of the truck of the apparatus is supported at its ends upon the fifth-wheels 7 and has circular bearing-plates 12, which rest on the fifth-wheels, as shown. Toothed segments 13 are arranged upon the upper faces of the fifth-wheels, and each is engaged by a gear 14, connected to the lower end of a shaft 15, which is revolubly mounted within the body of the truck and has a suitable hand-wheel 16, by means of which it can be readily rotated by a person occupying a seat 17 adjacent thereto. The front shaft 15 is tubular, as shown, and revolubly mounted therein is a shaft 18, having a hand-wheel 19. This shaft projects downward through a slot 20, formed within the front fifth-wheel 7, and is connected to a chain 21 or other flexible strip, which passes over pulleys 22, connected to the front axle 1, and is fastened to brake-shoes 23, which are suspended from the front fifth-wheel by hangers 24. It will be understood that by this arrangement of the shafts 15 and 18 the occupant of the front seat 17 of the apparatus can readily steer the truck by rotating shaft 15 and its gear 14 and can apply the brake-shoes 23 to the peripheries of the front wheels 2 by rotating the shaft 18. The motors 6 are electrically connected in any suitable manner to storage batteries 25, arranged at any suitable point upon the truck. The current is adapted to be controlled by mechanism operated by a lever 26.

Hangers 27 are secured to the lower face of the truck-body, near opposite ends thereof, and a depending casting 28 is secured to the lower face of the body 11, near the center thereof. This central casting supports a motor 29, the shaft 30 of which is provided with a gear 31, which extends between and meshes with gears 32, arranged at the inner ends of oppositely-projecting longitudinally-extending screw-threaded rods 33. These rods are swiveled within the hangers 27 and the casting 32, and it is obvious that when the motor is

put in operation the gear 31 thereof will cause the two rods 33 to rotate in unison. This motor receives its electric current preferably from storage batteries 34, arranged at a suitable point upon the body 11 of the truck and preferably adjacent one of the seats 17, so as to permit it to be readily controlled by the person occupying said seat.

A collar 35 is arranged upon each rod 33, and to these collars are pivoted brackets 36, which are securely fastened in any suitable manner to downwardly-extending arms 37, preferably formed integral with the lower ends of two pairs of primary beams 38, which are centrally pivoted to each other, as illustrated at 39. Rollers 40 are journaled upon the outer faces of these beams 38 and bear upon tracks 41, provided therefor and extending longitudinally of the body 11 at the sides thereof. The casting 32 projects upward from the body 11 at the sides thereof, and pivoted to each of these upwardly-projecting portions 42 are the lower ends of secondary beams 43, which are centrally pivoted at 44 to the primary beams 38 at points equidistant from the rollers 40 and the pivots 39 thereof. Beams 45 are pivoted to the upper ends of the beams 43 and 38 and are arranged parallel thereto, the same being pivotally connected to each other at points of intersection, thereby forming lazy-tongs. The pivots or fulcrums of the various beams comprising the lazy-tongs are preferably in the nature of rods 46, which connect the two lazy-tongs formed by the two sets of beams 38 and 43, and brace-rods 47 connect the various cross-rods 46, so as to form trusses to prevent swaying of the tower formed by the beams when extended. The upper ends of the upper beams 45 are pivoted to the sides of the skeleton platform 46', preferably formed of parallel beams connected at their ends by cross-strips 47'. Upon this skeleton platform, at the center thereof, is arranged a base 48, having an internally-toothed circular flange 49 thereon. A platform 50 is pivotally mounted at its center upon the center of the base 48, and this platform is approximately equal in length to the length of the skeleton platform 46 and is provided at its sides with suitable railings 51, as shown. A shaft 52 is journaled within the platform 50 adjacent its center and has a gear 53 at its lower end and below said platform, which meshes with the teeth upon the flange 49. This shaft has a hand-wheel 54 or any other suitable device by means of which it may be readily rotated by a person upon the platform, thereby causing said platform to swing upon its pivot to a desired angle in relation to the skeleton platform. Guide-brackets 55 extend over the sides of the platform 50 and engage a platform extension 56, having side rails 57. This extension is adapted to be slid backward and forward upon the platform 60.

Arms 58 project forward from the outer end of the platform extension and are adapted to engage a window-sill or other ledge, so as to support the extension when the same has been adjusted forward from the platform 50.

Secured to the body 11 at suitable points thereon are pipes 59, to which hose extending from engines are adapted to be attached. To each of these pipes is connected a flexible hose 60, which is fastened, by means of clips 61, to the beams 38, 43, and 45 at points adjacent the fulcrums, and these hose extend upward to pipes 62, which are fitted within the base 48 and project through curved slots 63, formed within the central portion of the platform 50. Hose 64 extend from these pipes 62 and are provided with suitable nozzles, as ordinarily.

The body 11 of the apparatus is prevented from sagging at the center by means of truss-rods 65, which are connected at their ends to the casting 28 and the end portions of the body 11, respectively. Hangers 66 are also fastened to the body and have alining apertures therein for the reception of threaded supports 67, provided with shoes 68. Wheels 69 are revolvably mounted upon the supports 67 and are immovably arranged within the hangers 66, so that when rotated the threaded supports will be moved downward within the hangers until the shoes 68 are brought into contact with the ground. As the hangers 66 extend outward at an incline, as shown in Fig. 3, it is obvious that after the shoes 68 have been brought in contact with the ground the body 11 will be firmly supported, and the entire apparatus will be held rigidly in position while being used.

The tower is normally in lowered position. Upon arriving at the fire current from the battery 34 is directed to the motor 29, and shaft 30 is thus caused to rotate, and the gears 32 are revolved by the intermediate gear 31. The rods 33 are thus rapidly rotated within their bearings, and the collars 35, which are securely connected to the brackets 36 and arms 37, are drawn toward the center of the apparatus, thereby causing the rollers 40 to travel upon the tracks 41 and drawing the lower ends of the primary beams 38 toward the lower ends of secondary beams 43. The fulcrums of the various beams constituting the lazy-tongs are thus drawn together simultaneously, thereby causing the platforms 46 and 50 to rise from their normal positions to a desired elevation. One or more persons can be carried upward upon the platform, and when the same is brought into position opposite a window or other place of exit within a building the shaft 52 can be rotated manually so as to swing the platform 50 at an angle to the skeleton platform 46'. If desired, the extension-platform 56 can then be moved longitudinally so as to bring its arms 58 in engagement with the window sill

or ledge. Persons can thus be rapidly removed from the building to the platform, and at a given signal the motor 29 can be reversed, so as to reverse the operation of the various parts of the tower, and thereby return the platforms to their normal positions. This action can be repeated until all persons have been removed from the structure. When not in use as a fire-escape, the apparatus can be employed as a water-tower by connecting the hose of one or more engines to the pipes 59, and the person or persons upon the platform 50 can, by means of the hose 64, direct powerful streams in any desired direction. It will of course be understood that prior to the elevation of the platform 50 the wheels 69 are rotated so as to bring the shoes 69 into contact with the ground to form braces for the apparatus. These braces, together with the brace-rods 47, serve to prevent lateral swaying of the tower, and a rigid structure is thus produced. The apparatus employed for guiding and stopping the truck is of simple construction, and by means thereof the truck can be quickly brought to any desired position prior to the housing of the platform.

In the foregoing description I have shown the preferred form of my invention; but I do not limit myself thereto, as I am aware that modifications may be made therein without departing from the spirit or sacrificing any of the advantages thereof, and I therefore reserve the right to make such changes as fairly fall within the scope of my invention.

Having thus described the invention, what is claimed as new is—

In an apparatus of the character described,

the combination with a truck; of a fixed bracket secured thereon, hangers depending from the truck, oppositely-extending screw-threaded rods journaled within the hangers and connected to be rotated in unison, collars mounted upon the screw-threaded rods and adapted to be simultaneously moved from or toward each other thereby, brackets pivoted to the collars, oppositely-disposed pairs of primary beams, the beams of each pair being centrally pivoted to each other, downwardly-extending arms provided on the beams and connected with the brackets, rollers journaled upon the beams and bearing on the truck, oppositely-disposed pairs of secondary beams above the truck, the pairs of secondary beams being centrally pivoted to each other and pivoted at their lower ends to the fixed bracket, said secondary beams being also centrally pivoted to the primary beams at a point midway between the rollers and the common pivot thereof, similarly-disposed crossed beams pivoted to one another and to the hereinbefore-mentioned beams to produce two sets of lazy-tongs arranged respectively at opposite sides of the truck and adapted to be extended and contracted uniformly and simultaneously, a platform adjustably mounted upon one end of the lazy-tongs, and crossed brace-rods connecting the pivots of the two lazy-tongs.

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

JOHN HOLM.

Witnesses:

ANDRÉ A. COTÉ,
BENEDICT NILSSON