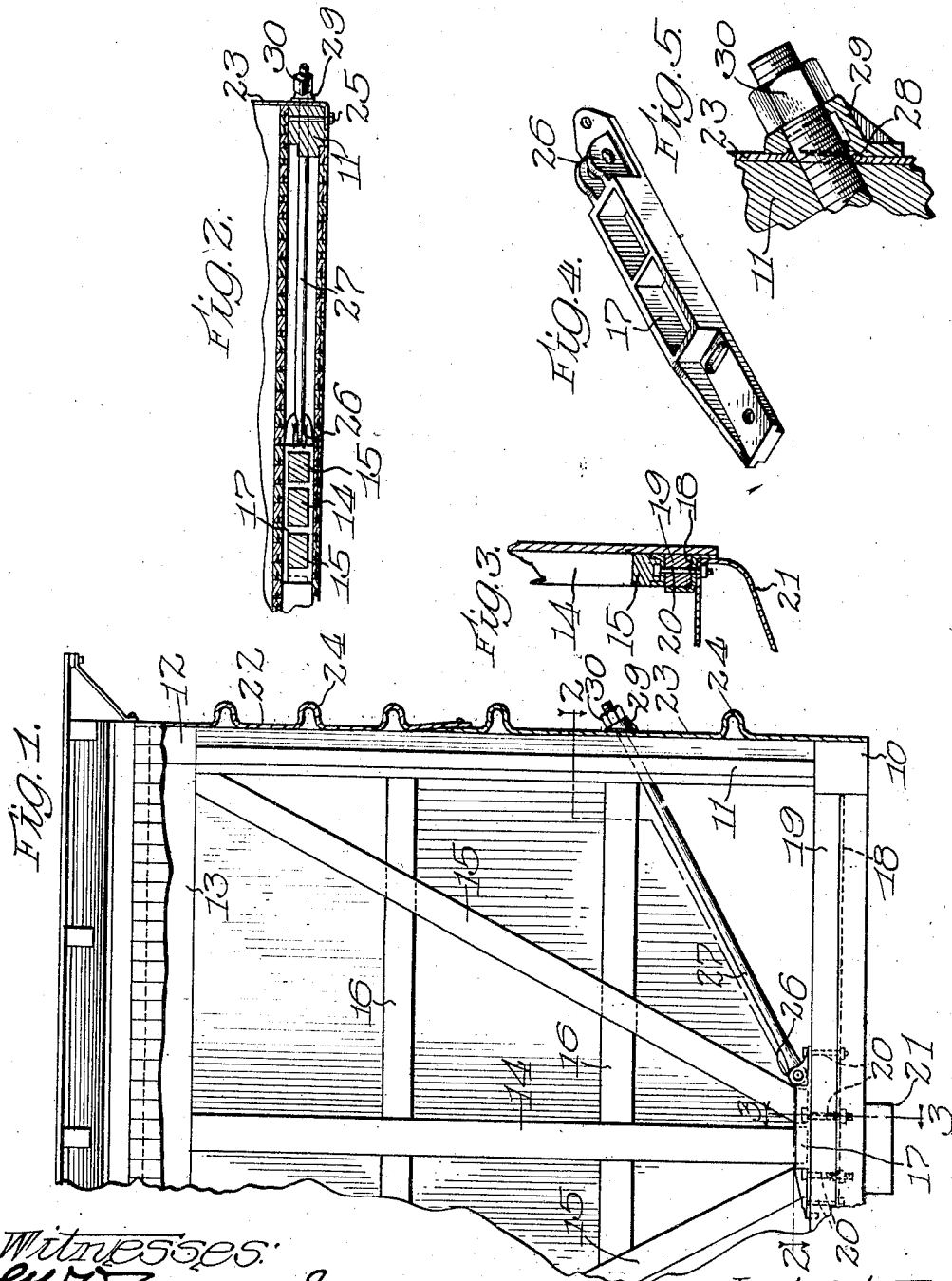


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BRACING STRUCTURE FOR RAILWAY CAR ENDS.
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UNITED STATES PATENT OFFICE.

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BRACING STRUCTURE FOR RAILWAY-CAR ENDS.

1,058,890.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, VINTON E. SISSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Bracing Structures for Railway-Car Ends, of which the following is a specification.

My invention relates to the construction of railway cars, particularly box cars, and has for its object to provide novel and improved means for reinforcing and bracing the end structure of the car, and securing it to the body of the car so that it cannot be torn off, loosened, or otherwise injured by the pressures and stresses to which car ends are subjected when in use, and particularly by the impacts of the cargo which take place when the train starts and stops.

The novel devices and arrangements constituting my invention are designed to be used particularly with a sheet metal end structure which is attached to the car body by flanging the end sheets and bolting the same to the framing of the car, the invention providing suitable anchoring means for the end structure which supplement the attachment provided by the bolts. The improvements of my invention might be used with car ends of different construction from this.

The invention is illustrated, in a preferred embodiment, in the accompanying drawing, wherein—

Figure 1 is a fragmentary side elevation of the end of a box car with the sheathing removed; Fig. 2, a sectional plan taken on line 2—2 of Fig. 1; Fig. 3, a detail sectional view on line 3—3 of Fig. 1, looking in the direction of the arrows; Fig. 4, a view, in perspective, of the casting to which the brace is anchored, and Fig. 5, a detail section, on an enlarged scale, showing the means for attaching the brace to the end sheet.

Like characters of reference designate like parts in the several figures of the drawing.

I have shown my improved bracing structure as forming part of a box car which in its general features is constructed along familiar lines.

10 designates an end sill of the car, 11 the corner posts, 12 the end plate, 13 one of the side plates, 14 a transom post, 15, 15 transom braces, and 16, 16 the belt rails. The transom post 14 and diagonal braces 15 are

seated in a socket casting 17 resting on one of the side sills. The side sill in question consists, in the construction shown, of a Z-bar 18 and a wooden sill 19. The socket plate 17 is secured to the sill by bolts 20 which also pass through the pressed steel bolster 21.

The end of the car is composed of one or more sheets of metal. I have shown two end sheets 22 and 23 preferably provided with the corrugations 24 and on their vertical edges with the flanges 25 which overlap and are bolted to the corner posts 11.

The socket casting 17 is formed at one end with the clevis 26 to which is pivotally anchored the tie rod or brace 27 which extends through a perforation in the corner posts and a registering perforation in the lower end sheet 23. The end sheet is preferably perforated by punching so that the outwardly projecting rib or bur 28 is formed. The extreme end of the brace rod 27 passes through a wedge shaped washer 29 and is threaded for the nut 30 (see Fig. 5). By screwing down the nut the washer is brought to bear against the bur 28 on the end sheet so that a water tight joint is provided. The rod 27 may be given any desired angle so that it will pass through the end sheet at whatever point is required for the proper reinforcement of the end. Preferably the attachment of the tie rod to the end sheet is opposite one of the belt rails 16 which acts as a compression member opposed to the tension member constituted by the tie rod 27. By this arrangement the sheet metal end is effectively prevented from becoming loosened by the impacts of the cargo and the entire end of the car strengthened, reinforced and rigidified. It is desirable that the connection between the rod 27 and the casting 17 be a pivotal connection so that, by using rods of suitable length the attachment to the end structure may be at any desired point. The drawings show the bracing structure on one side of the car only. It will be understood that the arrangement will be duplicated on the other side and at each end of the car.

While I have described my invention in a preferred embodiment, it will be readily understood that modifications might be made without departure from the invention. Therefore I do not limit the invention to the

particulars described and claimed except so far as they are made specific limitations in certain of the claims herein.

I claim:

- 5 1. The combination, in a freight car, of an end structure, a socket casting provided with sockets into which the lower ends of the transom posts and braces of the car are fitted, and a diagonal brace which is se-
10 cured to the end structure and pivoted to said socket casting.
- 15 2. The combination, in a freight car, of an end structure, a socket casting provided with sockets into which the lower ends of the transom posts and braces of the car are fitted, and a diagonal brace which extends
20 through and is secured to the end structure and is anchored at the other extremity to said socket casting.
- 25 3. The combination, in a freight car, of an end structure, a socket casting provided with sockets into which the lower ends of the transom posts and braces of the car are fitted, and a diagonal brace which extends
30 through and is secured to the end structure and is pivotally anchored to the socket casting.
- 35 4. The combination, in a freight car, of an end structure, a socket casting provided with sockets into which the lower ends of the transom posts and braces of the car are fitted, and a diagonal brace which extends
40 through and is secured to the end structure and is anchored at the other extremity to the under frame of the car.
- 45 5. The combination, in a freight car, of an end structure, a socket casting provided with sockets into which the lower ends of the transom posts and braces of the car are fitted, and a diagonal brace which extends
46 through and is secured to the end structure and is pivoted at the other extremity to the under frame of the car.
6. The combination, in a freight car, with
47 the framing of the car, of a metal end sheet

secured to said framing, means for attaching the end sheet to said framing, and comprising a brace which projects through the sheet and is secured to the same on the outside and which extends diagonally down-
50 ward and is attached to the under frame of the car.

7. The combination, in a freight car, with the framing of the car, of a metal end sheet secured to said framing, means for attaching the end sheet to said framing, a brace
55 which projects through the sheet and is secured to the same on the outside and which extends diagonally downward and is attached to the under frame of the car, said
60 sheet being formed with an outwardly projecting bur around the perforation through which the brace extends, a wedge-shaped washer which bears against said bur, and a
65 nut on the projecting end of said brace.

8. The combination, in a freight car, with the framing of the car, of a metal end sheet secured to said framing, means for securing the end sheet to said framing, a brace which projects through the sheet, which extends
70 diagonally downward and is anchored to the under frame of the car, said sheet being formed with an outwardly projecting bur around the perforation through which the
75 brace extends, a wedge-shaped washer which bears against said bur, and a nut on the projecting end of said brace.

9. The combination with the corner posts, transom post and braces of a railway car, of an end structure comprising a metal end
80 sheet secured to the corner posts, a socket casting in which the transom post and braces are seated, and a brace which extends through and is secured to the corner post
85 and end sheet, the other extremity of which is pivotally anchored to the socket casting.

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