

(No Model.)

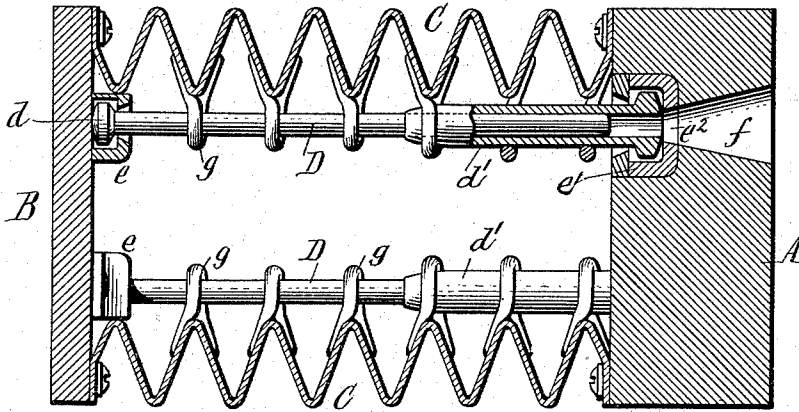
2 Sheets—Sheet 1.

W. F. RICHARDS.  
VESTIBULE CAR.

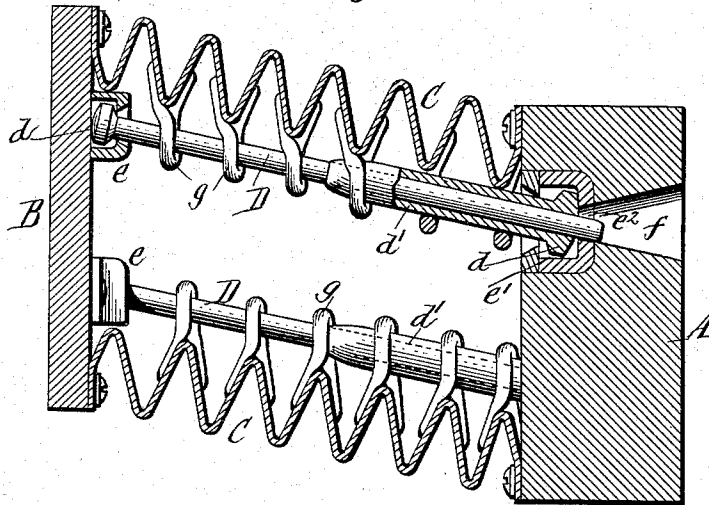
No. 526,540.

Patented Sept. 25, 1894.

*Fig. 1.*



*Fig. 2.*



WITNESSES.

*Emil Neubart.*  
*Theo. L. Popp.*

*W. F. Richards* INVENTOR,  
*By Wilhelm Hornum.* ATTORNEYS.

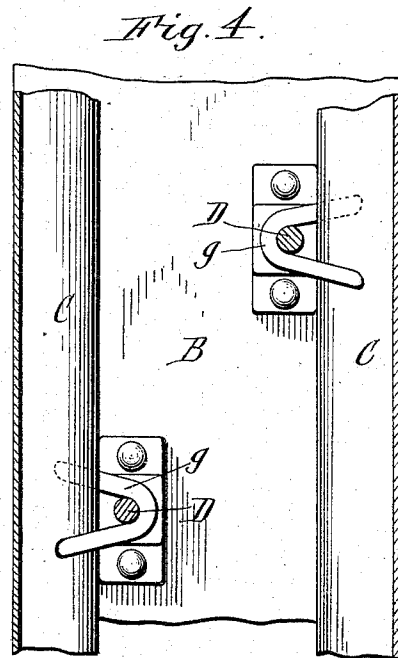
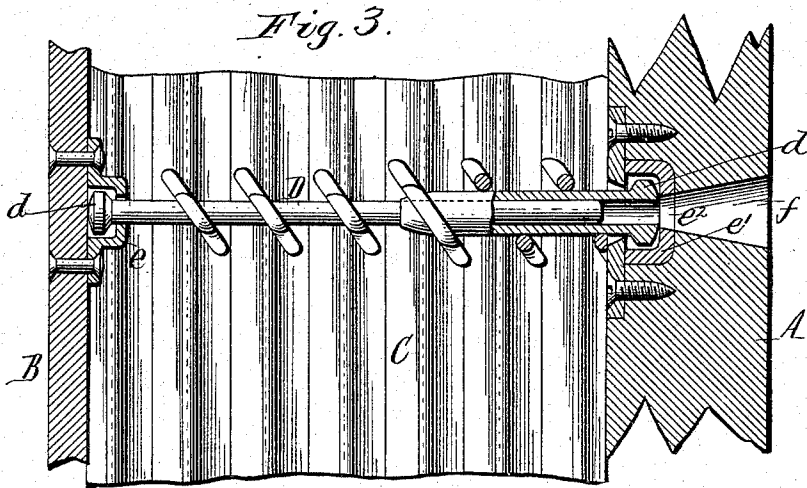
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# UNITED STATES PATENT OFFICE.

WILLARD F. RICHARDS, OF BUFFALO, ASSIGNOR TO THE GOULD COUPLER COMPANY, OF NEW YORK, N. Y.

## VESTIBULE-CAR.

SPECIFICATION forming part of Letters Patent No. 526,540, dated September 25, 1894.

Application filed January 12, 1894. Serial No. 496,605. (No model.)

### *To all whom it may concern:*

Be it known that I, WILLARD F. RICHARDS, a citizen of the United States, residing at the city of Buffalo, in the county of Erie and State of New York, have invented a new and useful Improvement in Vestibule-Cars, of which the following is a specification.

This invention relates to the flexible hoods or extensions which are arranged at the ends of the vestibule cars and which form closed passage ways between the cars. These hoods are usually constructed of flexible material which is plaited in the form of accordion or bellows folds. When the face plate attached to the outer end of the hood advances to its outward limit by the separation of the cars, as, for instance, in rounding a curve the folds of the hood are more or less stretched or straightened out and when the face plate again recedes, the folds frequently fail to collapse properly, in which case the hood buckles or bulges, causing it to interfere with the movements of the face plate and rendering it unsightly.

My invention has for its object to provide simple guide devices which compel the hood to fold properly in all positions of the cars, and at the same time permit the same to expand and contract freely.

In the accompanying drawings consisting of two sheets:—Figure 1 is a horizontal section of one side of the extensible hood showing the position of the parts when the face plate is in its normal central position. Fig. 2 is a similar section showing the position of the parts when the face plate is moved laterally in rounding a curve. Fig. 3 is a fragmentary vertical longitudinal section in line 3—3 Fig. 1. Fig. 4 is a vertical cross-section in line 4—4 Fig. 1.

Like letters of reference refer to like parts in the several figures.

A represents the end wall of the vestibule; B, one of the stiles or upright members of the face plate and C the accordion hood of leather, rubber or other flexible material, which is attached at its inner end to the end wall of the vestibule and at its outer end to the rear side of the face plate by screws or other suitable fastenings.

In the drawings, a double hood is shown,

but my improvement is also applicable to a single hood.

D D are longitudinal guide rods preferably arranged adjacent to the inner side of the hood and each provided at its ends with heads or knuckles *d* which are seated loosely in sockets *e* and *e'*, arranged respectively on the rear side of the face plate and the end wall of the vestibule and forming with said heads universal or ball and socket joints. These rods connect the face plate with said end wall and their end joints enable them to accommodate themselves to the lateral as well as the rising and falling motion of the face plate. In order to permit these rods to lengthen and shorten as the face plate advances and recedes, they are constructed of telescopic sections, one of which *d'* is hollow and receives the inner portion of the other section, as shown in the drawings. The rear socket *e'* of each guide rod is provided in its bottom with an opening *e<sup>2</sup>* and the adjacent wall of the vestibule is formed with an opening *f* arranged in line with the opening of the socket. These openings permit the front section of the rod to slide inward beyond the rear socket, and in order to afford the requisite play or oscillation of such section in all directions they are both flared rearwardly as shown in Figs. 1 and 2.

*g* represents a series of retaining eyes or loops which is attached to the folds of the hood on the inner side of the latter, and which loosely embrace the guide rods D, so as to slide freely thereon, as the folds expand and contract. These loops are preferably of the construction shown, being approximately U-shaped and having their legs fastened to opposite faces of the same fold, by cementing, riveting or other suitable means. The legs of the loops are bent in opposite directions and at the proper angle to lie flat against the sides of the folds, as shown. Those loops which surround the enlarged hollow section of the guide rod are made larger than those which embrace the solid or sliding section and to permit such loops to slide without restraint from the solid section upon the larger hollow section, the front end of the hollow section is tapered, as shown. As the guide rods are flexible and the folds of the hood are connected therewith, they are always confined

within their proper folding limits in all of the various positions assumed by the hood, and although the folds are free to expand and contract in accordance with the inward and outward movements of the face plate, they are effectually prevented from bulging or buckling. Any desired number of these guide rods may be employed but in order to keep the folds reliably in alignment from the top to the bottom of the hood, they should be arranged at comparatively short intervals, say about a foot and a half apart.

In the construction shown in the drawings a retaining loop is attached to every inward fold of the hood, but if preferred, the loops may be attached only to alternate folds.

I claim as my invention—

1. The combination with a folding vestibule hood, of a guide rod extending across the folds of the hood and connected therewith, the folds being held against lateral displacement by the guide rod but free to move lengthwise of the rod, substantially as set forth.

2. The combination with a folding vestibule hood, of a guide rod extending across the folds of the hood, and retaining eyes or loops attached to the folds and arranged on the guide rod, substantially as set forth.

3. The combination with the car vestibule and the upright face plate, of a folding hood

connecting said face plate with the end of the vestibule, an extensible guide rod attached at its ends to the face plate and vestibule respectively, and retaining eyes or loops secured to the folds of the hood and sliding upon said rod, substantially as set forth.

4. The combination with the car vestibule and the upright face plate, of a folding hood connecting said face plate with the end of the vestibule, an extensible guide rod connected at its ends to the face plate and the end of the vestibule by universal joints and eyes or loops attached to the folds of the hood and embracing said guide rod, substantially as set forth.

5. The combination with the end wall of the vestibule having a socket provided with an opening in its bottom, of a folding hood, a telescopic guide rod having a hollow rear section adapted to coincide with the bottom opening of said socket, whereby the front section of the rod is allowed to slide rearwardly through said socket, substantially as set forth.

Witness my hand this 23d day of December, 1893.

WILLARD F. RICHARDS.

Witnesses:

CARL F. GEYER,  
JNO. J. BONNER.