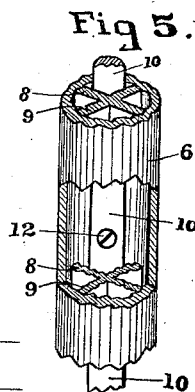
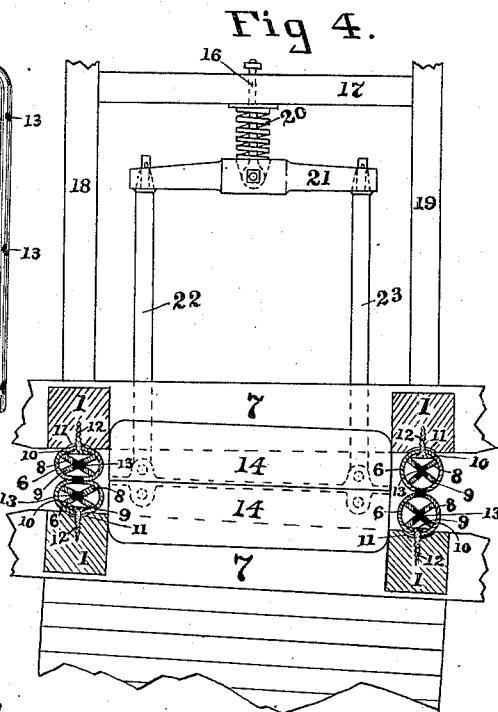
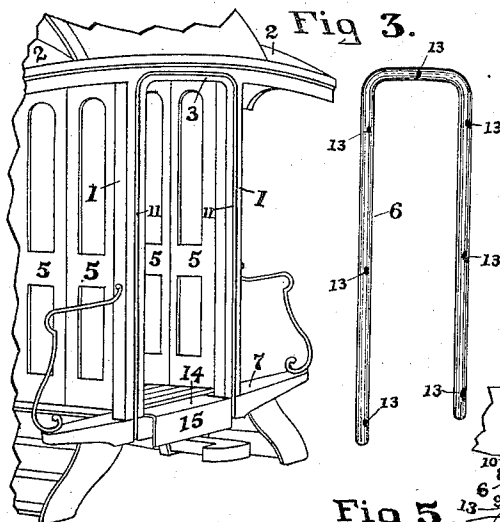
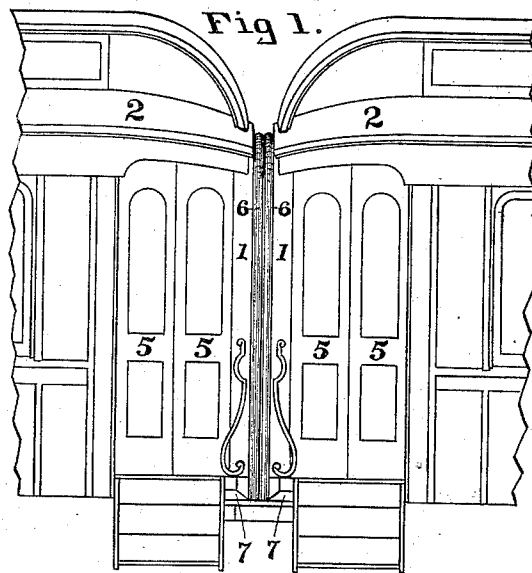
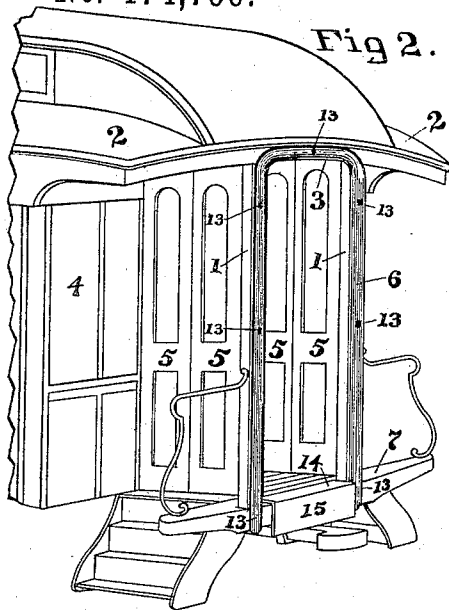


(No Model.)

A. M. KITTREDGE & J. KIRBY, Jr.  
VESTIBULE CONNECTION FOR CARS.

No. 474,796.

Patented May 10, 1892.



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# UNITED STATES PATENT OFFICE.

ARTHUR M. KITTREDGE AND JOHN KIRBY, JR., OF DAYTON, OHIO.

## VESTIBULE CONNECTION FOR CARS.

SPECIFICATION forming part of Letters Patent No. 474,796, dated May 10, 1892.

Application filed November 17, 1890. Serial No. 371,651. (No model.)

*To all whom it may concern:*

Be it known that we, ARTHUR M. KITTREDGE and JOHN KIRBY, Jr., citizens of the United States, residing in the city of Dayton, in the county of Montgomery and State of Ohio, have invented a new and useful Improvement in Vestibule Connections between Railroad-Cars, of which the following is a specification.

Our invention relates to cars having vestibuled ends, and particularly to an improved manner of forming a yielding or elastic connection between two vestibules when cars are coupled together, whereby the space between the vestibules is inclosed, by which means the movements of cars incident to a moving train are not interrupted, while the space is kept closed whatever the relative positions of the cars may be.

The object of our invention is to simplify the means employed for making the connections between vestibules of adjoining cars by avoiding the necessity of heavy face-plates, the use of springs, the mortising and cutting away of the car-framing, unusual strain upon the car-body, and to lessen the cost of constructing, applying, and maintaining the vestibule and its extension. To this end we mount an inherently-elastic extension upon the open end of the vestibule.

The manner in which we prefer to carry out our invention and which in practical use appears to be most desirable is hereinafter fully described, and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation showing the vestibuled ends of two adjoining cars coupled together, with our improved extension between. Fig. 2 is a perspective view of a vestibuled end of a car provided with our improved extension. Fig. 3 is a perspective view of the end of a vestibuled car and our improved extension detached therefrom. Fig. 4 is a plan view of a portion of two platforms coupled together, representing the posts and extensions in section above and the floor removed from one of the platforms to show the spring-actuated buffer. Fig. 5 is an enlarged broken perspective view showing a portion of the extension and iron strip for clamping it to the frame-work.

Similar numerals of reference indicate cor-

responding parts in each of the figures of the drawings.

The vestibule is formed on the platform of the car in the usual manner by posts 1, located at the outer end of the platform and extending to the car-roof 2, with a suitable cross-piece 3 at the top, the space between the posts and the car-body 4 being closed by doors 5. Upon the frame formed by posts 1 and cross-piece 2 is supported an extension 6, projecting beyond the platform 7 sufficient to make a practically close connection between the cars when coupled together, the said extension being made of rubber or other inherently-elastic material capable of yielding in all directions to the movements of the cars. We have shown the extension as made in the form of a hollow tube having its interior provided with longitudinal webs 8 9, which form appears to us most desirable for the purpose; but we do not limit ourselves to this particular form, as the same may be varied in numerous ways and still be within the scope of our invention. Neither do we limit ourselves to any particular manner of attaching the extension to the frame-work, as it is obvious that various modes of doing so may be employed. We have shown it as being secured to the frame-work by a strip of iron 10, Figs. 4 and 5, bent in the form of an arch at the top, one side of the iron strip being rounded to conform to the interior of the tube, the posts being grooved on their faces to receive the tube, as shown at 11. Holes are made in the iron strip to receive screws 12, any desired number of which may be employed, and by which means the extension is screwed to the frame-work; orifices 13 being made through the tube and webs for the insertion of the screws, and a suitable instrument for turning them into the frame-work. We prefer to make the extension in one continuous piece, as shown. It may, however, be made in sections, and it should project beyond the platform a suitable distance to close the space between the vestibules when cars are coupled together and at their greatest distance apart. Thus as they come closer together and change their positions in rounding curves, &c., the elastic extension yields to all such movements and maintains a practically close connection between the

cars under all conditions of the moving train. A foot-plate 14, preferably connected with a buffer-plate 15, closes the space between the vertical portions of the extension at the bottom. The foot-plate may, however, be disconnected from the buffer-plate and laid loosely across the space with its edges resting on the platforms. We make no claim to the construction of the buffer, as there are in use several kinds, any of which may be used in connection with our improved extension. The one shown in the drawings is of a well-known kind, and consists of a rod 16, passing through transverse timber 17, framed to stringers 18 19, and covered by a powerful spring 20, which moves the buffer-rod outward, receives the thrust of and is moved inward by the buffer of an adjoining car. An equalizing-bar 21 is connected with the buffer-rod in such manner as to allow it to oscillate upon its center, and the ends of two rods 22 23 are loosely connected with the ends of the equalizing-bar and move through mortises in the transverse end timber of the car. These rods are pivoted at their opposite ends to buffer-plate 15, thus allowing the latter to change its angle to correspond with the positions of the coupled cars.

From the foregoing description it will be seen and understood that our improvement offers practically no restraint to any movement of the cars; that it is entirely independent of the buffer rod and plate; that it is adaptable to any form of vestibule; requires no face-plates, springs, or fastenings to keep the extensions together; no mortising or extra framing, and that it can be applied at much less cost than any of the devices at present in use.

What we claim is—

1. In a railway-car having a vestibule upon the platform, an inherently-elastic extension always projecting beyond the outer end of the vestibule adapted, when two such vestibule-cars are coupled together, to produce a practically close connection under all conditions of a moving train.

2. In a railway-car, the combination, with a vestibule on the platform of the car, of an inherently-elastic extension, said extension always projecting beyond the outer end of the vestibule, and a spring-actuated buffer, whereby when two such vestibule-cars are

coupled together a practically close connection between the vestibules will be maintained while the cars are in motion.

3. In a railway-car, the combination, with a vestibule on the platform of the car, of an inherently-elastic extension, said extension always projecting beyond the outer end of the vestibule, a spring-actuated buffer, and a foot-plate, whereby when two such vestibule-cars are coupled together and in motion the spaces between them will be kept practically closed.

4. In a railway-car, the combination, with a vestibule on the platform of the car, of an inherently-elastic tubular extension projecting beyond the outer end of the vestibule adapted, when two such vestibule-cars are coupled together and in motion, to preserve a practically close connection between the vestibules.

5. In a railway-car, the combination, with a vestibule on the platform of the car, of an inherently-elastic tubular extension, a metal strip within the extension, and screws or other fastening devices passed through the strip and extension for securing the latter to the outer end of the vestibule.

6. In a railway-car, the combination, with a vestibule on the platform of the car, of an inherently-elastic tubular extension provided with interior elastic strengthening-webs, said extension projecting forward of the outer end of the vestibule.

7. In a railway-car, the combination, with a vestibule on the platform of the car, of an inherently-elastic tubular extension having integral interior strengthening-webs, said extension projecting forward of the outer end of the vestibule.

8. In a railway-car, the combination, with a vestibule on the platform of the car, of a tubular rubber extension having interior rubber strengthening-webs, a metal strip within the extension, and screws or other fastening devices passed through the strip and extension for securing the latter to the outer end of the vestibule.

ARTHUR M. KITTREDGE.

JOHN KIRBY, JR.

Witnesses:

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JOS. LEIDENGER.