

No. 713,911.

Patented Nov. 18, 1902.

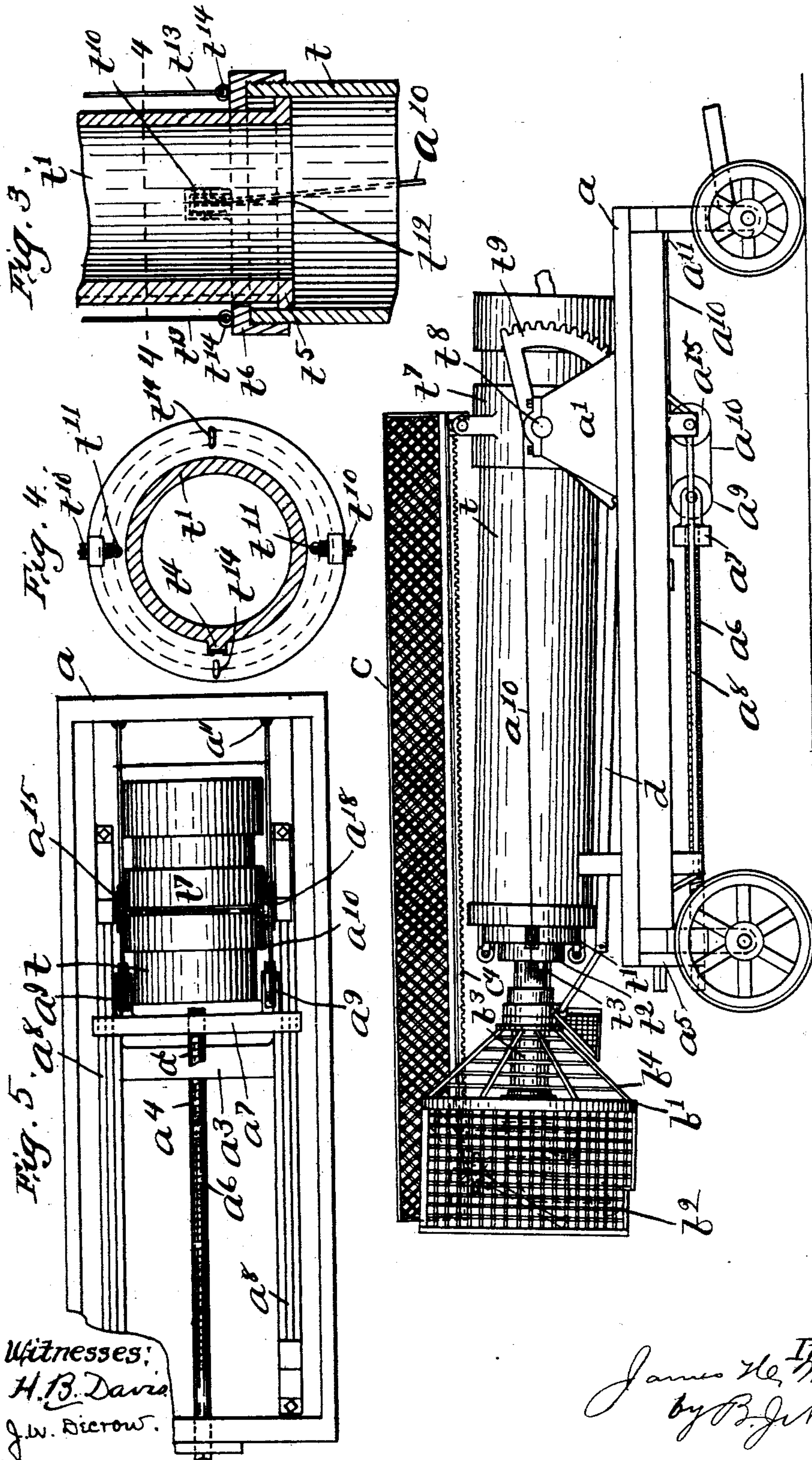
J. H. McPARTLAND.

FIRE ESCAPE WITH WATER TOWER ATTACHMENT.

(Application filed Apr. 5, 1901.)

(No Model.)

3 Sheets—Sheet 1.



Witnesses:  
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J. W. Dierow.

Inventor:  
James H. McPartland  
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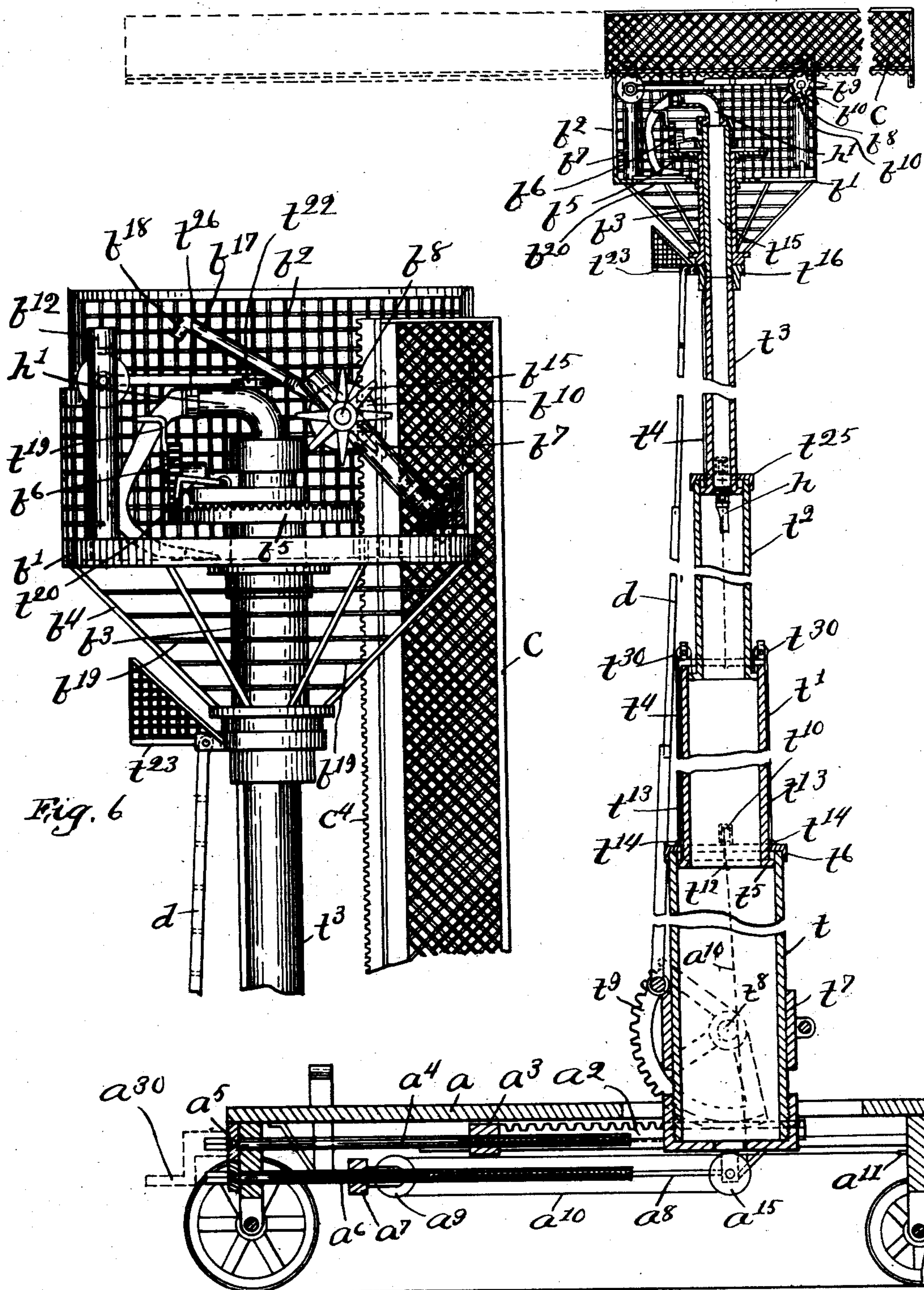
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(Application filed Apr. 5, 1901.)

(No Model.)

3 Sheets—Sheet 2.



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Fig. 2.

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3 Sheets—Sheet 3.

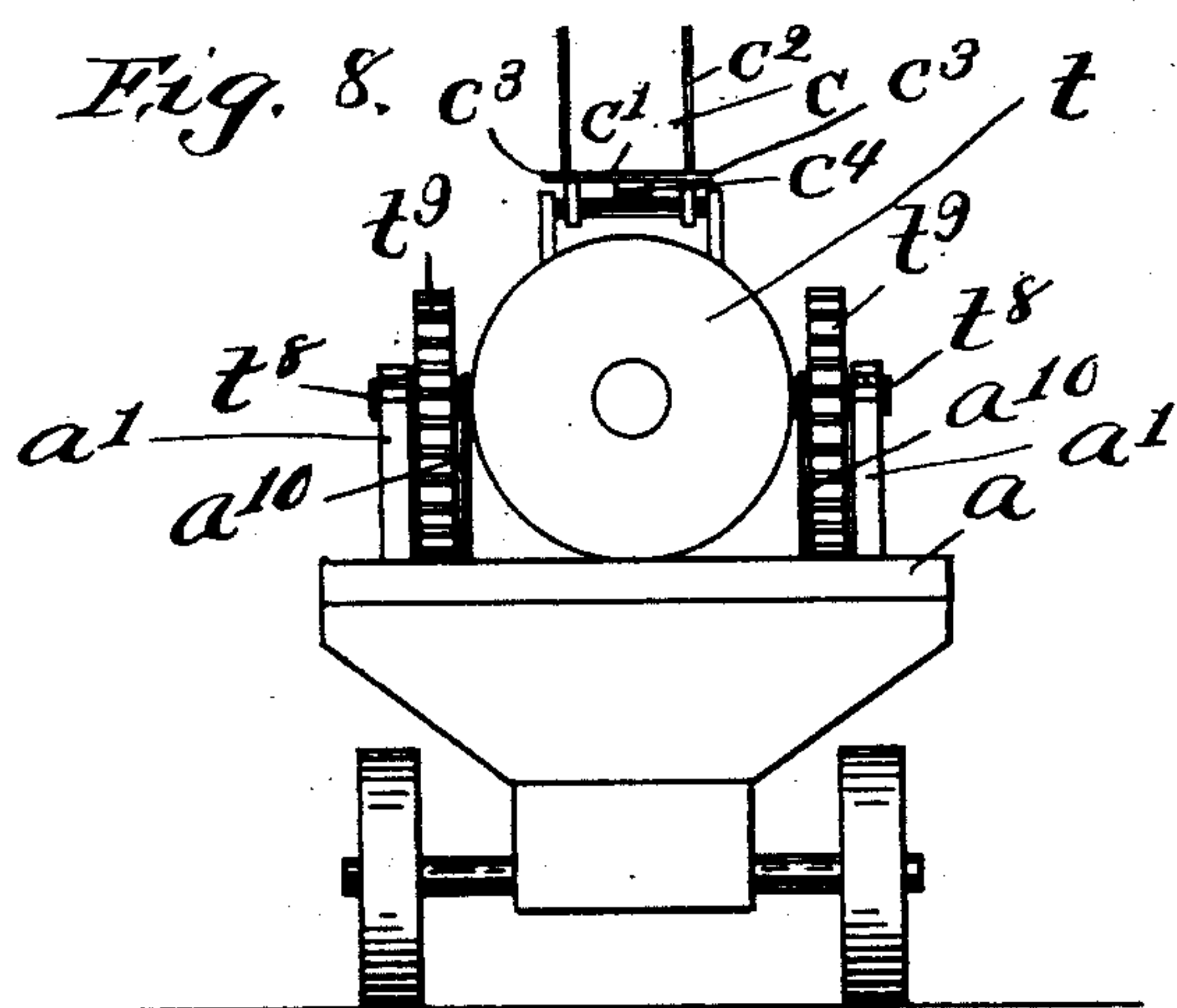
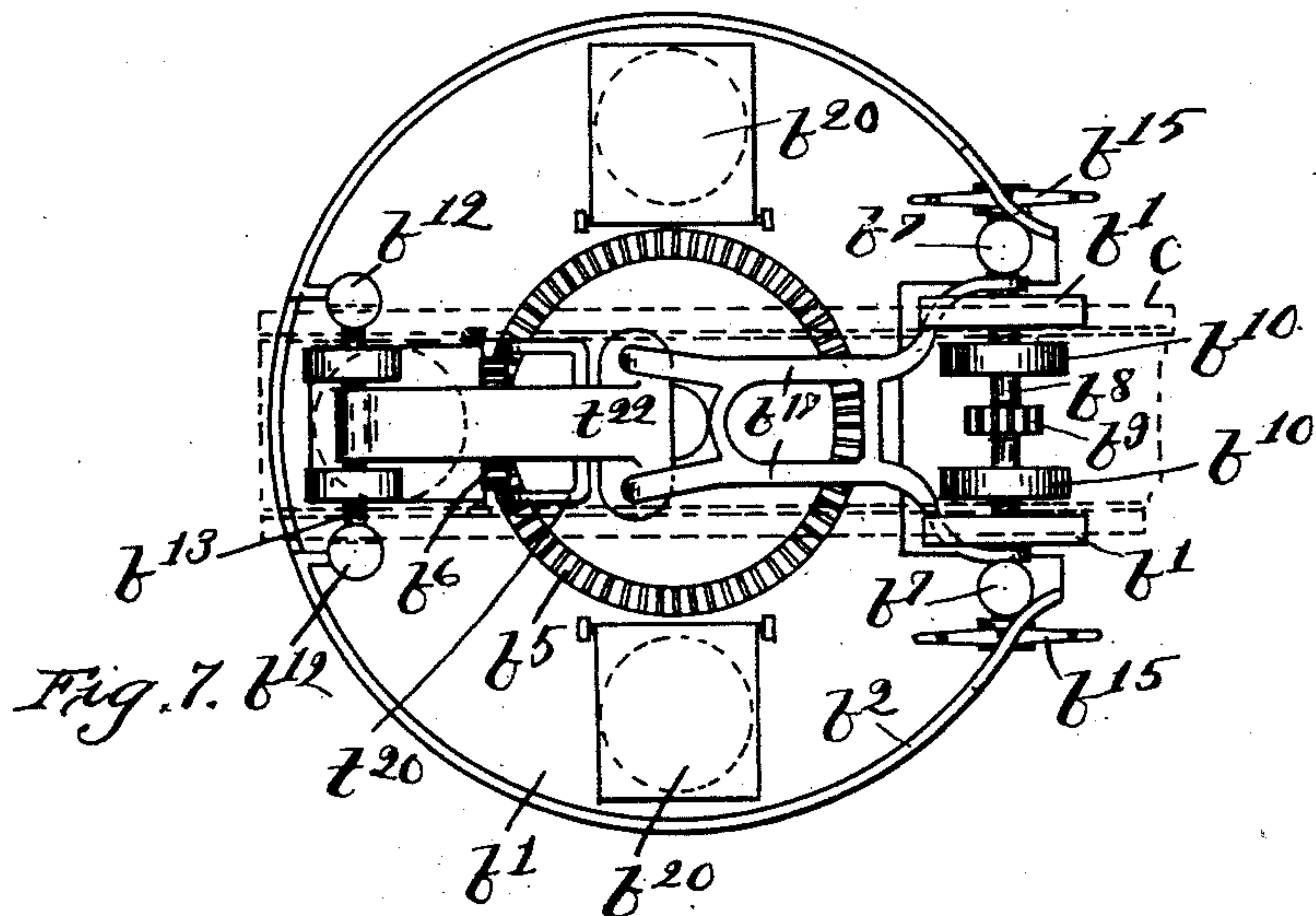
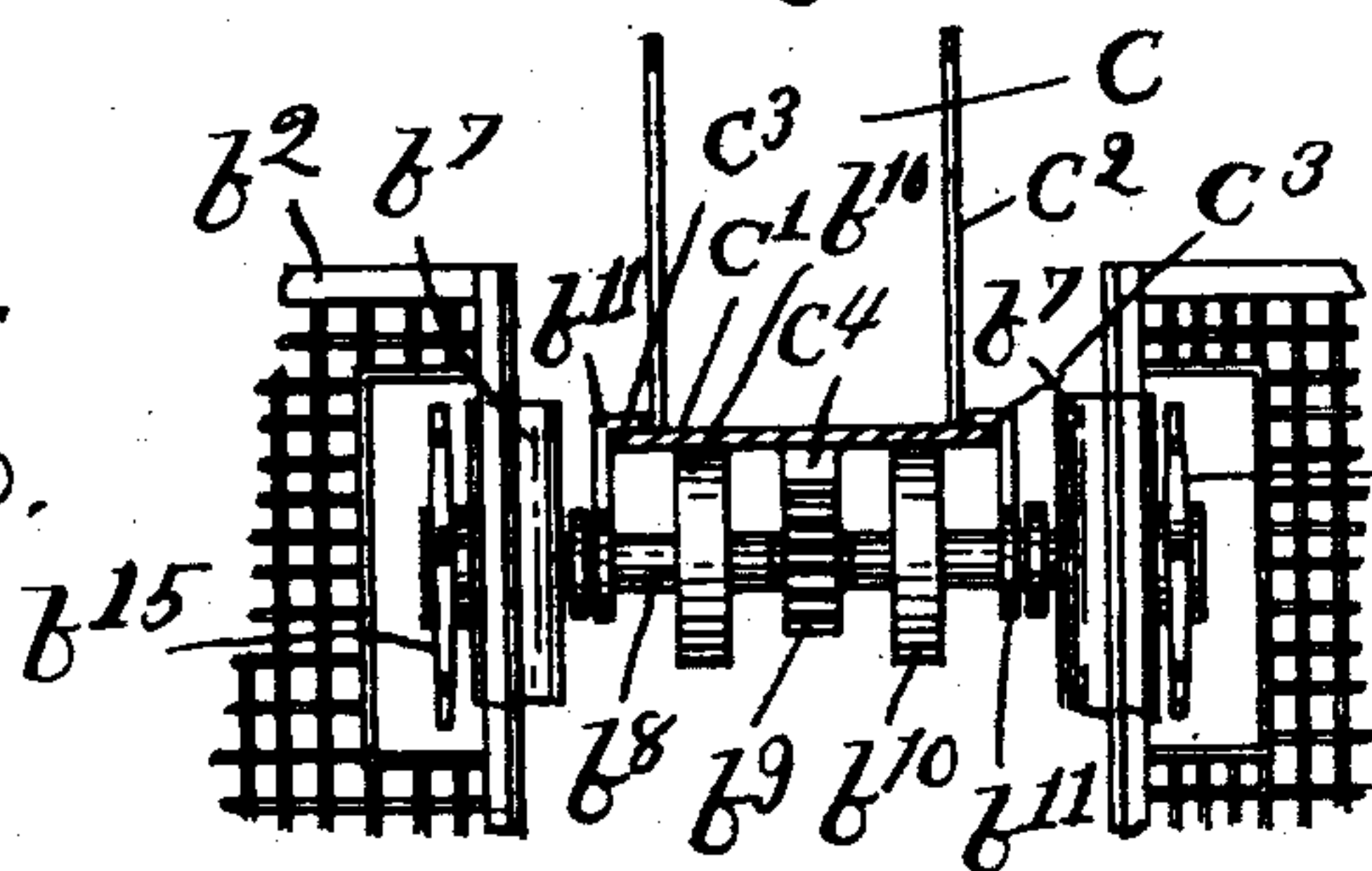


Fig. 9.



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# UNITED STATES PATENT OFFICE.

JAMES H. MCPARTLAND, OF HOULTON, MAINE.

## FIRE-ESCAPE WITH WATER-TOWER ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 713,911, dated November 18, 1902.

Application filed April 5, 1901. Serial No. 54,408. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES H. MCPARTLAND, a citizen of the United States, residing in Houlton, county of Aroostook, and State of  
5 Maine, have invented an Improvement in Fire-Escapes with Water-Tower Attachments, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings  
10 representing like parts.

This invention relates to fire-escapes of that class known as "carriage-escapes," and has for its object to improve the construction of such an escape to the end that while compact  
15 and light enough to be drawn through city streets to the scene of a fire it may be quickly raised to a height of several stories and may be operated without change of base to provide a means of egress from several windows  
20 in the same story and, furthermore, to the end that a line of hose may be raised to the height of the various stories.

In accordance with this invention a telescopic tower is provided comprising several  
25 sections normally contained one within another and adapted to be carried in a substantially horizontal position on a suitable wheeled truck, and means are provided for raising said tower into vertical position on  
30 said truck, and means are also provided for projecting its several sections to a greater or less height. A turret is attached to one end of the innermost section of the telescopic tower, and when said tower is in vertical position  
35 said turret will occupy a position at the top of the tower, and means are provided for revolving said turret. A gang-plank or bridge is provided, which is connected to said turret and which normally occupies a position  
40 substantially parallel to the tower, whether said tower is disposed horizontally or vertically, and means are provided for moving said gang-plank into horizontal position when the tower is in vertical position  
45 and for projecting it from said turret for a greater or less distance to thereby provide a passage from the windows of the burning building to said turret. A suitable extension-ladder leads from the truck to the turret,  
50 which is adapted to be raised with said tower. The innermost section of said tower is made tubular, as a pipe, and to one end of

it a hose may be coupled, and to the other end of it a nozzle may be connected, and as said innermost section is raised the line of hose  
55 will be drawn up.

Figure 1 shows in side elevation a fire-escape with water-tower attachment embodying this invention, the parts being in the position they will occupy when going to the  
60 scene of a fire or in out-of-use position. Fig. 2 is a vertical section and partial elevation of the apparatus, showing the parts in the position they will occupy when in use. Figs. 3 and 4 are sectional details of a portion of the  
65 tower. Fig. 5 is a detail showing the means for projecting the several sections of the tower. Fig. 6 is a detail showing the turret and a portion of the gang-plank. Fig. 7 is a plan view of the turret, a portion of the gang-plank being represented by dotted lines. Fig.  
70 8 is an end view of the apparatus shown in Fig. 1, the turret being removed for clearness. Fig. 9 is a detail of the gang-plank and its support.

*a* is a framework or flooring supported on and carried by a suitable truck, and said framework will be hereinafter referred to as  
75 a "truck-frame."

*t* is the bottom or containing section of a  
80 telescoping tower, and while I herein show and describe said tower as comprising four sections *t t' t<sup>2</sup> t<sup>3</sup>* I desire it to be understood that a greater or less number of sections may be employed. I also herein describe and  
85 show said tower as being cylindrical, but it may be otherwise constructed. The sections *t, t', t<sup>2</sup>, and t<sup>3</sup>* are made as tubes, of steel or other suitable material, and the outside diameter of each section or tube is made  
90 somewhat smaller than the inside diameter of its immediate containing-section for a purpose to be hereinafter shown. At the lower end of each section a laterally-projecting  
95 flange *t<sup>5</sup>* is disposed, made sufficiently wide to fit snugly the inner diameter of the immediate containing-section and yet permit longitudinal or telescopic movement of one relative to the other. A cap *t<sup>6</sup>* is adapted to be  
100 screwed or otherwise secured to the top of each of said sections, and said cap *t<sup>6</sup>* has a central hole through it of sufficient size to permit the next contained section to pass snugly through it, and as each section is



somewhat smaller than its immediate containing-section said flange  $t^5$  and said cap  $t^6$  will prevent lateral movement between the sections and will furthermore prevent the contained section from being projected entirely out of its containing-section. On the outside of each section  $t' t^2 t^3$  is disposed a laterally-projecting spline  $t^4 t^4$ , extending longitudinally the entire length of said sections, and each of said caps  $t^6$  is formed or provided with a splineway for said spline, rotary motion of the sections being thereby prevented. When not in use, said sections  $t' t^2 t^3$  are all contained in said bottom section  $t$ , and said section  $t$  is supported and carried in a substantially horizontal position on the truck-frame  $a$ , as shown in Fig. 1, and means are provided for turning said section  $t$  and its contained sections into a substantially vertical position on said truck-frame and for thereafter simultaneously projecting the several sections  $t' t^2 t^3$ . On said section  $t$ , near the lower end thereof, is secured a tightly-fitting band or hoop  $t^7$  of suitable width, and on said hoop at diametrically opposite points thereon are disposed a pair of trunnions  $t^8 t^8$ . Supports  $a' a'$  are disposed on said truck-frame, having bearings which receive and hold said trunnions. On each of said trunnions  $t^8$  is mounted a toothed sector  $t^9 t^9$ , and on the under side of the truck-frame are located two parallel longitudinally-movable toothed racks  $a^2 a^2$ , which are adapted to engage and operate said sectors  $t^9 t^9$ . Said racks  $a^2 a^2$  are connected by cross-bars  $a^3 a^3$ , disposed at substantially right angles thereto and forming therewith a sliding oblong frame. A rotatable shaft  $a^4$  extends along under said truck-frame in parallelism to said racks and substantially midway between them, and said shaft rotates in suitable bearings  $a^5$ , disposed near the end of the truck-frame, and said shaft  $a^4$  is held from longitudinal movement by the bearing-pieces entering an annular groove in the shaft. A portion of said shaft  $a^4$  extends beyond said truck-frame and has a squared end adapting it to be rotated by a crank  $a^{30}$  or other suitable means. The portion of said shaft which extends along under said truck-frame is threaded and passes through and is in engagement with a correspondingly-threaded hole in the cross-bar  $a^3$ , and when said shaft  $a^4$  is rotated sufficiently in one direction said racks  $a^2 a^2$  will be moved and will in turn move said sectors  $t^9 t^9$  to turn said tower-section  $t$  on its pivots, with its contained sections, to a substantially vertical position. It will be seen that when said tower-section  $t$  and its contained sections are in such vertical position reverse rotation of said shaft  $a^4$  will restore said section  $t$  to its normal horizontal position. A rotatable shaft  $a^6$ , constructed and disposed similarly to said shaft  $a^4$ , passes through a cross-bar  $a^7$ , which is supported by and movable along on a pair of parallel rods  $a^8 a^8$ , suitably disposed under said truck-frame, and when said shaft  $a^6$

is rotated said bar  $a^7$  will be moved along on said supporting-rods  $a^8 a^8$ . A pair of pulleys  $a^9 a^9$  are journaled in brackets secured to one side of said bar  $a^7$ , and a pair of chains, ropes, cords, or other suitable flexible connections  $a^{10} a^{10}$ , each fastened at one end to said truck-frame  $a$ , as at  $a^{11} a^{11}$ , pass over said pulleys  $a^9 a^9$  on said bar  $a^7$ , and thence over two similar and respectively-placed pulleys  $a^{15} a^{15}$ , disposed on said truck-frame  $a$  near said brackets  $a' a'$ . Said chains  $a^{10} a^{10}$  then pass along the outside of the section  $t$  and over pulleys  $t^{10} t^{10}$ , disposed on diametrically opposite sides of the top of said section  $t$ , thence through holes  $t^{11} t^{11}$ , provided in the cap  $t^6$ , into the space between said sections  $t$  and  $t'$  and are fastened to the flange  $t^5$  on said section  $t'$ , as at  $t^{12} t^{12}$ . As said shaft  $a^6$  is rotated in one direction the cross-bar  $a^7$  will be moved from the position shown in Fig. 1 to the position shown in Fig. 2, and the chains  $a^{10} a^{10}$  will be drawn, and said section  $t'$  will be projected from its containing-section, and by means hereinafter shown the sections  $t^2$  and  $t^3$  will be simultaneously projected. Chains  $t^{13} t^{13}$  are fastened at  $t^{14} t^{14}$  to diametrically opposite sides of the top of said section  $t$  and thence pass over pulleys  $t^{30}$  on top of said section  $t'$ , thence down through holes in the cap on said section, and are connected to the flange at the bottom of the section  $t^2$  in a similar manner to said chains  $a^{10} a^{10}$ . Each section is thus connected similarly to section  $t^2$ , and it will be seen that when said shaft  $a^6$  is rotated in one direction said chains  $a^{10} a^{10}$  will be actuated to project said section  $t'$  out of its containing-section  $t$ , and said chains  $t^{13} t^{13}$  will in turn be actuated by said section  $t'$  to simultaneously project said section  $t^2$ , and the remaining sections will likewise be projected in a similar manner. It will be understood when said sections are in projected position that by reverse rotation of said shaft  $a^6$  the several sections will by gravity resume their contained positions. While I have herein shown the shaft  $a^6$  and the bar  $a^7$  moved thereby as an actuating means for said chains  $a^{10} a^{10}$ , I desire it to be understood that other means for actuating said chains may be employed without departing from the spirit and scope of my invention. A turret is provided comprising a circular base or flooring  $b'$  and a suitable railing or bulwark  $b^2$  rising from it. Through the center of said base  $b'$  is fixed a hollow post  $b^3$ , which projects both above and below said base, and diverging braces  $b^4$  connect the lower end of said post with the outer edge of the base. On the top of said top tower-section  $t^3$ , and preferably removably connected therewith, is disposed a longitudinal connection  $t^{15}$ , which is made tubular for a purpose to be hereinafter stated, and is of a sufficient size to enter and pass through said turret-post  $b^3$ . A collar or nut  $t^{16}$  is placed on said extension  $t^{15}$  at its junction with said tower-section  $t^3$ , which secures the extension  $t^{15}$  in place, and said col-



lar or nut serves as a seat, rest, or support for the turret-post  $b^3$ , which rests upon it, so that said turret and its post may be revolved about said extension  $t^{15}$ . Near the top of said turret-post  $b^3$ , above the floor  $b'$ , is secured a crown-toothed wheel  $b^5$ , which is engaged by a pinion  $b^6$ , having its bearings on an arm projecting at right angles from the extension  $t^{15}$ , which latter extends entirely through and projects above said post  $b^3$ . The pinion  $b^6$  is rotated by a crank  $t^{19}$  or other means and when actuated will revolve the turret-post and turret. A suitable pawl  $t^{20}$  is provided to hold said turret from being accidentally revolved. Means are provided whereby a line of hose may be connected to said turret and there be directed on the burning building, and, as herein shown, said tower extension  $t^{15}$  and section  $t^3$ , as above stated, are both made tubular, and to the lower end of the section  $t^3$  a hose  $h$  is attached by a hose-coupling  $t^{25}$ , and at its upper end above the floor of the turret an angular tubular arm  $h'$  is secured, to which is attached a hose and pipe by means of a hose-coupling  $t^{26}$ . It will be seen that the line of hose  $h$ , attached to the coupling  $t^{25}$ , will be drawn up when said tower is projected. Said turret is provided with a bridge or gang-plank  $c$ , and said gang-plank is adapted, when not in use, to depend from said turret, occupying a position substantially parallel to said tower  $t$   $t'$   $t^2$   $t^3$ , as shown in Figs. 1 and 6, and may be moved into horizontal position for use and adjusted longitudinally, as shown in Fig. 2. Said gang-plank comprises, essentially, a base or floor  $c'$  and suitable bulwarks or railings  $c^2$   $c^2$  at opposite sides thereof and may be made of any practical width, but preferably not much longer than said tower-section  $t$ . A pair of upright posts  $b^7$   $b^7$  are pivotally connected at their lower ends to ears on the floor of the turret, said posts being placed a sufficient distance apart to permit of the longitudinal passage between them of said gang-plank  $c$ , and said turret-railing  $b^2$  and floor  $b'$  are cut away between said posts to permit said gang-plank to thus pass between. A rotatable shaft  $b^8$  passes through said posts  $b^7$   $b^7$  near their upper ends and is disposed at right angles thereto and is supported thereby, and said shaft  $b^8$  has fixed to it at a point substantially midway between said posts  $b^7$   $b^7$  a toothed wheel  $b^9$ , and has also loosely mounted on either side of said toothed wheel rollers or wheels  $b^{10}$   $b^{10}$ . The gang-plank  $c$  has a toothed rack  $c^4$ , centrally disposed and running throughout its entire length on the under side of its floor  $c'$ , which is held in engagement with said toothed wheel  $b^9$ . Clamps  $b^{11}$   $b^{11}$  are revolvably disposed on said shaft  $b^8$ , which engage flanges  $c^3$   $c^3$  on the opposite sides of the gang-plank for holding said gang-plank  $c$  with its rack  $c^4$  in engagement with said toothed wheel  $b^9$ , yet I wish it to be understood that said clamps will permit said flanges to slip along beneath them to enable the gang-plank to be

moved longitudinally. It will be seen, therefore, that said gang-plank  $c$  is revolvably mounted on and movable about said shaft  $b^8$  and may therefore depend more or less from said shaft and that as said shaft is rotated more or less by hand-wheels  $b^{15}$   $b^{15}$  or other suitable means said gang-plank will be moved longitudinally with respect to said shaft and may be manually or otherwise turned to a position substantially parallel to said turret-base  $b'$ . Two upright posts  $b^{12}$   $b^{12}$  are erected on the floor of said turret-base, said posts being a sufficient distance apart to permit of the longitudinal passage between them of said gang-plank  $c$ , and said posts  $b^{12}$   $b^{12}$  are disposed at substantially diametrically opposite points to said posts  $b^7$   $b^7$ , and it will therefore be seen that when said gang-plank is in a position substantially parallel to said turret-base it may be moved longitudinally between said posts  $b^{12}$   $b^{12}$  by rotation of said shaft  $b^8$ , the railing  $b^2$  being cut away to permit this, and said posts  $b^{12}$   $b^{12}$  are provided with lateral grooves or recesses (see dotted lines, Fig. 7) which receive said gang-plank flanges  $c^3$   $c^3$ , and thereby hold said gang-plank from any but longitudinal movement. To facilitate longitudinal movement of the gang-plank between said posts  $b^{12}$   $b^{12}$ , a shaft or rod  $b^{13}$ , bearing wheels or rollers loosely mounted thereon, is disposed and fixed at right angles between said posts  $b^{12}$   $b^{12}$ , and said shaft is disposed at a suitable height to permit said gang-plank to rest on said rollers when in its horizontal position. It will be seen, therefore, that said gang-plank may be projected more or less laterally from said turret and may be turned with said turret and may therefore be extended to any one of several windows on the same floor of a burning building by turning said turret. To enable said gang-plank  $c$  when in its depending position to be more compactly stored in a position substantially parallel to said tower  $t$   $t'$   $t^2$   $t^3$ , said posts  $b^7$   $b^7$  are pivoted at their bases to suitable ears, disposed so that said posts with the connecting-shaft  $b^8$  may be tipped to an inclined position, and said gang-plank  $c$  will thereby in its depending position swing in closely to said tower  $t'$   $t^2$   $t^3$ , as shown in Fig. 6. To hold said posts  $b^7$   $b^7$  in their upright position for operating said gang-plank  $c$ , a brace or braces  $b^{17}$   $b^{17}$  is pivotally connected to said shaft  $b^8$ , and at its other end has a laterally-projecting portion or portions  $b^{18}$ , adapted to be received into a suitable recess or recesses  $t^{21}$   $t^{21}$  in a bar  $t^{22}$ , extending from the shaft  $b^{13}$ . To provide means of access to and egress from said turret to the ground, said turret-braces  $b^4$   $b^4$  are connected by ratlines  $b^{19}$   $b^{19}$ , thereby forming a sort of cage immediately underneath the floor of said turret, and traps or manholes  $b^{20}$   $b^{20}$ , provided with suitable covers, are provided in said floor to permit passage to and from said turret to said cage. To said tower extension  $t^{15}$ , at a suitable point near said collar  $t^{16}$ , is fixed a



laterally-projecting platform  $t^{23}$ , and said platform has a railing or bulwark adapted to fit closely, yet not in contact with said braces  $b^4$   $b^4$  of said turret-cage. It will therefore be  
 5 seen that said platform  $t^{23}$  is stationary while said turret may be revolved, yet said platform may be reached from said turret by means of the particular manhole and ratlines which are in closest proximity to said  
 10 platform in any position of said turret. To said platform  $t^{23}$  is fixed the top of an extension-ladder  $d$ , of suitable construction, preferably formed with an equal number of sections to said tower, and said ladder-sections  
 15 also preferably correspond in length to said tower-sections. The bottom of the lower ladder-section is fixed to a point near the bottom of the lower tower-section  $t$ , and it will be seen that as said tower-sections are projected said ladder  $d$  will likewise be extended  
 20 and will form at all times a passage between said platform  $t^{23}$  and said truck-frame. When said tower-sections are in their contained position, said ladder-sections will also be in contained position and will be moved to a horizontal position with said section  $t$ .

I claim—

1. A fire-escape comprising a tower, a turret mounted on the top thereof, a vertically and  
 30 horizontally movable gang-plank and a pivoted support on which said gang-plank is mounted and operates, said support being provided with means for moving said gang-plank, substantially as described.

35 2. A fire-escape comprising a tower, a turret mounted on the top thereof, a vertically and horizontally movable gang-plank, a pivoted support on which said gang-plank is mounted and operates, said support being provided  
 40 with means for moving said gang-plank, and a stationary support for said gang-plank, substantially as described.

45 3. A fire-escape comprising a tower, a turret mounted on the top thereof, posts having a shaft journaled in their upper ends provided with a gear-wheel, and a gang-plank having a rack in engagement with said gear-wheel, substantially as described.

4. A fire-escape comprising a tower, a turret mounted on the top thereof, pivoted posts 50 having a shaft journaled in their upper ends, provided with a gear-wheel, and a gang-plank having a rack in engagement with said gear-wheel, substantially as described.

5. A fire-escape comprising a tower, a turret 55 mounted on the top thereof, a platform projecting laterally from said tower below said turret, and a ladder leading from said platform, substantially as described.

6. In a fire-escape, the combination of a piv- 60 oted telescopic tower, the sections of which are operatively connected together, two cords connected to one of the sections for operating it, the opposite ends of said cords being attached to a fixed point, several sets of pulleys 65 over which said cords pass, a cross-bar bearing one of said sets of pulleys, a screw engaging said cross-bar for moving it along and thereby operating said cords, substantially as described. 70

7. A fire-escape comprising a supporting-frame, a tower pivoted thereon, sectors secured to said tower, racks engaging said sectors, a cross-bar connecting said racks, and a rotatable screw-threaded shaft engaging said 75 cross-bar, substantially as described.

8. A fire-escape comprising a supporting-frame, a tower pivoted thereon, means for turning said tower on said pivot, supporting-rods, a cross-bar movable along said rods, 80 pulleys mounted on said cross-bar, pulleys mounted on said frame, flexible connections each fastened at one end to the frame and passing over the pulleys on said cross-bar and the pulleys on said frame and connected 85 to one of the sections of said tower, and a rotatable screw-threaded shaft engaging said cross-bar, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of 90 two subscribing witnesses.

JAMES H. MCPARTLAND.

Witnesses:

B. J. NOYES,  
 JOHN W. DECROW.