

(No Model.)

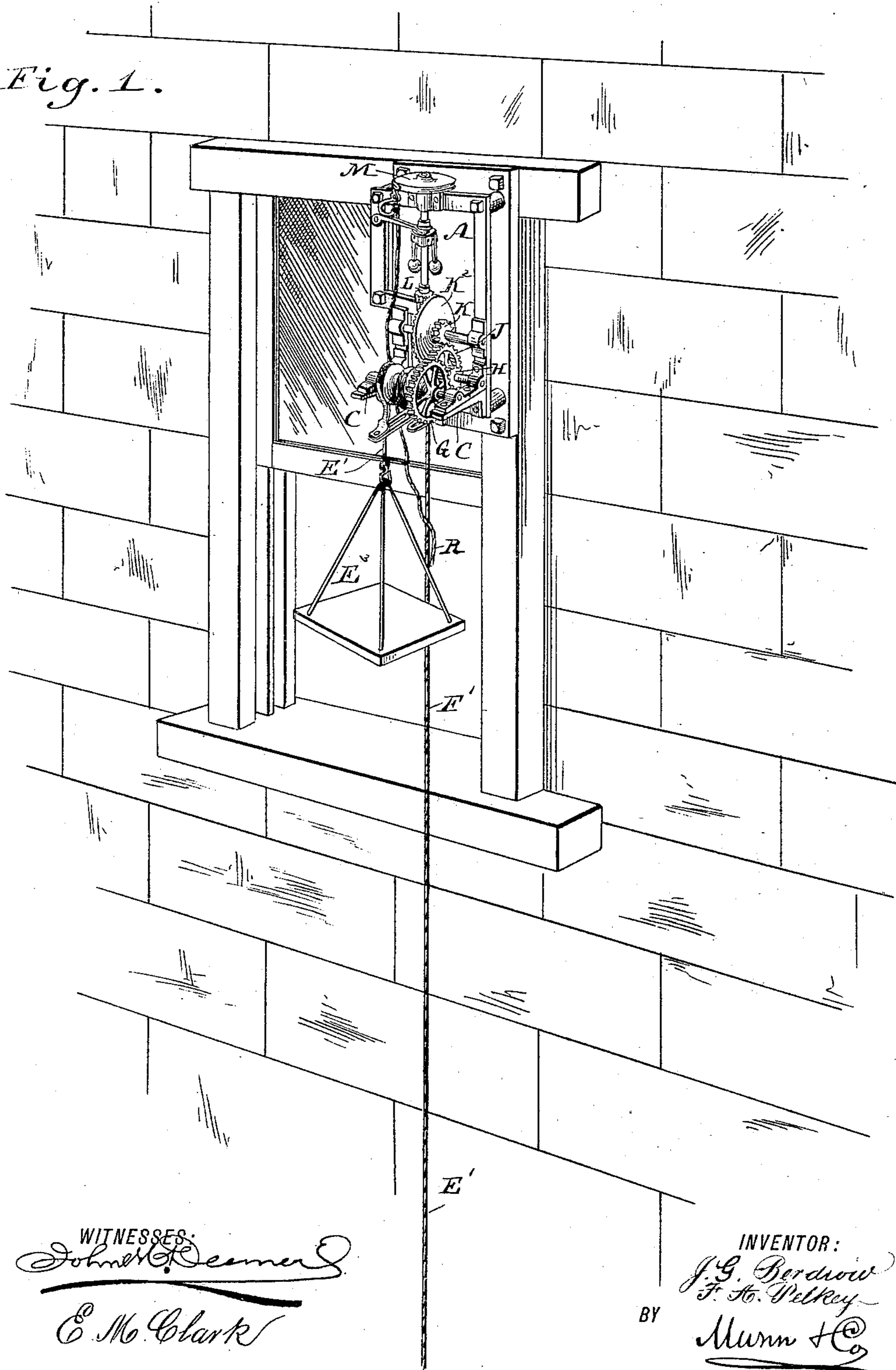
3 Sheets—Sheet 1

J. G. BERDROW & F. A. PELKEY.
FIRE ESCAPE.

No. 396,852.

Patented Jan. 29, 1889.

Fig. 1.



WITNESSES:
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E. M. Clark

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ATTORNEYS.

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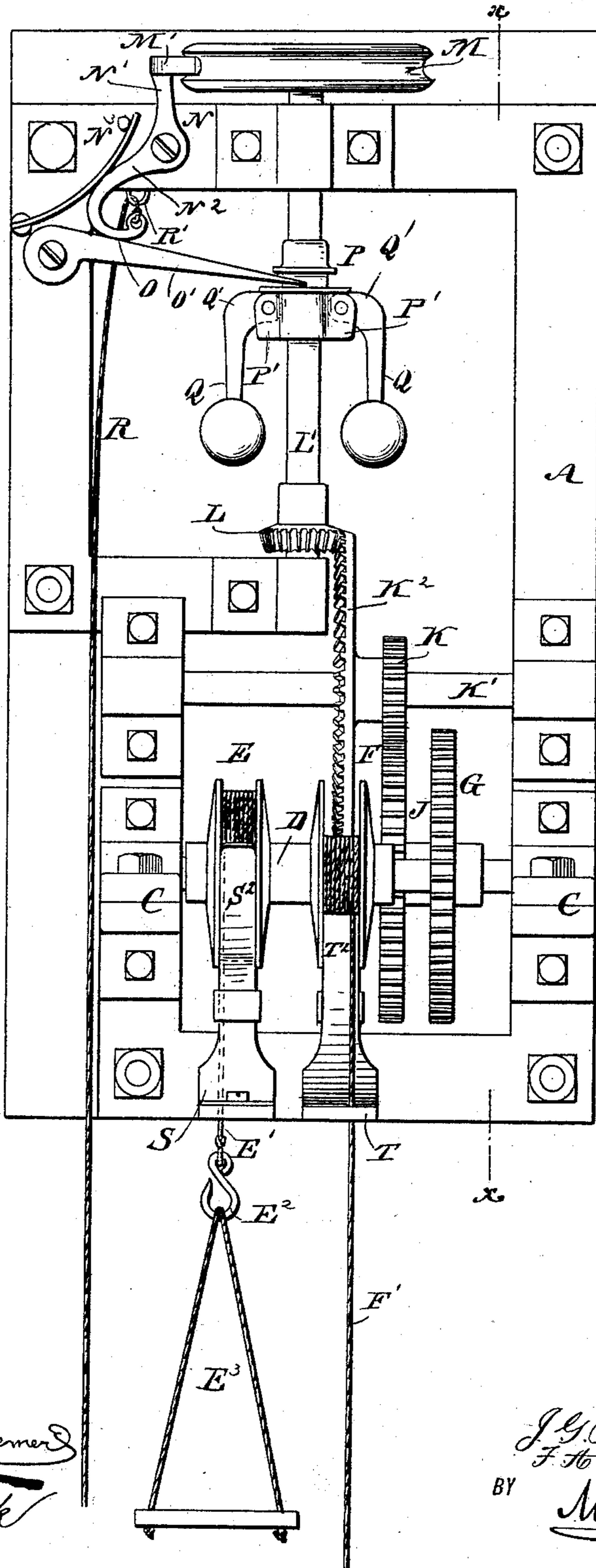
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Fig. 2.



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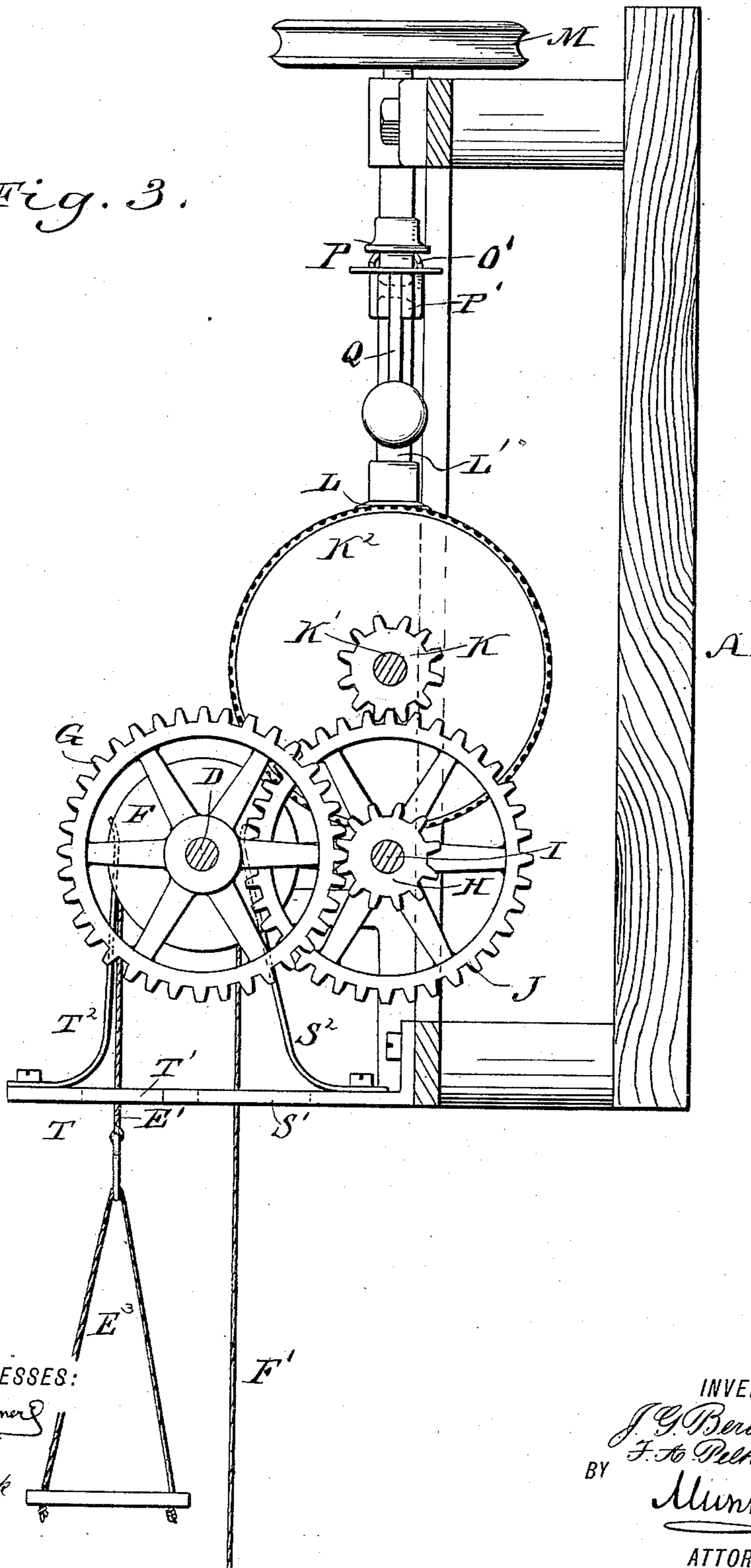
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Fig. 3.



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UNITED STATES PATENT OFFICE.

JAMES G. BERDROW AND FRANK A. PELKEY, OF SEWARD, NEBRASKA.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 396,852, dated January 29, 1889.

Application filed July 25, 1888. Serial No. 280,956. (No model.)

To all whom it may concern:

Be it known that we, JAMES G. BERDROW and FRANK A. PELKEY, both of Seward, in the county of Seward and State of Nebraska, have
5 invented a new and useful Improvement in Fire-Escapes, of which the following is a full, clear, and exact description.

The object of this invention is to provide an improved fire-escape by which the descent of
10 persons from a building in case of fire may be effected quickly, safely, and conveniently, and which will possess the merits of simplicity, compactness, and cheapness to a marked degree.

15 The invention comprises certain novel features of construction and combinations of parts; and in order that the invention may be fully understood the mode in which it may be carried into effect will first be described in
20 detail, and its various features then distinctly pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate
25 corresponding parts in all the figures.

Figure 1 is a perspective view illustrating the application of a fire-escape embodying our invention. Fig. 2 is an enlarged front elevation of the said fire-escape, and Fig. 3 is
30 a sectional side elevation of the same on the line *x x* of Fig. 2.

The frame A of the improved fire-escape thus illustrated is adapted to be rigidly secured to the outside of the door or window
35 casing of a building, as shown in Fig. 1, and is provided with forward-projecting bearings C, in which is mounted to turn a transverse shaft, D, having fixed thereto a pair of grooved winding-drums, E F.

40 Hoisting-cables E' F', carrying on their lower ends hooks for attachment of the cages or cars E³, which hold the persons making the descent, are wound in opposite directions on the respective drums E F, so that when one
45 car descends the other cable will be automatically wound up for use by the next person, and so on indefinitely. On the winding-shaft D is also fixed a cog-wheel, G, which gears with a pinion, H, fixed on a transverse shaft,
50 I, which is also mounted to turn in bearings on the frame A, and carries a cog-wheel, J,

which is geared with a pinion, K, fixed on another transverse shaft, K', mounted in bearings on the frame A. The shaft K' carries also a large bevel-gear, K², which engages
55 with a bevel-pinion, L, fixed on the lower end of a vertical shaft, L', which is mounted to turn in bearings on the frame A. This arrangement of multiplying gearing is to cause the vertical shaft L' to revolve rapidly while
60 the winding-shaft is undergoing a comparatively slow rotation.

On the upper end of the vertical shaft L' is fixed a peripherally-grooved brake-wheel, M, with the groove of which a brake-shoe, M',
65 fixed on the upward-projecting arm N' of an angle brake-lever, N, is adapted to engage, so as to firmly grip and check the brake-wheel, and thus, through the connecting-gearing described, the winding-shaft D when pressed
70 against the brake-wheel.

The brake-lever N is pivoted at its angle to the frame A, and has a lateral curved arm, N², against the top of which a spring, N³, is
75 arranged to bear, so as to hold the brake-shoe M' normally away from the brake-wheel M. The inturned end of the arm N² of the brake-lever forms a cam, O, below which a lever, O', is pivoted to the frame A in such a manner as
80 to, when swung upward, engage the cam O and throw the brake-shoe M' against the brake-wheel.

The free end of the lever O' is forked to embrace loosely an annularly-grooved sleeve, P, which is mounted both to slide lengthwise and
85 to turn freely on the vertical shaft L', and directly beneath which opposite pairs of ears P' are formed on or rigidly attached to the shaft L', between which ears are pivoted the ends of opposite weighted governor-arms Q,
90 having cams Q' on their upper edges to engage the bottom of the sleeve P.

The construction and arrangement are such that when the winding-shaft D is caused to revolve in either direction by the weight of a
95 person descending by one of the two cables E' F' an excessive speed will cause the weighted arms Q of the governor in revolving to swing upward, so that their cams Q' will elevate the sleeve P, and thus through the lever
100 O' apply the brake and check the rotation of the winding-gear. The descent of the car

will thus be maintained at a uniform rate whatever be the weight of the person descending thereby. A hand-brake rope or cable, R, is also attached to the outer arm of the brake-lever N, is passed loosely through a stationary guide, R', thereabove, and is permitted to hang downward, so that it can be grasped and drawn upon by the person about to descend by the car, and the latter thus held in place until he is ready to descend or checked at any point of the descent.

Brackets S T are fixed to the frame A below the respective winding-drums E F, and are provided with guides S' T', through which the cables F' E' run, and with spring-tongues S² T², which press continuously upon the coils on the drums F E in the grooves thereof and cause the cables to wind properly thereon.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination of a supporting-frame, a winding-drum, a descending-cable, a gov-

ernor-shaft, weighted swinging governor-arms, a pivotal lever in operative connection with the governor-arms, a brake-wheel connected to the winding-gear, and a pivotal brake-lever having a brake-shoe and a cam engaged by the pivotal lever operated by the governor-arms, substantially as described.

2. The combination of a supporting-frame, a winding-drum, a descending-cable, a brake-wheel in connection with the winding-drum, a brake-lever pivoted to the frame and having a curved cam-arm, a cam-lever engaging the cam-arm, speed mechanism by which the said cam-lever is controlled, and a hanging hand rope or cable, also attached to the said cam-arm of the brake and guided on the frame, substantially as described.

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Witnesses:

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