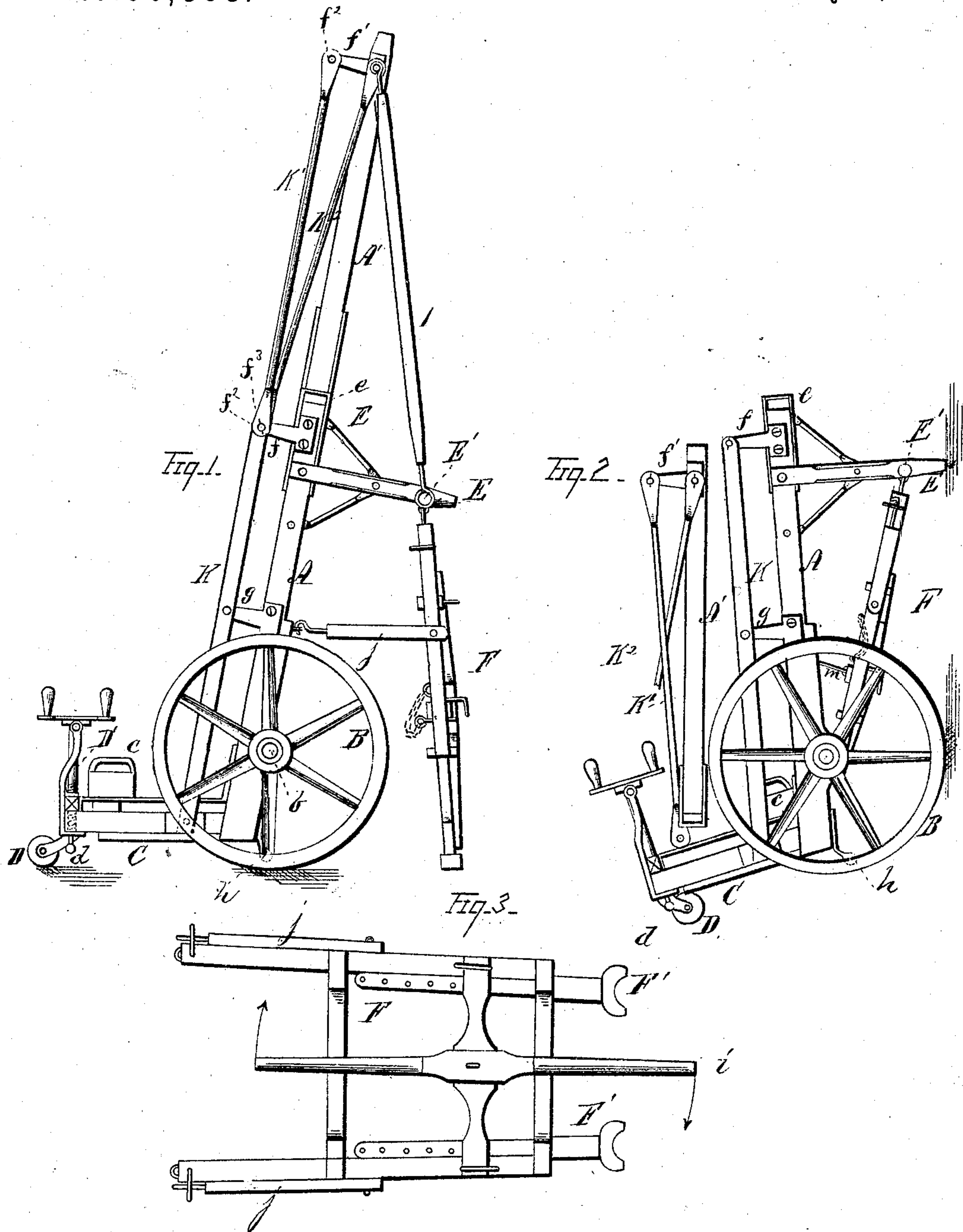


P. PORTA.  
Firemen's Ladders.

No. 150,888.

Patented May 12, 1874.



WITNESSES.

*W. J. Newman.*

*W. H. Breerton Jr.*

INVENTOR.

*Pavel Porta*

By

*Leggett & Leggett.*

Attorneys.



# UNITED STATES PATENT OFFICE.

PAOLO PORTA, OF MILAN, ITALY, ASSIGNOR TO MICHAEL UDA AND MARY BELLE SCOTT UDA.

## IMPROVEMENT IN FIREMEN'S LADDERS.

Specification forming part of Letters Patent No. 150,888, dated May 12, 1874; application filed February 9, 1874.

*To all whom it may concern:*

Be it known that I, PAOLO PORTA, of the city of Milan and Kingdom of Italy, have invented a new and useful Improvement in Flying Ladders; and declare the following to be such a full, clear, and exact description thereof as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which make a part of this specification.

My invention relates to improvements in what I term flying ladders.

In the drawings, Figure 1 represents a side elevation, showing the ladder extended and in its operative condition; Fig. 2, a view showing the ladder folded or in its inoperative condition; Fig. 3, a plan view of the swinging rear brace or supporting-frame.

My invention consists of the various devices and combinations of parts, as hereinafter specified and claimed, wherein—

A represents the lower section of the ladder, secured to the axle *b* of the wheels B. At the lower end of this section A, and extending at a slightly obtuse angle from the same, is a platform, C. Sliding in grooves or slots in the top edges of the sides of this platform C are counterbalance-weights *c*, which, by their adjustment, counteract any tendency of the ladder to tip over. The front part of the platform C is supported either on the feet *d*, or by the adjustable caster D, by which adjustable caster the angle or tilt of the ladder may also be regulated. A' represents the top section of the ladder, joined to section A by means of strap-loops *e* on the ends of the sections, halved into each other and keyed by the flat key E, which key forms one of the rungs of the ladder. Situated near the ends of each section A A are posts *f f*<sup>1</sup>, provided with spurs *f*<sup>2</sup>, on which spurs the ends of the different braces are placed and held by pins *f*<sup>3</sup>. The lower section A of the ladder is braced and held in position by the bar K, which extends from the platform C to the top of the lower section, and is held by posts *f g*. K<sup>1</sup> is a tie-rod which unites the outer ends of the two posts *f f*<sup>1</sup>, and K<sup>2</sup> a diagonal straining-rod ex-

tending from the top end of the post *f* to the base of post *f*<sup>1</sup>. These rods, in connection with the bar K, form a rigid and continuous brace for the ladder. Attached to the lower section A near its top end, and projecting rearward, are posts or supporting-legs, E, to the cross-bar E' of which is hinged the swinging rear support F. This rear brace or support consists of a frame-work, Fig. 3, provided at its lower end with adjustable feet F'. *i* is a bar, pivoted at its center to this frame-work, which, when the ladder is raised and the frame or support F secured in position by the braces *j*, forms a handle by which to turn or adjust the position of the ladder. I is a brace extending from the top of the ladder to the ends of cross-bar of the posts or legs E. These braces, in connection with the swinging support F, form a rigid rear support for the extended ladder.

When the ladder is not in use, and it is intended to be moved from place to place, the machine is lowered, and rests on the legs or posts E, Fig. 2, the top section removed and placed on top of the base section, as shown, the rear support F folded up and secured by hooks *m*. The machine is now in the form of a "push-cart," and may be moved to any desired place. *h* is the handle or bar by which the machine is pushed or handled.

When it is desired to put the device to use, the top section is removed and properly attached to the lower section, the rods and braces adjusted, and the ladder raised by pulling down on the platform C, which raises the ladder up, Fig. 1. The caster and the adjustable feet F are then adjusted to any desired degree, and the machine is ready for use.

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

1. The ladder A, provided with a rigid angular lever-arm, C, and adjustable counterpoise *c* attached thereto, the whole poised upon the axle of a two-wheel truck, B, substantially as set forth and shown.

2. In combination with a ladder, the under-

neath support, composed of posts or legs E, removable brace I, adjustable brace F, and stays *j*, substantially as set forth.

3. The adjustable brace F, composed of the adjustable legs F' and swinging stays *j*, substantially as and for the purposes described.

4. In combination with the adjustable brace

F, the hand-bar *i*, pivoted to the brace F, as and for the purpose set forth.

In testimony that I claim the foregoing, I hereunto set my hand.

Witnesses:

PAOLO PORTA.

BARTHELÉMY GRAILLE,

DOMENICO CROJA CYTO.