

No. 847,501.

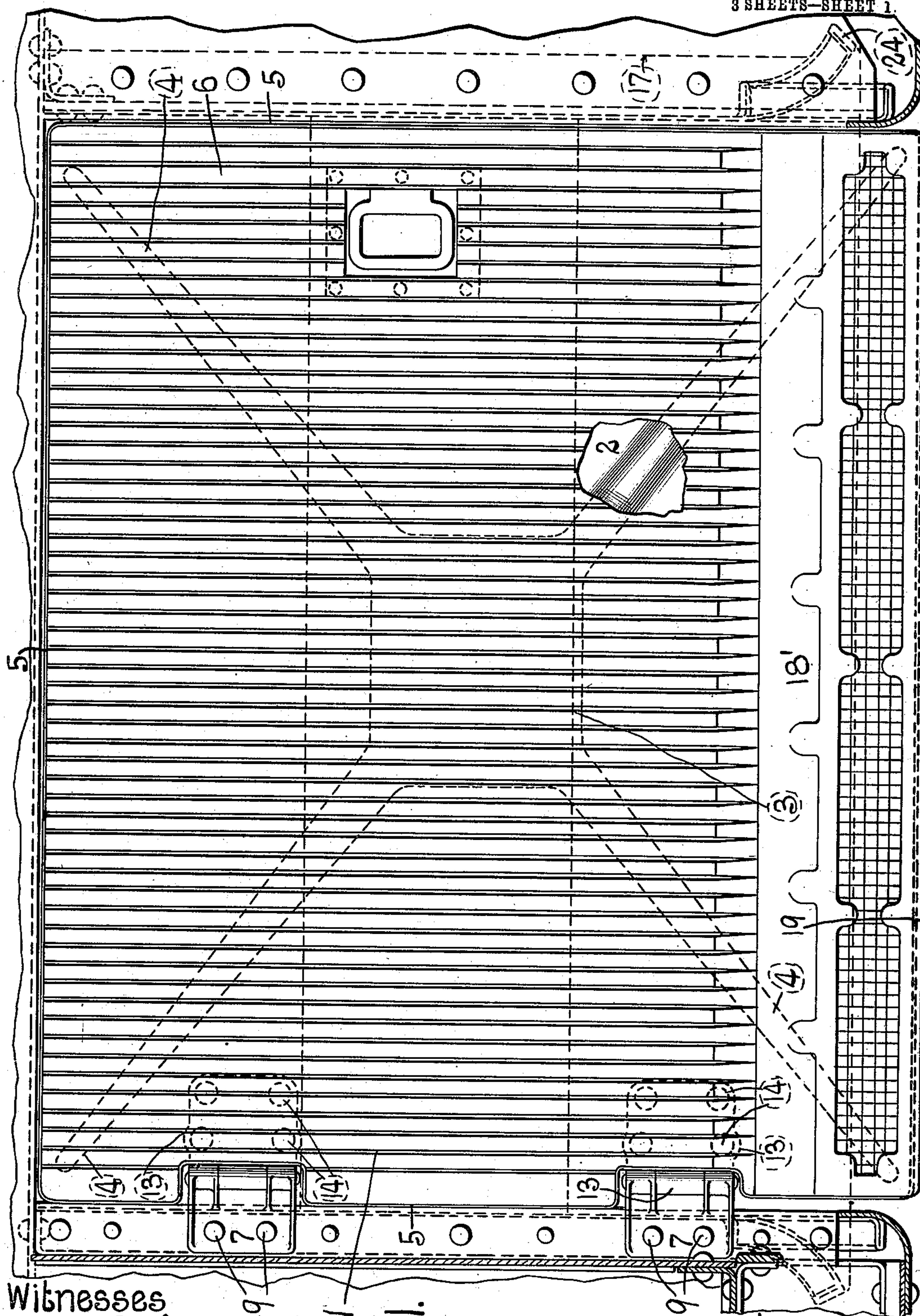
PATENTED MAR. 19, 1907.

A. E. OSTRANDER.

VESTIBULE TRAP DOOR AND STEPS FOR PASSENGER CARS.

APPLICATION FILED JUNE 13, 1906.

3 SHEETS—SHEET 1.



Witnesses
a.g.m. Couley
Wells L. Church.

Fig. 1.

Inventor:
Allen E. Ostrander:
by *Patience Cornwall Abby's.*

No. 847,501.

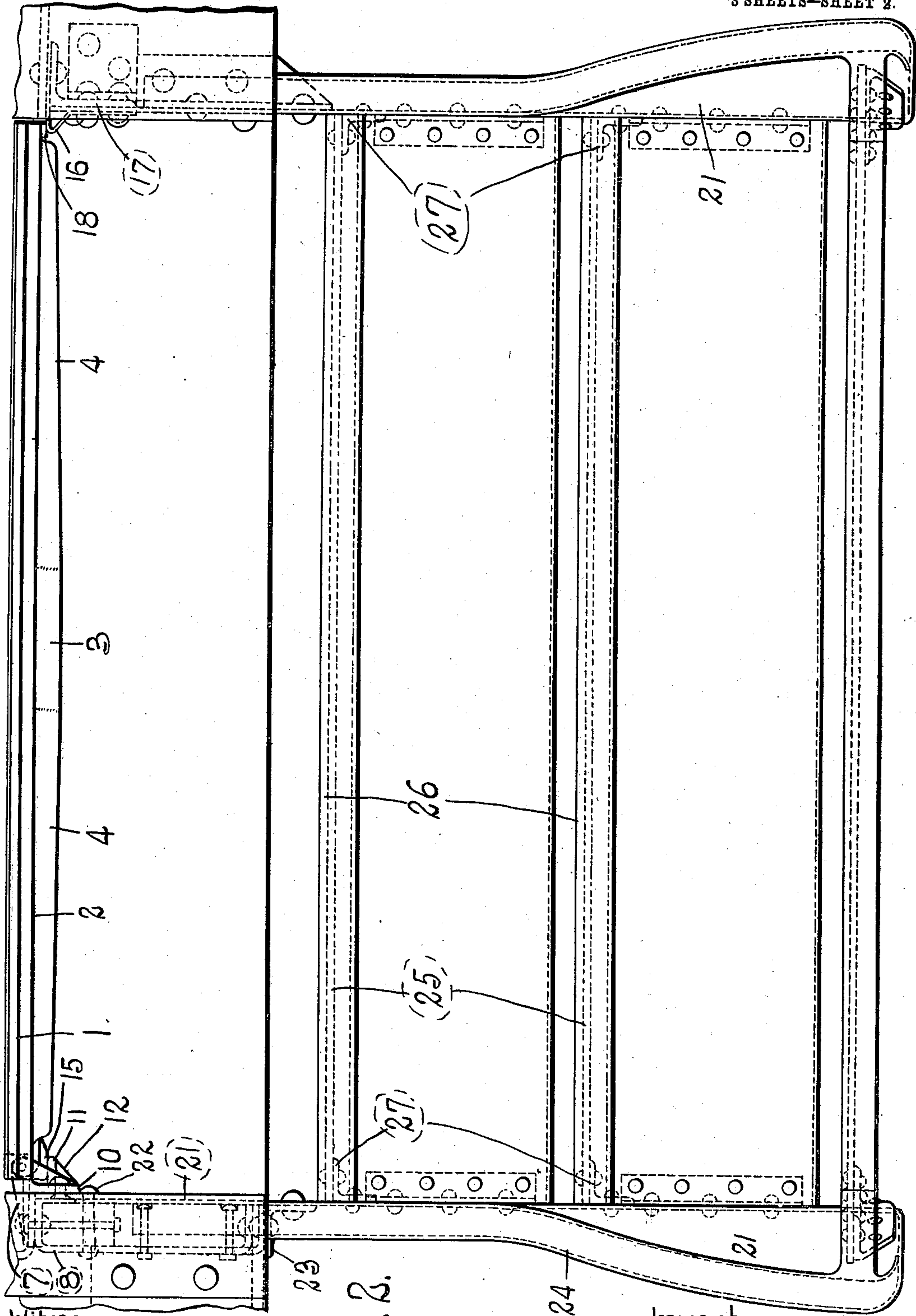
PATENTED MAR. 19, 1907.

A. E. OSTRANDER.

VESTIBULE TRAP DOOR AND STEPS FOR PASSENGER CARS.

APPLICATION FILED JUNE 13, 1906.

3 SHEETS—SHEET 2



Witnesses
a. J. M. Caulley
Mills L. Church

219

Inventor:
Allen E. Ostrander
by *Bakerwell Cornwall Atty's.*

No. 847,501.

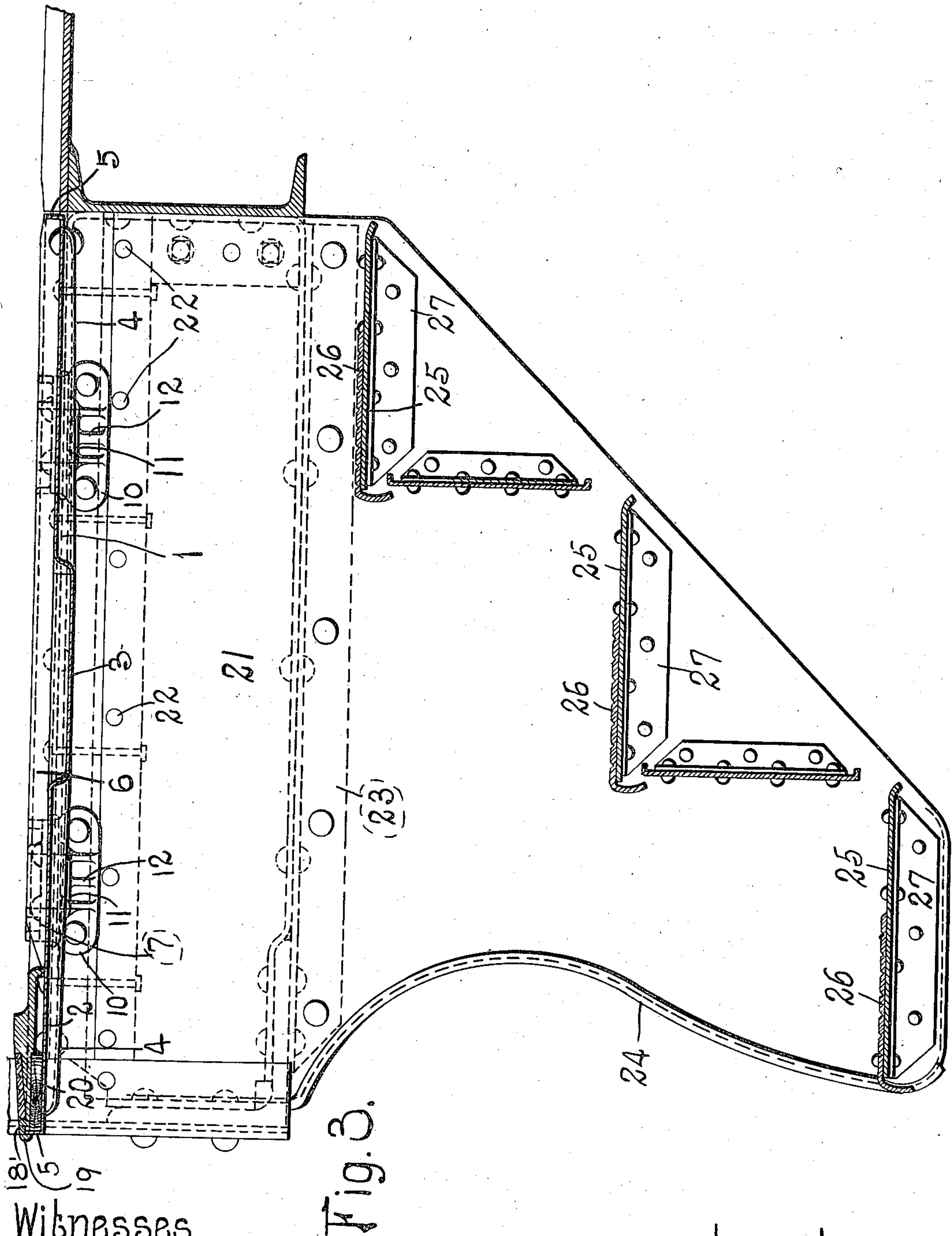
PATENTED MAR. 19, 1907.

A. E. OSTRANDER.

VESTIBULE TRAP DOOR AND STEPS FOR PASSENGER CARS.

APPLICATION FILED JUNE 13, 1906.

3 SHEETS—SHEET 2



Witnesses

Edgar T. Farmer

Nels L. Chueh

Fig. 3.

Inventor:
Allen E. Ostrander
by *Bakerwell Cornwall*
Atty's.

UNITED STATES PATENT OFFICE.

ALLEN E. OSTRANDER, OF PATERSON, NEW JERSEY, ASSIGNOR TO AMERICAN CAR & FOUNDRY COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF NEW JERSEY.

VESTIBULE TRAP-DOOR AND STEPS FOR PASSENGER-CARS.

No. 847,501.

Specification of Letters Patent.

Patented March 19, 1907.

Application filed June 13, 1906. Serial No. 321,573.

To all whom it may concern:

Be it known that I, ALLEN E. OSTRANDER, a citizen of the United States, residing at Paterson, New Jersey, have invented a certain new and useful Improvement in Vestibule Trap-Doors and Steps for Passenger-Cars, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a top plan view of a vestibule trap-door embodying the features of my invention. Fig. 2 is a front view showing car-steps constructed in accordance with my invention, the vestibule trap-door being also shown in this view; and Fig. 3 is a sectional view of the steps and trap-door shown in Fig. 2.

This invention relates to railroad rolling-stock, and particularly to passenger-coaches.

One object of my invention is to provide an improved vestibule trap-door for closing the car-step opening, and another object of my invention is to provide a novel form of car-steps of steel construction.

Referring to the drawings, which represent the preferred form of my invention, I designate a trap-door which closes the car-step opening in the vestibule of the car. The trap-door consists of a metal plate 2, provided at its center with a rectangular depressed portion 3 and with four tapered depressed ribs 4, which extend from the four corners of said central depressed portion to the corners of the door, as shown in Fig. 1, whereby said plate 2 is greatly strengthened. Said plate is provided with a continuous integral flange 5, and a filling, preferably of strips of hard wood, covers said plate inside of said continuous flange.

The trap-door is carried by hinges which comprise a stationary member 7, that is connected to the upper face of the end sill 8 of the car by bolts 9, and said member is provided with a downwardly-projecting flange 10, which is provided with a supporting-lug 11 and with a strengthening-rib 12, as shown in Figs. 2 and 3. The movable member 13 of the hinge extends under the lower face of the trap-door, to which it is connected by bolts or rivets 14, as shown in Fig. 1, and said movable member is provided

with a lug 15, which rests upon the supporting-lug 11 of the stationary member of the hinge when the door is closed, as shown in Fig. 2, and thus relieves the pintle of the hinge from strain when weight is placed on the door. The opposite edge of the trap-door is supported by a bracket 16, consisting of a plate which is fastened to the horizontal flange of one of the supports 17 for the floor of the vestibule, said plate being also bent downwardly and secured to the vertical flange of said floor-support, as shown in Fig. 2. A sound-deadening strip 18 is fastened to the underneath face of the trap-door and rests on this bracket 16. The edge portion of the trap-door which is adjacent the side of the car is provided with a corrugated metal tread 18' to prevent slipping, said tread having a downwardly-projecting flange 19 and being supported by a wooden strip 20, the wooden strips which form the filling for the trap-door terminating at the downwardly-projecting flange 19 of this metal tread.

The step-hangers consist of plates 21, one of which is connected to the end sill of the car by rivets 22 and to an angle 23, secured to the end sill, the other plate 21 being connected to the transversely-extending floor-support 17. The outer edges of said plates are curved, as shown in Fig. 3, and are provided with flanges 24, the lower ends of the plates being flared outwardly, as shown in Fig. 2, adjacent to the lower step.

The steps, which consist of metal plates 25, are connected to angles 27, that are fastened to the metal-plate step-hangers 21, and the plates 25 are preferably provided with treads 26, consisting of a steel base provided with a lead filling and commonly known as the "Mason tread." It is obvious, however, that instead of using metal treads 26 the plates 25 could be corrugated or otherwise constructed to prevent slipping.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a passenger-car, a vestibule trap-door consisting of a metal plate having a central depressed portion with depressed portions radiating therefrom; substantially as described.

2. In a passenger-car, a vestibule trap-door consisting of a metal plate having a central depressed portion, and strengthening-

ribs extending from said central portion toward the corners of the door; substantially as described.

3. In a passenger-car, a vestibule trap-door consisting of a metal plate having a continuous flange, a central depressed portion, and pressed tapered ribs extending from this central portion to the corners of the door; substantially as described.

4. In a passenger-car, a vestibule trap-door consisting of a metal plate having its edges flanged upwardly, strengthening-ribs pressed in said plate, and a covering arranged within the marginal flange of said plate; substantially as described.

5. In a passenger-car, a vestibule trap-door consisting of a metal plate having its edges flanged upwardly, strengthening-ribs pressed in said plate, a covering arranged within the marginal flange of said plate, and a metal tread at one edge of said door; substantially as described.

6. In a passenger-car, a vestibule trap-door consisting of a metal plate having its edges flanged upwardly, strengthening-ribs pressed in said plate, a covering arranged within the marginal flange of said plate, a metal tread at one edge of said door, said tread being supported by a wooden strip, and a flange which is formed integral with the tread; substantially as described.

7. In a passenger-car, step-hangers consisting of a plurality of sheet-metal plates, one of which is riveted to the end sill of the car and to an angle fastened to the underneath side of said end sill, the other of said plates being connected to a transversely-extending floor-support, angles secured to said step-hangers, and steps resting on the horizontal legs of said angles and being fastened thereto; substantially as described.

8. In a passenger-car, a vestibule trap-door having one member of a hinge connected thereto, a cooperating hinge member rigidly connected to a portion of the car-frame, and a lug on said rigid member for supporting the hinge member which is connected to the trap-door; substantially as described.

9. In a passenger-car construction, a trap-door comprising a metal plate provided with a continuous unbroken flange formed integral with the plate; substantially as described.

10. In a passenger-car construction, a trap-door comprising a metal plate provided on all sides with pressed flanges, and a filling covering said plate and arranged inside of said flanges; substantially as described.

11. In a passenger-car, step-hangers consisting of sheet-metal plates provided at their outer edges with integral flanges and being flared outwardly at their lower ends, and metal plates connected to said step-hangers to form the treads; substantially as described.

12. A passenger-car provided with step-hangers consisting of two continuous sheet-metal plates, independent metal supports connected to said plates, metal step-plates connected to said supports between the step-hangers, and a steel piece secured to each of said step-plates and provided with a lead filling and with a depending flange that covers the front edge of the step-plate; substantially as described.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, this 26th day of May, 1906.

ALLEN E. OSTRANDER.

Witnesses:

DAVID LEVY,
G. V. WASHINGTON.