

No. 778,676.

PATENTED DEC. 27, 1904.

W. F. KIESEL, JR.  
FRAME FOR RAILWAY CARS.  
APPLICATION FILED SEPT. 24, 1904.

2 SHEETS—SHEET 1.

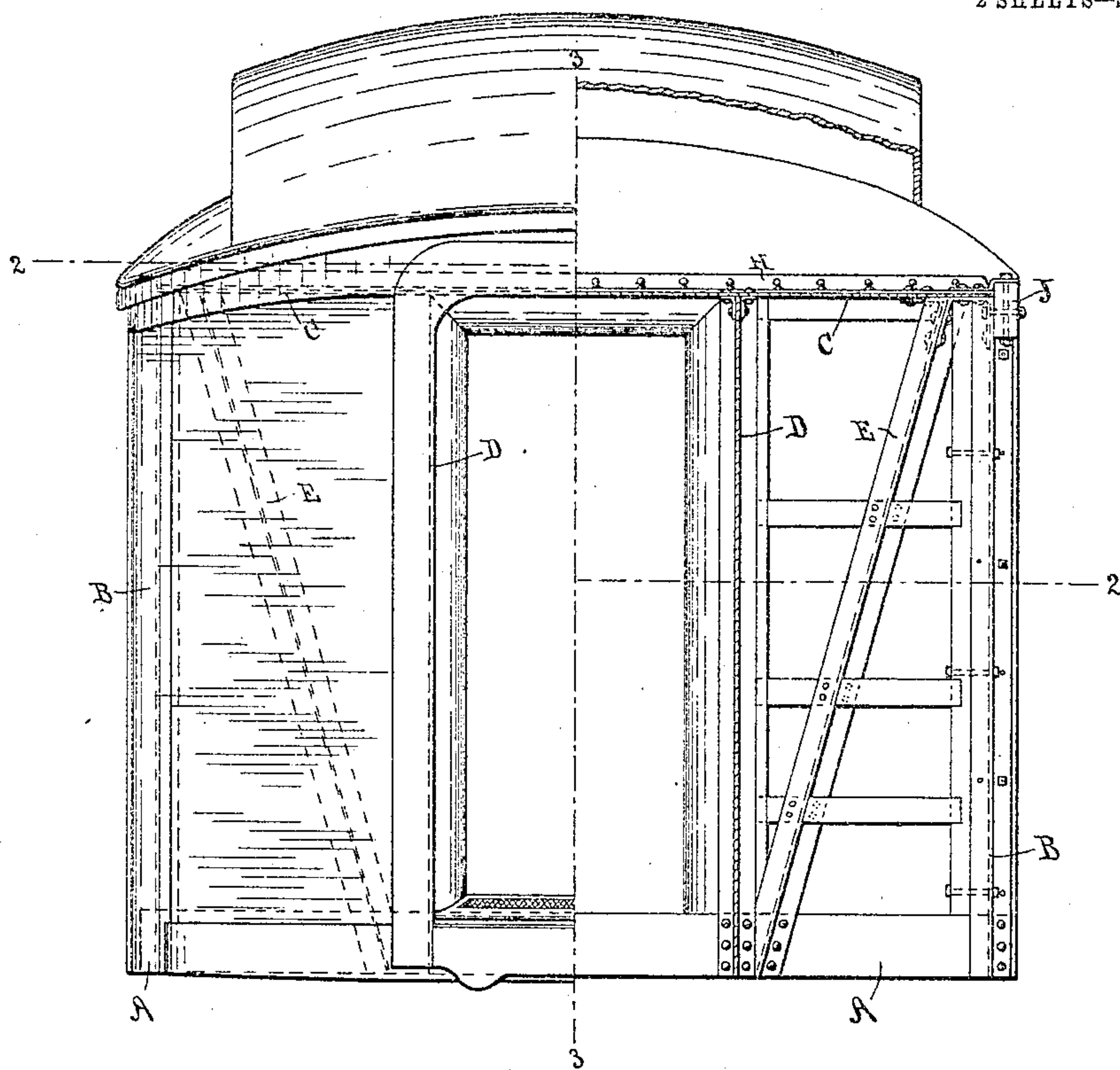


Fig. 1.

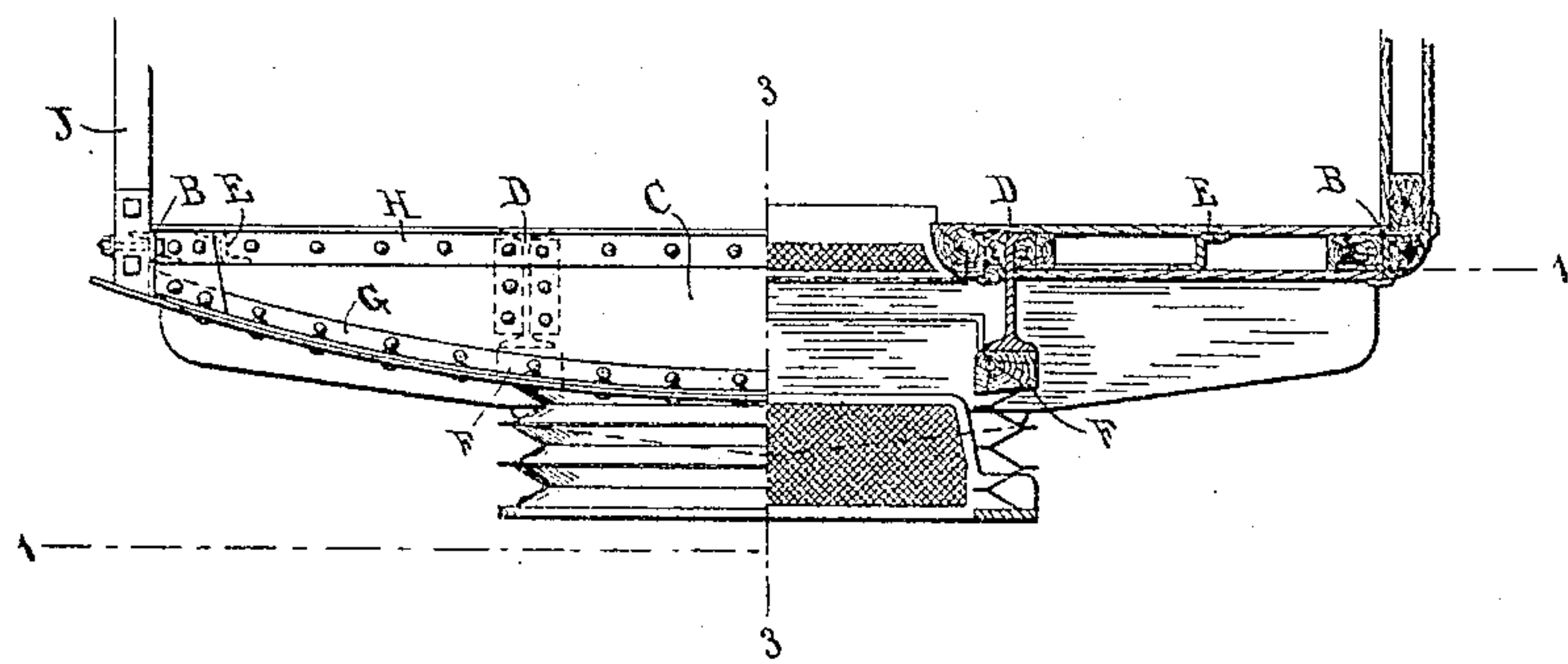


Fig. 2.

WITNESSES:

*H. Kaufell*

*E. M. Diven*

INVENTOR

*William F. Kiesel, Jr.*

BY

*Eugene Diven*  
ATTORNEY

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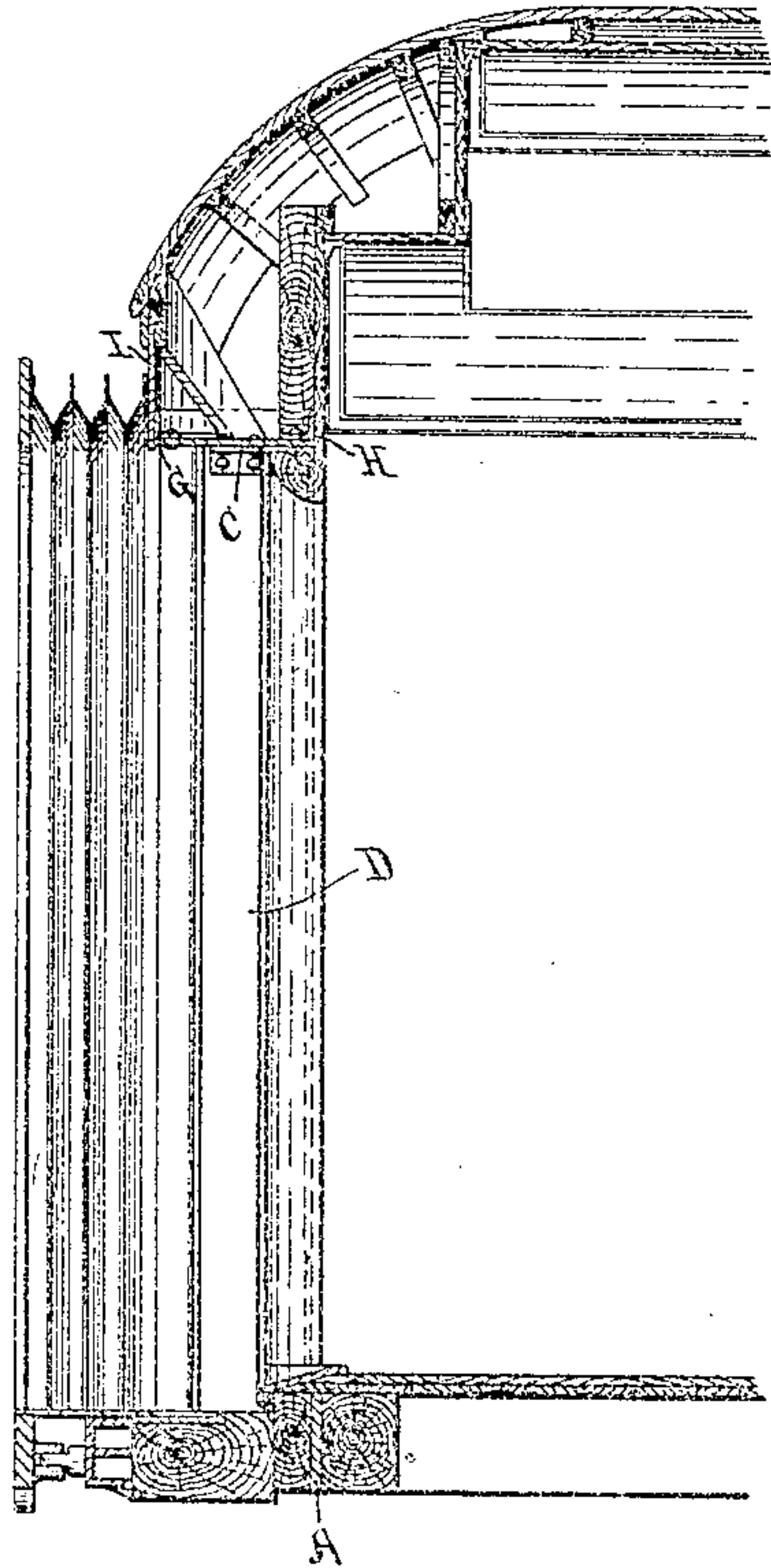


Fig. 3.

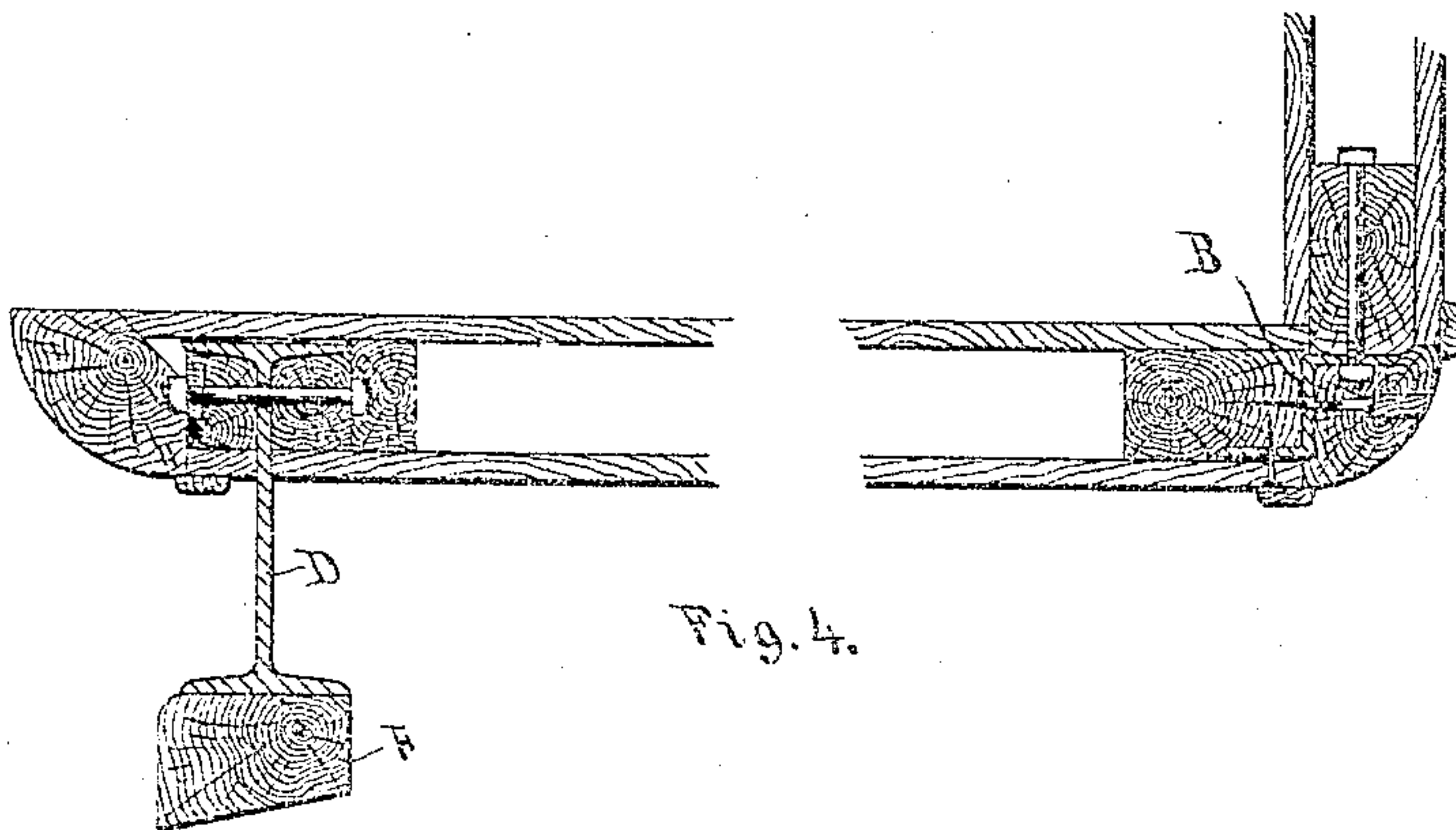


Fig. 4.

WITNESSES:

*Wm. H. H. H. H.*

*E. W. H. H.*

INVENTOR

*William F. Kiesel, Jr.*

BY

*Eugene W. H.*  
ATTORNEY



# UNITED STATES PATENT OFFICE.

WILLIAM F. KIESEL, JR., OF ALTOONA, PENNSYLVANIA.

## FRAME FOR RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 778,676, dated December 27, 1904.

Application filed September 24, 1904. Serial No. 225,741.

*To all whom it may concern:*

Be it known that I, WILLIAM F. KIESEL, JR., a citizen of the United States, residing at Altoona, in the county of Blair and State of Pennsylvania, have invented certain new and useful Improvements in Frames for Railway-Cars, of which the following is a specification.

My invention relates to improvements in the manner of constructing the end frames of railway-cars which are to be used in connection with passenger and express trains; and the object of my improvements is to provide a steel reinforcing framework for the ends of such cars which shall add materially to the strength and stiffness of the wooden framework to resist shock where cars are brought violently together, as when in collision, in order to prevent the telescoping of the cars or the carrying away of the car-body above the sills

I attain my object by means of the construction and arrangement of the parts of the framework as illustrated in the accompanying drawings, in which—

Figure 1 represents an end view of a vestibule-car adapted for postal or express service with the right-hand portion cut away on the line 1 1 in Fig. 2; Fig. 2, a horizontal section on the lines 2 2 in Fig. 1; Fig. 3, a vertical longitudinal section on the lines 3 3 in Figs. 1 and 2, and Fig. 4 a detail showing an enlarged sectional view to illustrate the manner of attaching the frame-timbers and sheathing to the steel skeleton.

Like letters of reference designate like parts in the several views.

A represents a steel plate which forms part of the end sill of the car, the end-sill timbers being bolted or otherwise fastened to said plate. At each end of this plate are riveted the uprights B, which are in the form of Z-bars and are inclosed by the frame-timbers which form the corner-posts of the car. At the top of the car and passing across between the corner-bars B B is a horizontal channel-plate C, which at the ends is bolted to the top side plates J of the car. This channel-plate, as illustrated in the drawings, is formed of a flat plate with the flanges formed by the sepa-

rate angle-bars G and H riveted thereto at the front and back to give it the required stiffness. It will be understood, however, that this channel-piece may be made up of one steel plate pressed into the required shape. The front of the channel-plate is curved to conform with the end of the car-roof and has riveted to it the vertical plate I, which completes the overhang of the roof.

Extending between the plate A and the channel C at each side of the door are I-bars firmly riveted in place and forming reinforcements for the door-posts. These I-bars also project outwardly and have attached to their outer faces the uprights F, which form part of the framework of the vestibule. An inspection of the drawings will show that these I-bars, attached as they are at the top and bottom to the channel-plate and to the end-sill plate, respectively, will receive and resist any end shock produced by another car being thrown violently against a car so constructed. The channel-plate at the top being attached to the top side plates forms, together with the I-bars, a stiff framework to resist such shock. Thus if a car in collision should rise up next to a car so constructed the force tending to carry away the car-body above the sills will be resisted by the joint action of the different members comprised in my reinforcing-framework.

To further strengthen the framework, I provide Z-bars riveted to the plate A at the bottom of the door-posts and extending thence diagonally to the top of the corner-posts, where they are riveted to the channel-plate. This particular construction is applicable only to passenger, postal, or express cars provided with stub platforms and vestibules. In the case of cars having wide platforms and vestibules some modification must necessarily be made in the I-bars which form the door-post reinforcements, otherwise the framework will remain the same, the channel-piece C, however, being made much wider, so as to extend out to the end of the hood of the vestibule.

While I prefer to use the Z-bars for the uprights B and the diagonals C, because they are better adapted for the purpose of attach-



ing the frame-timbers thereto, as will be seen by an inspection of Figs. 1 and 4, I do not limit myself to the use of this shape of bar. The manner of attaching the frame-timbers and the outside and inside sheathing of the car to this reinforcing steel framework will readily appear to those skilled in the art from an inspection of Fig. 4 and does not require particular description, as my invention lies wholly in the manner of building up the steel framework.

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

15 1. A steel reinforcing end frame for railway-cars comprising a horizontal plate having strengthening ribs or flanges extending along the front and rear edges attached to the top side plates of the car, an end-sill plate, and  
20 vertical members extending therebetween for the corner and door posts.

2. A steel reinforcing end frame for railway-cars comprising a horizontal channel-plate attached to the top side plates of the car  
25 and forming a vestibule-ceiling, an end-sill plate, and vertical members extending therebetween for the corner and door posts.

3. A steel reinforcing end frame for railway-cars comprising a horizontal channel-plate attached to the top side plates of the car  
30 and forming a vestibule-ceiling, an end-sill

plate, and I-bars extending therebetween for the door-posts.

4. A steel reinforcing end frame for railway-cars comprising a horizontal channel-plate attached to the top side plates of the car and forming a vestibule-ceiling, an end-sill plate, and I-bars for the door-posts and Z-bars for the corner-posts extending therebetween. 35

5. A steel reinforcing end frame for railway-cars comprising a horizontal channel-plate attached to the top side plates of the car and forming a vestibule-ceiling, an end-sill plate, I-bars for the door-posts and Z-bars for the corner-posts extending therebetween, and Z-bar diagonals extending from the foot of the door-posts to the top of the corner-posts. 40

6. A steel reinforcing end frame for railway-cars comprising a horizontal plate passing across between the ends of the top side plates, an end-sill plate, vertical members therebetween for the corner and door posts, and diagonal members extending from the foot of the door-posts to the top of the corner-posts. 50

In testimony whereof I have affixed my signature in presence of two witnesses. 55

WILLIAM F. KIESEL, JR.

Witnesses:

J. F. MECK,  
J. C. STORM.