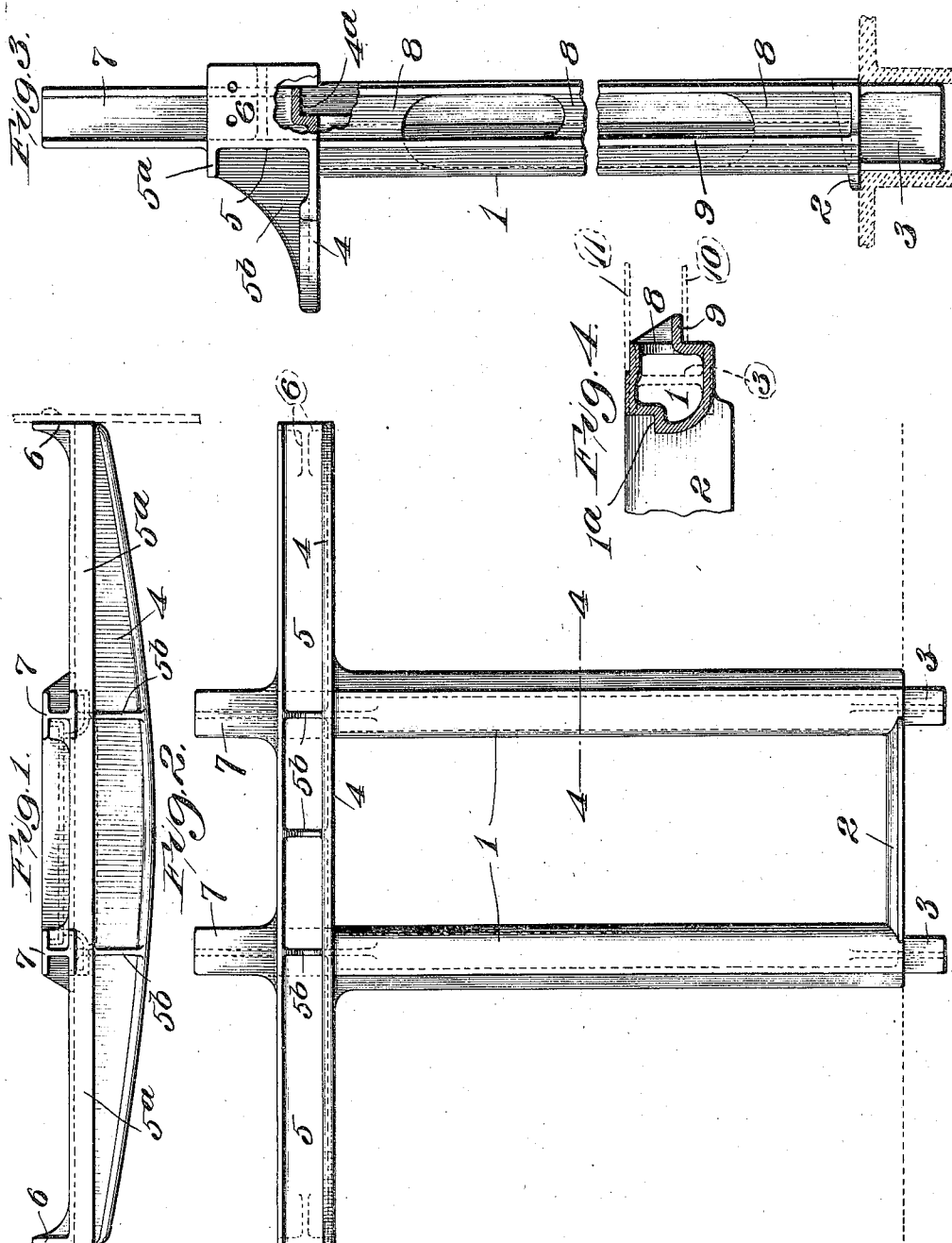


W. J. KNOX.
RAILWAY CAR END FRAMING.
APPLICATION FILED MAY 6, 1912.

1,066,122.

Patented July 1, 1913.



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UNITED STATES PATENT OFFICE.

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RAILWAY-CAR END FRAMING.

1,066,122.

Specification of Letters Patent.

Patented July 1, 1913.

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To all whom it may concern:

Be it known that I, WILLIAM J. KNOX, a citizen of the United States, residing at Dubois, Pennsylvania, have invented a certain new and useful Improvement in Railway-Car End Framing, 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 plan view of a car end frame of my improved construction. Fig. 2 is an elevation of the end frame. Fig. 3 is an enlarged side elevation of the end frame with parts thereof broken away. Fig. 4 is an enlarged detail section taken on the line 4—4 of Fig. 2.

This invention relates generally to railway car construction, and more particularly to a cast metal end frame, comprising door posts, an end plate or lintel and a threshold plate, which frame is particularly designed to be combined with the side plates and end sill of a car frame in forming a superstructure having great strength and rigidity, and which is anti-telescopic in effect.

One of the most important features in the construction of railway cars, and particularly those cars utilized in passenger service, is the reinforcing of the ends of the car so as to provide an exceptionally strong, rigid construction that will effectually resist crushing stresses and end shocks delivered to the cars, consequently overcoming the tendency of the cars to telescope in case of collisions, thereby affording the greatest possible degree of safety to the occupants of the cars.

My improvement contemplates a comparatively light weight, strong and durable cast metal structure that combines a number of the essential parts of a car end frame, and which structure readily combines with the car underframe and body framing so as to produce a construction that will resist end shocks and crushing stresses, thereby materially reducing the loss of life and property due to collisions.

The principal object of my invention is to provide a one-piece casting, combining door posts, a top plate that performs the function of a lintel and a bottom plate that

forms a threshold or door sill, which parts are arranged and disposed so as to utilize to the greatest possible advantage the strength of the material of which said parts are formed.

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

My improved end frame as shown includes a pair of hollow upright members 1 which perform the function of door posts, and formed integral with the lower ends of these posts is a plate 2 having an inclined top surface which forms the lower sill or threshold plate of the door frame.

Formed integral with the lower ends of the hollow posts are depending flanged lugs 3 that engage with and are fixed to the platform casting or end sill of the underframe. Formed integral with the tops of the hollow posts is a horizontally disposed web plate 4 that forms the end plate of the car body frame, and that portion of this plate between the posts 1, forms the lintel of the door frame. Formed integral with the rear edge of this plate 4 is a vertically disposed plate 5, and the ends of the plates 4 and 5 are preferably provided with rearwardly projecting ears or brackets 6 to which the top plates of the car frame are fixed.

Formed integral with and projecting forwardly from the upper edge of the plate 5 is a horizontally disposed strengthening flange 5^a, and extending from this flange downward in front of the upper ends of the posts 1 are integral strengthening flanges 5^b. Formed integral with the plates 4 and 5 and extending from the posts 1 are short vertically disposed members 7 that provide means for attaching the end portions of the deck sills and deck plates (not shown). The inner corners of the posts 1 and the rear edge of that portion of the plate that forms the lintel, are preferably recessed or rabbeted, as designated by 1^a and 4^a in order to receive the edges of the door utilized in connection with the door frame. The upper and lower ends of the posts 1 are reinforced by interiorly arranged strengthening webs or flanges 8, and formed integral with the outer side of each post is a vertically disposed flange 9 which performs the function of a strengthening web, and also provides means for attaching the edges of the outer

sheathing plates 10. The inner sheathing plates 11 are attached directly to the inner faces of the posts 10 shown by dotted lines in Fig. 4.

- 5 My improved end frame is preferably cast in a single piece and can therefore be readily applied to a car underframe and body with an expenditure of comparatively little time and labor, and said frame combines with the underframe and car body frame in such a manner as to effectually resist all end shocks and crushing stresses, thereby materially reducing the tendency of cars to telescope as a result of collisions.
- 10 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. A car end frame comprising a pair of hollow end door posts, flanges on the sides thereof for receiving the outer sheathing plates of the car end wall, said posts being rabbeted on their inner faces to receive a door, a car end plate integral with the upper ends of said posts, short vertically disposed posts integral with said end plate in alignment with the door posts, a threshold plate integral with the lower ends of said door posts, and extensions integral with the lower ends of the door posts below the threshold plate, which extensions are adapted to engage the end sill of a car underframe.
2. The hereindescribed car end door frame comprising a pair of flanged posts, a car end plate at the upper ends of said posts, the ends of which end plate are adapted to be attached to the side plates of the car body

frame, the central portion of which end plate forms a door lintel, a threshold plate between the lower ends of said posts, all of which parts are formed integral, extensions at the upper ends of the door posts for attachment to the deck sills and extensions integral with the lower ends of the posts, which extensions are adapted to engage in suitable openings formed in the end sill or platform of the car underframe.

3. The hereindescribed car end door frame, comprising a pair of flanged posts, a threshold plate integral with the lower ends of said posts, parts of which posts extend below the threshold plate and are adapted to engage the end sill or platform of the car underframe, a car end plate integral with the upper ends of said posts, and short vertically disposed members integral with said end plate in alinement with the door posts.

4. An integral car end frame comprising a car body end plate having a broad horizontally disposed flange, a pair of tubular door posts integral with said end plate, a pair of vertically disposed extensions integral with the end plate in alinement with the posts, a threshold plate integral with the lower ends of the posts, and extensions integral with the lower ends of the posts below the threshold plate for engagement with the end sill or platform of the car underframe.

In testimony whereof I hereunto affix my signature in the presence of two witnesses, this 27th day of April, 1912.

WM. J. KNOX.

Witnesses:

HAL C. BELLVILLE,
FRED W. DIECKMANN.