

H. T. ANDERSON.
CROSSTIE OR STIFFENER FOR STEEL CARS.
APPLICATION FILED SEPT. 27 1919.

1,365,216.

Patented Jan. 11, 1921.

2 SHEETS—SHEET 1.

FIG. 1

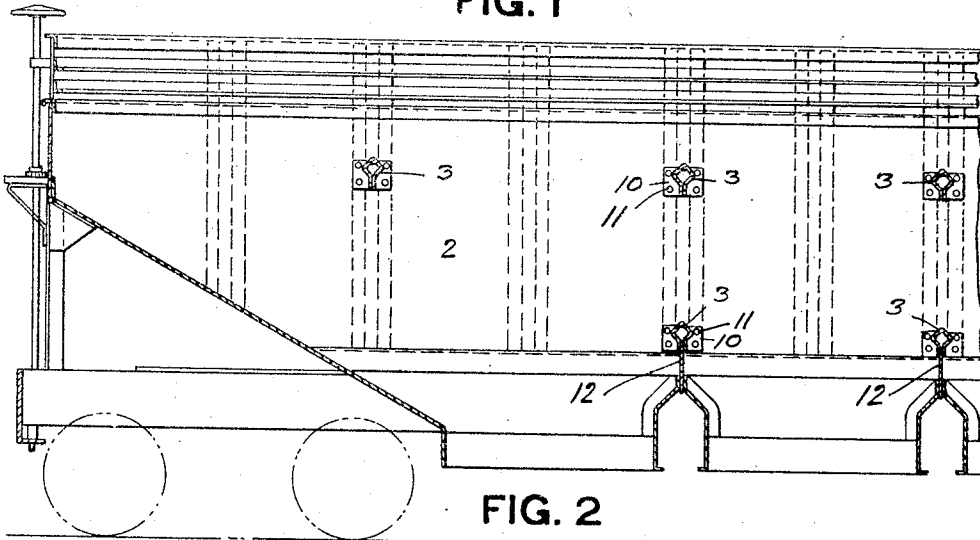


FIG. 2

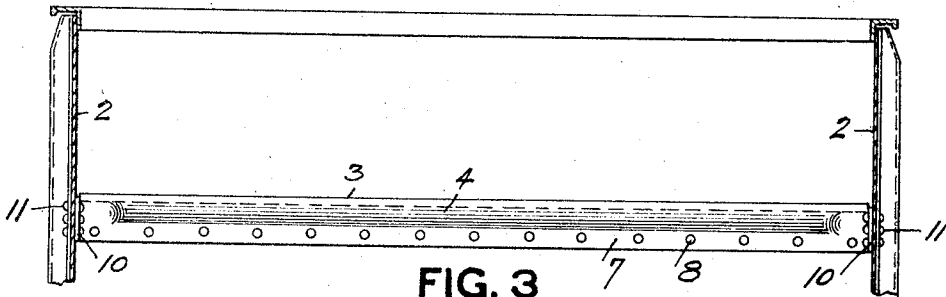
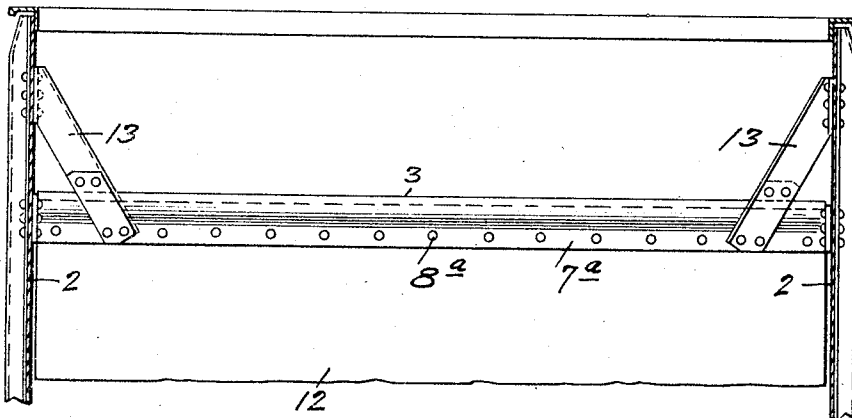


FIG. 3



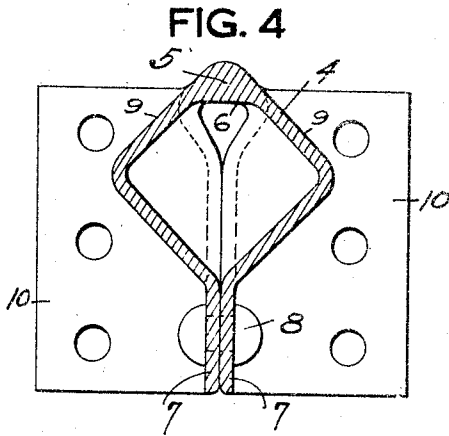
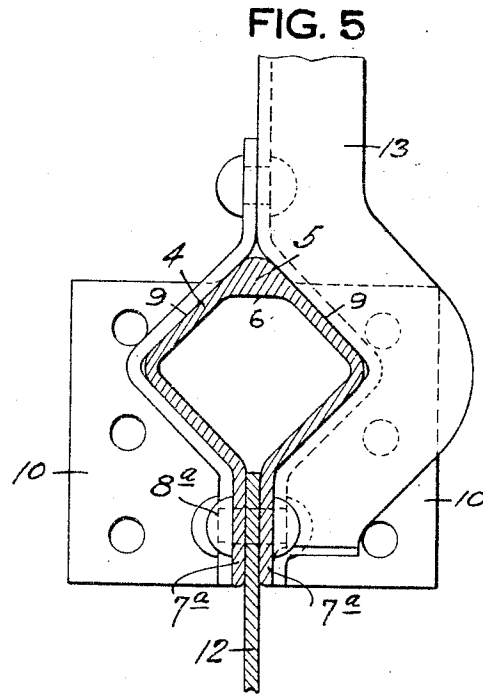
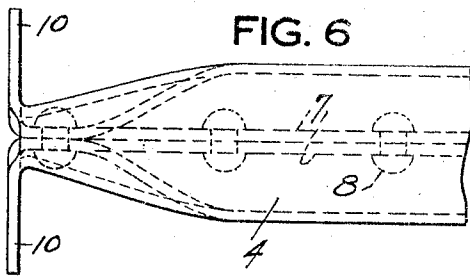
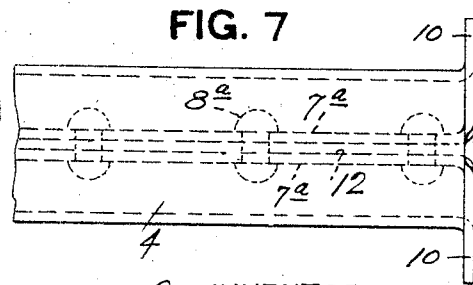
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H. T. ANDERSON.
CROSSTIE OR STIFFENER FOR STEEL CARS.
APPLICATION FILED SEPT. 2, 1919.

1,365,216.

Patented Jan. 11, 1921.

2 SHEETS—SHEET 2.



INVENTOR
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UNITED STATES PATENT OFFICE.

HARRY T. ANDERSON, OF BUTLER, PENNSYLVANIA, ASSIGNOR TO THE STANDARD STEEL CAR CO., OF PITTSBURGH, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

CROSSTIE OR STIFFENER FOR STEEL CARS.

1,365,216.

Specification of Letters Patent. Patented Jan. 11, 1921.

Application filed September 2, 1919. Serial No. 321,197.

To all whom it may concern:

Be it known that I, HARRY T. ANDERSON, a citizen of the United States, and a resident of Butler, in the county of Butler and State of Pennsylvania, have invented a new and useful Improvement in Crossties or Stiffeners for Steel Cars; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to steel car construction, and more particularly to the cross-ties and cross-ridge supports for hopper and other high-side open cars.

In cars of this character, it is necessary to have cross-ties extending from one side to the other within the car to tie and brace the sides, so as to prevent bulging of the same. Furthermore, in hopper cars, cross-ridge sheets are required and the upper edges of these sheets have to be stiffened or supported so as to resist the dropping loads. This is likewise true of the cross-ties, for where these cars are loaded with ore, coal, or other material, the material is dropped into the car from the loading buckets and these cross-ties and cross-ridge sheets are subjected to very severe blows and bending stresses.

The object of my invention is to provide a very strong and durable construction which will present greater resistance to the dropping loads, and with certain other advantages all fully hereinafter set forth.

In the accompanying drawings, Figure 1 is a portion of an ordinary hopper car partly in section showing my invention applied thereto; Fig. 2 is cross-section of a portion of an open-top car showing my improved cross-tie; Fig. 3 is a like view showing the cross-ridge sheet of a hopper car with my invention applied thereto; Fig. 4 is an enlarged cross-section of a cross-tie; Fig. 5 is an enlarged cross-section of the cross-ridge sheet with my invention applied thereto; Fig. 6 is a plan view of the construction illustrated in Fig. 4; and Fig. 7 is a plan view of a portion of the construction shown in Fig. 5.

In the drawing, the numeral 2 designates the side plates of a hopper or any kind of high-side open-top car, and 3 the cross-ties extending between said sides.

The cross-tie as exemplified in Fig. 4 is

made up of the angle-bar 4, and for this purpose, I prefer to employ an angle-bar such as set forth and claimed in an application filed by me of even date herewith, Serial No. 321,198.

This angle-bar is rolled with a heavy fillet or reinforcement 5 at the vertex of the angle, said fillet or enlargement having the straight face 6. The angle is bent preferably in the form of a square tube with the downwardly extending flanges 7 which are connected by the rivets 8. By bending the angle into this form, the reinforcement 5 is at the vertex and the sides 9 sloping therefrom shed the material which is loaded into the car, and the reinforcement at the vertex offers greater resistance to the dropping loads, and the cross-ties are so stiffened as to resist without bending these falling loads. I do not wish to limit my invention to the square form as it may be bent round.

Furthermore, by having the cross-tie formed of one piece there is no opportunity for water to get between the separate plates as in the old construction, which sets up corrosion and the consequent weakening of the structure.

The ends of the angle are bent outwardly to form the flanges 10 through which the rivets 11 pass which connect the cross-tie to the sides 2 of the car.

As shown in Fig. 6, the cross-ties are compressed or tapered at their ends so as to give more room for the riveting operation.

In Fig. 5 I have shown my invention as applied to the cross-ridge sheet 12 where the angle is bent around in the same manner as in connection with the cross-tie, the flanges 7^a inclosing the sheet 12 and secured thereto by the rivets 8^a. In this case the taper at the ends of the cross-member is omitted.

The cross-member in this connection acts as a stiffener or support for the cross-ridge sheet, and, to further brace the same, braces 13 may be employed.

By my invention I provide a cross-tie made of a single piece of metal thereby dispensing with the extra rivets, as distinguished from the cross-tie heretofore made up of two parts. This reduction in the rivets not only decreases the cost of the material, but also labor cost of riveting. Fur-

thermore, there are no joints for the entrance of water to set up corrosion and consequent weakening of the structure.

What I claim is:

- 5 1. A cross-tie or stiffener for railway cars formed of a single piece of metal bent to form a square tube with downwardly projecting flanges secured together, and reinforced on the inside at the vertex.
- 10 2. A cross-tie or stiffener for railway cars

formed of an angle-bar reinforced on the inside at its vertex, bent to form a square tube with downwardly projecting flanges secured together.

In testimony whereof I, the said HARRY 15
T. ANDERSON, have hereunto set my hand.

HARRY T. ANDERSON.

Witnesses:

A. B. JOHNSON,

A. H. WILLS.