

1,048,998.

2 SHEETS--SHEET 1.



Wm. James
J. A. Bishop

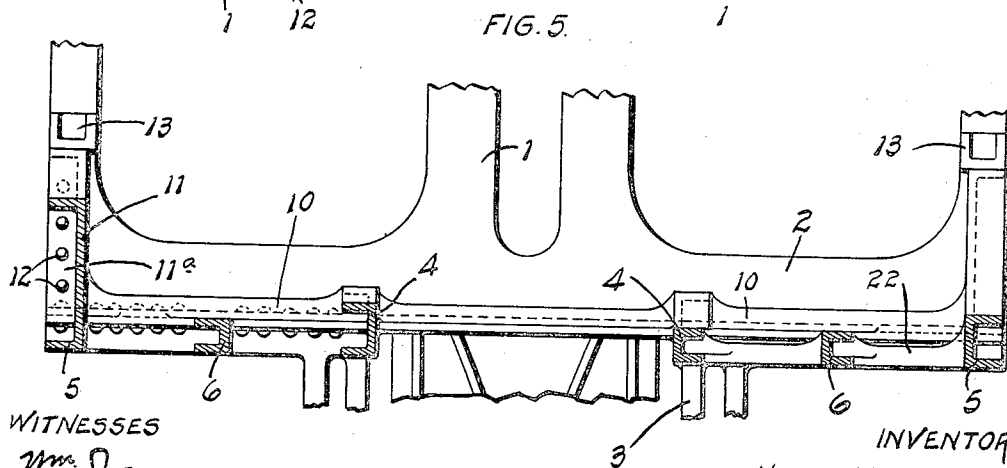
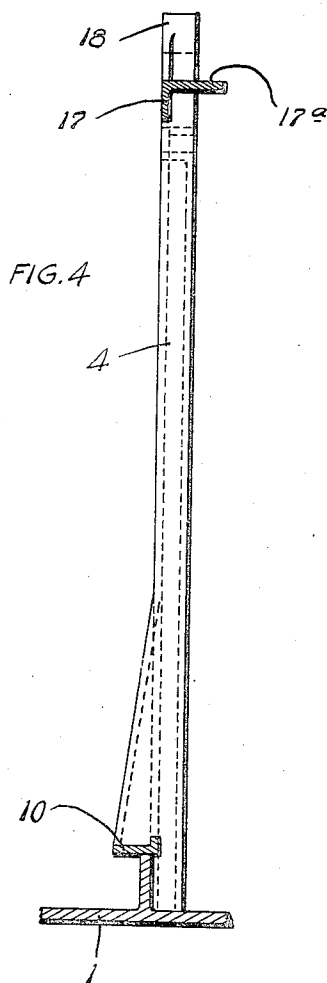
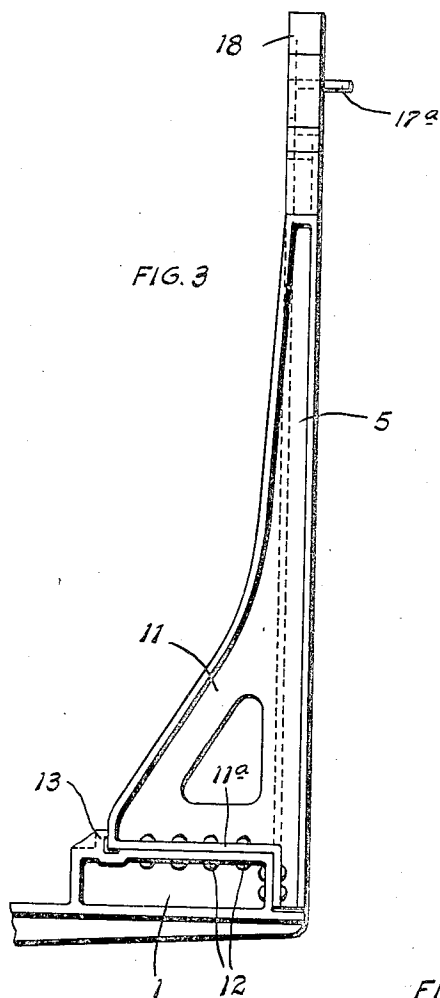
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BY *J. Cornwall* ATTY.

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

1,048,998.

Patented Dec. 31, 1912.

2 SHEETS—SHEET 2.



WITNESSES

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HARRY M. PFLAGER

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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.

1,048,998.

Specification of Letters Patent.

Patented Dec. 31, 1912.

Application filed April 9, 1912. Serial No. 689,569.

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 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, refer-
10 ence being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a vertical section taken transversely through the platform portion of a
15 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 elevational view of the end frame. Fig. 4 is a vertical section
20 taken on the line 4—4 of Fig. 1. Fig. 5 is a horizontal section taken on the line 5—5 of Fig. 1.

This invention relates generally to rail-
way car construction and more particularly
25 to cast metal end frames for cars of the type disclosed in Patent No. 917,716, issued April the 6th, 1909, and No. 929,705, issued August 3d, 1909.

One of the most important features in the
30 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
35 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
40 safety to the occupants of the car.

My improvement contemplates a comparatively light weight, strong and durable one-piece cast metal structure which is formed and braced so as to effectually re-
45 sist 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 invention are
50 to generally improve the construction of cast metal end frames disclosed in the patents above referred to, to arrange and dispose the various uprights or posts or cross pieces and braces forming the end frame so
55 as to utilize to the greatest possible ad-

vantage 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
60 end frame which can be advantageously employed in connection with composite cars having vestibule ends.

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

Referring by numerals to the accompanying drawings, 1 designates the car under frame, 2 the end sill thereof and 3 the plat-
70 form casting which parts are preferably formed integral.

My improved end frame, as shown, includes a pair of upright members 4 which perform the function of door posts, a pair of outer members 5 which perform the func-
75 tion of corner posts and a pair of intermediate members 6. All of these posts are preferably channel shape in cross section, although other cross sectional shapes may be utilized, if desired, and formed integral
80 with and connecting the lower portions of the uprights 5 and 6 are vertically disposed web plates 7. Corresponding web plates 8 are formed integral with the lower portions
85 of the uprights 4 and 6 and when the end frame is applied to the under frame, the web plates 7 and 8 bear directly against the outer face of the end sill of the under frame and said end frame is fixed to the under
90 frame by means of rivets 9 or like fastening devices which pass through the web plates and through the front wall of the end sill of the under frame. Formed integral with the
95 upper portions of the web plates 7 and projecting rearwardly therefrom is a horizontally disposed plate 10 and the central portion of this plate between the uprights 4 performs the function of a threshold plate for the door frame. Formed integral with
100 the lower portions of the posts or uprights 5 are rearwardly extending brackets 11 which rest directly upon the corresponding portions of the under frame and the hori-
105 zontally disposed base flanges 11^a of these brackets are fixed to the under frame by means of rivets 12 or like fastening devices. The rear ends of the brackets 11 bear directly against shoulders 13 formed on the
110 under frame, and this arrangement, to-
gether with the bearing of the lower ends

of the uprights against the front ends of the under frame, takes all shearing strain off the rivets 12. Any crushing stresses or shocks imparted to the upper portion of the end frame and which may tend to swing the upper portion of the frame inwardly will be resisted by the bearing of the brackets 11 directly on top of the under frame. The upper portions of the posts 4, 5 and 6 are united by horizontally disposed rails 14, preferably L-shape in cross section. Formed integral with and projecting upwardly from the inner ends of these rails 14 in alinement with the door posts 4 are short upright posts or brackets 15. Uniting the upper ends of all the posts 15 and 16 is a horizontally disposed rail 17, preferably of inverted L-shape in cross section, the horizontal flange 17^a of which performs the function of a lintel for the door frame, said flange being widest at its central portion and gradually tapering toward its ends. Formed integral with and projecting upwardly from the ends of the rail 17 are uprights 18 adapted to receive the lower portions of the ventilator frames and formed integral with and extending outwardly and downwardly from these uprights 18 are inclined brackets 19 adapted to support the side portions of the roof structure of the car body and the lower ends of said brackets are connected to the end portions of the rails 14. The upper ends of the posts 5 are notched or cut away as designated by 20 so as to receive the side plates of the car body frame. The lower ends of the inclined brackets 19 unite with the rails 14 at short distances from the outer ends thereof, thereby forming angular seats 21 for the upper portions of the side plates. Integral rails 22 preferably of inverted L-shape in cross section unite on the uprights 4, 5, and 6 and said rails 22 are located at such a height as to occupy approximately the same plane as the belt rail of the car body.

My improved end frame is preferably cast in a single piece and for this reason it can be readily applied to a car under frame and body and considerable time and labor can be saved in the assembling and building up of the end portion of the car body.

By my improved construction and manner of forming the lower portion of the end frame all shearing stresses are taken off the rivets utilized in fastening said frame to the under frame.

By providing rearwardly projecting brackets at the sides of the end frame and arranging the same so as to bear directly upon the under frame 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.

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 provided with shoulders on its side sills, of an end frame comprising a pair of door posts, a pair of corner posts, a pair of intermediate posts, web plates integral with the lower portions of said posts, brackets integral with and projecting rearwardly from the lower portions of the corner posts, the rear ends of which brackets bear against the shoulders on the side sills of the underframe, and the upper, outer corners of which corner posts are notched to receive the side plates of the car body frame.

2. The combination with a car underframe provided with shoulders on its side sills, of an end frame comprising a pair of door posts, a pair of corner posts, the lower ends of which are extended rearwardly and bear against the shoulders on the side sills of the underframe, a pair of intermediate posts, web plates integral with the lower portions of said posts, horizontally disposed rails integral with and connecting the upper portions of said posts and the outer, and the upper corners of which corner posts are notched to receive the side plates of the car body frame.

3. The combination with an underframe having shoulders on its side sills, of an end frame comprising, a pair of door posts, a pair of corner posts, web plates connecting the lower ends of said posts for attachment to the under frame, rearwardly projecting brackets integral with the lower portions of the corner posts, the rear ends of which brackets bear against the shoulders on the side sills of the underframe, rails integral with and connecting the upper portions of said posts, and the upper, outer corners of which corner posts are notched to receive the side plates of the car body frame.

4. The combination with a car underframe having shoulders on its side sills, of a car end frame, comprising a pair of door posts, a pair of corner posts, web plates connecting the lower ends of said posts for attachment to the under frame, rearwardly projecting brackets integral with the lower portions of the corner posts, rails integral with and connecting the upper portions of said posts, the rear ends of which brackets engage the shoulders on the side sills of the underframe, the upper outer corners of which posts are notched to receive the side plates of the car body frame, a lintel integral with the rails at the upper ends of the posts and integral brackets arranged be-

tween the ends of the lintel and the end portions of the rails.

5 5. The combination with a car under-
frame having shoulders on its side sills, of a
car end frame comprising a series of up-
rights, rearwardly projecting brackets on a
pair of said uprights, which brackets engage
the shoulders on the side sills of the under-
frame, web plates integral with the lower
10 portions of said uprights for attachment
to the car under frame, integral members
connecting the upper portions of said up-
rights, a lintel integral with said integral
members, upright members integral with the
15 end portions of the lintel which upright
members serve as supports for the ventilator
frames, and angular brackets between the
ends of the lintel and the end portions of
the integral members which brackets are
20 adapted to support the side portions of the
roof structure.

6. The combination with a car under-
frame having shoulders formed on its side
sills, of a car end frame comprising a pair
25 of door posts, a pair of corner posts, the

lower portions of which corner posts are ex-
tended rearwardly and engage the shoulders
on the side sills of the underframe, a pair of
intermediate posts, web plates integral with
the lower portions of said posts, the upper 30
outer corners of which corner posts are
notched to form seats for the side plates of
the car body frame, rails integral with the
upper portions of the posts, a lintel integral
with and occupying a plane above said rails, 35
upright members integral with the ends of
the lintel which upright members provide
means for attaching the lower portions of
the ventilator frames and integral brackets
extending from the ends of the lintel to the 40
outer portions of the rails at the upper ends
of the posts.

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.