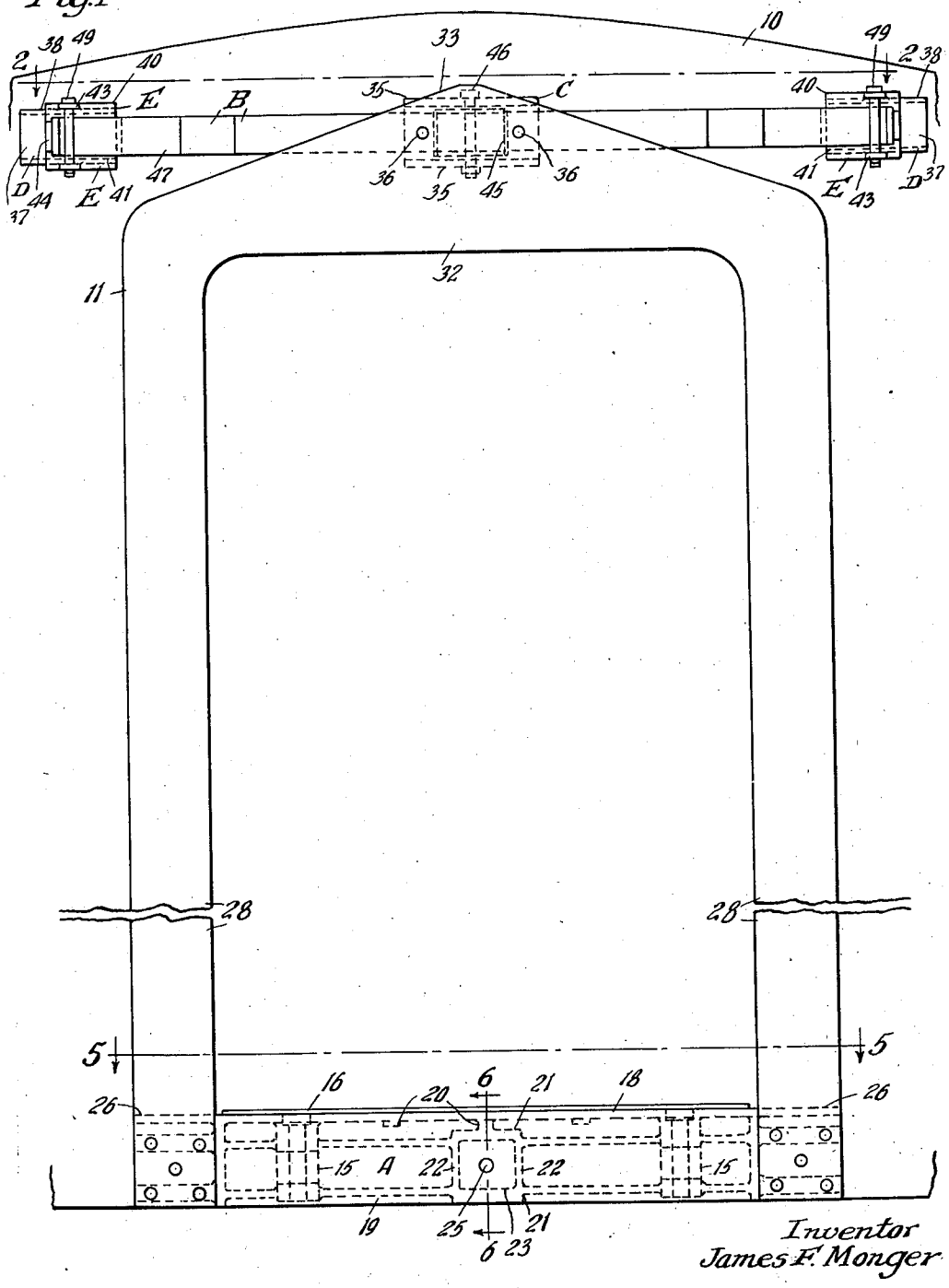
Jan. 8, 1946. J. F. MONGER 2,392,759

CAR CONSTRUCTION

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Fig. 1



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Fig. 2

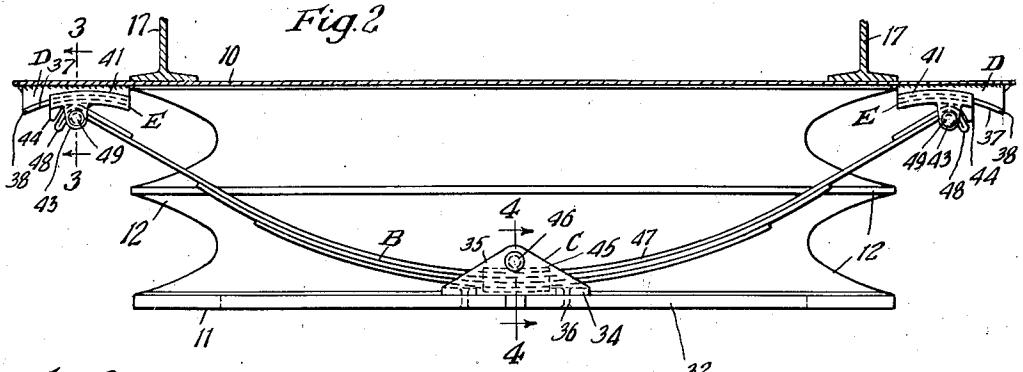


Fig. 3

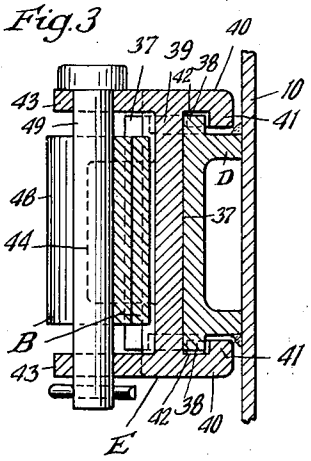


Fig. 4

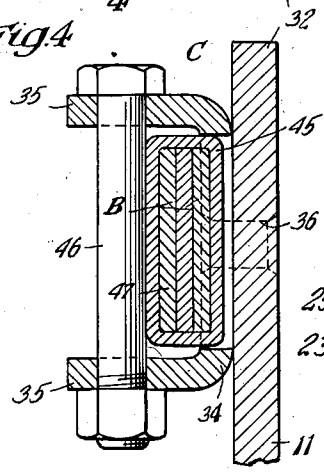


Fig. 6

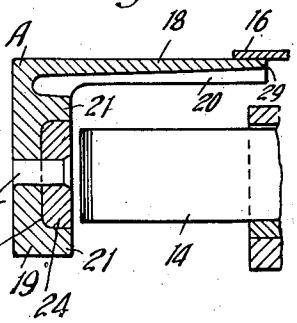
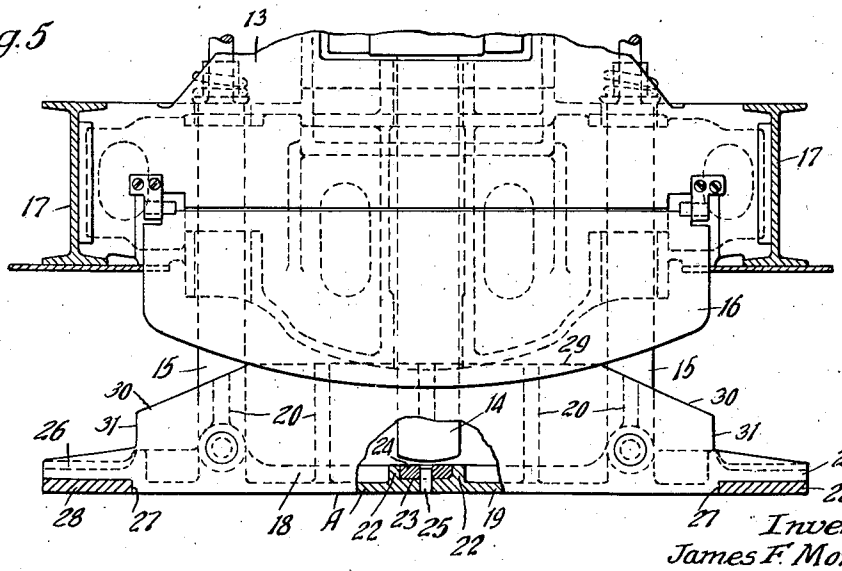


Fig. 5



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2,392,759

CAR CONSTRUCTION

James F. Monger, Chicago, Ill.

Application July 15, 1943, Serial No. 494,759

2 Claims. (Cl. 105—14)

This invention relates to improvements in car construction, and more particularly the diaphragm face plate and buffer construction of railway passenger cars of the vestibule type.

One object of the invention is to provide a railway passenger car having buffer and vestibule structure at the ends thereof of simple design, which comprises few parts and is of rugged construction.

Another object of the invention is to provide simple and efficient supporting means for the vestibule diaphragm face plate of the car including spring means which is associated with the upper end of the diaphragm face plate comprising a leaf spring having sliding connection with supporting means on the end of the car, whereby wear of the spring is eliminated.

A further object of the invention is to provide in a car end structure of the character described a buffing mechanism including a buffer face plate to which the bottom end portion of the vestibule diaphragm face plate is attached, wherein the buffer face plate is in the form of a one-piece member, thereby greatly simplifying the structure and reducing the number of parts of the car end structure.

In the drawings forming a part of this specification, Figure 1 is an end elevational view, partly broken away, of the vestibule end portion of a passenger car illustrating my improvements in connection therewith. Figure 2 is a horizontal sectional view, corresponding substantially to the line 2—2 of Figure 1. Figure 3 is a transverse vertical sectional view, on an enlarged scale, corresponding substantially to the line 3—3 of Figure 2. Figure 4 is a transverse vertical sectional view, on an enlarged scale, corresponding substantially to the line 4—4 of Figure 2. Figure 5 is a horizontal sectional view, corresponding substantially to the line 5—5 of Figure 1. Figure 6 is a longitudinal vertical sectional view, corresponding sustantially to the line 6—6 of Figure 1. showing the main buffer stem in elevation.

In said drawings, 10 indicates the end wall of a vestibule passenger car, 11 the vestibule diaphragm face plate, and 12 the diaphragm proper which is connected at its inner end to the end wall 10 of the car and has the face plate 11 at the outer end thereof secured thereto in the usual manner. The lower end of the face plate is connected to the buffing mechanism of the car which is carried by the end platform 13. The platform 13 slidably carries the center buffer stem 14 and side stems 15—15. The usual threshold plate is indicated by 16. The I-beam end posts of the car are indicated by 17—17.

In carrying out my invention, I provide a one-piece buffer face plate A to which the bottom end portion of the diaphragm face plate 11 is secured; a diaphragm spring B at the upper end portion of the diaphragm face plate; a supporting bracket C on the face plate for the spring B; stationary supporting bearing brackets D—D on the car; and movable diaphragm spring supporting brackets E—E cooperating with the brackets D—D.

The buffer face plate A, which is preferably in the form of a casting, has a horizontal top wall 18 and a depending front wall 19 at the front edge thereof. The top wall is reinforced by bottom ribs 20 extending lengthwise of the car, and the front wall is reinforced by spaced horizontal ribs 21—21 at the rear side thereof extending transversely of the car. At the central portion thereof, the wall 19 has vertically extending spaced ribs 22—22 connecting the ribs 21—21, thereby providing a rectangular pocket or seat 23 within which a hardened wear plate 24 is accommodated. The wear plate 24 is fixed to the wall 19 of the buffer face plate A by a rivet or similar securing element 25 extending through said wall and plate.

The depending front wall 19 projects beyond the opposite side ends of the wall 18, as indicated at 26—26, said projecting portions of the wall 19 being cut out at the front side of the plate, as indicated at 27—27, to accommodate the lower ends of the side members 28—28 of the diaphragm face plate 11. The horizontal top wall 18 of the face plate A is of the outline shown in Figure 5, having a transverse straight rear edge 29 and forwardly diverting side edges 30—30 extending from said rear edge to the straight side edges 31—31.

The buffer face plate A is supported in the usual manner by the buffer side stems 15—15, which are pivotally connected thereto, as is common practice in railway passenger car construction. The center stem 14 cooperates with central portion of the buffer face plate and engages with the wear plate 24 of the face plate when the latter is forced inwardly.

As shown in Figures 5 and 6, the threshold plate 16 overlaps the rear portion of the top wall 18 of the buffer face plate A so that the same rides over the wall 18 as the buffer face plate moves inwardly and outwardly of the car.

The diaphragm spring B is of the leaf type and supports the diaphragm face plate 11 at its up-

per end. The diaphragm face plate 11 is of the usual type having spaced vertical side members 28—28 connected at the top by a transverse member 32. The top edges of the member 32 are inclined upwardly toward the central portion of said member, thereby providing a peak portion 33.

The supporting bracket C is secured to the inner side of the top member 32 at the peak thereof. The bracket C comprises a vertically disposed, substantially rectangular platelike section 34 having horizontally disposed, inwardly projecting top and bottom flanges 35—35 of substantially triangular shape in plan. At the central portion thereof the platelike wall is provided with an opening therethrough to provide clearance for the diaphragm spring B. The bracket C is fixed to the rear side of the diaphragm face plate by a pair of rivets 36—36 extending through the member 32 of the face plate and the wall 34 of the bracket.

The supporting brackets D—D, which are two in number, are secured to the car wall 10 at opposite sides of the vestibule diaphragm 12, above the latter, in horizontal alignment with the bracket C. Each of the brackets D is in the form of a hollow block having a concavely curved vertical front wall 37 and top and bottom curved flanges or tongues 38—38 forming continuations of said front wall 37. The blocks D—D are preferably welded to the wall 10 of the car but may be secured thereto in any other well known manner.

The movable spring supporting brackets E—E are in the form of shoes having tongue and groove sliding connection with the fixed brackets D—D. Each bracket E comprises a vertically disposed, longitudinally curved, platelike section 39 which is of the same curvature as the concave wall 37 of the cooperating bracket D and bears on said wall of the latter. At the top and bottom thereof, the platelike sections have rearwardly extending, horizontal, top and bottom flanges 40—40 having, respectively, downturned and upturned edge portions 41, said turned portions being concentrically curved to the plate section 39, thereby providing top and bottom guide grooves 42—42 adapted to receive the guide tongues 38—38 of the corresponding stationary bracket D. The brackets or shoes E—E are thus mounted for sliding movement on the brackets D—D respectively. Each bracket E has forwardly projecting, vertically aligned, top and bottom ears 43—43 near the outer ends thereof and a forwardly projecting lug 44 outwardly of the ears and located between said ears.

The spring B, which comprises a plurality of leaves, of different lengths, is bowed outwardly away from the end of the car and is centrally anchored to the bracket C. The central portion of said spring extends through the bracket C and is embraced between the top and bottom flanges 35—35 of the latter. That portion of the leaf spring B, which is housed within the bracket C, is shown as enclosed by the usual sleeve 45. The spring is confined within the bracket C by a bolt 46 extending through the top and bottom flanges 35—35 to the rear of the spring B. The leaf of greatest length of the spring B is at the rear side thereof. This leaf is indicated by 47. The opposite ends of the leaf 47 are doubled over as shown in Figure 2 and said doubled ends are bent into hook shape, as indicated at 48—48, said hook ends 48—48 being anchored to the movable brackets or shoes E—E by pins 49—49 with which said hooked ends are engaged. The hooked portion at each end of the spring B, is embraced between the ears 43—43 of the bracket and is confined between said ears by the pin 49 which extends through said ears in front of the doubled end portion of the leaf 47. The back of the outer end portion of the hook 48 at each end of the leaf 47 bears on the stop lug 44 of the corresponding bracket E, thus preventing slippage of the hook which might result in accidental disengagement of the same from the bracket.

Inasmuch as the spring supporting brackets E—E to which the spring B is anchored have sliding movement on the fixed blocks D—D, the ends of the spring are subjected to very little wear, if any, as the spring is compressed and expands during inward and outward movement of the diaphragm face plate, thus preventing breakage of the spring and greatly prolonging the life thereof.

I have herein shown and described what I now consider the preferred manner of carrying out my invention, but the same is merely illustrative and I contemplate all changes and modifications that come within the scope of the claims appended hereto.

I claim:

1. In a vestibuled railroad car having an end wall, the combination with a diaphragm face plate at the end of the car outwardly of said end wall; of an elongated leaf spring anchored between its ends to the inner side of said face plate; a pair of laterally spaced fixed brackets on said end wall, said brackets having upstanding and depending, curved guide ribs at the top and bottom edges thereof; and shoes anchored to opposite ends of said spring, said shoes having curved guide grooves slidably engaged with the curved ribs of said brackets.

2. In a vestibuled railroad car having an end wall, the combination with a diaphragm face plate at the end of the car, outwardly of said end wall; of a pair of laterally spaced supporting brackets fixed to said end wall, each of said brackets having a concavely curved front wall and top and bottom concavely curved flanges forming continuations of said curved wall; a shoe cooperating with each of said fixed brackets, each of said shoes having a convex face engaging said concave wall of the corresponding bracket, each shoe also having curved guide grooves within which said curved flanges of the bracket are slidably engaged; and an elongated bowed leaf spring having its opposite ends anchored to said shoes, said spring being anchored between its ends to said face plate.

JAMES F. MONGER.