

FIRE ESCAPE.

No. 261,137

Patented July 18, 1882.

Fig: 1.

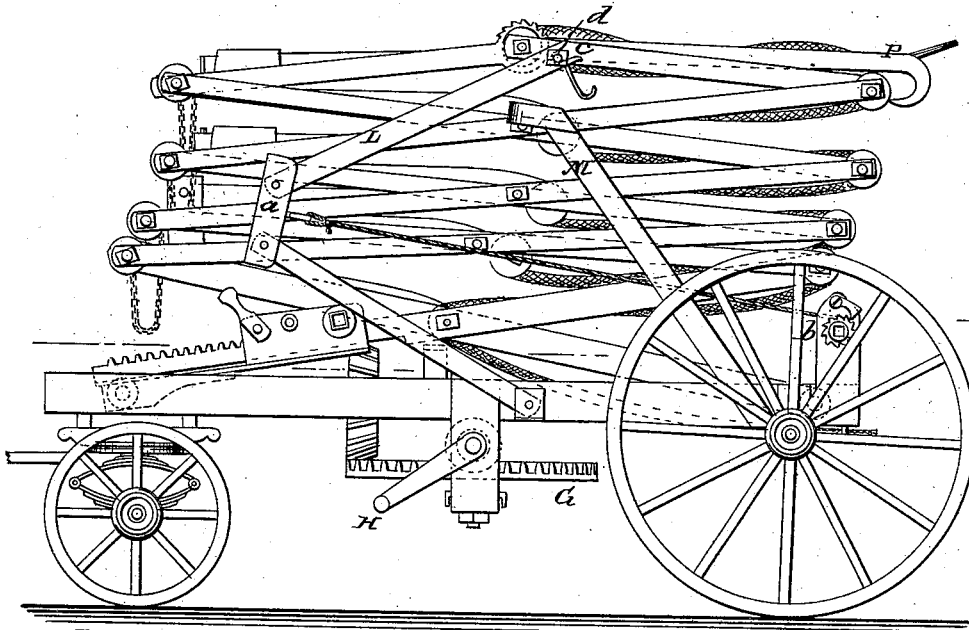
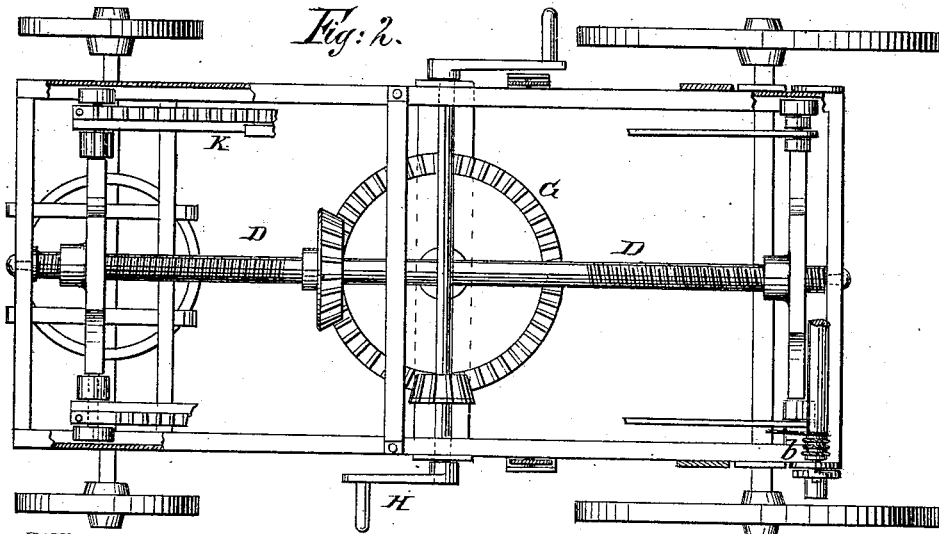


Fig: 2.



Witnesses:
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" "
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Inventor:
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by David McCormick
his Attorney

(No Model.)

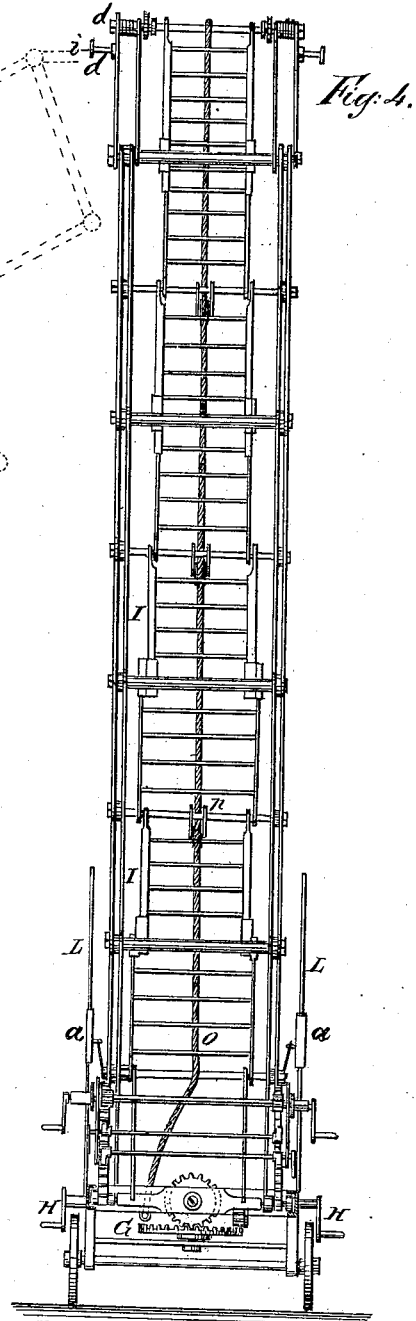
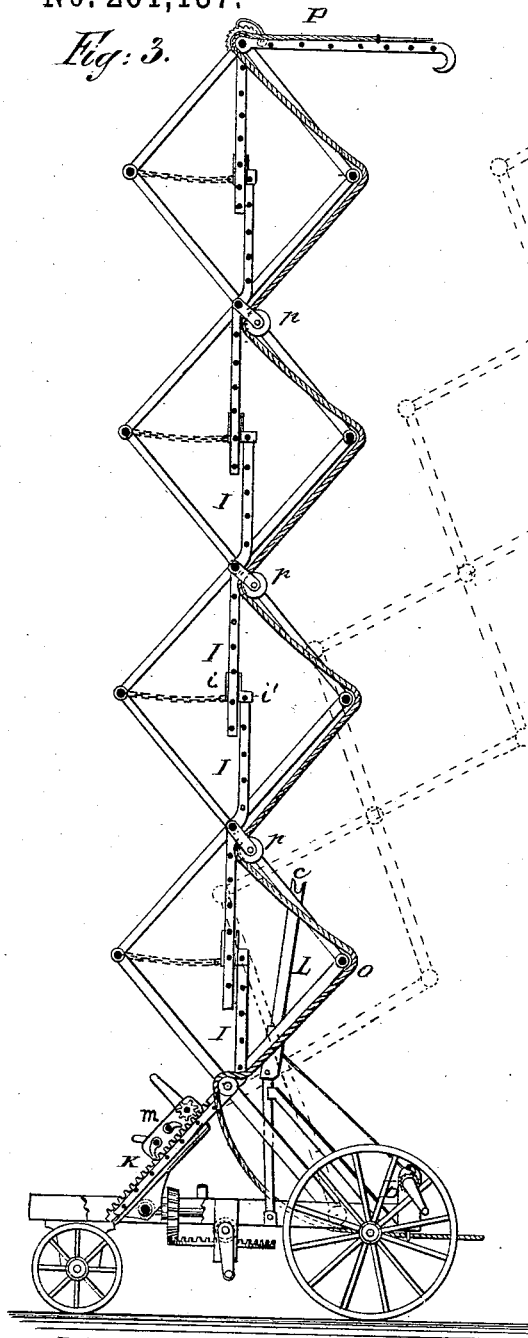
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3 Sheets—Sheet 2.

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(No Model.)

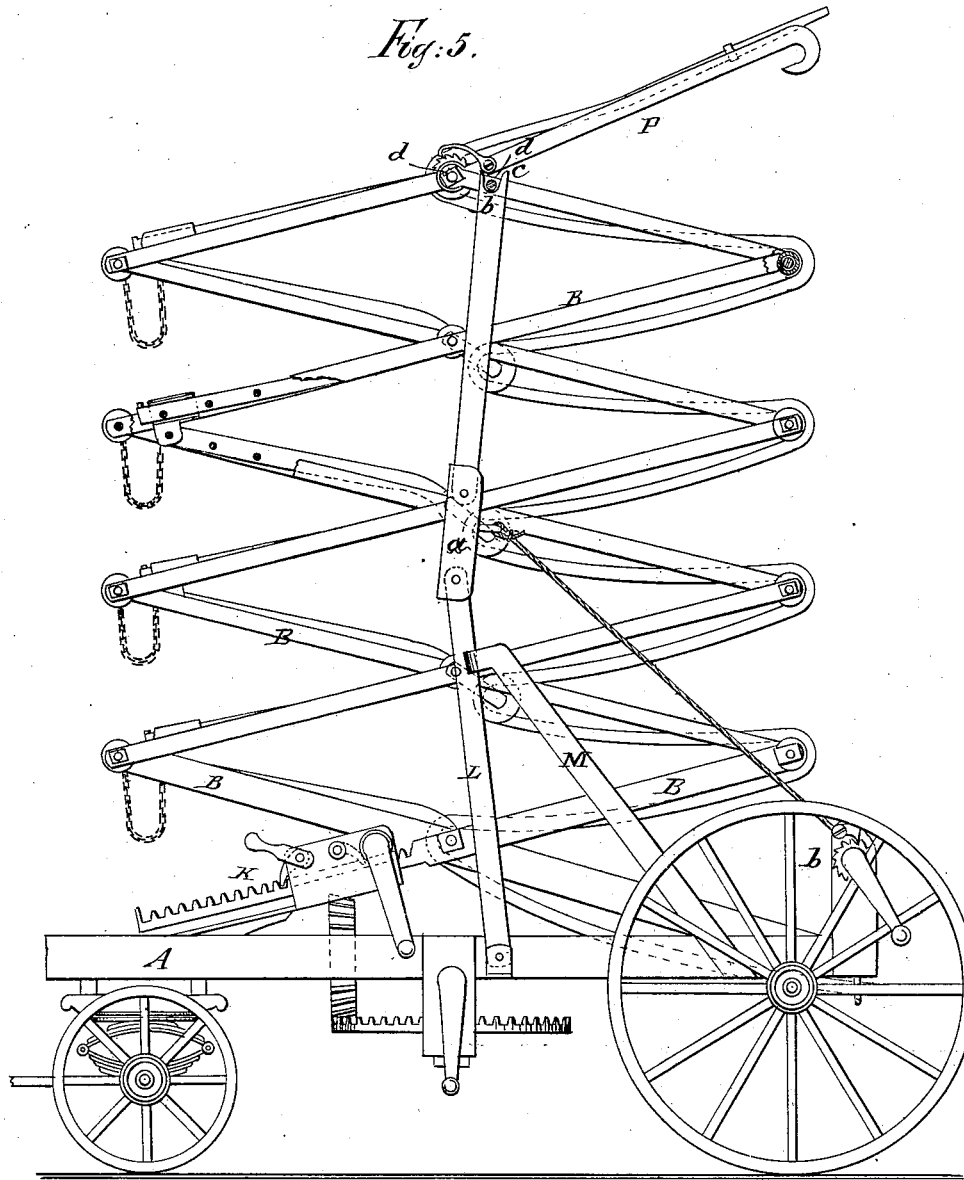
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FIRE ESCAPE.

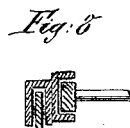
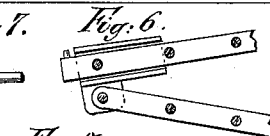
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UNITED STATES PATENT OFFICE.

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FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 261,137, dated July 18, 1882.

Application filed June 26, 1880. (No model.)

To all whom it may concern:

Be it known that I, GUSTAVE J. CRIKELAIR, of the city of New York, in the county and State of New York, have made certain new and useful Improvements in Fire-Escapes; and I hereby declare that the following is a full and clear description of the same, reference being had to the annexed drawings, in which—

Figure 1, Sheet 1, is a side view of my fire-escape and ladder when folded for transportation; and Fig. 2 is a top view of the truck with the extending ladder removed, showing a portion of the elevating apparatus. Fig. 3, Sheet 2, is a side view of my device, showing the ladder extended, and Fig. 4 is an end view of the same. Fig. 5, Sheet 3, is a side elevation on a larger scale, showing my improved means of assisting the elevation of the ladder; and Figs. 6, 7, and 8 are details of the smaller parts, to be more particularly described hereinafter.

The object of my invention is to utilize what is known as the "lazy-tongs mechanism" for the purpose of providing an escape from burning buildings, and combining with such lazy-tongs mechanism a practical means of raising a ladder or other arrangement for communication with the ground. It is also designed to raise to any desired height a hose for the distribution of water. I am aware that this principle has been utilized heretofore in connection with apparatus for fire-escapes; but my invention consists in a new arrangement of parts, designed to provide a practical device for the purposes named.

In the drawings, A is a truck or frame, placed for convenience of transportation on wheels, which is made of suitable size and weight to sustain the structure.

B B are the working-arms of the lazy-tongs mechanism, the four bottom ones being secured at their lower extremities to the supports C, Fig. 4, Sheet 2, which supports are arranged so as to be drawn toward the center of the truck-frame or expanded by the operation of the screw-bar D, the ends of these supports being confined and arranged to slide in grooves in the sides of the truck-frame or roll on rollers along the grooves in the frame. The screw-bar D is turned by the cog-wheel G, being set in motion by operating the crank H, the screw-threads on the bar D being opposite, so as to bring the supports C C toward each other

when turned in one direction or thrust them apart when turned in the opposite direction. To this lazy-tongs mechanism are attached ladder-sections I I, adapted to slide together or be extended as the structure is lowered or raised, the arrangement of such ladder-sections being shown in Figs. 6, 7, and 8 of Sheet 3, in which *i* is a sleeve, in which the ladder-section above it slides, the same being pivoted by an offset part, *i'*, to the upper end of the ladder below, which enables the ladder to both slide and fold as the structure is lowered.

In order to assist the practical working of the device and provide for obtaining an inclination of the structure when raised, the lower arms of the lazy-tongs B B on one side are arranged to be lengthened or shortened by means of a ratchet and slide provided at each side of the truck-frame, as shown at K in Fig. 3, Sheet 2. By this means any desired inclination may be given to the ladder after it is extended, as appears by the dotted lines in Fig. 3, Sheet 2.

In order to raise the ladder from the position in which it is transported—*i. e.*, closely folded on the truck, as shown at Fig. 1, Sheet 1—greater power is required than is necessary after it has acquired an elevation of a few feet, and the ordinary crank and cog-wheel movement is not fully sufficient to readily and easily commence the elevation from the closely-folded position. In order to overcome this difficulty, I provide auxiliary levers L, hinged to the sides of the truck-frame and jointed in the middle, as shown at *a a*. These hinged levers are worked by cords attached to the hinge-pieces and running over a drum provided with a ratchet-wheel at *b*, and at the upper end are notched, as at *c*, so as to take into such notches the pinions *d* of the upper section of the lazy-tongs mechanism or a separate pinion, *i*.

M is a guide for the lever L.

The operation of my apparatus will be readily understood from its construction. The drum at *b* is turned, and the jointed levers L extend the lazy-tongs by raising the first or upper section to the height shown in Fig. 5, Sheet 3, the lower arms on one side sliding in the ratchet at K, and are held in position by a pawl, *m*. The crank H then being turned, the bar D is set in motion and the supports *c c* are brought

together, so that the lazy-tongs are projected and the ladder-sections I I extended into position, as appears in Figs. 3 and 4, Sheet 2, the utility of the auxiliary levers ceasing when the upper section of the device gets above their height. The crank at K, when turned, will lengthen the lower arms of the lazy-tongs on that side, and thus cant or incline the structure, so as to provide more easy communication with a burning building. If desired, a hose may be attached to the different sections and raised with the ladder, as represented by O in Fig. 3 of Sheet 1 and Fig. 4 of Sheet 2 and Fig. 5 of Sheet 3, and the wheels *p p* assist its passage.

The chains *ee* are attached to the ladder-sections I I and the joint-bars of the lazy-tongs, so that when the structure is folded they will pull the ladder-sections out into their proper position.

At the top of the ladder is a hinged ladder-section, P, with hooked ends, in order to more readily catch on the window or other portion of a building at any desired inclination, and thereby steady the structure and provide a means of communication between the building and main portion of the ladder.

I am aware that a double threaded screw has been operated from the end by spur and pinion, and also from the center by a worm and worm-gear. The former device is often in the operator's way, and the latter is so slow that the people are burned up before you get to them. By placing the operating mechanism centrally with reference to the truck and by using bevel spur and pinions, I arrange said mechanism very compactly and out of the way and secure sufficient speed in the operation.

I claim—

1. In an extending ladder or fire-escape structure, the ladder-sections I I, pivoted upon the center joints of the lazy-tongs, and adapted and arranged, as shown, to slide into each other and also fold, in combination with the lazy-tongs mechanism, substantially as and for the purposes described.

2. The combination of auxiliary toggle-levers, arranged to apply a lifting force to a central pivot near the top of the lazy-tongs, with said lazy-tongs mechanism, substantially as described.

3. The horizontal gear-wheel G, operated by the upright gear-wheel turned by the crank H, in combination with the upright gear-wheel secured to a double threaded screw-bar, D, as a means of operating the lazy-tongs mechanism, substantially as shown and described.

4. In an extending ladder composed of hinged arms or lazy-tongs mechanism and sliding and folding ladders, the auxiliary ladder P, arranged to be held at any desired inclination by the ratchet-wheel and pawl, substantially as shown and described.

5. In an extending ladder or fire-escape structure operated by lazy-tongs mechanism, the ratchet-wheel and slide K, adapted to receive the lower arms of one side of the structure and lengthen or shorten the same, substantially as and for the purpose shown and described.

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Witnesses:

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