

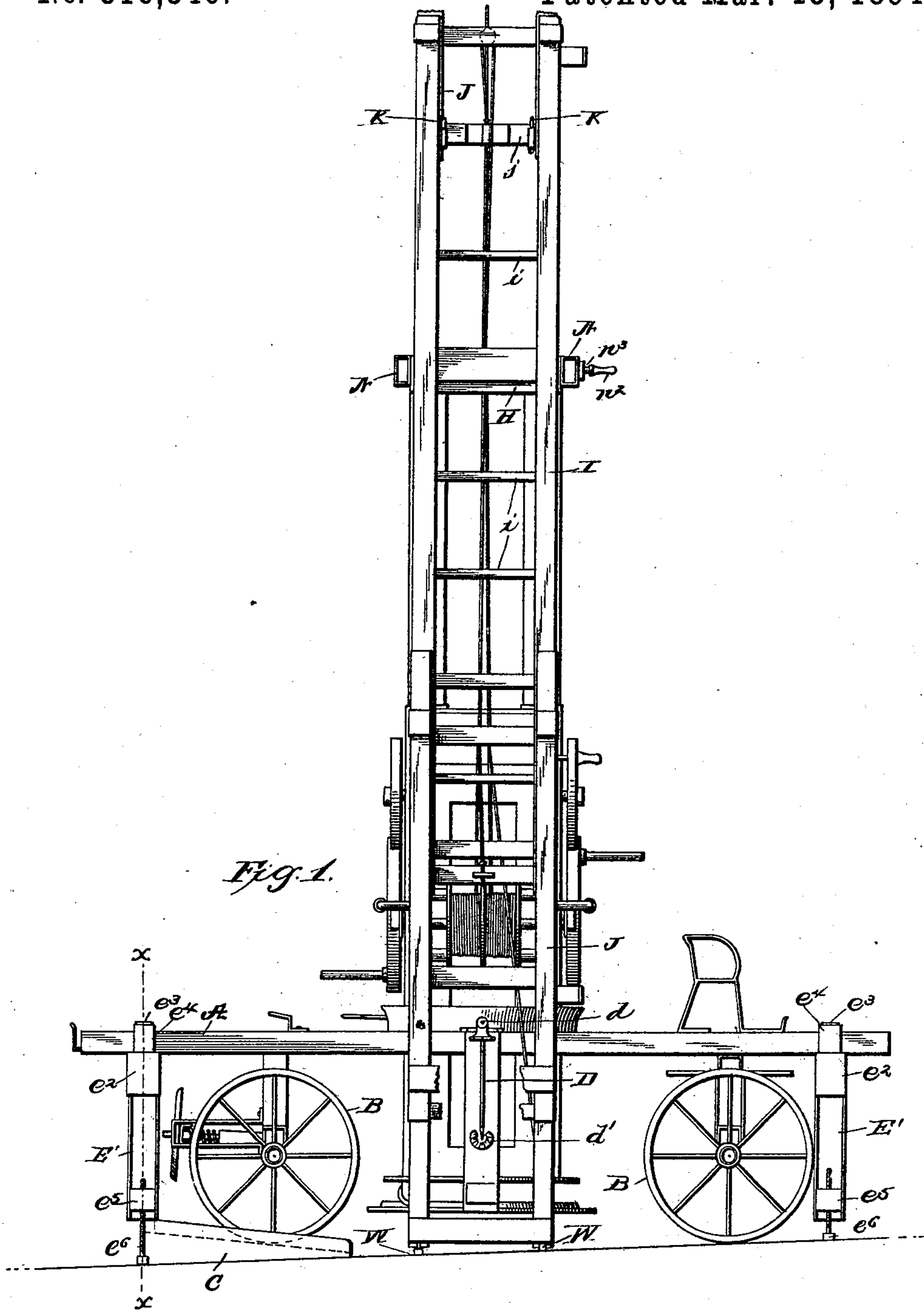
(No Model.)

4 Sheets—Sheet 1.

E. CARDARELLI.
FIRE ESCAPE TRUCK.

No. 516,346.

Patented Mar. 13, 1894.



Witnesses

E. A. Hurdman
D. P. Walhauser

Inventor

Emilio Cardarelli

By his Attorneys,

C. A. Snow & Co.

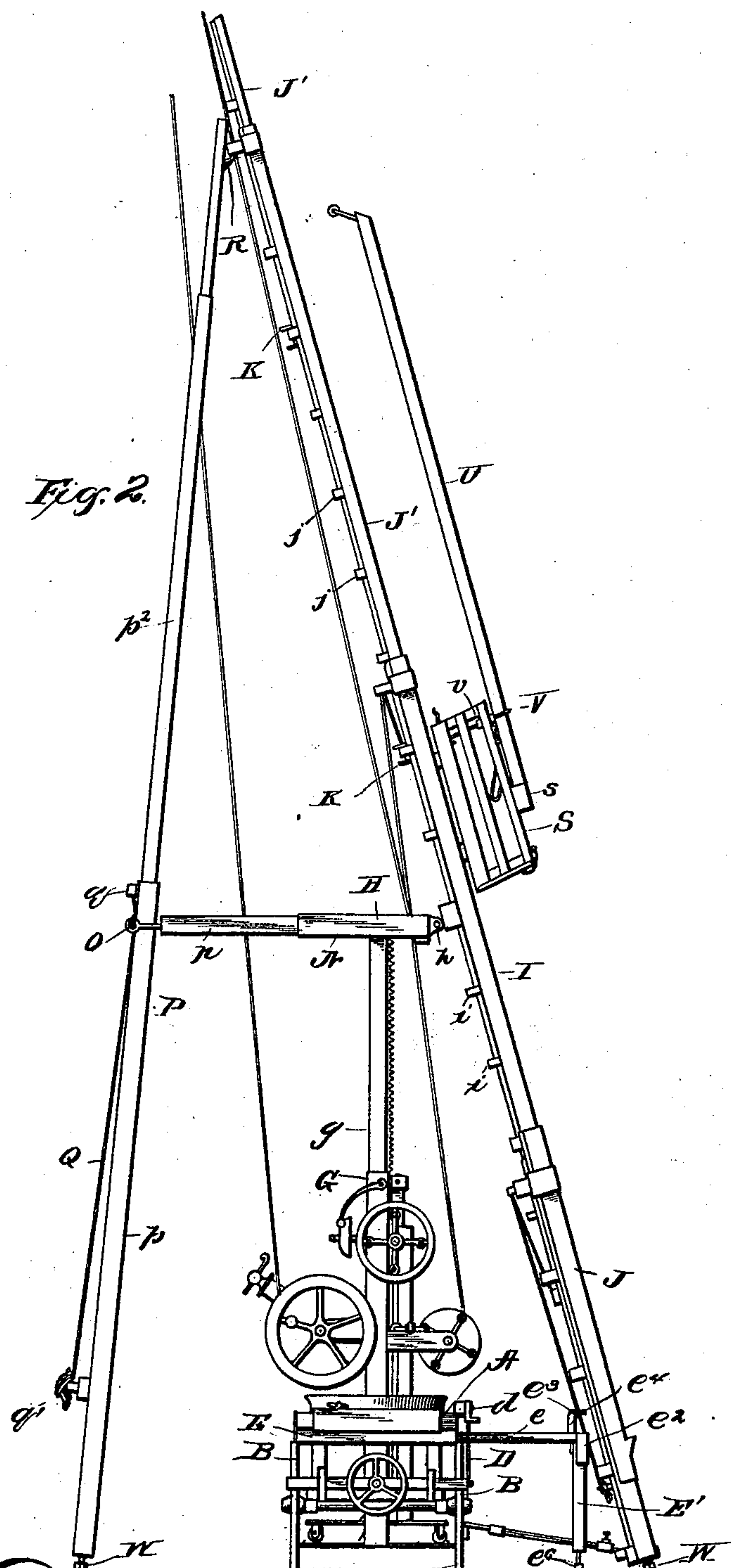
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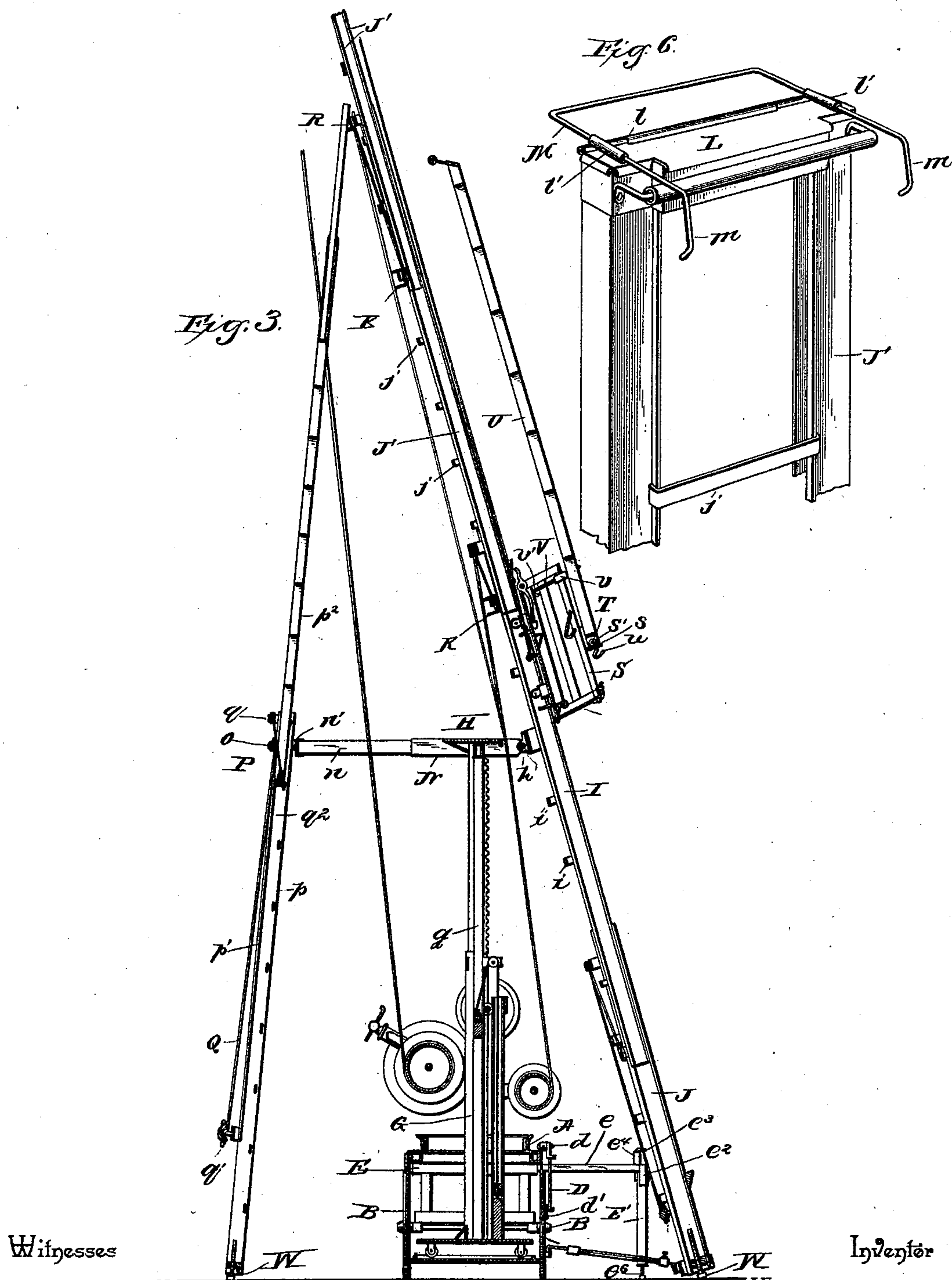
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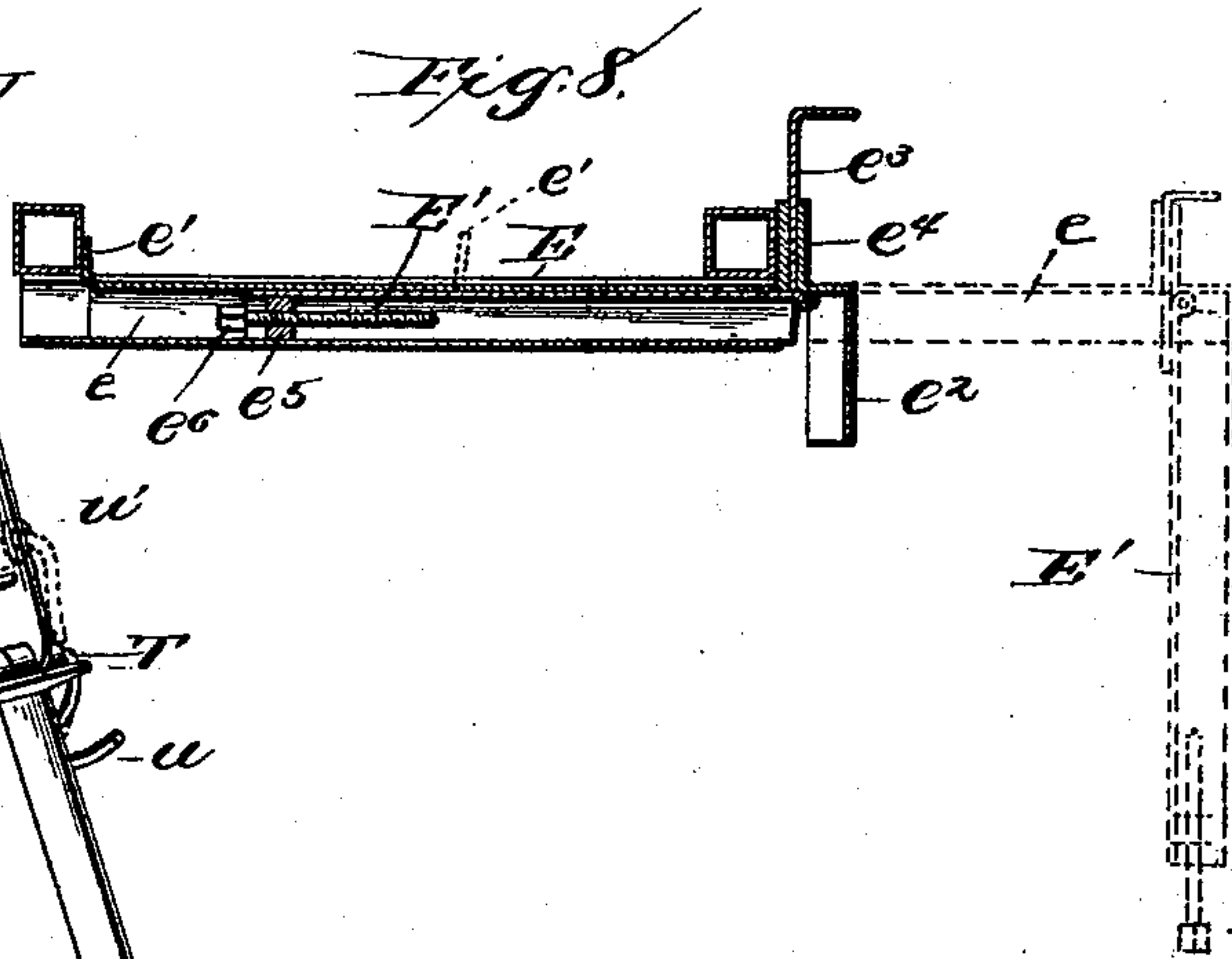
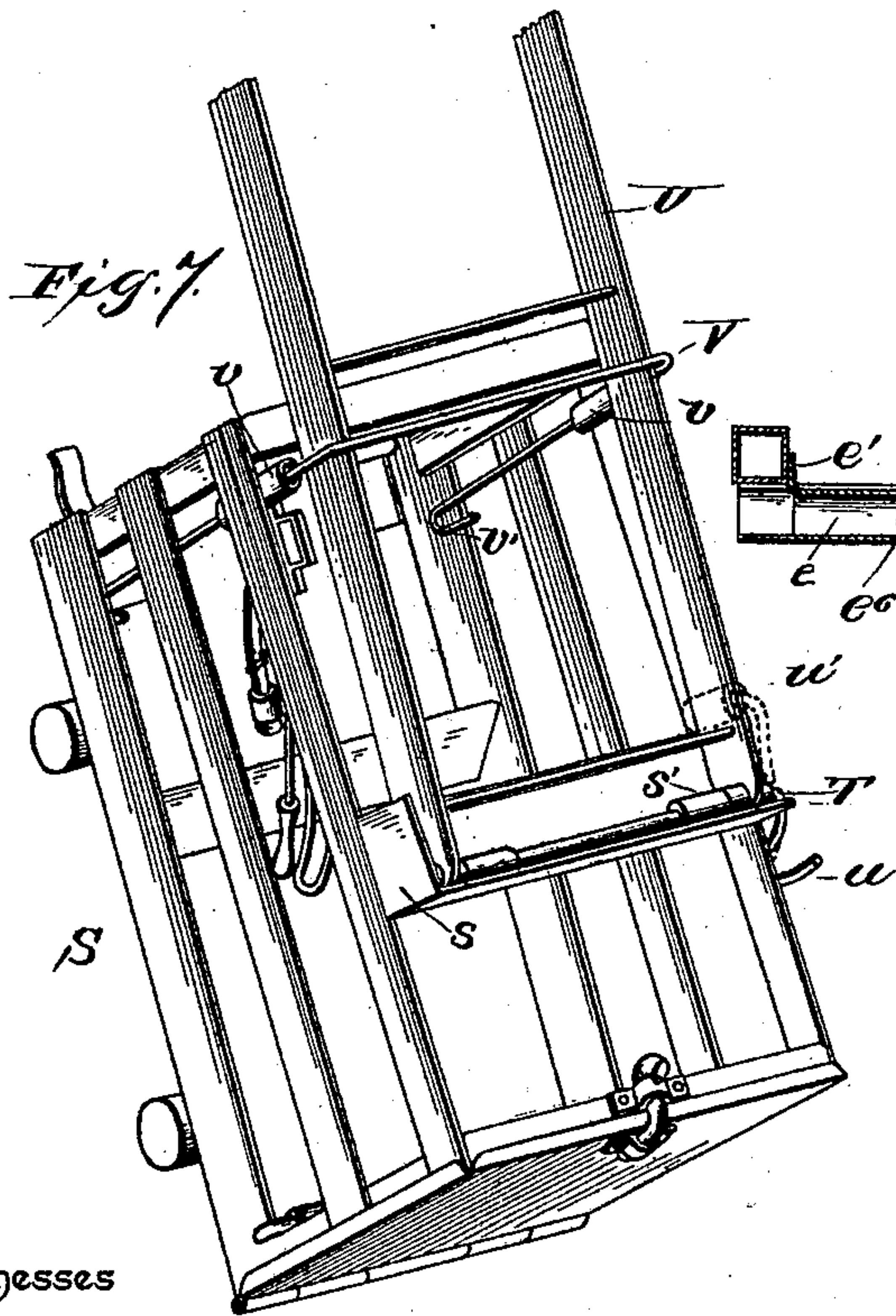
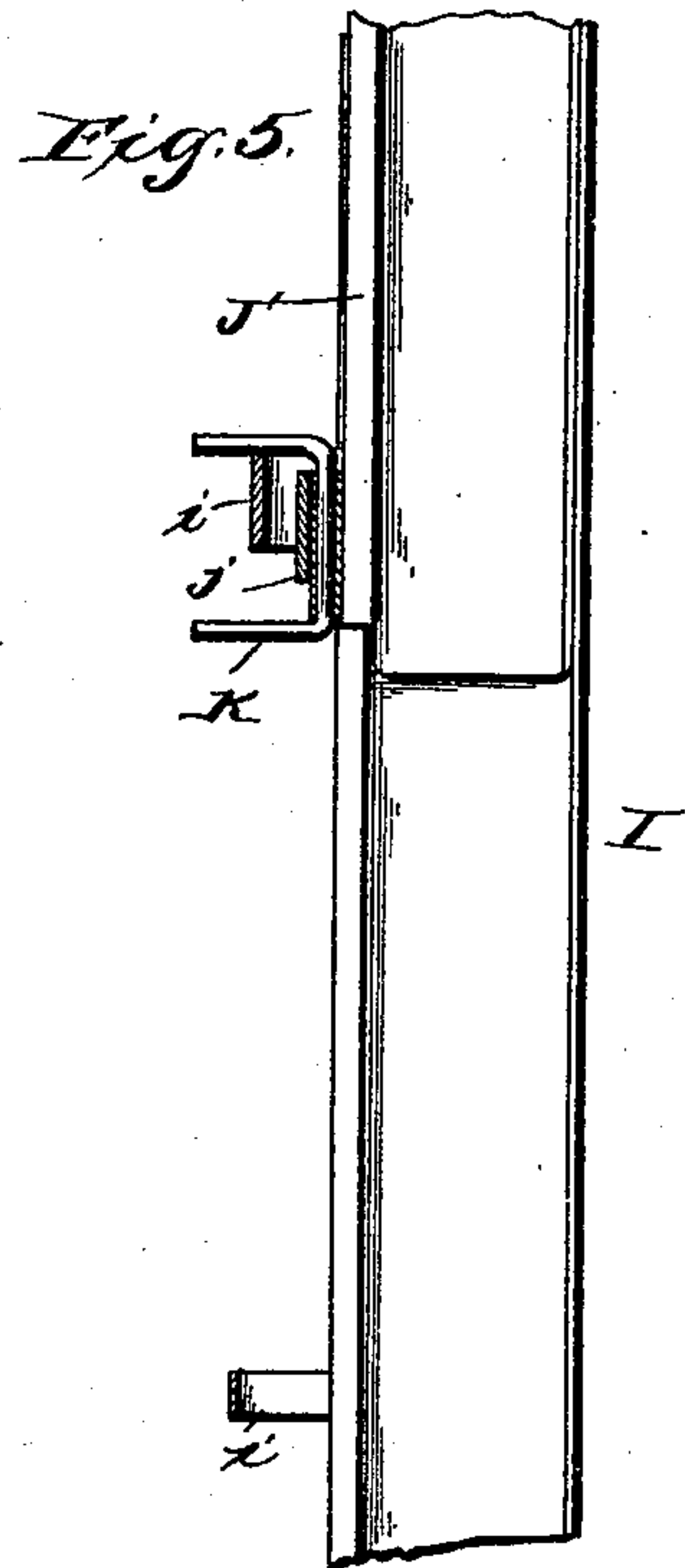
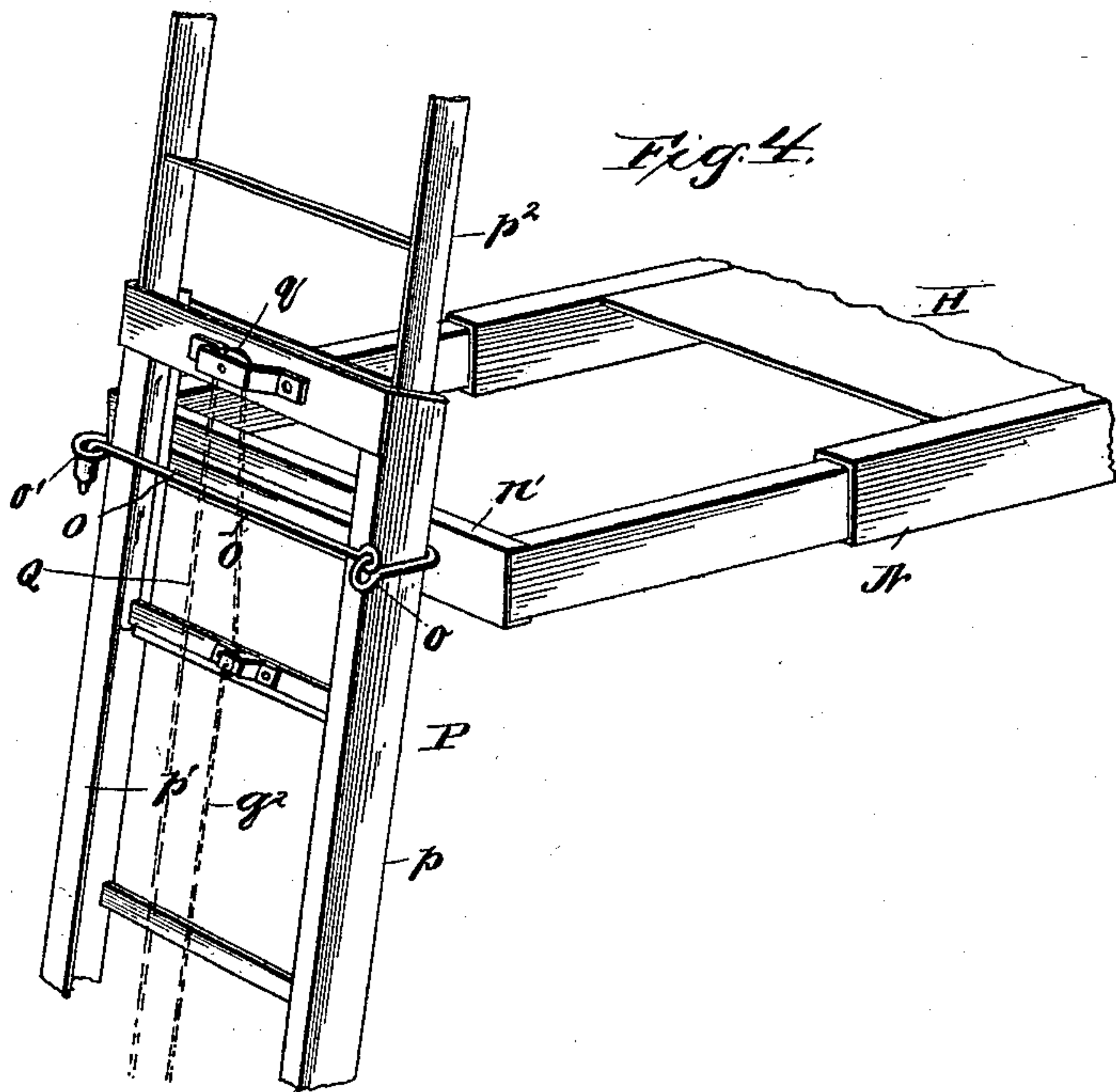
(No Model.)

4 Sheets—Sheet 4.

E. CARDARELLI.
FIRE ESCAPE TRUCK.

No. 516,346.

Patented Mar. 13, 1894.



Witnesses

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UNITED STATES PATENT OFFICE.

EMILIO CARDARELLI, OF SUMTER, SOUTH CAROLINA.

FIRE-ESCAPE TRUCK.

SPECIFICATION forming part of Letters Patent No. 516,346, dated March 13, 1894.

Application filed April 1, 1893. Serial No. 468,730. (No model.)

To all whom it may concern:

Be it known that I, EMILIO CARDARELLI, a citizen of the United States, residing at Sumter, in the county of Sumter and State of South Carolina, have invented a new and useful Fire-Escape Truck, of which the following is a specification.

This invention relates to fire escape trucks; and it has for its object to provide certain improvements upon the fire escape truck described and claimed by me in my pending application, filed November 30, 1892, and bearing Serial No. 453,675.

To this end the main and primary object of the present invention is to provide an improved portable fire escape truck having every qualification for ready adjustment into a proper operative position and carrying all necessary auxiliaries for fire escape purposes.

With these and many other objects in view which will readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination and arrangement of parts hereinafter more fully described, illustrated and claimed.

In the accompanying drawings:—Figure 1 is a side elevation of my improved fire escape truck showing the combined track and ladder sections extended for use, and the leveling device in position under one pair of wheels. Fig. 2 is an end view of the fire escape truck showing the parts extended for use, the extreme upper end of the combined track and ladder section not showing. Fig. 3 is a vertical longitudinal sectional view of the apparatus. Fig. 4 is an enlarged detail view showing more clearly the removable connection of the extensible bracing ladder to the horizontally adjustable brace frame. Fig. 5 is an enlarged detail sectional view of the lock connection between the sliding track and ladder sections when extended. Fig. 6 is an enlarged detail in perspective of the extreme upper end of the uppermost combined track and ladder section. Fig. 7 is an enlarged detail in perspective of the traveling car showing clearly the attachment of the auxiliary ladder thereto. Fig. 8 is an enlarged longitudinal sectional view of the adjustable truck side braces, on the line $x-x$ of Fig. 1.

Referring to the accompanying drawings,

A represents a truck frame mounted and carried on the end wheels B, said truck being adapted to be transported from place to place, and is designed to carry the various fire escape appurtenances hereinafter more particularly referred to, and as set forth in my pending application above referred to.

In case the truck is put in use on a hill or upon unlevel ground I employ the leveler C, which is adapted to be placed under the wheels of the truck which are in the lowest position, so that the entire truck can be placed level or in a horizontal position to hold the apparatus level while in use.

In order to determine when the truck has been set in a perfectly level position, I employ the hanging indicator finger or arm D. The hanging indicator finger or arm D, is pivoted at its upper end at d , to the truck frame at an intermediate point and has its lower index end work adjacent to the indicator plate d' , directly over which the finger or arm is designed to lie when the truck is in a level position from end to end. The wheel truck A, is further provided at opposite extremities thereof with the transverse guide boxes E, in which are arranged to slide the extensible side brace arms e . The extensible side brace arms e , are open at their under sides and are provided at their inner ends with the upturned stops e' , to limit their outward extension, and at their outer extremities with the downturned stop ends e^2 , which stop ends are designed to embrace and limit the extension of the folding brace legs E' . The folding brace legs E' , are pivoted at one end at the outer ends of the hollow arms e , and when not in use are adapted to be folded up into said brace arms so that they can be slid together with such brace arms back into the transverse guide boxes E, out of the way, as clearly indicated in the drawings. When the extensible side brace arms e , are extended out from either side of the truck as the case may be, for use, the folding legs E' , are dropped into a vertical position, bearing against the stops e^2 , and are held in such position and prevented from folding back, by means of the drop lock plates e^3 , working loosely in the upwardly extended guides e^4 , and adapted to drop behind the pivoted ends of the brace legs E' . The folding brace legs

E', are provided at their unpivoted ends with the threaded openings e^5 , into which are adjustably mounted the threaded feet e^6 , adapted to rest on the ground, and be adjusted, so that the truck can be leveled from the side as well as at the ends, while at the same time acting in the capacity of side braces to prevent any side tilting of the truck when in use.

Arranged within the truck A, is the revoluble standard frame G, in which is mounted the vertically adjustable frame g , which frames are constructed and operated in the same manner as described and claimed in my previous application, and the revoluble frame carries the same operating devices for manipulating the entire apparatus as fully set forth in such application, and, forming no part of the present invention, will not be further described nor referred to.

Fixedly mounted on the upper extremity of the vertically adjustable frame g , is the hinge or pivot plate H, to one end of which is pivoted at h , the pivoted combined track and ladder section I. The track section I, is of the same general construction as that described by me in my former application, but in the present invention it is further provided with a regularly spaced series of ladder rounds i , connecting the rails of the track, so that the apparatus will be available for ladder use as well as for accommodating a traveling car, and adapted to telescope with and be extended from the pivoted combined track and ladder section I, are the ground section J, and the outer telescoping extension sections J'. By reference to the drawings, it will be seen that the several nesting and extensible combined ladder and track sections are to be extended and collapsed in identically the same manner as described by me in my previous application, and the sections other than the pivoted section are also provided with the regularly spaced series of ladder rounds j , which connect the rails of the track in order to complete an extension ladder, as well as an extension track device, the advantage of which combination will be readily apparent to those skilled in the art. After the ground and the outer track sections have been extended from the pivoted section I, the same are locked in their extended positions by means of the pivoted U-shaped catches K. The pivoted U-shaped catches K, are pivoted to one extremity of each of the sections which are extended from the pivoted section I, and are adapted to be turned over to embrace the last aligned ladder rounds when the extensions have been extended to their limit, although it will be apparent that the said catches can be turned to embrace any intermediate ladder round so as to lock the extension track and ladder sections in any extended position, whether they be extended to their full limit or only partly so. The features just described complete the general improvement upon the combined track and ladder, but the outermost extension section, has piv-

oted to the outer or top extremity thereof the hook plate L. The hook plate L, is pivoted only at one edge l , to the outermost extension section and is provided at its opposite ends with the guide eyes l' , in which is mounted for sliding adjustment the U-shaped window hook M. The U-shaped window hook M, is provided with hook extremities m , that are adapted to be hooked onto a window sill, or other convenient object on a building, when the extension sections have been shot up to such building, and by reason of the pivot of the plate L, and the sliding adjustment of the hook itself, the same can be readily adapted to be placed in engagement with the object, no matter what the angle of the combined track and ladder sections may be. It will be apparent that the window hook M, relieves the upper end of the outermost extension section, from the pulling strain of the escape car which is adapted to travel over the track.

The hinge or pivot plate H, to which the track section I, is pivoted, is adapted to have the position as the corresponding plate shown in my former application, and in the present invention is provided at its opposite sides with the tubular guides N, in which are horizontally adjustable the opposite arms of the laterally extensible U-shaped brace frame n , which frame n , comprises opposite parallel arms connected at their outer extremities by the end bar n' , and said horizontally adjustable frame is held stationary in any laterally adjusted position by means of the set screw n^2 , working through a threaded opening n^3 , at one side of one of the tubular guides N, and onto one arm of said brace frame n . The adjustment of the brace frame n , out from the vertically adjustable frame g , depends on the incline or angle at which the combined track and ladder sections are extended, and to the outer end of said brace frame is attached the off-standing clamp O, having at one end the eye o , and at its other end the swinging locking clamp hook o' , adapted to be removably placed into engagement with the opposite eye, so as to removably clamp in position at the outer end of the frame n , the sectional brace ladder P.

The sectional brace ladder P, comprises the ground section p , adapted to have its lower end rest on the ground at one side of the truck and provided with opposite flanged sides p' , in which is nested an extensible section p^2 , which is designed to be extended from said ground section so as to meet the main combined track and ladder section at a point above its pivot to provide for a rigid and firm bracing thereof, which is rendered necessary owing to the great heights to which the said combined track and ladder sections can be extended. In order to extend the extension section p^2 , from the ground section p , I employ the operating rope Q, attached at one end to the lower end of said extension section and passing over a suitably arranged pulley q , at the upper end of the stationary

ground section, so that by pulling down on one portion of said rope the said extension section will be extended until it is placed in engagement with the main track and ladder section, and is held firmly in such position by wrapping the wire on a suitably arranged stay hook q' , attached to the ground section p . The operating rope is further provided with a supplemental portion q^2 , attached to the lower end of the extension section so that such extension section may be pulled back within the ground section.

The sections of the upright ladder brace P , are provided with the usual ladder rounds so that the same is available for use as a ladder to reach the upper end of the main track and ladder section, or intermediate points of the building, and as clearly shown in the drawings, the upper extremity of the extension section p^2 , is provided with the engagement hooks R , that are adapted to engage any of the ladder rounds of the upper extension sections of the main track and ladder, according to any height to which the same may be extended, inasmuch as the brace ladder may itself be disposed at an incline and extended to any height.

Although I have shown and described the brace ladder as provided with only one extension section p^2 , nevertheless, it will be apparent that several of such extensions may be employed, without departing from the spirit of the improvement, and, in either case, the brace ladder, when the truck appurtenances are to be folded out of operative position for transportation, can be readily detached from the clamp O , and suitably hung onto the ladder truck as will be easily understood. It may be observed at this point before leaving this feature of the improvement, that the disposition of the brace ladder at one side of the truck opposite the side at which the main track and ladder sections are placed, provides a firm brace and support for said main track and ladder sections so as to hold the same rigid and firm in their extended positions, thus rendering the apparatus efficient for ladder purposes and as a water tower, as well as for accommodating the escape car S .

The escape car S , is designed to travel up and down the combined track and ladder section in the same manner as fully described in my former application, and in the present invention the car S , is provided with the front ladder rest s , having the hinge eyes s' , which are adapted to removably receive the hinge or pivot pin T . The removable hinge or pivot pin T , is also adapted to removably pass through the lower perforated ends of the auxiliary ladder U , which rests on the ladder rest s , and is adapted to be carried up by the car S . The lower perforated ends of the auxiliary ladder U , are aligned with the eyes s' , on the car, so as to receive the pin T , which provides a hinge or pivot for the auxiliary ladder, and said pin is provided at one end

with the right angularly disposed portion u , adapted to be thrown in engagement with the lock eye u' , at one side of the car, so that the pin will be prevented from working loose. By releasing the lock end of the pin from its lock eye, the same can be withdrawn to remove the auxiliary ladder, and while the said pin is in position, the ladder can be swung out at any angle from the body of the car as may be found necessary, and is held in its outward inclination and prevented from falling down by means of the sliding U-shaped yoke V . The sliding U-shaped yoke V , embraces the auxiliary ladder U , and slides in the inclined guide eyes v , at opposite inner sides of the car near its top, said yoke being provided at its inner extremities with stop hooks v' , which prevent its entire withdrawal from the eyes v , as will be readily apparent. This attachment of the auxiliary ladder U , to the traveling escape car, not only provides for a secure connection thereof to the car, but also secures a convenient and safe adjustment of said ladder, as may be necessary in certain buildings to reach points above the extreme upper limit of the main track and ladder of the apparatus. When the truck is leveled on a hill or uneven ground as clearly indicated in Fig. 1 of the drawings, it is of course necessary to have the lower ends of the combined track and ladder, as well as the brace ladder, leveled, so that there will be no unevennesses of any part of the apparatus, and to secure this result, I employ adjustable feet W , threaded in the lower extremities of such combined track and ladder and the brace ladder, to correspond with the adjustable feet e^6 , in one end of the brace legs E' , as clearly indicated in the drawings.

Changes in the form, proportion and the minor details of construction as embraced within the scope of the appended claims, may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a fire truck, the combination with the truck; of an adjustable support arranged on the truck, an extensible combined track and ladder, an extensible ladder brace arranged at one side of the truck and removably connected at one side to said support and removably at its upper end with the combined track and ladder, and the car moving over the track, substantially as set forth.

2. In a fire truck, the combination with the truck; of a revoluble and vertically adjustable frame arranged on the truck, an extensible combined track and ladder pivotally mounted on the upper end of said frame, locking devices for each track and ladder section, and the car for the track, substantially as set forth.

3. In a fire escape truck, the combination of an extensible track and ladder pivotally sup-

ported on the truck, a self adjusting hook plate pivoted at one edge to the top extremity of the outermost section and provided at opposite ends with guide eyes, and a single
 5 U-shaped hook frame arranged to slide in said guide eyes, on the plate and provided with hook extremities, substantially as set forth.

4. In a fire escape truck, the combination
 10 with an adjustable support; of an extensible combined track and ladder pivoted to said support, a laterally adjustable brace frame mounted on said support, and an extensible ladder brace removably attached to said frame and
 15 adapted to connect at its upper end to the combined track and ladder, substantially as set forth.

5. In a fire escape truck the combination with an adjustable frame; of an extensible
 20 combined track and ladder pivoted to the top of said frame, a laterally adjustable brace frame mounted at the top of said adjustable frame, a clamp arranged at the outer end of said laterally adjustable brace frame, and an
 25 extensible ladder brace removably clamped in position by said clamp and having at its upper extremity hooks adapted to engage a ladder round of said combined track and ladder, substantially as set forth.

30 6. In a fire escape truck, the combination with a revoluble and vertically adjustable frame; of a hinge or pivot plate attached to the upper end of said frame and having opposite guides, an extensible combined track
 35 and ladder pivoted to one end of said hinge or pivot plate, a laterally adjustable U-shaped brace frame mounted for adjustment in said guides, a clamp arranged at the outer end of said laterally adjustable brace frame, an ex-
 40 tensible ladder brace removably clamped in position by the brace frame by said clamp and having at its upper extremity hooks adapted to engage a ladder round of said combined track and ladder, and the escape
 45 car, substantially as set forth.

7. In a fire escape truck, the combination with an adjustable frame; of a hinge or pivot plate attached to the top of said frame and provided at its opposite sides with tubular
 50 guides, an extensible combined track and ladder pivoted to one end of said plate, a laterally adjustable U-shaped brace frame having its opposite arms adjustably mounted in the tubular guides of said hinge or pivot
 55 plate, a clamp attached to the outer end of said laterally adjustable brace frame, and an upright extensible ladder brace removably clamped to the outer end of the brace frame by said clamp and having hooks at its upper
 60 extremity to engage a ladder round of said combined track and ladder, and the escape car, substantially as set forth.

8. In a fire escape truck, the combination with an adjustable support and an extensible
 65 track and ladder mounted thereon; of an adjustable clamp device mounted at the top and

one side of said support, an adjacent extensible ladder brace arranged back of the combined track and ladder, and removably held
 in position by said clamp device which em- 70
 braces the same and comprising a ground section, and one or more extension sections adapted to be nested within and extended from said ground section, the outer extremities of the last extension section having hooks 75
 adapted to engage a round of said combined track and ladder, substantially as set forth.

9. The combination in a fire truck, of the inclined track, a car adapted to move over said track and provided at its front side with
 80 a ladder rest having hinge eyes, an auxiliary ladder having lower perforated ends resting on said rest and aligned with said hinge eyes, a removable hinge or pivot pin adapted to pass through the aligned ladder ends and
 85 hinge eyes, a lock for one end of said pin, and an adjustable yoke mounted on the car and adapted to embrace the auxiliary ladder, substantially as set forth.

10. The combination in a wheel truck for
 90 fire escapes, and a truck leveler adapted to be arranged under one end pair of wheels, of an indicator plate arranged at one side of the truck, and a hanging indicator finger or arm pivoted at its upper end to a suitable point of
 95 attachment and working over said indicator plate, substantially as set forth.

11. A wheel truck for fire escapes having at its opposite extremities transverse guide boxes, extensible hollow side brace arms
 100 adapted to move in and be extended from said guide boxes, and folding brace legs pivoted to the outer end of said hollow side brace arms, and adapted to be folded within the latter, substantially as set forth. 105

12. The combination in a fire escape, of the truck having at its ends transverse guide boxes, extensible hollow side brace arms arranged in said guide boxes, and folding brace legs pivoted to the outer ends of said side
 110 brace arms and provided with adjustable feet, said legs being adapted to be folded back within the side brace arms, substantially as set forth.

13. The combination of a wheel truck hav- 115
 ing opposite transverse guide boxes, hollow extensible side brace arms mounted within said guide boxes and having stops at each end, folding brace legs pivoted to the outer ends of said hollow arms and adapted when 120
 not in use to be folded into said brace arms, adjustable feet arranged at the unpivoted ends of said folding legs, and a locking device for holding the folded legs in their extended position. 125

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

E. CARDARELLI.

Witnesses:

J. H. SIGGERS,

H. G. PIERSON.