

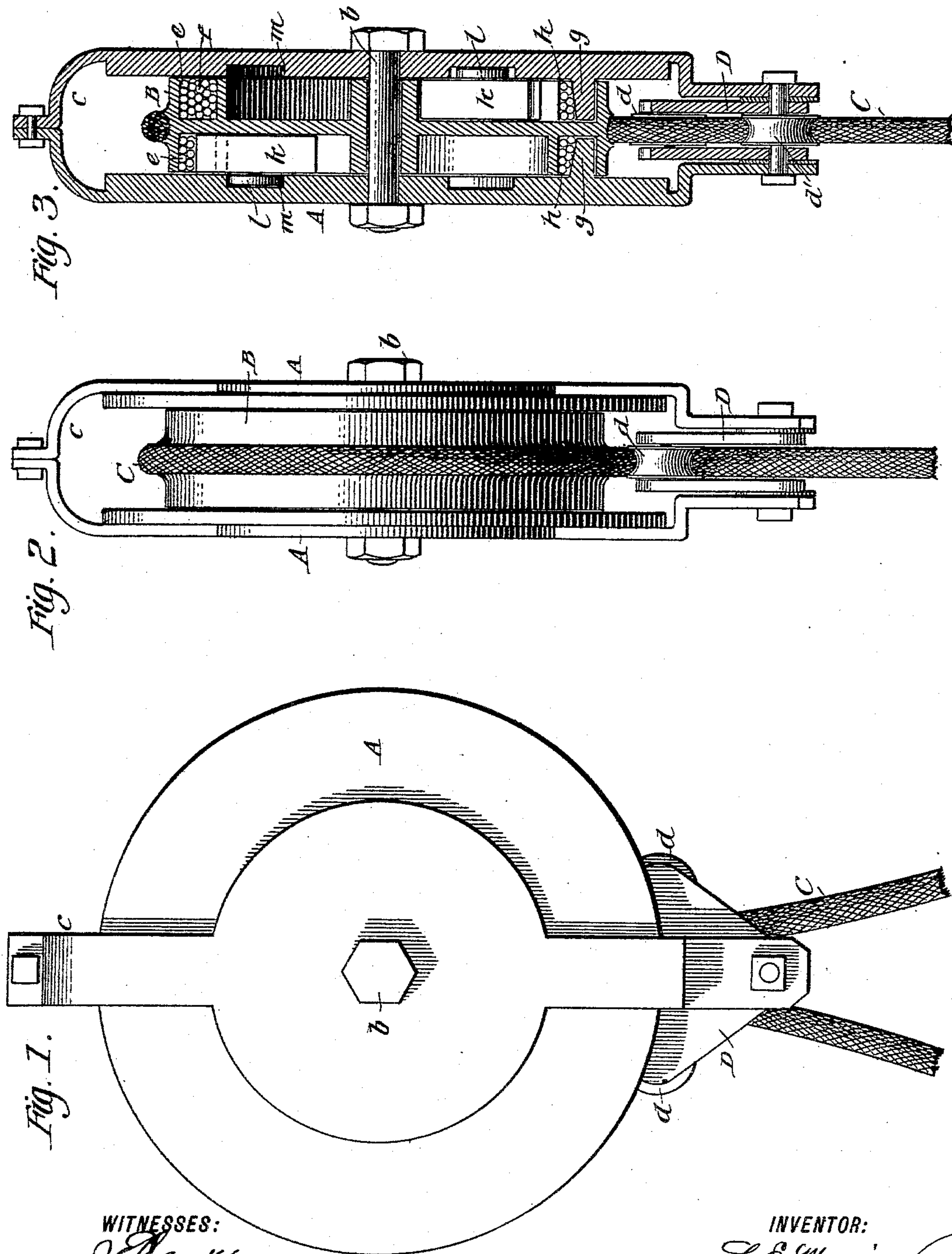
(No Model.)

2 Sheets—Sheet 1.

L. E. MORRISON.
FIRE ESCAPE.

No. 414,429.

Patented Nov. 5, 1889.



WITNESSES:

J. Clark.
W. Bedgwick

INVENTOR:

L. E. Morrison

BY

Munn & Co.

ATTORNEYS.

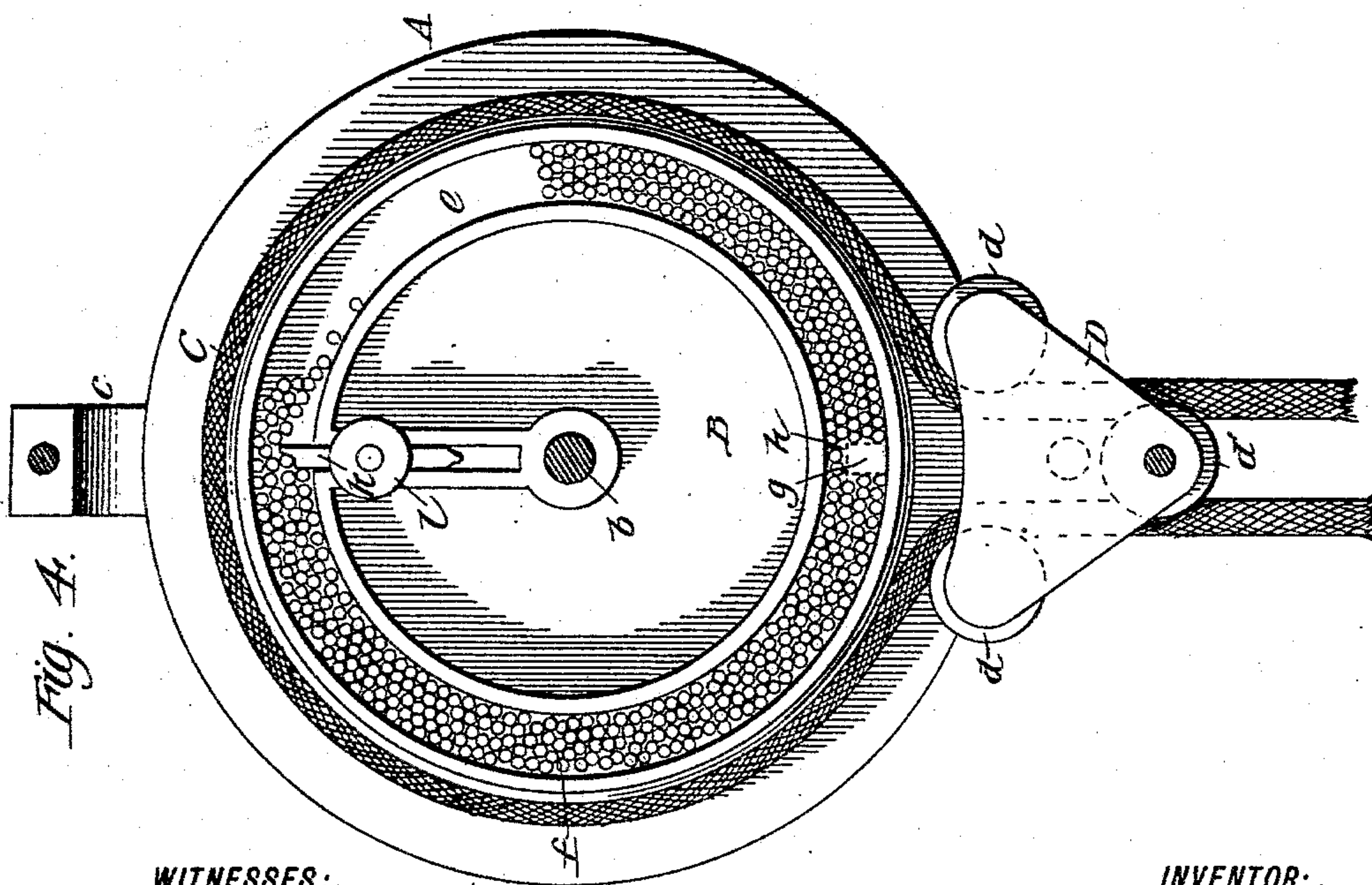
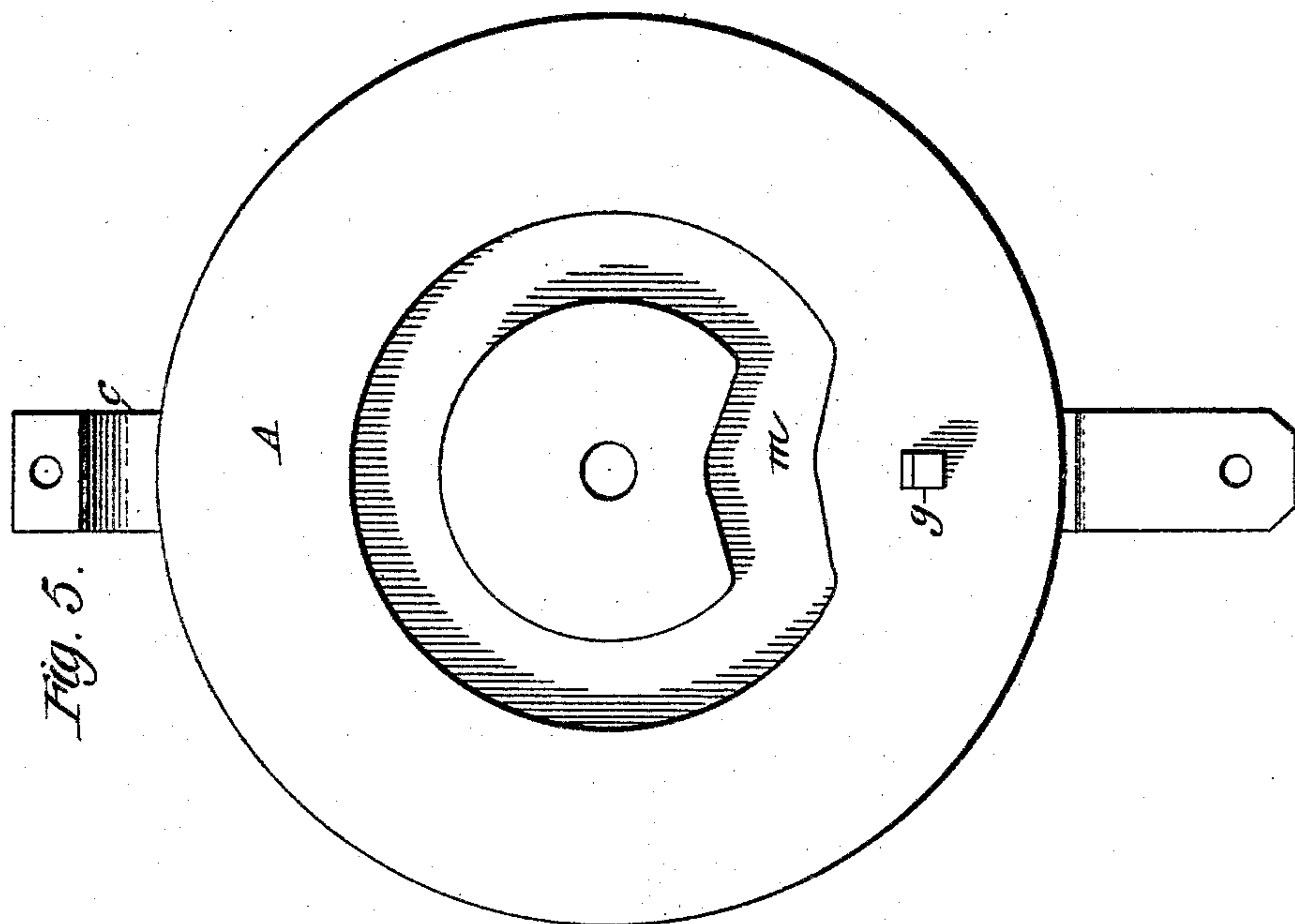
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2 Sheets—Sheet 2.

L. E. MORRISON.
FIRE ESCAPE.

No. 414,429.

Patented Nov. 5, 1889.



WITNESSES:

J. Clark.
C. Sedgwick

INVENTOR:

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UNITED STATES PATENT OFFICE.

LEWIS E. MORRISON, OF BROOKLYN, NEW YORK.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 414,429, dated November 5, 1889.

Application filed August 28, 1889. Serial No. 322,257. (No model.)

To all whom it may concern:

Be it known that I, LEWIS E. MORRISON, of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Fire-Escapes, of which the following is a full, clear, and exact description.

The object of my improvement in fire-escapes is to provide means which shall automatically prevent the too free run of the lowering-rope and shall avoid objectionable shocks thereto, and insure its smooth and uninterrupted descent; also, which shall aid in producing a fire-escape that will be always in readiness and can be used without any special instruction, one, too, that can be made at but little expense and will safely and smoothly lower any weight from any height.

The invention consists, essentially, in a fire-escape in which the speed of the lowering mechanism is controlled by friction or resistance produced by the forcing of detached particles of solid matter in mass through a contracted throat or passage way.

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

Figure 1 represents a front elevation of a fire-escape embodying my invention. Fig. 2 is a side view of the same; Fig. 3, a central vertical section in a plane at right angles to Fig. 1. Fig. 4 is a vertical section in a plane parallel with Fig. 1, and Fig. 5 is an inside face view mainly of one of a pair of side covers of the main frame.

A A indicate two opposite side covers forming parts of the main frame and containing within or between them the rope-pulley B, which is free to turn upon a bolt *b*, passing through its center and uniting the side covers or pieces A A. The rope-pulley B is grooved on its periphery and preferably serrated to give a suitable friction to the lowering-rope C, which runs over said pulley. The side plates or covers A A may be extended and united, as by a bolt or rivet, above to form a strap or loop *c* by which to suspend the fire-escape, and said plates be also extended and united below to receive between them and hold a V-shaped frame D, having in its upper

part a pair of anti-friction rolls *d d*, on opposite sides of a vertical plane intersecting the axis of the rope-pulley B in direction of its length, and a lower anti-friction roll *d'*, having its axis in line with said plane. Such anti-friction roll carrier or frame has before been used in fire-escapes, and serves to guide the lowering-rope and give it a close hug upon the rope-pulley, the ends of the lowering-rope C, after passage of the latter over the rope-pulley B, being entered down through the frame D and caused to run over and bear against adjacent peripheral portions of the rolls *d d* and against the lower roll *d'* on opposite sides of its axis, as shown in Fig. 4.

The resistance means which retard and control the speed of the lowering mechanism may be variously arranged, but are here shown as applied to opposite sides of the rope-pulley, but might be applied to the one side only thereof. Thus the rope-pulley B is constructed with circular or continuous grooves *e e* in its opposite sides or faces. These grooves are charged with a mass of fragmentary substances or detached particles of solid matter *f*, such as shot, small pieces of wire, or other fragmentary materials. Entering each of these grooves or channel-ways *e* is a stationary throat-piece *g*, of a size to leave only a contracted throat or passage-way *h* within the channel-way *e* for the fragmentary substances or shot *f* to pass through. The throat-pieces *g* are here supposed to be carried by the stationary side plates A A, from the inner faces of which they project to partly dam the channel-ways *e e*. Arranged to project within each of these channel-ways *e* is a stud or driver *k*, carried by the rope-pulley B, so as to rotate in common with it. This driver serves as the rope-pulley is rotated to crowd the fragmentary substances or particles *f* in the same channel-way *e* up against the partial dam or throat-piece *g* and to force them, subject to certain resistance, through the contracted throat *h*, and so to put a steady drag upon the rope-pulley, which will retard and control its speed and insure a smooth and safe run of the lowering-rope. Each driver *k* is preferably in the form of a radially-sliding gate, so as to provide for its being drawn inward when passing the throat-piece or dam *g* in the same

channel-way *e* and to prevent it striking said dam. Thus it is represented as free to slide in radial ways in the rope-pulley and as fitted on its side margin with a roller *l*, which as the rope-pulley is rotated travels round within a cam-groove *m*, arranged in the inner face of the adjacent side plate *A* and shaped to move the driver *k*, so that it will clear the stationary throat-piece *g* when passing it and be kept projected a full or sufficient distance within the channel-way *e* at other times. I would here, however, have it distinctly understood that I do not confine myself to the particular construction and arrangement of the parts shown and described, as these may be variously modified without changing the distinguishing character of the invention, and for the reason that I believe I am the first to control the speed of the lowering mechanism of a fire-escape through the medium of a friction means in which the necessary resistance is obtained by forcing fragmentary or detached particles of matter in mass through a contracted throat or passage-way.

By my invention a person may be lowered

from a burning building without shock or injury, the retarding of the lowering mechanism being most effective.

The lowering-rope may, as usual, be provided with loops or other holding devices for the better protection of the person using it.

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

A fire-escape composed of a lowering mechanism and a friction or resistance means made up of a channel way or ways having a contracted throat, fragmentary substances or detached particles of matter in mass within said channel way or ways, and a traveling stud or driver actuated by the lowering mechanism and operating to force said substances through the contracted throat of the channel way or ways, whereby the speed of the lowering mechanism is retarded and controlled, substantially as and for the purpose set forth.

LEWIS E. MORRISON.

Witnesses:

A. GREGORY,
C. SEDGWICK.