(No Model.)

A. FORDHAM.

CAR VESTIBULE.

No. 482,006. Patented Sept. 6, 1892.

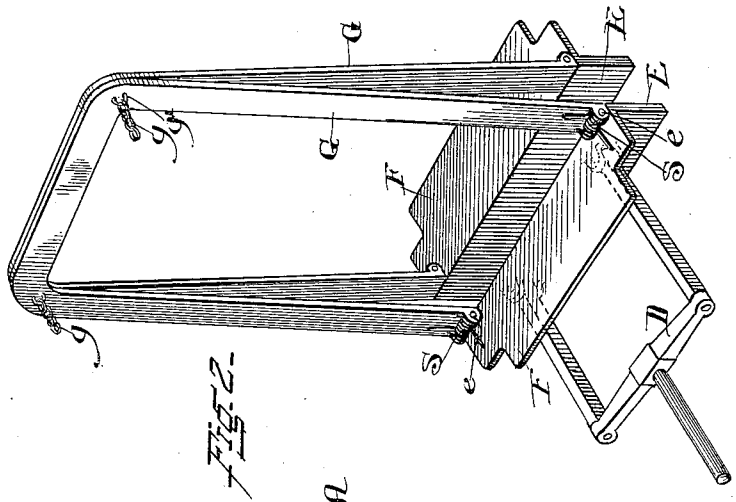

Fig. 2.

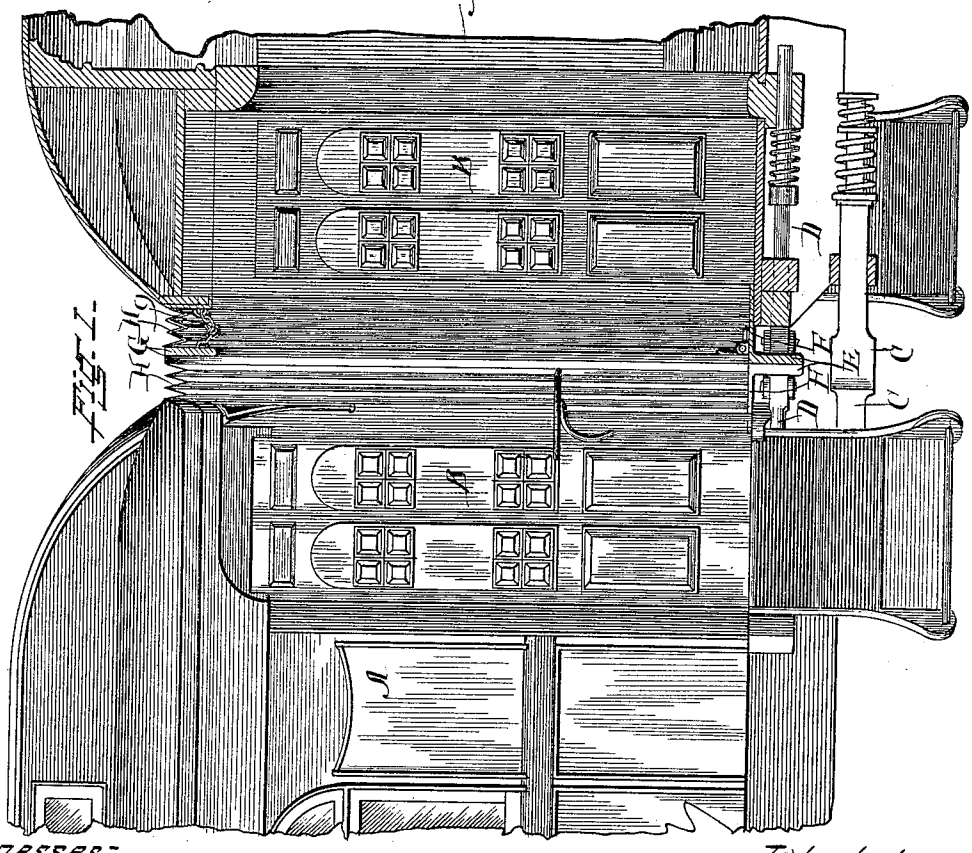

Fig. 1.

Witnesses:
Thos. O. Harvey
A. T. Odesen

Inventor:
Arthur Fordham
by Wiles Greene & Bitner
Attorneys

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ARTHUR FORDHAM, OF CHICAGO, ASSIGNOR OF ONE-HALF TO ROBERT H. WILES, OF FREEPORT, AND HARRY BITNER, OF CHICAGO, ILLINOIS.

CAR-VESTIBULE.

SPECIFICATION forming part of Letters Patent No. 482,006, dated September 6, 1892.

Application filed December 21, 1891. Serial No. 415,695. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR FORDHAM, a subject of the Queen of Great Britain, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Car-Vestibules, of which the following is a specification.

My invention relates to improvements in car-vestibules of that class in which the outer end of the vestibule terminates in a frame or plate intended to be held in contact with a similar plate upon the vestibule of an adjoining car when the cars are coupled together and the vestibules are in working connection. The invention is fully described and explained in this specification and shown in the accompanying drawings, in which—

Figure 1 is a view, partly in side elevation and partly in vertical section, illustrating the meeting ends of two cars and vestibules attached thereto and supplied with terminal plates of such form, construction, and connection as to embody my invention; and Fig. 2 is a perspective view of one of the terminal frames and certain parts immediately connected therewith.

In the views, A A are the superstructures of two railway-cars of suitable construction, and B B are vestibules built upon the platforms at the ends of the cars and preferably permanently attached thereto.

The cars are connected by means of couplers C C of any desired form and are provided with spring-actuated buffer-rods D D, which, as shown, are of the double form, each car being provided with two parallel rods pressed forward by a common spring in the manner well known in the construction of railway-cars. The double buffer-rod may, however, be replaced by the single rod, which is in common use in railway-cars, and will in every way take the place and perform the functions of the double rod shown in the drawings.

To the free end of the buffer-rods D D of each of the cars is fastened a transverse buffer-plate E, adapted to be pressed against a similar buffer-plate mounted on an adjoining car or against the ordinary buffer-heads upon a car not provided with vestibule-terminals. A threshold-plate F is fastened to each of the buffer-plates E and extends backward from the edge of the corresponding car-platform, its object being to close any space between the edges of the two platforms, and thereby to form a continuous walk from car to car.

To each of the buffer-plates E is hinged a frame G, preferably of metal, extending upward from the buffer-plate and of such width and height as to form a terminal arch for the vestibule and the passage-way formed thereby. This frame is connected with the stationary framework of the vestibule proper by means of a folding bellows-like hood H or other wall adapted to permit movement of the frame toward and away from the vestibule, and the movement of the upper end of the frame away from the vestibule proper is limited by means of suitable stops of any kind, but preferably by short chains *g*, each fastened at one end to the frame and at the other to the vestibule by means of suitable eyes or otherwise.

To each of the hinges connecting the frame with the buffer-plate is applied a coiled spring S, encircling the hinge-pintle, and so arranged as to tend to throw the upper end of the frame outward or away from the vestibule, and the limiting-chains *g* or other stops are preferably so arranged as to permit the swinging of the upper end of the frame to a point outside of or beyond the vertical plane passing through the hinge-joint. Each of the frames thus stands normally in a slightly-inclined plane, its upper end being farther from the vestibule than its lower end, and as two cars furnished with these frames are brought together for the purpose of coupling them the two frames will first strike at their upper ends and when they are in the position shown in Fig. 2. The continued movement of the cars toward each other, however, twists the springs of the hinges and presses the lower ends of the frames together until they are in complete contact from top to bottom, and this contact must continue so long as the buffer-plates themselves are held together through the coupling of the cars and the pressure of the buffer-springs. The use of springs at or below the platform gives to the vestibule-frame a yielding connection with the platform or its attachments, whereby the frame may slightly change its angle to the platform

for the sole purpose of insuring close contact between the frames on two connected cars. Any force applied to the upper end of the frame and tending to press it inward toward its vestibule is transmitted directly to the car-platform or car-sills, so that the position and effect of strain brought to bear upon the car through the opposing pressure of the two vestibule-frames are precisely the same as if no springs of any kind were used to press the frame forward, except the buffer-springs or other springs at the level of the platform.

In the drawings I have shown only the simplest form of spring-hinge and one which is perfectly adapted for the purpose to which I have applied it. I wish it distinctly understood, however, that I consider my invention in this regard as including any and every form of spring-hinge, of which, as I am aware, there are great numbers, many of which I am familiar with and might illustrate if I thought desirable or necessary. The form shown is intended, therefore, merely as a representative of the entire class of spring-hinges, and I have no intention of limiting the invention to the use of this form or of any other special form in which the spring is either visible or covered by a shell or any other means of concealment.

I am aware that it has heretofore been proposed to provide a car with a buffer-plate attached to the buffer rod or rods and pressed outward thereby and a vestibule-frame fastened to the buffer-plate, the upper part of the frame being pressed outward by means of springs interposed between it and the superstructure of the car. In that construction any pressure applied to the upper part of the frame is transmitted to the superstructure and not to the platform or sills of the car, whereas in the construction shown and described herein the comparatively slight pressure required to press the upper end of each frame backward to a vertical position is, as I have said, transmitted directly to the platform or sills.

My intention is to cover in this application as my invention the combination, with the car-platform and the spring-actuated buffer-plate or other equivalent attachment, of a vestibule-frame hinged to such plate or platform attachment and a spring interposed between the frame and the buffer-plate or platform and tending to throw the upper end of the frame outward, the force of the spring being brought to bear in one direction upon the vestibule-frame and in the opposite direction upon the buffer-plate, the platform, the sills, or other part of the substructure of the car.

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

1. The combination, with a car-platform and a spring-actuated buffer-plate at the end thereof, of a vestibule-frame hinged to the buffer-plate and a spring transmitting its force in one direction to the car-platform and in the opposite direction to the vestibule-frame and tending to throw the upper end of the frame outward or away from the platform, substantially as shown and described.

2. The combination, with a car-platform and a spring-actuated buffer-plate at the end thereof, of a vestibule-frame connected with the buffer-plate by a spring-hinge tending to throw the upper end of the frame outward from the car, substantially as shown and described.

3. The combination, with a car-platform and a spring-actuated buffer-plate at the end thereof, of a frame G, hinged to the buffer-plate, and springs S S, encircling the hinge-pintles and pressing the upper end of the frame outward, substantially as shown and described.

4. The combination, with a car-platform and a buffer-plate at the end thereof, of a vestibule-frame hinged to the buffer-plate, a spring interposed between the platform and the vestibule-frame and tending to throw the upper end of the frame outward, and a stop limiting the outward movement of the upper end of the frame, substantially as shown and described.

5. The combination, with the car-platform, the buffer-plate, and the vestibule-frame connected with the buffer-plate by spring-hinges, of chains *g*, connecting the upper end of the frame with the superstructure of the car and limiting the outward movement of the upper end of the frame, substantially as shown and described.

ARTHUR FORDHAM.

Witnesses:
C. P. SMITH,
R. H. WILES.