L. Wahle,

Fire Escape.

No. 105,280. Patented July 12. 1870.

Fig. 1.

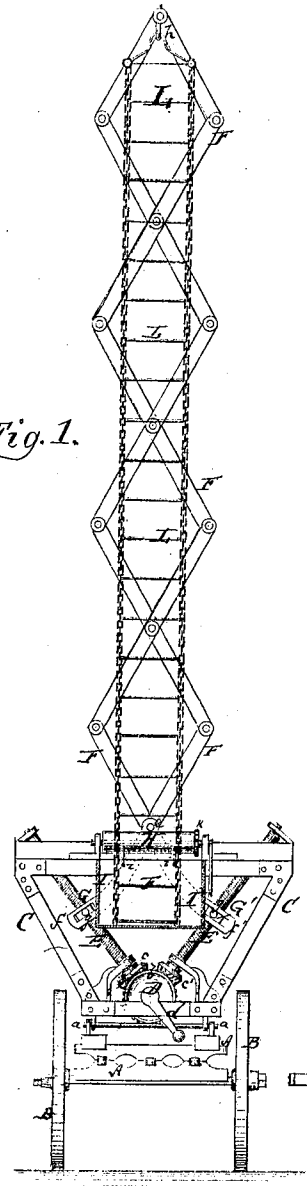
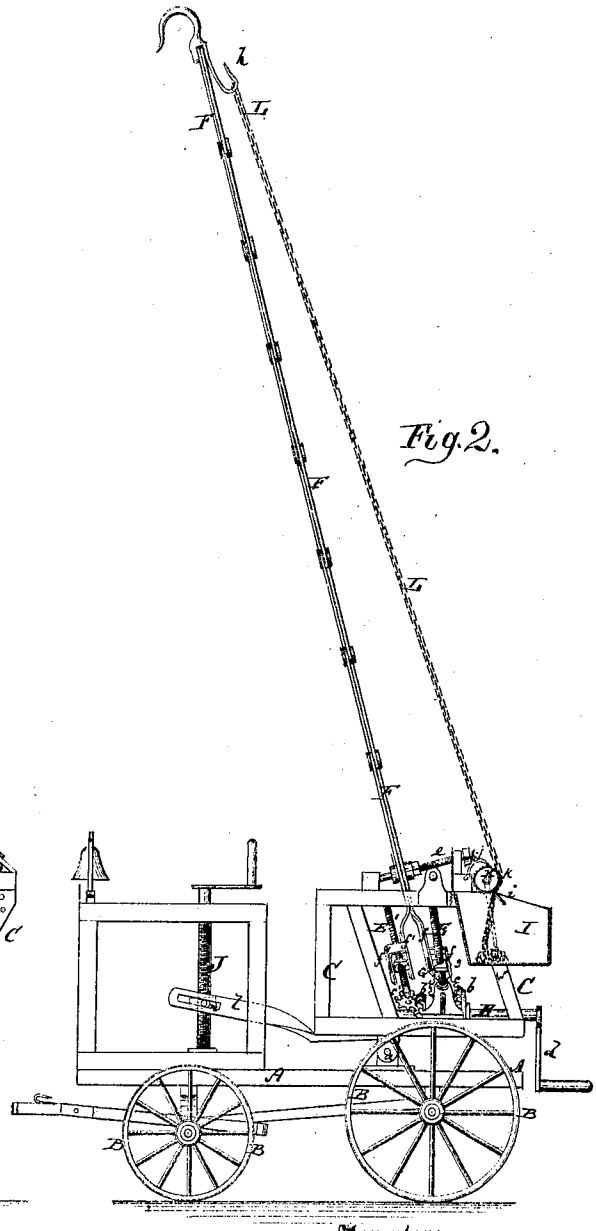


Fig. 2.



Witnesses:

Chas. Wida

S. S. Mabee

Inventor:

L. Wahle

Per

Attorneys.

UNITED STATES PATENT OFFICE.

LORENZ WAHLE, OF DAVENPORT, IOWA.

IMPROVEMENT IN FIRE-ESCAPES.

Specification forming part of Letters Patent No. **105,280**, dated July 12, 1870.

To all whom it may concern:

Be it known that I, LORENZ WAHLE, of Davenport, in the county of Scott and State of Iowa, have invented a new and Improved Fire-Escape; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification.

Figure 1 represents a rear elevation of my improved fire-escape. Fig. 2 is a side elevation, partly in section, of the same.

Similar letters of reference indicate corresponding parts.

This invention relates to a new fire-escape of that class in which lazy-tongs for elevating and lowering a flexible ladder are employed.

The invention consists in the novel construction of screw-power for operating the said jointed frame; also, in the application of a device for adjusting the jointed frame and ladder in any desired inclination; and, finally, in the apparatus for stretching the chain ladder, all as hereinafter more fully described.

A in the drawing represents the main frame of the escape. The same is supported by four wheels, B B, which are hung on their axles in the ordinary manner. The fire-escape is thus supported on a wagon in the usual manner.

C represents a frame of suitable form and size, pivoted at its lower end, by pins *a a*, to the frame A near to the rear part of the same. In the lower part of the frame C are the bearings of a longitudinal shaft, D, which carries two bevel-gear wheels, *b b'*, as shown. These wheels mesh respectively into the teeth of pinions *c c'*, that are mounted upon the lower ends of inclined shafts E E', as shown. The shafts E E' have their bearings also in the frame C, and are hung in inclined positions, extending from the middle of the frame C upward and outwardly, as shown in Fig. 1. A crank, *d*, is mounted upon the shaft D, so that the same is thereby revolved. When the shaft D is turned it will rotate the shafts E E' in opposite directions. Screw-threads are cut into the shafts E E', as indicated in the drawing, the said threads being arranged in opposite directions.

F is a jointed frame, composed of two intersecting rows of parallel levers, pivoted together at their extremities and centers, such a frame being generally known under the name of "lazy-tongs." The frame F is, at its lowest joint, pivoted by a strong bolt, *e*, to the frame C. The lower ends of the lower levers, *f f'*, of the lazy-tongs are bifurcated and slotted. Between their forked ends are fitted two nuts, G G', respectively. From the ends of each nut project pins *g* through the slots of said levers, as shown. The nuts G G' work, respectively, on the screw-shafts E E'. As the latter are turned they will cause the nuts to work up and down on them, and to thereby carry the levers of the lazy-tongs into a more horizontal or perpendicular position. The slots in the levers *f f'* are for the purpose of making up for the varying distances of the nuts from the bolt *e* during the adjustment of said nuts. It is thus evident that the frame F will be extended or contracted by revolving the shaft D.

A flexible ladder, L, is secured to a hook, *h*, at the upper end of the frame F. The lower end of the ladder can, at any suitable height of the frame F, be secured to arms *i i*, that project from a horizontal drum, H, hung transversely in the frame C. By turning the said drum the ladder can be stretched, and is then held stretched by means of a pawl, *j*, catching into a ratchet-wheel, K, that is mounted upon the said drum. A box, I, is suspended from the frame C under the drum H, to receive the loose end of the ladder.

From the front end of the frame C projects forward a slotted bifurcated arm, *l*, which embraces and holds a nut, *m*, that is fitted around a vertical screw-shaft, J. This shaft J is hung in the main frame A. By revolving it the nut *m* will be raised or lowered, swinging thereby the frame C on its pivot *a*. The inclination of the ladder and frame F can thus be regulated at will.

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

1. The inclined screw-shafts E E', geared together with the shaft D, and working the nuts G G' in the slotted forked ends of the levers *f f'*, substantially as herein shown and

described, for the purpose of extending or contracting the jointed frame F, as set forth.

2. The frame C, pivoted at its under side to the frame A, and provided with the bifurcated arm *l*, connected with the nut *m* on the vertical screw-shaft J, all arranged as shown and described.

3. The drum H, provided with the radial teeth or arms *i*, relatively arranged to the jointed frame F and ladder L, for the purpose specified.

LORENZ WAHLE.

Witnesses:
WILLIAM SCHÖNDELEN,
WILLIAM S. NYTON.