No. 610,041. Patented Aug. 30, 1898.

D. FRIEDHEIM.

FIRE ESCAPE.

(Application filed Nov. 8, 1897.

(No Model.)

FIG. 1.

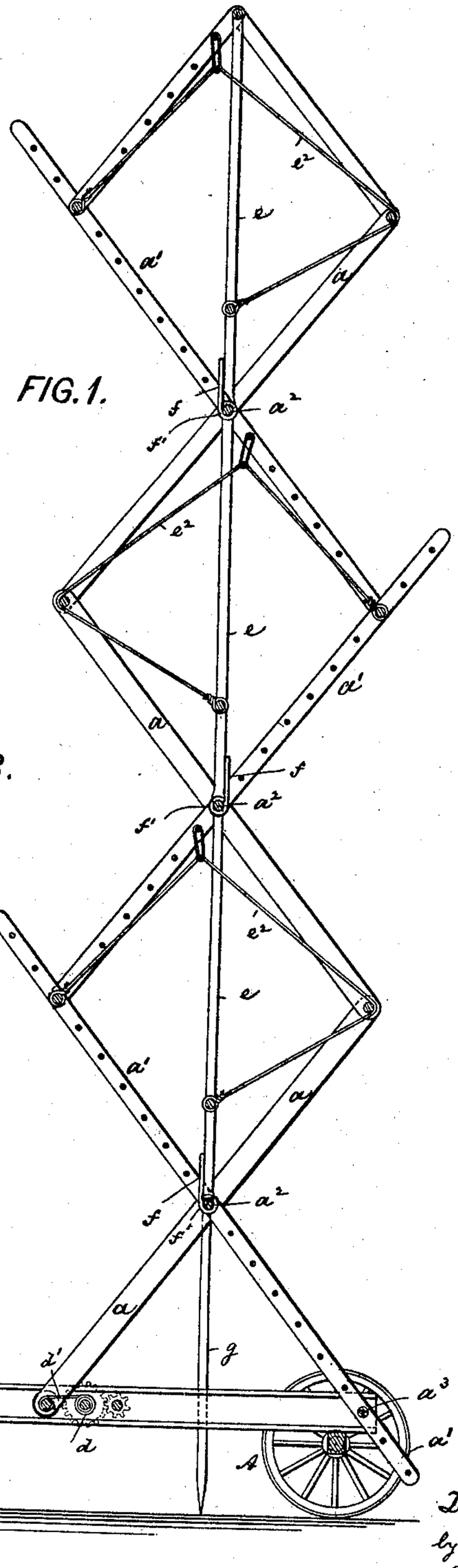


FIG. 2.

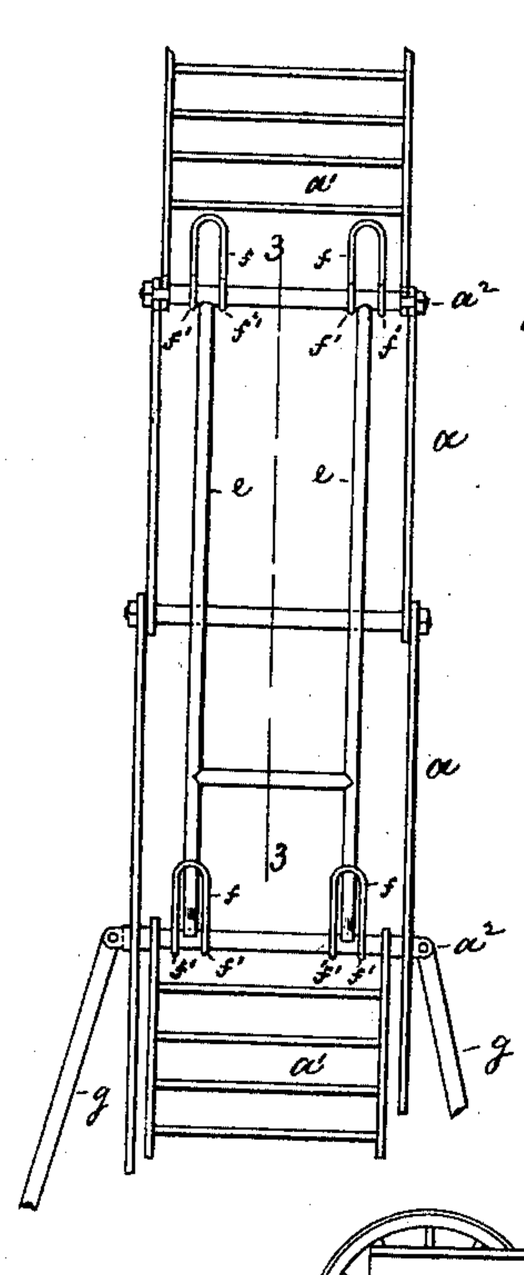
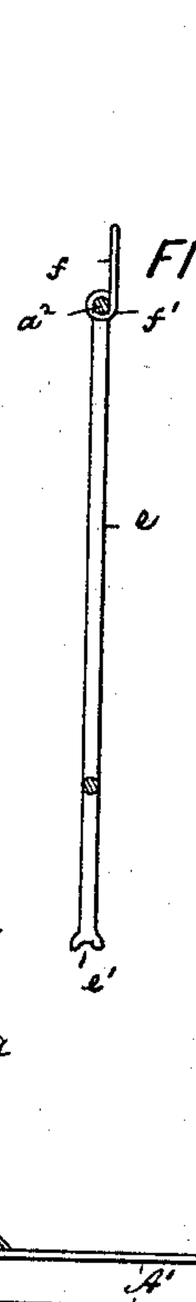


FIG. 3.



Witnesses:

John Becker

William Miller

Inventor:

David Friedheim

by his attorneys

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UNITED STATES PATENT OFFICE.

DAVID FRIEDHEIM, OF NEW YORK, N. Y.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 610,041, dated August 30, 1898.

Application filed November 8, 1897. Serial No. 657,742. (No model.)

To all whom it may concern:

Be it known that I, DAVID FRIEDHEIM, of New York city, county and State of New York, have invented an Improved Fire-Escape, of which the following is a specification.

This invention relates to a fire-escape of the class described in Patent No. 275,816, granted to me April 17, 1883, and composed of sets of vertically-extensible ladders opening in the manner of lazy-tongs and held in their extended position by means of swinging upright rods.

The object of the present invention is to increase the stability and facilitate the manipulation of the fire-escape.

In the accompanying drawings, Figure 1 is a vertical cross-section of my improved fire-escape; Fig. 2 a side view of a portion of the same, and Fig. 3 is a detail view.

a a' are the members of three (more or less) connected pairs of lazy-tongs, each pair being composed of a ladder *a'* and of a frame *a*, pivotally connected thereto at the central rung a^2, which is made revoluble. The lowermost ladder *a'* is pivoted above its lower end by a fixed pivot a^3 to the supporting wheeled truck A near one end thereof and is longer than the lowermost frame *a*, so that it projects below the truck-body and can be readily mounted from the ground. The lowermost frame *a* is guided at its lower end within the grooved side bars A' of truck A and is connected to a winding-drum *d* by a rope *d'*. Thus as the rope is wound upon the drum the frame *a* is drawn with its lower end toward ladder *a'*, and in this way the entire system of ladders is raised, while when the rope is slackened or unwound the ladders will collapse.

By attaching the ladder *a'* to the truck and making the frame *a* alone movable, in contradistinction to making both the frame and ladder movable, the rigidity of the structure is greatly increased.

From the central rungs a^2 depend swinging rods *e*, having notched lower ends *e'*, adapted to engage the central rungs next below when the structure is raised, while they are swung sidewise by ropes e^2 when the structure is lowered.

Each of the central rungs is provided in vertical alinement with rods *e* with U-shaped guards *f*, the two shanks of which are coiled around the rung at the sides of the rods *e*, as at *f'*, so as to form circular abutments *f'*, Fig. 2, that prevent lateral displacement of the rods along the rungs, the two ends of the guards *f* being coiled around the rungs and forming continuous circular abutments upon each side of the rod *e*. Thus these abutments prevent lateral displacement of the rods *e* in any position of the rung.

When the ladders are raised, the lower notched ends of rods *e* will engage the rungs a^2 between the shanks of guards *f*, and thus the entire structure will be maintained in its upright position. To collapse the structure, the lowermost rung a^2 is partly rotated by a brace *g*, when all the several rods *e* will be swung aside to release the rungs, and then the ladders may be lowered by revolving the drum.

What I claim is—

A fire-escape composed of a series of frames and ladders, revoluble rungs for pivotally connecting the same, a series of depending stay-rods, and U-shaped guards having coiled ends that are wrapped around the rungs at both sides of the stay-rods and form continuous lateral abutments, substantially as specified.

DAVID FRIEDHEIM.

Witnesses:

F. v. BRIESEN,

WILLIAM MILLER.