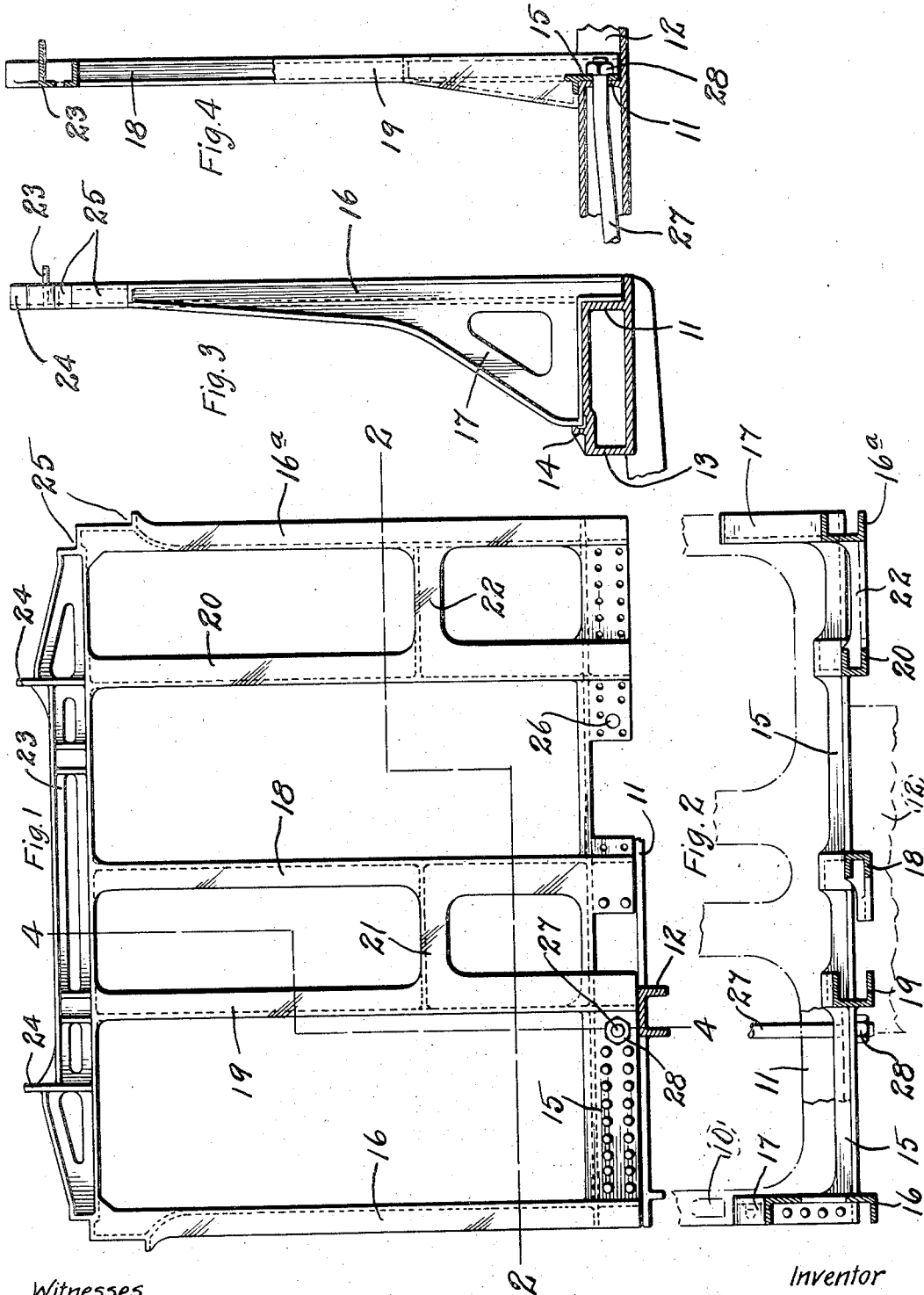


H. M. PFLAGER.
CAR FRAME CONSTRUCTION.
APPLICATION FILED NOV. 8, 1912.

Patented Mar. 18, 1913.

2 SHEETS-SHEET 1.

1,056,445.



Witnesses

Wm. Janus
M. P. Smith

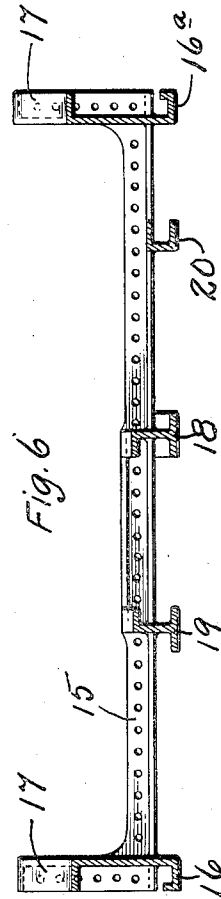
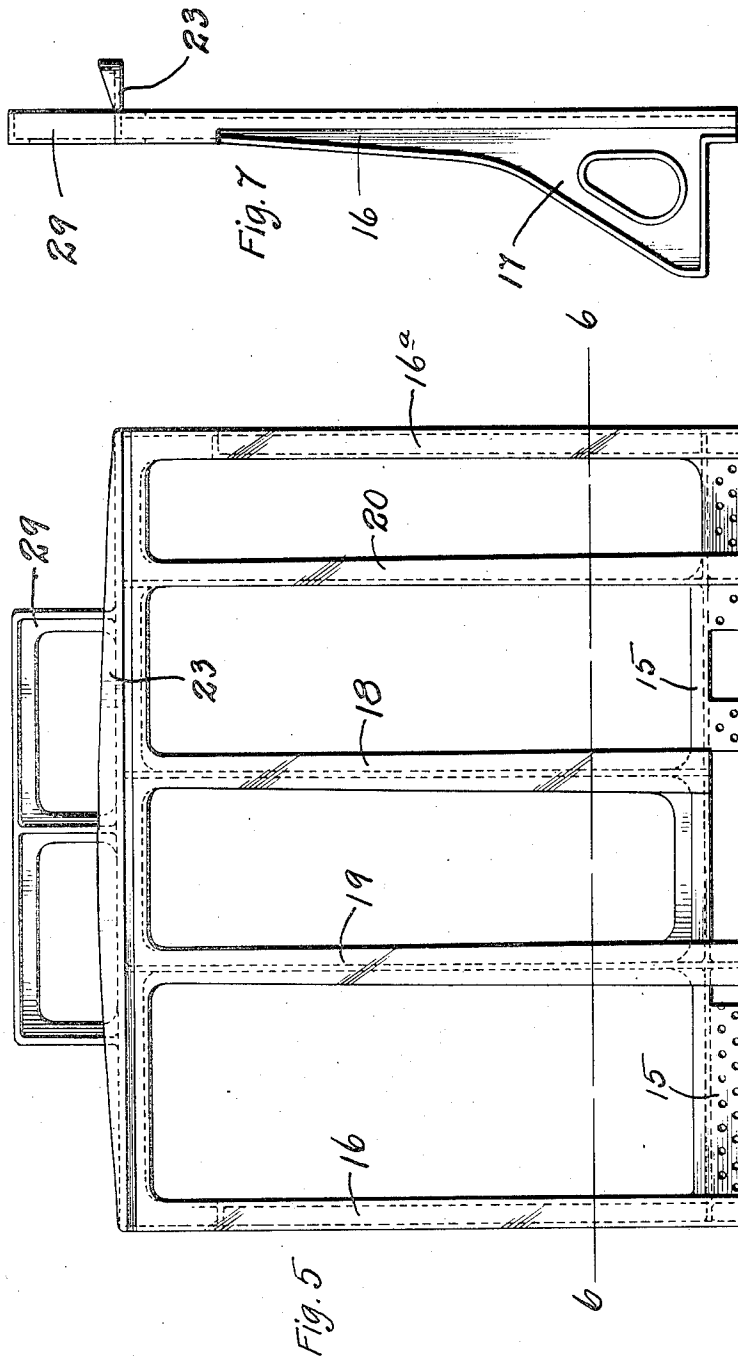
Inventor
Harry M. Pflager
By *J. M. Cornwall* Atty.

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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-FRAME CONSTRUCTION.

1,056,445.

Specification of Letters Patent.

Patented Mar. 18, 1913.

Application filed November 8, 1912. Serial No. 730,218.

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
5 new and useful Improvement in Car-Frame Construction, 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 elevational view of a car end frame forming a part of my improved
15 car frame construction. Fig. 2 is a horizontal section taken approximately on the line 2—2 of Fig. 1. Fig. 3 is a side elevational view of the end frame. Fig. 4 is a vertical section taken approximately on the line
20 4—4 of Fig. 1 and showing the end frame, a portion of the underframe and the end of one of the truss rods. Fig. 5 is a front elevational view of a modified form of the end frame forming a part of my invention.
25 Fig. 6 is a horizontal section taken on the line 6—6 of Fig. 5. Fig. 7 is a side elevational view of the form of end frame shown in Fig. 5.

This invention relates generally to railway car construction, and more particularly to that part of the frame of the car embodying the underframe, the truss rods and a one-piece end frame of the type disclosed in Patent No. 917,716, issued April 6, 1909 and
35 No. 929,705, issued to me August 3, 1909.

One of the most important features in the construction of the present types of railway cars, and particularly those utilized for the transportation of passengers is the
40 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
45 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
50 one-piece, cast metal end frame combined with the car underframe and truss rods so as to form a very strong and rigid structure which will be effective in resisting end shocks and crushing stresses imparted to

the end of the car, thereby providing a construction which is anti-telescopic in effect.

The principal objects of my present invention are, to combine with an underframe a one-piece end frame, and to attach the ends of the truss rods to the end sill of the underframe and the base member of said end frame, and further, to provide an end frame having a pair of door openings that are offset with respect to a vertical line drawn through the center of the end frame, which arrangement is particularly desirable on dining cars having kitchen ends.

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

Referring by numerals to the accompanying drawings, 10 designates a car underframe, preferably of the one-piece type and provided with an end sill 11, from which projects the usual skeleton platform 12.

Formed on the side members or sills of the underframe adjacent to the ends of the end sill are vertical extensions 13 provided near their rear ends with shoulders 14 against which parts of the end frame are adapted to engage.

The end frame forming a part of my improved construction comprises a base member 15, preferably of inverted L-shape in cross section, and said base member is applied to the end sill of the underframe with the vertical leg of said base positioned against the front face of said end sill. The base 15 is rigidly fixed to the end sill by means of rivets which pass through the vertical leg or flange of the base and through the front wall of the end sill.

Formed integral with the ends of the base 15 are uprights 16 and 16^a, preferably flanged and of any desired cross-sectional shape, and the lower ends of these uprights are provided with rearwardly projecting brackets 17 which rest upon the upwardly projecting portions 13 of the underframe, and the rear lower ends of said brackets bear against the shoulders 14. The lower portions of the brackets 17 are attached to the extensions 13 by means of rivets or like fastening devices, and by locating the rear ends of said brackets against the shoulders 14, and by arranging the vertical flange of the base 15 against the front face of the

end sill, the end frame is held against inward horizontal movement with respect to the underframe, and the rivets utilized in attaching the end frame to the underframe are relieved of all shearing strains. The up-
 5 rights 16 and 16^a constitute corner posts for the car body frame.

Formed integral with the base 15 at or near the center thereof is a flanged upright
 10 18 of any desired cross-sectional shape, the same constituting one of the door posts of the frame.

Formed integral with the base 15 between the uprights 16 and 18 is an upright 19
 15 which constitutes one of the door posts, and the space between the uprights 16 and 19 forms one of the door openings.

Formed integral with the base 15 between the uprights 16^a and 18 is a flanged upright
 20 20 constituting one of the door posts, and the space between the uprights 18 and 20 forms one of the door openings of the frame.

Formed integral with the uprights 18 and 20 is a short, horizontally disposed rail 21,
 25 and formed integral with the uprights 16^a and 20 is a corresponding rail 22.

If desired the open spaces above the rails 21 and 22 and between the pairs of uprights 18 and 19 and 16^a and 20 can be utilized
 30 as window openings.

Formed integral with and connecting the uprights 16, 16^a, 18, 19 and 20 is a horizontally disposed top rail 23 with which is
 35 formed integral a pair of upwardly projecting brackets 24 which serve as points of attachment and supports for the car roof deck sills. The upper ends of the uprights 16 and 16^a are notched, as designated by 25, in order to receive and form seats for the
 40 side plates of the car body frame.

Formed through the vertically disposed flange of the base 15 at or near the lower ends of the uprights 19 and 20 are openings
 45 such as 26 which receive the ends of truss rods 27, the same passing through corresponding apertures formed through the end sill of the underframe. The projecting ends of these truss rods are threaded and receive
 50 nuts 28. By such construction the end frames and the end sills of the underframe are rigidly connected and a very strong, substantial frame-work is formed for the superstructure of the car body.

In the modified form of end frame shown
 55 in Figs. 5, 6 and 7 the horizontally disposed rails 21 and 22 are dispensed with and a vertically disposed skeleton frame 29 is formed integral with the central portion of the top rail 23, which skeleton frame
 60 supports the car roof structure.

My improved car frame construction is very strong and rigid, is anti-telescopic in effect, thereby affording the highest degree
 85 of safety to the occupants of the car in case of collisions, and by forming each end frame

in a single piece, the same can be easily handled and can be constructed with comparatively little cost inasmuch as the time, labor and expense ordinarily involved in
 70 the construction and assembling of a built-up end frame is done away with.

It will be readily understood that minor changes in the size, form and construction of the various parts of my improved car
 75 frame construction 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. In car frame construction, the combination with an underframe, of a pair of
 80 one-piece end frames attached to the underframe, and truss rods having their ends anchored to the end sills of the underframe
 85 and the base members of the end frames.

2. In car frame construction, the combination with an underframe, of a pair of one-piece end frames attached to said under-
 90 frame, the bases of which end frames are provided with openings adapted to receive the ends of truss rods.

3. In car frame construction, the combination with an underframe, of a pair of one-piece end frames attached to said under-
 95 frame, which end frames are provided with openings, and truss rods, the ends of which are seated in said openings.

4. The combination with an underframe, of an end frame, the lower end of which
 100 is riveted to the underframe; and truss rods, the ends of which pass through suitable openings in the end of the underframe and the base of the end frame.

5. In car frame construction, a car end
 105 frame cast in a single piece and having two separate door openings.

6. In car frame construction, an end frame cast in a single piece and comprising
 110 a base member, a series of uprights, a top member, and having a pair of separate door openings between said uprights.

7. In car frame construction, an end frame cast in a single piece and comprising
 115 a base member provided with truss rod openings, a series of uprights integral with said base member, and a top rail connecting the upper portions of said uprights.

8. In car frame construction, an end frame cast in a single piece and comprising
 120 a flanged base member provided with truss rod openings, a series of flanged uprights, certain of which constitute door posts, and a flanged top rail connecting the upper portions of said uprights.
 125

9. The combination with a car underframe having an end sill, of a one-piece end frame comprising a flanged base member
 130 positioned upon and fixed to the end sill of the underframe, truss rods having their

ends seated in the end sill and the base member of the end frame, a series of posts projecting upwardly from the base, which posts are arranged to form two separate door openings, and a top rail connecting the upper portions of said posts.

10. In car frame construction, an end frame formed in a single piece and comprising a base, a series of posts projecting upwardly therefrom, which posts are ar-

ranged to form two separate door openings, and a member connecting the upper ends of all of the posts.

In testimony whereof I hereunto affix my signature in the presence of two witnesses, this 22nd day of October, 1912.

HARRY M. PFLAGER.

Witnesses:

HAL C. BELLVILLE,

FRED H. BLANKENHORN.