No. 777,735. PATENTED DEC. 20, 1904.

O. LAMPE.

FIRE ESCAPE.

APPLICATION FILED MAR. 3, 1903.

NO MODEL. 4 SHEETS—SHEET 1.

Fig. 1.

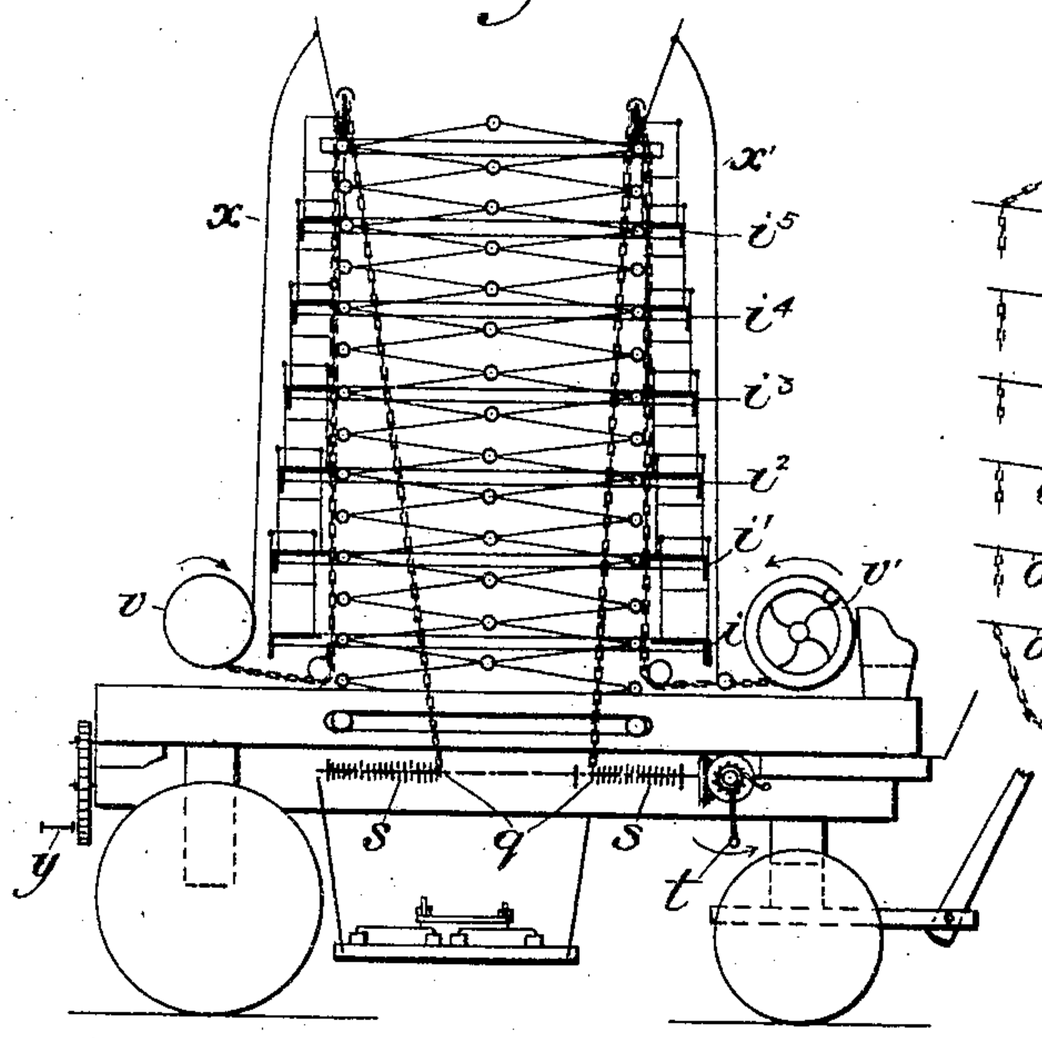


Fig. 3.

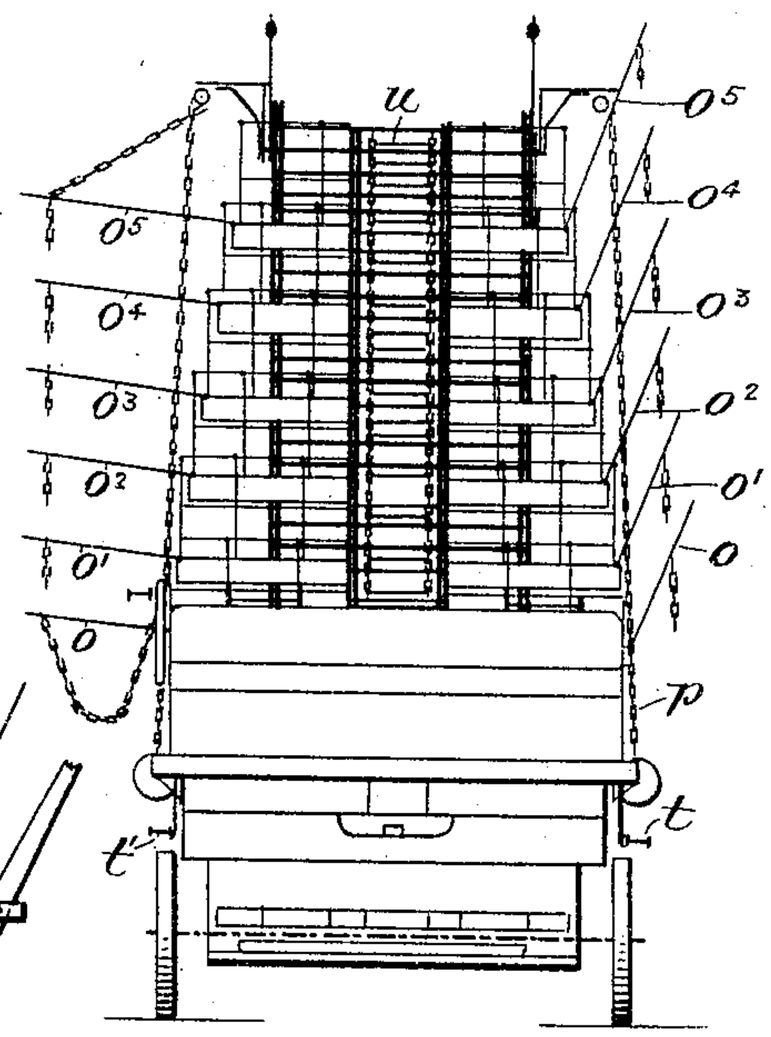


Fig. 13.

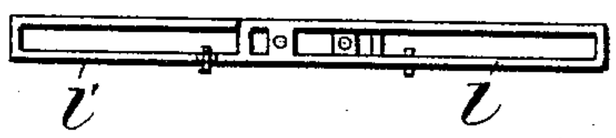


Fig. 12.

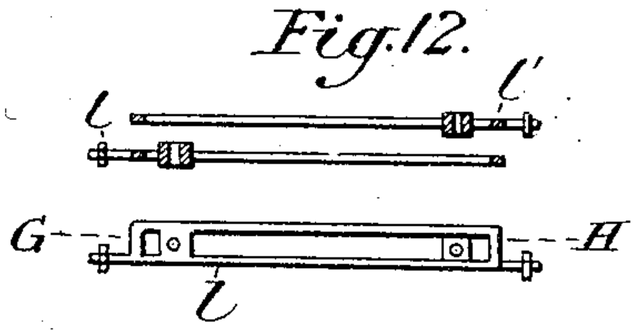


Fig. 2.

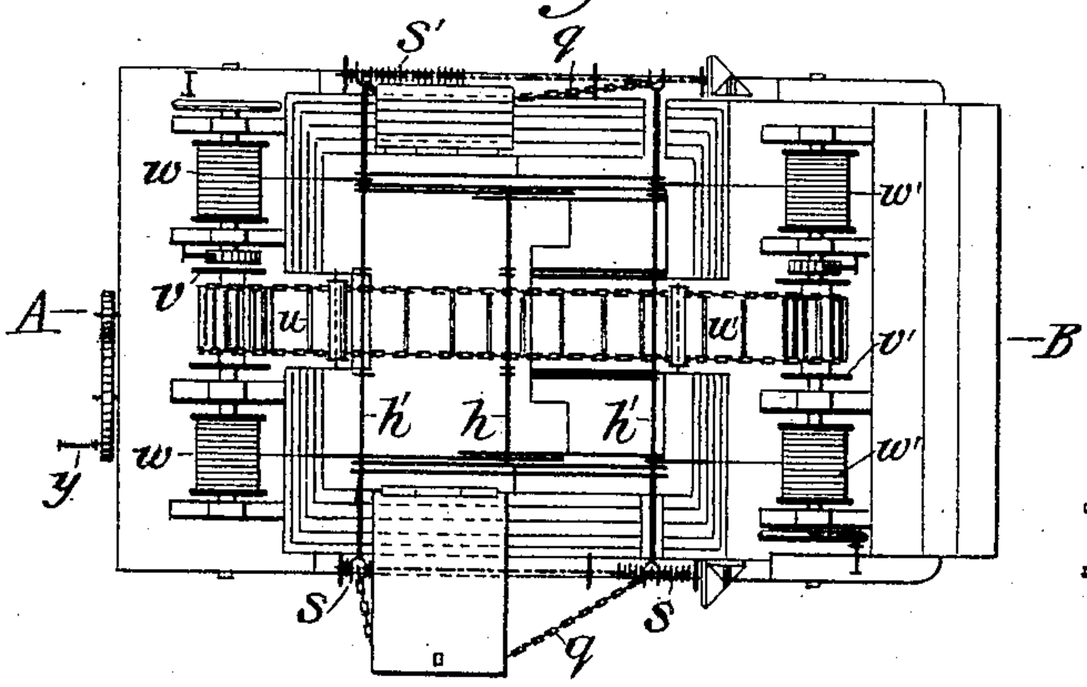
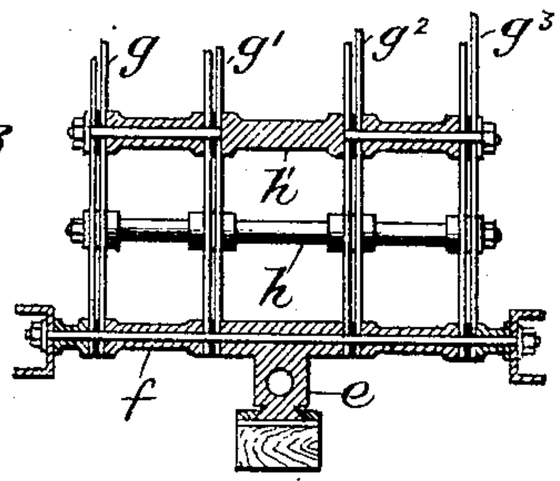


Fig. 5.



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NO MODEL. 4 SHEETS—SHEET 2.

Fig. 7

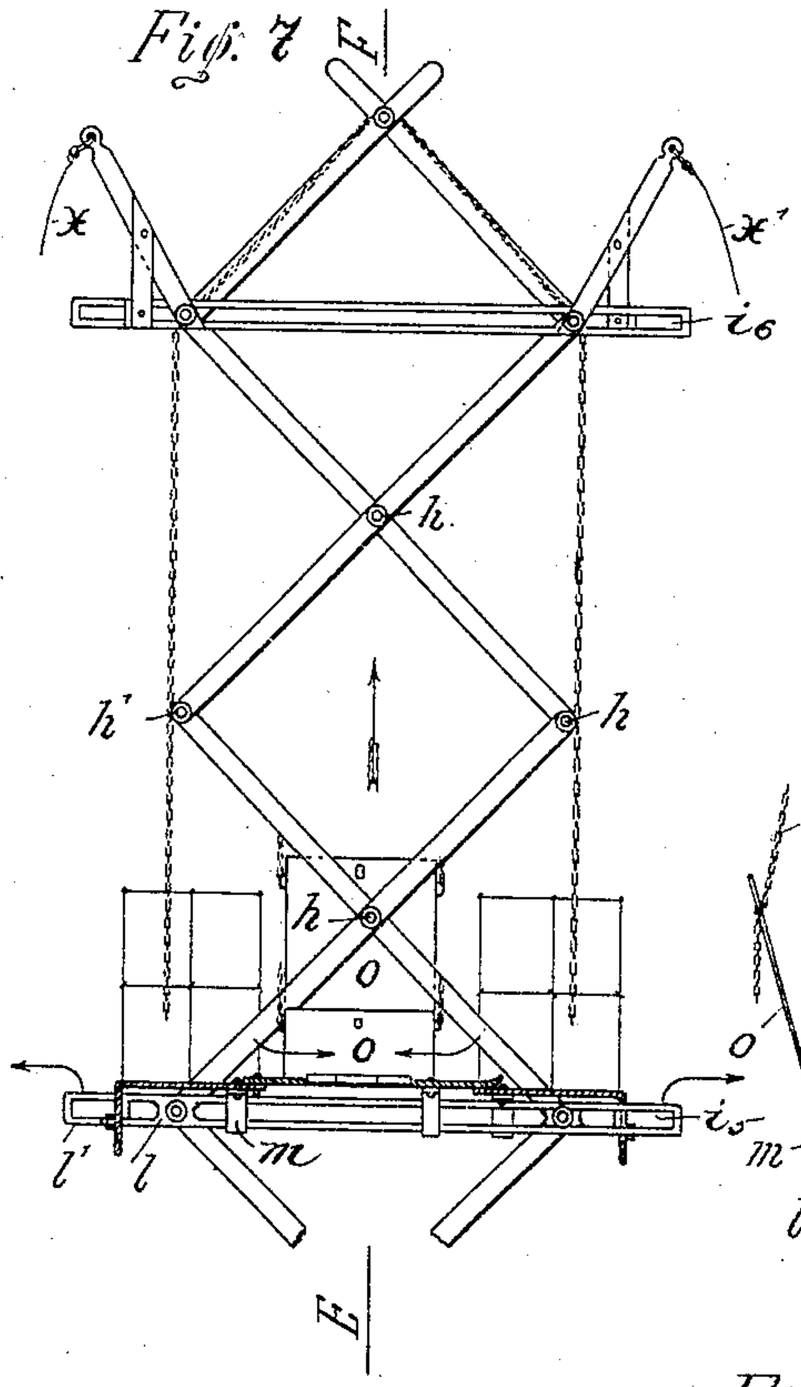


Fig 8 E—F

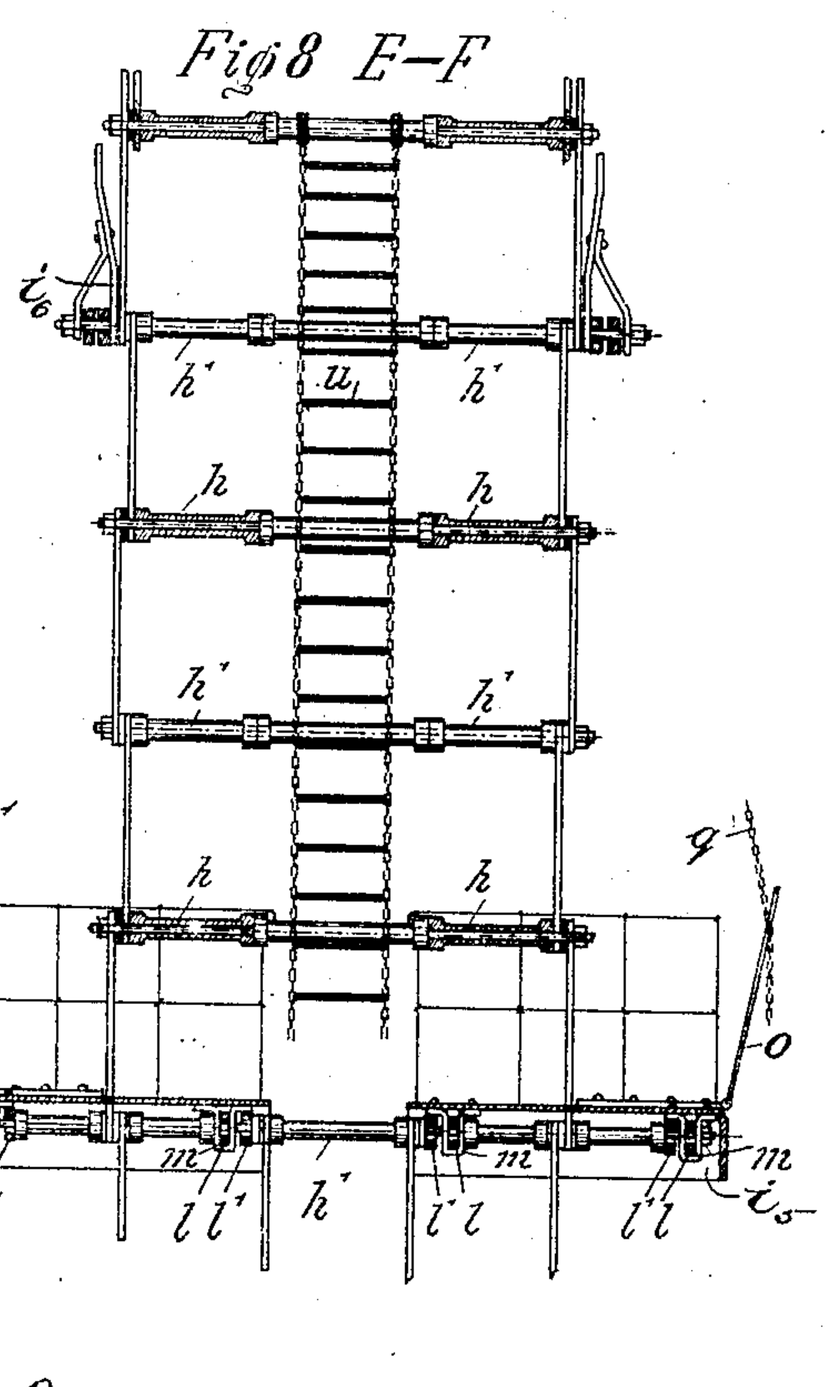


Fig. 9

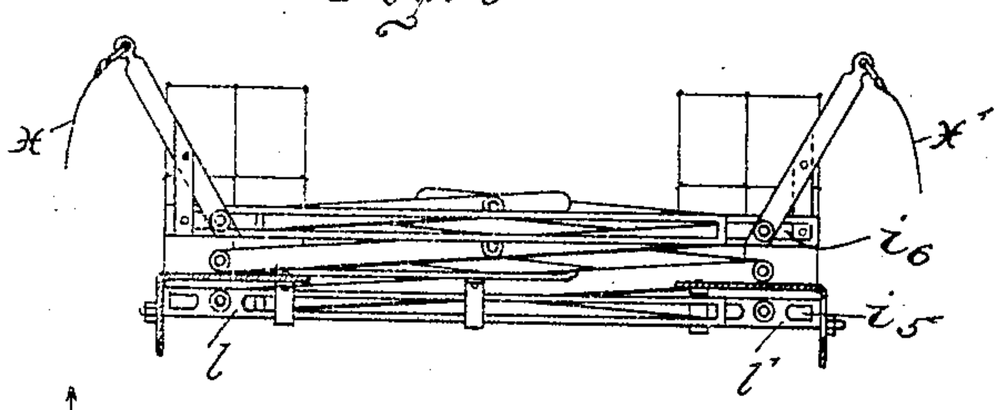


Fig. 4

A—B

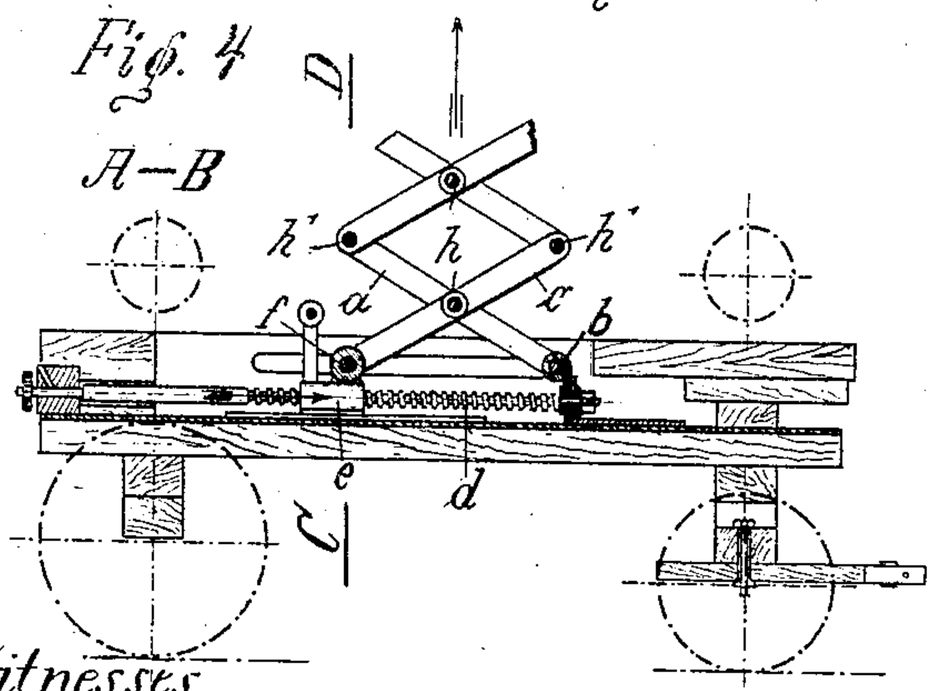
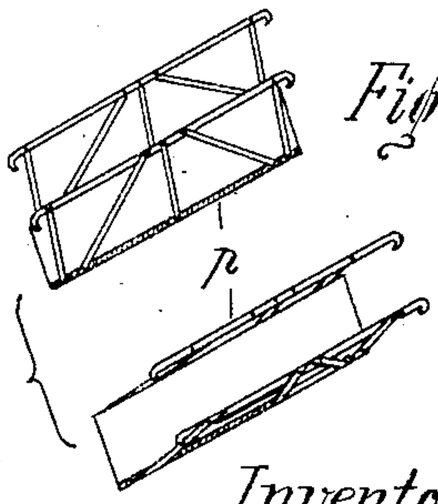


Fig 14



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NO MODEL. 4 SHEETS—SHEET 3.

Fig. 6

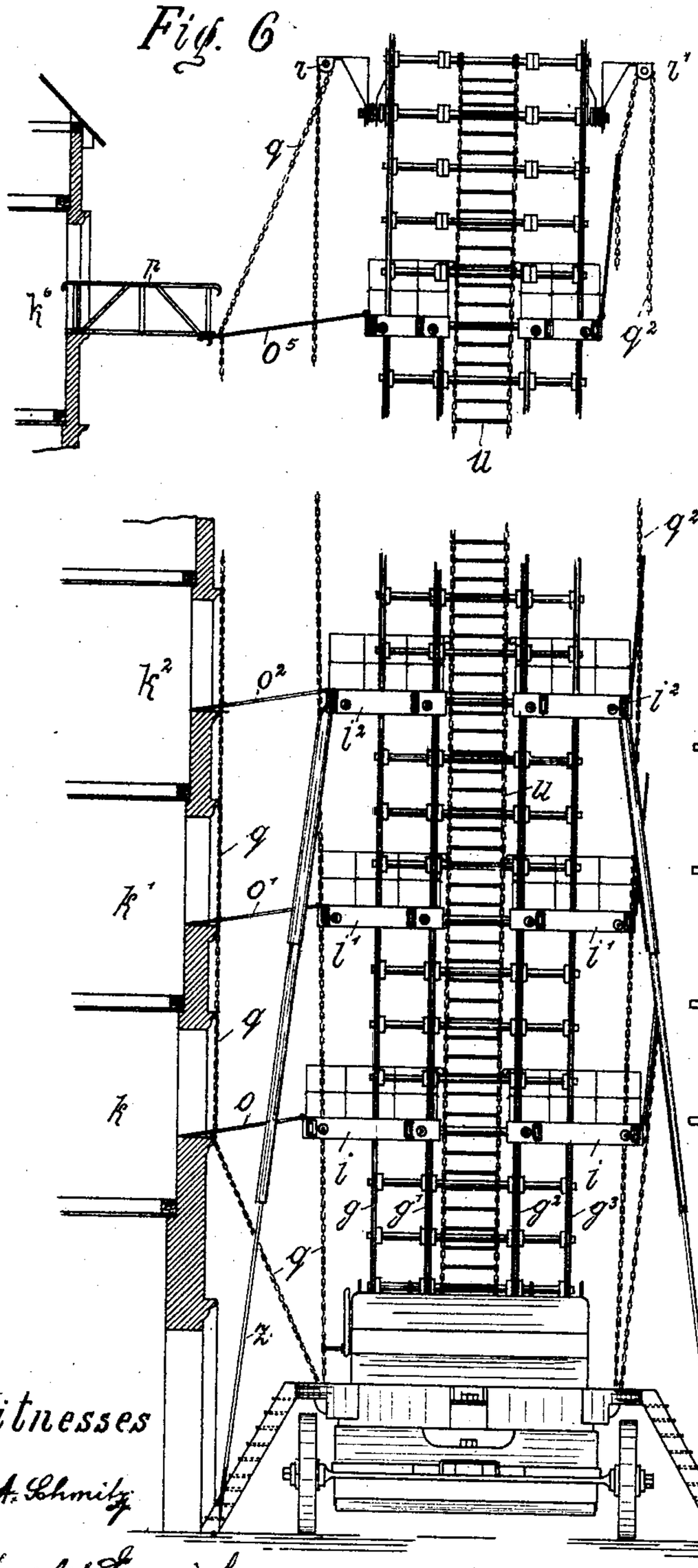


Fig. 10

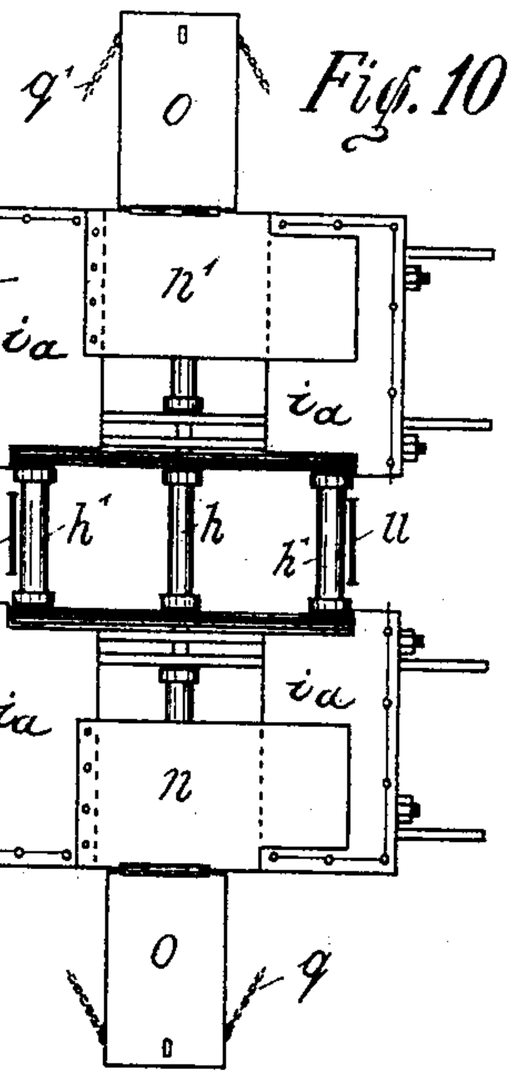
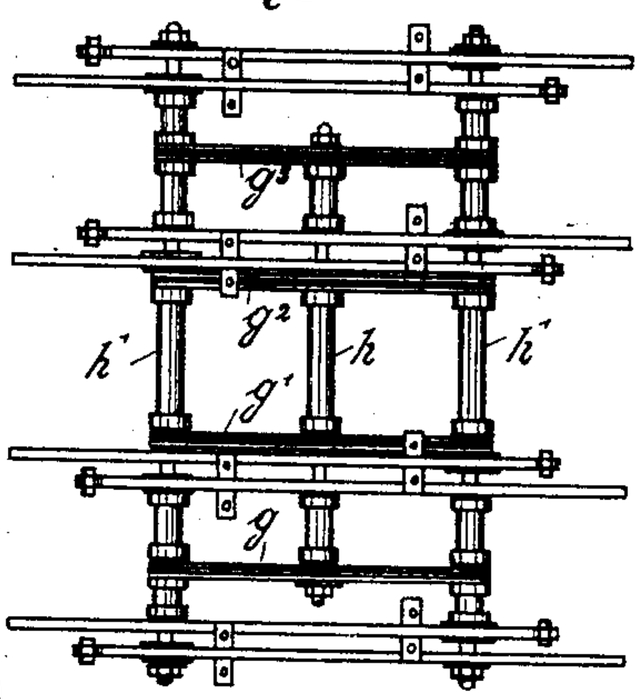


Fig. 11



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No. 777,735. PATENTED DEC. 20, 1904.

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FIRE ESCAPE.

APPLICATION FILED MAR. 3, 1903.

NO MODEL. 4 SHEETS—SHEET 4.

Fig. 15

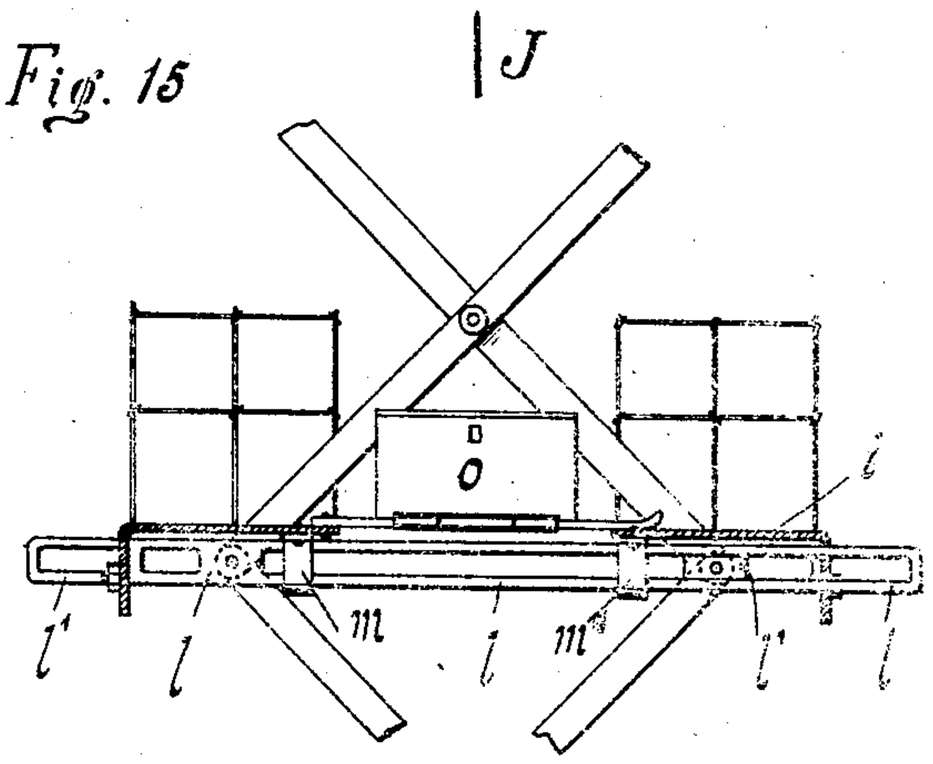
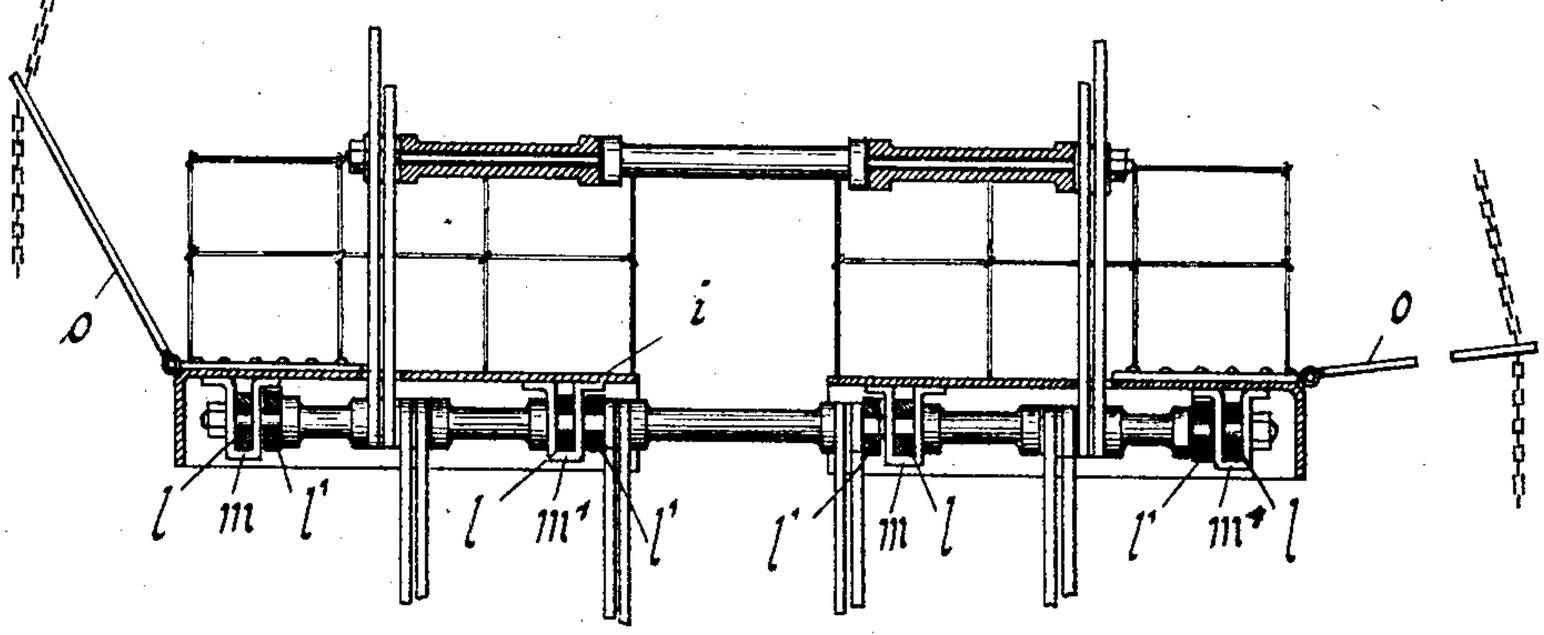


Fig. 16 J–K



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Attorney.

No. 777,735. Patented December 20, 1904.

UNITED STATES PATENT OFFICE.

OTTO LAMPE, OF BADEN-BADEN, GERMANY.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 777,735, dated December 20, 1904.

Application filed March 3, 1903. Serial No. 146,006.

To all whom it may concern:

Be it known that I, OTTO LAMPE, civil engineer, a citizen of the German Empire, residing at Fremersbergerstrasse 35, in the town of Baden-Baden, in the Grand Duchy of Baden, Germany, have invented a new and useful Fire-Escape, of which the following is a specification.

The present invention relates to an appliance for the rapid, secure, and simultaneous rescue in case of fire of the collective inhabitants of all the floors of a house and the provision of an unobstructed passage for firemen to all such floors.

Complete stability of the entire appliance is accomplished, easy and safe ingress thereto and egress therefrom, and perfect security for those persons who may use or be placed upon its platforms. Working parts are so constructed and arranged that on arrival at a fire rapid operation at every point is assured. Directly after elevation of the toggle-jointed framework of lazy-tongs the laying of gangways and bridges across to each floor of the burning house can be begun. Within a few minutes from an alarm this appliance can be sent away and set at work. It may also be used for a military post of observation, as a simple station for wireless telegraphy, as a display-point for heliographing and for searchlights, and generally as a means of observing whatever may best be served thereby.

A framework of lazy-tongs is herein constructed in such a manner that the outer points of junction of every second pair of its legs are so shaped and adjusted as to serve as supports for platforms. These platforms can be put up at the various heights of the floors of inhabited houses or tenements. To each side of the platforms a gangway is hinged. In conjunction with safety-bridges, which are kept folded up underneath the truck, such gangways form a means whereby all the inhabitants of the various floors of a burning house are enabled to cross over from the windows and gain the main platform. Thence, aided by railings fixed thereon, they can descend down a rope ladder, held securely in position by means of winding-drums, in safety to the ground.

In the accompanying drawings this fire-escape, its truck, and its other appurtenances are displayed in sundry dispositions and details.

Figure 1 gives a side view of the fire-escape as prepared for transport; Fig. 2, a plan view of same; Fig. 3, a front view showing the gangways extended only at the left-hand side; Fig. 4, a horizontal section at A B of Fig. 2 through the center of the truck; Fig. 5, a cross-section at C D of Fig. 4 at the bottom of the lazy-tongs framework; Fig. 6, a representation, but with some stages omitted, showing the fire-escape when set up and extended, its connection with the different floors of a house being clearly denoted; Fig. 7, the example given of the arrangement for fastening the platforms in vertical section at the uppermost platform with the fixing of the chain or rope ladders round a middle tie-rod of the uppermost joint and with the tie-holes of the tension-cables or wire ropes; Fig. 8, a side view of Fig. 7 along the line E F; Fig. 9, that portion of the fire-escape exhibited in Fig. 7, but when the same is folded together; Fig. 10, a top view of a platform with gangways extended at each side; Fig. 11, a plan view of Figs. 7 and 8, displaying the fixing of the platform; Figs. 12 and 13, details singly and in combination of platform-bearers having long guide-loops; Fig. 14, an easily-folded portable safety-bridge, such being carried in suitable numbers beneath the truck. Fig. 15 is a vertical section of a platform as seen from the side. Fig. 16 is a cross-section of same along the line J K, showing thus more particularly the bearers $l\ l'$ and the loops $m\ m'$.

The fire-escape is set on a truck having great width between its wheels, which are constructed of metal. The truck has a strong wrought-iron frame. In such frame turning-joints are fixed. On one of these latter the leg a of the undermost pair of a system of toggle-joints or lazy-tongs is set by its bottom tie-hole b. The other leg, c, of said pair is connected similarly at f, but by means of a powerful spindle d and the medium of a female screw e can be drawn inward and outward horizontally. That gives the upper pairs of lazy-tongs a

continually-increasing upward and downward motion. To the extent of the aforementioned arrangements the present construction presents nothing not heretofore known. The erection of a platform on the summit of the lazy-tongs, which in certain cases can be used as a lookout, is also known, as well as are appliances which make it possible to actuate the lazy-tongs from above. However, in the present invention the length of the legs *a* and *c* is so proportioned that when the lazy-tongs are extended upward the outer points of junction of every second superposed pair of legs may be brought to the height of the ordinary floors or flats of inhabited houses or tenements. The greater distance of the window-ledge of the first floor from the ground is compensated by the height of the truck—*i. e.*, the height of the bottom tie-holes of the undermost pair of legs above the ground.

Four systems of lazy-tongs g g' g^2 g^3, placed at a certain distance apart, are connected by means of tie-rods h h', Figs. 5, 6, and 11. Of such tie-rods h represents their central and h' their outer points of junction with such systems. The whole taken together constitutes one movable system, wherein the outer points of junction of the tie-rods h' of every second pair of legs of the lazy-tongs are connected with platforms i i' i^2, having hand-railings. It is thus made possible to establish a connection with the separate floors k k' k^2 of a house. With the elevation of the entire system its adjustment to any differences in the heights of said floors can be easily accomplished by a small increase or decrease of such elevation.

As exhibited in Figs. 7, 8, 9, and 10, the fixed part of each platform consists of four rectangular plates separated one from the other by a remaining cross-like central space. Each couple of such fixed plates is spanned by closing-plates n n', Fig. 10. Such closing-plates are fastened at one end to one of the fixed plates and can be pushed across and slide over the surface of the other fixed plate. Should, therefore, in certain cases an alteration of the surface level of the platform occur, no gap would be left through which a person being rescued might fall. The separate fixed rectangular plates i^a rest on loop-like bearers l l', Figs. 12 and 13, which bearers are bolted to the outwardly-lengthened tie-rods h h' and are connected l, Fig. 7, with the right-hand and l' with the left-hand junction-points of said tie-rods of the lazy-tongs. The loops m m', Figs. 7 and 11, are riveted to the plates and slingwise hold the bearers l l', thus aiding to support the plates composing the fixed part of the platforms. Each fixed plate at its outer side and end is bent downward at a right angle into a short curtain. The end curtain contains oblong apertures and also screw-holes. On the lower corner of the bearers l l' a thread is constructed, which thread passes through its related screw-hole in said curtain. A nut is then screwed down over the curtain tight on the above thread, and the plate thus made fast, and in consequence can be neither lifted off nor yet displaced. This fixture is effected in pairs at alternate sides, the unthreaded ends of the bearers l l' running to and fro through the above-mentioned oblong apertures with the extension and contraction of the lazy-tongs.

Hinged to the outside of the closing-plates n and n', Fig. 10, are gangways o o', ordinarily kept folded back against the fire-escape. (See Fig. 3.) When same is in operation, such gangways can by a single movement be collectively let down to stand out horizontally and to have their outer ends instantly laid upon the window-ledges of the different floors of a burning house. Should, however, from any cause these gangways o o' o^2 fail to reach far enough to make the needed connection, then in addition the portable safety bridges p, having hand-rails, Figs. 6 and 14, may advantageously be employed. These safety-bridges are held fast at their nearer ends by pins or clamps, their farther ends being placed loose on the window-ledge. They may well be constructed of foldable trussed or strutted frames, Fig. 14, as giving best results, and thus easily stowed, (see Fig. 1,) folded together, underneath the truck.

The gangways o hinged to the platforms are connected one with the other at their outer corners by chains q q', passing through pulleys r r', Fig. 6, and thence down to winding-rollers s s', worked by winch-handles t t'.

From each end of the truck, through and within the central space between the platforms, a strong rope ladder u u', Fig. 10, runs up as far as to the highest platform and is unwound or made tense by means of winding-drums v v'. At both sides of these drums are other drums, w w', Fig. 2, which serve for the winding of the wire ropes x x', Fig. 1. These wire ropes, strung on tie-holes at the four corners of the system, produce a uniform tension of the entire framework of the fire-escape. One of the rope ladders aforesaid can be used by firemen to gain the floors of the burning premises, while the other can be used for their descent thereby from the various platforms of those persons who escape or are rescued from the fire.

As shown in Fig. 1, the series of platforms, with their railings, decrease in size from bottom to top. The platforms thus fit into one another when the toggle-jointed framework is folded together for transport. Where necessary, the various winding appliances can be provided with powerful transmission-gear as well as ratcheting. By means of the crank y the entire system can be elevated. Four stays z z', Fig. 6, stiffen the framework when it is drawn out and extended upward. These stays consist of tubular lengths or joints

which may telescope one into the other or be conjoined by any other convenient method. They are fastened to upper portions of the framework, and thence slant downward, forming together a solidly firm strutting for the entire fire-escape.

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

A portable tower, applicable as a fire-escape and for other purposes, consisting in the combination of a lazy-tongs structure, railed platforms *i*, *i*, located at each junction-point and decreasing serially in size from bottom to top of such structure, said platforms extending beyond the exterior vertical line of such structure, bearers and carrier-loops *l l' m m'*, each of said platforms being constructed of four rectangular plates and two closing-plates *n n'*, and having gangways *o* and railed safety-bridges *p* forming together a firm, unbroken floor adjustable to the various stories of a house or tenement.

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

OTTO LAMPE.

Witnesses:
H. W. HARRIS,
JACOB ADRIAN.