

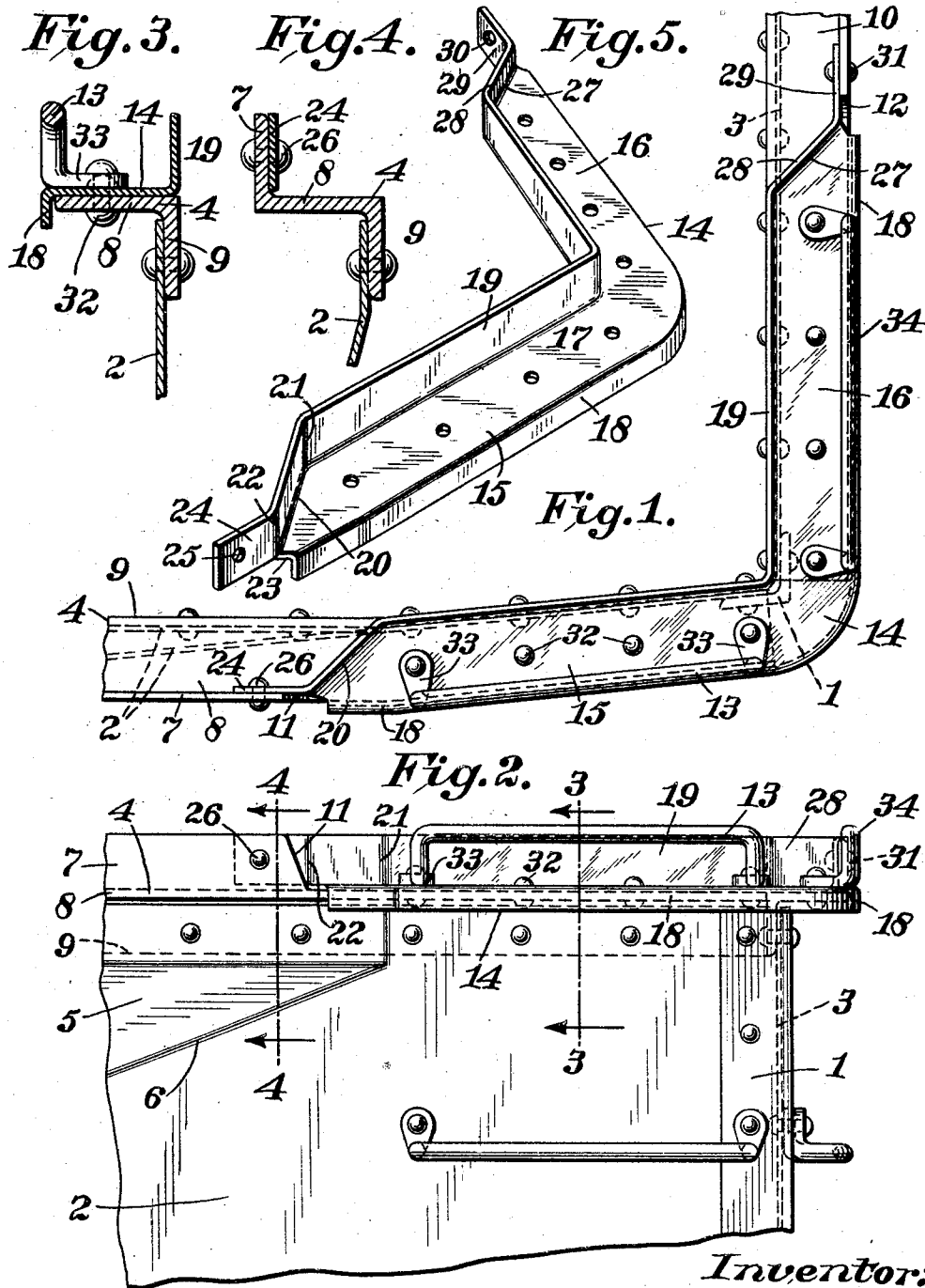
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CORNER CONSTRUCTION FOR FREIGHT CARS

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CORNER CONSTRUCTION FOR FREIGHT CARS

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My invention relates to new and useful improvements in corner constructions for freight cars, and more particularly to a top rail corner bracket, and has for an object to provide a top rail corner bracket that will rigidly tie the top side rail and top end rail together and, at the same time, prevent the loaded car from spilling some of the coal at the corners.

The invention in its broadest aspect is somewhat similar to a co-pending application filed by me on April 2, 1929; Serial No. 351,968.

Still another object of the invention is to provide a top rail corner bracket that may be quickly and easily fitted to a form of top rail construction now in use.

In some of the "full capacity type" cars which are manufactured today, the side and corner rails consists of Z-bars, to which the side and end sheets are fastened, and to provide clearance for the grab irons at the top of the car, at the corners thereof, it has been found necessary to cut away the top leg of the Z-bar where the end top rail meets with the side top rail, that is, at the corners. However, when the car is loaded to its top with coal, the reduced three or four inches in height at its several corners will permit some of the coal to drop from these corners.

An object of my invention, therefore, is to provide a corner bracket that will fit over the deformed Z-bars at these corners and which bracket will have an inside flange that is as high as the normal height of the top leg of the Z-bar and thus prevent the coal from spilling out at these reduced corners. At the same time, the bracket is so formed that the grab iron may be fitted or secured on the upper surface of this bracket and its height still come within the limits allowed by the Master Car Builders Association.

Still another object of the invention is to provide a bracket which may be a unitary casting or stamping that will tightly tie the corners together, allow the loading of the car to its normal height throughout its length and, at the same time, be so arranged as to permit of a grab iron directly above the ladder.

With these and other objects in view, the

invention consists in certain new and novel arrangements and combination of parts, as will be hereinafter more fully described and pointed out in the claims.

Referring now more particularly to the drawings showing a preferred embodiment,

Fig. 1 is a fragmentary top plan view of one corner of a car with the top rail corner bracket secured in place;

Fig. 2 is a fragmentary side elevation of a corner of the car and showing the corner bracket and grab irons in position;

Fig. 3 is a fragmentary section taken on the line 3—3 of Fig. 2;

Fig. 4 is a sectional view taken on the line 4—4 of Fig. 2;

Fig. 5 is a perspective of the top rail corner bracket before attachment to the top rails of the car.

Referring now for the moment to Fig. 2, there is shown the fragmentary portion of a corner of a car with the corner post 1, side sheet 2, end sheet 3 and a top side rail 4.

Also, as may be seen in Fig. 1, cars of the type referred to have what are known as tapering ends or, in other words, the sides of the car at opposite ends thereof extend slightly inwardly as they approach the respective ends of the car.

It will be seen that the end side sheet 2 slopes slightly outwardly, as at 5, where it merges along the line 6 of the end side sheet, which is the construction similar to that shown in my reissue of April 23, 1929, No. Re. 17,285. In fact, the term "full capacity car" comes from a structure of this kind or a similarly built car.

Glancing at Figs. 2 and 4, it will be seen that the top rail 4 is of Z-bar construction, with the upper leg 7, the horizontal leg or portion 8, and the downwardly extending leg 9. In the same way, the end top rail 10 (see Fig. 1) is of a similar construction. However, as heretofore mentioned, instead of running the side top rail 4 and the end top rail 10 in their original shape down to the end post 1, it has been the practice, in some types of cars, to deform or cut away the top leg 7 of the Z-bar, say from the point 11 (see Figs. 1 and 2) all the way to its

end and, in the same way, to cut the end rail or Z-bar 10 in a similar manner, starting say at the point 12. This has been done so that the necessary grab iron 13 may not extend above the normal level of the car and so that it could be readily attached. However, when these upper legs of the Z-bars are cut away, as shown, if the car is heavily loaded, some of the coal is apt to spill from the corners or, in other words, the capacity of the car is somewhat cut down. To overcome this objection and to tightly secure the top rails together, and to still provide sufficient space for the grab iron 13, I form the bracket 14, as clearly shown in Fig. 5, either in the form of a casting or a heavy stamping, it comprising a leg 15 and a merging leg 16 extending at an angle thereto.

As may be clearly seen, there is what I term the body 17, which extends throughout the length of the bracket, and there is a small downwardly extending flange 18 that follows the contour of the body throughout.

There may also be seen the upstanding flange 19, which merges with the body portion and is located on the inner edge of the bracket.

Glancing at the body portion 17, it will be seen that its end 20 is reduced and, in the same manner, the flange 19 follows this reduced end from the point 21 to the point 22, so that the front flange 18 and the oppositely located flange 19 are but slightly spaced from each other at the point 23. There is also shown a projecting wing or end 24 provided with a hole 25, as this end is to be riveted to the Z-bar 4, as at 26 (see Fig. 2). In a like manner, the opposite end of the bracket, that is, the body, is cut sharply, as at 27, and the flange 19 follows the cut portion, as may be seen at 28, and after extending forwardly extends outwardly to form the wing 29 with a small aperture 30.

This bracket is then laid over the horizontal portion 8 of the Z-bar 4 and will also similarly fit the end top rail of the Z-bar 10, and the body portion 17 of the bracket will lie flush and be supported on the horizontal portions of the Z-bar. The wing 29 will be riveted, as at 31, to the upstanding leg of the Z-bar 10 in a manner similar to the manner the wing 24 is fastened to the upstanding leg 7 of the Z-bar side rail. This bracket may be riveted to the Z-bar, as at 32, as small holes are provided in the body of the bracket, as may be seen in Fig. 5, and the grab iron 13 with its outstanding feet 33 will also be riveted on the body 17 of the bracket and the rivets, of course, passing down the horizontal portion 8 of the Z-bar. In a like manner, a similar grab iron 34 will be fastened on the other leg of the bracket, as may be readily seen and understood.

It will be noticed that this bracket, therefore, is securely riveted to the top side rail

and the end top rail and extends over the corner post and ties the two top rails tightly together. Furthermore, the rear upstanding flange 19 will prevent the coal from spilling out over the corners, that is, at a level normal with the normal plane of the side and end top rails. Again, the bracket is of such width that the upstanding flange 19 is far enough back of the grab iron so that it will not in any way interfere with the hands of the brakeman climbing up the side of the car.

The small outer downwardly extending flange 18 covers the cut edge of the Z-bar, as may be clearly seen in Fig. 3, and the rear flange extends in a plane parallel with the top of the top leg of the end and side Z-bars.

From the foregoing, it will be seen that I have designed a special form of top rail bracket that may be either stamped or cast and, therefore, may be made in an economical manner, and furthermore may be quickly applied or riveted in position with but a minimum amount of labor.

Finally, it will be seen that it will prevent any coal from flowing out of these otherwise reduced corners and, at the same time, permits the grab iron to be quickly and readily placed in position and come within the limits set out by the Master Car Builders Association.

Many slight changes might be made without in any way departing from the spirit and scope of the invention.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A freight car having end side sheets sloping from the normal sides of the car to the corner post, end top rails and side top rails formed of Z-bars and the end top rails and side top rails terminating short of one another, the upper legs of the said Z-bar rails being cut away near their adjacent ends, a bracket for the respective corners resting on the said Z-bar rails, and an upwardly extending flange on each bracket adapted to be secured to the upper legs of the respective adjacent Z-bar top rails.

2. A freight car having end side sheets, end sheets, and corner posts, Z-bar top side rails and Z-bar top end rails, the top leg of the respective Z-bars being cut away, corner brackets respectively secured to the end and side rails and extending between the cut-out portions of the top legs thereof, each of said brackets having a flange along its inner edge and extending outwardly near its opposite ends and secured to the said Z-bars.

3. A freight car having inwardly tapering side sheets, top side rails and top end rails, the said top side rails terminating short of the top end rails, the said rails being in the form of Z-bars and having their upper legs cut away near their respective ends, corner brackets riveted to the said rails over the re-

spective ends thereof and each of the said corner brackets having a flange on its inner edge and the said flange extending angularly at the opposite ends of the bracket and then parallel with the upper legs of the respective Z-bars and adapted to be riveted thereto to thereby form a continuous flange level with the upper portions of the said respective Z-bars.

4. A freight car having top side rails and top end rails formed of Z-bars and the upper legs of the said Z-bars being cut away near their ends, a bracket lying on the horizontal portions of the adjacent Z-bars, said bracket having an upwardly extending flange and the end of said flange riveted to the upper legs of the said Z-bars directly beyond the said cut-away portion thereof.

5. A freight car having top side rails and top end rails formed of Z-bars, the upper legs of the said Z-bars being cut away at their ends, brackets secured on the horizontal portions of the adjacent Z-bars, said brackets each having an upwardly extending flange along its inner edge and the ends of the said flanges being offset and riveted to the said Z-bars, and a grab iron mounted on said brackets and outwardly of the said inner upper flanges.

6. A top rail corner bracket for freight cars having arms merging at an angle, a downwardly extending marginal flange on the outer edge of the bracket and an upwardly extending flange on the inner edge of the bracket and the said inner flange extending across the bracket at its respective ends and adapted to be secured to the top rails of a freight car.

7. A top rail corner bracket for freight cars having arms merging at an angle, an upwardly extending flange starting near the outer edge of one end of the bracket and then extending rearwardly and following the inner edge of the bracket and then outwardly to near the outer edge at the other end of the bracket, and the said ends of the flange adapted to be secured to the top rails of a freight car.

8. A corner bracket for freight cars comprising a body portion adapted to rest on the end portions of the top rails of a freight car, a downwardly extending outer marginal flange, an upwardly extending marginal flange formed along the inner edge of the bracket and offset at its opposite ends and adapted to be secured to the top rails of the car.

9. A top rail corner bracket for freight cars comprising two arms merging at an angle to each other, a marginal downwardly extending flange along the outer edge of the bracket and a marginal upwardly extending flange along the inner edge of the bracket, said flange extending outwardly at its opposite ends toward the downwardly extending flange, and the ends of said flange being in

the form of wings adapted to be secured to the top rails of the car.

10. A top rail corner bracket for freight cars having arms merging at an angle to each other, said arms having angularly-shaped ends, an upwardly extending flange extending completely about the inner edge of the bracket and following the angularly-shaped ends.

11. A top rail corner bracket for freight cars having arms merging at an angle, a downwardly extending marginal flange along the outer edge of the bracket, an upwardly extending flange on the inner edge of the bracket, the inner marginal flange being offset near its opposite ends and terminating in wings, and said wings adapted to be secured to the top rails of a freight car.

In testimony whereof I affix my signature.
WILLIAM E. WINE.

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