

B. V. H. JOHNSON.
 VESTIBULE END FRAME.
 APPLICATION FILED MAY 20, 1912.

1,056,905.

Patented Mar. 25, 1913.

Fig. 1.

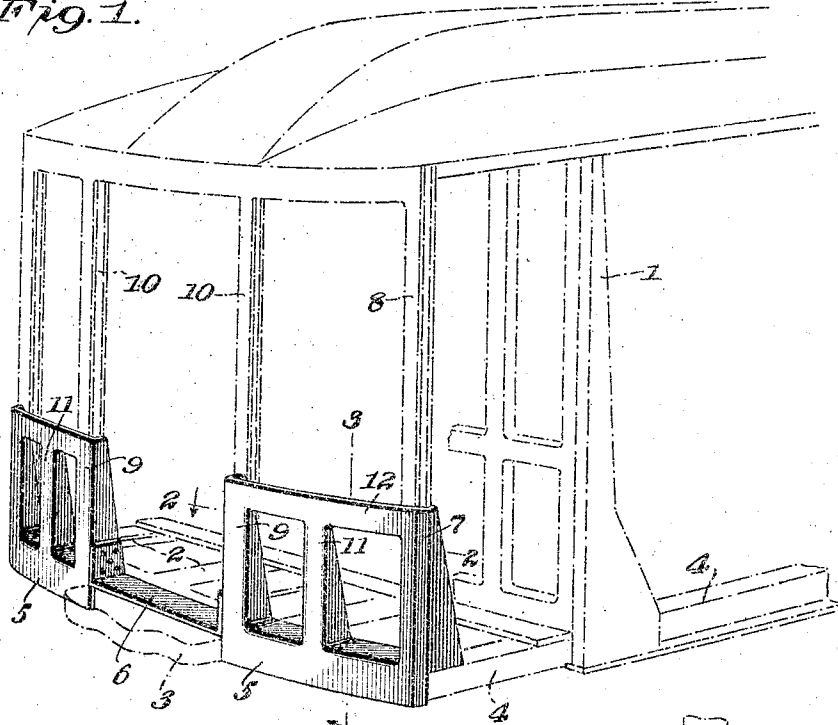


Fig. 4.

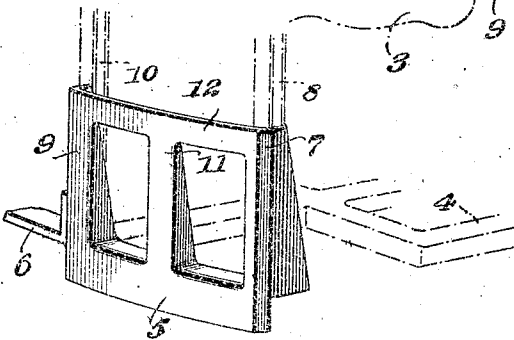


Fig. 2.

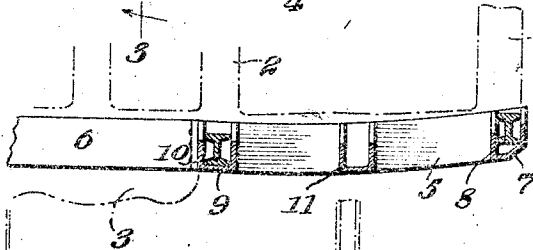
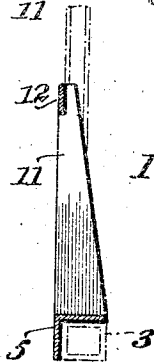


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

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VESTIBULE END FRAME.

1,056,905.

Specification of Letters Patent.

Patented Mar. 25, 1913.

Application filed May 20, 1912. Serial No. 698,521.

To all whom it may concern:

Be it known that I, BOONE V. H. JOHNSON, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Vestibule End Frames, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a perspective view of a vestibule end frame of my improved construction with dotted lines illustrating the end structure of the car body to which the end frame is applied. Fig. 2 is a horizontal section taken approximately on the line 2—2 of Fig. 1. Fig. 3 is a vertical section taken approximately on the line 3—3 of Fig. 1. Fig. 4 is a perspective view of a portion of a modified form of the vestibule end frame.

This invention relates generally to railway passenger cars, and more particularly to an end reinforcing member in the form of a frame that is applied to the buffer beam or outer end of the car platform.

In the construction of the present day type of railway cars, and particularly those cars used in passenger service, one of the prime objects of the car-builders is to provide a particularly strong reinforced end structure, that will effectually resist end shocks and crushing stresses, thereby reducing to a minimum the tendency of the car bodies to telescope during collisions, and to this end various metal structures have been devised and are at present in general use, which structures include cast metal underframes, platforms, buffing sills, one-piece underframes and reinforced corner posts. To further strengthen and reinforce the ends of cars, and to provide a strong, rigid and substantial structure at the extreme outer end of the platform, I propose to provide a skeleton cast metal frame, located at the extreme outer end of the platform, and combines readily with the buffer beam, the vestibule posts and the end portions of the continuous side sills to form a shock-absorbing and resisting structure that materially reinforces and strengthens the extreme ends of the car superstructure.

The principal object of my invention is

to provide an end frame particularly designed for use on vestibule end cars, which frame, in case of collisions, will act as a shock absorber, and provide a strong substantial resisting element at the outer end of the platform, which is, in ordinary car construction, a substantial distance in front of the ends of the car body.

A further object of my invention is to provide a simple, inexpensive structure that will overcome the tendency of the sides of a vestibule frame to crumple, or swing inwardly due to the force of collisions, which action results in the formation of a wedge at the end of the car body and enables the underframe of one car to penetrate the superstructure of the next adjacent car.

To the above purposes my invention consists in certain novel features of construction and arrangement of parts hereinafter more fully described and claimed.

Referring by numerals to the accompanying drawings, 1 designates the end frame of a car body, 2 the platform, 3 the buffer beam and 4 the side sills, which, in certain types of cars,—for instance, cars having observation ends, are continuous from the underframe to the ends of the buffer beam.

My improved vestibule end frame as shown is formed in two main parts each of which comprises a flanged base member, 5 preferably of inverted L-shape, which rests directly upon the outer end of the platform casting or buffer beam.

Formed integral with the outer end of each base member 5 is a vertically disposed post 7, preferably channel-shape in horizontal section, which post gradually increases in width toward its lower end so that the latter has a wide bearing on the forward end of the continuous side sill 4 or the end of the buffer beam. These corner posts are adapted to receive the lower portions of the vestibule corner posts 8.

Formed integral with the inner end of each base member 5 is a vertically disposed post 9 that is preferably channel-shaped in cross section, and said post receives the lower portion of the corresponding vestibule door post 10.

Where my improved vestibule end frame is applied to cars having observation platforms, which latter are constructed without the posts or uprights 8 and 10, the two parts of the end frame are fixed in any suitable

manner to the outer end of the platform at the sides of the passage way at the outer end of said platform and extend upward from said platform a suitable distance.

5 Formed integral with the base member 5 between the posts 7 and 9 is an intermediate post 11 preferably channel-shape in cross section, and connecting the upper ends of the posts 7, 9, and 11 is a horizontally disposed rail 12.

10 Arranged between the lower portion of the posts 9 is a plate 6, that is fixed at its end to said posts in any suitable manner, preferably by means of rivets as shown or the parts may be cast integral. This plate rests directly upon the buffer beam and performs the functions of a vestibule door threshold plate.

In Fig. 4 the end frame is shown applied 20 to a buffer beam that is a part of a cast metal platform and underframe, this construction being provided for cars having the usual steps between the buffer beam and sill of the underframe.

25 A vestibule end frame of my improved construction is adapted to be readily combined with all existing types of cars having vestibule and observation ends, and said frame, when properly positioned, unites 30 with the underframes and vestibule posts in forming a very strong, substantial structure that will resist severe end shocks and crushing stresses due to collisions, thereby materially reducing the tendency of cars to telescope and affording a maximum degree 35 of safety to life and property.

It will be readily understood that minor changes in the size, form and construction of the various parts of my improved vestibule 40 end frame can be made and substituted for those herein shown and described without departing from the spirit of my invention, the scope of which is set forth in the appended claims.

45 I claim:

1. An integral vestibule end frame comprising a base member, and a series of uprights that are adapted to engage the lower 50 portions of the vestibule corner and door posts.

2. An integral vestibule end frame comprising a base member, a series of uprights, and rails connecting the upper portions of said uprights that are adapted to engage the 55 lower portions of the vestibule corner and door posts.

3. An integral vestibule end frame comprising a flanged base member, and a series of flanged uprights that are adapted to engage the lower portions of the vestibule corner and door posts.

4. An integral vestibule end frame comprising an inverted L-shaped base member, and channel-shaped uprights adapted to 65 receive the lower portions of the vestibule

door posts and the uprights at the sides of the passage way at the outer end of the car platform.

5. A vestibule end frame comprising a pair of skeleton members adapted to engage 70 the platform and the lower portions of the vestibule door and corner posts, and a threshold plate connecting the lower inner corners of said skeleton members.

6. The combination with a car platform, 75 of a vestibule end frame comprising a pair of skeleton members positioned on the platform to the sides of the vestibule door opening, which members are adapted to engage the lower portions of the vestibule door and corner posts, and a threshold plate between 80 the lower portions of said skeleton members.

7. The combination with a car platform of a vestibule end frame rigidly fixed to the outer end of the platform and projecting 85 upwardly therefrom, and parts of which frame are adapted to engage the vestibule door posts and the uprights at the sides of the vestibule passage way leading from the outer end of the platform.

8. The combination with a car platform, 90 of a vertically disposed frame applied to the end of said platform, and flanged members on said frame adapted to receive the lower portions of the vestibule door posts 95 and the uprights at the sides of the vestibule passage way leading from the outer end of the platform.

9. The combination with a car platform, 100 of an upright frame applied to the outer end of the platform, and channel-shaped uprights forming a part of said frame adapted to receive the lower portions of the vestibule door posts and the uprights at the sides of the vestibule passage way leading from the 105 outer end of the platform.

10. The combination with a car platform buffer beam and vestibule posts, of a vertically disposed one-piece frame applied to the outer end of the platform and engaging 110 the lower portions of the vestibule posts the top of which frame occupies a position intermediate of the platform and car hood.

11. The combination with a car platform and vestibule posts, of a skeleton frame applied to the end of the platform, and vertically disposed posts forming a part of said vestibule end frame, which posts are adapted to receive the lower portions of the vestibule posts and the top of which frame is positioned intermediate of the car platform 120 and hood.

12. The combination with a car platform, of a pair of vertically disposed cast metal frames applied to the outer end of said platform on opposite sides of the passage way 125 at the outer end of said platform, each of which frames comprises an inverted L-shaped bottom rail adapted to engage the top and outer end face of the platform, a top 130

rail, and a series of upright members between said top and bottom rails.

13. The combination with a car platform of a pair of vertically disposed frames applied to the outer end of said platform which frames are adapted to engage the lower portions of the vestibule corner posts and vestibule door posts and a threshold plate arranged between the lower inner corners of said frames.

14. The combination with a car platform of a pair of cast metal skeleton frames applied to the outer end of said platform, vertically disposed members forming parts of said cast metal frames which vertically disposed members receive the lower portions of the vestibule corner posts, and the vestibule door posts, and a threshold plate arranged between the inner lower portions of the upright members that receive the vestibule door posts.

15. The combination with a car platform, of a pair of cast metal skeleton frames applied to the outer end of said platform to the sides of the vestibule passage way leading from said platform, each of which frames comprises a bottom rail, a top rail,

and a series of upright members between said rails, which upright members normally rest upon the platform end sill and gradually taper in width toward their upper ends and a threshold plate connecting said frames, which threshold plate is positioned upon the platform end sill.

16. The combination with a car platform, of a pair of cast metal skeleton frames applied to the outer end of said platform to the sides of the vestibule passage way, each of which frames comprises a base member adapted to engage the end sill of the platform, a series of upright members, which are substantially channel shaped and adapted to engage the lower portions of the vestibule passage way and corner posts and a rail connecting the upper portions of said upright members.

In testimony whereof I hereunto affix my signature in the presence of two witnesses, this 24th day of April, 1912.

BOONE V. H. JOHNSON.

Witnesses:

HAL C. BELLVILLE,

FRED H. BLANKENHORN.