

(No. Model.)

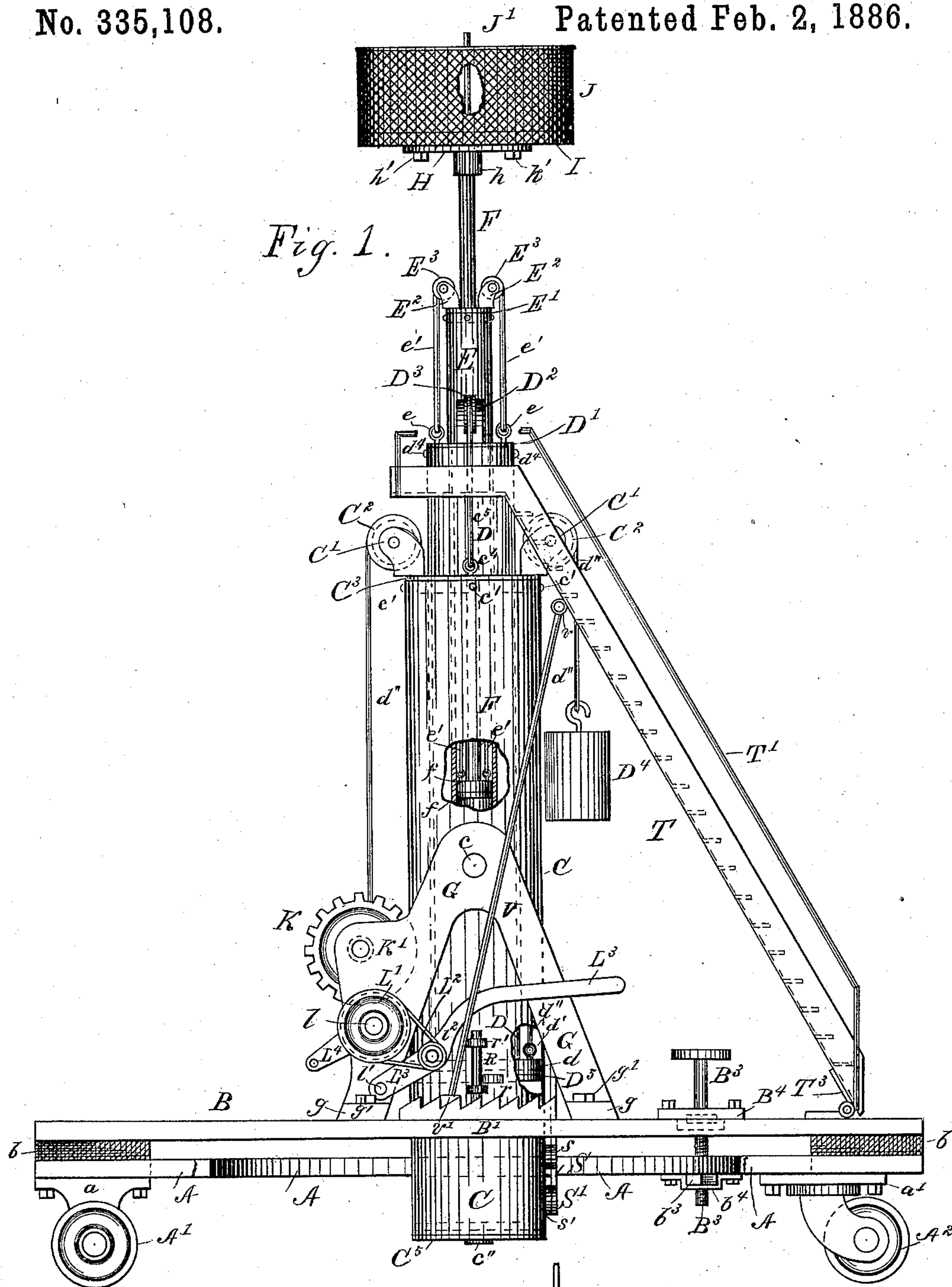
2 Sheets—Sheet 1.

W. BROWN.

FIRE ESCAPE.

No. 335,108.

Patented Feb. 2, 1886.



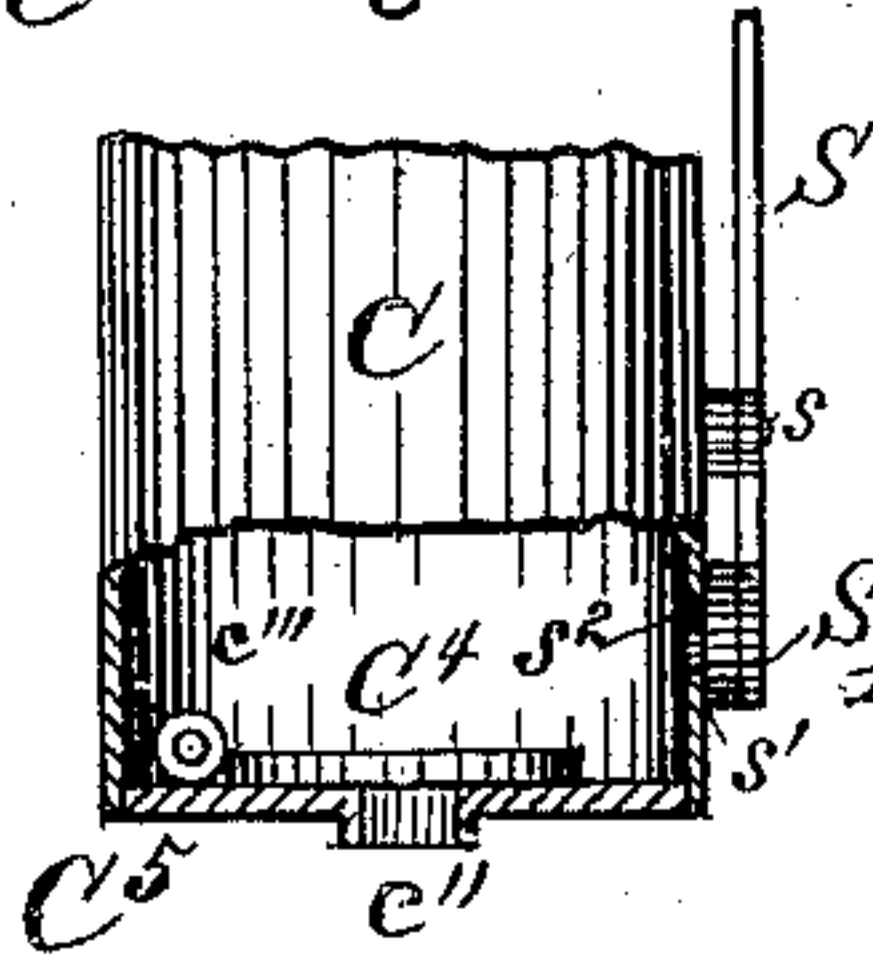
WITNESSES

Fig. 2.

John C. Miller,
Percy White.

INVENTOR

William Brown.



C. C. Alexander
His Attorney.

(No Model.)

2 Sheets—Sheet 2.

W. BROWN.
FIRE ESCAPE.

No. 335,108.

Patented Feb. 2, 1886.

Fig. 3.

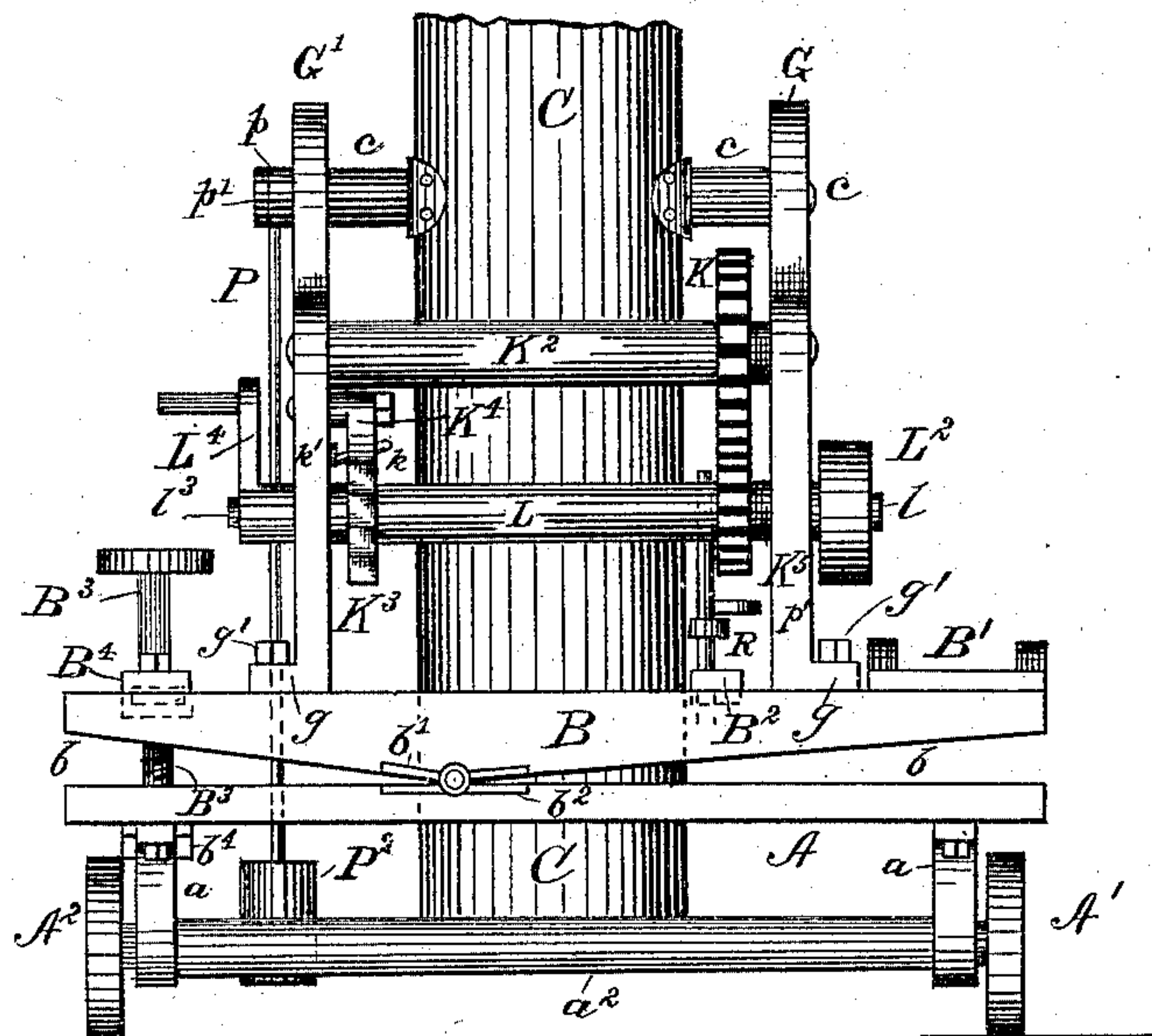
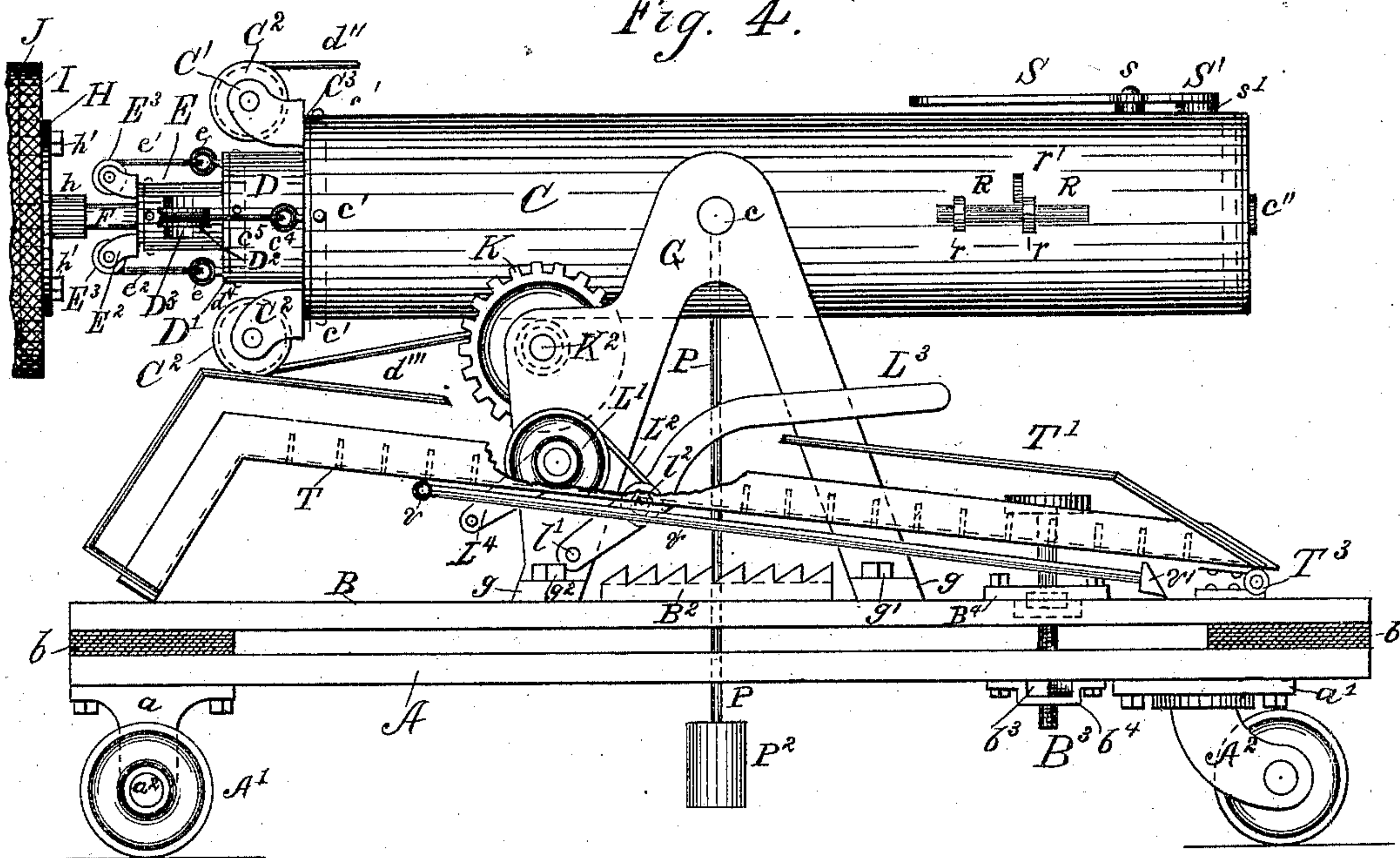


Fig. 4.



WITNESSES

John C. Miller,
Percy White.

INVENTOR

William Brown.

By C. M. Alexander
his Attorney

UNITED STATES PATENT OFFICE.

WILLIAM BROWN, OF DUNCANNON, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO WILLIAM H. PENNEL, OF SAME PLACE.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 335,108, dated February 2, 1886.

Application filed June 15, 1885. Serial No. 168,766. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM BROWN, a citizen of the United States, residing at Duncannon, in the county of Perry, and State of Pennsylvania, have invented certain new and useful Improvements in Fire-Escapes, of which the following is a specification, reference being had therein to the accompanying drawings.

The object of this improvement is a portable fire-escape having a series of intersliding tubes provided with pliable connections to each other and to a winding mechanism, by means of which the tubes are simultaneously adjustable for the purpose of extending the mechanism to building-exits of different elevations, and to provide the same with an adjustable base for giving the same an inclination toward, and thereby getting the carriage at its top closer to, the places of exit from the building; also, to provide the same with other useful and novel features of construction and operation hereinafter fully set forth, and specifically claimed.

The results mentioned are attained by the means illustrated in the drawings herewith filed as part hereof, in which the same letters of reference denote the same parts in the different views.

Figure 1 is a side elevation, with parts broken away, representing a fire-escape embodying the features of my improvement. Fig. 2 is a sectional view representing the lower part of one of the tubes and relative features of construction. Fig. 3 is a front elevation partly in section, and with parts removed. Fig. 4 is a side elevation showing the parts adjusted for transportation.

A is a supporting-frame mounted at one end on truck-wheels A', secured to the frame A by ordinary metal bearings, *a*, and at the opposite end on casters A², having bearing-plates *a'*, affixed to the frame A by screws or bolts, substantially as shown.

B is an adjustable base for the mechanism, the end frame-pieces of which are provided with inclinations, *b*.

The frames B and A are pivotally connected by hinges *b'* *b*², (shown in Fig. 3,) for a purpose hereinafter set forth.

G G are metal standards secured to the frame

B by lateral extensions *g* and bolts *g'*, for supporting the intersliding tubes and relative parts.

C is the outer tube, articulated to the standards G G' by means of trunnions *c*, affixed thereto substantially in the manner shown. The upper end of the tube C is provided with a flanged ring, C³, secured thereto by pins or screws, *c'*, for the purpose of forming a bearing and guide for the tube D.

C' are standards suitably secured to the guide-rings C³, for supporting rollers C².

Suitably secured to the lower end of the tube C is a disk, C⁵, provided with a perforation, *c''*, and a valve, C⁴, articulated thereto, substantially as shown at *c'''*.

Affixed to the lower end of the tube D is a disk, D⁵, which fits snugly the tube C, and forms the means of providing the lower end of the tube D with packing *d*, for the purpose of holding the same in proper relative position with the tube C.

Secured to the disk D⁵, through the packing *d*, are eyebolts, as shown at *d'*, Fig. 1, which form reliable connections for an operating rope or chain, *d''*, which passes through an opening in the guide-ring C³ over the roller C², and is provided at its outer end with a weight, D⁴, for a purpose hereinafter set forth, and an operating chain or rope, *d'''*, which passes through the guide-ring C³ over the roller C², and connects with the winding mechanism, to be presently described.

The lower end of the tube E is provided with guide-disk, packing, and eyebolts, the same as the tube D, and is connected by means of ropes or chains *e*⁵ over rollers D³, supported by standards D² on flanged guide-ring D', affixed to tube D by screws or pins *d*⁴, with eyebolts C⁴, on guide-ring C³, affixed to tube C.

The lower end of the tube F is provided with guide-disk, packing, and eyebolts, the same as tubes D and E, as shown at *f f' f*², and is connected by means of operating chains or ropes *e'* through guide-ring E', affixed to tube E, over rollers E³, supported by standards E², with eyebolts *e* affixed to guide-ring D' of the tube D.

H is a disk-plate fixed to the tube F by an

integral socket, h , and secured by bolts or screws h' to the floor I of a circular carriage, J, provided with a central vertical rod, J' , for passengers to grasp for the purpose of
5 steadying themselves during the descent of the carriage.

K is a gear-wheel affixed to a winding-drum, K^2 , having bearings K' in the standards G G'.

10 L is a shaft having bearings l l^3 in the standards G G'.

K^3 is a pinion-wheel on the shaft L, and arranged to mesh with the gear-wheel K.

15 K^3 is a ratchet-wheel on the shaft L, in position to be engaged by a pawl, K^4 , affixed to standard G' and actuated by a spring, k , also affixed to standard G'.

L' is a friction-pulley affixed to an extension of the shaft-bearing l .

20 L^4 is an operating-crank affixed to an extension of the shaft-bearing l^3 .

L^3 is a lever pivoted to the standard G, as shown at l' , and provided with a friction-bearing, l^2 .

25 L^2 is a belt connecting the friction-pulley L' with the friction-bearing l^2 on the lever L^3 .

B^3 is an adjusting-screw affixed to the frame B by means of a recessed plate, B^4 , and arranged to engage with a nut, b^3 , affixed to the
30 frame A by flanged plate b^4 , as shown in Fig. 1.

T is a staircase, provided at each side with balusters T' and hinged to the supporting-base B, as shown at T^3 .

35 V is a rod pivotally affixed to the staircase T, as shown at v , and provided at its lower end with a beveled lateral extension, v' , for engaging with correspondingly-sized serrations of a plate, B' , affixed to the base B, and thereby propping the staircase T in the position shown in Fig. 1.

40 S is a lever pivoted to a boss on the tube C, as shown at s , and provided at its lower end with an enlargement, S' , for covering or uncovering a perforation, s^2 , in a boss, s' , of the tube C.

45 P is a rod, provided at its lower end with a weight, P^2 , and at its upper end with an eye, p , which fits over an extension of the corresponding trunnion-bearing, c , in which position it is secured by a screw, p' .

50 R is a latch-bolt having an operating-handle, r' , and secured to the tube C by eyes r r in position to engage with a series of perforations in a plate, B^2 , suitably secured to the adjustable frame B, for a purpose set forth in the explanation of the operation of the mechanism.

55 By means of the screw B^3 the corresponding side of the frame B may be drawn toward the frame A, and the tubes C D E F and carriage J inclined toward the places of exit from the building, and entrance of the carriage thus made secure.

60 By operating the crank L^4 , the winding-drum K^2 will be put in motion through the shaft L, pinion K^3 , and gear-wheel K^2 , when the tubes D E F will be put in simultaneous

70 ous motion by means of their chain or rope connections d''' , c^5 , and e' , and the motion of the parts will be assisted by the gravity of the weight D^4 , affixed to the rope or chain d''' , connected over the roller C^2 to the lower part of the tube D, and the parts may thus be adjusted to bring the carriage in position for safe entrance at different elevations, as occasion may require. Should the supporting-
75 frame A be given an inclination longitudinally from unevenness in the ground, the weighted rod P will automatically take a perpendicular position, and thus furnish a guide for the corresponding adjustment of tubes, which may be secured by inserting the latch-bolt R in an appropriate perforation of the plate B^2 . As the tubes ascend, the valve C^4 will allow the entrance of air into the tube C, which, with the weight D^4 , will retard the descent of the tubes when the winding mechanism is reversed. When necessary, such descent may be additionally retarded by means of the lever L^3 , connected to the friction-pulley L' through the belt L^2 .
80 85 90

By suitable adjustment of the lever S the air may be allowed to escape from the tube C, and the degree of resistance to the descent of the parts thus partially or entirely abrogated. The pawl K^4 will engage with the ratchet K^3 on the shaft L, and secure the relative adjustment of the tubes when they are in vertical position for use, as shown in Fig. 1, or in horizontal adjustment suitable for transportation of the mechanism, as shown in Fig. 4.
95 100

The mechanism may be adapted for use by municipal fire departments by substituting the usual running-gear for the truck-wheels and casters shown, which would be sufficient means for transporting the mechanism when intended for factories or other buildings in isolated positions.
105

The staircase when in the position shown in Fig. 1 will furnish convenient descent from the carriage J to the ground after the carriage has been lowered.
110

By adjusting the parts as shown in Fig. 4 the mechanism will be put in convenient shape for rapid transportation, and the pawl K^4 will secure the horizontal position of the tubes by engaging with the ratchet K^3 on the shaft L.
115

Having explained the construction and operation of my improvement, what I claim as new, and desire to secure by Letters Patent, is—
120

1. The combination of the adjustable base B, provided with serrated plate B' , perforated plate B^2 , for engaging with latch-bolt R of the tube C, the adjusting-screw B^3 , and frame A, all constructed and arranged to operate as specified, for the purpose set forth.
125

2. The adjustable staircase T T', provided with adjustable prop V, having lateral extension l' , in combination with the base B and serrated plate B' , as and for the purpose set forth.
130

3. The lever L^3 , provided with friction-bearing l^2 , and friction-pulley L' , arranged to

operate as described, in combination with the winding mechanism, as and for the purpose set forth.

4. The combination of the transporting-
5 frame A, base B, pivoted thereto, as shown, the adjustable staircase, screw B³, standards G G', the winding mechanism, intersliding tubes, ropes *d''' e' e'*, latch-bolt R, and perfo-

rated plate B², all arranged to operate as and for the purpose set forth.

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

WILLIAM BROWN.

Witnesses:

CHAS. D. DAVIS,

WILLIAM H. GASS.

10