

(No Model.)

2 Sheets—Sheet 1.

A. M. DUNGAN & M. LACRONE.
ELEVATOR.

No. 280,151.

Patented June 26, 1883.

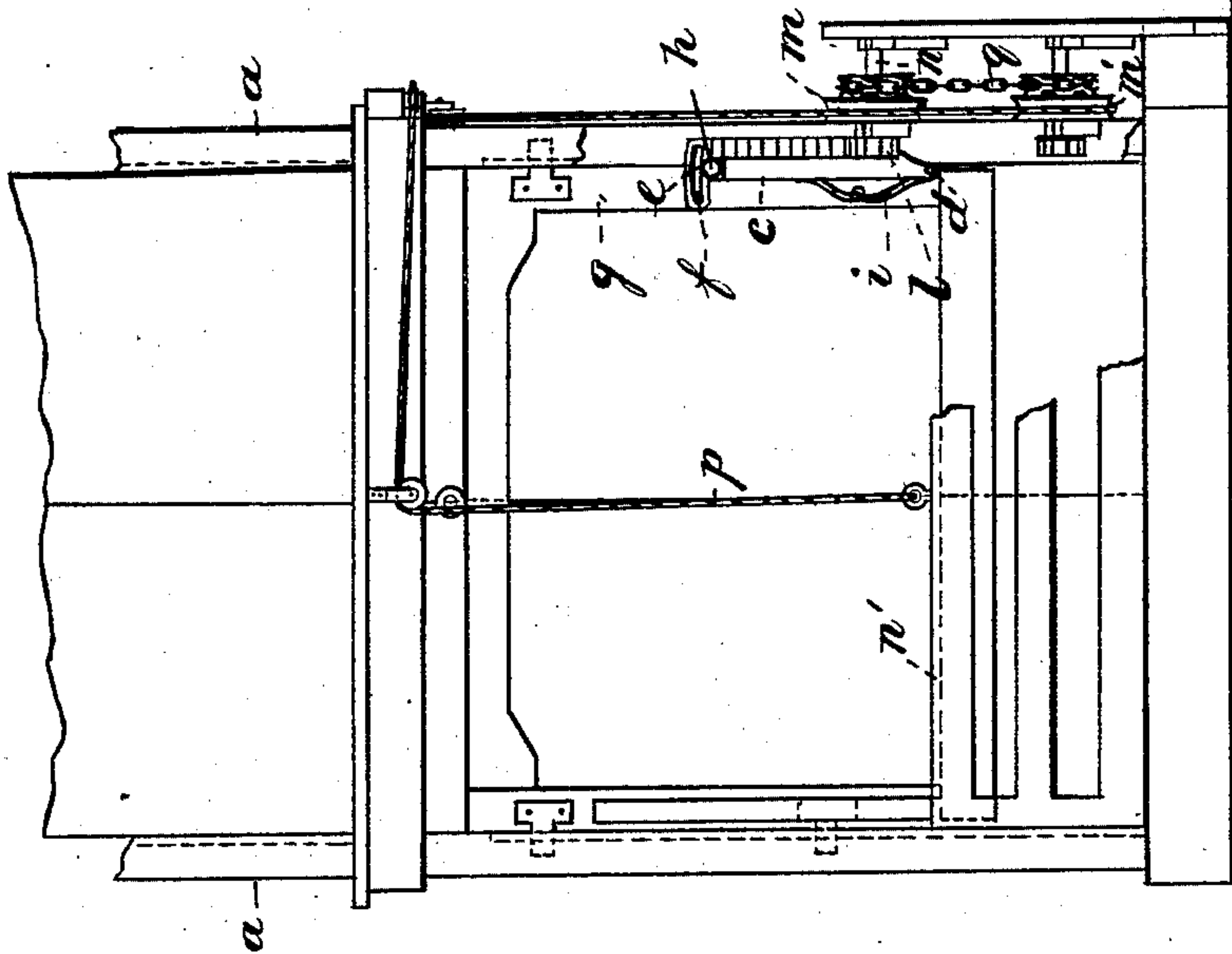


Fig 2.

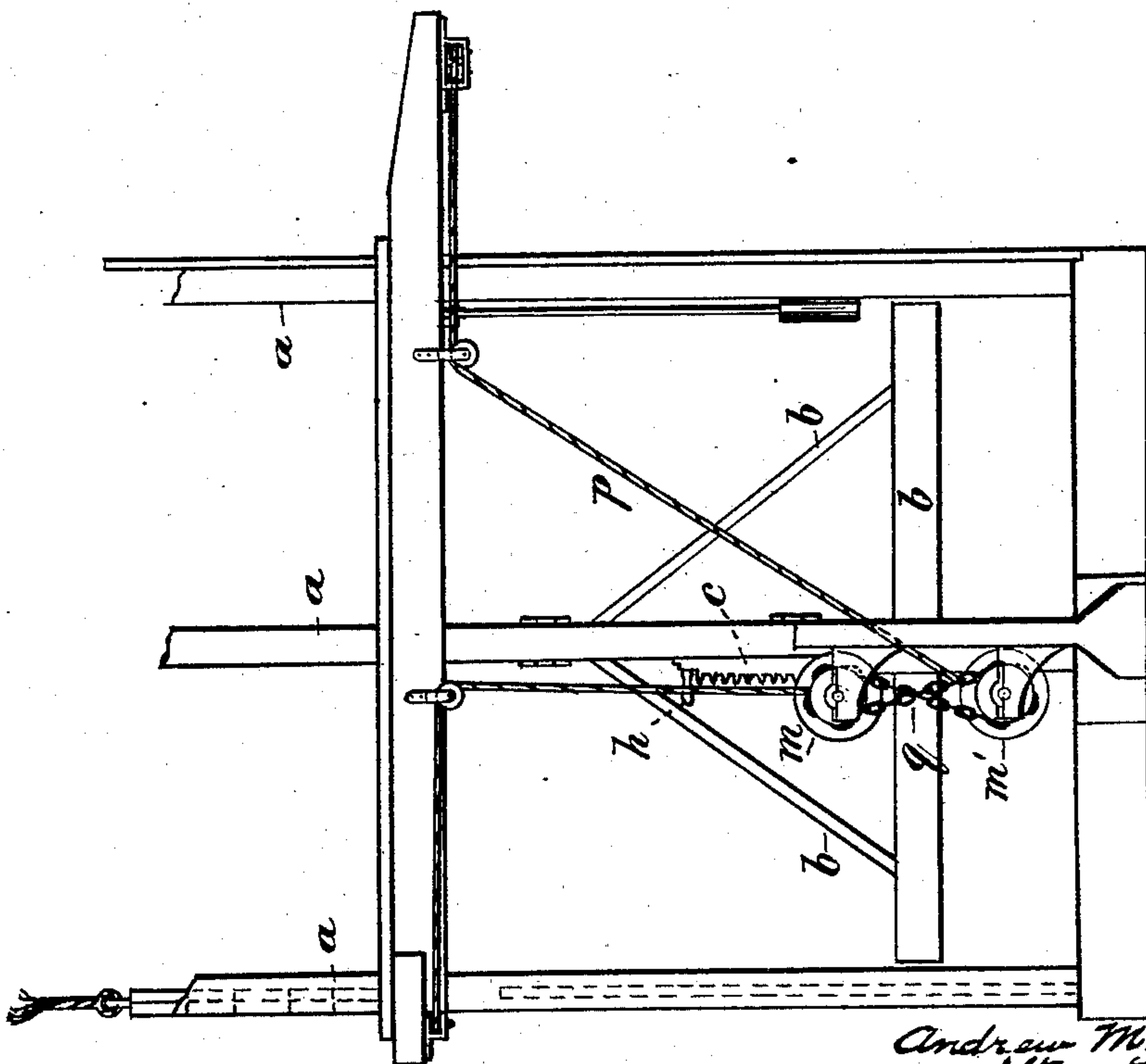


Fig 1.

WITNESSES.

J. Richards
Louis Dieter

Andrew M. Dungan
Milton Lacrone
INVENTORS.

Henry Millward
their Attorney

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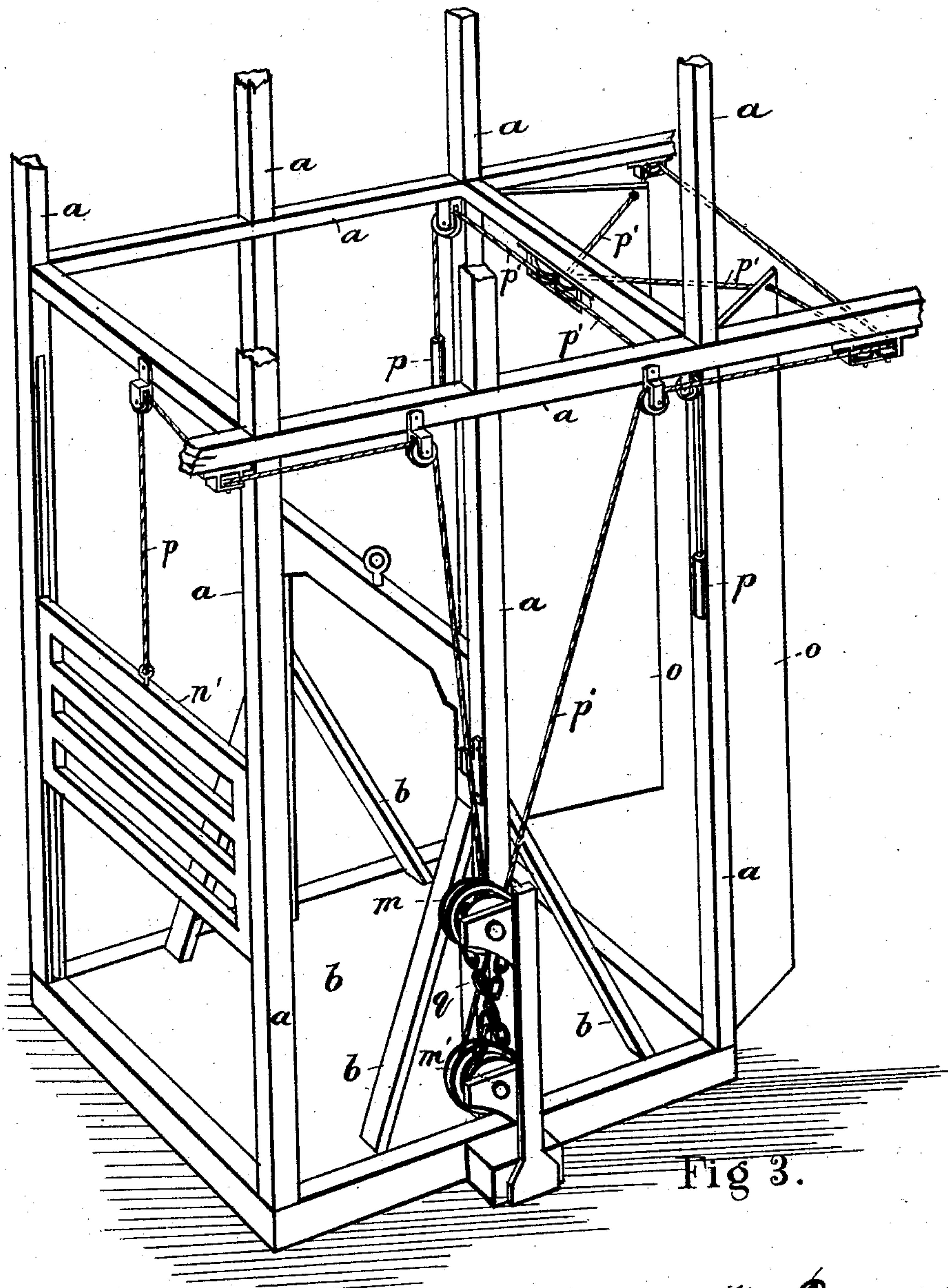


Fig 3.

WITNESSES.
J. Richards
Louis Vieter.

Andrew M. Dungan
Milton Lacroche
INVENTORS
by
Henry Millward
their attorney -

UNITED STATES PATENT OFFICE.

ANDREW M. DUNGAN AND MILTON LACRONE, OF SPRINGFIELD, OHIO.

ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 280,151, dated June 26, 1883.

Application filed February 10, 1883. (No model.)

To all whom it may concern:

Be it known that we, ANDREW M. DUNGAN and MILTON LACRONE, of Springfield, county of Clarke, State of Ohio, have invented a new and useful Improvement in Elevators, of which
5 the following is a specification.

Our invention relates to that class of elevators that are provided with self-closing hatchways or guards to hatchways; and it consists
10 in a pivoted rack attached to the cage of the elevator, said rack being arranged to mesh into and rotate a stationary gear-wheel located at any convenient point contiguous to the afore-
15 said rack, which will, as it turns, move a sheave, upon which may be wound and unwound a rope or other suitable flexible band, one end of which is attached to said sheave and the
20 other to the hatchway-guard, for the purpose of opening it as the cage ascends or descends, and closing it as it returns or passes on.

In the accompanying drawings, Figure 1 is a longitudinal elevation of an elevator embodying our invention. Fig. 2 is a transverse elevation, showing a portion of the hatchway-guard removed for perspicuity; and Fig. 3 is
25 a perspective view of the same.

In the drawings above referred to letters of like character indicate corresponding parts in each of the figures:

30 *a* represents the usual framing of an elevator; *b*, the cage; *c*, the rack, attached to the cage in such a manner that it may oscillate upon a pin at *d*, and having a limited movement in the direction in which it so oscillates,
35 by means of a curved slot, *e*, and a stud or pin, *f*, fixed to the upright *g* of the cage.

To the rack *c* we attach a handle, *h*, by means of which the rack may be oscillated upon the pin *d* at the pleasure of the operator.

40 To keep the rack in its normal position when not disturbed by the operator, we employ a spring, *i*, secured to the upright *g* of the cage.

To any convenient part of the elevator-framing, or else upon the floor of the building, we

apply a pinion, *l*, and sheave *m*, mounted upon a suitable shaft, *n*, both of which are rigidly
45 secured to said shaft.

To the sheave *m* we secure one end of a rope, the other end of which is applied to a gate, *n'*, or door *o*.
50

To close the doors *o*, after the cage has opened them and passed on, we use weights *p*, attached to ropes *p'*. However, it is obvious that the doors may be closed by springs or by reverse ropes attached to the sheaves *m m'*. Where a
55 gate is used, as shown at *n'*, it will fall of its own gravity. Where the cage *b* and rack *c* have to pass beyond the pinion *l*, as they will where more than two floors are reached by the
60 elevator, we employ two sets of sheaves *m m'* and a cross-belt, *q*, so that the elevator, in descending, may open the gates in the same manner as it did in ascending.

When the operator is passing a floor, he can, through the agency of the handle *h*, oscillate
65 the rack *c* on the pin *d*, to cause it to pass the pinion *l* without disturbing it.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—
70

1. In an elevator, and in combination, a rack, *c*, pivoted at *d* to the cage, a pinion, *l*, and sheave *m*, mounted on a shaft, *n*, and a rope, *p*, attached to a gate or other hatchway-guard, substantially as and for the purpose specified.
75

2. The combination of the cage and the rack-bar pivoted at one end to the cage and adapted to oscillate with the shaft *n*, pinion *l*, sheaves *m m'*, cross-belt *q*, and ropes connecting the two sheaves with hatchway-gates, substantially as described.
80

In testimony whereof we have hereunto set our hands this 25th day of January, 1883.

ANDREW M. DUNGAN.

MILTON LACRONE.

Witnesses:

HENRY MILLWARD,
E. S. WALLACE.