

(No Model.)

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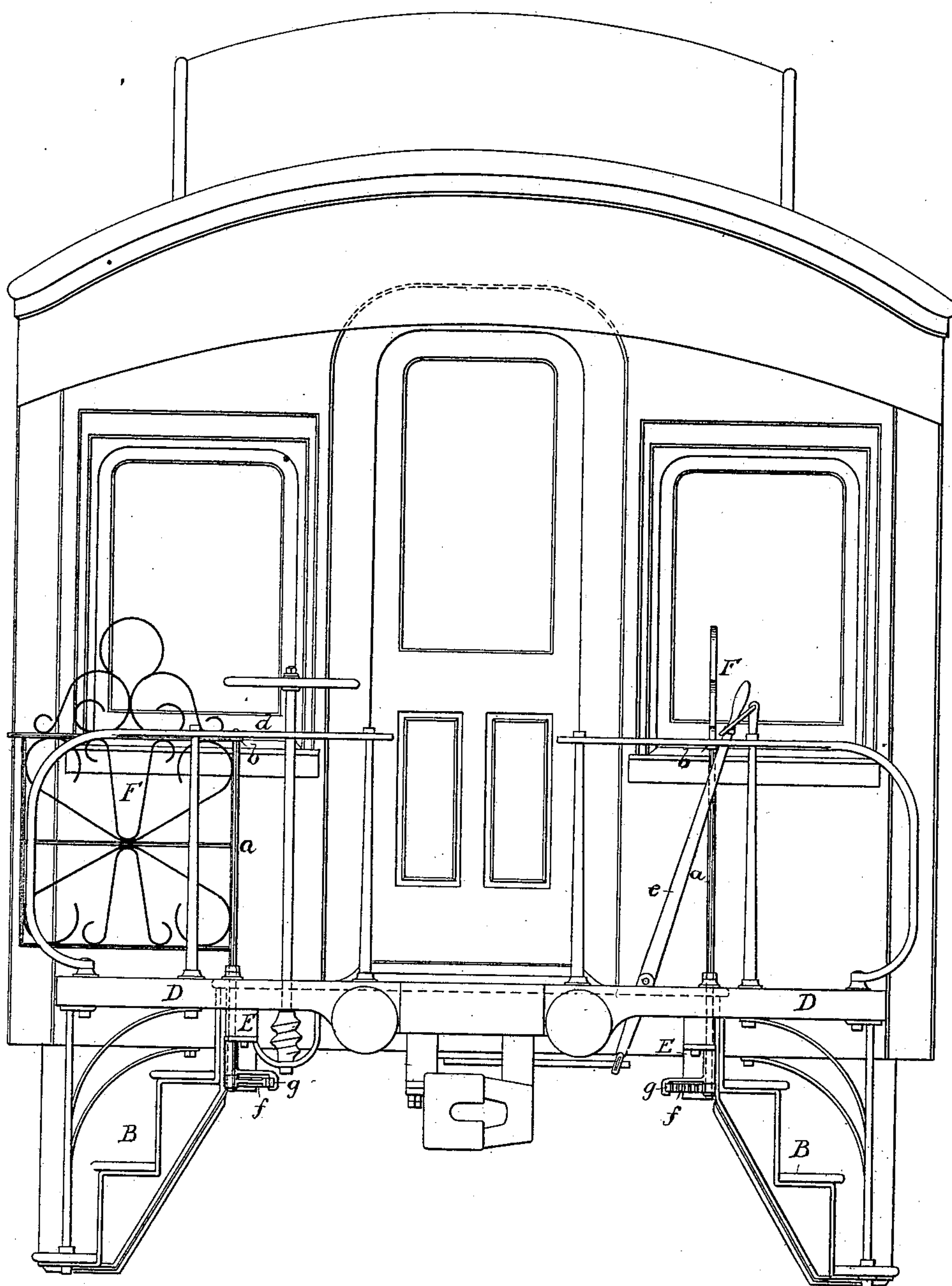
E. L. TEVIS.

SAFETY GATE FOR CAR PLATFORMS.

No. 353,898.

Patented Dec. 7, 1886.

FIG. 1



WITNESSES:

David S. Williams
William D. Conner

INVENTOR:

Edwin L. Tevis
by his Attorneys
Howson & Sons

(No Model.)

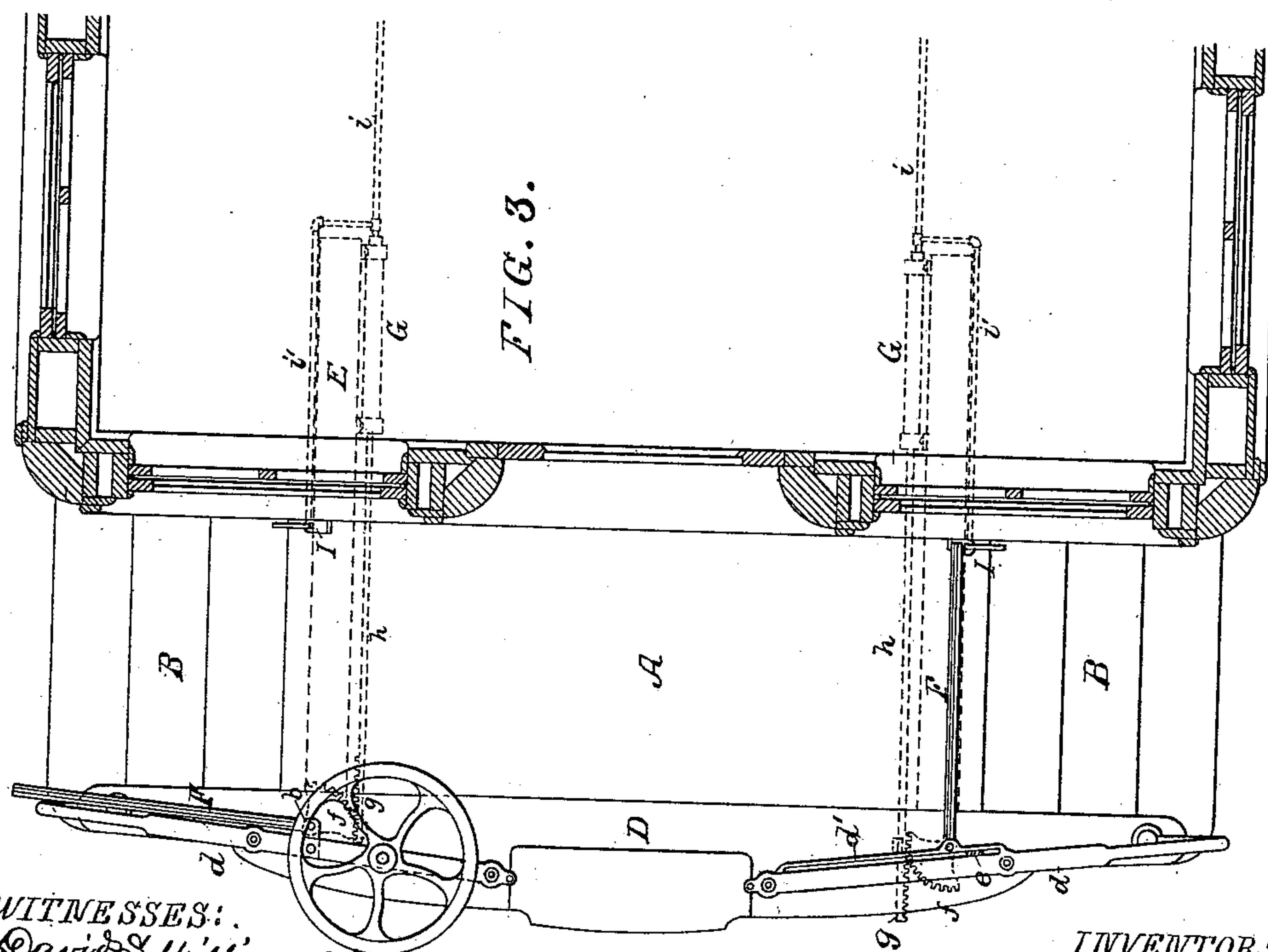
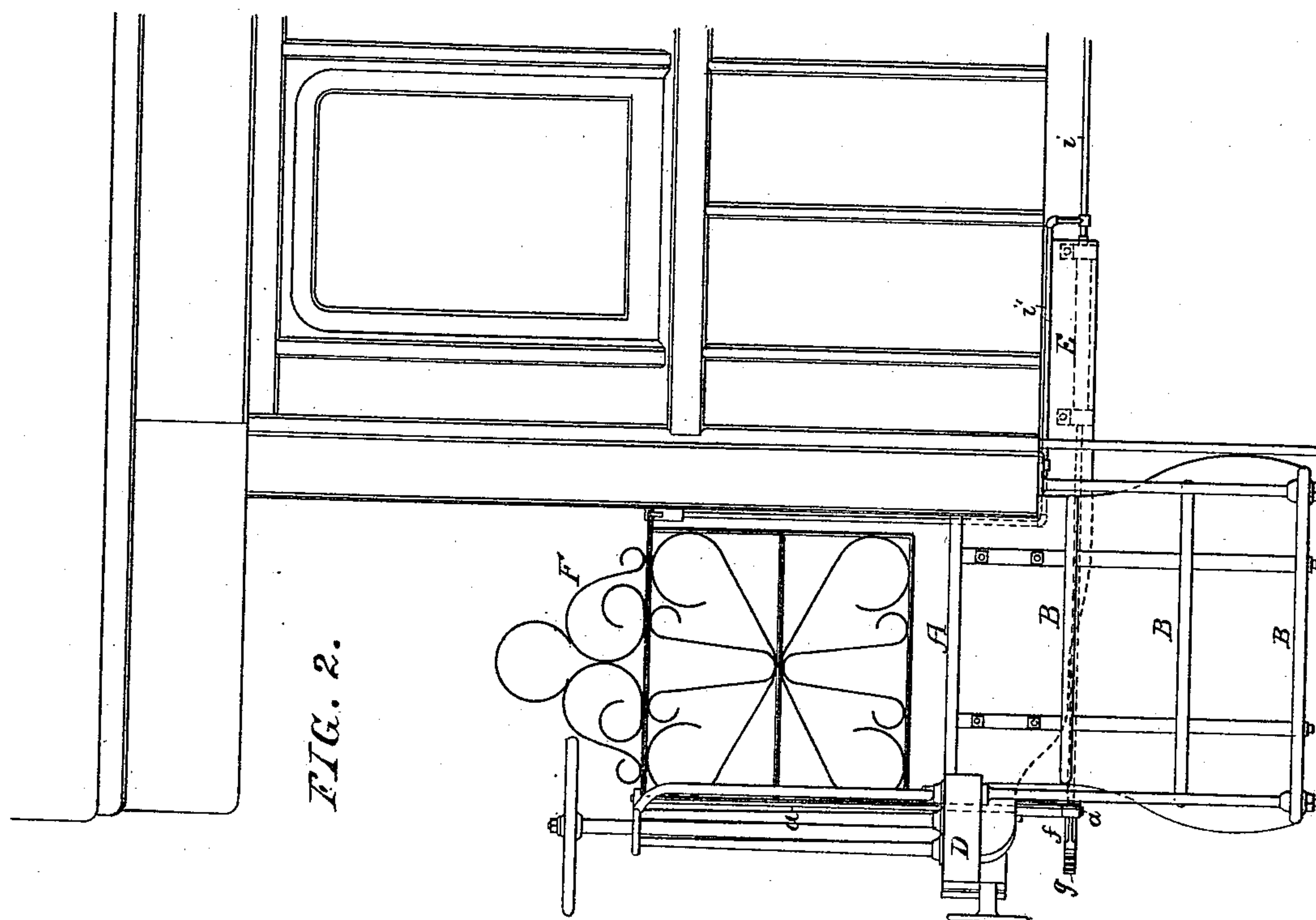
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3 Sheets—Sheet 3.

E. L. TEVIS.

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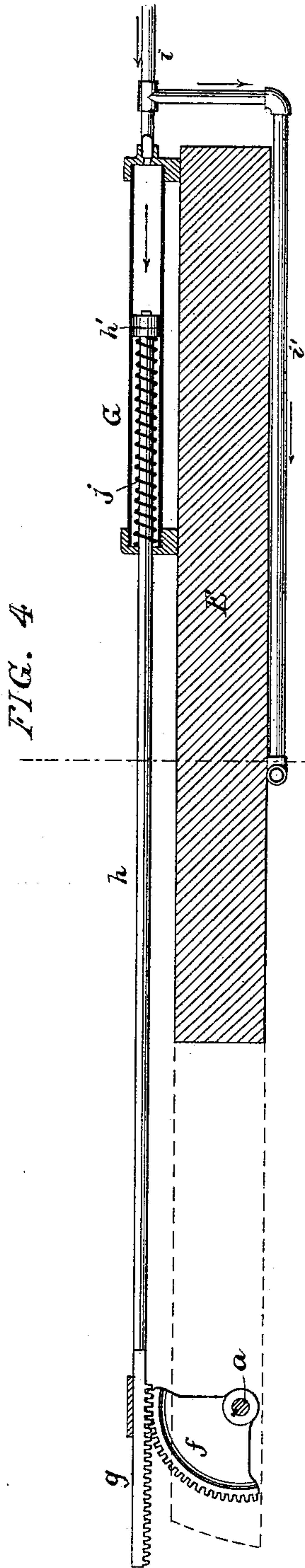


FIG. 4.

FIG. 7.

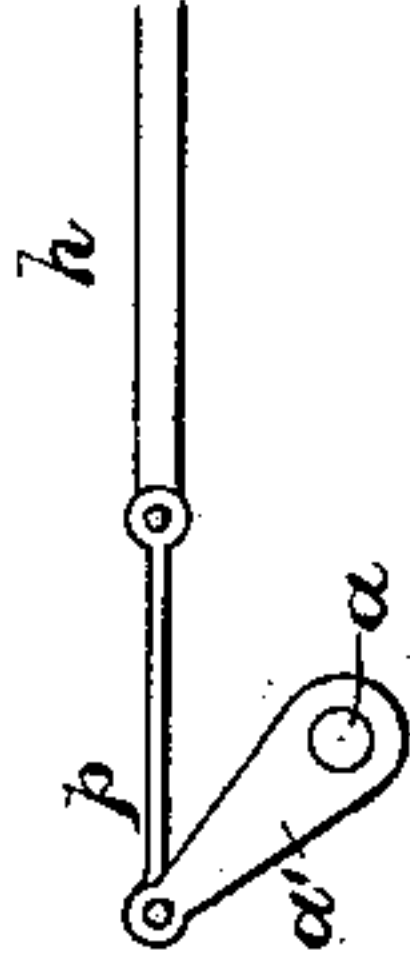


FIG. 6.

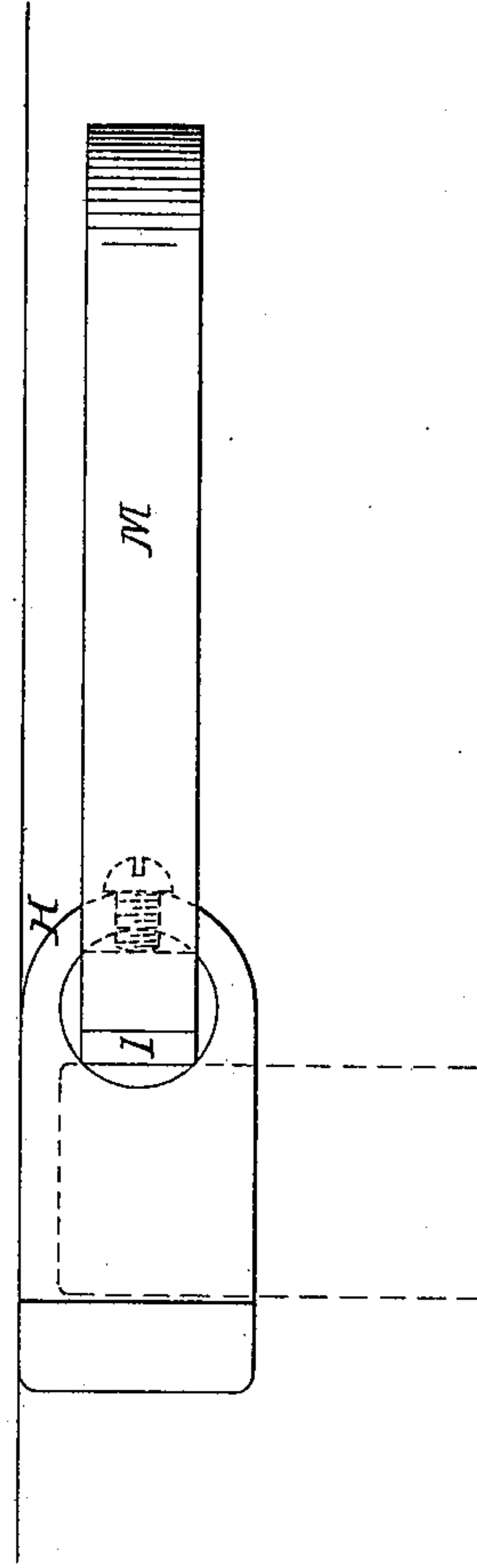
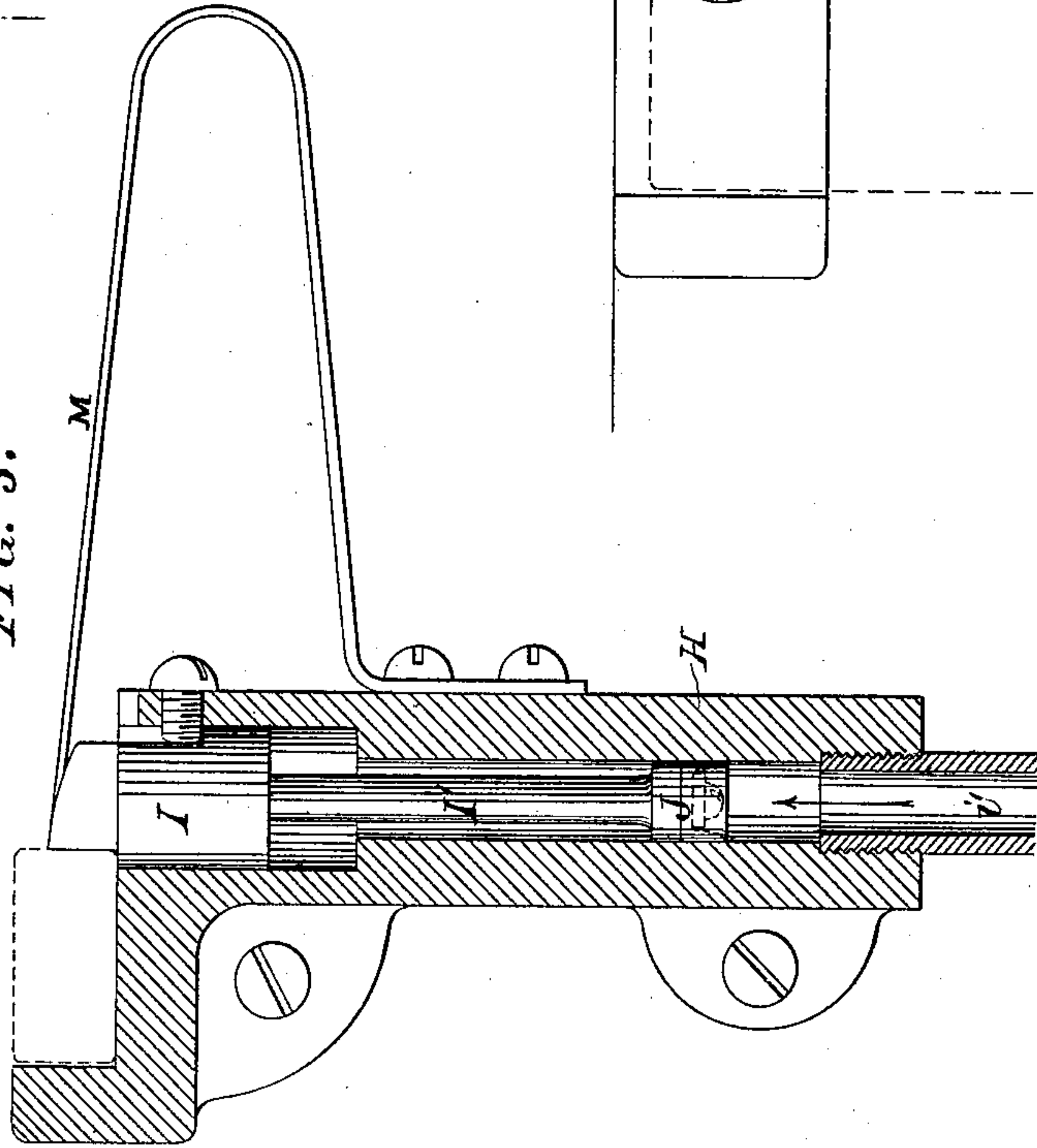


FIG. 5.



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UNITED STATES PATENT OFFICE.

EDWIN L. TEVIS, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF THREE-TENTHS TO JAMES N. WHELEN, OF SAME PLACE.

SAFETY-GATE FOR CAR-PLATFORMS.

SPECIFICATION forming part of Letters Patent No. 353,898, dated December 7, 1886.

Application filed July 19, 1886. Serial No. 208,394. (No model.)

To all whom it may concern:

Be it known that I, EDWIN L. TEVIS, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Safety-Gates for Railroad-Car Platforms, of which the following is a specification.

My invention relates to a railroad-car-platform gate to be operated by connection with the usual air or vacuum apparatus on the locomotive under control of the engineer of the train, one object of my invention being to so construct the gate-operating appliances that they can be applied to existing cars without changing any part of the structure of the latter, and further objects being to simplify the construction of the gate-operating mechanism, and to prevent the passengers from tampering with and opening the gates while the train is in motion.

In the accompanying drawings, Figure 1 is an end view of a railway passenger-car with my improved platform-gates and operating mechanism therefor, one gate being shown closed and the other open. Fig. 2 is a side view of the end portion of the car. Fig. 3 is a sectional plan view of the same, partly in elevation; Fig. 4, an enlarged sectional plan view of the gate-operating device; Fig. 5, a sectional view, on a still larger scale, of the gate-locking device. Fig. 6 is a plan view of the latter, and Fig. 7 a view showing a modification of part of the gate-operating device.

A represents the platform of the car, B B the platform-steps, D the end sill of the platform, and E E the platform-supporting beams, or, as they are termed, "hounds," projecting from the main frame-work of the car.

F F are the opposite gates for obstructing the platform, these gates being swinging gates and having pivot-shafts *a*, the lower ends of which pass through openings in the end sill of the platform, and are adapted to suitable bearings thereon, the upper ends of said shafts being adapted to bearings *b*, secured either to the top bar of the platform-rail *d* or to the guard *d'*, for the coupling-operating lever *e*.

The lower end of the gate shaft or spindle is provided with a toothed segment, *f*, with which engages a rack, *g*, at the outer end of a

rod, *h*, the inner end of said rod having a piston, *h'*, adapted to a cylinder, G, secured to one of the hounds E of the car, and extending longitudinally of the same, as shown in Figs. 2 and 3. The inner end of the cylinder G communicates with a pipe, *i*, which is intended to form a branch of a pipe extending longitudinally from end to end of the car, the pipes of the various cars being connected and communicating with the air or vacuum brake apparatus on the locomotive, the latter being under control of the engineer.

As shown in the drawings, the gate operating and locking mechanism is intended for operation by air under pressure, the air entering the inner end of the cylinder and forcing the piston and its rod forward, so as to close the gate and hold it in the closed position as long as the pressure of air is maintained in the cylinder. Between the outer end of the cylinder and the piston *h'* is interposed a spring, *j*, which tends to drive the piston backward in the cylinder when the air is permitted to escape from the inner end of the same, this rearward movement tending to open the gate. With the pipe *i* communicates another branch, *i'*, whereby air is admitted to a cylinder, H, secured to the rear side of the car in such a position that when the gate is closed the top bar of the same will be in position for engagement with a locking-bolt, I, at the upper end of a rod, I', the lower end of which has a plunger, J, adapted to the cylinder H. When the gate is closed, therefore, by the admission of air under pressure to the cylinder G, the locking-bolt I is at the same time elevated so as to engage with the top bar of the gate and retain the same in the closed position, a spring, M, pressing upon the upper end of the bolt and serving to depress the same as soon as the piston J is relieved from pressure. The spring M is a plate-spring, the upper portion of which is acted upon by the top bar of the gate as the latter closes, so as to effect the automatic depression of the locking-bolt I.

It will be evident that when vacuum-brake apparatus is employed on the train the gate will be closed by the exhausting of the air from the cylinder, the character of the springs

and connections being modified to accord with the change in the mode of operation.

The gates may, if desired, be hung to a pin adjacent to the end of the car, the locking device being on the platform-rail, or the guard for the coupling-lever; but I prefer to construct the devices as shown, for the reason that the gates now in use on some railroad cars are hung at the outer portion of the platform; hence my improved operating device can be applied without change to cars having gates so arranged, and when hung in this position the gate does not interfere with the entrance or exit of passengers, as it offers no obstacle to the grasping of the usual hand-rail at the end of the car.

When it is desired to lock the gate on one side of the platform, so as to prevent the exit of passengers on the wrong side of the train, said gate may be immovably held in position by means of a suitable locking pin, as will be readily understood.

Other means than the rack and pinion may be used to transmit the movement of the rod *h* to the gate-shaft *a*. For instance, in Fig. 7 I have shown a gate-shaft having a projecting arm, *a'*, coupled by a rod, *p*, to the end of the rod *h*.

It will be observed that my improved platform-gates and the operating mechanism therefor are of very simple and compact character, and such as to be readily applied to existing car-structures without any interference with the coupling devices, hand-brake mechanism, or other attachments with which such cars are usually provided, the operating devices, moreover, comprising but few parts, which are not liable to get out of order.

As the pressure of air is not relied upon to retain the gate in the locked position, a very light pressure is available for operating the gate, so that there can be no injury to passengers by reason of their being struck by the gate as the latter is closing or opening.

The locking-bolt serves to retain the gate so effectually that the unauthorized opening of the same by ignorant, meddlesome, or malicious passengers is prevented.

I am aware that platform gates have been operated by connection with the pneumatic braking mechanism of the car; but this plan is objectionable in practice, as it is frequently necessary to apply the brakes without opening the gates.

I am also aware that it has been proposed to operate a sliding platform-gate by means of air-cylinders placed transversely beneath the

car; but this plan is also objectionable, because it precludes the location of the gates at the top of the platform-steps, and because, moreover, it interferes with the present arrangement of braking devices and other mechanism beneath the car.

I claim as my invention—

1. The combination of the frame and platform of a railroad-car with a swinging gate adapted to close across said platform, a longitudinal cylinder secured to the frame of the car beneath the same, but independent of the braking mechanism, a rod having a piston adapted to said cylinder, a pipe for providing communication between said cylinder and the air-pressure or vacuum apparatus on the engine, and means, substantially as described, whereby the movement of the piston is transmitted to the pivot shaft or spindle of the gate, all substantially as specified.

2. The combination of the frame and platform of the car, the pivoted gate adapted to swing across the platform, a locking bolt or catch for said gate, a cylinder beneath the car having a piston and rod for operating the locking bolt or catch, and pipes whereby both of said cylinders may be placed in communication with the air-pressure or vacuum apparatus on the engine, both cylinders being independent of the braking mechanism of the car, all substantially as specified.

3. The combination of the frame and platform of the car, a pivoted gate swinging across the platform, a longitudinal cylinder independent of the braking mechanism of the car and having a piston-rod connected to the gate-shaft, a pipe for connecting said cylinder to air-pressure or vacuum apparatus on the engine, and a retracting-spring, all substantially as specified.

4. The combination of the swinging gate, the locking-latch and its piston, the cylinder to which said piston is adapted, a pipe for connecting said cylinder to air-pressure or vacuum apparatus on the engine, and a spring acting upon the upper end of the latch and projecting laterally beyond the same, so as to be acted upon directly by the gate as the latter closes, all substantially as specified.

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

EDWIN L. TEVIS.

Witnesses:

WILLIAM D. CONNER,
HARRY SMITH.