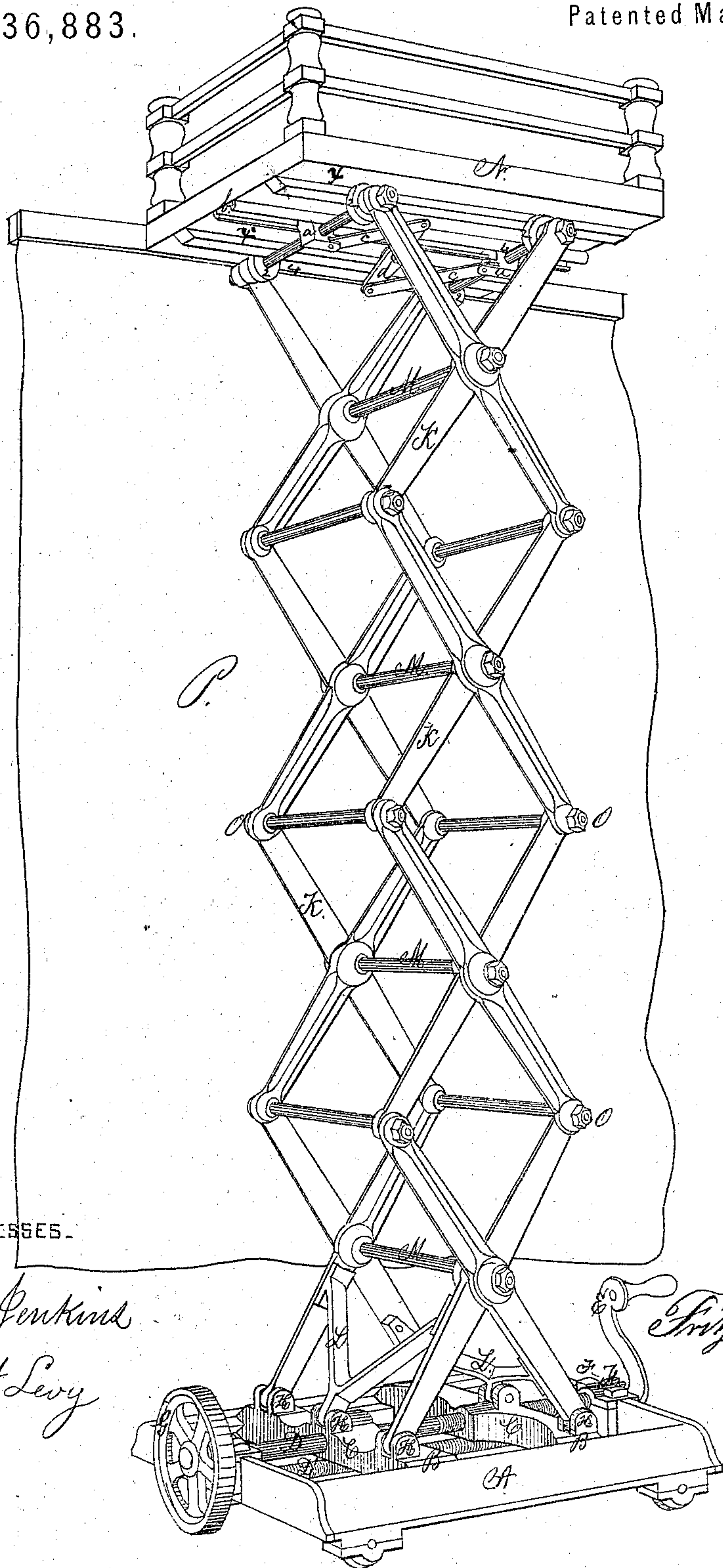


**F. A. L. VON EHREN.**  
**Fire Escapes.**

No. 136,883.

Patented March 18, 1873.



WITNESSES.

INVENTOR.

H. A. Jenkins  
E. H. Levy

Fritz R. L. von Ehren.



# UNITED STATES PATENT OFFICE.

FRITZ A. L. VON EHREN, OF NEW ORLEANS, LOUISIANA.

## IMPROVEMENT IN FIRE-ESCAPES.

Specification forming part of Letters Patent No. 136,883, dated March 18, 1873.

*To all whom it may concern:*

Be it known that I, FRITZ A. L. VON EHREN, of the city of New Orleans and State of Louisiana, have invented a new, useful, and Improved Elevator; and I hereby declare the following to be a full, clear, and exact description thereof, reference being had to the drawing annexed constituting a part of the same.

This improvement relates to an apparatus by means of which any material may be raised to almost any desired height in a very short space of time, and the mechanical agencies by which this result is accomplished are a series of levers, technically known as "lazy-tongs," which are operated by means of any motor which may possess sufficient power to operate the machine and raise the weight to be placed upon the platform. It is more especially designed for the following purposes, but it may be applicable to many others not herein enumerated: First, for the elevation of articles or persons to any desired height in public places of amusement; second, to be rendered available as a machine for hoisting materials in the construction of buildings, for steamships, steam-boats, or sailing vessels; third, for the elevation of firemen at burning buildings, where it would be otherwise impracticable to attain the height desired, for the purpose of extinguishing the fire; fourth, it may be used as a fire-escape, as it can be elevated near a building in a very short space of time, and hence it is well adapted as an excellent life-saving apparatus; fifth, it is especially adapted for the use of photographers, for the purpose of taking bird's-eye views of cities and surrounding countries; but

My improvement will be more clearly understood by referring to the drawing, which is a perspective view of the apparatus complete in all its parts.

A is the bed-plate mounted upon wheels which will enable the machine to be moved from one place to another with the greatest facility either by hand or animal power. B B are slides connected by the cross-beams C, through the center of which, in metal nuts, work in opposite directions the screws D D' operated by the crank E and pinions F upon the ends of the screws, opposite to the ends upon which is placed the fly-wheel or pulley G. Upon the said slides B and cross-beams C

are the raised pillow blocks or journals H, through which pass the shafts I, and upon which the lower end of the lower levers have their bearings. All the levers are represented by K. L are braces to keep the lower levers from working inwardly upon the several shafts. M are the shafts or connecting rods, to which all the levers are pivoted, as clearly shown. N is the platform, on which must be placed whatever it is intended to elevate. On the upper section of the toggle-jointed levers K K are secured axles 4 4. At the center of these axles 4 4 are sliding blocks *a a*, while at their ends are rollers 2 2. On these sliding blocks *a a* and rollers 2 2 the platform N rests, and is held in a central position over the levers by means of groove *b*, in which the sliding blocks *a a* travel, and guide-rods *x x'* against the rollers 2 2 have a lateral bearing. This groove *b* is at the center of the lower face of the base of the platform, and the rods *x x'* are at the opposite sides thereof. The slides *a a* are connected by rods *c* to the ends of a central bar, *d*, which is pivoted in its center to the under side of the platform.

It will be perceived by the drawing that the inside face of the lower levers which face each other are flat, and have the connecting-rods M running from and connecting the four levers in such a manner that they pass through the center and ends of the said levers, being thereto firmly and securely fixed by means of the nuts O, and thus they form the first connecting-link of said ladder, the extreme ends being attached to the aforesaid bed-plate and moving slide. A sufficient number of levers are connected together to attain, according to the length thereof, the desired height when elevated. All the levers when not elevated rest upon each other.

The screws D aforesaid have their bearings in journal-boxes upon the bed-plate A aforesaid, and may be worked by the crank or the pulley placed thereon either to the right or to the left, according as it is desired to raise or lower the platform.

It will be clearly understood that as the screws are operated all the levers and the platform are raised gradually and simultaneously by means of the forward action of the slides B aforesaid; and, furthermore, through the combined action of the screw-and-lever power, a



solid and firm elongated ladder is produced which can be raised or lowered at pleasure.

My improvement may be constructed of wood or metal, or of both combined, as the purposes for which it is intended may indicate as the most suitable.

When my device is used as a fire-escape a blanket, P, may be suspended from the top to the ground upon the side toward the fire, and, by being kept wet, protect the machine from fire, if made of wood, while the same is being operated.

A sliding platform or stage, R, is placed upon the top platform to be made available in communicating with a building from the machine when elevated closely thereto.

It is clearly obvious that the screws D, instead of being placed one directly over the other, as shown on the drawing, might be placed one at each side of the bed-plate and running directly through the cross-beams and operated by means of suitable gearing—for instance, a central pinion working into spur-wheels upon the proximate ends of the screws. In that case it would be necessary to have the

one a right-hand and the other a left-hand screw. The lower ends of the levers to any number desired might also be attached to shafts running through journal-boxes placed upon the said cross-frames.

Having described my invention, what I desire to secure by Letters Patent is the following:

*Claims.*

1. In combination with the levers K the sustaining braces L L, for the purpose of making a compact support for elevators of this class.

2. The pivoted central bar *d*, links *c c*, sliding blocks *a a*, groove *b*, rods *x x'*, and rollers 2 2 2 2, whereby the platform N is held in central position over the levers K, substantially as described.

3. In combination with the apparatus above described, the fire-protection blanket P, for the purposes set forth.

FRITZ A. L. VON EHREN.

Witnesses:

H. N. JENKINS,  
E. H. LEVY.