

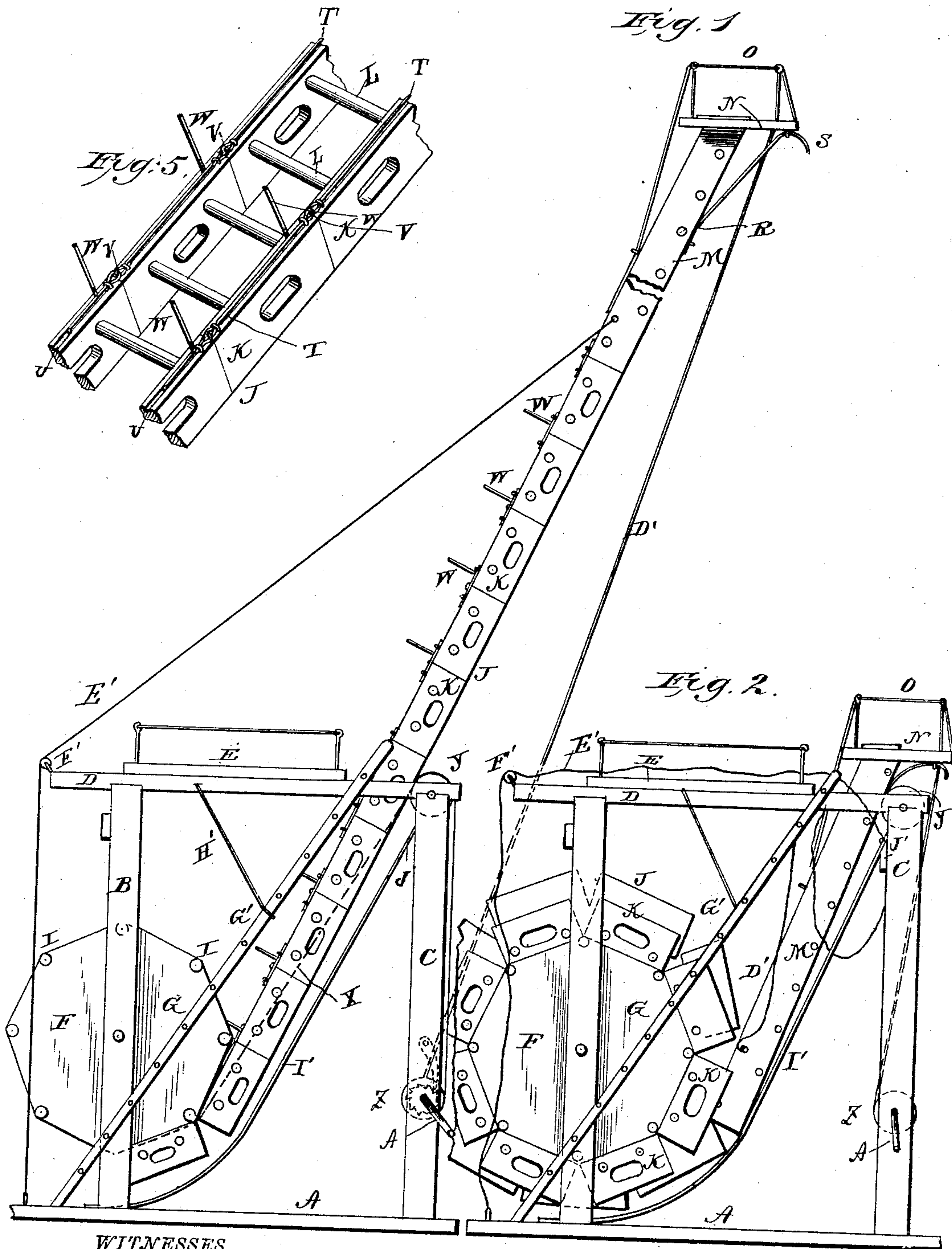
(No Model.)

2 Sheets—Sheet 1.

L. SEES.
FIRE ESCAPE.

No. 328,345.

Patented Oct. 13, 1885.



WITNESSES

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Gunnett Jones

INVENTOR

Louis Sees,
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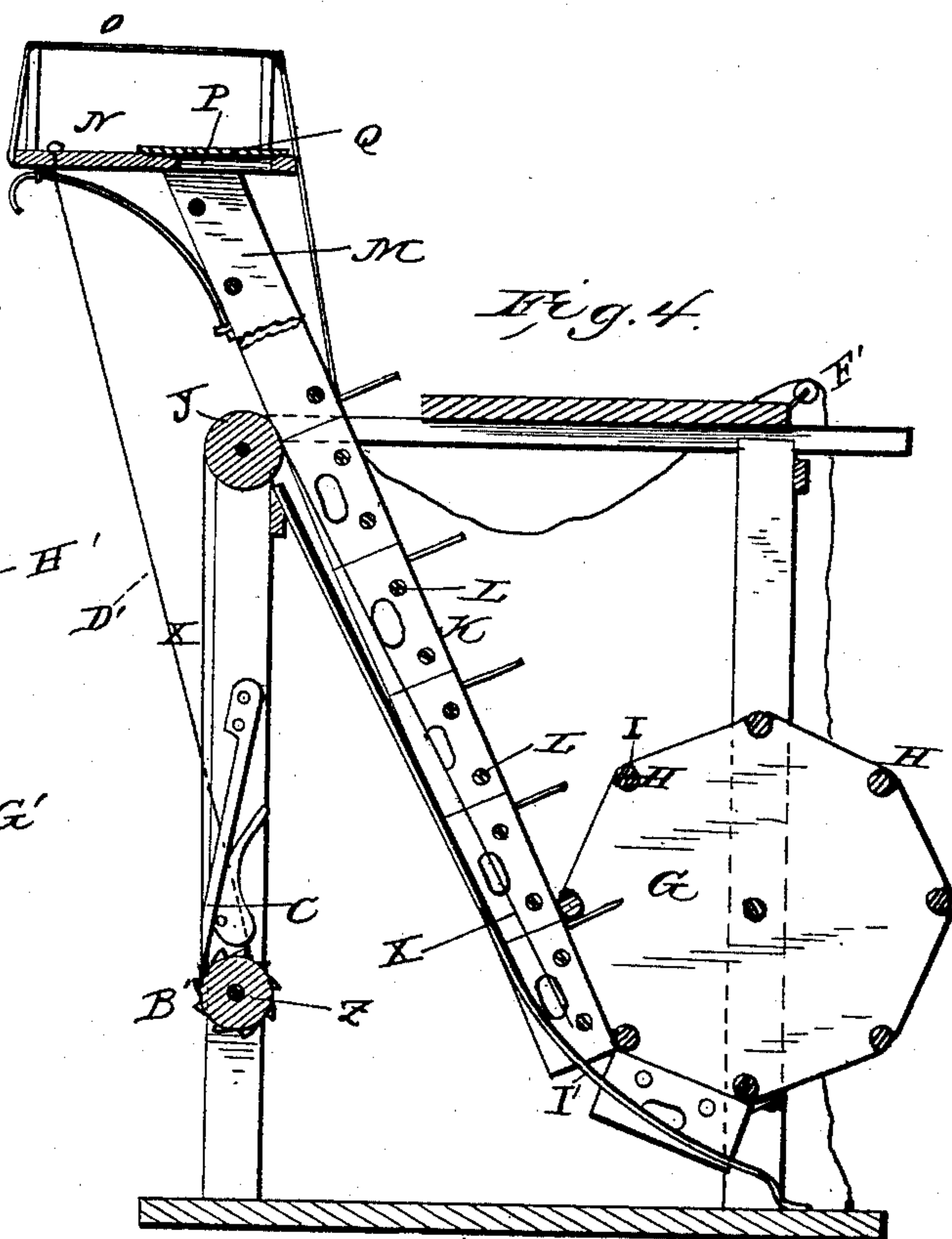
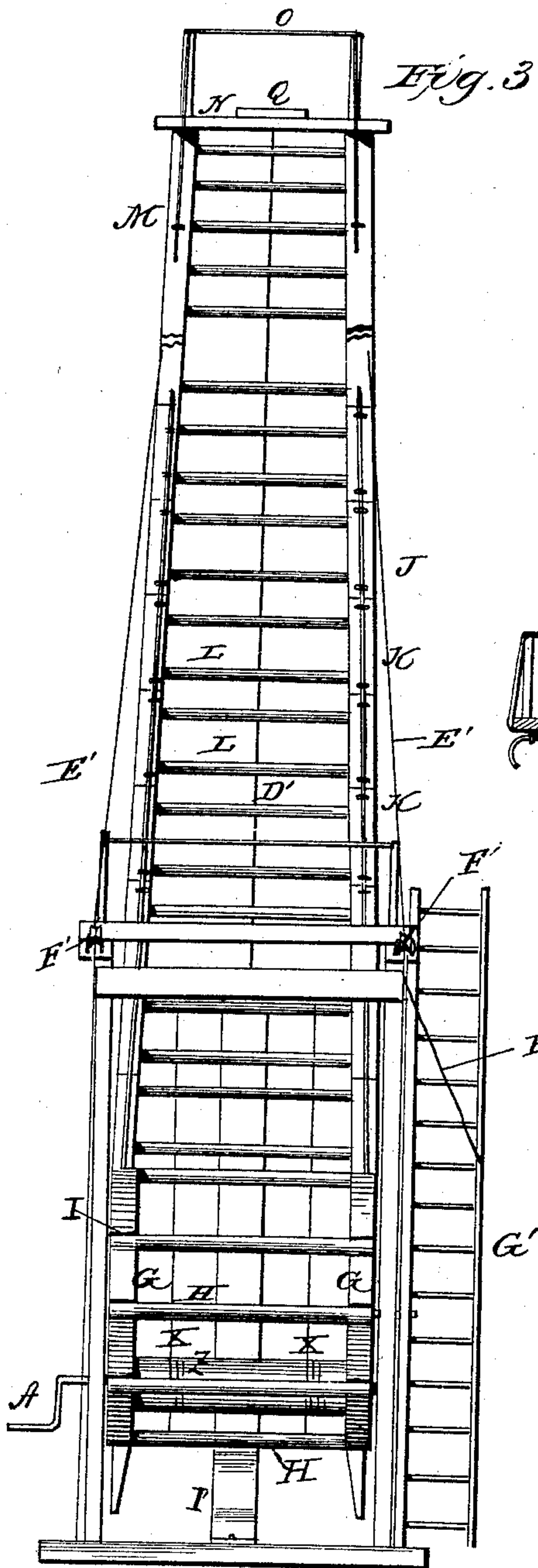
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UNITED STATES PATENT OFFICE.

LOUIS SEES, OF PORT ELGIN, ONTARIO, CANADA.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 328,345, dated October 13, 1885.

Application filed August 18, 1885. Serial No. 174,729. (No model.)

To all whom it may concern:

Be it known that I, LOUIS SEES, a subject of the Queen of England, and a resident of Port Elgin, in the Province of Ontario and Dominion of Canada, have invented certain new and useful Improvements in Fire-Escapes; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a side view of my improved fire-escape, showing it raised. Fig. 2 is a similar view of the same, showing it lowered. Fig. 3 is a front view of the device, showing it raised. Fig. 4 is a longitudinal vertical section of the same; and Fig. 5 is a perspective detail view of the links constituting the ladder.

Similar letters of reference indicate corresponding parts in all the figures.

My invention has relation to that class of fire-escapes in which a ladder wound upon a drum may be extended to a building by unwinding it from the drum; and it consists in the improved construction and combination of parts of the same, as hereinafter more fully described and claimed.

In the accompanying drawings, the letter A indicates the base of the device, which may be mounted upon wheels or otherwise made portable, and from which two pairs of uprights, B B and C C, project, which uprights support two longitudinal beams, D D, upon which a platform, E, is placed.

Journaled upon the uprights B is a drum or reel, F, consisting of two solid polygonal heads, G G, connected at their peripheries by means of the rounds H, fitting in notches I.

A ladder, J, consisting of links K, connected together at their ends by rule-joints, so as to form the side rails of the ladder, and of rounds L, secured with their ends in the links, winds upon the reel, and the links are of the same length as the sides of the polygonal heads of the drum, so that the ladder will fold up, fitting exactly to the periphery of the drum. The rounds of the ladder decrease in length toward the top of the ladder, so that the ladder will be wound upon the reel with the upper portion of the ladder resting within

the side pieces of the lower portion, and the uppermost portion of the ladder consists of two rigid side pieces, M M, to the upper ends of which a small platform, N, is secured, having a railing, O, around its edges, with the exception of the edge facing the building, and having an aperture, P, through which access may be had from the ladder to the platform, and which aperture or man-hole is covered with a swinging door or cover, Q, pivoted to swing horizontally over the aperture upon the face of the platform.

The side pieces, M, are provided at their upper ends with rods R, the upper ends of which form hooks S, secured to the under side of the platform, and serving to engage a window-sill or similar object upon the building where the escape is used.

The upper edges of the links of the ladder have grooves U, in which longitudinal rods T are secured, the ends of which form links V, which engage each other, forming the joints between the links of the ladder, and pins or lugs W project from the upper edges of the links, and the lugs upon the lower portion of the ladder engage the notches in the peripheries of the heads of the reel, while the lugs upon the other portion of the ladder engage the rounds of the ladder as it is folded up.

Two ropes or chains, X X, are secured to the lowermost end of the ladder and pass up on the under side of the same, passing over a roller, Y, which is journaled between the upper ends of the uprights C, from which roller they pass down to a drum, Z, journaled in transverse bearings upon the said uprights, upon which drum they may be wound, the drum having cranks A' for turning it.

One end of the drum is provided with ratchet-teeth B', which are engaged by the lower end of a spring-pawl, C', which is secured upon the inner side of one of the uprights, and a cam-lever is pivoted upon the said inner side of the upright, and may bear with its head against the lower end of the spring-pawl, so as to throw it out of engagement with the ratchet-teeth when the handle of the lever is thrown out.

A rope or chain, D', is secured to the under side of the platform at the top of the ladder, and winds upon the same drum Z in the direction opposite to the hoisting ropes or chains.

Guy-ropes E' E' are secured to the upper portion of the ladder, and pass through eyes or pulleys F' upon the platform supported by the uprights, the ropes supporting the upper end of the ladder when it is raised.

A ladder, G', is hinged to one side of the frame formed by the uprights and the platform, extending from the ground to the platform, and has a rope, H', which may support it in its position swung out, or serve to draw it toward the side of the frame when not in use.

It will be seen that the device may be used with buildings of any height, inasmuch as the ladder may be extended to its entire length, or only for a portion of its length, according to the height to which it is desired to reach with the ladder, and by turning the drum one way the hoisting ropes will be wound upon it and the ladder raised, the said ropes drawing and unwinding the ladder, and by reversing the revolution of the drum the ladder may be lowered, the cam-lever being tilted out so as to throw the pawl out of engagement with the ratchet-teeth upon the drum.

A curved guide-strip, I', is secured at its upper end to a cross-piece, J', secured between the upper ends of the uprights C, and at its lower end to the base of the device, and serves to prevent the ladder from being wound irregularly upon the reel, the strip bearing with its upper side against the rounds of the ladder and guiding them to the reel.

In this fire-escape a ladder is produced which can be used upon a low building or a tall building, and which successively may be used for the several stories of the building, and although the ladder is flexible, any weight upon the ladder will fall upon the sides or edges of the links having the hinges, so that the ends of the links will be forced together, and consequently the stiffness of the ladder increased. A flexible ladder winding upon a reel will occupy less space than a ladder consisting of a number of gradually-decreasing ladders sliding one upon the other, and the flexible ladder will be easier manipulated and less liable to become bound or stuck at any place, as will be sliding extensible ladder.

The entire device may be mounted upon

wheels for transportation, or it may form a fixed permanent fire-escape, and may be found very useful, not only as a fire-escape, but also in the case of repairs being needed upon a building or access being wished to any elevated place, 55 when the ladder may be used as a scaffold, which may be extended all over the entire building, or as means of access to the elevated place.

Having thus described my invention, I 60 claim and desire to secure by Letters Patent of the United States—

1. In a fire-escape, the combination of a reel having a polygonal periphery and having notches or recesses in the peripheries of its 65 heads and cross-pieces secured within said recesses, with a flexible ladder consisting of links of the same length as the sides of the polygonal heads connected by means of rule-joints and having upwardly-projecting pins or lugs upon 70 the upper edges of the links, as and for the purpose shown and set forth.

2. The combination of the links forming the side pieces of the ladder and having the longitudinal grooves in their upper edges with 75 the rods secured in the groove and formed into interlocking links at their ends, as and for the purpose shown and set forth.

3. In a fire-escape, the combination of an extensible flexible ladder, a platform at the top 80 of the same, and hooks secured to the rear edges of the side pieces of the ladder at its upper end and to the under side of the platform projecting out and down from the same, as and for the purpose shown and set forth. 85

4. In a fire-escape, the combination of a reel, a roller journaled parallel to the reel and above it, a ladder winding upon the reel and decreasing in width toward its top, and a guide-strip extending from near the roller to under- 90 neath the reel, as and for the purpose shown and set forth.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

LOUIS SEES.

Witnesses:

JESSE SMITH,

R. D. NORTHGREAVE.