

No. 687,049.

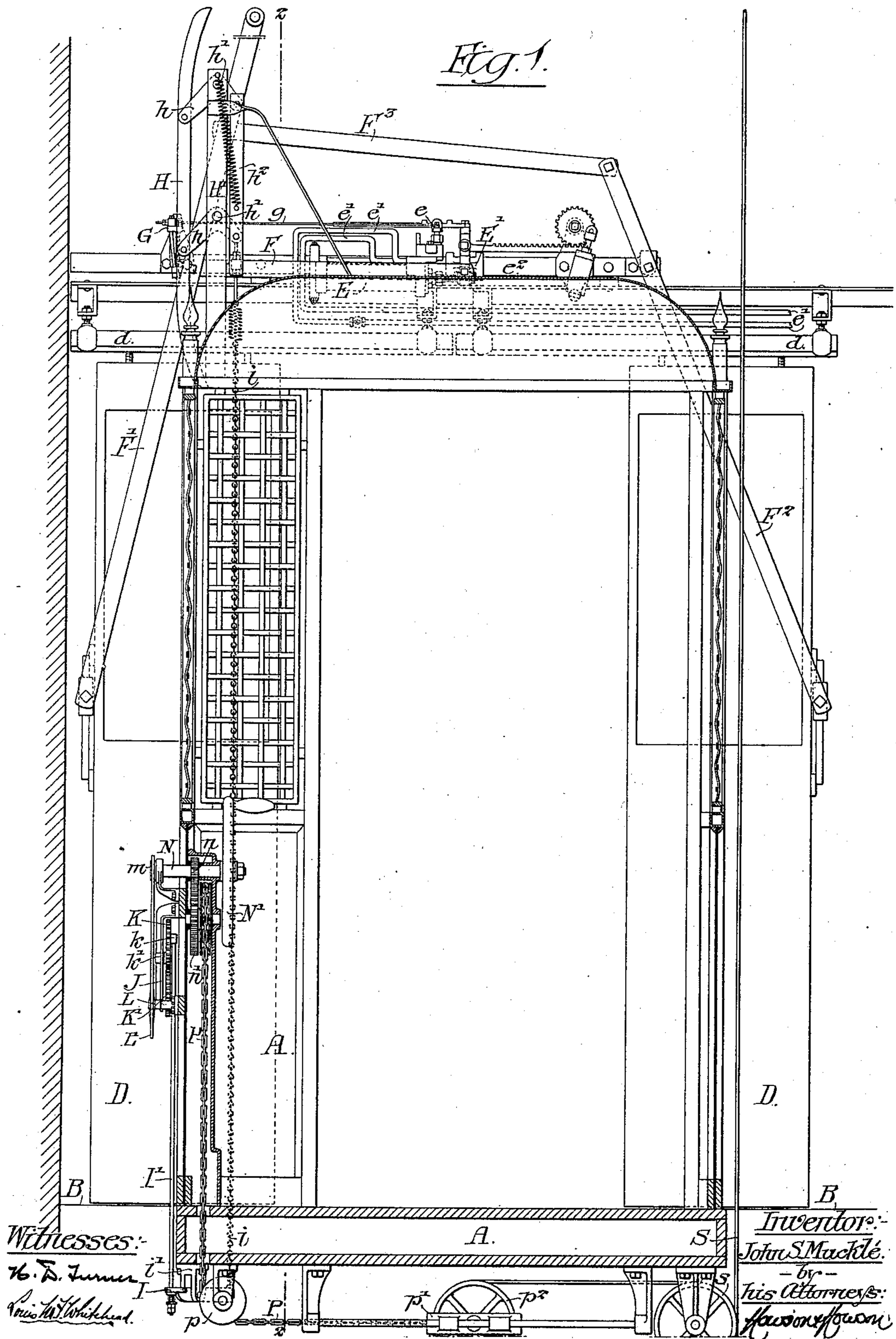
Patented Nov. 19, 1901.

J. S. MUCKLÉ.
ELEVATOR DOOR LOCKING MECHANISM.

(Application filed Jan. 20, 1900.)

(No Model.)

3 Sheets—Sheet 1.



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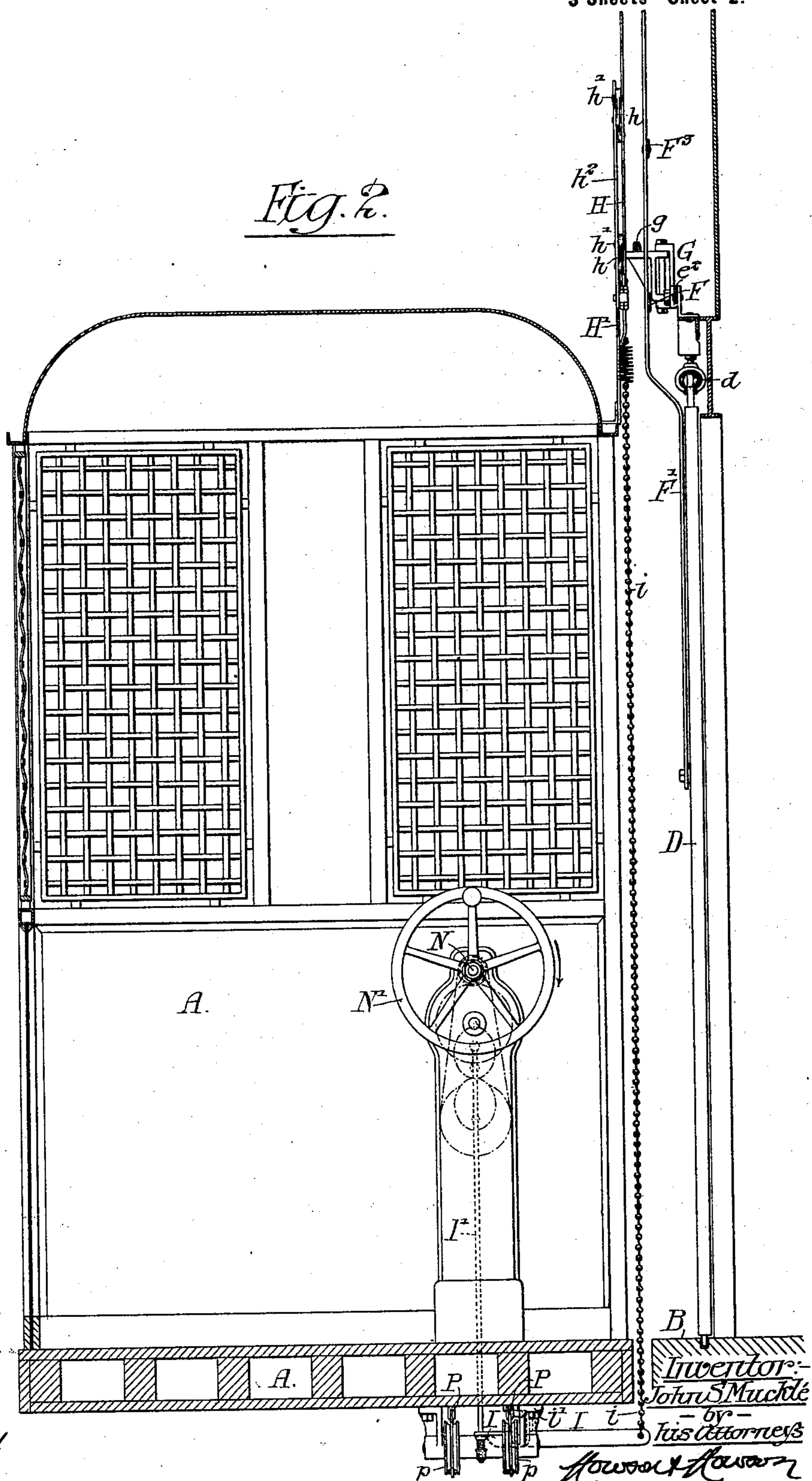
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Fig. 2.



Witnesses:-

W. S. Turner

Louis H. Whitehead

Inventor:-

John S. Mucklé

- by -

His Attorneys

Howell & Howan

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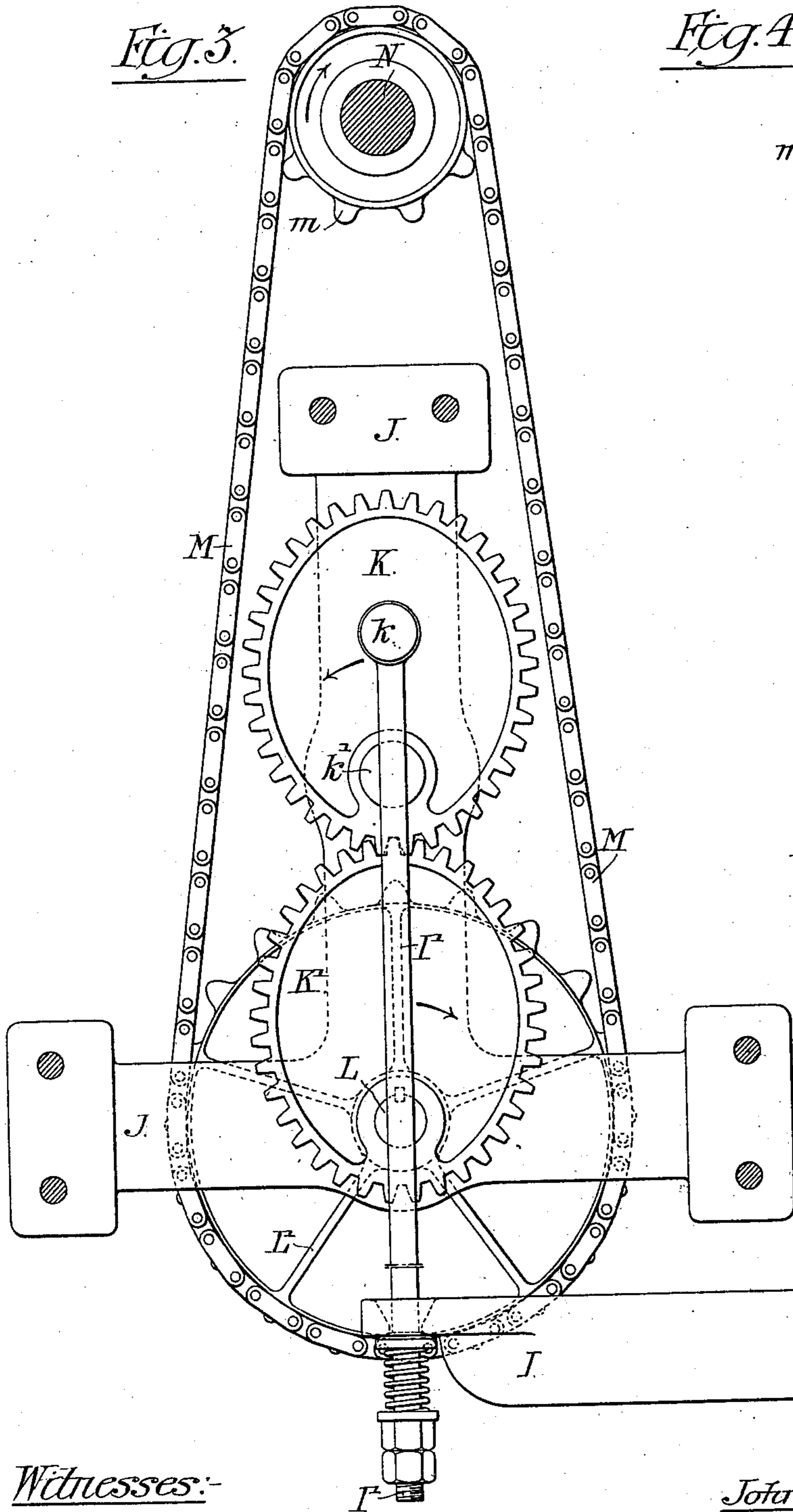
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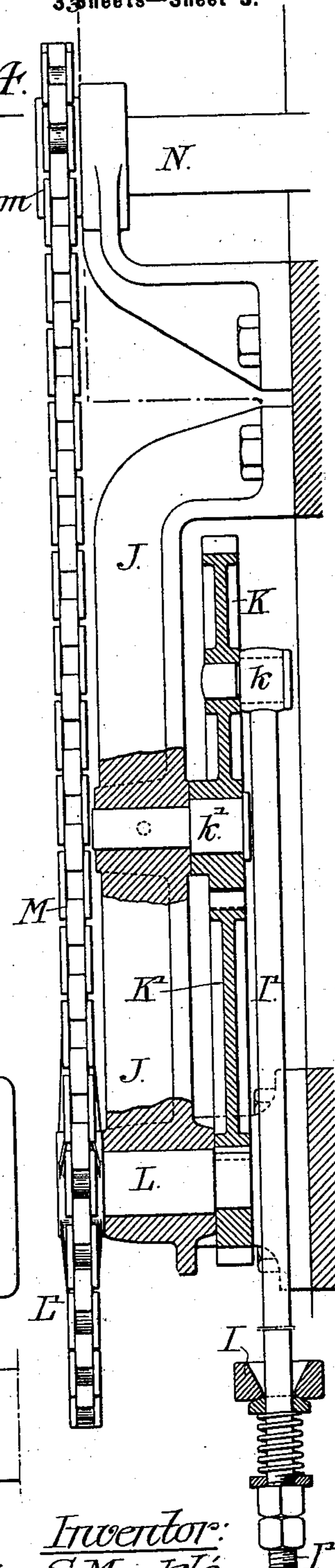
Fig. 3.



Witnesses:-

W. E. Turner
Louis H. Whitehead

Fig. 4.



Inventor:-

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UNITED STATES PATENT OFFICE.

JOHN S. MUCKLÉ, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO HIMSELF, M. R. MUCKLÉ, JR., AND THOMAS CARPENTER SMITH, OF PHILADELPHIA, PENNSYLVANIA.

ELEVATOR-DOOR-LOCKING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 687,049, dated November 19, 1901.

Application filed January 20, 1900. Serial No. 2,132. (No model.)

To all whom it may concern:

Be it known that I, JOHN S. MUCKLÉ, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain
5 Improvements in Elevator-Door-Locking Mechanism, of which the following is a specification.

My invention relates to certain improvements in elevator mechanism in which the
10 doors are operated by pneumatic devices.

The object of my invention is to control these devices by the operating hand wheel or lever for starting or stopping the car.

In the accompanying drawings, Figure 1
15 is a view of an elevator-car at a landing, showing the car in section and the doors open. Fig. 2 is a section on the line 2 2, Fig. 1. Fig. 3 is an enlarged sectional view on the line 3 3, Fig. 4, showing the connection between the
20 car-controlling device and the door-operating mechanism. Fig. 4 is a side view, partly in section, of the device shown in Fig. 3.

By my invention the car-controlling mechanism must be brought to a certain point to
25 stop the car before the doors are opened, and this mechanism cannot be again operated to start the car without first closing the doors.

A is the car, in the present instance of a passenger-elevator.

30 B is the floor of a landing.

D D are the landing-doors, being of the sliding type in the present instance, adapted to guides $d\ d$ above the doorway.

E is an air-cylinder having a controlling-
35 valve e , connected to the cylinder by pipes.

$e' e'$ are the air-service pipes. The piston-rod of the cylinder is connected to a slide E' , adapted to a way e^2 . The slide E' is connected
40 by a rod F to a pivoted arm F' , attached to the rear of one of the doors, and the arm in turn is connected to a pivoted arm F^2 by a rod F^3 and attached to the opposite door, so that when the piston is forced forward the action of the mechanism is to close the doors.

45 The controlling-valve e of the cylinder E is connected by a rod g to a lever G, which projects so as to be engaged by a bar H, pivoted to levers h , hung at h' to a projection H' on the car. The other arms of the levers $h\ h$

are connected to a bar h^2 , to which is attached 50
a chain i , connected to a lever I, pivoted to a bearing i' under the bottom of the car. The arm of this lever is connected by a rod I', Fig. 3, to a pivot-pin k on an elliptical gear-wheel K, hung at k' to a frame J, secured 55
to the side of the elevator-car. The gear-wheel K meshes with the elliptical gear-wheel K', secured to a shaft L, adapted to bearings in the frame J, and on this shaft is a sprocket-wheel L', around which passes a chain M from 60
a sprocket-wheel m on the shaft N, on which, in the present instance, is mounted the operator's hand-wheel N'. Also on the shaft N is a pinion n , which meshes with the gear-wheel n' , and attached to this gear-wheel is a sprocket- 65
wheel n^2 , around which passes the chain P. The chain P passes around idlers p under the car, and each end is attached to a carrier p' , on which are the rope-wheels p^2 . The controlling-rope S passes around the guide- 70
pulleys s , under the car, and around the pulleys p^2 , as shown, so that as the hand-wheel N' is turned the carriers p' will be moved toward or from the wheels s , and consequently will shift the rope, which is connected to the 75
controlling-valve or other controlling mechanism of the elevator, and will either start or stop the car, according to the position of the wheel. The gearing for controlling the mechanism for opening the doors is so set that af- 80
ter the hand-wheel is turned so as to shift the valves and stop the elevator-car at the landing by a continued movement of the hand-wheel the lever I will be moved so as to force the bar H out, and as the lever G is in the 85
path of this bar when the car is at the landing it will also be moved, and this motion will be imparted to the valve e , which will allow air to be admitted to the cylinder, drawing the piston in and causing the doors to open 90
through the connections $F\ F'\ F^2\ F^3$. When it is wished to close the doors prior to starting the elevator, the first movement of the hand-lever will retract the bar H, releasing the lever G and shifting the valve e , causing 95
the air to enter the other end of the cylinder E, and the doors will immediately close. Then by a continued movement of the hand-wheel

the controlling-lever of the car will be operated and the car can either ascend or descend, as desired.

5 The general mechanism for opening and closing the door is not my invention, and I lay no claim to it; but I do claim the connection between this mechanism and the controller for the car, so as to dispense with any hand or foot levers usually employed in door-
10 openers of this type to shift the valve. Furthermore, this combination prevents the opening of the door until the elevator is in the proper position at the landing, and it prevents the starting of the car until the doors are
15 closed.

I claim as my invention—

The combination of a car, a landing, doors at the landing, means for automatically closing and opening said doors, means on the

car adapted to engage the doors when opposite the landing, a hand-wheel on the car controlling the movement of the elevator, a connection between the hand-wheel and the door-operating device, the same consisting of eccentric gears, and a connecting-rod whereby
25 the doors can be opened when the elevator is at the landing by continuing the movement of the wheel and can be closed prior to starting the car on the first return movement of the wheel, substantially as described. 30

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN S. MUCKLÉ.

Witnesses:

WILL. A. BARR,
JOS. H. KLEIN.