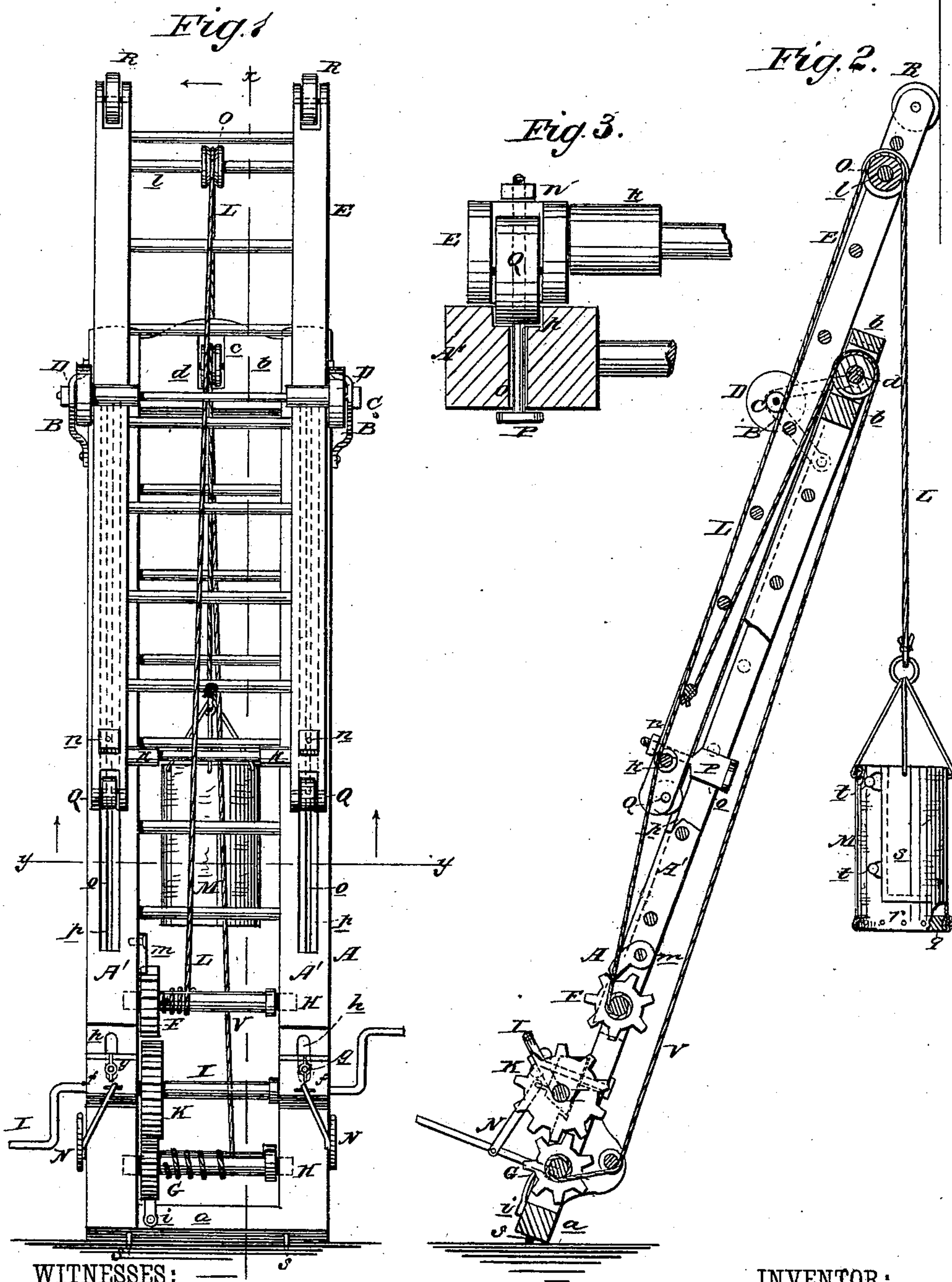


M. SICHEL.
Fire-Escape Ladders.

No. 226,798.

Patented April 20, 1880.



WITNESSES:

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UNITED STATES PATENT OFFICE.

MICHEL SICHEL, OF CAPE GIRARDEAU, MISSOURI.

FIRE-ESCAPE LADDER.

SPECIFICATION forming part of Letters Patent No. 226,798, dated April 20, 1880.

Application filed November 20, 1879.

To all whom it may concern:

Be it known that I, MICHEL SICHEL, of Cape Girardeau, in the county of Cape Girardeau and State of Missouri, have invented a new and Improved Fire-Escape, of which the following is a specification.

Figure 1 is a front elevation of the device. Fig. 2 is a sectional side elevation on line *x x*, Fig. 1. Fig. 3 is an enlarged sectional view on line *y y*, Fig. 1, looking upward.

Similar letters of reference indicate corresponding parts.

This invention relates to that class of devices that have for their object the rescuing of persons from burning buildings.

The invention consists of an adjustable windlass, whereby the ladder may be extended and the suspended platform be elevated and lowered; of a novel construction of ladder side pieces; of brackets, rollers, and bolts for holding the stationary and extension parts together and facilitating their relative adjustment, and of an improved platform for affording a direct means of escape from burning buildings.

In the drawings, *A' A'* are the side pieces of the stationary or lower ladder, *A*, which side pieces are held together at the bottom by a stout cross-piece, *a*, and at the top by a cross-piece, *b*, in the central socket, *c*, of which is fixed a pulley, *d*, revolving on a pin set transversely across the said socket *c*. Two iron brackets, *B B*, fixed one on each side of the lower ladder, *A*, support a shaft, *C*, on which are two flanged rollers, *D D*, that serve to prevent lateral movement of the upper or extension ladder, *E*, and to steady it in its upward movement.

In the lower part of the ladder *A* two rollers and cog-wheels, *F* and *G*, are set on shafts *H H*, that stretch across from one side piece, *A'*, to the other, and between these rollers and cog-wheels *F* and *G* is the revolving crank-shaft *I*, provided with cog-wheel *K*, forming a windlass that is journaled in boxes *f* that are adjustable by means of the thumb-screws *g*, which work in the slots *h* in the sides *A' A'*.

The upper roller and cog-wheel, *F*, has made fast to it one end of the rope *L*, from which is

suspended the platform or bucket *M*, and the lower roller and cog-wheel, *G*, has made fast to it the rope *V*, that has its other end made fast to a round of the extension-ladder *E*.

As shown in the drawings, the cog-wheel *K* of the windlass is in gear with the cog-wheel *G*, so that by turning the crank-shaft *I* the extension-ladder *E* may be elevated and be held in position by the pawl *i*, that engages in the teeth of the ratchet *G*.

By an upward movement of the levers and arms *N*, the thumb-screws *g* being loosened, the boxes *f*, carrying the crank-shaft *I* of the windlass, can be elevated so as to throw the cog-wheel *K* in gear with the cog-wheel *F*, whereby the platform or bucket *M* may be raised or lowered by means of the rope *L*, that bears upon the roller *k* in the bottom of the ladder *E* and passes over the sheave *O*, that is fixed on a horizontal rod, *l*, near the top of the said ladder *E*, and the pawl *m* will hold the said platform or bucket *M* in position by engaging in the ratchet or cog wheel *F*.

The extension or upper ladder, *E*, is held to the lower ladder, *A*, by the flattened bolts *P* and nuts *n*, the flat shanks of said bolts *P* passing through the longitudinal slots *o*, that extend through the side pieces, *A' A'*, of the lower ladder, *A*, from front to rear, and the round part of the bolts passing through the side pieces of the ladder *E*, and having the nuts *n* turned on them.

The lateral movement of the lower end of the ladder *E* is prevented and its upward movement facilitated by the rollers *Q*, that are set in the ends of the side pieces of the said ladder *E* and run in the grooves *p*, in the center of which the slots *o* are formed. The rollers *R*, fixed in the upper ends of the side pieces of the ladder *E*, serve to support these ends against the walls of the building against which they may be placed and to facilitate the elevation of the device.

The spikes *S* in the bottom of the ladder *A* are to prevent its slipping.

The platform or bucket *M* is composed of a circular wooden bottom, *q*, intended to be large enough to accommodate several persons, and

of a cylinder, *r*, made of stout canvas or other
suitable material, the bottom *q* being held in
place with nails or other suitable fastenings,
and a door, *s*, being provided for the bucket or
5 platform *M* and secured with buttons *t*.

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

1. The crank-shaft *I*, cog-wheel *K*, adjusta-
10 ble boxes *f*, and levers and arms *N*, in combi-
nation, substantially as herein shown, and for
the purpose described.

2. As a means of holding adjustably together
the ladders of a fire-escape, the brackets *B B*,

shaft *C*, and flanged collars *D D*, arranged and 15
operating substantially as herein shown and
described.

3. As a means for holding adjustably to-
gether the ladders of a fire-escape, the bolts
and nuts *P n*, rollers *Q*, and the slots and 20
grooves *o p* in the side pieces, *A' A'*, of the
ladder *A*, substantially as herein shown and
described.

MICHEL SICHEL.

Witnesses:

THEODORE BOCK,
EDWARD H. ENGELMANN.