

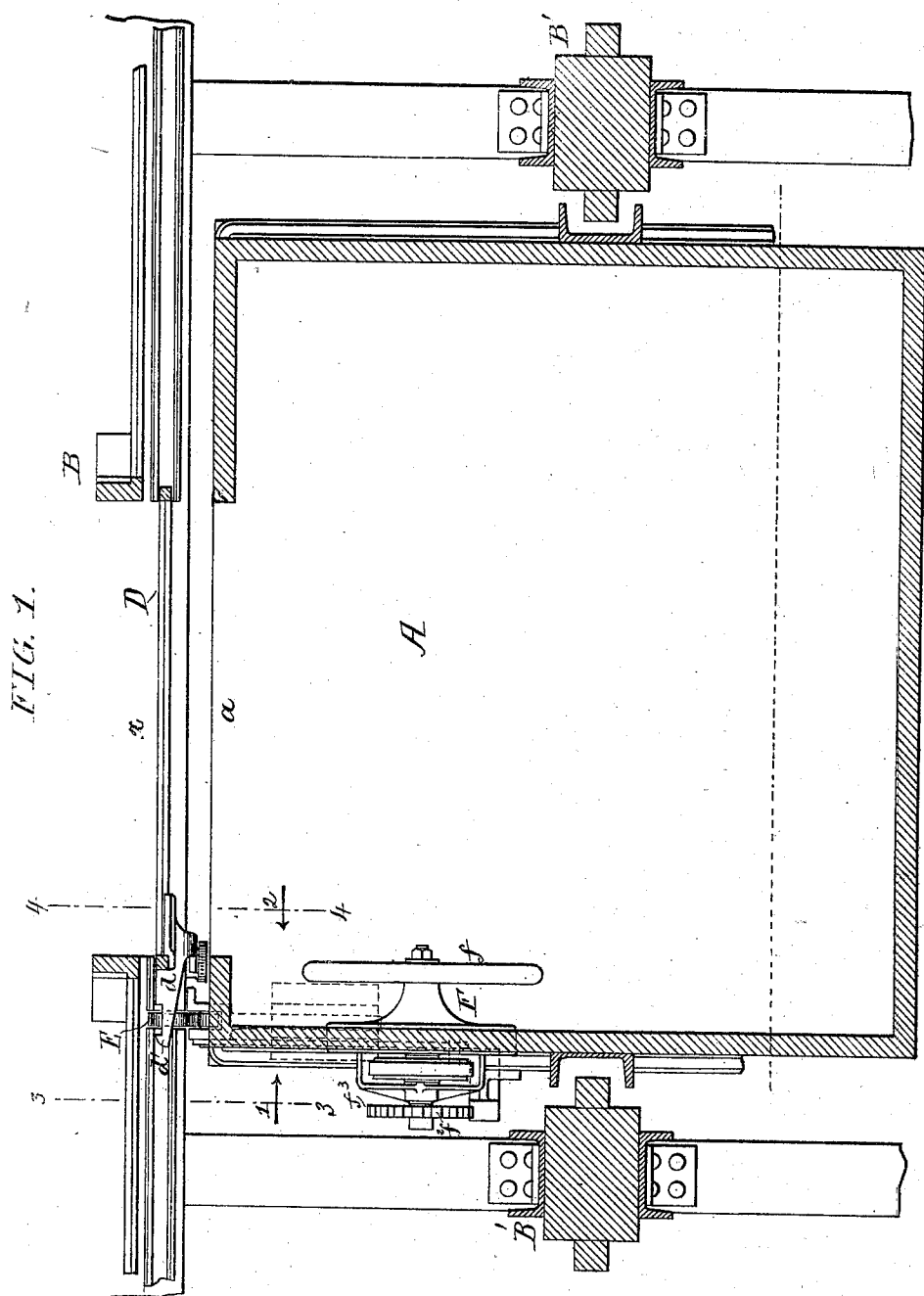
(No Model.)

4 Sheets—Sheet 1.

J. S. MUCKLÉ & W. H. B. TEAMER.
ELEVATOR.

No. 555,825.

Patented Mar. 3, 1896.



Witnesses:
J. C. Benner
H. D. Goodwin

Inventors:
John S. Mucklé and
William H. B. Teamer
by their Attorneys
Hamm & Hamm

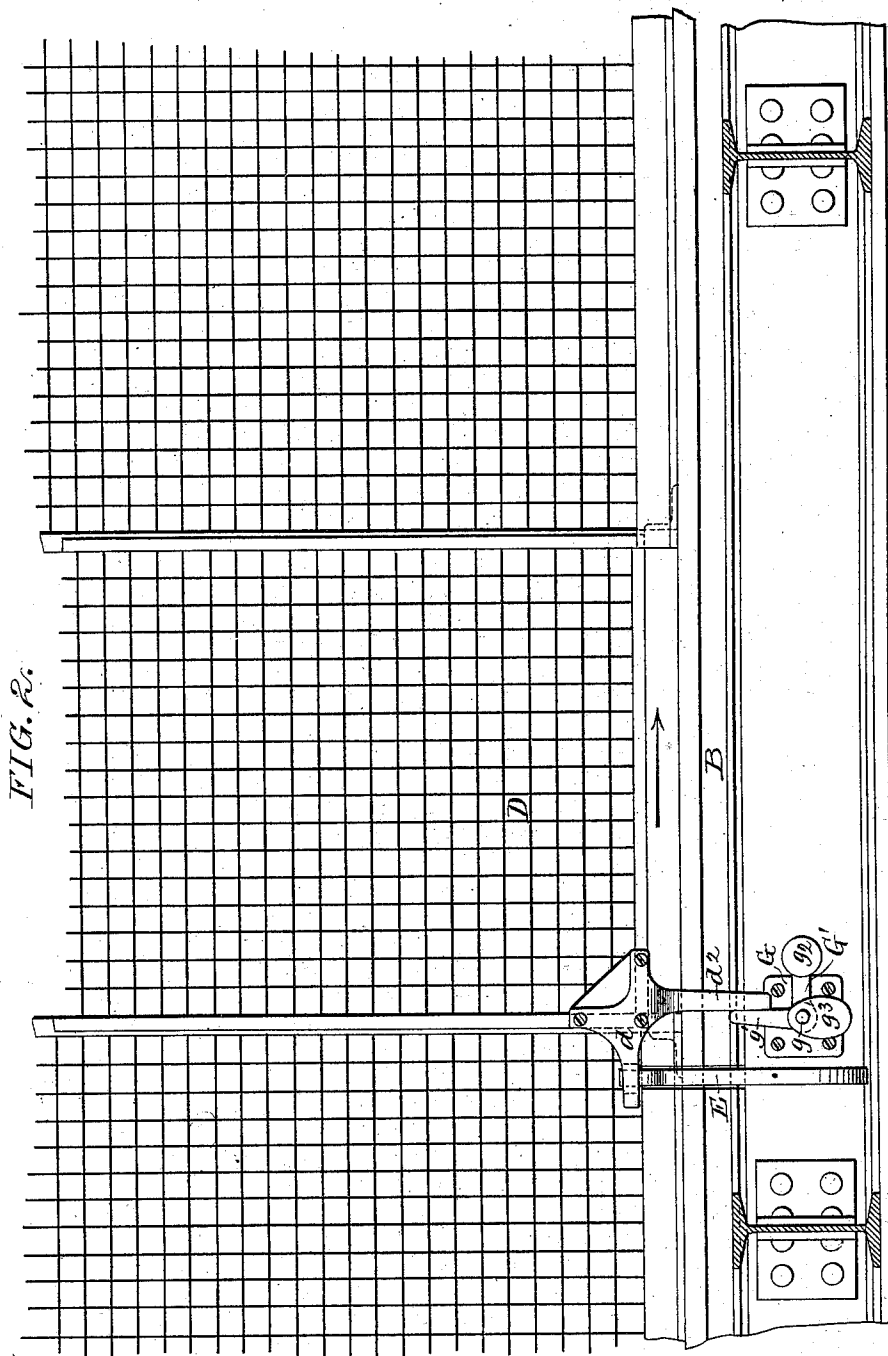
(No Model.)

4 Sheets—Sheet 2.

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(No Model.)

4 Sheets—Sheet 3.

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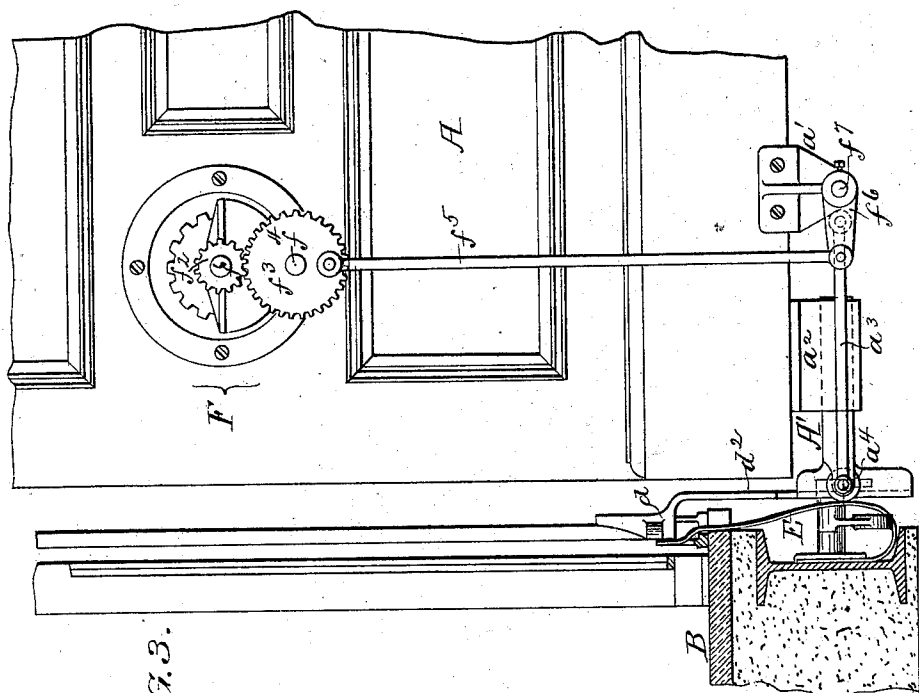


FIG. 3.

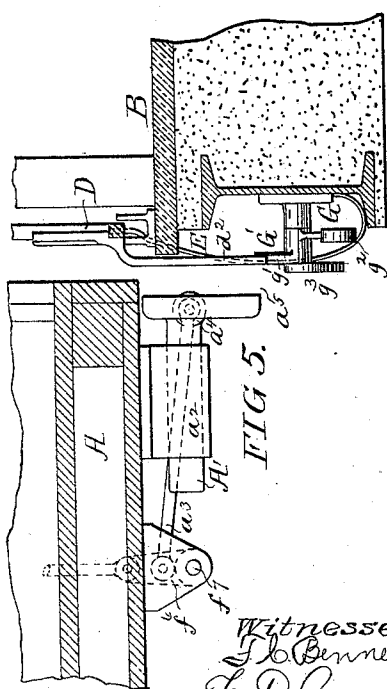
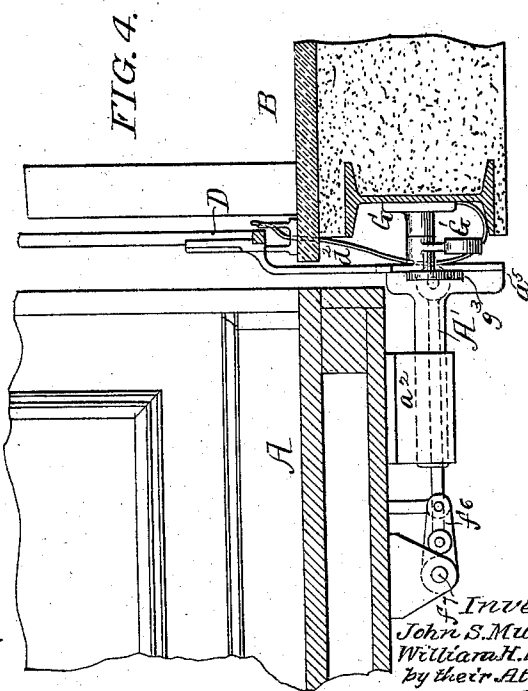


FIG. 4.



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(No Model.)

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FIG. 6.

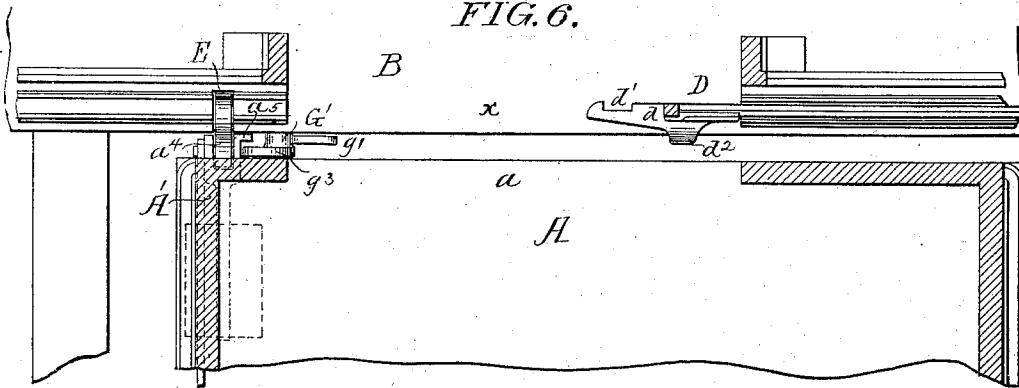


FIG. 7.

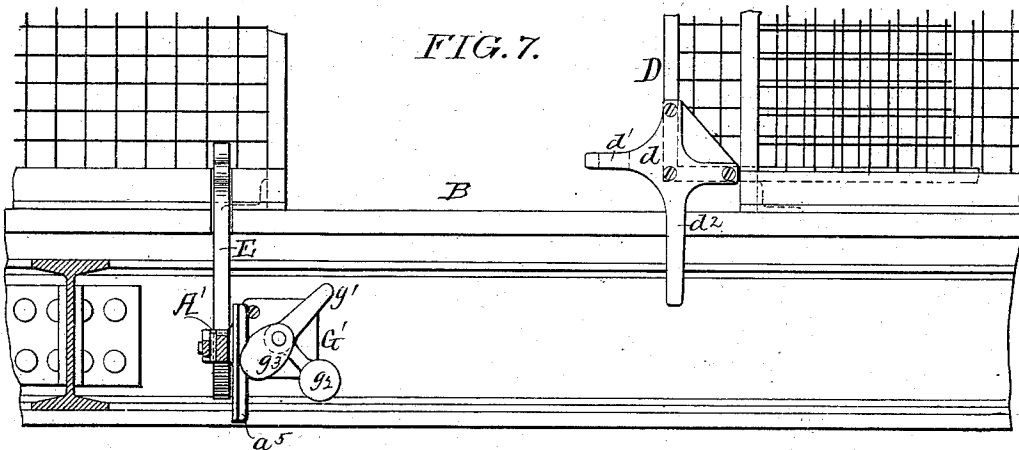
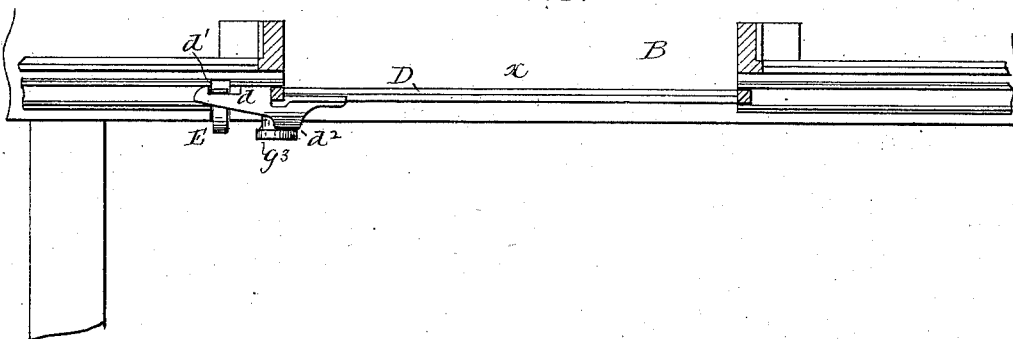


FIG. 8.



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UNITED STATES PATENT OFFICE.

JOHN S. MUCKLÉ AND WILLIAM H. B. TEAMER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNORS TO M. R. MUCKLÉ, JR., & CO., OF SAME PLACE.

ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 555,825, dated March 3, 1896.

Application filed October 30, 1895. Serial No. 567,442. (No model.)

To all whom it may concern:

Be it known that we, JOHN S. MUCKLÉ and WILLIAM H. B. TEAMER, citizens of the United States, and residents of Philadelphia, Pennsylvania, have invented certain Improvements in Elevators, of which the following is a specification.

The object of our invention is to prevent accidents on passenger-elevators due to the carelessness of the operator in starting the car while the door is open and leaving the door open after the car has passed the floor. This object we attain by positively locking the car on the opening of the door and locking the door on the movement of the mechanism to start the car.

Referring to the accompanying drawings, Figure 1 is a sectional plan view showing an elevator-car in position in front of one of the landings with the door closed, but unlocked. Fig. 2 is a view from the elevator-well, showing the door in a position similar to Fig. 1. Fig. 3 is a view on the line 3 3, looking in the direction of the arrow 1, Fig. 1. Fig. 4 is a section on the line 4 4, looking in the direction of the arrow 2, Fig. 1. Fig. 5 is a view similar to Fig. 4, with the exception that it illustrates the door locked. Fig. 6 is a diagram plan view showing the door open and the operating mechanism of the car locked. Fig. 7 is a view in elevation showing the parts in the position shown in Fig. 6. Fig. 8 is a view showing the door locked in the position shown in Fig. 5.

In the drawings we have shown an ordinary sliding door and a hand-wheel for operating the controlling mechanism of a hydraulic elevator.

It will be understood that our invention can be applied to any style of elevator or any form of door, and it can be used for either passenger or freight service, as desired.

A is the elevator-car.

B is one of the floors of a building.

D is a sliding door adapted to close the passage-way x to the car. a is a doorway leading to said passage-way from the car.

B' are the guides for the car.

Secured to one of the floor-beams within the well is a spring-latch E, which is bowed,

as shown in Fig. 3, and extends up into the path of an arm d on the door. This arm is notched at d' to receive the latch when the door is closed, as shown in Fig. 8. When this latch is in position as shown in said figure it is impossible to move the door, but as soon as the latch is depressed by the mechanism carried by the car the door will be free to be opened.

On the car is the shifting mechanism F, of which the hand-wheel f forms a part. This hand-wheel is within the car in easy access of the operator and on the shaft f' , to which the hand-wheel f is attached, is a pinion f^2 , engaging with a gear-wheel f^3 on the shaft f^4 . A crank-pin on this gear-wheel is connected by a rod f^5 to the lever f^6 , pivoted at f^7 to a bracket a' on the bottom of the car, as shown in Fig. 3.

Adapted to the bearing a^2 on the bottom of the car is a slide A' , and this slide is connected to the lever f^6 by a rod a^3 , so that on the movement of the hand-wheel to stop the car the slide A' will be moved forward to the position shown in Fig. 3. Carried by this slide is a roll a^4 , which engages with the spring-latch E, forcing it out of the notch d' of the arm d carried by the door, the slide A' and its connections thus constituting mechanism on the car connected to the motor-controlling mechanism of the car and adapted to release the door from the latch when the mechanism is operated to stop the car, so that it will be seen that as soon as the operator stops the car by the mechanism above described the door will be unlocked and will be free to be opened in the direction of the arrow, Fig. 2.

On the face of the elevator-well at one side of the spring-latch E is a plate G carrying a stud g on which is hung a lever G' . The arm g' of said lever extends in the path of an arm d^2 depending from the door, as shown in Fig. 2. The arm g^2 of the lever is weighted and the arm g^3 is so shaped as to engage with the slide A' on the elevator-car. The slide has a flange back of which the arm g^3 of the lever passes. On the opening of the door the depending arm d^2 of the door moves away from the arm g' of the lever G, the weight g^2 moves the lever G to the position shown in Fig. 7, throwing the

arm g^3 into engagement with the slide A' , and as the slide is positively connected to the motor-controlling mechanism on the car it will lock the shifting mechanism and prevent the car moving in either direction until the door is closed and its arm d^2 moves the lever G' to the position shown in Fig. 2.

It will be noticed that the flange a^5 of the slide A' is long, so that in the event of any leakage of the hoisting mechanism whereby the car should move, it will not break the parts, but the slide A' will simply move slightly on the arm g^3 of the lever G' without the parts being disengaged and without unlocking the motor-controlling mechanism, and should the car accidentally move a distance greater than the length of the slide the parts will simply become unlocked without causing any breakage, but this will only occur in very rare instances. One advantage of this construction is that as soon as the parts are detached the elevator-car and its mechanism is entirely clear of the mechanism at the landing, so that it is impossible for the parts to foul one another.

It will be understood that other mechanism may be used to connect the slide A' with the motor-controlling mechanism.

We claim as our invention—

1. The combination of an elevator-car, the motor-controlling mechanism, a movable well-door at the landing, a latch adapted to lock the door in the closed position, with mechanism on the car adapted to release the door from the latch when the mechanism is operated to stop the car so that the door can be opened, and connections on the car between the last-named mechanism and said motor-controlling mechanism, substantially as described.

2. The combination of an elevator-car, motor-controlling mechanism, a sliding door, a latch adapted to engage with the door when closed, a device secured to the wall of the elevator-well, mechanism on the car connected to the motor-controlling mechanism, said mechanism operating to release the door from the latch and in turn to be locked by the device secured to the wall of the elevator-well so as to prevent the car from moving when the door is opened, the said device being held clear of the mechanism on the car by the door when it is closed, substantially as described.

3. The combination in an elevator, of the car, motor-controlling mechanism, a movable well-door, a spring-latch fixed in the well, an arm on the door with which the latch engages, a slide on the car and connections on the car between the said slide and the motor-controlling mechanism on the car so that when the car is stopped the slide is moved out and acts

to release the door from the latch so that it can be opened, substantially as described.

4. The combination of an elevator-car, motor-controlling mechanism, a sliding door, a spring-latch fixed in the elevator-well, an arm on the door, with which the latch engages, a sliding bar connected to the motor-controlling mechanism of the car, a lever hung in the well, one arm of said lever adapted to engage with the slide and lock the motor-controlling mechanism and the arm on the door acting on the other arm of the lever when the door is closed so as to release the slide, substantially as described.

5. The combination of the elevator-car, motor-controlling mechanism, a sliding door, a latch on the wall of the elevator-well adapted to engage with the door, a lever pivoted to the elevator-wall and adapted to be acted upon by the door, a slide carried by the car and mechanism for moving the said slide out so as to release the latch, said slide having a flange with which the pivoted lever engages when the door is opened so as to lock the slide, substantially as described.

6. The combination of the elevator-car, motor-controlling mechanism, a spring-latch secured to the wall of the elevator-well and adapted to engage the door, a lever pivoted to the wall of the elevator-well to be acted upon by the door, a slide carried by the car and having a vertical flange, mechanism for projecting said slide so as to act on the latch and release the door, an arm on the lever adapted to rest back of the flange on the slide but so arranged as to allow for the free movement of the elevator-car in case of leakage, substantially as described.

7. The combination of the elevator-car, motor-controlling mechanism, the door, a spring-latch fixed on the wall of the elevator-well adapted to engage with the door, a slide A' on the car, a lever connected to said slide, a hand-operating device within the car connected to the motor-controller, a shaft on which the hand-operating device is mounted, a pinion on said shaft, a gear-wheel engaging with said pinion and having a crank-pin connected to the lever so that on the turning of the hand-operating device to stop the car the slide will be projected to release the door from the latch, substantially as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

JOHN S. MUCKLÉ.
WILLIAM H. B. TEAMER.

Witnesses:

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