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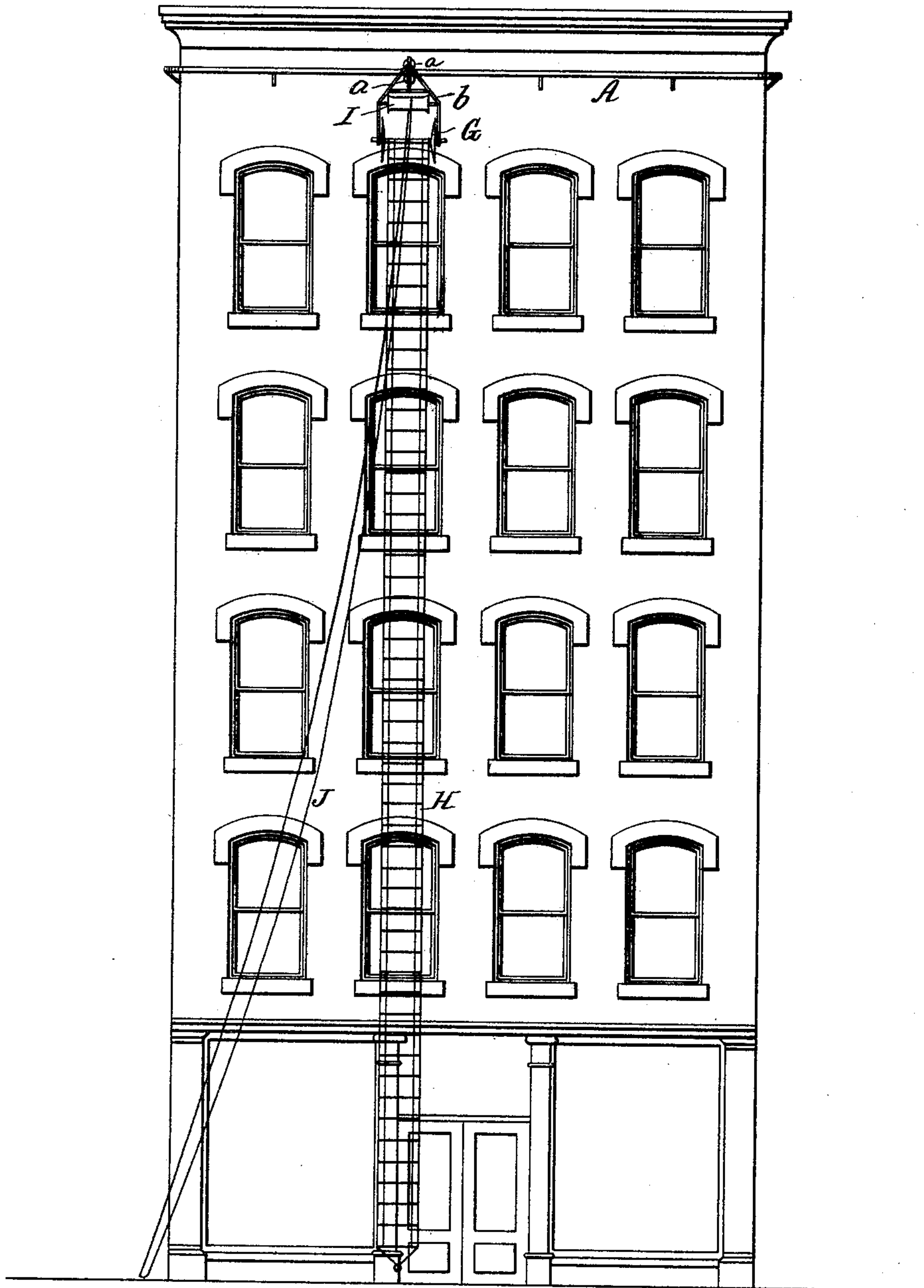
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J. M. GLENN.
FIRE ESCAPE.

No. 407,196.

Patented July 16, 1889.

Fig. 1.



Witnesses:
W. C. Jirdinston.
Charles Bellon.

Inventor:
James M. Glenn
by Peck & Co. Receptor
his Attorneys.

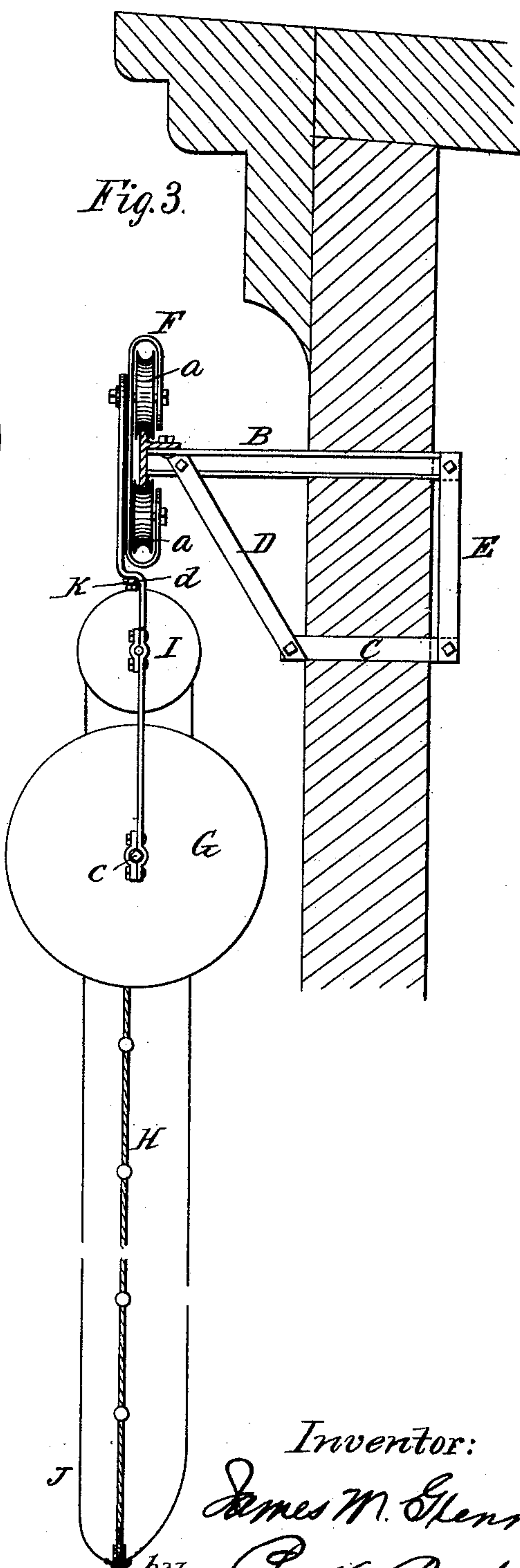
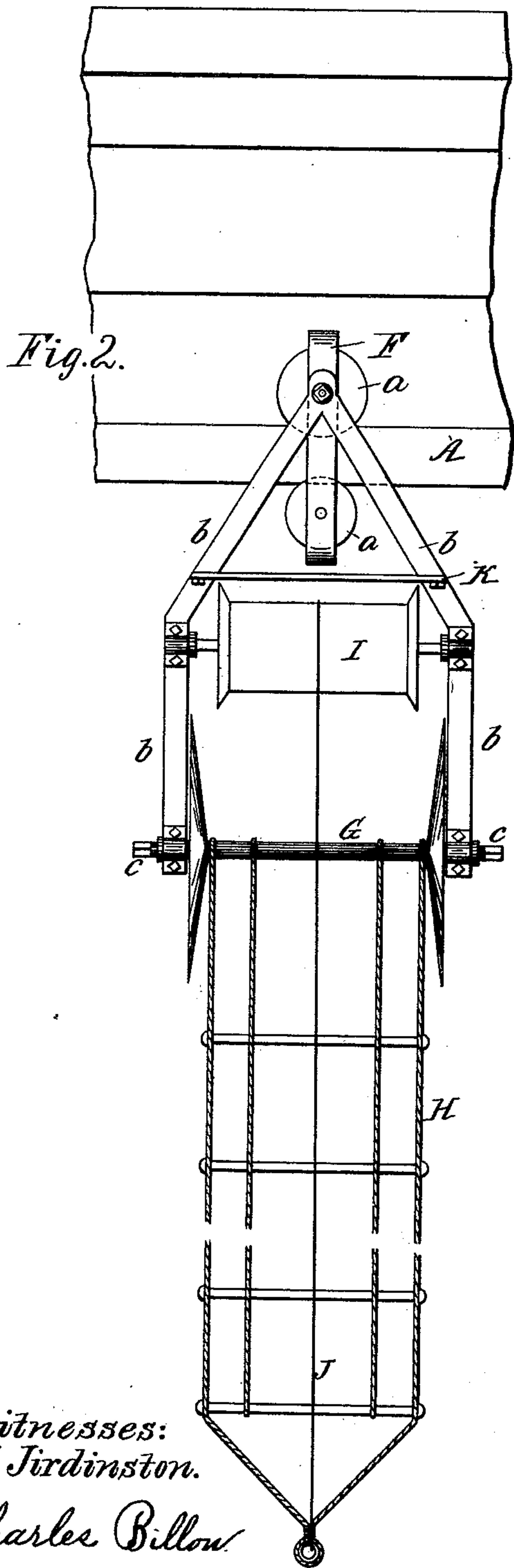
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Charles Billow

Inventor:
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by Peck & Pector
his Attorneys.

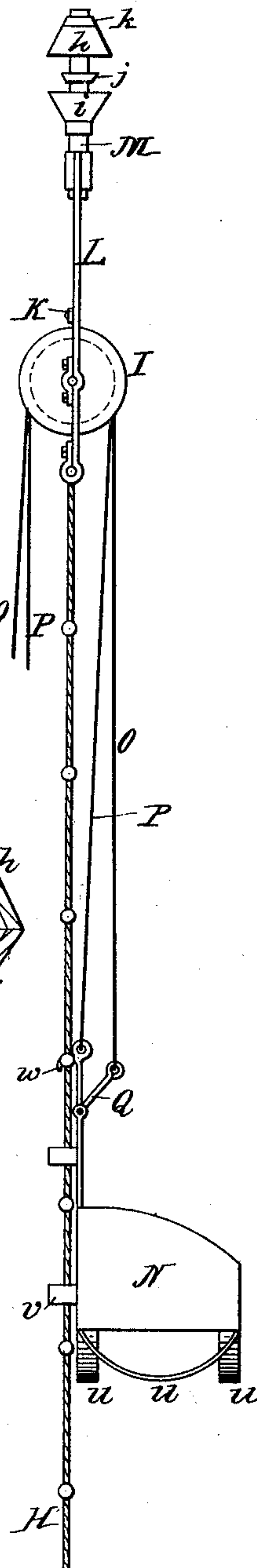
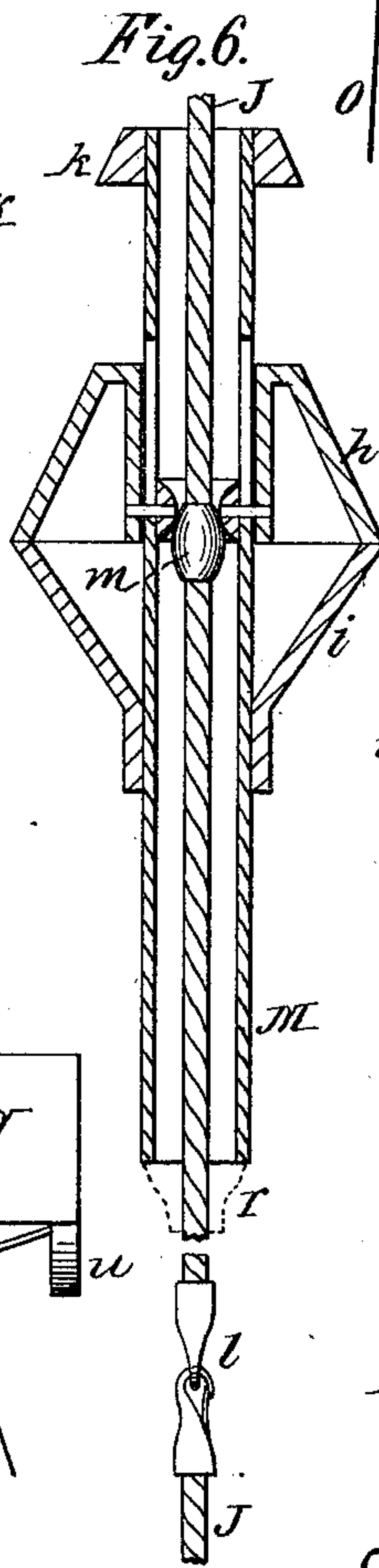
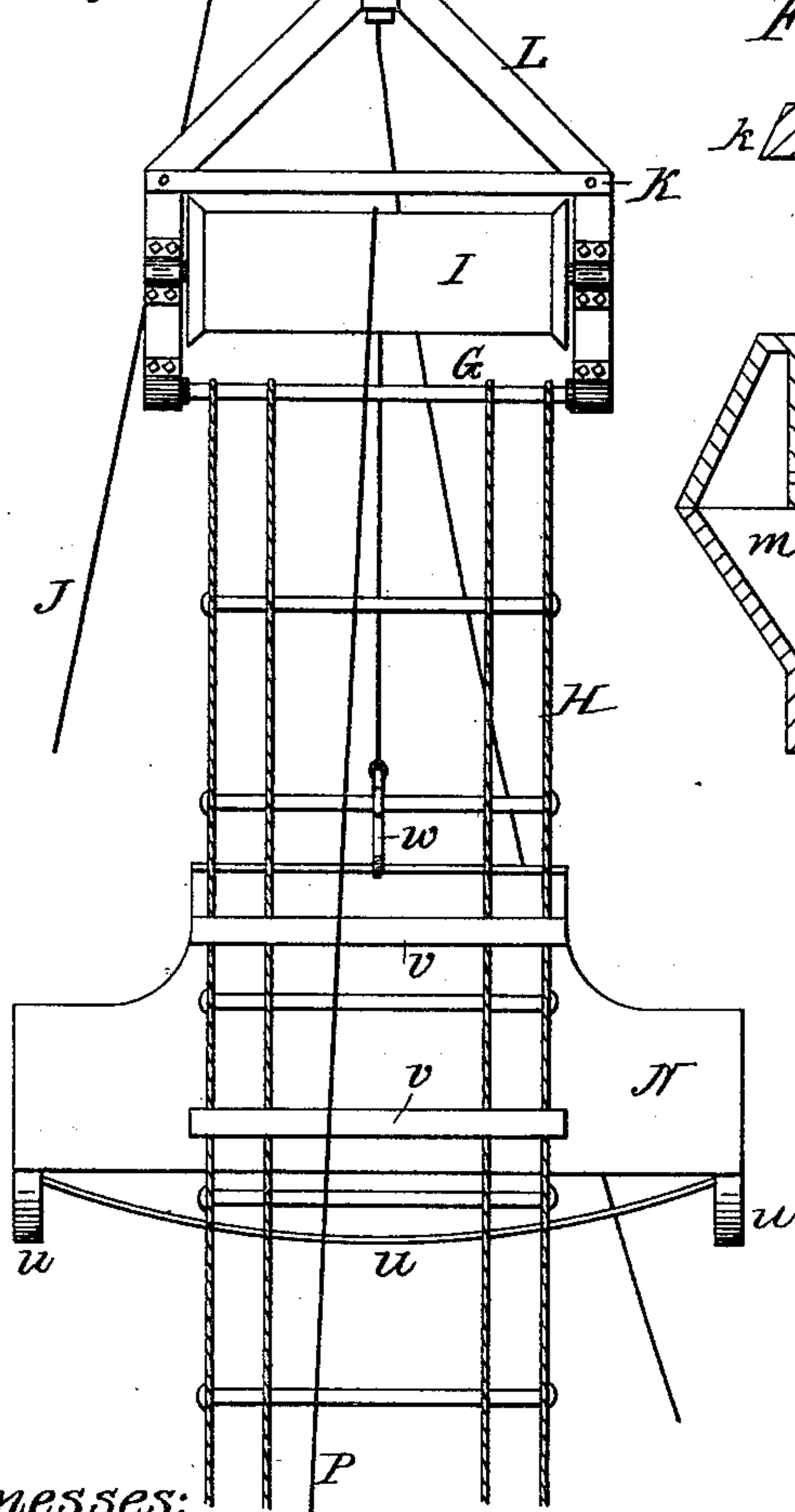
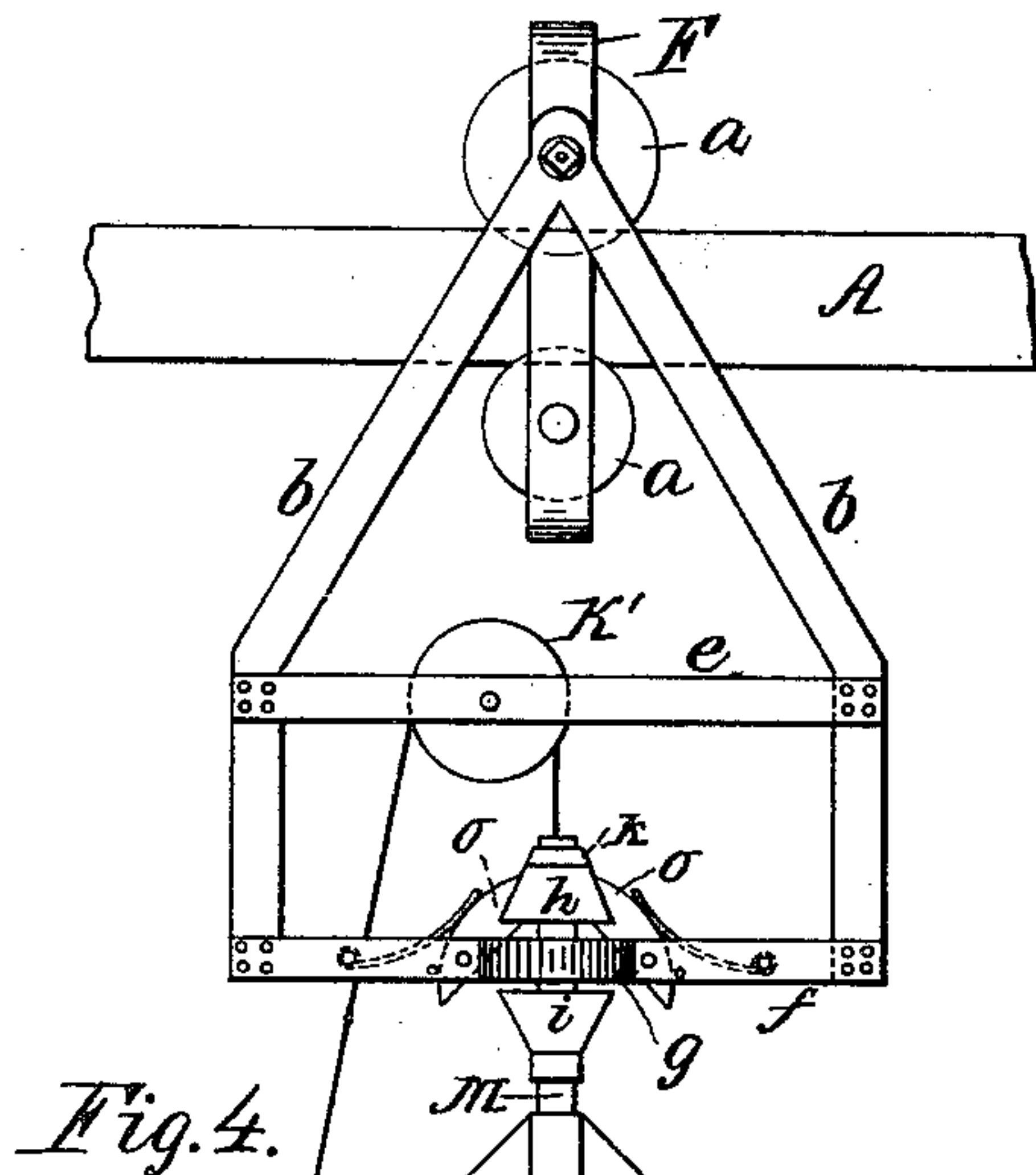
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Patented July 16, 1889.



Witnesses:
W. C. Jirdinston.

Charles Billon.

Inventor:
James M. Glenn
by Peck & Rector
his Attorneys.

(No Model.)

4 Sheets—Sheet 4.

J. M. GLENN.
FIRE ESCAPE.

No. 407,196.

Patented July 16, 1889.

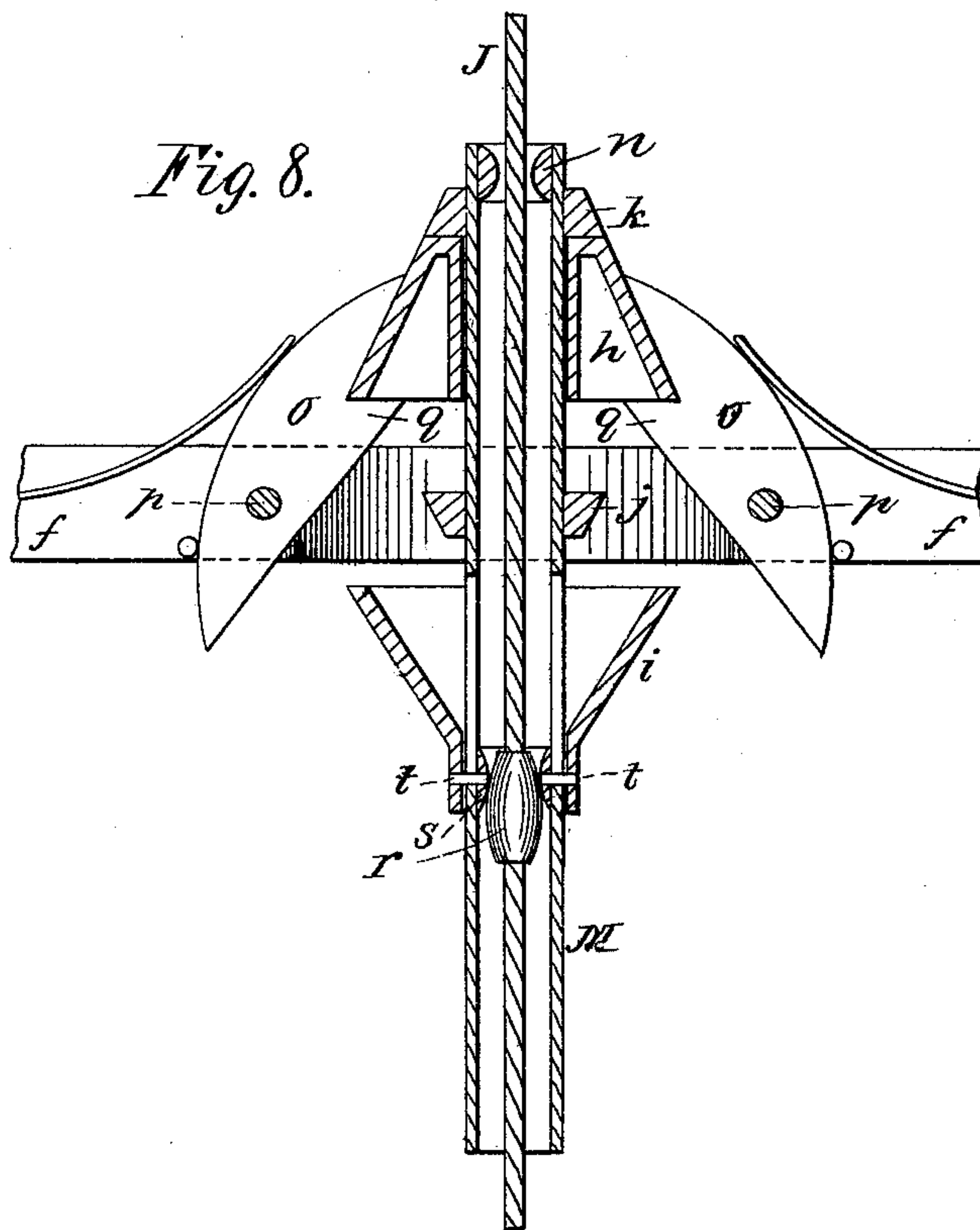
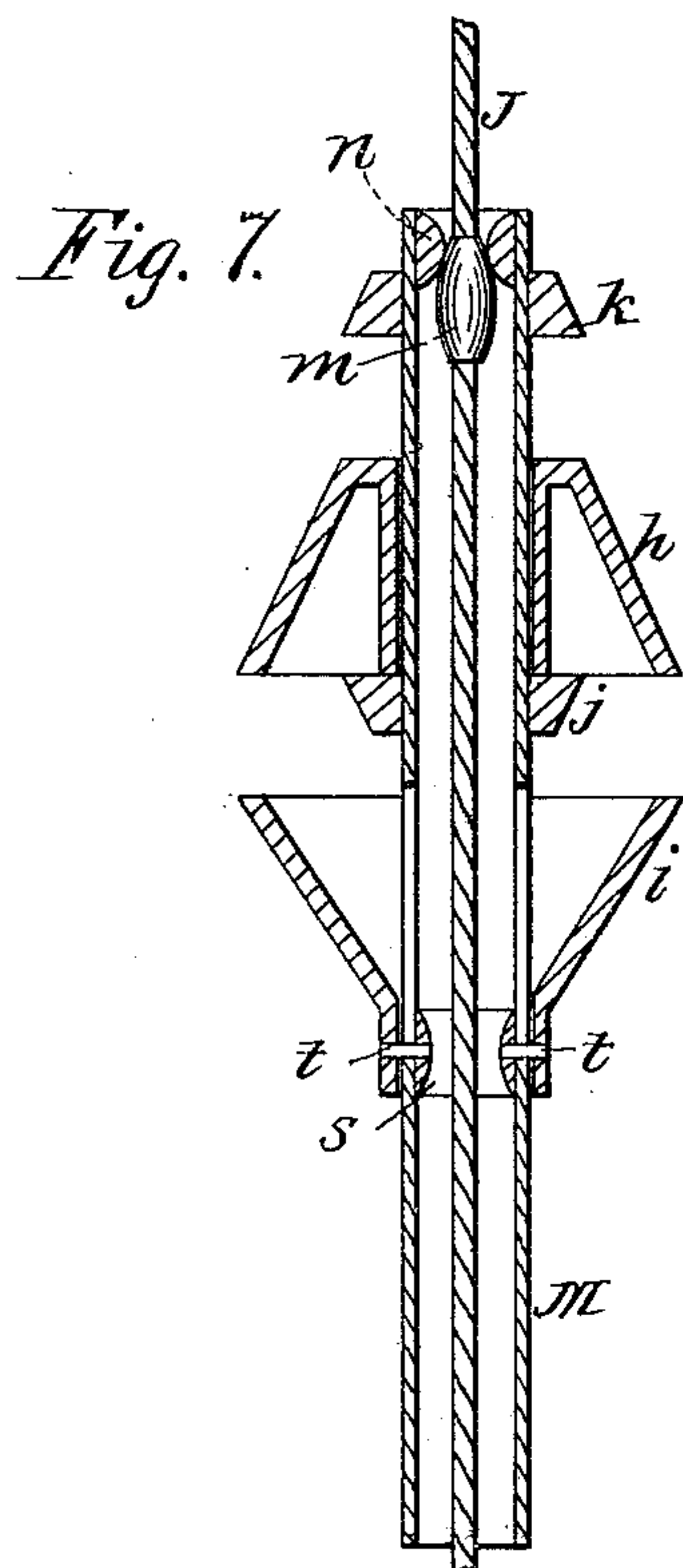
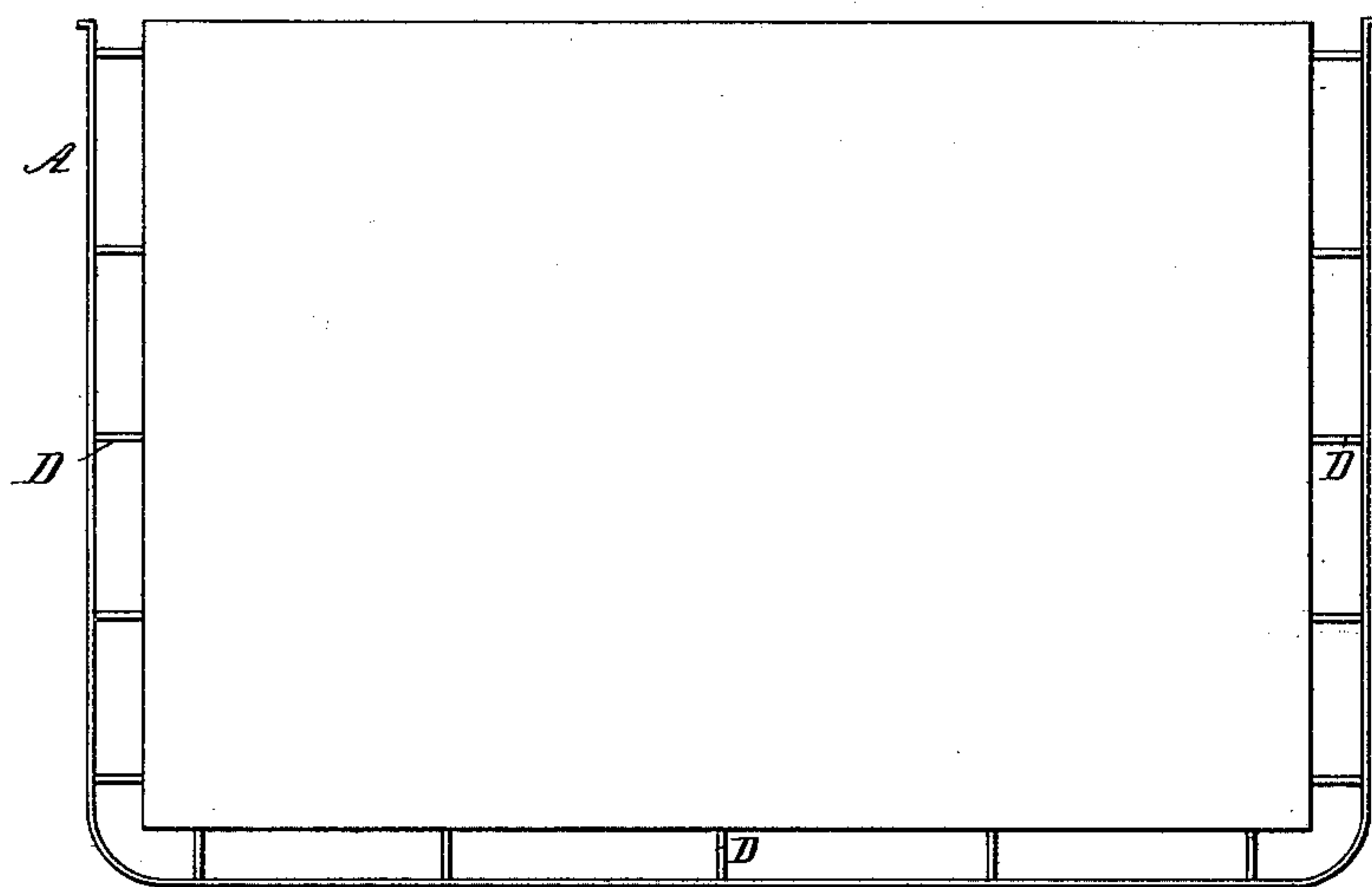


Fig. 9.



Witnesses:
W. C. Jirdinston.
Charlie Billow.

Inventor:
James M. Glenn
by *Peck & Peck*
his Attorneys.

UNITED STATES PATENT OFFICE.

JAMES M. GLENN, OF CINCINNATI, OHIO.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 407,196, dated July 16, 1889.

Application filed June 4, 1888. Serial No. 276,003. (No model.)

To all whom it may concern:

Be it known that I, JAMES M. GLENN, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Fire-Escapes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to improvements in fire-escapes for buildings; and it has for its object the improvement of the construction and mode of operation of such escapes. Its novelty will be herein set forth, and specifically pointed out in the claims.

In the accompanying drawings, Figure 1, Sheet 1, is a front elevation of a building, showing the application of my improved fire-escape. Fig. 2, Sheet 2, is a front elevation of the apparatus constituting the escape. Fig. 3, Sheet 2, is a side elevation of the same, with the upper part of the wall of the building in section. Figs. 4, 5, 6, 7, and 8, Sheets 3 and 4, are details of modifications, to be referred to hereinafter. Fig. 9, Sheet 4, is a plan view of a building, showing the application of the rail.

The same letters of reference are used to indicate identical parts in all the figures.

My invention has for its object, primarily, the securing of a permanent rail or way to the wall of a building above the upper windows and preferably just below the cornice, upon which is a traveling frame or carrier, to which is permanently or adjustably connected a flexible ladder in such manner that the ladder can be shifted from one vertical row of windows to another clear across the building and around it if it be isolated or on a corner.

One way of constructing and applying the rail is shown in Figs. 1, 2, 3, and 9, where the rail A is a T-beam bolted at suitable intervals to brackets built into and projecting from the wall, and each of which is constructed of an upper horizontal I-beam B, extending through the wall, a lower beam C likewise extending through the wall, and an outer brace D and inner brace or strap E, all firmly bolted or riveted together, as shown. Other forms

of brackets may be used if desired, and the shape of the rail A is immaterial so long as it affords a bearing for the roller-frame to travel on. The roller-frame F is in this instance a metal bar, with its ends so bent as to form bearings for the two grooved rollers *a*, which are journaled therein and bear upon the upper and lower edges of the rail A, as shown. Secured to the frame F, preferably coincident with the spindle of the upper roller *a*, is the frame to which the hoisting and lowering devices are attached, and consisting of the two arms *b*, of the shape shown, between the lower ends of which a reel G, carrying wound upon it a rope or wire cable ladder H, is journaled. The projecting end or ends of the reel-spindle are shaped, as at *c*, to receive a crank or cranks for turning the reel to wind up the ladder. The ladder H has its upper end tightly secured to the reel, and it is of sufficient length when unwound to reach the ground. For greater strength and rigidity, I propose to use four ropes, chains, or cables in the construction of the ladder.

Journaled between the arms *b*, just above the reel G, is a drum I with flanged ends, around which one or more endless ropes or wire cables J extend and reach to the ground, for a purpose to be presently explained. The arms *b* are bent in, as at *d*, Fig. 3, to bring the spindles of the drum and reel directly under the rollers *a*, and thereby prevent torsional strain upon the rail A, and a bar K is secured to the arms *b*, just above the drum, to serve as a brace and to prevent the rope or ropes J from slipping off the drum.

When not in use, the ladder H is rolled up upon the reel G, and the rope J, which hangs down, is connected by a hook or any other suitable means to the free end of the ladder. When it is desired to use the escape, the rope J is caught and the ladder pulled down and run along the building on the rail A to the row of windows desired, where its lower end is held or secured in any suitable manner. After being used at one row of windows it may be shifted to the next, and so on across the building, and, as seen in Figs. 1 and 9, around its sides, if desired. In this way I apply to a building a permanent escape-lad-

der, which is normally rolled up and out of the way, but which can be instantly brought into position for use and can be shifted to any part of the building desired.

5 Where it is desired that the fire-companies should carry the ladder with them, the modifications illustrated in Figs. 4, 5, 6, 7, and 8 may be employed. In such case the arms *b*,
10 secured to the roller-frame, are provided with two lower cross-bars *e* and *f*, to the former of which is connected a sheave *K'*, over which the rope *J* is passed and one portion of which extends through a central aperture in the bar
15 *f*, which may be doubled and bent out, as at *g*, on each side to form said aperture. The ladder and drum frame *L* in this case is similar in construction to the one before described, and the bar *G* is revoluble in its bearings to
20 constitute a reel on which the ladder can be wound when not in use, and the only difference is that it has at its top a tube *M*, Figs. 7 and 8, upon which are two sliding conical
25 pieces *h* *i*, separated by a collar *j* upon the tube *M* and with their large ends facing each other. A second collar *k* is secured upon the tube above the piece *h*, which latter normally rests upon the collar *j*. The rope *J*, connected
30 at its two ends by snap-hooks *l*, is passed through the tube *M*, and is provided with a removable button *m*, which engages with a ring *n*, secured upon the inner side of the tube at its top, Fig. 7, and by this means the
35 apparatus is hoisted until the tube and piece *h* have been drawn through the aperture in the bar *f*, where two spring or gravitating dogs *o* are pivoted, as at *p*, and are provided with engaging shoulders *q*, which catch under
40 the lower edge of the piece *h*, as seen in Figs. 4 and 8. In this way the drum and ladder-frame can be hoisted and connected to the roller-frame and the device be operated as before described. To release the drum and
45 ladder-frame from the roller-frame from the ground and by means of the rope *J*, it is only necessary to remove the button *m* and apply to the rope a larger button *r*, Fig. 8, which, when drawn up, engages with a ring *s*, secured
50 within the tube *M* to the piece *i* by means of pins *t*, passed through vertical slots in the tube. By this engagement the piece *i* is drawn up on the tube *M* until its flaring end strikes the under inclined sides of the dogs *o* and pushes them back, thereby releasing the
55 piece *h*, which at once drops upon the collar *j*, and the whole apparatus can be then lowered, as will be readily understood. As a modification of this latter construction, that

shown in Fig. 6 may be employed, where the piece *i* is fast to the tube *M*, the collar *j* dispensed with, and the ring *n* connected to the
60 piece *h* by pins passed through slots in the tube, as before described. In this case to release the dogs the button *r* engages directly with the bottom of the tube, as shown by the
65 dotted lines, Fig. 6.

For the purpose of lowering helpless persons, I have provided a basket *N*, Figs. 4 and 5, of any suitable construction, but preferably of woven wire, with bottom springs *u*, which basket is guided upon the ladder *H* by
70 rear staples *v*, and which is operated from below by two ropes *O P*, passed over the drum *I*, and connected to the two arms of a bell-crank *Q*, pivoted to the back of the basket at its middle. The rope *P* is the hoisting and low-
75 ering rope for the basket, while the rope *O* is a tripping-rope for causing the bell-crank to be tilted to bring the hook *w* at its back over a rung of the ladder—as, for instance, when it is desired to fasten the basket to the ladder
80 at a window in order to place the helpless person therein. The springs *u* are to lessen the shock should the basket strike the ground harder than intended.

Having thus fully described my invention, 85 I claim—

1. In a fire-escape apparatus, the combination, with a rail secured to a building, of a roller-frame engaged thereby, a frame provided with a reel carrying a ladder, and a
9 drum carrying one or more endless ropes and secured to said roller-frame, substantially as and for the purpose specified.

2. In a fire-escape apparatus, the combination, with a rail secured to a building and a
95 roller-frame engaged thereby, of an attaching-frame secured to said roller-frame and provided with engaging-dogs and carrying an endless rope, and a ladder-frame adapted to be hoisted from below by said rope and be
100 automatically secured to said attaching-frame, substantially as and for the purpose specified.

3. In a fire-escape apparatus, the combination, with the attaching-frame provided with
105 the dogs *o*, of the ladder-frame having the tube *M*, provided with the collars *j k*, and carrying the sliding conical pieces *h i*, substantially in the manner and for the purpose specified.

JAS. M. GLENN.

Witnesses:

EDWARD W. RECTOR,
CHARLES BILLOU.