

F. J. GILROY.
 SECURING DEVICE FOR CAR DOORS.
 APPLICATION FILED DEC. 27, 1910.

991,611.

Patented May 9, 1911.
 2 SHEETS—SHEET 1.

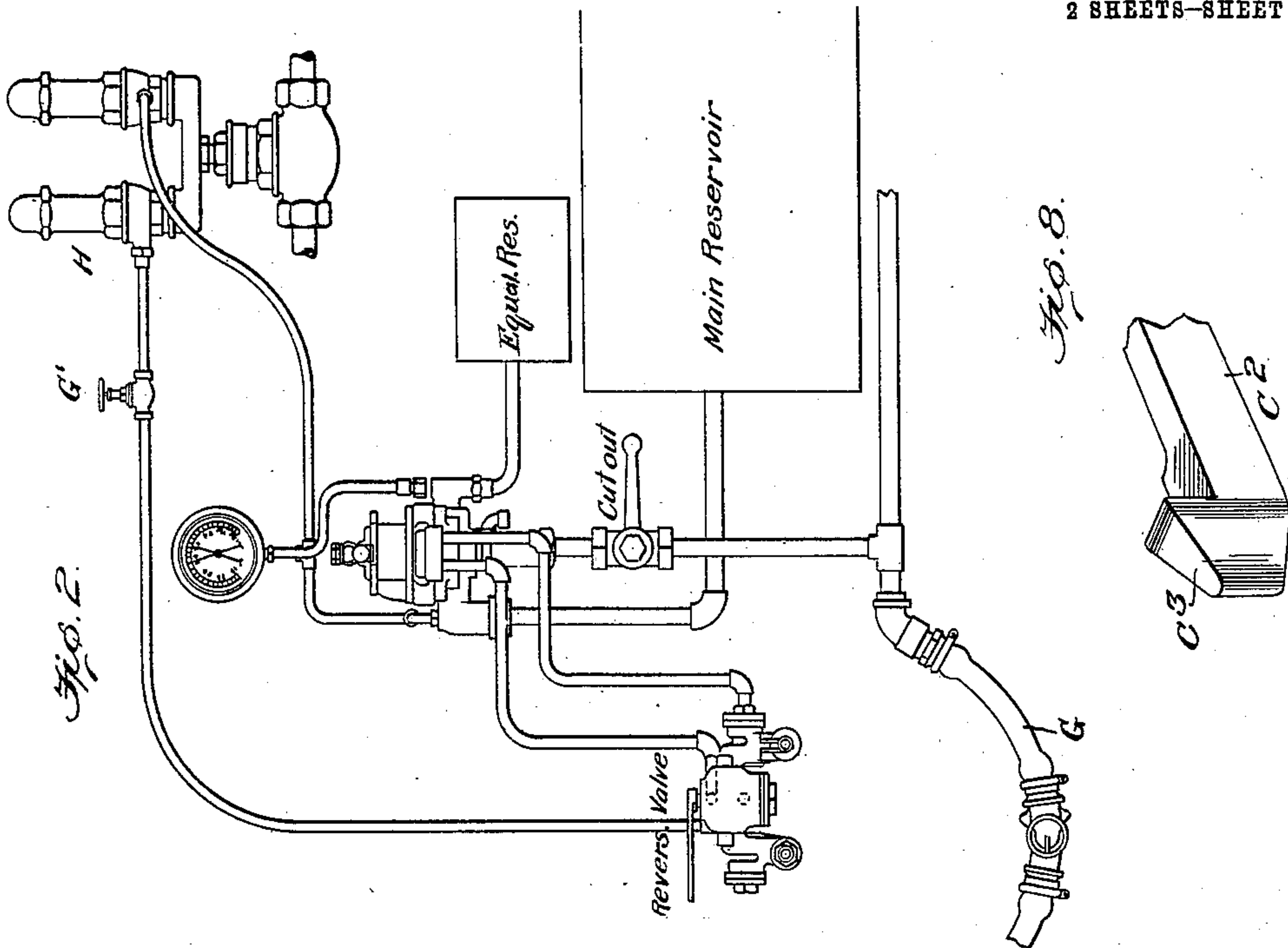


Fig. 1.

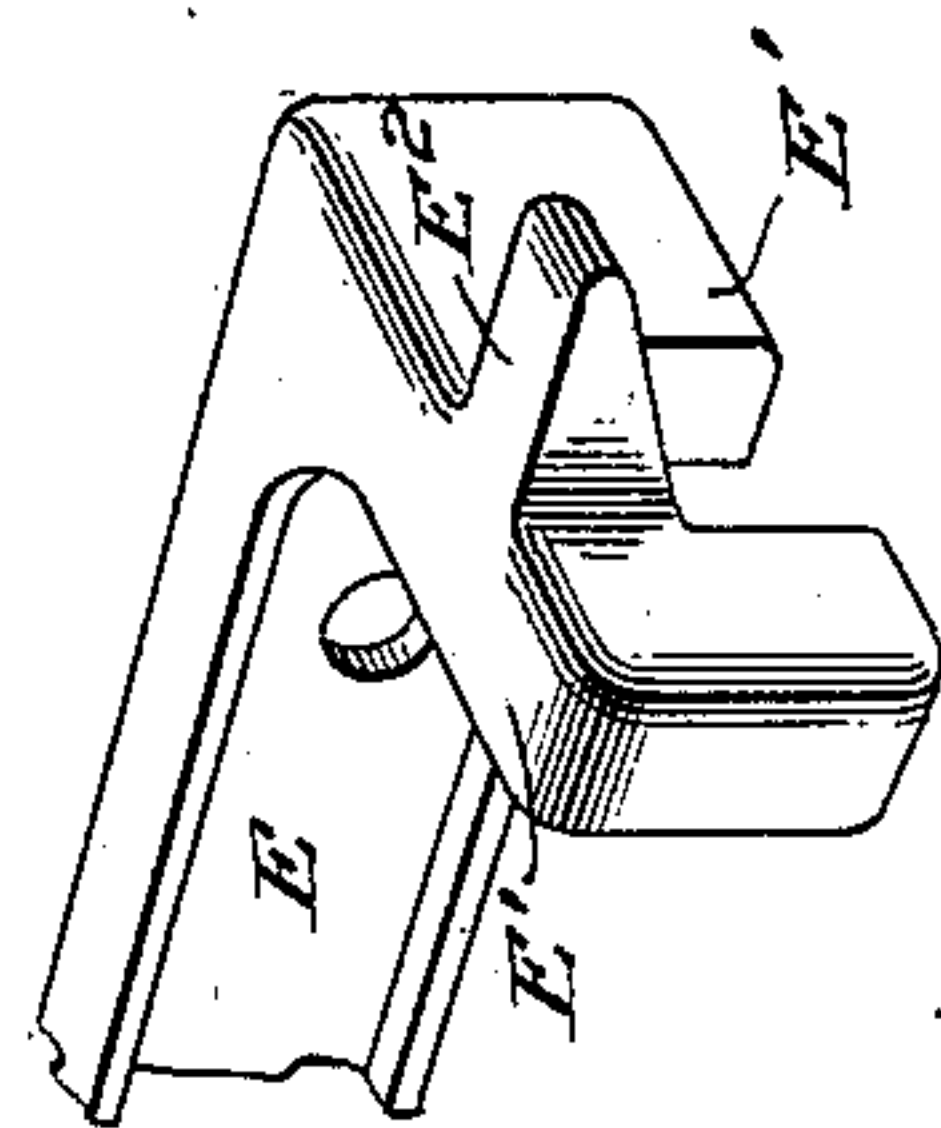
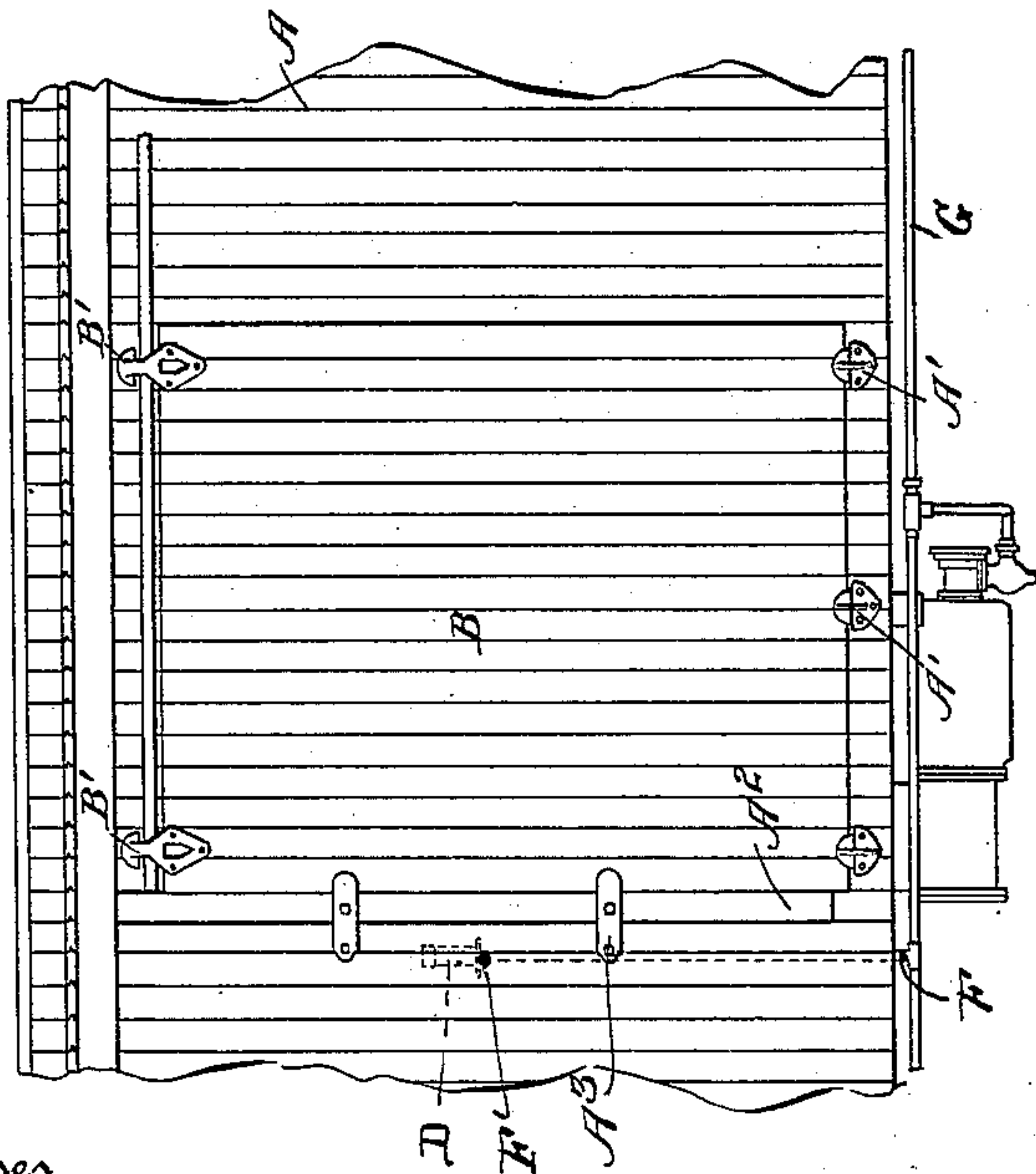


Fig. 7.

Witnesses

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By

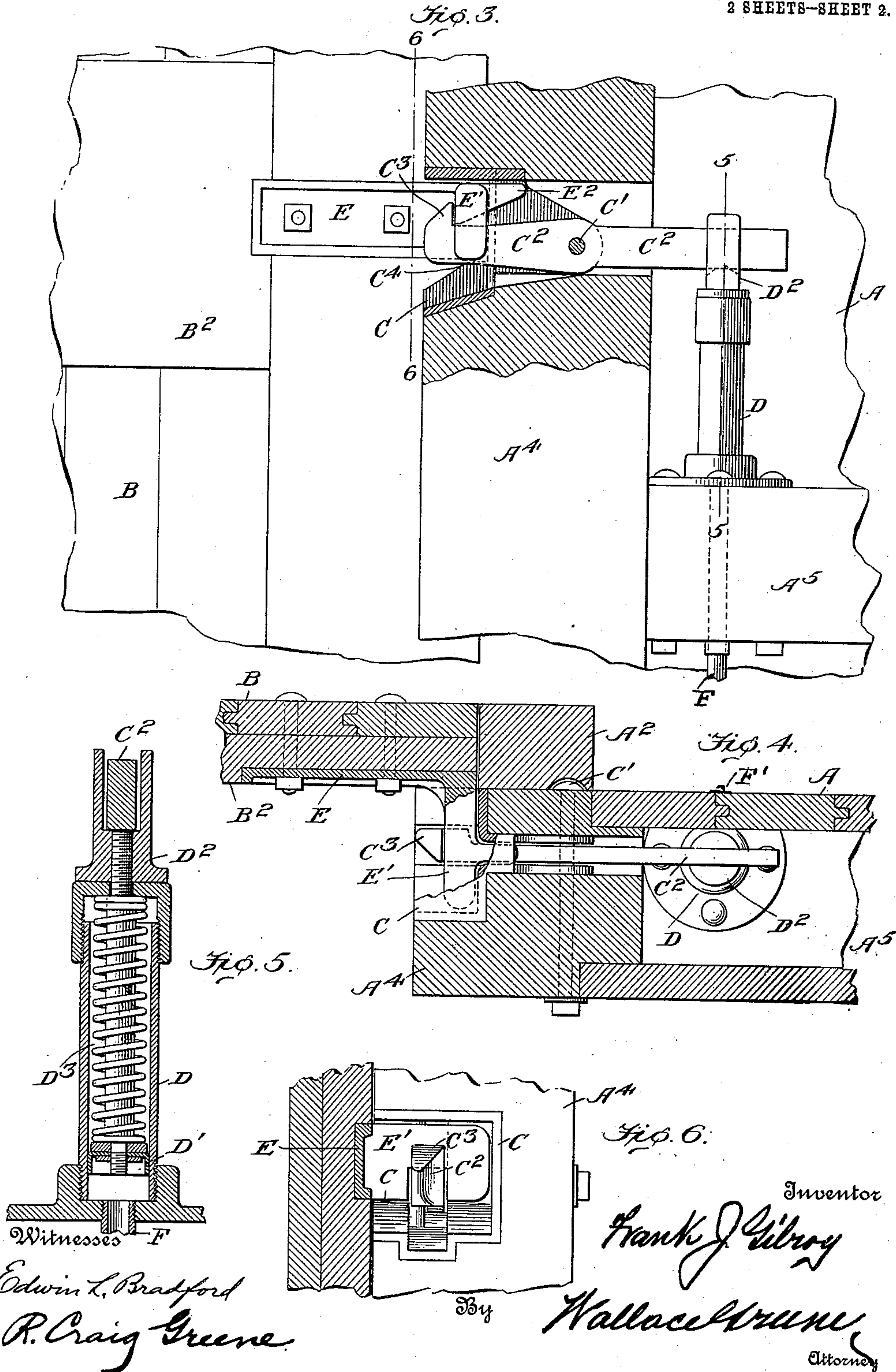
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2 SHEETS—SHEET 2.



UNITED STATES PATENT OFFICE.

FRANK J. GILROY, OF BUFFALO, NEW YORK.

SECURING DEVICE FOR CAR-DOORS.

991,611.

Specification of Letters Patent.

Patented May 9, 1911.

Application filed December 27, 1910. Serial No. 599,366.

To all whom it may concern:

Be it known that I, FRANK J. GILROY, citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Securing Devices for Car-Doors, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to car door securing devices which can ordinarily be released only with the coöperation of the engineer upon the locomotive. The locking devices are operated by fluid pressure and are inaccessible from the exterior of the closed car. The devices are of such character that they hold the car door closed and also support its weight if other supports be removed and still further hold it against moving outward from the car into position for striking cars upon an adjacent track. The locking device is connected with the ordinary train pipe, but is so arranged that ordinary train pipe pressure will not avail for unlocking, since this would enable evil disposed persons to unlock the car whenever it was in service or carrying train pipe pressure. In ordinary standard equipment, a governor upon the locomotive limits the train pipe pressure to a predetermined maximum. I provide means upon the locomotive whereby the engineer may cut out the governor and thereby be able to raise the train pipe pressure temporarily to such a degree that it will suffice for unlocking the door locking devices.

In the accompanying drawings, Figure 1 is a side elevation of the central door bearing portion of a car provided with air brake pipes and with my devices. Fig. 2 is a diagrammatic side view of devices carried by the locomotive. Fig. 3 is an elevation looking from the interior of the car toward the locked side of the door, the door post being broken away to show locking mechanism. Fig. 4 is a horizontal section of the same part of the door and adjacent parts of the car, the plane of section being just above the lock. Fig. 5 is an axial section of the air cylinder, the line of section being indicated at 5—5, Fig. 3. Fig. 6 is a section on the line 6—6, Fig. 3, looking to the right. Figs. 7 and 8 are perspective views of portions of the locking mechanism, carried, respectively, by the door and the car wall.

In these views, A represents the body of a

car and B its sliding door, suspended in the usual way by roller hangers B', held against the side of the car by shoes A', below, abutting, when closed, a stop A², and in this position pressed against the side of the car by guides A³. Opposite the horizontal mid-rail B² of the door, the door post A⁴ is mortised to receive a heavy hollow casting C in which is centrally pivoted at C' a horizontal hooked latch C² projecting from that side of the post most distant from the door, and having its end within the casting C beveled as shown at C³.

Upon a rail A⁵ of the car wall and just below the projecting arm of the latch is fixed an upright cylinder D in which works a piston D' having its rod threaded and projecting from the upper end of the cylinder to receive a member D² which engages the latch and lifts its projecting portion when the piston rises, this portion, from gravity, unaided or otherwise, following the piston's descent.

To the inner side of the door is secured a heavy catch or keeper E, preferably extending to the line of the edge of the door which when closed overlaps the post, and at its end this keeper has an inwardly extending portion E' notched below to pass over the latch and provided above with a long projection E² beveled on its lower side to ride upon and depress the latch as the door closes, and closely fitting above against the upper wall of the casting C. As the keeper (Fig. 6) rests below upon the lower wall of the casting C near the side of the post, and since these parts are heavy and of malleable iron, they will safely sustain many times the weight of the door if all other door supports be removed. Still further, since the part E' rests against the face of the casting C while the projection E² fits laterally in a channel therein, (Fig. 4) the door is effectually prevented from moving materially from the car at either margin.

Air for operating the piston D' is admitted through a valved pipe F from the train pipe G, the valve being operated by devices without novelty projecting from the car at F'. The rise of the piston, forcing the latch to disengage, is resisted by a spring D³ the force of which cannot be overcome by the pressure of air beneath the piston unless that pressure be materially greater than that permitted by the governor H upon the locomotive. When, however, the engineer de-

sires to assist in unlocking any car, he closes a valve G' cutting out the governor and allowing the air compressing devices to raise the train pipe pressure to the proper extent. 5 This done, opening the valve in the pipe F admits air under sufficient pressure to overcome the resistance of the spring, lift the outer end of the latch, and leave the door free to open. The locking is automatic when 10 the door closes, but unlocking is not possible until the engineer acts. It may be remarked that, as in earlier devices, piston operating air is allowed to escape from the cylinder so rapidly that the necessary pressure cannot be 15 obtained with a hand pump, even were suitable connection made.

What I claim is:

1. The combination with a car and its sliding door, of a pneumatic door locking 20 device inaccessible to persons without the car when the door is closed, a conduit leading from the train pipe to said device, to supply unlocking air, a governor normally limiting the pressure in the train pipe to a 25 degree below that capable of unlocking said devices, and means for cutting out said governor at will.

2. The combination with a car and its sliding door, of door locking devices adapted 30 to resist unlocking force of normal train pipe pressure or less, a conduit leading from the train pipe to said devices, to supply unlocking compressed air thereto, a valve in said conduit, and means whereby the engi- 35 neer may at will cause the pressure in the train pipe to rise beyond its normal maximum.

3. The combination with a car and its sliding door, of an automatically locking de- 40 vice adapted to hold the door closed, a conduit leading from the train pipe to said device to supply unlocking air thereto, means for controlling the passing of air in said con-

duit, a governor normally limiting the pres- 45 sure of air in the train pipe to a degree below that needed for unlocking said device, and means whereby the engineer may at will cause the pressure in the train pipe to rise to the degree necessary for such unlocking.

4. The combination with a car having a re- 50 cess in that face of its door jamb or post toward which the door moves in sliding to closed position, of a sliding door having an internal rigid keeper in position to enter said recess as the door closes and adapted to 55 rest against the lower wall of the recess at a point near said face and against the upper wall at a point materially more distant from said face, a latch in said recess adapted to engage said keeper automatically when the 60 door is closed, and an air-operated device connected with the air brake system for causing the latch to disengage said keeper.

5. The combination with a car having its door post provided with a horizontal pas- 65 sage or perforation inaccessible from without the car when the door is closed, of a pivoted latch mounted in said passage and projecting from that side thereof opposite the door, a similarly inaccessible air cylin- 70 der, a piston working in the cylinder and engaging the projecting portion of the latch, a conduit leading from the train pipe to said cylinder, to supply compressed air, a sliding 75 car door, a keeper rigidly secured to the inner portion of the door in position to enter said passage as the door closes and adapted to engage said latch, and a valve operable from the exterior of the car and controlling the passing of air in said conduit. 80

In testimony whereof I affix my signature in presence of two witnesses.

FRANK J. GILROY.

Witnesses:

JAMES L. CRAWFORD,
R. CRAIG GREENE.