E. POSSON.

FREIGHT CAR.

APPLICATION FILED MAY 24, 1910.

1,033,343.

Patented July 23, 1912.

3 SHEETS—SHEET 1.

Fig. 1.

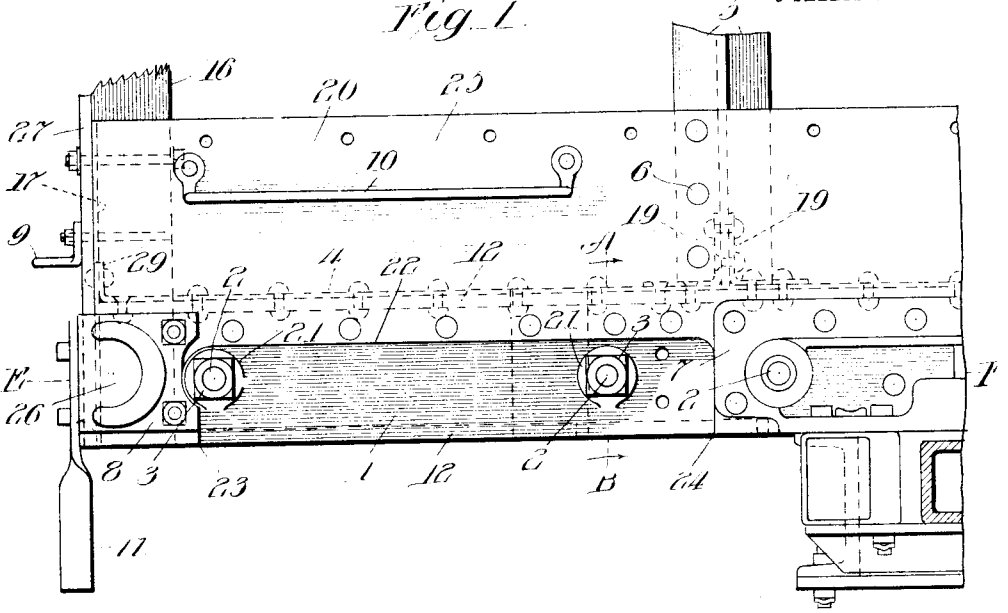
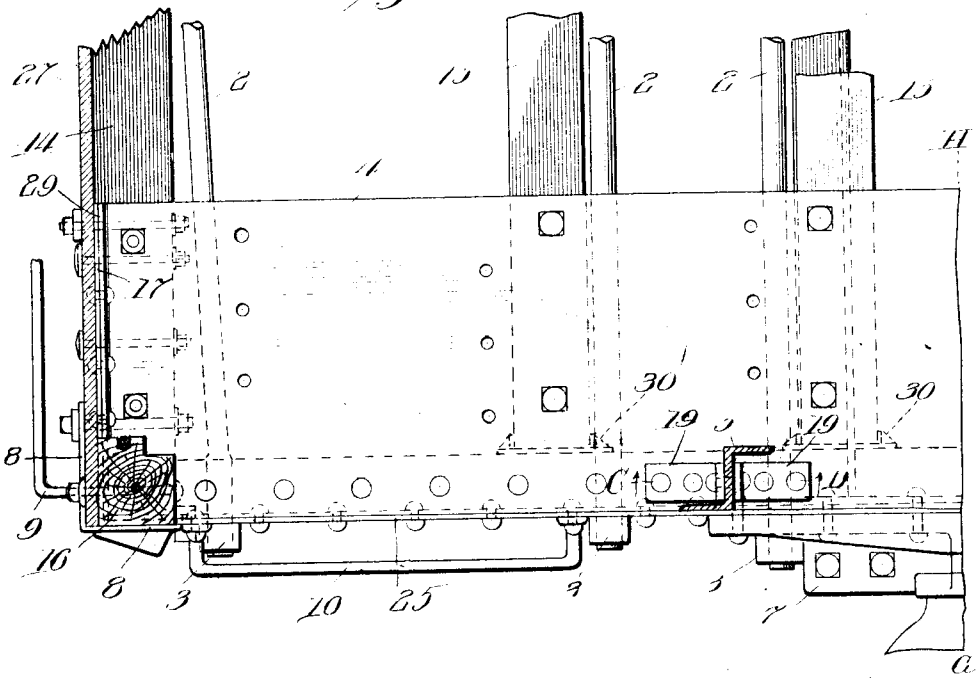


Fig. 2.



Witnesses.

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3 SHEETS—SHEET 2.

Fig. 3.

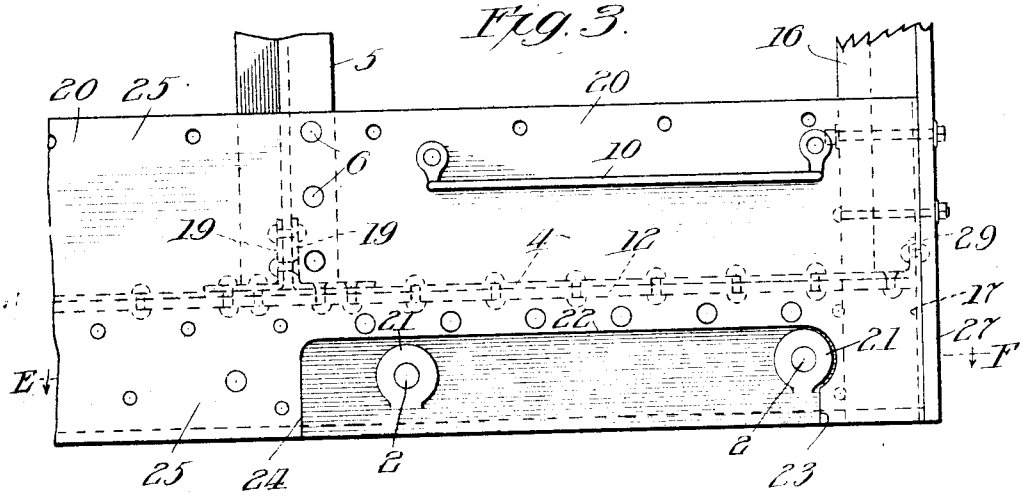
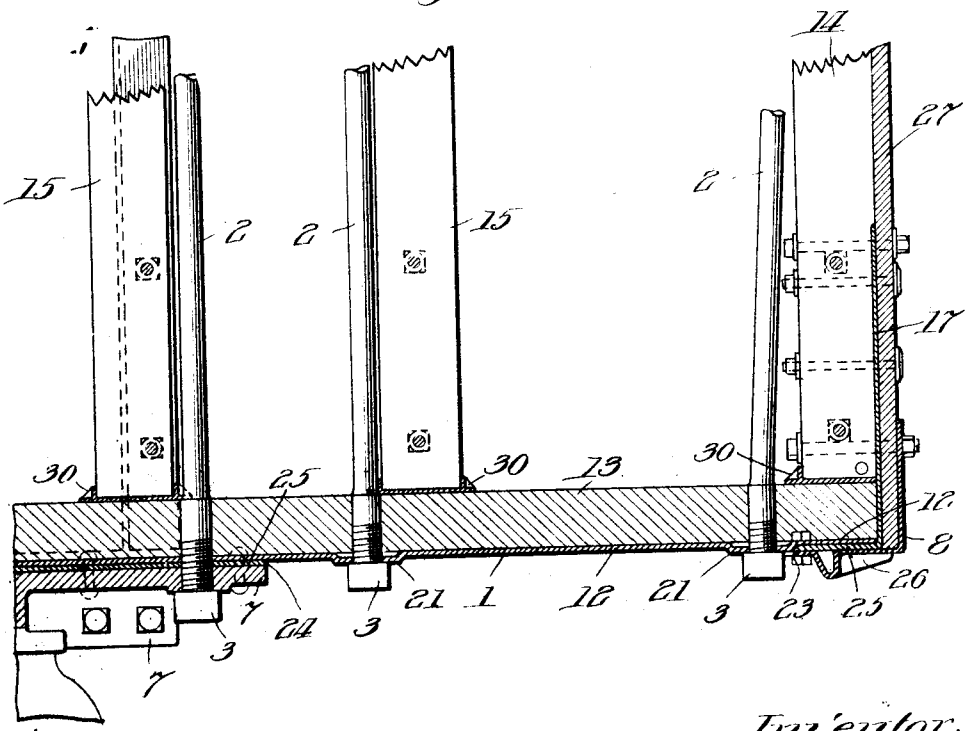


Fig. 4.



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3 SHEETS—SHEET 3.

Fig. 5.

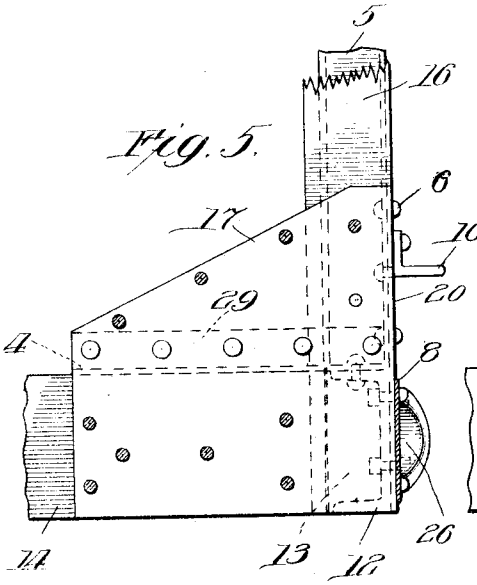


Fig. 6.

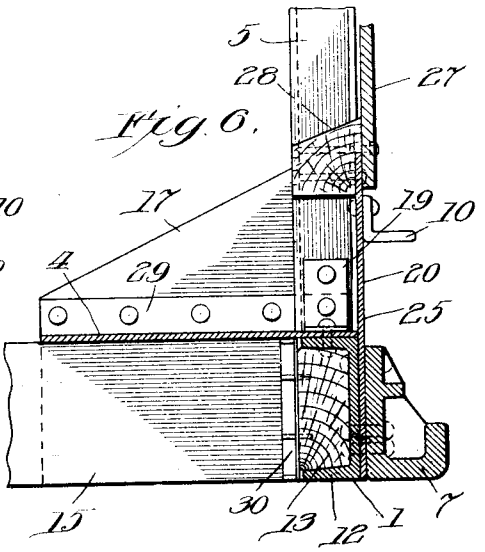


Fig. 7.

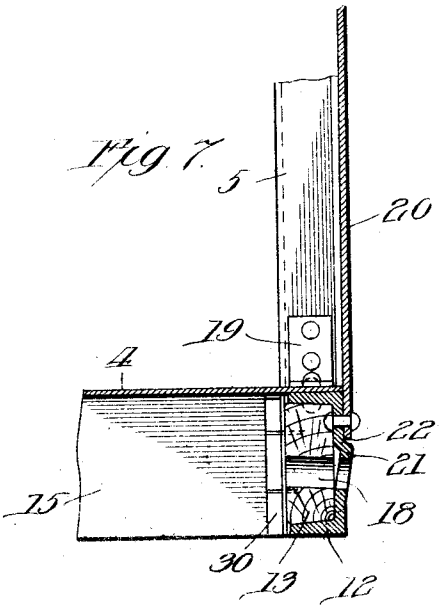
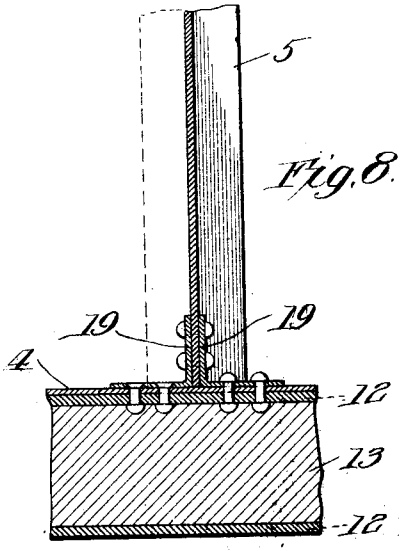


Fig. 8.



Witnesses:
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UNITED STATES PATENT OFFICE.

EDWARD POSSON, OF CHICAGO, ILLINOIS.

FREIGHT-CAR.

1,033,343. Specification of Letters Patent. Patented July 23, 1912.

Application filed May 24, 1910. Serial No. 563,082.

To all whom it may concern:

Be it known that I, EDWARD POSSON, 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 Freight-Cars, of which the following is a specification.

My invention relates to improvements in freight cars, and particularly to the end construction of box cars.

The principal object of my invention is to provide a new and improved construction for the frames of freight cars.

Another object of my invention is to provide an improved construction of the end sills of freight cars.

Still another object of my invention is to provide an improved construction of freight car end sills, in combination with adjacent members. I also aim to secure great strength and durability of reinforced end construction.

These objects and others will be made apparent in the following description and claims, referred to in connection with the drawings. I attain these objects by a peculiar reinforced structural device, as shown and illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of the lower part of one side of an end view of a box car embodying my invention. The end sheathing is not shown on this figure. Fig. 2 is a top view of one side, showing part of one end of a box car near the bottom, the top of the car being removed, and part of the drawing being in section. Fig. 3 is a front elevation of the lower part of one side of an end with some of the parts removed. Fig. 4 is a horizontal section of the bottom through the floor framework, end sill, etc., along the line E, F of Fig. 3 and shows end details on one side of the car. Fig. 5 is a side elevation of a lower corner of the car, with the sheathing removed and showing the framework and a part of the end plate which protects the corners. Fig. 6 is a longitudinal vertical section at the center of the car along the line G, H, Fig. 2, and shows the framework, etc., at and near the floor on one end of the car. Fig. 7 is a longitudinal vertical section at one end of the car on a line A, B of Fig. 1 showing the structure of the end sills, one of the Z-bars and particularly the special shoulder or boss stamped in the channel at the point where one of the tie rod nuts finds a bearing. Fig. 8 is a transverse vertical section along the lines C, D, Fig. 2 showing one of the Z-bars and the end sill to which it is attached at the lower end.

In the following description, like reference numerals refer to like parts in all the different views.

The end sill 1 is a reinforced structure comprising the wooden sill 13 inclosed on three sides by the channel beam 12 and serves to hold and retain the ends of the two side sills 14, as well as the intermediate longitudinal sills 15. This end sill 1 also supports the dead block 7, push pole pockets or corner plates 8, the Z-bars 5 and the corner posts 16. It serves also as an anchorage for the ends of the tie and truss rods 2. In short, this end sill 1 serves generally as a foundation for the end structure of the base, as shown by the drawings.

The channel beam 12 has special shoulders or bosses 21 to support the stress from certain of the tie and truss rods 2, which are inclined slightly upward from the horizontal at the end. Part of these rods extend through the holes 18, as shown in Fig. 7, and part of them extend through other holes leading through the end sill 1 and the dead block 7, as shown by Fig. 4.

Resting on the end sill and attached thereto at the lower end are several Z-bar posts 5, two being shown in the preferred embodiment represented in the drawings. These Z-bars extend upward to support and stiffen the interior part of the end wall structure; they are attached to the end sill by means of angle irons 19 secured by bolts, rivets, or the like; they are also fastened by rivets 5 to the end shield plate 25.

Vertical corner posts 16 rest on and are attached to the ends of the end sill 1. A horizontal metal cover plate 4 extends across the end of the car and for a short distance back from the end and is attached to the upper side of the end sill 1 and side sills 14, as well as to the intermediate sills 15, and serves to stiffen and protect the end floor structure. This plate is turned up at the ends 29 for fastening to the sides of the car, particularly to the side wings 17, thus further reinforcing the structure as shown in Fig. 1.

A vertical metal end plate 20 comprising a central end shield 25 and two side wings 17 extends across the end of the car at the base and bends at right angles and laps over the corner post 16 and extends a short dis-

tance backward on each side constituting the wings 17. There is a peculiar feature of this plate 20, which is that the central part or shield 25 has two sections of its lower part, one on each side of the center, extending from points 23 to 24 cut out, thus leaving two open spaces underneath that part of the lower edge marked 22 for locating the bosses 21, and providing access to the nuts 3 and ends of the tie and truss rods 2, as shown in Figs. 1 and 7. These bosses 21 are necessary in order to properly accommodate an inclined position of the rods 2 and a consequent inclined bearing surface for the nuts 3.

Both plates 4 and 20 are securely fastened to the framework and to each other by suitable bolts, rivets, and such similar means, as shown by the drawings. The several miscellaneous parts and attachments, such as the dead block 7, push pole corner plates 8, hand holds 10, sill steps 11, ladder rounds 9, etc., are mounted in the usual places and in the manner shown by the drawings. A cross bar 28 extends across the end of the car at and attached to the upper edge of the end plate 25 and serves to stiffen this plate and also to support the lower ends of the end sheathing 27. This bar 28 is in sections separated by the Z-bars 5 to which the parts are also fastened by bolts.

The side sills 14 and all intermediate sills 15 have their ends set in metal socket plates 30 secured to the end sill 1 by means of bolts, pins, or the like, attaching to the wooden beam 13, constituting part of the end sill. The tie and truss rods 2 serve to bind and hold the longitudinally extending sills 14 and 15 in place in their sockets 30 on the end sill 1. The dead block 7 consists of a cast metal block of peculiar shape and structure as shown in the drawings, and is attached to the end sill 1 by rivets, bolts, or the like, and is further secured in place by part of the tie rods 2.

The push pole plates 8 are of stamped malleable metal and each comprises two wings or flanges at right angles, one flange containing the pocket 26, the other being plain. These plates 8 are attached at the lower corners of the car, each with the pocket on the end as shown in Figs. 1, 3 and 4. Each of these serves both to hold the end of a push pole, when such is used, and also to reinforce the corner of the car structure. A wooden sheathing 27 extends down the full length at the sides of the car, but only down to the upper edge of the end shield plate 25, or thereabouts, on the end of the car where it is fastened to the cross bar 28, as shown by Figs. 3 and 6. The hand holds 10 on the end of the car are attached to and are supported by the shield plate 25, one on each side of the car, as shown by Figs. 1, 2 and 3.

While I have herein shown and particularly described some embodiments of my invention, I do not wish to limit myself to the precise construction as herein shown, as many modifications may be made by those skilled in the art without departing from the spirit of my invention.

What I claim and desire to secure by Letters Patent, is—

1. In a device of the class described, a combined end sill of iron and wood, a plurality of Z-bars with their lower ends resting thereon and extending vertically upward therefrom, an end wall attached to said Z-bars, a horizontal plate over said end sill, and a vertical plate across the outer face of the end sill and the lower ends of the Z-bars, said horizontal and vertical plates being fastened together.

2. A reinforced end construction for box cars comprising a metal channel beam inclosing a wooden beam for an end sill, a plurality of upwardly extending Z-bars secured at their bases to this end sill, corner posts standing on the ends of the end sill, side sills attached to the end sill at its ends, intermediate sills between the side sills also attached to the end sill, a metal plate overlying all the said sills, and another metal plate applied to the outer face of the end sill and across the outer faces of the lower ends of said corner posts and Z-bars, said last mentioned plate having side wings bent around the corner posts and attached to the side sills.

3. An improved end structure for box cars comprising an end sill, side and intermediate sills connected thereto, corner and intermediate posts standing on the end sill, a floor plate overlying the end sill and the ends of the other sills adjacent thereto, said floor plate having its ends at the side of the car turned upward, and a vertical end plate lying against the outer face of said end sill and also lying against the lower ends of the said corner and intermediate posts.

4. A reinforced end sill comprising a wooden beam inclosed in a metal channel beam, the web of the metal beam having holes therein surrounded by oblique bosses, inclined tie-rods passing through said holes, and nuts engaging said rods over said bosses.

5. In a reinforced end structure for freight cars, an end sill, a plurality of side sills and intermediate sills connected therewith, tie-rods having their ends passing through said end sill and nuts securing them in place, end posts standing on said end sill, a sheet metal plate lying on said end sill and overlying the ends of the longitudinal sills, a vertical end plate along the lower outer faces of the end posts and the outer face of the end sill, a cross bar along the upper edge of the said last mentioned

plate and attached thereto, and reinforcing angle iron plates around the corners where the side sills meet the end sill, said plates having push-pole pockets therein.

6. In a device of the class described, an end sill an end plate lying against the outer face thereof and having portions cut away, tie-rods projecting through the end sill where this end plate is cut away, nuts upon said tie-rods, and a cover plate over the end sill, said cover plate having its ends turned up and thereby giving a stiffness to the plate as a whole.

7. In a freight car the end sill in combination with the end plate 20 and cover plate 4 substantially as described.

8. In a device of the class described, the end sill, side sills, intermediate sills, tie and truss rods in combination with cover plate 4 and end plate 20.

9. In a device of the class described, the end plate 20, cross bar 28, and end sheathing 27 substantially as described.

10. In a device of the class described, the end plate 20, and cover plate 4 connected together at their ends substantially as described.

11. In a device of the class described, an end sill comprising a channel beam with its flanges directed horizontally inwardly, and a wooden beam lying between said flanges, said channel beam having holes through its web and having the web struck up around said holes to form bosses and said wooden beam having holes therethrough registering with said holes in the web of the channel beam.

12. In a device of the class described, a reinforced end sill, two corner posts standing on the ends thereof, two side sills meeting the ends of said end sill, a vertical end plate passing across the outer face of the end sill and having its ends bent around the lower ends of the corner posts, and a floor cover plate overlying the end sill and connected at its ends to the said vertical plate.

13. In a device of the class described, an end sill, an end plate attached thereto and extending upward therefrom and having large notches in its lower edge giving space for bolts and for nuts bearing directly on said sill, and a dead block assembled and attached to said sill and plate, with means for anchoring the ends of tie and truss rods, substantially as shown.

14. In a device of the class described, a reinforced corner construction comprising an upright end plate having a backwardly turned wing adapted to embrace an ordinary frame corner, a prostrate floor plate having its end turned up and provided with fastening means adapted to attach said upturned end to said wing adjacent to the upper edge line of the floor sills of said frame, and an upright corner plate having two wings embracing the lower portion of said corner, the transverse wing having a pocket therein adapted to receive a push pole.

In testimony whereof, I have subscribed my name.

EDWARD POSSON.

Witnesses:
HENRY A. PARKS,
ANNA L. WALTON.