

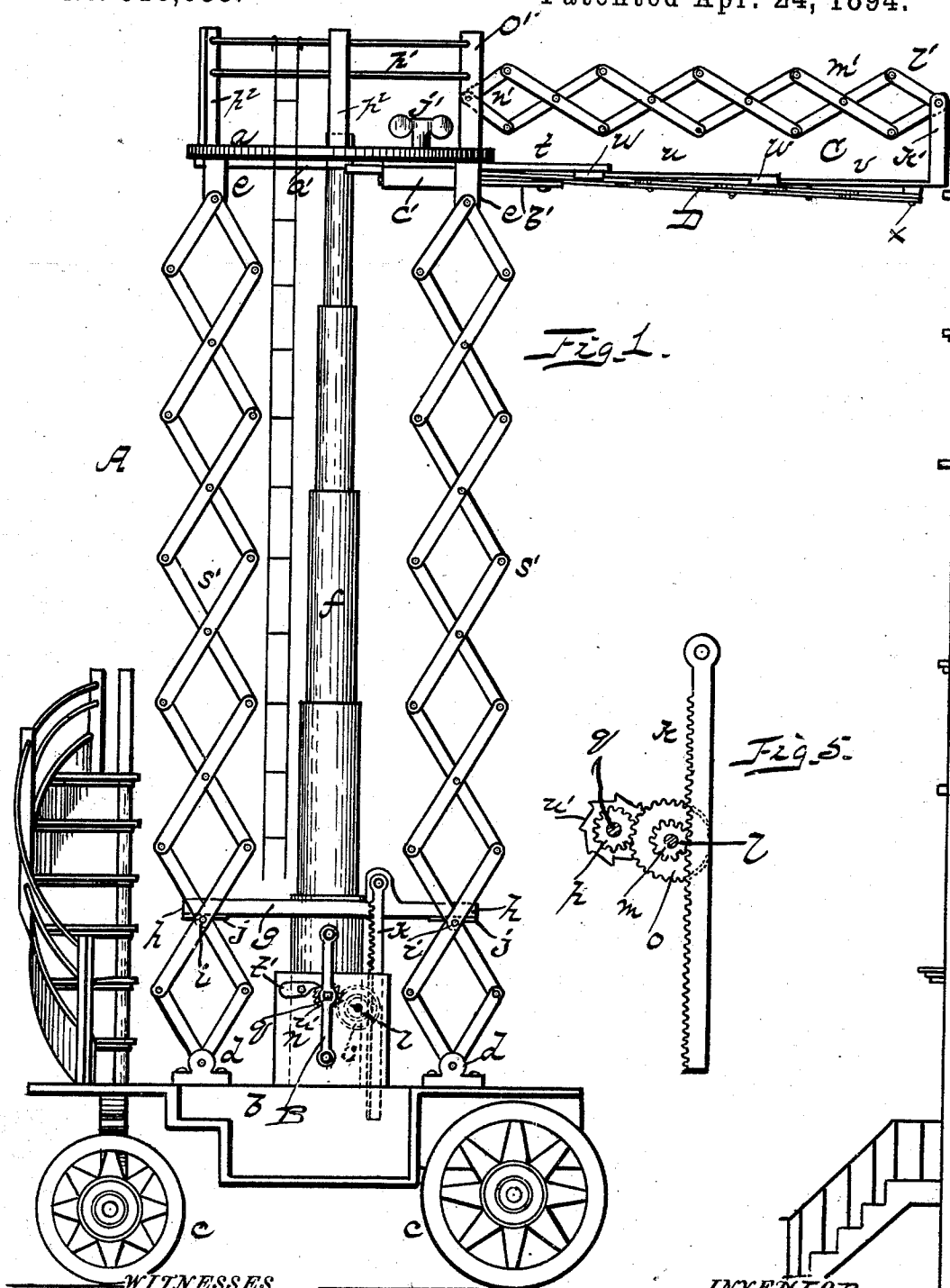
(No Model.)

2 Sheets.—Sheet 1.

J. J. STEUR.
PORTABLE FIRE ESCAPE.

No. 518,633.

Patented Apr. 24, 1894.



WITNESSES
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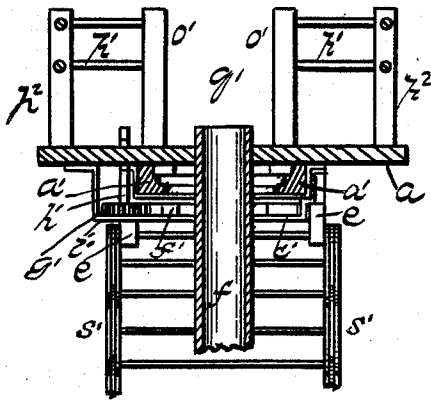
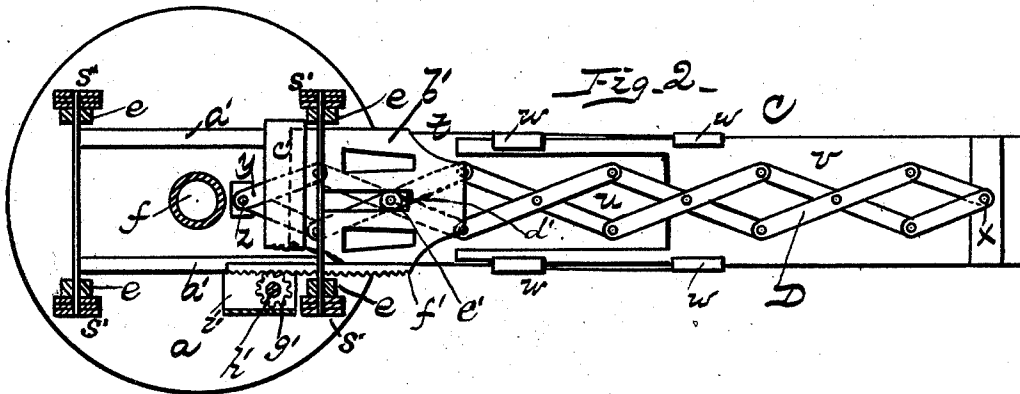


Fig. 3.

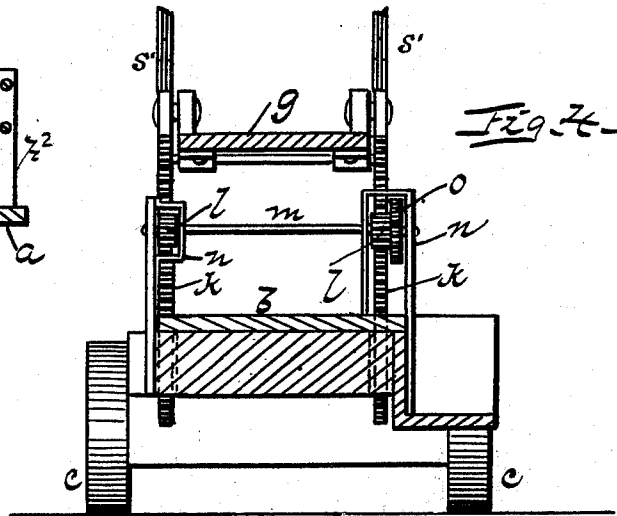


Fig. 4.

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UNITED STATES PATENT OFFICE.

JOHN JACOB STEUR, OF ALBANY, NEW YORK.

PORTABLE FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 518,633, dated April 24, 1894.

Application filed July 24, 1893. Serial No. 481,284. (No model.)

To all whom it may concern:

Be it known that I, JOHN JACOB STEUR, a citizen of the United States, residing at Albany, in the county of Albany and State of New York, have invented certain new and useful Improvements in Portable Fire-Escapes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention has relation to improvements in fire escapes, of the class wherein the lazy tongs are employed for raising and lowering a platform; and it consists in the novel construction, arrangement, and combination of parts of which it is composed, all as will be hereinafter more fully described and particularly pointed out in the appended claims.

The annexed drawings, to which reference is made, fully illustrate my invention, in which—

Figure 1, represents a side view of my improved fire escape. Fig. 2, is a horizontal sectional view, showing the under side of the bridge. Fig. 3, is a vertical detail sectional view of the upper portion of the escape. Fig. 4, is a detail sectional view of the lower portion of the escape and Fig. 5, is a detail view of the rack *k* and pinion *p*.

Referring by letter to the accompanying drawings, *A* designates the fire escape, composed of an upper platform *a*, and lower platform *b*, which is mounted on transporting wheels *c, c*, whereby the fire escape can be carried from place to place. Interposed between the upper and lower platforms *a* and *b*, are arranged two sets of lazy tongs; the lower ends of which are pivoted to the casting *d*, secured on the lower platform, while the upper ends of the lazy tongs are pivoted to brackets *e*, secured to the under side of the upper platform. Centrally arranged between the upper and lower platforms is a bracing tube *f* composed of sections, each section being smaller, in cross section, than the other section, and telescope and the same provide means, whereby a hose may be passed vertically through said tube from bottom to top thereof. Surrounding this tube and arranged between all the lazy tongs is a platform *g*, which is secured at

both ends *h, h*, to the cross rounds *i, i*, of said lazy tongs, by casting *j, j*, secured to the under side of the platform *g*. On each side of the platform *g*, is secured two vertical toothed bars *k, k*; the teeth of which engage or mesh with a pinion *l, l*; on a short shaft *m*, having its journals in housings *n* secured to the sides of the lower platform. On this short shaft *m* is secured a larger pinion or gear wheel *o*, which latter revolves with the pinions *l, l*, and meshes with a small pinion *p*, secured on the operating shaft *q*, also journaled in said housing. This latter shaft is also provided with a toothed or ratcheted wheel *u'*, which engages a pawl *t'* pivoted on the face of said housing.

B, represents the operating or double cranked lever which is secured to the end of the operating shaft *q*, and is turned in operating the device as hereinafter explained.

C, indicates a rescuing bridge designed to straddle the space between the fire escape when in position for use and the wall of a building. This bridge *C*, is composed of one or more sections, being three sections or parts, shown herein, said sections are lettered *t, u*, and *v*, and the same slide upon one another. The inner section is constructed with inwardly bent side flanges *w*, for guiding the central section in its horizontal movement back and forth, and the central section also has the guide flanges for guiding the outer section in its movement.

D, represents a lazy tong which is horizontally arranged beneath the bridge and a portion of the top platform. The outer ends of these lazy tongs are pivoted at *x*, to the under side of the forward portion of the bridge, while the opposite end *y*, is pivoted at *z*, to the under side of the top platform. There is also secured to the under side of this platform two side guide strips *a'*, which support and guide the inner section of the bridge. Beneath the bridge is arranged a horizontal sliding skeleton frame *b'* which has its bearing in plates *c'* secured to the under side of the top platform. This frame *b'* has a sliding movement and is provided with a slot in which the pivot *e'* of the lazy-tongs *D*, has its play in its outer and inner movement beneath the bridge. On one side or edge of this latter frame is secured a toothed horizontal

bar f' which meshes with a pinion g' , horizontally arranged on a vertical shaft h' journaled in bearing or plates i' , secured to the under side of the top platform. This shaft
 5 has a square upper end to receive a key j' , by which said shaft is revolved—or a crank handle may be employed for this purpose, if desired. At the outer or extended end of the bridge are two posts or standards k' , to the
 10 upper end of which is pivoted the forward end l' , of each lazy tong m' , m' , the inner end n' , of which is pivoted to a post o' on the upper face of the top platform. The top platform is provided with guard rails p' secured
 15 to posts p^2 leaving spaces q' q' for the passage of persons using the escape.

The lower platform is provided with a winding stairs which may be used by persons leaving the top platform when lowered, or
 20 the rounds connecting the lazy tongs in pairs can be readily used as a ladder and persons may descend from the top platform without the latter being lowered.

Having thus described the different parts
 25 of which my fire escape is constructed, I will now proceed and explain its operation.

When it is desired to raise or elevate the top platform for rescuing persons from a burning building, the operator simply grasps
 30 the cranked lever B, and turns the same in one direction and through the medium of the pinions and gear and racks meshing therewith, the inner platform g , is raised a short distance, which latter acts upon the lazy
 35 tongs s' , causing them to extend vertically and carry the top platform upwardly at the same time the central tubular support is also extended with said top platform until the desired height is reached, when the pawl i , will
 40 engage the ratchet u' , and prevent the shaft from turning, thus holding the lazy tongs s' , platform g , central bracing tube and the top platform in a rigid position, after which the bridge is projected or extended toward a
 45 building, by the operator turning the key and through the medium of the pinion g' , and toothed bar f' , and lazy tongs D, cause the sections t , u , v , of the bridge to move and slide upon one another laterally or in a direction
 50 from the top platform; the lazy tongs m' , on each side of the bridge being extended at the same time and forming side guards or fence for sides of said bridge. Thus it will be seen that persons may walk from window
 55 or door of a burning building upon the bridge and land safely upon the top platform and if desired may descend to the lower platform and ground by the rounds connecting the lazy tongs, but when it is desired to lower the
 60 top platform, the bridge is withdrawn by turning the key j' , in a reverse direction, the pinion g' , operating on the tooth bar f' , causes the skeleton frame, lazy tongs, bridge sections and guard rails or fence of said bridge to travel in-
 65 wardly; the sections folding beneath the top platform and the lazy tongs m' , folding close to

the rails of said top platform, after which the operator turns the double crank handle in a reverse direction, and through the medium of the pinions and toothed side bars k , k ,
 70 the platform a , is caused to descend, thereby causing the lazy tongs, s' , s' , to act and bring down the top platform; the central tube telescoping at the same time, and said platform comes about on a level with the top step of
 75 the winding stairs when the persons can readily walk from said platform, upon the stairs and down to the ground, and a fire escape as herein described is easily and quickly thrown in and elevated to position, and it is durable
 80 as well as inexpensive to manufacture.

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

1. The combination with the lower platform and duplex system of lazy tongs the intermediate platform attached to said lazy tongs the
 85 side toothed bars the pinions meshing with the teeth of these bars, crank handle and top platform all substantially as described.

2. The combination in a portable fire escape, of the sets of lazy tongs pivoted at their lower ends to the lower platform and at their upper ends to the under side of the top platform, the central tubular sectional brace connecting the lower and top platform and stairs
 90 mounted on the lower platform; the intermediate platform pivoted to the lazy tongs, toothed bars, pinions, hand lever and pawl engaging the ratchet wheel; the top platform provided with the railing and sectional bridge
 95 and means for operating the bridge back and forth, all substantially as described.

3. In a portable fire escape the combination of the lower, top, and intermediate platforms, the toothed bars and pinions, ratchet wheel,
 100 pawl and crank handle, the tubular central sectional brace connecting the top and bottom platforms to one another, the stairs arranged on the lower platform and the bridge composed of sections, each section sliding
 105 upon the other section and operated substantially as described.

4. In a portable fire escape the combination with the lower, top and intermediate platforms and means as described for lowering
 110 and raising the top platform and the tubular sectional brace connecting the top and bottom platforms, of the bridge composed of sections each section sliding upon the other, the lazy tongs beneath this bridge and connected
 115 at one end thereto and at the opposite end to the under side of the top platform, the sliding skeleton frame connected to the lazy tongs and leaving the side toothed bar, the pinion meshing with this bar and the key en-
 120 gaging the shaft on which the pinion turns, and the lazy tongs forming a rail or fence for each side of the bridge, all substantially as described.

5. The within described improvement in
 130 portable fire escapes consisting of the lazy-tongs interposed between the upper and lower

platforms and pivoted thereto, both top and bottom, the central sectional tubular brace, serving the double purpose as a brace and a tube for the passage of fire hose, the intermediate platform connected to the lazy-tongs at each end, the toothed bars secured to each side or edge of this latter platform, the pinions engaging said teeth in said bars, ratchet wheel on the shaft of one of these pinions, pawl and double crank handle for operating the device, the stairs secured on the lower platform and the bridge composed of horizontally sliding sections; the lazy tongs for operating these sections, skeleton frame arranged beneath the top platform and pivoted to the lazytongs and the tooth bar secured to the skeleton frame and the pinion and key for operating the bridge all substantially as described.

6. In a portable fire escape a platform interposed between the top and bottom platforms thereof and pivoted to lazytongs at each end and suitable gearing for operating said intermediate platform, whereby the top plat-

form is raised and lowered all substantially as described.

7. In a portable fire escape of the class herein-described, the combination with the lazy tongs pivoted both at the top to the upper platform and at the bottom to the lower platform or base, the central tubular brace secured to the lower base or platform and at its upper end to the top platform, the intermediate platform, pivoted to the lazy tongs, having the side toothed bars and pinions, ratchet wheel, pawl and double crank handle, the bridge composed of sectional pieces sliding upon one another and provided with the side rails, lazy tongs, side toothed bar, pinion for operating this bar and key all substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN JACOB STEUR.

Witnesses:

A. N. THOMPSON,
E. THOMPSON.