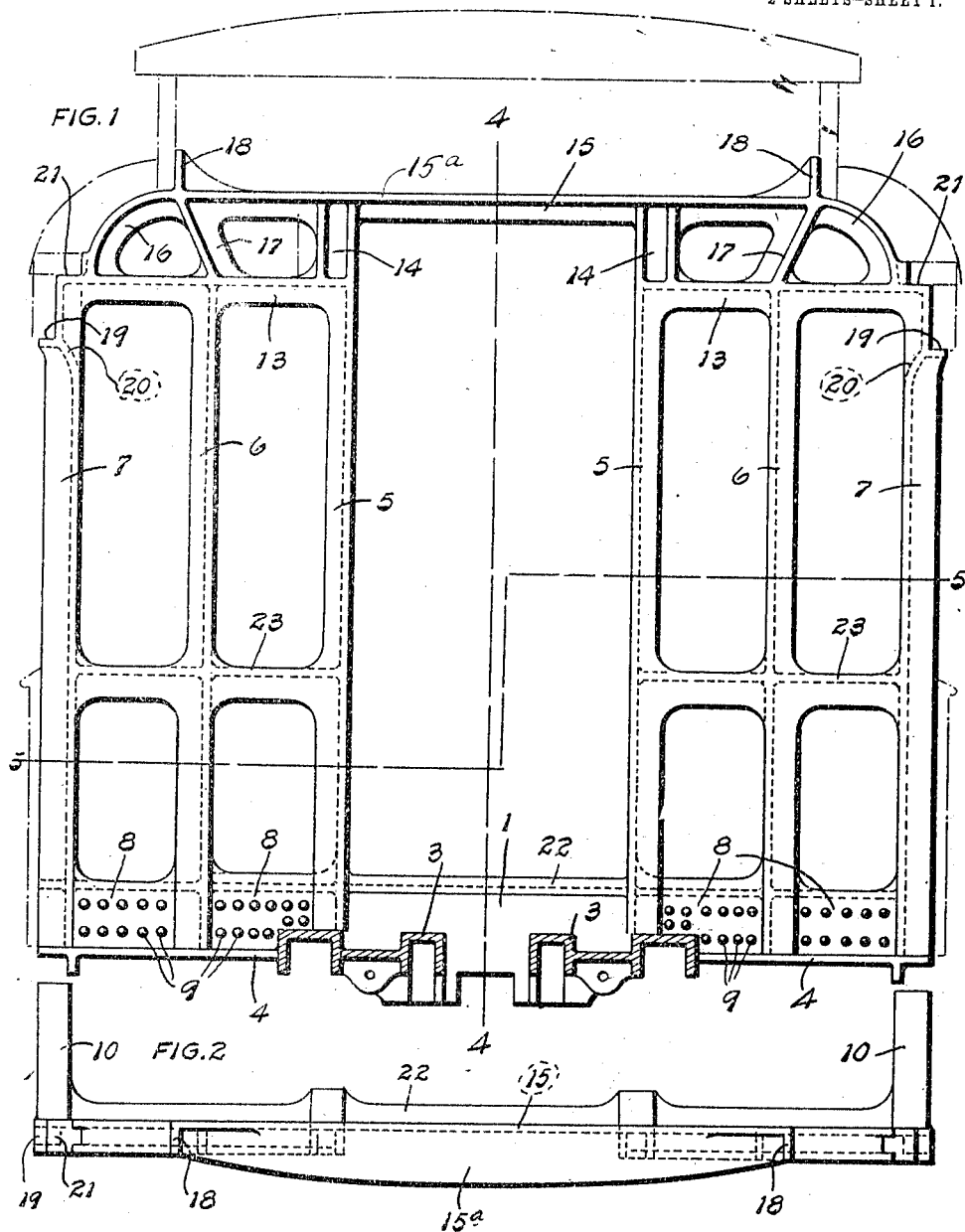


H. M. PFLAGER.
CAR END FRAME.
APPLICATION FILED APR. 9, 1912.

1,048,428.

Patented Dec. 24, 1912.

2 SHEETS-SHEET 1.



WITNESSES

Wm. Jannus.
Lily Root

INVENTOR

HARRY M. PFLAGER

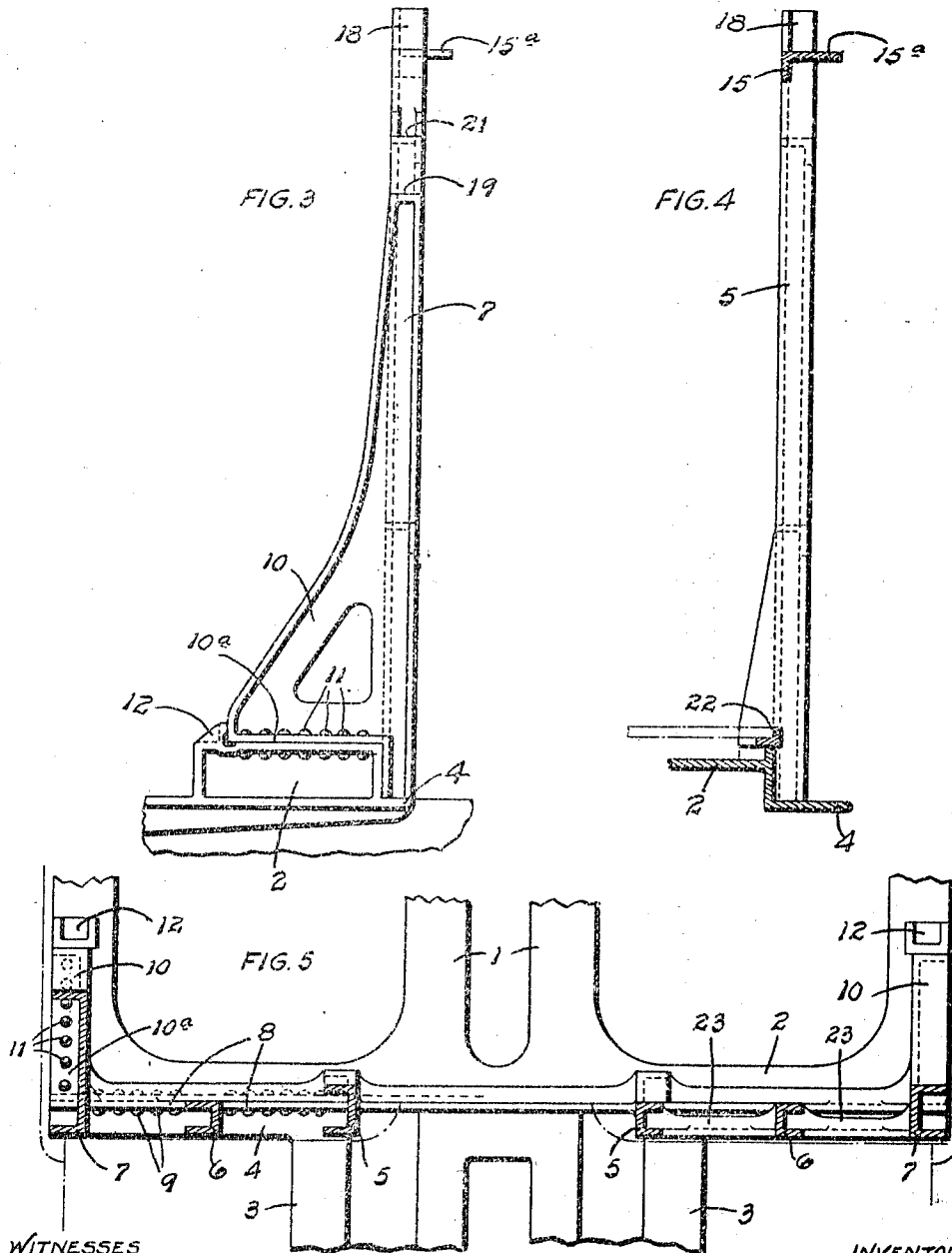
BY *F. R. Cornwall* ATT'Y.

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WITNESSES
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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.

1,048,428.

Specification of Letters Patent.

Patented Dec. 24, 1912.

Application filed April 9, 1912. Serial No. 689,567.

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 a vertical section taken transversely through the platform casting of a car underframe, and showing a car end frame of my improved construction in elevation. 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 approximately 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 No. 917,716, issued April 6, 1909, and No. 929,705, issued August 3d, 1909.

One of the most important features in the construction of the present forms of railway cars, and particularly those 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 cases 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 under frame in such a manner as to rigidly maintain said end frame in an upright position, cross pieces and braces form-

ing 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.

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 car under frame, 2 the end sill which, in the present instance, is shown as an integral part of the under frame, and 3 the platform casting which, as shown, is preferably integral with the end sill.

The plane occupied by the top of the platform casting 3 is substantially below the plane occupied by the top of the end sill 2 and thus a vertically disposed shoulder is formed between the platform and the end sill and against which shoulder engages the lower portion of the end frame.

Formed integral with the lower portion of the end sill 2 and projecting forwardly therefrom to the sides of the platform casting are horizontally disposed flanges 4 upon which rest the lower ends of the corresponding parts of the end frame.

My improved end frame as shown includes a pair of upright members 5 which perform the function of door posts, a pair of intermediate upright members or posts 6 and a pair of upright side members or posts 7 which latter perform the function of corner posts for the car body. All of these posts are preferably channel-shape in cross section, although other cross sectional shapes may be utilized, if desired, and the lower ends of said posts are united by vertically disposed web plates 8 which, when the frame is positioned for use, bear directly against the shoulder between the platform casting and the end sill, which shoulder is in reality the front face of said end sill.

The end frame is rigidly fixed to the end sill of the under frame by means of rivets or like fastening devices 9 which pass through the web plates 8 and the front wall or web of the end sill.

The lower ends of the intermediate posts 6 and the corner posts 7 normally rest upon the flanges 4 and the lower ends of the door posts 5 rest upon the side portions of the

platform casting 3. Formed integral with the lower portion of each post or upright 7 is a rearwardly extending bracket or heel portion 10 which rests directly upon the corresponding side rail of the under frame. The horizontally disposed base flange 10^a of this bracket is fixed to the corresponding part of the under frame by means of rivets or like fastening devices 11 and the extreme rear end of this bracket bears against the lug 12 formed on the under frame.

By the construction just described, the lower portion of the end frame is rigidly fixed to the under frame and all end shocks or crushing stresses imparted to the end frame are effectually resisted by the bearing of the lower ends of the posts or uprights against the front side of the end sill and by the engagement of the rear ends of the brackets 10 against the shoulders in front of the lugs 12. Any crushing stresses or shocks imparted to the upper portion of the end frame tending to swing the upper portion of said frame inwardly will be resisted by the bearing of the brackets 10 directly upon top of the under frame.

The upper portions of the posts or uprights 5, 6, and 7 are united by integral horizontally disposed rails 13 preferably L-shape in cross section and formed integral with and extending upwardly from the door posts 5 are short vertical posts 14, the upper ends of which are united by a horizontally disposed angle plate 15. The horizontal flange 15^a of this plate performs the function of a lintel for the door frame, said flange being widest at its central portion and gradually tapering toward its ends. The end portions of the rail 15 extend beyond the uprights 14 and said ends are connected to the end portions of the rails 13 by downwardly curved brackets 16. Intermediate strengthening webs 17 preferably L-shape in cross section extend between the rails 13 and the end portions of the rail 15. Immediately above these intermediate strengthening webs, are vertically disposed lugs 18 which serve as supports for the lower portions of the ventilator frames.

The outer faces of the upper ends of the posts 7 are notched as designated by 19 to form seats for the side plates of the car body and the center webs between the flanges of the corner posts 7 are curved outwardly as designated by 20 to meet the flanges beneath the notched or cut away upper ends of said corner posts. The lower ends of the outwardly curved brackets 16 terminate a short distance from the outer faces of the corner posts 7, thereby forming seats 21 which accommodate the upper portions of the side plates of the car body frame, and which plates rest on the seats 19.

Formed integral with the lower portions of the door posts 5 is a horizontally disposed

rail 22 which normally rests directly upon top of the central portion of the end sill 2 and performs the function of a threshold plate. Formed integral with the posts or uprights 5, 6, and 7 and in alinement with the belt rail of the car body are horizontally disposed rails 23.

My improved end frame which is preferably cast in a single piece can be readily applied to a car under frame and body and by providing brackets on the corner posts and attaching the same direct to the under frame an exceptionally strong, rigid, anti-telescoping construction is provided which affords a maximum degree of safety to the occupants of the car during collisions. Ordinarily the greatest force of end shocks and crushing stresses occurring during collisions is developed at or below the belt rail of the car and for this reason it is especially desirable that the lower portion of the end frame be substantially braced and fixed to the under frame so as to resist to the greatest extent the force of the blows and stresses resulting from collisions. For this reason, I provide the brackets extending rearwardly from the corner posts and unite the lower ends of all of the posts with the webs which bear directly against and are attached to the end sill of the under frame.

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 accompanying claims.

I claim:

1. The combination with a car under frame and end sill, of a cast metal end frame, brackets integral with the side portions of said end frame which brackets bear on the side portions of the under frame and which under frame is provided with shoulders against which the rear ends of said brackets engage.

2. The combination with a car under frame and end sill, of a cast metal end frame, brackets integral with the side portions of said end frame, which brackets bear upon the side portions of the under frame and lugs on the under frame against which the rear ends of the brackets engage.

3. The combination with a car under frame, of a cast metal end frame having a series of upright members, the lower ends of which upright members are positioned against the outer face of the end member of the under frame, web plates integral with and arranged between the lower portions of the uprights which web plates are fixed to the end member of the under frame, brackets integral with a pair of the uprights which brackets bear against and are

fixed to parts of the under frame and shoulders on the underframe against which the rear ends of the brackets engage.

4. The combination with a car under-frame provided with shoulders on top of its side sills, of an end frame having side posts, the lower ends of which are extended rearwardly and bear against the shoulders on the underframe.

5. The combination with a car under-frame provided with lugs on top of its side sills, of a car end frame provided with side posts, the lower ends of which extend rearwardly and bear against the lugs on the underframe.

6. The combination with a car under-frame having shoulders on top of its side rails, of a car end frame comprising a pair of door posts, a pair of corner posts, connections between the lower portions and upper ends of said posts, and brackets projecting rearwardly from the corner posts, which brackets engage against the shoulders on the underframe.

7. The combination with the under frame of a car body which underframe is provided on its side sills with shoulders, of a cast metal end frame, uprights forming a part of said end frame, web plates integral with and connecting the lower portions of said uprights, which web plates bear against the outer face of the end member of the under frame, means for rigidly fixing said web plates to the under frame, brackets integral with and projecting rearwardly from a pair of the posts which brackets engage the top of the under frame and bear against the shoulders on the underframe, and means for fixing said brackets to the under frame.

8. The combination with an under frame

of a car body, of a cast metal end frame, uprights forming a part of said end frame, web plates integral with and connecting the lower portions of said uprights which web plates bear against the outer face of the end member of the under frame, means for rigidly fixing said web plates to the under frame, brackets integral with and projecting rearwardly from a pair of posts, which brackets engage the top of the under frame, means for fixing said brackets to the under frame, and lugs on the under frame against which the rear ends of the brackets engage.

9. The combination with a car under frame provided with shoulders on top of its side sills, of a cast metal car end frame, the lower portion of which is rigidly fixed to said under frame, and brackets projecting rearwardly from the side portions of the said under frame, the rear ends of which brackets engage against the shoulders on the under frame.

10. The combination with a car under frame, of a metal end frame cast in a single piece the lower portion of which is rigidly fixed to the end member of the under frame, brackets integral with and projecting rearwardly from the lower portions of the sides of said end frame, means for rigidly fixing said brackets to the under frame, and lugs on said under frame against which the rear ends of the brackets engage.

In testimony whereof I hereunto affix my signature in the presence of two witnesses, this 2nd day of April, 1912.

HARRY M. PFLAGER.

Witnesses:

HAL C. BELLVILLE,

FRED H. BLANKENHORN.