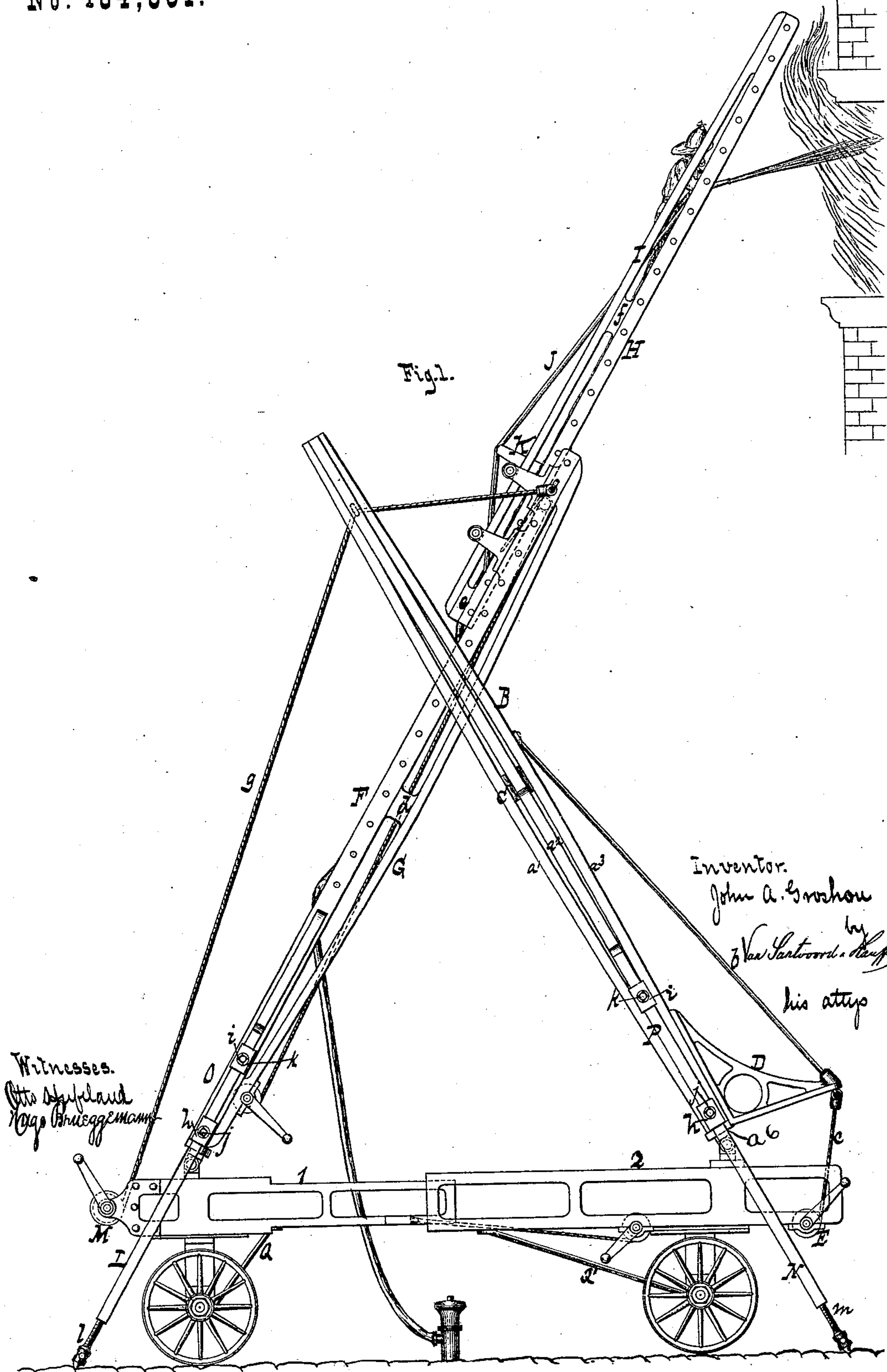


J. A. GROSHON.
FIRE-LADDER.

No. 184,861.

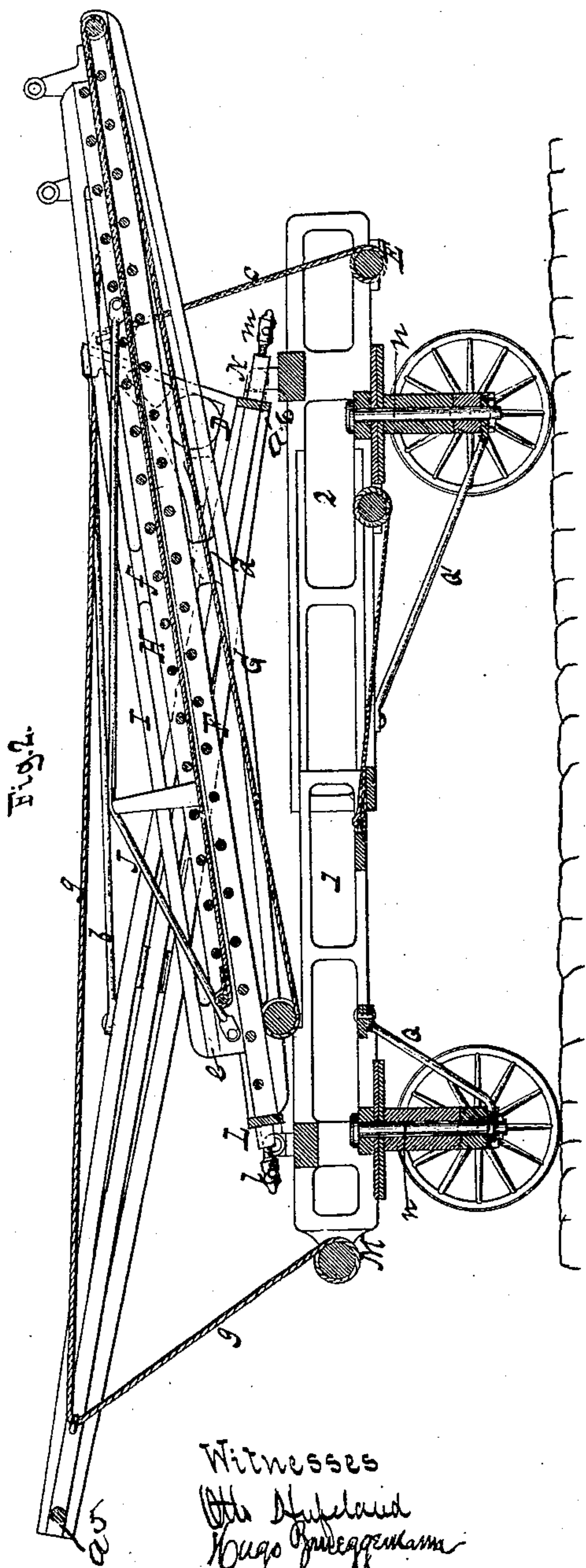
Patented Nov. 28, 1876.



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FIRE-LADDER.

No. 184,861

Patented Nov. 28, 1876.



Witnesses
Otto Hufeland
Hugo Guegenmann

Fig. 4.

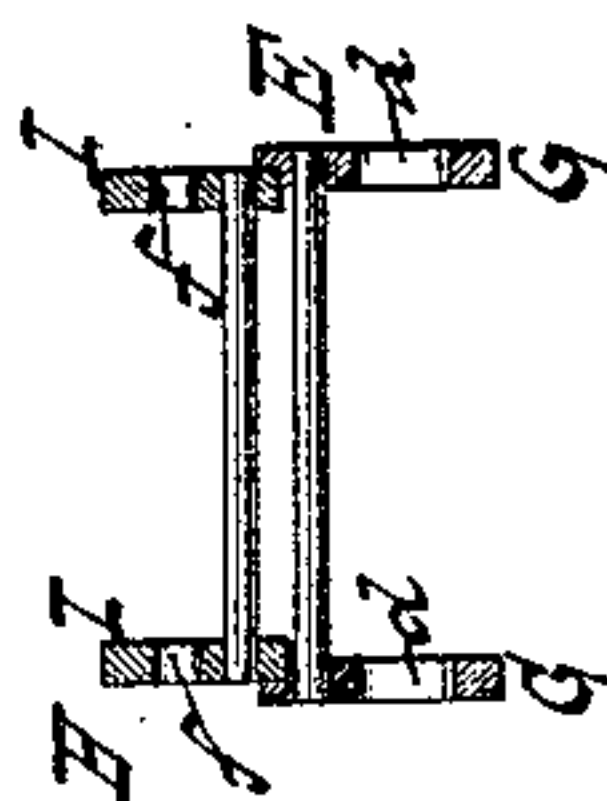


Fig. 3.



Inventor.
John A. Groshon
Van Santvoord & Hauff
his attys

UNITED STATES PATENT OFFICE

JOHN A. GROSHON, OF NEW YORK, N. Y., ASSIGNOR TO HIMSELF AND
JOHN D. BUCKHOUT, OF SAME PLACE.

IMPROVEMENT IN FIRE-LADDERS.

Specification forming part of Letters Patent No. 184,861, dated November 28, 1876; application filed
October 24, 1876.

To all whom it may concern:

Be it known that I, JOHN A. GROSHON, of the city, county, and State of New York, have invented a new and useful Improvement in Fire-Ladders, which improvement is fully set forth in the following specification, reference being had to the accompanying drawing, in which—

Figure 1 represents a vertical longitudinal section of my ladder, when the parts are extended. Fig. 2 is a like section thereof when the parts are folded together. Fig. 3 is a cross-section of one of the stiles of the derrick. Fig. 4 is a like section of the ladders.

Similar letters indicate corresponding parts.

My improvement relates to that class of fire-ladders for which Letters Patent of the United States were granted to me September 26, 1876, No. 182,660; and it consists in a construction and combination of parts, which will be fully hereinafter described, and which will be specifically pointed out in the claims.

In the drawing, the letter A designates the frame of my ladder made in two sections, 1 2, which are arranged to telescope one within the other. To the main section 2 is hinged a derrick, B, the stiles of which are composed of four strips, $a^2 a^4$, connected at their upper ends by the cross-bar a^5 , and at their lower ends by the cross-bar a^6 , which is pivoted or hinged to the truck-frame, and between which a block, C, is interposed at about the middle portion of the stiles, so as to distend the strips, as shown. To the lower portions or ends of the stiles of the derrick B are secured brackets D in any suitable manner, and from these brackets to about the middle portions of the stiles extend tie-rods b . To the brackets D is connected one end of ropes or chains c , the other end of which is connected to a windlass, E, mounted in the main section 2 of the frame, so that when the ropes or chain c are wound on the windlass E the derrick B is raised. The object of connecting the ropes c to the brackets D is to bring the lifting-strain out of a horizontal plane with the derrick B when it is in its lowest position.

The letter F designates the main ladder of the apparatus, each of the stiles of which is strengthened by a rib, G. This rib G is se-

cured at each end to the stiles of the said main ladder F, while between its middle portion and the said stiles is interposed a block, d , so as to distend the said rib. The main ladder F is raised by means of ropes or chains g , one end of which is fastened to said ladder, while the other end is attached to a windlass, M. H is the movable ladder, which is arranged to slide on the main ladder F, and the stiles of which are provided with a strengthening-rib, I. Said rib I is fastened at one end to the stiles of the movable ladder H, while, at its other end, it is secured to a block, e , placed between it and the stiles in addition to a central block, f . With each of the stiles of the said movable ladder H are combined tie-rods J, which are secured to said stiles at their opposite ends in any suitable manner, while they are bent up and secured to posts K projecting from the said stiles.

In the example shown the said tie-rods J are secured to the posts K by being made to pass over the ends of the posts. It will be seen that the tie-rods J, by being bent up, as stated, constitute a guard for the firemen in climbing the ladder, while they materially increase the strength of the movable ladder.

With the derrick B and the main ladder F, respectively, I have combined extensible bars L N to assist in supporting these parts when they are raised. The said extensible bars L N are connected to standards O P, which are secured to the stiles of the derrick and of the main ladder, respectively, by means of eyes $h i$, which are fastened to the said bars L N and embrace the said standards O P, so that the said bars L N can be slid up or down, and adjusted to any desirable position. Set-screws $j k$ are applied to the eyes $h i$ for holding the bars L N in any position to which they may be adjusted. Thus, when the ladder and derrick are raised, and the bars L N are slid down so as to rest on the ground, a support is thereby afforded to the said parts.

In order to adapt the extensible bars L N to any unevenness of the ground I provide the same at their lower ends with adjusting-screws $l m$.

It is obvious that the said extensible bars L N can be arranged to slide in various ways

other than by the eyes *h i* on the ladder and derrick, and I do not wish to be limited to the means shown for effecting this purpose.

With each of the parts or sections 1 2 of the frame I have combined a brace, *Q Q'*. Said braces *Q Q'* extend from the king-bolts *n* of the trucks which support the sections 1 2 to the frame-work, and they are fastened at each end in any suitable manner. It will be seen that by the braces *Q Q'* a material support is afforded to the sections 1 2, and particularly when they are drawn out.

It may be remarked that the derrick B and main ladder F can be connected by suitable catches or other fastenings when they are raised up, and then the ropes can be released.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a fire-ladder, arranged on a truck, the combination therewith of the strips *a¹ a² a³ a⁴*, connected together at their lower ends by a cross-bar, *a⁶*, which is pivoted to the truck-frame, the strips *a²* and *a⁴* being connected at their upper ends by a cross-bar, *a⁵*, substantially as described.

2. In combination with the adjustable ladder, the derrick B, having the brackets D and tie-rods *b* attached thereto, and the windlass E, the rope or chain *c* attached to the brackets, the rope or chain *g*, and the windlass M, substantially as and for the object specified.

3. The combination of the truck mounted on wheels, the ladder hinged to one end thereof, the derrick hinged to the opposite end, the adjustable bars L connected with the ladder, and the adjustable bars N connected with the hinged derrick, whereby, when the ladder is raised, the truck is steadied at both ends, substantially as and for the object specified.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 16th day of October, 1876.

JOHN A. GROSHON.

Witnesses:

JOHN D. BUCKHOUT,
CHAS. WAHLERS.