

(No Model.)

2 Sheets—Sheet 1.

E. C. SESSIONS.  
STREET RAILWAY CAR.

No. 432,954.

Patented July 22, 1890.

Fig. 1.

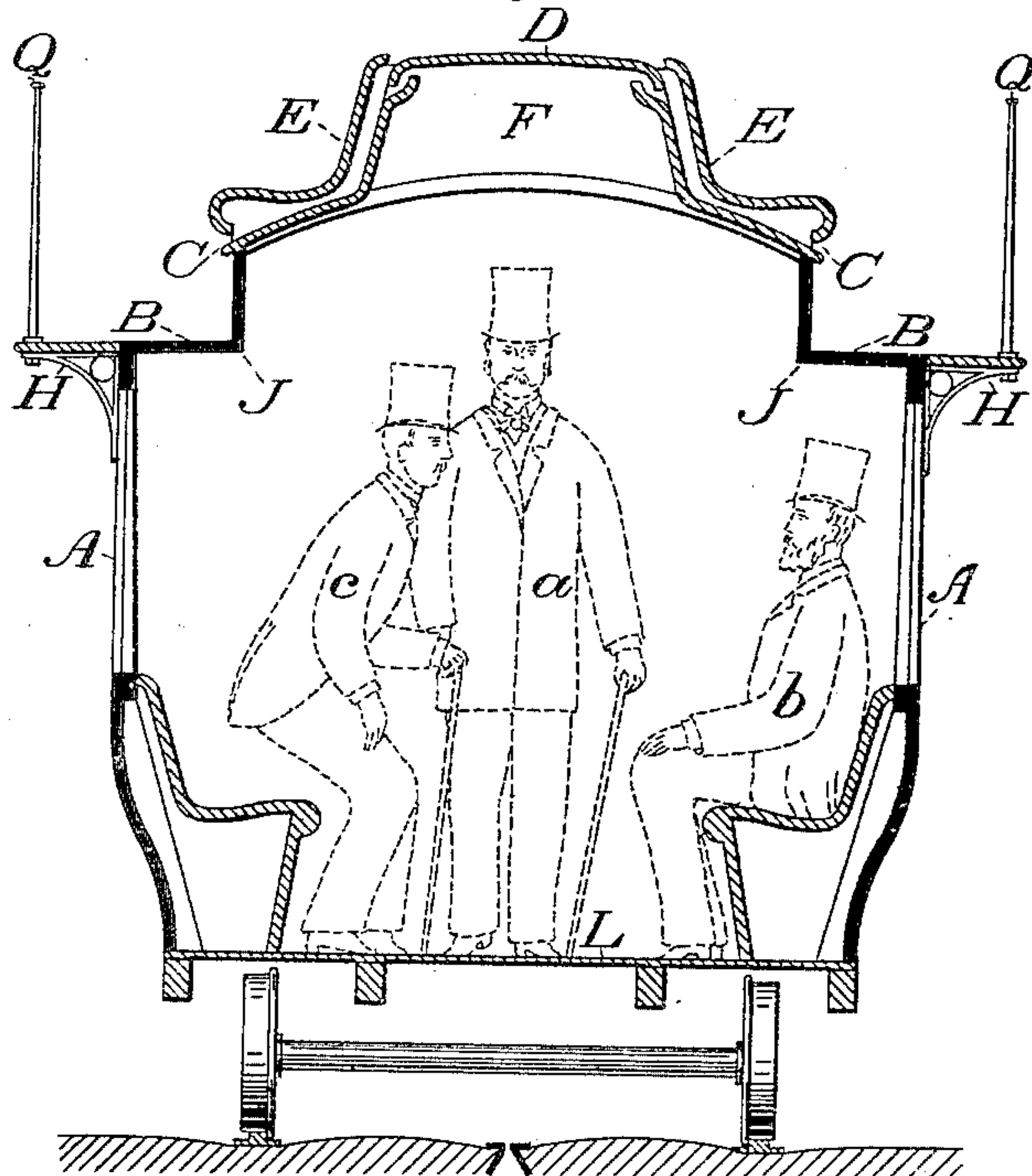
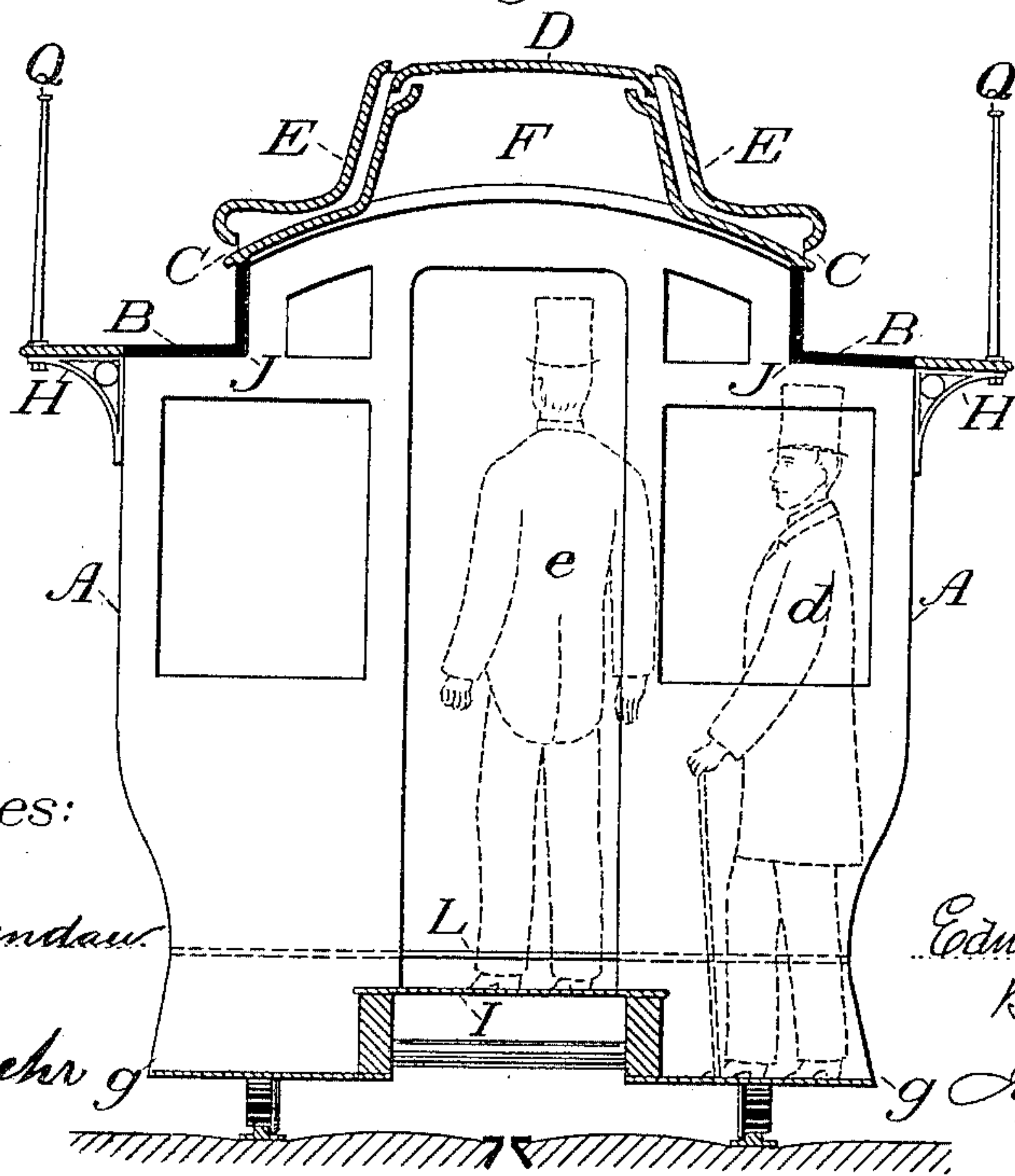


Fig. 2.



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Edmund Sessions

By his atty

John Richards

(No Model.)

2 Sheets—Sheet 2.

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Fig. 5.

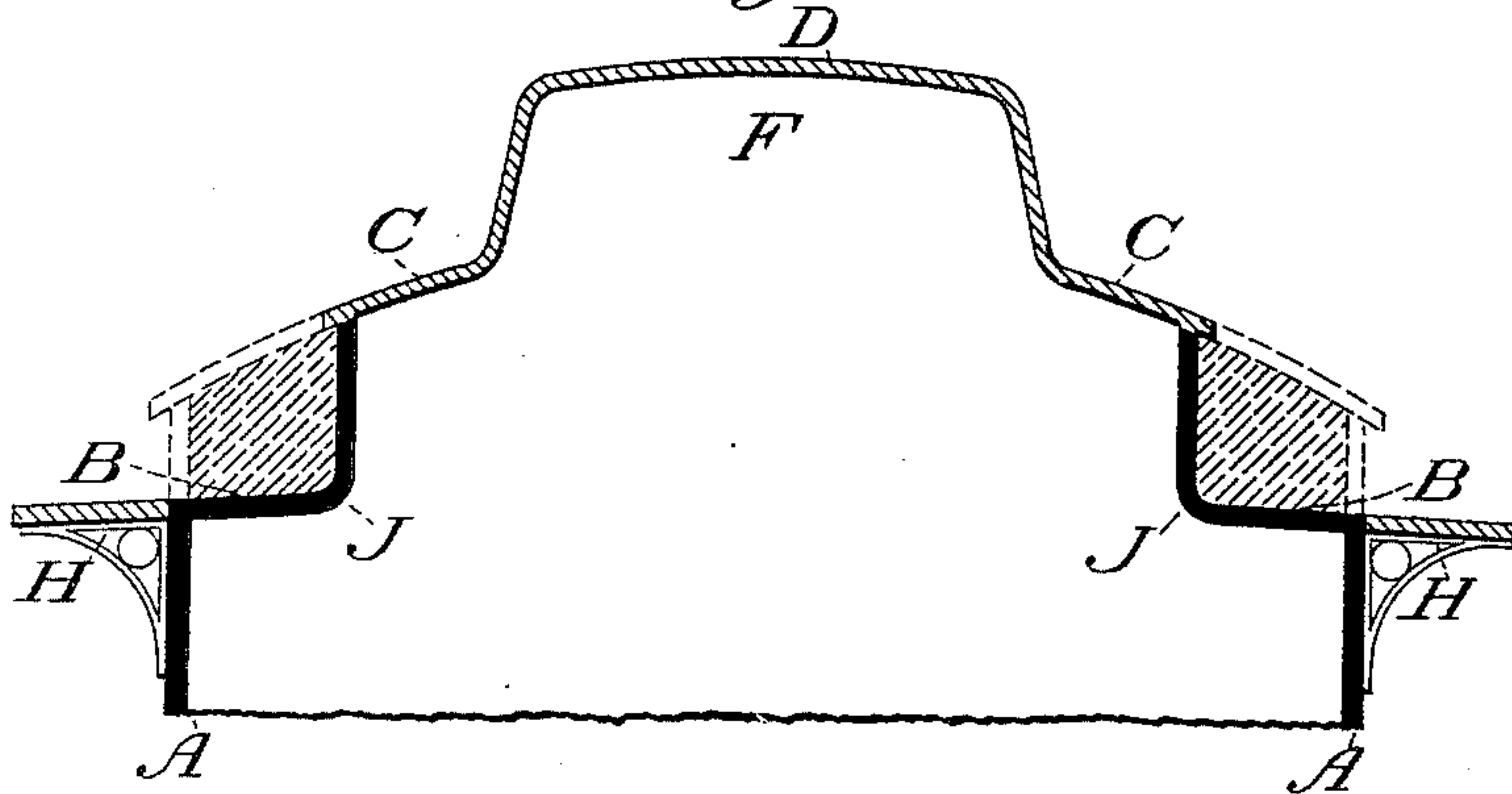


Fig. 3.

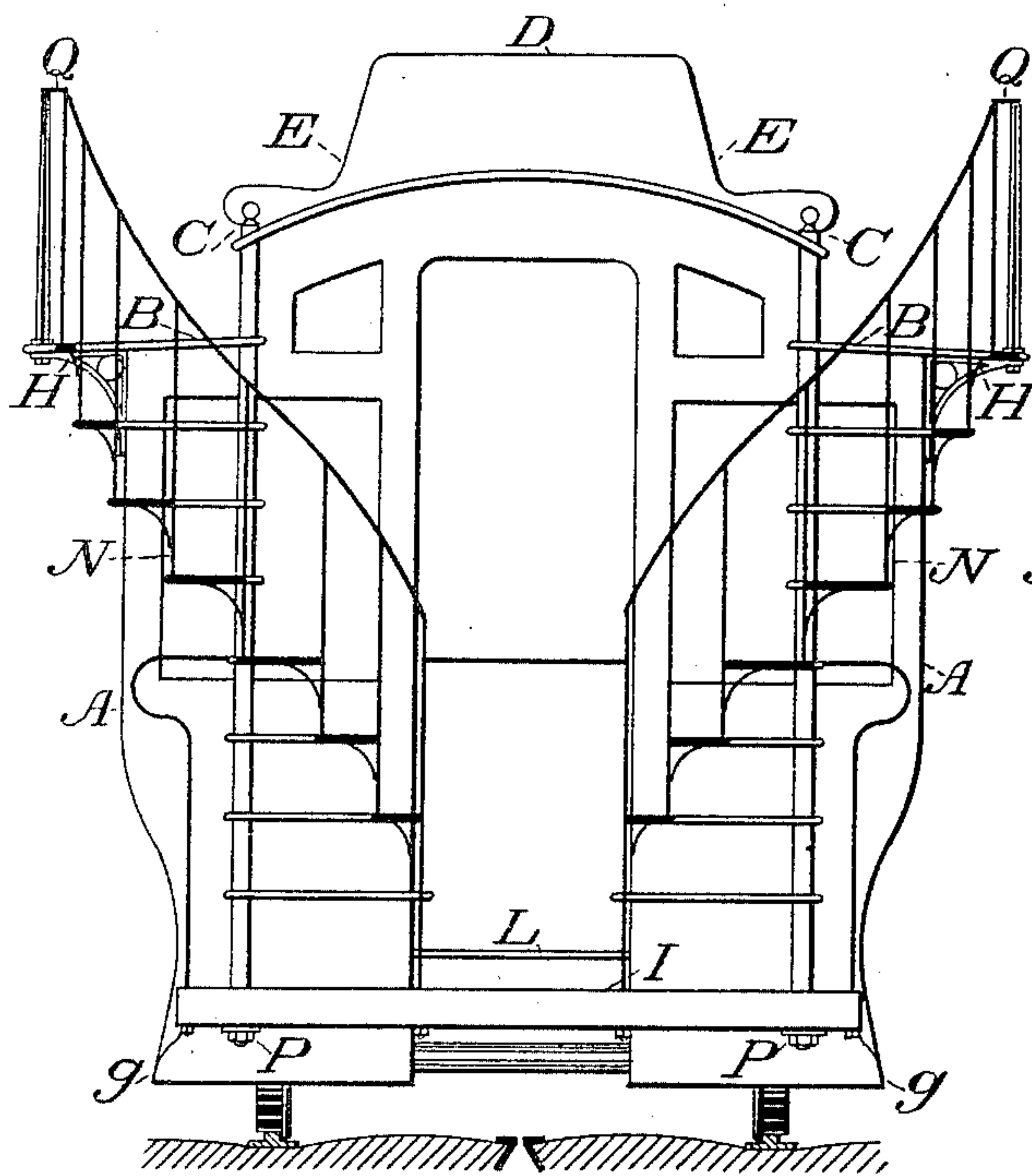
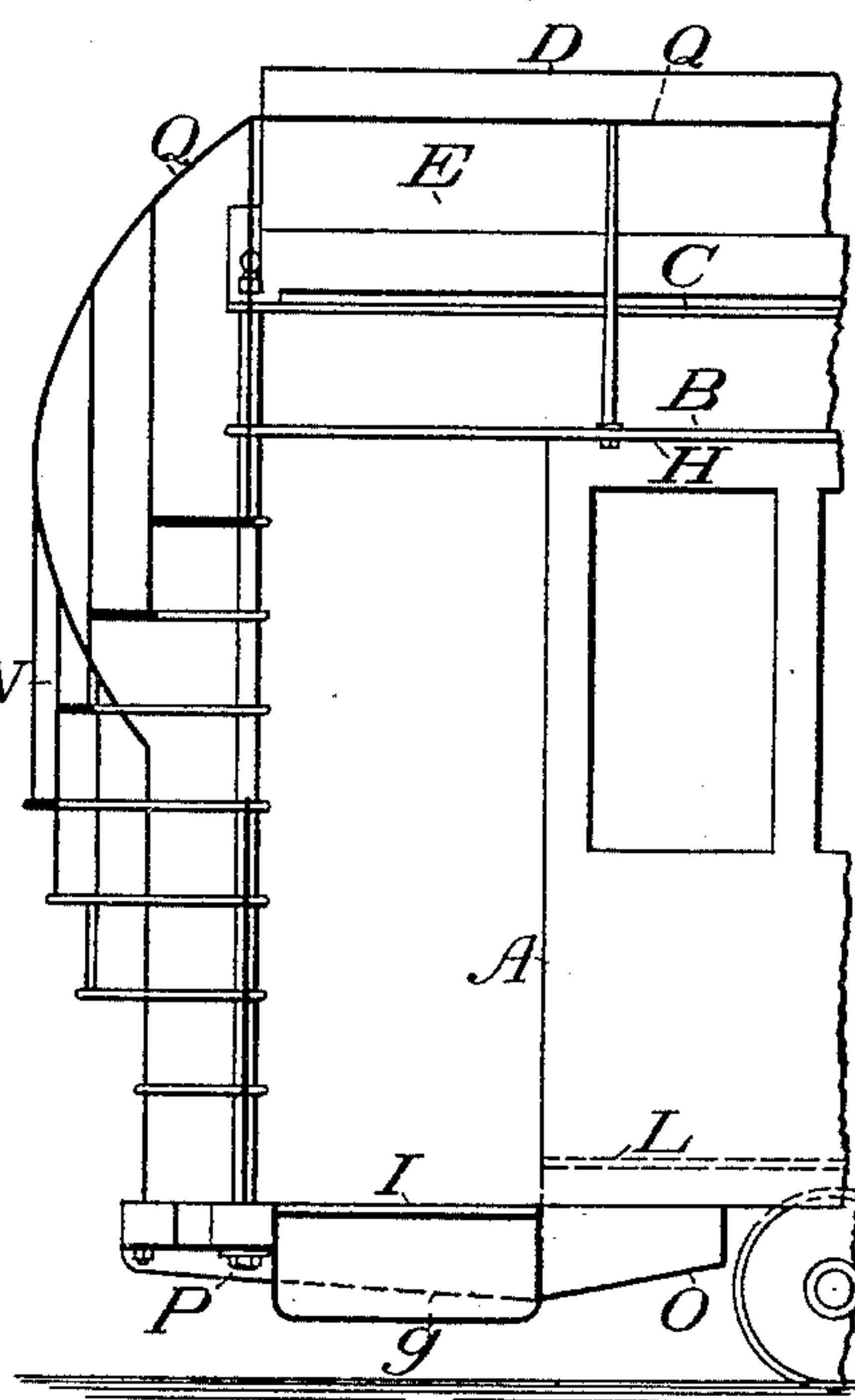


Fig. 4.



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# UNITED STATES PATENT OFFICE.

EDWARD C. SESSIONS, OF OAKLAND, CALIFORNIA.

## STREET-RAILWAY CAR.

SPECIFICATION forming part of Letters Patent No. 432,954, dated July 22, 1890.

Application filed May 1, 1890. Serial No. 350,184. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD C. SESSIONS, of Oakland, in the county of Alameda and State of California, have made certain Improvements in Passenger-Carriages for Street-Railways; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the sheets of drawings herewith, forming a part of this specification.

This invention relates to certain improvements in the construction of passenger-carriages, such as are arranged for carrying passengers both inside and on the roof, and especially to such carriages as are employed for street tramways or railroads.

My invention consists in constructing such carriages with a lateral contraction of sides of the body of such carriages above the head-room for seated inside passengers, so as to form a footway and platform at a lower level than the roof, the distance between the tiers of seats on the top being thus considerably widened and the top seats correspondingly lowered without interfering with the room required for inside passengers when entering, standing, or sitting.

My invention also consists in extending the contracted portion of the sides over the entrance-platform, so as to communicate with means of access to the roof-seats.

My invention also consists in modifying the entrance-platform of such carriages to conform to the configuration of the sides and roof before named, so that passengers can enter freely beneath this extension of the contracted portion of the sides projecting over the entrance-platform.

It also consists in supporting the entrance-platform to such carriages wholly or in part from the roof-framing, so that the platform may be constructed independent of the main sills of the carriage, and the steps from the ground to be so situated as to conform to the requirements of the roof above, as before named, and thus permit free entrance.

My invention also includes the employment of winding or direct stairs or ladders ascending at one or both ends and on each side of the carriage to the footway in front of the tiers of seats on top, thus avoiding a cross gangway

or passage between the tiers of seats on the roof. These various features are illustrated in the drawings hereto attached and forming a part of this specification, in which—

Figure 1 is a transverse section through a passenger, tram, or railway carriage arranged with my improvements and showing the form of the sides and roof, also the position of seats inside and on the top. Fig. 2 is an end view of the same carriage, the entrance, platform, sides, and roof being in section to show the relation of the two and the manner of gaining clearance for passengers entering from the ground. Fig. 3 is a complete end view of the same carriage, showing the double ascending stairs of a winding form for passing to the footways or platforms below or in front of the tiers of seats on the top. Fig. 4 is a partial side view also showing ascending stairs and the manner of supporting the entrance-platform from the roof and beneath the main sills of the carriage; and Fig. 5 is a diagram showing the form of a common carriage and the section of the sides thereof removed in my improved construction of the same.

Similar letters of reference on the different figures indicate corresponding parts.

I am aware that passenger-carriages employed for street tramways or railroads constructed with tiers of seats on top are well-known; also, that such tiers of seats are reached by stairs or ladders ascending from the entrance-platforms; but in all such carriages, so far as I know, the portion of the roof used as footway in front of the seats on top of the carriages has been at such height or elevation as to permit inside passengers to stand erect beneath the same. To avoid the height required for a carriage thus arranged, I adopt a new form of constructing the sides, these being contracted inward above the inside seats at a point sufficiently high to permit head-room for seated inside passengers, the horizontal part of the contraction forming in outline a step and foot-rest for outside passengers. The seats for outside passengers thus come directly on the edge of the roof, and the latter is thus made sufficiently wide to offer free standing-room inside of the carriage.

Referring now to the drawings, the sides



of the carriage A are contracted at B over heads of inside passengers when sitting, providing the distance from J to J inside for passengers when standing or walking about.

5 The roof is made in two steps or extensions, (shown at C and D, Fig. 1,) the first or main one C terminating where it meets the vertical extension of the sides, as shown. This places the angle or corner of the sides at J.

10 proportionately nearer to extreme width of the carriage A, to afford for passengers inside sufficient room when standing, sitting, or in the act of sitting down, as indicated by the figures *a*, *b*, and *c*, Fig. 1. It also affords a

15 much wider space for head-room between the two footways B B, these being extended by overhanging shelves H H, and at the same time provides ample width for a ventilating-extension F. This extension F forms backs

20 for the top seats E and a wide platform or deck at D, which may be used for carrying baggage, parcels, or freight when required for that purpose. This change in the configuration of the sides from the ordinary

25 form of construction can be fully understood by referring to the diagram Fig. 5, Sheet 2, where the shaded parts at B indicate the sections of the main body A, omitted or removed to gain the objects sought in my invention. Other letters of reference thereon indicate parts corresponding to the other figures.

Referring to Fig. 2 it may be seen that the platform I, in order to permit the entrance of

35 passengers beneath the footway B and with clearance at J, requires a section conforming in a degree to the roof and the contracted step-shaped portion of the sides, and that the steps of the platform must correspond to B

40 and C above. The figures *e* and *d* indicate the position of passengers when ascending and entering. This construction narrows the central portion of the platform at I to a little more than that of the door above, and also

45 reduces its extreme dimensions from *g* to *g* within the width occupied by the main body, so that passengers are sheltered in entering and leaving the carriage.

The stairs N, Figs. 3 and 4, ascend to the

50 footway B on each side of the carriage, and thus permit the top tiers of seats, if desired, to be extended over the platform I, dispensing with a cross passage between them on the top. This permits passengers to ascend to

55 either side above from the same end of the carriage and from one entrance-platform. These stairs N are shown of a winding form; but it is evident that this construction may be modified without changing the main ob-

60 ject of my invention.

The platform I, being below the main sills of the carriage, is partially supported from the roof by the rods P, forming the axis of the stairs, as seen in Figs. 3 and 4, the inner end at O being attached to the sills or bottom

65 framing of A, as seen in Fig. 4. The hand and guard rails Q are of the usual construction, continuous from the lower platform to the top and in front of the seats on the opposite side of the carriage.

Having thus explained the nature and objects of my invention and the manner of carrying it into effect, what I claim, and desire to secure by Letters Patent, is—

1. In a passenger-carriage for street-rail- 75 ways with tiers of seats on top, the sides A, formed with angular inward step-shaped extensions B B, providing foot-room for outside passengers below the roof C, constructed and arranged substantially in the manner and for

80 the purposes herein set forth.

2. In a passenger-carriage for street-rail- ways arranged with tiers of seats on top, the angular inward step-shaped extensions B B of the main sides A A, with a shelf H, project- 85 ing over the extreme width of the carriage, substantially as and for the purposes set forth and described.

3. In a passenger-carriage for street-rail- ways arranged with tiers of seats on its top, 90 the narrow-stepped platform I, supported at its outer end from the roof, in combination with double ascending stairs N and the sunken footway B and the overhung shelf H, arranged and constructed substantially in the manner 95 and for the purposes herein described.

4. In a passenger-carriage for street-rail- ways arranged with double tiers of seats on top, the narrow-stepped platform I, having a construction substantially in conformity to 100 the roof and the contracted step-shaped portions of the sides, while the steps correspond to the portions B and C, and double stairs N, leading to both sides of the roof from one or both ends of the carriage, substantially in the 105 manner and for the purposes herein set forth and described.

5. In a passenger-carriage for street-rail- ways arranged with double tiers of seats on top, the double stairs N, the axial supporting- 110 rod P, and the platform I, combined and arranged substantially as and for the purposes specified.

In testimony whereof I have hereunto af- fixed my signature in the presence of two wit- 115 nesses.

EDWARD C. SESSIONS.

Witnesses:

L. A. MITCHELL,  
C. W. DEARBORN.