

J. B. STRAUSS.
CAR.
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Fig. 1

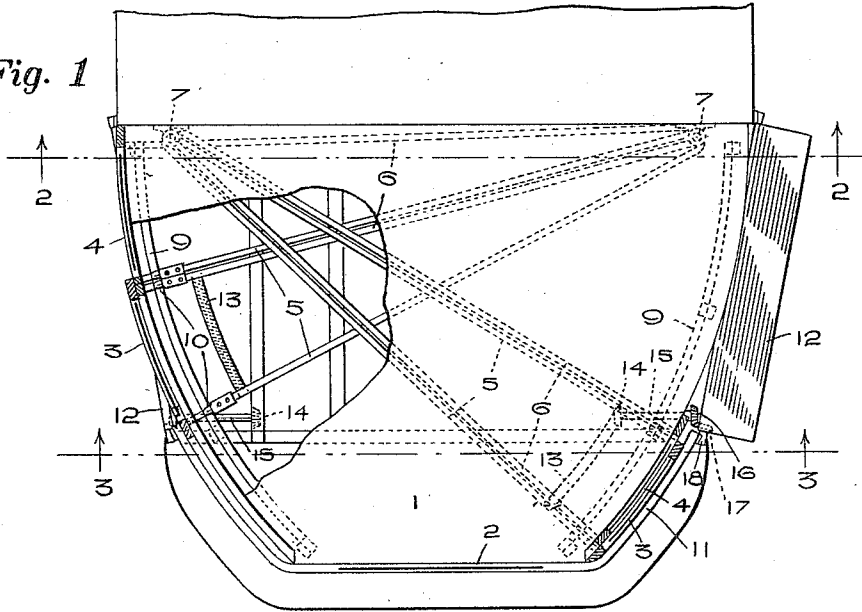


Fig. 2

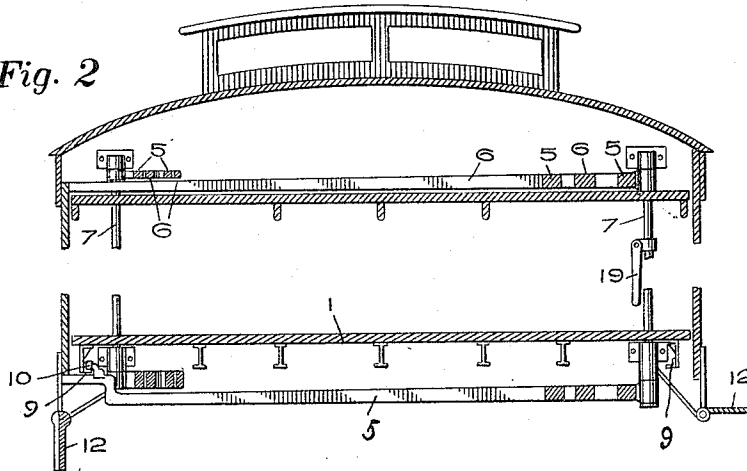
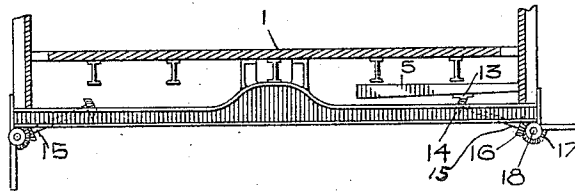


Fig. 3



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To all whom it may concern:

Be it known that I, JOSEPH B. STRAUSS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Cars, of which the following is a specification.

This invention relates to improvements in cars, and has for its object to provide a new and improved door and step therefor.

The invention is illustrated in the accompanying drawings, wherein—

Figure 1 is an inside plan view of the car vestibule; Fig. 2 is a sectional view taken on line 2—2 of Fig. 1; Fig. 3, is a sectional view taken on line 3—3 of Fig. 1, with parts omitted.

Like letters refer to like parts throughout the several figures.

The vestibule is provided with a floor 1 and the walls 2, and there are provided suitable doors to permit passengers to pass to and from the car. There is preferably a door on each side of the vestibule and a step arranged at the door, the step and door adapted to be simultaneously operated. In Fig. 1, I have shown a long vestibule, and in such construction the door is preferably divided into sections so that when open it will occupy only a small space. As herein shown, the vestibule door is made up of two sections 3 and 4. Section 3 of the door is mounted upon the frames 5 at the top and bottom, and the section 4, upon the frames 6. These frames are horizontal and are mounted upon suitable pivots so as to be moved about such pivots. As herein shown, the frames are mounted upon the vertical shafts 7. The frames 5 and 6 at the bottom are provided with suitable supports beneath the vestibule floor. These frames are provided with tracks 9 which are engaged by rollers 10 fastened to the frames. The doors are received into the portion 11 of the vestibule wall when open, so as to be out of the way. When the door is made into sections the two frames 5 and 6 may be used, but if the door is only in one section one frame may be omitted. When the door is made in sections the sections are spread apart when the door is closed and are brought together when the door is open, as shown in Fig. 1, the two parts collapsing in any desired manner. It will be seen that by rotating the

shaft 7 these doors may be easily and quickly opened and closed and the two sections collapsed when opened so as to occupy only a small space. Some suitable arrangement is also provided for moving the steps 12 to their operative and inoperative positions. Both the step and the door are preferably operated from the same device or shaft 7. As herein shown, the frame 5 is provided with a rack 13 which engages a gear 14 on a shaft 15. This shaft has a beveled gear 16 which engages the beveled gear 17 on a shaft 18 to which the step 12 is fastened. The parts are arranged so that the step is moved to its operative position when the door is opened and to its inoperative position when the door is closed. The shaft 7 may be operated in any desired manner, as by means of a folding handle 19. When the car is in motion the doors are closed so as to completely inclose the vestibule, and the steps are in their inoperative position so that passengers cannot stand thereon. When the car is stopped the conductor rotates one of the shafts 7, thus moving the frames 5 and 6 about their pivotal points. The door is then slid open and the two sections collapsed so as to form a wide opening for the entrance and exit of the passengers. When the rack 13 engages the beveled gear 14 the shaft 15 is rotated and also the shaft 18, thus moving the steps 12 into their operative position so that the passengers can use them. The steps are held in this position as long as the doors are open. When it is desired to start the car, the conductor rotates the shaft 7 in the opposite direction. This moves the frames 5 and 6 back to their initial position, moves the two sections of the door with relation to each other, and closes the door opening. The movement of the rack 13 to the connection to the shaft 18 causes the steps, during this operation, to be moved to their inoperative position. The steps may be counterweighted if desired to facilitate their movement.

It is, of course, evident that the construction may be varied in many particulars and for purposes of illustration I have shown one of the most difficult applications of my invention to car vestibules.

It will be noted that the vestibule is provided with what may be termed a swinging section or sections, having a rotary move-

ment about the pivotal point outside of such sections, the sections forming the arc of a circle and moving in the arc of a circle.

I claim:

5 1. The combination with a vestibule for cars, having an opening through which passengers pass, of a swinging section having a rotary movement about a pivotal point outside of said section and located at the edge
10 of the vestibule, said swinging section and pivotal point being on opposite sides of the center line of the car, and a sector extending between the pivotal point and said swinging section.

15 2. The combination with a vestibule for cars of a swinging section extending from the top to the bottom of said vestibule having a rotary movement about a pivotal point at one side of such section, and a movable
20 step connected with said section and adapted to be moved to an inoperative position when the section is moved to its closed position.

3. The combination with a vestibule of a swinging section extending from the top to
25 the bottom of said vestibule, a substantially horizontal radial member connected at one end to said section and movably connected at the other end to a fixed part formed in the arc of a circle, and means for moving said
30 section in the arc of a circle to open or close the vestibule, said horizontal radial member extending across said vestibule, the fixed part to which it is attached being at one side of the vestibule, the opposite ends of said
35 radial member being on opposite sides of the center line of the car.

4. The combination with a vestibule of a swinging section, a substantially horizontal
40 radial member connected at one end to said section and movably connected at the other end to a fixed part formed in the arc of a circle, means for moving said section in the arc of a circle to open or close the vestibule, and a step associated with said section, the
45 position of which is controlled by the movement of said section.

5. A vestibule for cars comprising a swinging section, a plurality of supporting
50 devices at the bottom of said section and located beneath the car platform, said section projecting below the platform of the car at the point where the supporting devices are connected thereto, said supporting
55 devices adapted to be moved with relation to each other as the swinging section is opened and closed.

6. The combination with a car vestibule of a door adapted to move in the arc of a circle, a shaft at a distance from the door by
60 means of which it is controlled, and a connection between said door and said shaft.

7. The combination with a car vestibule of a door, a supporting device for said door comprising a part at the top and at the bot-
65 tom, and a shaft at a distance from the door

to which said parts are connected, said door forming the connecting link between said supporting parts at the top and bottom.

8. The combination with a car vestibule of a door, two frames, one at the top and one at the bottom, to which said door is connected, and projecting inwardly, a shaft to which said frames are connected, and means for rotating said shaft to open or close the door.

9. The combination with a car vestibule of a door comprising a plurality of swinging sections, a shaft with which said sections are connected, and means for collapsing said sections.

10. The combination with a car vestibule of a door comprising a plurality of swinging sections each provided with a supporting device, a shaft to which said supporting devices are connected, said supporting device adapted to be moved relatively to collapse the sections.

11. The combination with a car vestibule of a door comprising a plurality of swinging vertical sections, a vertical shaft at a distance from said sections, and a connection between said shaft and said sections whereby the sections may be moved with relation to the car vestibule and also with relation to each other.

12. The combination with a car vestibule of a vertical swinging section, an inside vertical shaft at a distance therefrom and located at one side of the vestibule, and a connection between said section and shaft, the opposite ends of said connection being on opposite sides of the center line of the car whereby the section is moved by the rotation of the shaft.

13. The combination with a car vestibule of a swinging section moving about a pivotal point at a distance from said section, a step mounted upon a rotatable shaft, and means for simultaneously moving said section and step.

14. The combination with a car vestibule of a swinging section, a step mounted upon a rotatable shaft, an operating device for said section comprising a lineal moving part and a rotating part, and a connection between said operating device and the shaft of said step whereby the shaft and section are controlled from the same operating device.

15. The combination with a car vestibule of a movable door and a movable step, a rack connected with the door and a rotating part engaged by said rack and connected with the step.

16. The combination with a car vestibule of a sliding door and a rotatable step, and an actuating device under the car platform for simultaneously moving them.

17. The combination with a car vestibule of a movable step and door, the step mounted upon a horizontal axis and the door upon

a vertical axis located at a distance from the opening controlled by said door.

18. The combination with a car vestibule of a movable step and door, the step mounted upon a horizontal axis and the door upon a vertical axis located at a distance from the opening controlled by said door, and means for simultaneously operating said door and step.

19. The combination with a car vestibule of a swinging door, a movable step associated therewith, a vertical shaft at a distance from said door and fixed against lateral movement, an operative connection between both the step and the door and said shaft whereby the rotation of the shaft operates

the step and the door and a protecting floor above said connection.

20. The combination with a car vestibule of an opening section by means of which the vestibule is opened and closed and a step adapted to be operated so as to be moved in a position to be used or in a position to be out of the way when not in use, and means comprising a vertical shaft at a distance from said opening section for operating said opening section and step, said shaft fixed against lateral movement.

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Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."