No. 745,384. PATENTED DEC. 1, 1903.

J. RASHKIN.

MECHANISM FOR OPENING OR CLOSING GATES OF ELEVATOR WELLS.

APPLICATION FILED JUNE 1, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

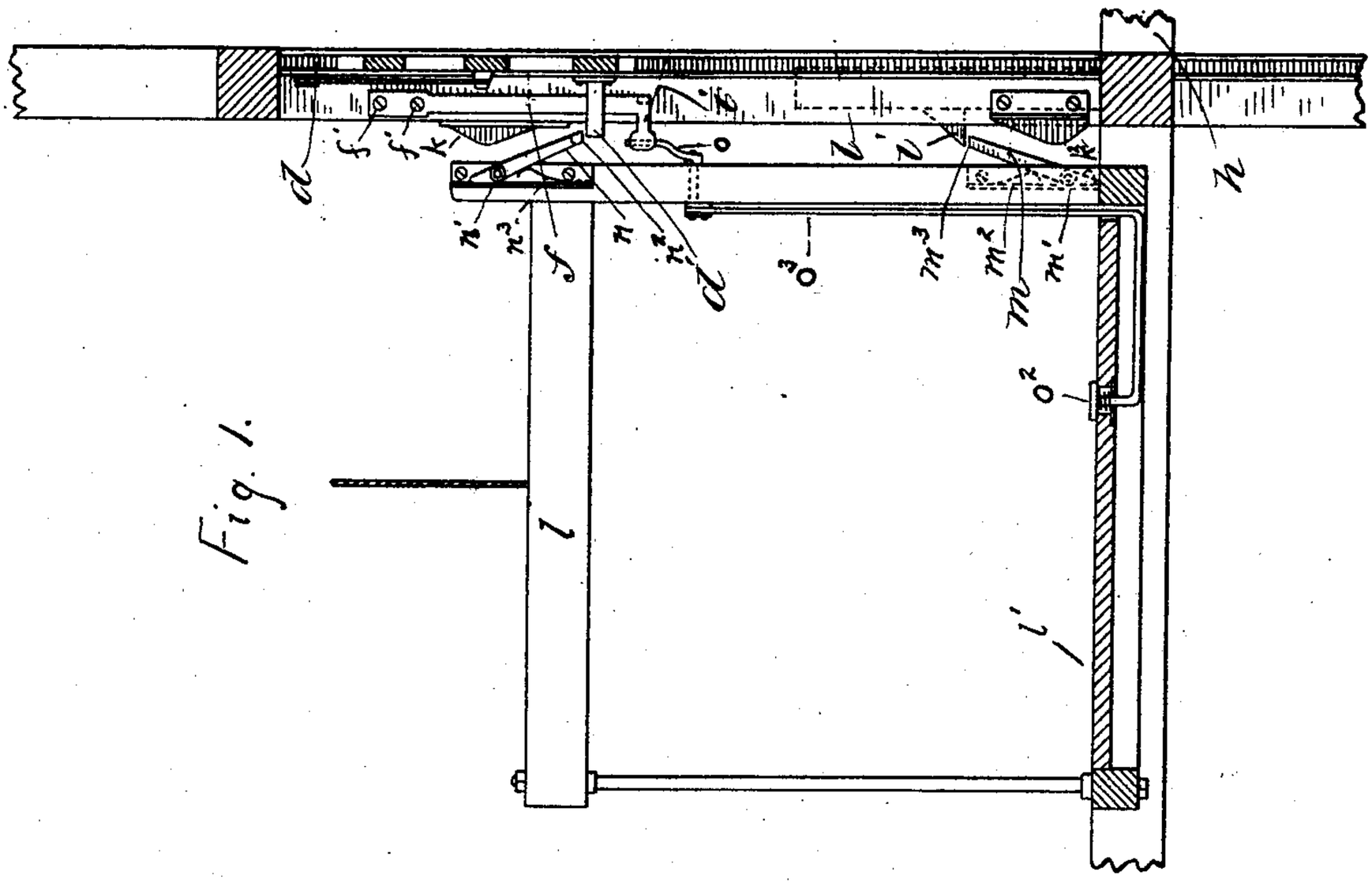

Fig. 1.

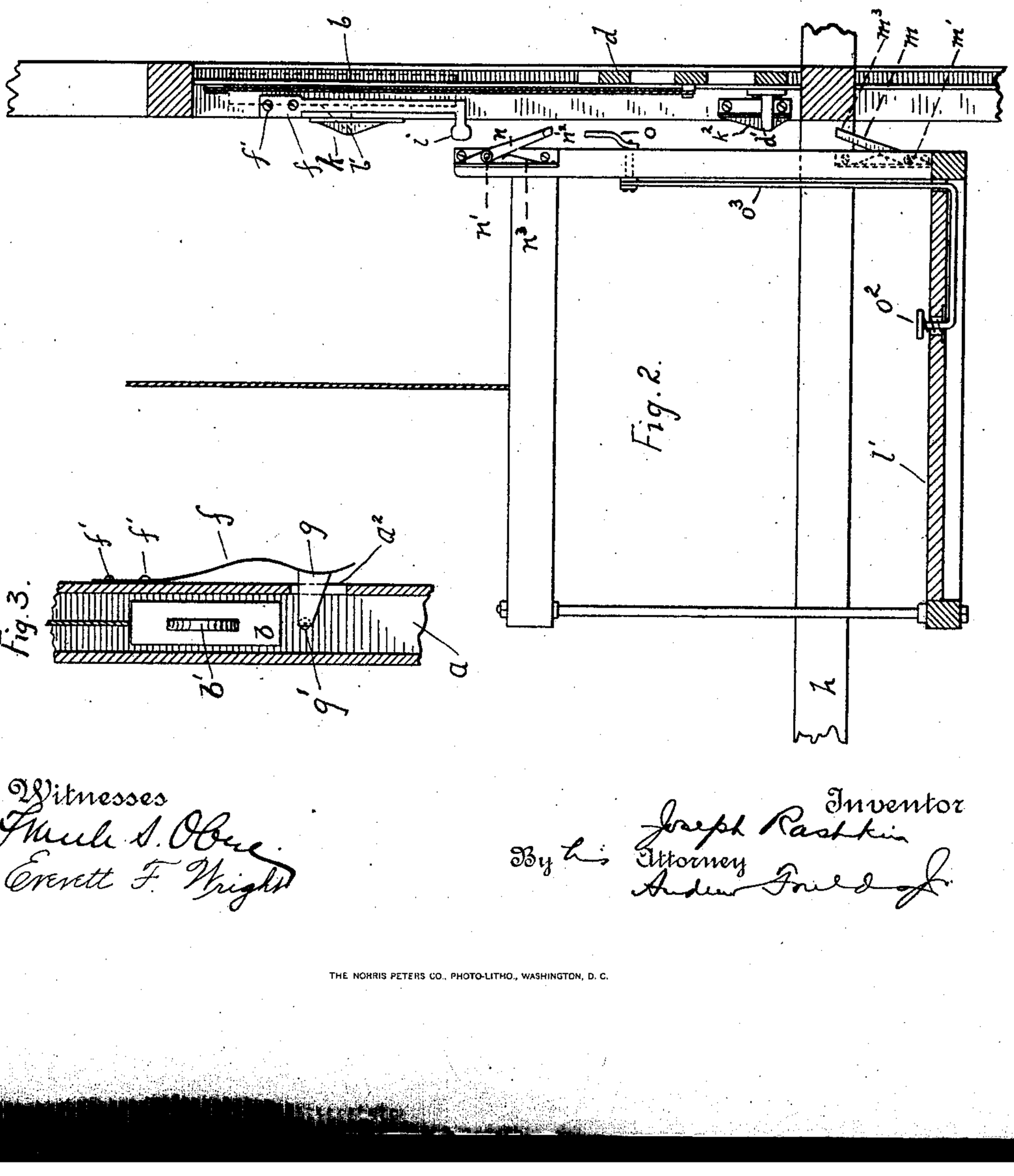

Fig. 2.

Fig. 3.

Witnesses
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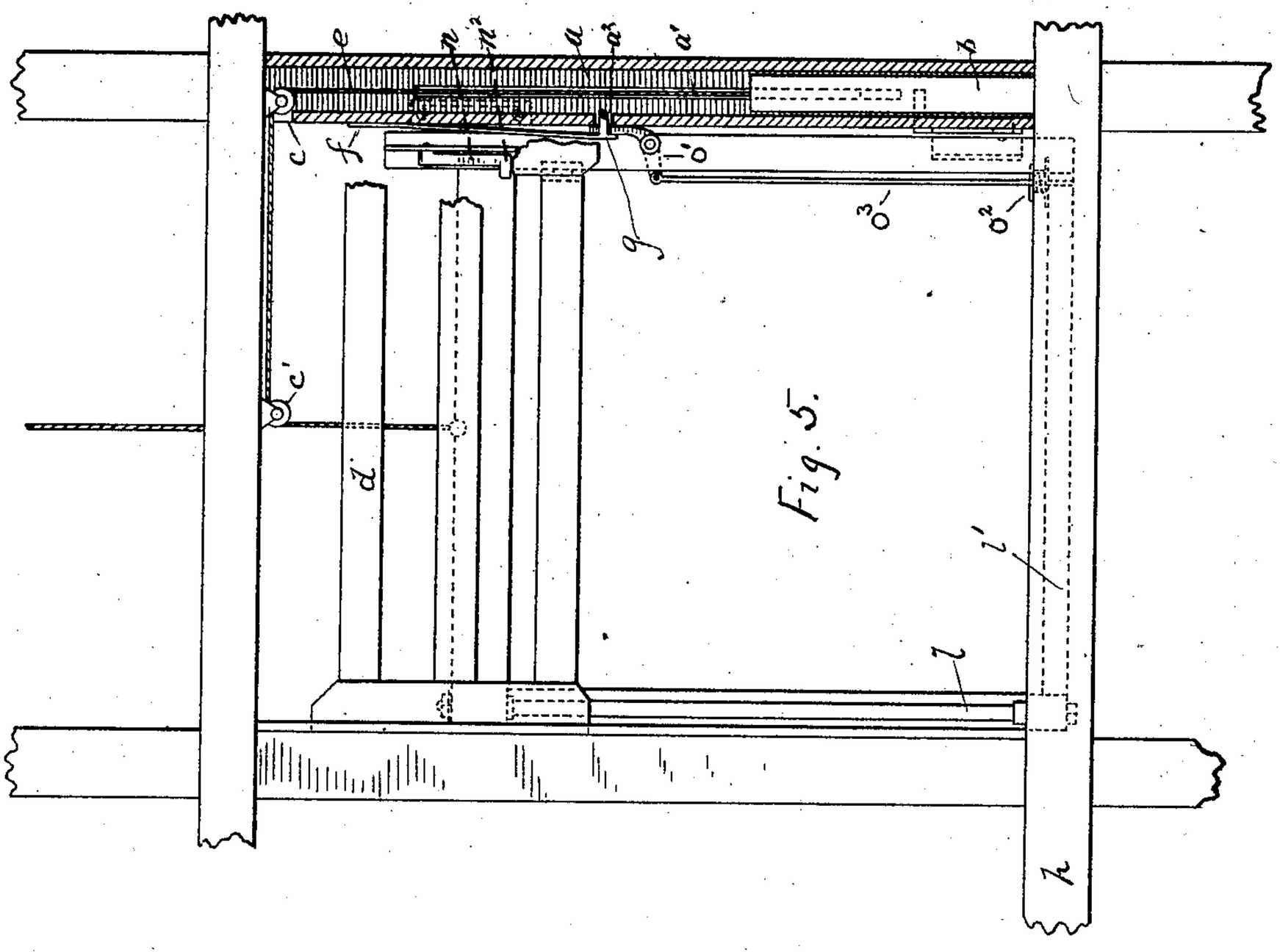

Fig. 5.

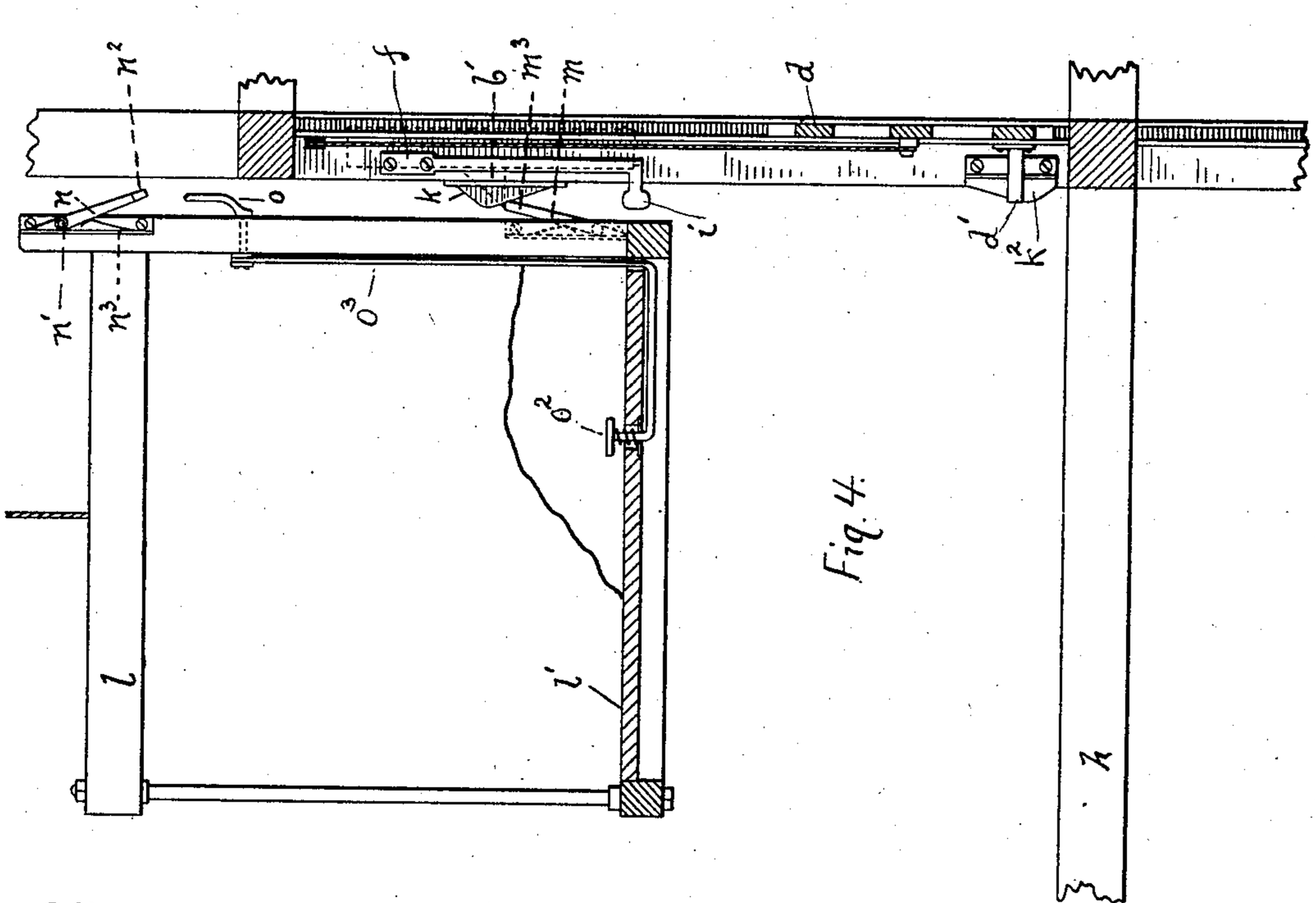

Fig. 4.

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UNITED STATES PATENT OFFICE.

JOSEPH RASHKIN, OF NEW YORK, N. Y.

MECHANISM FOR OPENING OR CLOSING GATES OF ELEVATOR-WELLS.

SPECIFICATION forming part of Letters Patent No. 745,384, dated December 1, 1903.

Application filed June 1, 1903. Serial No. 159,506. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH RASHKIN, a subject of the Czar of Russia, and a resident of the city of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Mechanism for Opening or Closing Gates of Elevator-Wells in Buildings, of which the following is a specification.

My invention relates to improvements in mechanism for opening and closing gates of elevator-wells in buildings; and the objects of my invention are to provide safe means upon an elevator-car for quickly opening the entrance to the elevator-well by the operator when desired and for automatically closing the entrance when the elevator-car leaves the floor. I attain these objects by the device illustrated in the accompanying drawings, in which—

Figure 1 is a sectional view of the device, showing the elevator-car at the floor of a building. Fig. 2 is a sectional view of the device, showing the elevator-car below the floor of the building in ascending. Fig. 3 is a view of the weight and spring-catch. Fig. 4 is a sectional view of the device, showing the elevator-car after it has left the floor of the building in ascending. Fig. 5 is a view of the device, partly in section, showing the car at the floor of the building, as in Fig. 1.

Similar letters refer to similar parts throughout the several views.

Upon the side of an elevator-well at each floor I affix a perpendicular run or slide a, provided in the face adjoining the elevator-well with a vertical slot a'. Within the perpendicular run a I provide a counterbalance-weight b, provided with a lug b', projecting through the vertical slot a' in the perpendicular run a. A cable e is attached to the upper end of the weight b in any well-known manner and is passed over pulleys $c\,c'$ at the top of the perpendicular run a near the ceiling and down to the gate d, which closes the entrance to the elevator-well. I find it preferable to place the perpendicular run at the side of the gate. It may, however, be placed at any part of the well, direction-pulleys being provided in such case for the cable. Upon the side of the perpendicular run a I attach a hanger f by means of bolts $f'\,f'$, passed through the hanger near its upper end or in any other well-known manner. This hanger f is provided at its lower end with a lug g. An opening a^2 is provided in the side of the run a, through which the lug g projects into the vertical weight-run a. Upon the end of this lug g I attach a roller g' to minimize the friction. This lug g projects into the vertical run a at the point where, when the weight b rests upon it, the lower edge of the gate d will be at or near the floor h of the building and where the weight b when resting upon the lug g will be a sufficient height from the floor h to permit the fall of the weight b to raise the gate d to a height sufficient to permit an unobstructed entrance and exit to the elevator-car when at the floor. At or near the lower end of the hanger f I provide a short arm i, projecting from it toward the car and at an angle to the lug g. At a point on the side of the vertical run a where the projecting lug b' of the weight will lie when the weight b is resting upon the lug g, I provide at one side of the slot a' a shoe k, projecting out into the well a distance slightly greater than that of the projecting lug b' on the weight b.

On the outer side and near the top of the elevator-car l I attach a dog n, having its upper end n' pivoted or hinged to the side of the car and having its free lower end n^2 normally lying in the vertical plane of the projecting lug d' on the gate d. A spring n^3 is provided behind the dog n to hold the free lower end n^2 normally out into the elevator-well. The dog n is sufficiently wide to engage the lug d', projecting from the gate d, and also the shoe k^2, placed at the side of the lug d' on the gate d near the floor of the building. I also provide a similar dog m near the lower edge of the elevator-car, having its lower end m' hinged to the car and having its upper end m^3 normally projecting out into the elevator-well and lying in the vertical plane of a projecting lug b', attached to the weight and projecting through the slot a' in the side of the vertical run a and sufficiently wide to engage both the lug b' and the shoe k.

Upon the elevator-car l I provide a casting-off device, consisting of the projecting arm o, lever o', press-button o^2, and connecting-bar o^3, in such manner that a pressure upon the

button o^2 will cause the end of the projecting arm o to move horizontally. This projecting arm o is placed at such height in the car that when the floor l' of the car l is even with the floor h of the building the projecting arm o is at and lying in the horizontal plane of the projecting arm i of the hanger f.

The gate d slides vertically on tracks provided for the purpose at the entrance to the elevator-well from the floor to a point above the floor sufficiently high to permit the free passage of persons using the car to and from the car when it is at the floor.

When the gate is at the floor, the counterbalance-weight b will rest upon the projection g on the hanger f. The shoe k on the side of the vertical run a projects into the well a distance slightly greater than that of the projecting lug b' on the weight b, and the car may thus pass up or down the well without engaging the projection b' on the weight b, and as the shoe k^2 projects out into the well a distance slightly beyond that of the projection d' on the gate d the car may pass up or down the well without engaging the projecting lug d' on the gate d.

When it is desired to open the gate at a floor, the elevator-car is raised or lowered by the usual means, so that the floor of the car is level with the floor of the building. The projecting arm o carried by the car will then be in the horizontal plane of the projecting arm i on the hanger f and adjacent thereto. The operator applies pressure by means of his foot or in any other manner to the button o^2, and by means of the connecting-bar o^3 and lever o' the projecting arm o is forced against the projecting arm i of the hanger f. The hanger f being forced out by this means, the supporting-lug g upon which the weight b is resting is withdrawn and the weight falls. The weight b being slightly heavier than the gate d, the gate d is thus drawn upward by the connecting-cable e and remains open while the car is at the floor. When the car l leaves the floor h, moving upwardly, the dog m carried by the car engages the projecting lug b' on the weight b and lifts the weight above the supporting-lug g, attached to the lower end of the hanger f, which will slip under the weight b and prevent its fall when the dog m is disengaged from the projecting lug b' by the shoe k, which engages the dog m at this point. As the weight b is thus raised, the gate attached to the other end of the connecting-cable e will descend, and thus close the entrance to the elevator-well, and, as above described, the car may pass up or down the well without disturbing the gate.

When it is desired to move the car down the well after the gate has been opened without first raising the car, the dog n engages the projection d' on the gate d and draws the gate downward with it until the weight has been raised above the supporting-lug g on the hanger f, when the shoe k^2 will engage the dog n and force it back out of engagement with the projection d' on the gate d, and the weight b being thus supported by the lug g on the hanger f will remain thus suspended, and the gate d will remain closed until the operator again opens the gate by means of the mechanism above described or releases the weight in any other manner desired.

While I find it desirable to operate the gate by means of the press-button in the floor of the car, the connecting rod and lever above described, the press-button, and connecting lever and rod may be entirely dispensed with when desired, and the lug g on the hanger f may be moved by the operator by hand without any intervening means whatever or by any other desired means, and other forms of dogs may be substituted for the dogs m and n shown in the accompanying drawings when desired without departing from my invention.

Having thus described my invention, what I claim is—

1. In a mechanism of the character described the combination of a gate having a weight connected thereto, a projecting lug upon the weight, an elevator-car, a dog carried by the car and normally lying in the vertical plane of the projecting lug upon the weight and means for moving the dog out of the vertical plane of the projecting lug upon the weight substantially as shown and described.

2. In a mechanism of the character described the combination of a gate having a weight connected thereto, an elevator-car, a dog carried by the car and normally lying in the vertical plane of the weight and means for moving the dog out of the vertical plane of the weight substantially as shown and described.

3. In a mechanism of the character described the combination of a gate having a weight connected thereto, a projecting lug upon the gate, a dog carried by the car and normally lying in the vertical plane of the projecting lug upon the gate, and means for moving the dog out of the vertical plane of the projecting lug upon the gate, substantially as shown and described.

4. In a mechanism of the character described the combination of a gate having a weight connected thereto, a dog carried by the car and normally lying in the vertical plane of the gate and means for moving the dog out of the vertical plane of the gate substantially as shown and described.

5. In a mechanism of the character described the combination of a weight-run, a vertically-movable weight therein, a hanger mounted on the weight-run and provided with a weight-support normally projecting into the weight-run an elevator-car and means carried by the elevator-car for moving the weight-support out of the weight-run substantially as shown and described.

6. In a mechanism of the character described the combination of a weight-run a vertically-movable weight therein, a movable

weight-support normally projecting into the weight-run, an elevator-car, a projecting arm carried by the car and means for bringing said projecting arm into engagement with the weight-support substantially as shown and described.

7. In a mechanism of the character described the combination of a vertically-movable weight, a gate connected thereto, an elevator-car, a movable dog carried by the car and normally lying in the vertical plane of the weight and a shoe also lying in the vertical plane of the movable dog carried by the car substantially as shown and described.

8. In a mechanism of the character described the combination of a vertically-movable weight, a gate connected thereto, an elevator-car, a movable dog carried by the car and normally lying in the vertical plane of the gate and a shoe also lying in the vertical plane of the movable dog carried br the car substantially as shown and described.

9. In a mechanism of the character described the combination of a vertically-movable weight, a gate connected thereto, an elevator-car, a movable dog *m* carried by the car and normally lying in the vertical plane of the weight and a shoe also lying in the vertical plane of the movable dog *m* carried by the car, a second movable dog *n* carried by the car and lying in the vertical plane of the gate and a shoe also lying in the vertical plane of the dog *n* substantially as shown and described.

10. In a mechanism of the character described the combination of a vertically-movable weight, a gate connected thereto, an elevator-car, a movable dog *m* carried by the car and normally lying in the vertical plane of the weight and a shoe also lying in the vertical plane of the movable dog *m* carried by the car, a second movable dog *n* carried by the car and lying in the vertical plane of the gate and a shoe also lying in the vertical plane of the dog *n*, a movable weight-supporting lug and means for moving the said weight-supporting lug substantially as shown and described.

Signed at New York city, in the county of New York and State of New York, this 27th day of May, A. D. 1903.

JOSEPH RASHKIN.

Witnesses:
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