No. 836,595. PATENTED NOV. 20, 1906.

R. LYTLE.

FIRE ESCAPE.

APPLICATION FILED JAN. 31, 1906.

3 SHEETS—SHEET 1.

Fig. 1.

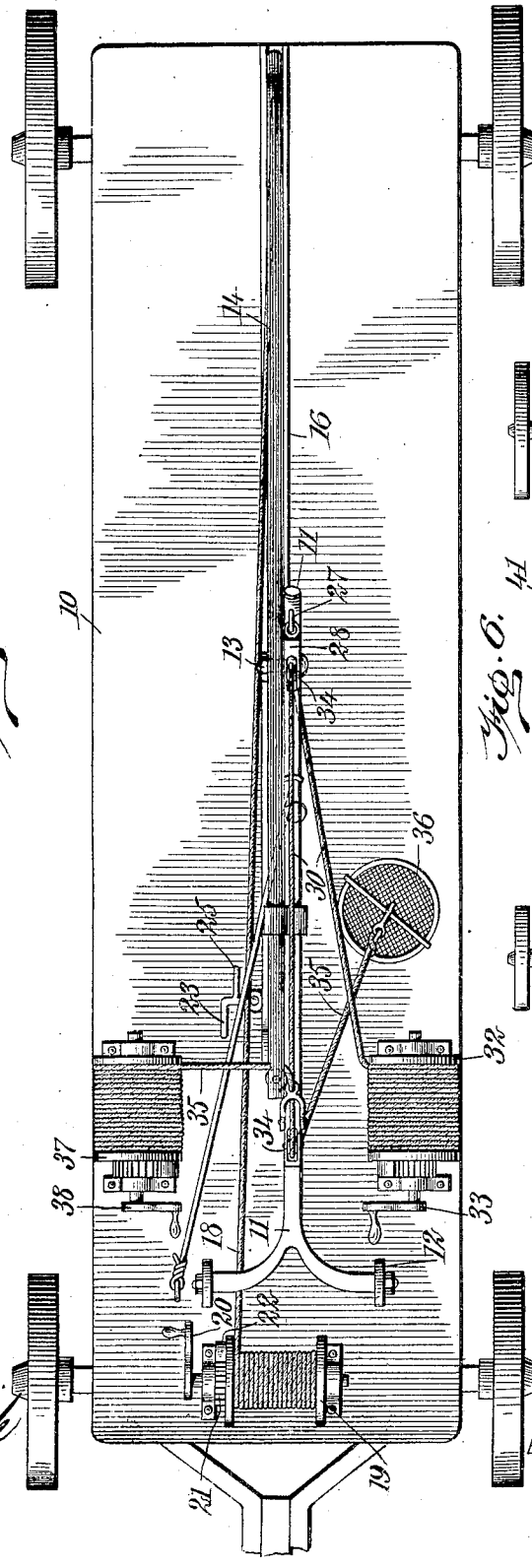
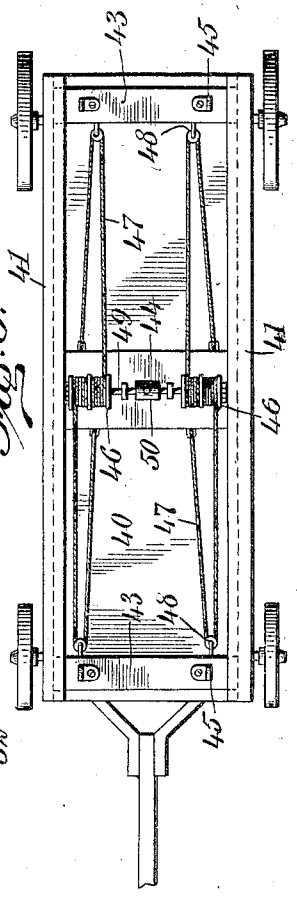


Fig. 6.



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3 SHEETS—SHEET 2.

Fig. 2.

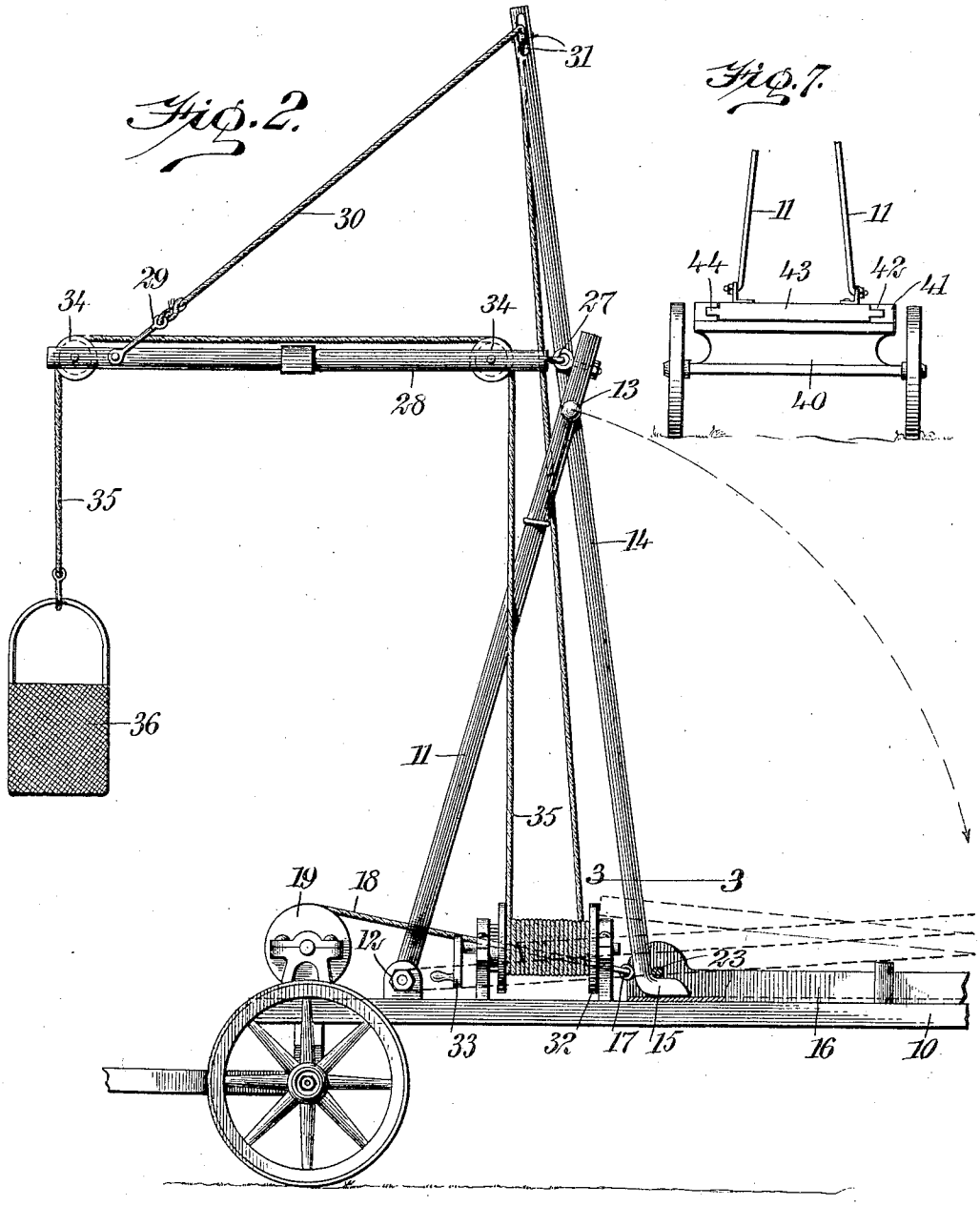
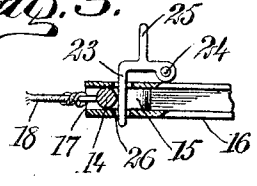


Fig. 7.

Fig. 3.



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3 SHEETS—SHEET 3.

Fig. 4.

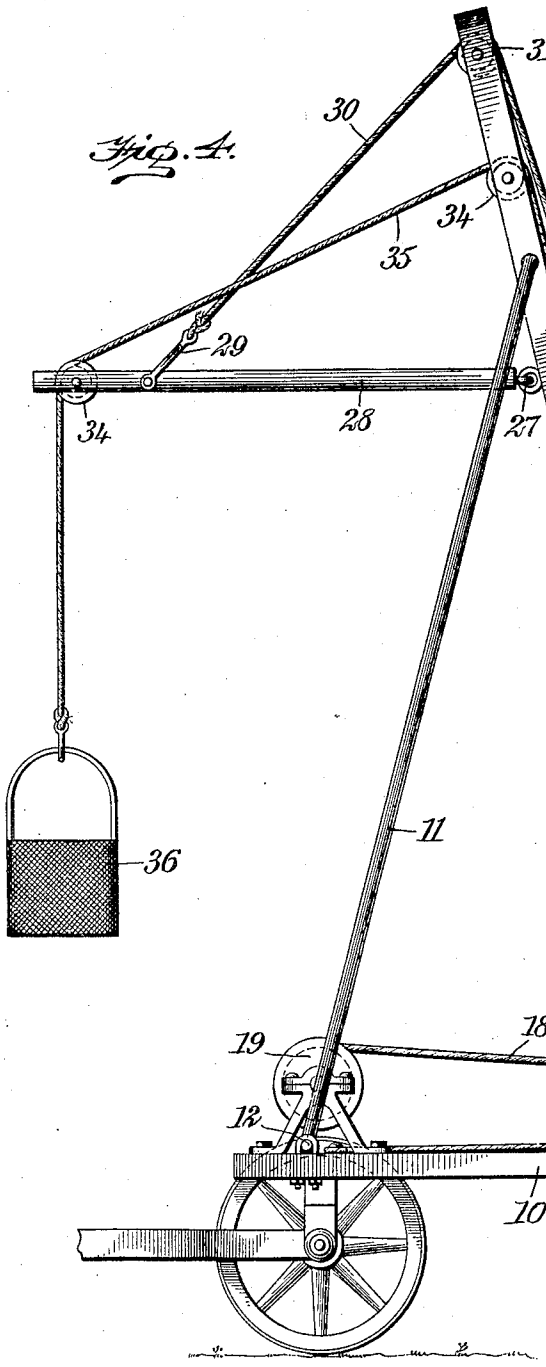
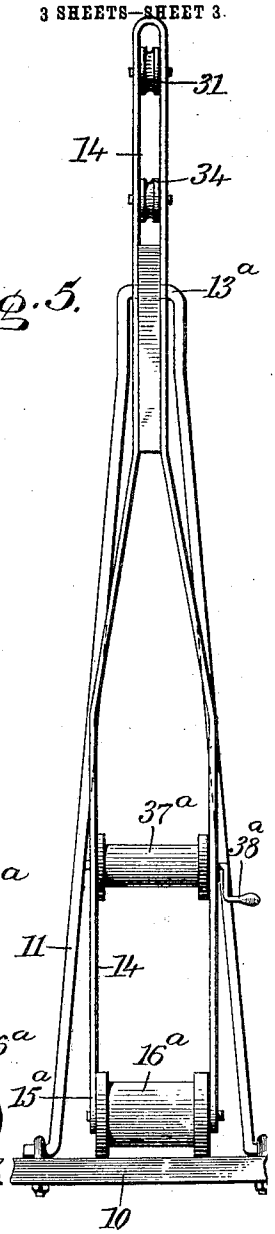


Fig. 5.



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UNITED STATES PATENT OFFICE.

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FIRE-ESCAPE.

No. 836,595. Specification of Letters Patent. Patented Nov. 20, 1906

Application filed January 31, 1906. Serial No. 298,816.

To all whom it may concern:

Be it known that I, ROWAN LYTLE, a citizen of the United States, and a resident of Afton, in the county of Clermont and State of Ohio, have invented a new and Improved Fire-Escape, of which the following is a full, clear, and exact description.

Several fire-escapes have been invented which have for their object the elevation of a mast into such position that a hose can be manipulated in front of a building or so that persons or articles can be removed from a building by the aid of the mast. These have usually been of such a nature, however, that they could not be employed in streets having various kinds of wires and other obstructions above the surface, and they have been open to many other objections which rendered them impracticable.

It is the principal object of my invention to provide for efficiently and rapidly elevating a mast and to provide connections with the mast in such a manner that a cage can be readily elevated and let down, so that several persons can be quickly removed from the building, and, furthermore, with hose quickly elevated into a position to fight a fire.

Further objects of the invention comprise means for making the device exceedingly flexible, so that it can be readily applied to various parts of the building and to provide for securely holding the parts in a position for operation.

While I have described the device of a fire-escape, it will be readily understood that it can be used as a derrick for lifting articles into position to be placed in buildings or the like.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan of a truck supplied with mechanism representing the principle of my invention, the parts being in a folded position. Fig. 2 is a side elevation of same with the parts in position for operation. Fig. 3 is a sectional view on the line 3 3 of Fig. 2. Fig. 4 is a side elevation of another form of fire-escape, also showing my invention. Fig. 5 is an end view of the same. Fig. 6 is a plan of another modification, and Fig. 7 is an end view of the same.

On the body of the truck 10 or other vehicle, which may be self-propelled or otherwise, I have shown a frame 11 pivoted to lugs 12 on the truck, Figs. 1 and 2. With this frame is pivotally connected, by means of a bolt 13, a mast 14. This mast is provided with a foot 15, which is adapted to slide in ways 16, extending longitudinally of the body of the truck. Connected with the foot by means of an eye 17 or the like is a cable 18, passing over a drum 19, which may be operated by a crank 20 or by a gas-engine or any other kind of machinery. I have shown the drum as provided with a ratchet 21 and a pawl 22 for the usual purpose.

When the parts are in the position indicated in Fig. 1, in which the mast and frame are folded flat upon the truck, as indicated in dotted lines in Fig. 2, these two elements can be raised by winding up the cable 18 on the drum 19. This pulls the foot 15 forward and raises the mast and frame in an obvious manner. When the mast reaches the limit of its movement, a pin 23 is swung on a pivot 24, by means of a handle 25, through perforations 26 in the ways 16, so as to engage the foot and hold it in fixed position, as indicated in Figs. 2 and 3.

Connected with the frame and mast by a universal joint 27 is a boom or arm 28. This boom is provided with a connection 29 for a cable, chain, or rope 30, which passes over a pulley 31, located near the upper end of the mast, and is adapted to be wound upon a drum 32. This drum is shown as provided with an operating-crank 33, but, like the other, may be operated in any desired manner. The operation of this drum provides for the manipulation of the boom, so as to raise and lower it about its pivot, and it can be readily understood that by the use of guys the boom can be moved sidewise about its pivot to adjust it to any particular portion of a building in front of which the device operates. This boom is provided with a pair of pulleys or sheaves 34, and over these works a cable, rope, or chain 35, which is connected with a cage 36 or other device for holding people or articles to be raised or lowered. This cable is operated by a drum 37, having a crank 38 like the other drums.

In the form shown in Figs. 4 and 5, which is simpler than the other form, and consequently indicates more broadly the scope of my invention, the elements 10, 11, 12, 14, 19, 27, 28, 29, 30, 31, 32, 33, 35, and 36 are substantially the same as those heretofore de-

scribed. The mast 14, however, is provided with a foot 15^a, which is connected with a guiding means in the form of a roller 16^a. This roller is mounted on the mast, and a cable or other flexible connection 18^a is passed from the drum 19 around the roller and fastened at a point near the drum to a stationary part of the truck. The winding up of the flexible connection on the drum 19 will obviously cause the lower end of the mast to move toward the pivotal point 12 of the frame 11 in a manner which will be clearly understood. The connection of the frame 11 with the mast 14 is also simplified in this form, as the frame consists of a piece of metal bent at a point 13^a to pass through perforations in the mast, thus forming a pivotal joint. One of the sheaves 34 also is mounted on the mast 14 instead of on the boom 28, as in the other case, and a drum 37^a, which operates the connection 35, is here shown also as being mounted on the mast, and it is provided with a crank 38^a for operating it, or it can be operated by a motor in any desired manner.

In Figs. 6 and 7 I have shown another modification of my invention. A truck 40 is in this case provided with a pair of side rails 41, having grooves or tracks 42 on their inner edges or in any other convenient position. At the two ends of the truck are located cross-bars or frames 43, having projections or the like 44 for engaging the tracks and allowing the cross-bars to slide longitudinally of the track toward and from a centrally-fixed platform 44. The two bars 43 carry brackets or eyes 45, to which are pivotally connected frames 11 and 14, and it will be obvious that the manipulation of these cross-bars toward and from each other will operate in a manner similar to that described above to raise and lower the fire-escape. For the purpose of drawing them together I have shown a set of drums 46, mounted upon the platform 44 and provided with flexible connections 47 for engaging pulleys 48, connected with the cross-bars. The drums are connected with a shaft 49, which may be operated with an engine 50 or in any other desired manner.

It will be seen that all of these constructions provide for simplification and eliminating objectionable parts and substituting parts equally as good or better and capable of more ready manipulation. A broader and more substantial foot or support is also secured, especially in the third form. Thrust from all directions is also equalized. A more upright mast instead of a leaning one is secured, thus relieving same of the strain upon it from the leverage of the arm 28. Also a very much more secure means of holding the feet of both masts is provided in the third form.

The operation of all the forms of the apparatus shown will be clear from the above description. It will be seen that it is perfectly flexible and that a large part of a building can be reached even without moving the truck, also that it can be raised over the ordinary electric wires which usually are found in our city streets, and that it can be used for all of the above-mentioned purposes with great advantage and convenience.

Having thus described my invention, I claim—

1. A fire-escape, comprising a truck having a longitudinal guideway, a pivoted frame on the truck, a mast to which the upper end of the frame is pivoted intermediate of the ends of the mast, the mast being provided at its lower end with a foot slidable in said guideway, a drum and cable for moving the foot of the mast toward the pivot of the frame, means for locking the foot in position, a boom connected with the frame by a universal joint, a drum and cable for raising and lowering the boom, a cage at the outer end of the boom, and a drum and cable for operating the cage.

2. A fire-escape, comprising a truck having a longitudinal guideway, a pivoted frame on the truck, a mast to which the upper end of the frame is pivoted intermediate of its ends, the lower end of the mast sliding in the guideway of the truck, means for moving the lower end of the mast toward the pivot of the frame, means for locking the lower end of the mast in position, a boom pivotally connected to the frame, means for raising and lowering the boom, and means for adjustably suspending a cage from the outer end of the boom.

3. A fire-escape, comprising a truck, a pivoted frame on the truck, a mast pivoted intermediate of its ends to the upper end of the frame, the lower end of the mast having guided movement on the truck, a drum on the truck, a cable on the drum and connected with the lower end of the mast, a pivoted boom, means for raising and lowering the boom, and means for adjustably suspending a cage from the outer end of the boom.

4. In a fire-escape, the combination with a support provided with a longitudinally-extending and apertured guideway, a pivoted frame on the support, a mast pivoted intermediate of its ends to the upper end of the frame, the mast being provided at its lower end with a foot sliding in the guideway of the support, means for drawing the foot of the mast toward the pivot of the frame, and a pivoted lever having a member adapted to enter the apertures of the guideway to lock the mast in position.

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

ROWAN LYTLE.

Witnesses:
WM. LYTLE,
H. L. BRITTON.