(No Model.) 6 Sheets—Sheet 1.

J. N. BARR.

VESTIBULE CAR.

No. 583,137. Patented May 25, 1897.

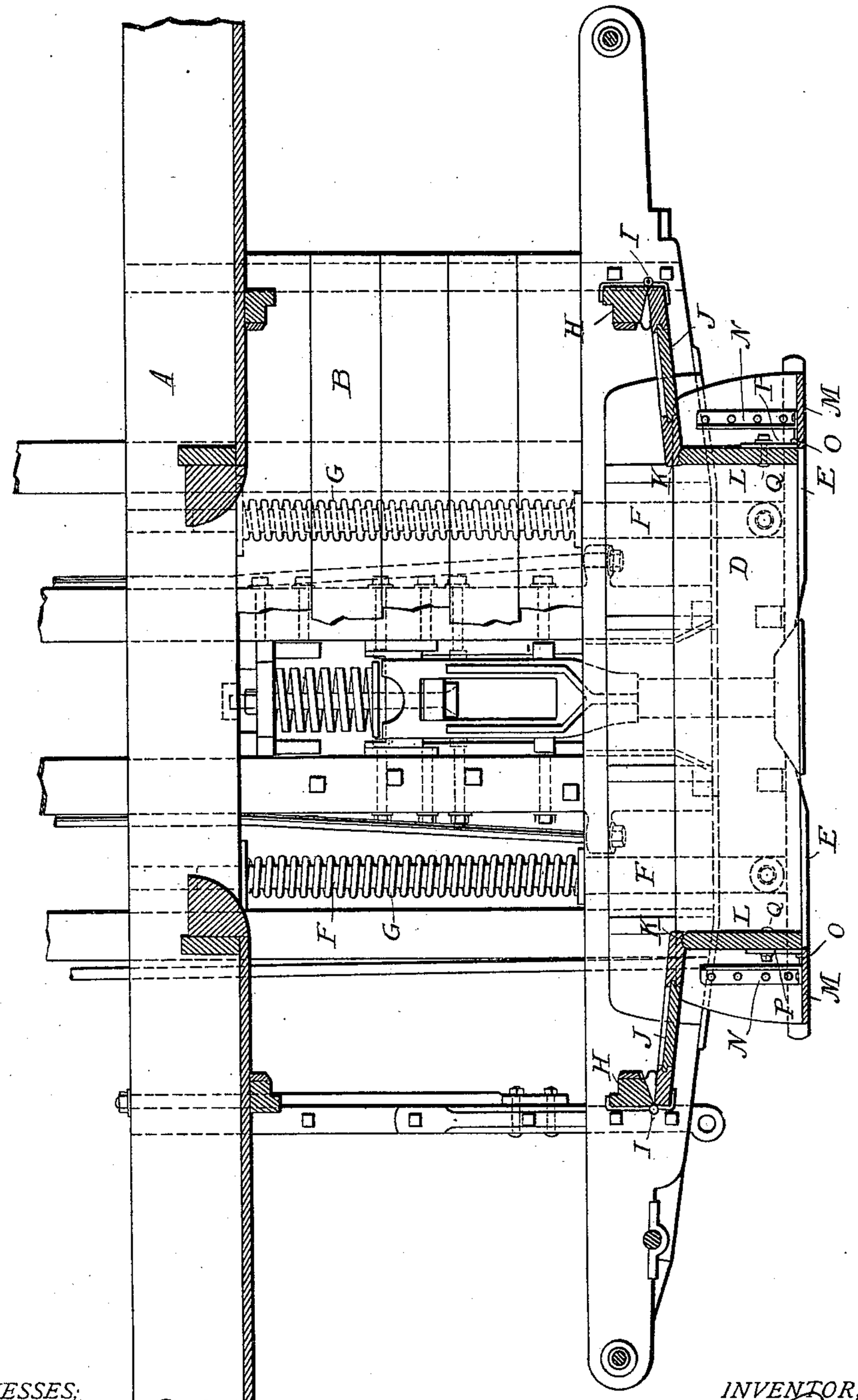

Fig. 1.

WITNESSES;

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(No Model.)

6 Sheets—Sheet 2.

J. N. BARR.

VESTIBULE CAR.

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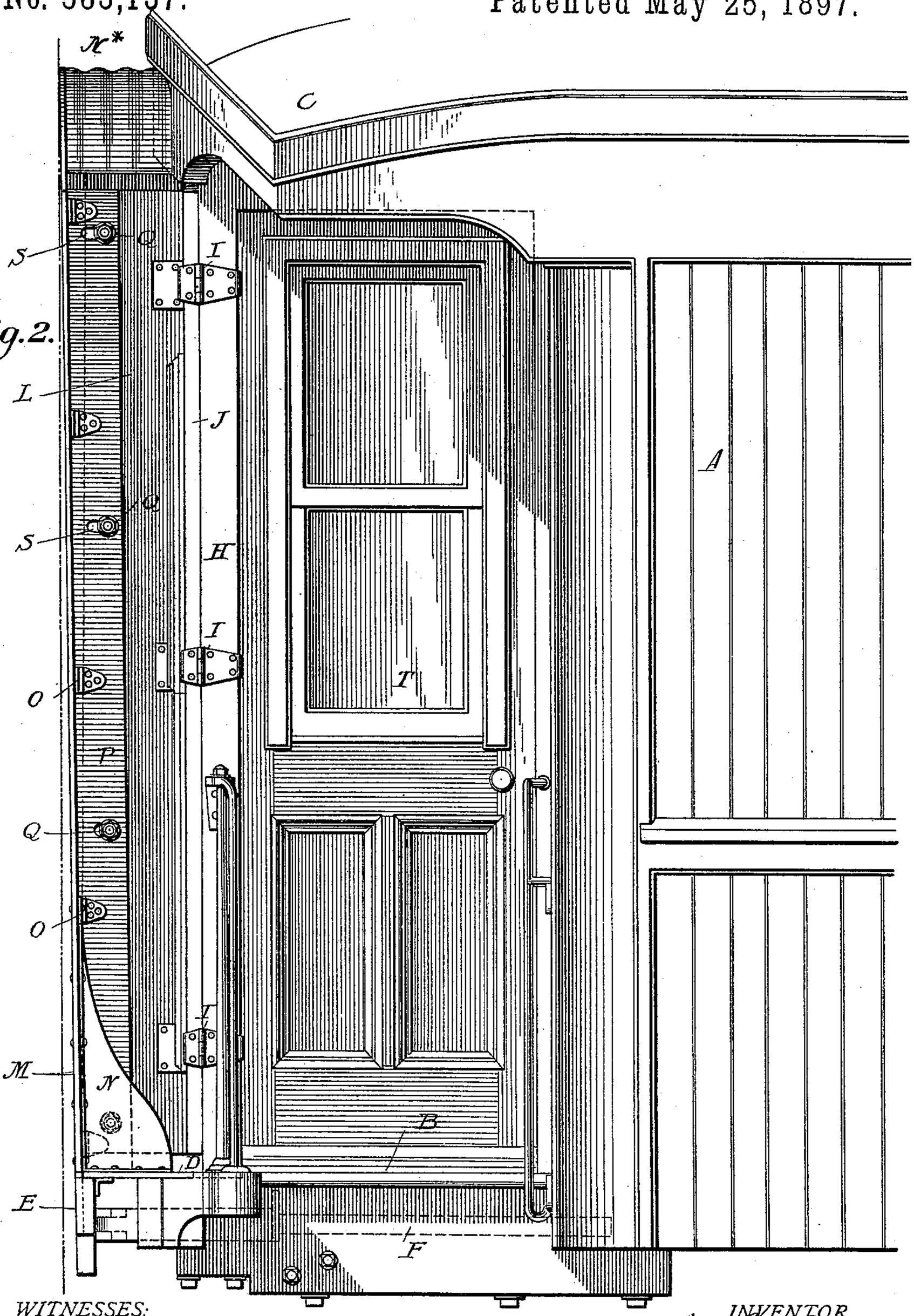

Fig. 2.

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(No Model.)

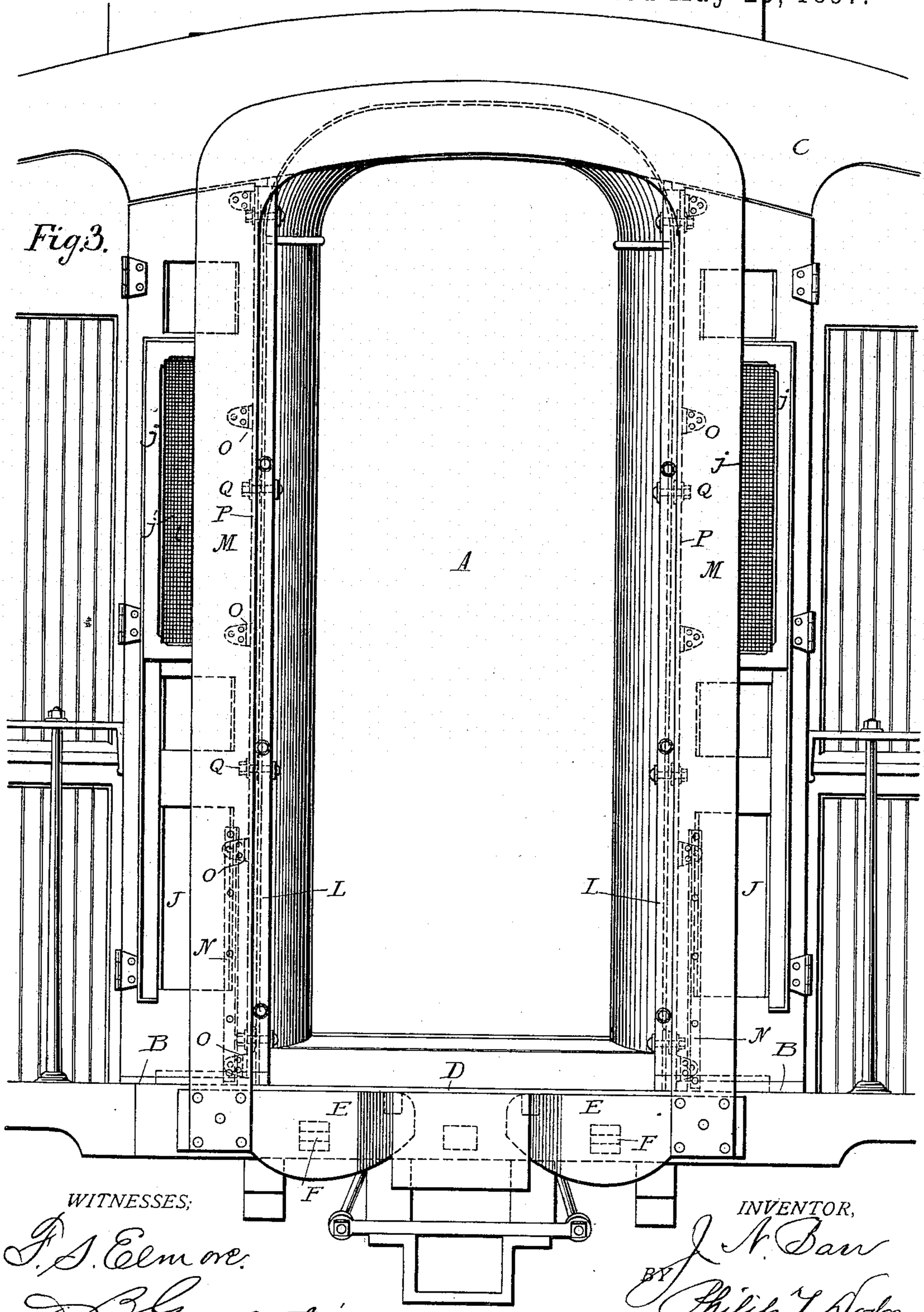
6 Sheets—Sheet 3.

J. N. BARR.

VESTIBULE CAR.

No. 583,137. Patented May 25, 1897.

Fig. 3.



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(No Model.)

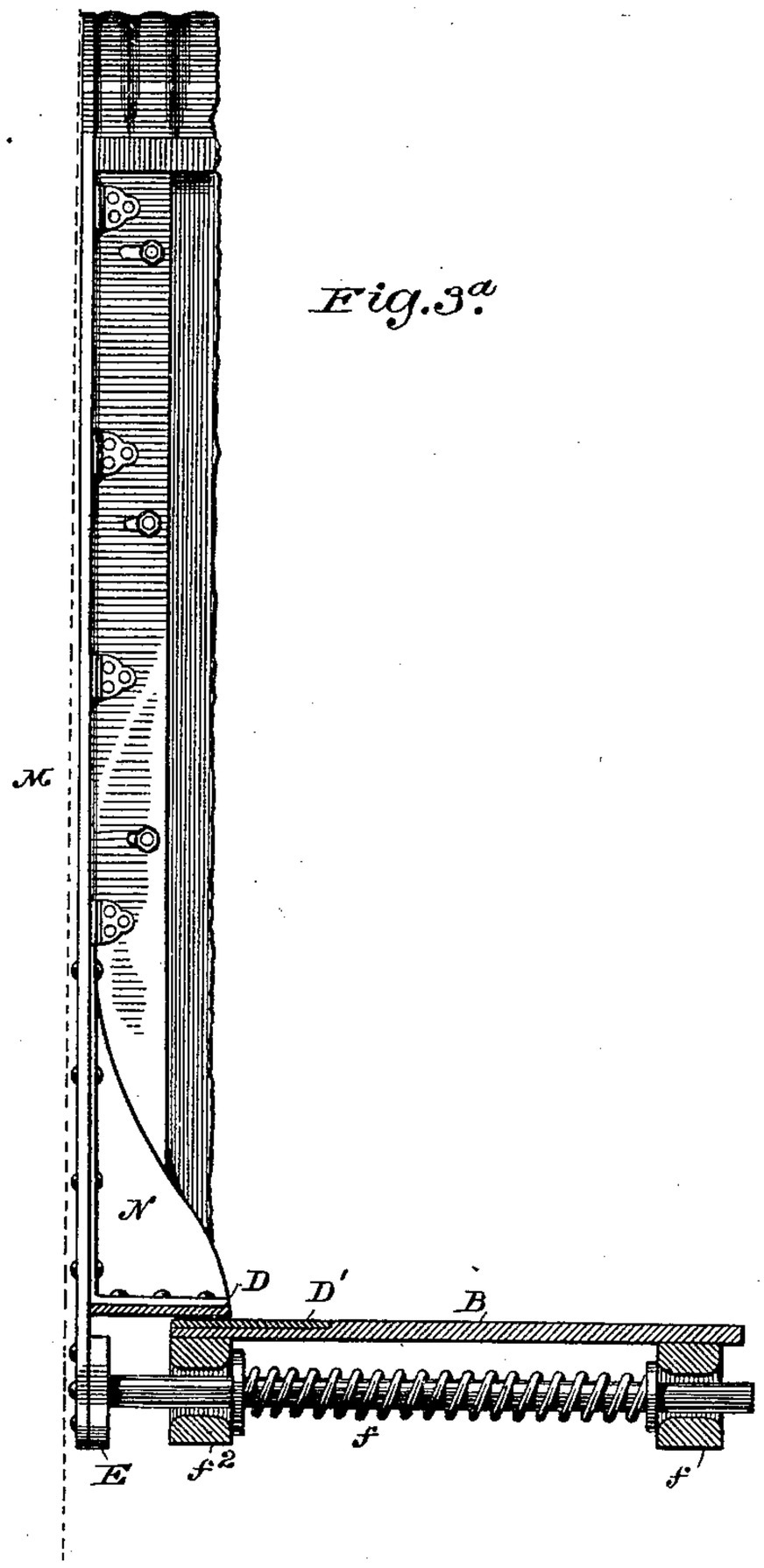
6 Sheets—Sheet 4.

J. N. BARR.

VESTIBULE CAR.

No. 583,137. Patented May 25, 1897.

Fig. 3ª.



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(No Model.)

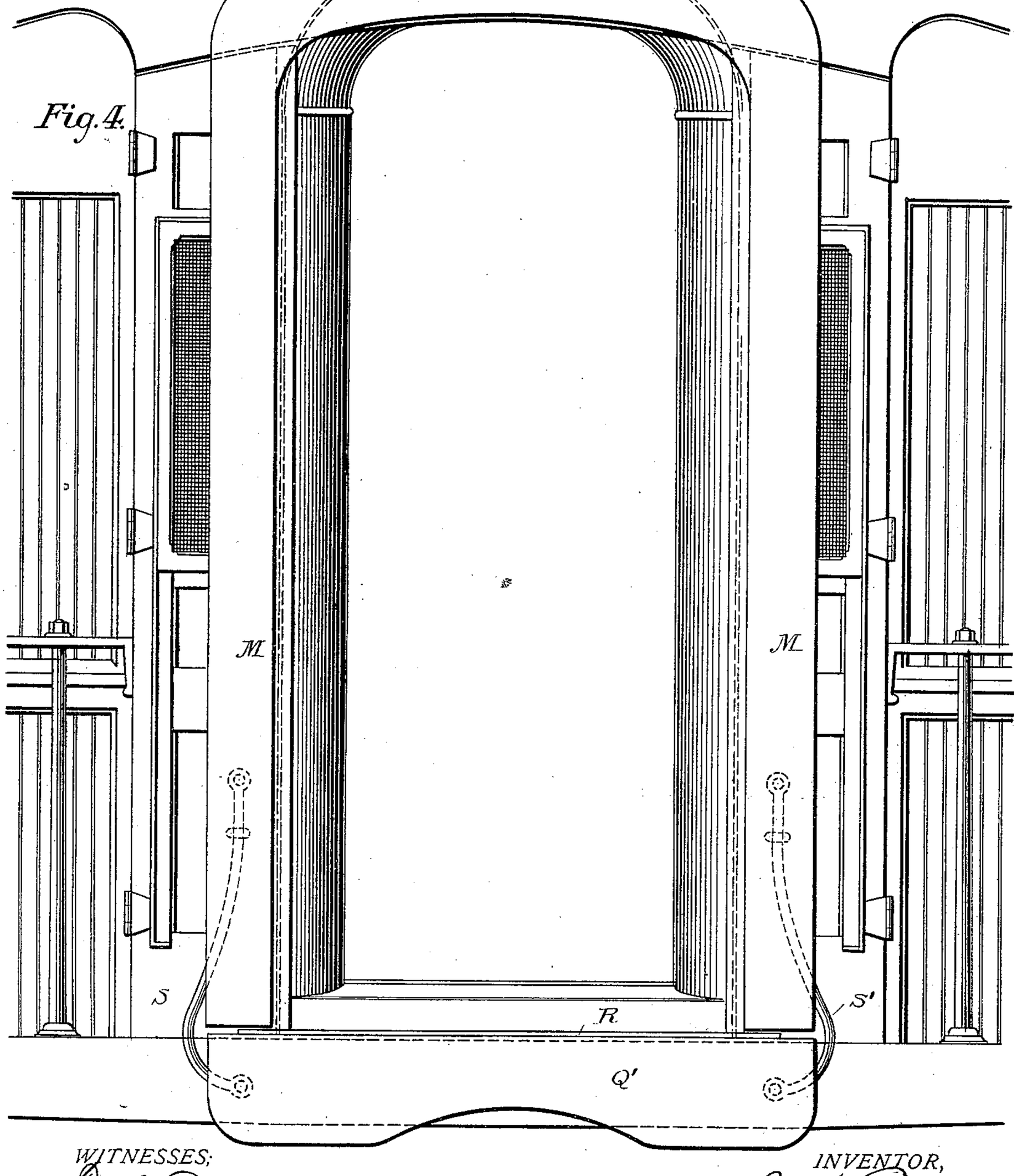
6 Sheets—Sheet 5.

J. N. BARR.

VESTIBULE CAR.

No. 583,137. Patented May 25, 1897.

Fig. 4.



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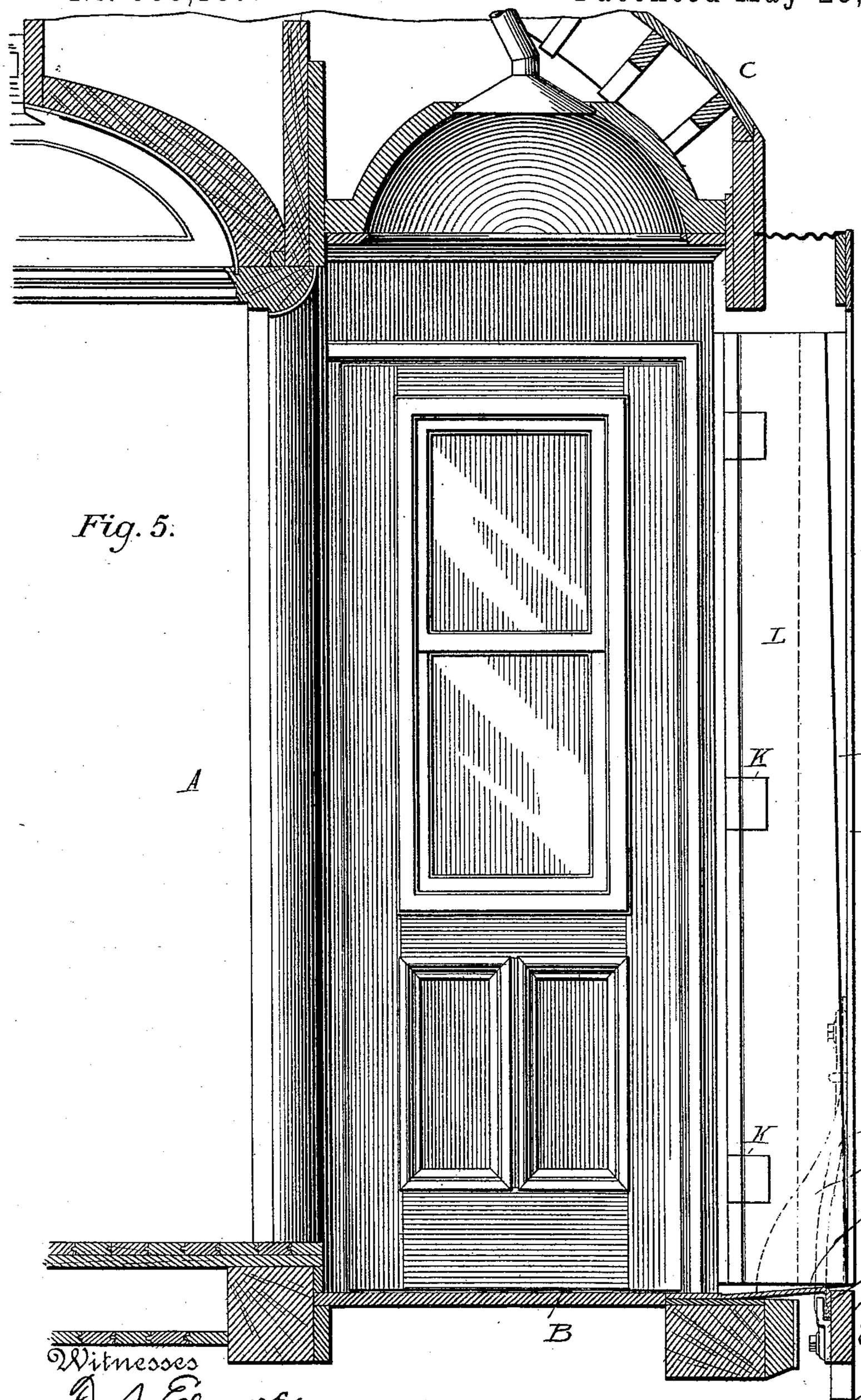
(No Model.) 6 Sheets—Sheet 6.

J. N. BARR.

VESTIBULE CAR.

No. 583,137. Patented May 25, 1897.

Fig. 5.



Witnesses
F. S. Elmore.
D. B. Gallatin

Inventor
J. N. Barr
By Philip Y. Dodge
Attorney

UNITED STATES PATENT OFFICE.

JACOB N. BARR, OF MILWAUKEE, WISCONSIN.

VESTIBULE-CAR.

SPECIFICATION forming part of Letters Patent No. 583,137, dated May 25, 1897.

Application filed September 24, 1894. Renewed April 9, 1897. Serial No. 631,439. (No model.)

To all whom it may concern:

Be it known that I, JACOB N. BARR, of Milwaukee, county of Milwaukee, and State of Wisconsin, have invented a new and useful Improvement in Vestibule-Cars, of which the following is a specification.

My invention relates to yielding or flexible passage-ways between the ends of railway passenger-cars, commonly known as "vestibules," and has in view the production of a cheap, strong, and durable structure of this character and the doing away with certain springs, bellows, and other parts ordinarily used.

Referring to the accompanying drawings, Figure 1 is a horizontal section through one end of a car provided with my improvement, the floor of the platform being partly broken away to show parts thereunder. Fig. 2 is a side elevation of the same; Fig. 3, an end view of the same. Fig. 3ª is a vertical sectional elevation through the platform of the car, the face-plate, and adjacent parts, showing the manner in which the face-plate is sustained by rear brackets to admit of the tipping of the same by gravity. Figs. 4 and 5 represent views showing my improved device applied to a car having the Janney-Buhoup platform.

In Figs. 1, 2, and 3 I have shown my vestibule applied to a car having the Miller platform, familiar to every person skilled in the art.

A represents the body of the car, having, as usual, the extended platform B and extended overhanging roof C; D, the sliding threshold-plate, and E the buffer-plates, which are sustained at the front ends of thrust-bars F, jointed thereto and arranged to slide forward and backward in the platform in guides at their rear ends, subject to the influence of the springs G, which urge the buffers outward.

In applying my invention I first provide near each outer corner of the platform a rigid post H, extending to the roof, and to each of these posts I connect by vertical hinges I a vertical board or panel J, extending inward at practically right angles to the center line of the car. To the inner edge of each panel J, I connect by vertical hinges or joints K, of any suitable construction, a panel or leaf L. These two panels L are extended outward toward the buffer-plate in parallel lines to serve as side walls for the intervening passage and are jointed at their outer or forward edges, as presently described in detail, to the opposite sides of the face-plate or diaphragm-plate M, forming the end of the vestibule and intended to lie against the corresponding plate of the adjoining car. The face-plate presents in looking toward the end of the car a ∩ form, and its ends are extended down and riveted to the buffer-plates. It is sustained by angle plates or brackets N, riveted to its lower ends on the rear side, and the angle plates or brackets are riveted at their lower edges to a foot or threshold plate D, which is arranged to slide freely on the chafing-iron D′ on the platform. The lower edges of the angle-brackets are inclined in relation to the face-plate—that is to say, the angle between the face-plate and the lower edges of the brackets is an obtuse angle, and consequently when the threshold-plate which is attached to the angle-brackets rests flatly on the chafing-iron the face-plate will be sustained in an outwardly-inclined position, its upper end being beyond the perpendicular and the center of gravity. As a result of this arrangement the face-plate will have a tendency to pitch or tip forward at the upper end by gravity, and is in this way caused to lie snugly against and maintain connection with the opposing plate of the other car without the use of springs for the purpose, the face-plate when the two cars are coupled together assuming an upright position and the inner edge only of the threshold-plate sliding on the platform or chafing-iron. This tipping action of the face-plate is limited by side ties, hereinafter mentioned, and by the canvas N*, connecting the face-plate with the car and forming a roof for the vestibule. The thrust-bars F are supported at their rear by the rear beam F′ and pass at their front ends through vertical guide-openings F^2, so as to allow said front ends a limited vertical movement with the face-plate M, which is connected therewith by means of the buffer-plates E, as before described. It will be understood from the above description that the face-plate, buffer-plates, threshold-plate, and thrust-bars are all connected

rigidly together by the angle plates or brackets N, the weight of all these parts being sustained by the chafing-iron with relation to which they slide back and forth.

The manner in which the face-plate is jointed to the side panels L is clearly shown in the drawings, the plate being united by hinges O to plates P, which lie against the outer faces of the panels and are connected thereto by bolts Q. The plates are slotted horizontally, as shown at S, for the passage of the bolts in order that the face-plate may tilt inward and outward, as before mentioned. These bolts serve as side ties to limit the tilting motion.

In the action of the structure the independent hinged panels J, turning in hinges I, permit the vestibule as a whole or either side thereof to move forward and backward in the direction of the length of the car, thus allowing the face-plates of the two cars to remain constantly in contact, so that a continuous closed passage is maintained. The cars are brought and held near enough to each other to insure contact between the face-plates from top to bottom. As regards the action of the face-plate, the essential point is that it shall receive a rear support in order that it may have the tendency to pitch outward by gravity, and it is manifest that the details may be varied at will, provided this characteristic is retained. Owing to the location of the posts H at the outer edge of the platform I am enabled to give a wider passage than usual to make use of the entire platform within the vestibule and to use at the side an ordinary single door T instead of the usual jointed door.

It will be observed that as a result of my improved vestibule I dispense with the usual rubber or canvas diaphragm connected to the sides of the face-plate, the jointed panels being substituted for the same.

In order that the ventilation of the car at the end may be permitted without the necessity of opening the doors, I provide one or both of the panels J at opposite ends of the car with a vertically-sliding sash *j* and a covering-screen *j'*. By the use of these ventilating-openings a free passage of air is permitted through the car, thus avoiding the danger and inconvenience attending the opening of the doors to afford ventilation.

When my improvement is to be applied to cars having the Janney-Buhoup platform, I adopt the construction shown in Figs. 4 and 5, in which it will be seen that the upper side of a buffer-plate Q' is provided with a groove extending transversely of the car, which receives a flange *q*, depending from the under side of the threshold-plate R.

The brackets or angle-plates N of the face-plate are riveted at their lower inclined edges to the threshold-plate, the rear edge of the latter thus affording a support for the face-plate. Both the face-plate and threshold-plate by this arrangement are permitted to move laterally with respect to the buffer-plate. In order that this side motion of the face-plate may be limited and the consequent lateral motion of the panels jointed to the same, I provide two springs S', which connect the buffer-plate at its ends to the two ends of the face-plate. These springs are in the form of rods, each of which is fixed at its upper end to the rear side of the face-plate, while at their lower ends the rods are fixed to the rear sides of the buffer-plate at its ends. The rods are so bent that they exert a pressure toward each other against the face-plate, and thus act to maintain the same yieldingly in a position in line with the center of the car. In addition to this pressure transversely of the car the springs also exert a pressure at their upper ends longitudinally of the car and tend to throw the upper end of the face-plate from the car, and in this manner assist gravity in tilting the face-plates on their sustaining angle-plates. It will be understood, of course, that other forms of springs than those shown may be used for this purpose and may be applied in other ways, the essential requirement being that the face-plate may be maintained yieldingly in a position in line with the center of the car.

What I claim is—

1. In a car-vestibule, the combination with the platform, of the face-plate, and a rigid rearwardly-extending support fixed to the face-plate serving to sustain the same in an upright position and having its supporting-edge arranged to slide on the platform and so formed as to normally hold the upper end of the face-plate beyond the perpendicular; whereby the face-plate will have a tendency to constantly tip forward by gravity and to lie snugly against the opposing plate of the adjacent car.

2. In a car-vestibule, the combination with the gravity-tilting face-plate, and the rearwardly-extending brackets secured thereto and having inclined lower edges, of the inclined sliding threshold-plate secured to said inclined edges with its lower inner edge in sliding contact with the platform, and thereby supporting the weight of the said face-plate to cause it to tip outwardly at its upper end by gravity, substantially as set forth.

3. In a car-vestibule, the combination of the gravity-tilting face-plate provided with rearwardly-extending brackets having inclined lower edges and the threshold-plate secured to the said inclined edges and sliding on the platform, with the spring-pressed buffer connected with the lower ends of the face-plate and movable therewith, substantially as set forth.

4. In combination the hinged panels J and L, the face-plate loosely connected with the latter and provided at its lower ends with rear sustaining-brackets, a support for said brackets, and the spring-actuated buffer exerting an outward pressure on the lower ends of the face-plate.

5. In combination with the car the spring-

actuated buffer, the hinged panels J, the hinged side panels L, the face-plate, the rear sustaining plates or brackets for said face-plate, and the plates P jointed to the face-plate and to the side panels substantially as described.

6. A vestibule consisting of two upright panels hinged to the car, two side panels hinged to those first named, a flexible roof and a face-plate jointed to the side panels to tip outward by gravity and spring connections tending to force the lower ends of the face-plate outward.

7. In combination with the car and its platform, the face-plate, the two vertical posts located in rear of and beyond the sides of the face-plate, the side panels jointed to the face-plate, and the outwardly-extending end panels jointed to the side panels and to the posts.

8. In combination with the car and the platforms at its ends, the two face-plates, the side panels extending longitudinally of the car, the outwardly-extending panels jointed to the first-named panels and provided with ventilating-openings.

9. In a car-vestibule a face-plate supported at the rear and arranged to tip outward at its upper end by gravity and movable laterally with relation to the car, in combination with spring-rods S, arranged to maintain the face-plate in a line with the center of the car and tending to tip the same outward.

10. In a car the combination of a buffer, a face-plate movable laterally with relation to the same, vertical posts, side and end panels jointed together and to the face-plate and posts, and vertical springs fixed at their upper ends to the face-plate and at their lower ends to the buffer.

In testimony whereof I hereunto set my hand, this 14th day of April, 1894, in the presence of two attesting witnesses.

JACOB N. BARR.

Witnesses:
C. A. NEALE,
W. R. KENNEDY.