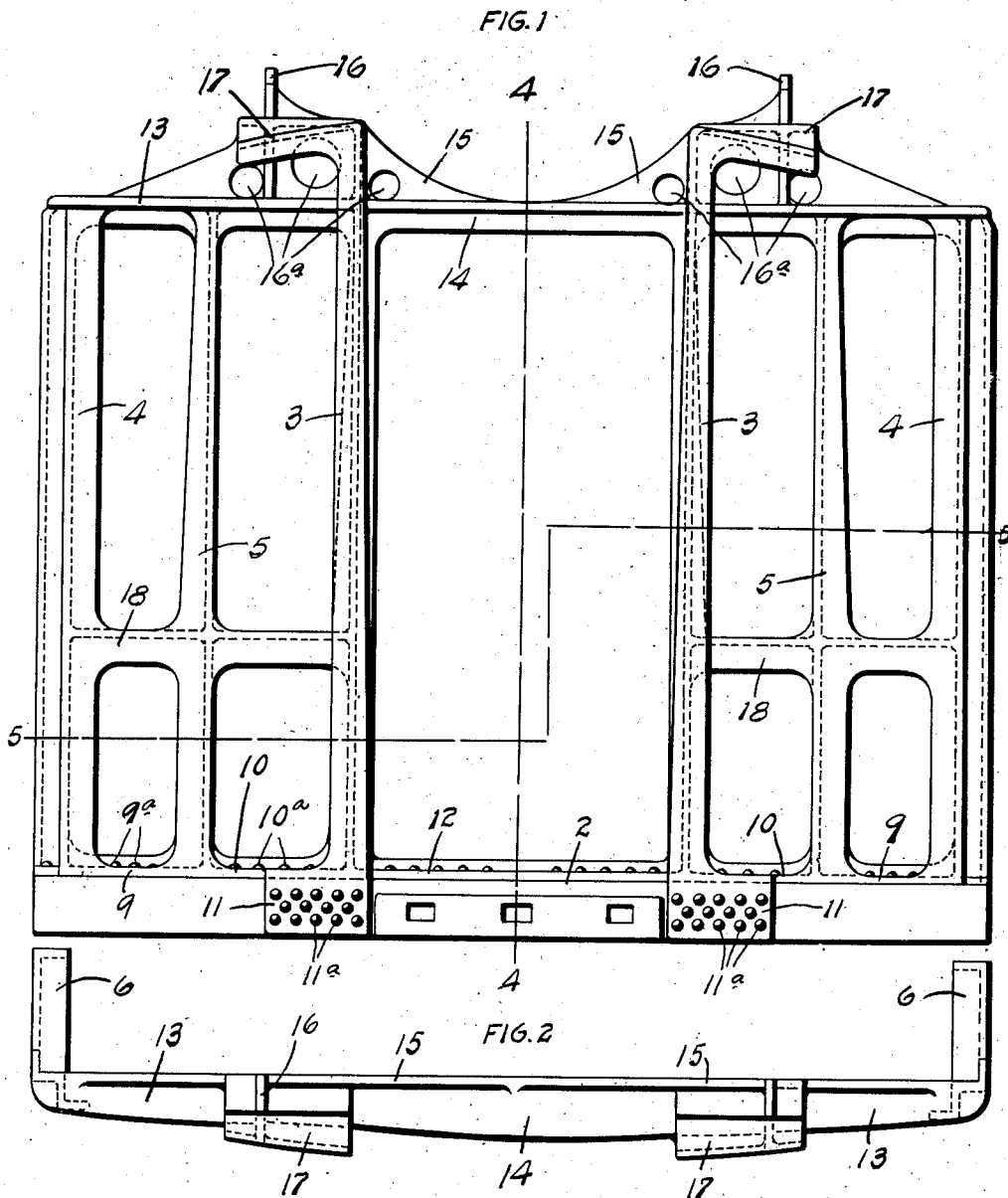


H. M. PFLAGER.
 CAR END FRAME.
 APPLICATION FILED APR. 15, 1912.

1,054,938.

Patented Mar. 4, 1913.

2 SHEETS—SHEET 1.



WITNESSES

Wm. Jannus.
 J. H. Bishop

INVENTOR

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BY *W. Cornwall*

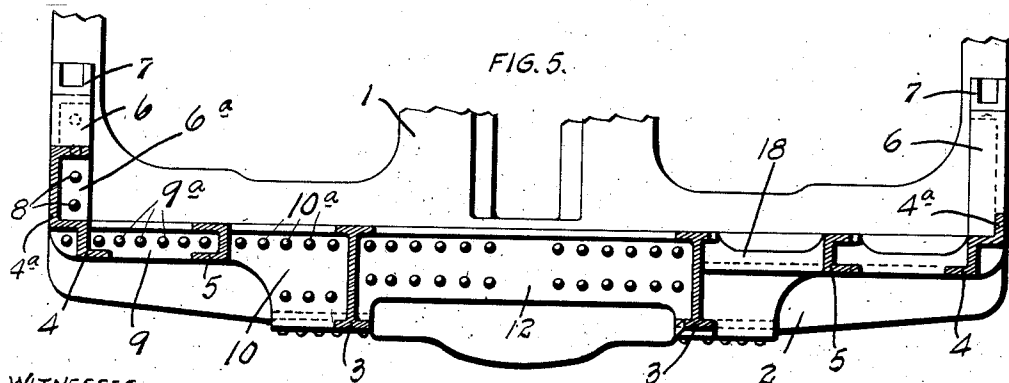
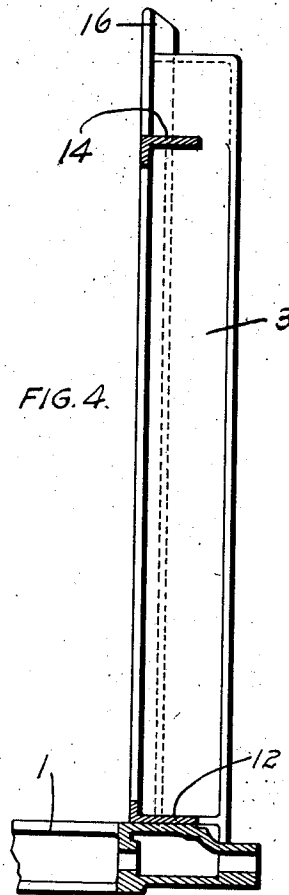
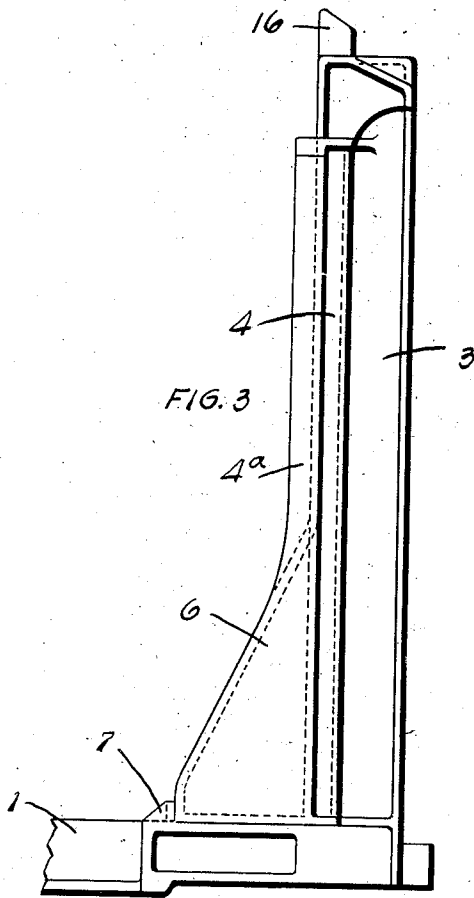
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UNITED STATES PATENT OFFICE.

HARRY M. PFLAGER, OF ST. LOUIS, MISSOURI, ASSIGNOR TO DOUBLE BODY BOLSTER COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF NEW JERSEY.

CAR END FRAME.

1,054,938.

Specification of Letters Patent.

Patented Mar. 4, 1913.

Application filed April 15, 1912. Serial No. 690,969.

To all whom it may concern:

Be it known that I, HARRY M. PFLAGER, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Car 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 an elevation of a car end frame, the same being shown in position on a car underframe. Fig. 2 is a plan view of the end frame. Fig. 3 is a side elevation of the end frame. Fig. 4 is a vertical section taken on the line 4—4 of Fig. 1. Fig. 5 is a horizontal section taken approximately on the line 5—5 of Fig. 1.

This invention relates generally to railway car construction and more particularly to cast metal end frames for cars of the type disclosed in Patent #917,716, issued April 6, 1909, and #929,705, issued August 3, 1909.

One of the most important features in the construction of the present forms of railway cars, and particularly those cars utilized for transporting passengers, is the reinforcing of the ends of the cars so as to provide an exceptionally strong, rigid construction which will effectually resist crushing stresses delivered to the ends of the cars, consequently overcoming the tendency of the cars to telescope in case of collisions, and affording the greatest possible degree of safety to the occupants of the cars.

My improvement contemplates a comparatively light weight, strong and durable one-piece cast metal structure which is formed and braced so as to effectually resist end shocks and crushing stresses imparted to the ends of the car, thereby providing a construction which is anti-telescopic in effect.

The principal objects of my present invention are to generally improve the construction of the cast metal end frames disclosed in the patents above referred to, to form braces on the end frame and fix said braces to the underframe in such a manner as to rigidly maintain said end frame in an upright position, and further to arrange and dispose the various uprights, cross pieces and braces forming the end frame so

as to utilize to the greatest possible advantage the strength of the material of which said parts are formed in resisting end shocks and crushing stresses due to collisions and further to construct a one-piece cast metal end frame particularly adapted for use on blind end cars.

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 underframe and 2 the end member or buffing sill thereof, which parts are preferably cast integral.

My improved end frame as shown indicates a central pair of upright members 3 which perform the function of door posts, a pair of side members 4 which perform the function of corner posts and a pair of intermediate upright members or posts 5. The outer pair of upright members 4 or the corner posts are preferably Z-shaped in cross section and formed integral with the outer edges of the transversely disposed flanges of said Z-shaped members are rearwardly projecting flanges 4^a. Formed integral with the lower portion of these uprights or corner posts are brackets 6, the webs of which are continuations of the rearwardly projecting flanges 5, and the lower rear ends of said brackets bear directly against shoulders or lugs 7 formed on the side pieces of the underframe 1. The horizontally disposed base flanges 6^a of the brackets 6 rest directly upon the underframe and these parts are fixed to one another by means of rivets 8 or like fastening devices. The intermediate posts or uprights 5 are preferably channel-shaped in cross section and the lower ends of said intermediate uprights or posts are connected to the lower portions of the corner posts by horizontally disposed plates 9 which rest directly upon the buffing sill and being fixed thereto by means of rivets or like fastening devices 9^a. The inner pair of uprights 3 which perform the function of door posts are considerably wider than the posts 4 and 5 and said door posts are substantially of I-beam shape in cross section. A pair of the outer flanges and a pair of the inner flanges of each of these posts gradually taper in width toward the upper ends of said posts so that said upper ends are substantially Z-shaped in cross section, which

arrangement materially reduces the weight without sacrificing strength.

The lower portions of the door posts 3 are connected to the lower portions of the intermediate posts 5 by comparatively wide horizontally disposed plates 10 which rest directly on top of the buffing sill and being fixed thereto by means of rivets or like fastening devices 10^a. Formed integral with the front edges of the plates 10 and the lower ends of the posts 3 are depending plates 11 which bear directly against the front face of the buffing sill and being fixed thereto by means of rivets 11^a or like fastening devices. The lower portions of the uprights 3 are united by a horizontally disposed plate 12 which rests upon and is rigidly fixed to the top of the buffing sill 2, and said plate performs the function of a threshold plate for the door frame. It will be readily understood that the posts or uprights 3, 4 and 5 may be of any desired cross sectional shape.

By the construction just described the lower portion of the end frame is rigidly fixed to the underframe and all end shocks or crushing stresses imparted to said end frame are effectually resisted by the brackets 6 which perform the function of braces at the sides of the end frame and by providing the depending plates 11 and the shoulders 7 against which the rear ends of the brackets 6 engage all shearing strains are removed from the various rivets or like fastening devices utilized in rigidly fixing the end frame to the underframe.

Horizontally disposed rails 13 which are preferably of inverted L-shape in cross section are formed integral with and unite the upper ends of the posts 4 and 5 with the upper portions of the posts or uprights 3, and formed integral with and uniting the upper portions of the posts or uprights 3 is a rail 14 which is of inverted L-shape in cross section and the horizontal flange of which performs the function of a lintel for the door frame.

Formed integral with the rear edges of the rails 13 and 14 is a vertically disposed plate 15 which is perforated, as designated by 16^a to accommodate the train bell cords, and formed integral with this plate 15 between the posts 3 and 5 are vertically disposed plates 16 that serve as supports for the lower ends of the ventilator frames. The posts or uprights 3 extend above the rails 13 and 14 and formed integral with the upper ends of said posts or uprights 3 are horizontally disposed brackets 17 the outer ends of which project slightly beyond the plates 16, and these brackets serve as supports for parts of the car roof and car hood. Horizontally disposed rails 18 are formed integral with the posts 3, 4 and 5 and an elevation which is substantially in

the same plane with the belt rail of the car body.

My improved end frame is cast in a single piece and can therefore be easily and quickly applied to a car underframe and body and by the use of such end frame considerable time and labor can be saved in assembling or building up of the end portions of a car.

By my improved construction and manner of attaching the end frame to the underframe and by the arrangement of the brackets at the sides of the end frame and arranging the same so as to bear directly upon the underframe an exceptionally strong, rigid anti-telescoping construction is provided which in service affords a maximum degree of safety to the occupants of the car during collisions.

The central pair of posts or uprights 3 which perform the function of door posts are made substantially wider than the remaining posts, thereby providing an exceptionally strong, reinforced construction at the center of the end frame or at the sides of the door opening.

It will be readily understood that minor changes in the size, form and construction of the various parts of my improved 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.

I claim:

1. The combination with a car underframe having shoulders formed on its side sills, of a car end frame, comprising a pair of door posts, a pair of corner posts, rear extensions on the lower portions of said corner posts, which extensions engage the shoulders on the side sills of the underframe, horizontally disposed members connecting said posts and horizontally disposed brackets integral with the upper ends of the door posts.

2. The combination with a car underframe having shoulders formed on its side sills, of a car end frame, comprising, a pair of door posts, a pair of corner posts, rear extensions on the lower portions of said corner posts, which extensions engage the shoulders on the side sills of the underframe, plates integral with and connecting the lower portions of said posts, vertically disposed plates integral with the lower ends of the door posts and horizontally disposed brackets integral with the upper ends of said door posts.

3. The combination with a car underframe having shoulders formed on its side sills, of a car end frame, comprising a pair of door posts, a pair of corner posts, horizontally disposed members integral with and connecting the upper and lower ends of said posts, rearwardly projecting brackets

on the lower portions of the corner posts, which brackets engage the shoulders on the side sills and are fixed to the underframe and car roof and car hood supporting brackets integral with the upper ends of the door posts.

4. The combination with a car underframe having shoulders on its side sills, of a cast metal end frame comprising a pair of corner posts which are substantially Z-shaped in cross section, brackets on the lower portions of said corner posts, which brackets engage the shoulders on the side sills of the car underframe, a pair of door posts of I-beam shape in cross section, which door posts are substantially wider than the corner posts, means integral with and connecting the lower portions of the posts for attaching the end frame to an underframe and horizontally disposed members connecting the upper ends of said posts.

5. The combination with a car underframe having shoulders on its side sills, of a car end frame comprising a pair of corner posts which are substantially Z-shaped in cross section, brackets on the lower portions of said corner posts, which brackets bear against the shoulders on the side sills of the underframe, a pair of door posts of I-beam shape in cross section, which door posts are substantially wider than the corner posts, means integral with and connecting the lower portions of the posts for attaching the end frame to an underframe, horizontally disposed members connecting the upper ends of said posts and means integral with the upper ends of the door posts for supporting parts of the car roof and car hood.

6. The combination with a car underframe having shoulders on its side sills, of

a one-piece cast metal end frame, comprising a pair of corner posts which are substantially Z-shaped in cross section, brackets on the lower portions of said corner posts, which brackets engage the shoulders on the side sills of the underframe, a pair of door posts of I-beam shape in cross section, which door posts are substantially wider than the corner posts, means integral with and connecting the lower portions of the posts for attaching the end frame to an underframe, horizontally disposed members connecting the upper ends of said posts and intermediate posts between the door and corner posts.

7. A cast metal end frame for car bodies having an integral door frame the posts of which are substantially wider than the remaining portions of the end frame and horizontally disposed brackets integral with and projecting outwardly from the upper ends of said door posts which brackets are equal in width to the width of the door posts.

8. The combination with a car underframe having shoulders on its side sills, of a car end frame, comprising a pair of corner posts that are substantially Z-shaped in cross section and rearwardly projecting brackets integral with the lower portions of said corner posts the rear ends of which brackets engage the shoulders on the side sills of the underframe.

In testimony whereof I hereunto affix my signature in the presence of two witnesses, this 8th day of April, 1912.

HARRY M. PFLAGER.

Witnesses:

FRED W. DIECKMANN,

HAL C. BELLVILLE.