

1,093,652.

Patented Apr. 21, 1914.

2 SHEETS—SHEET 1.

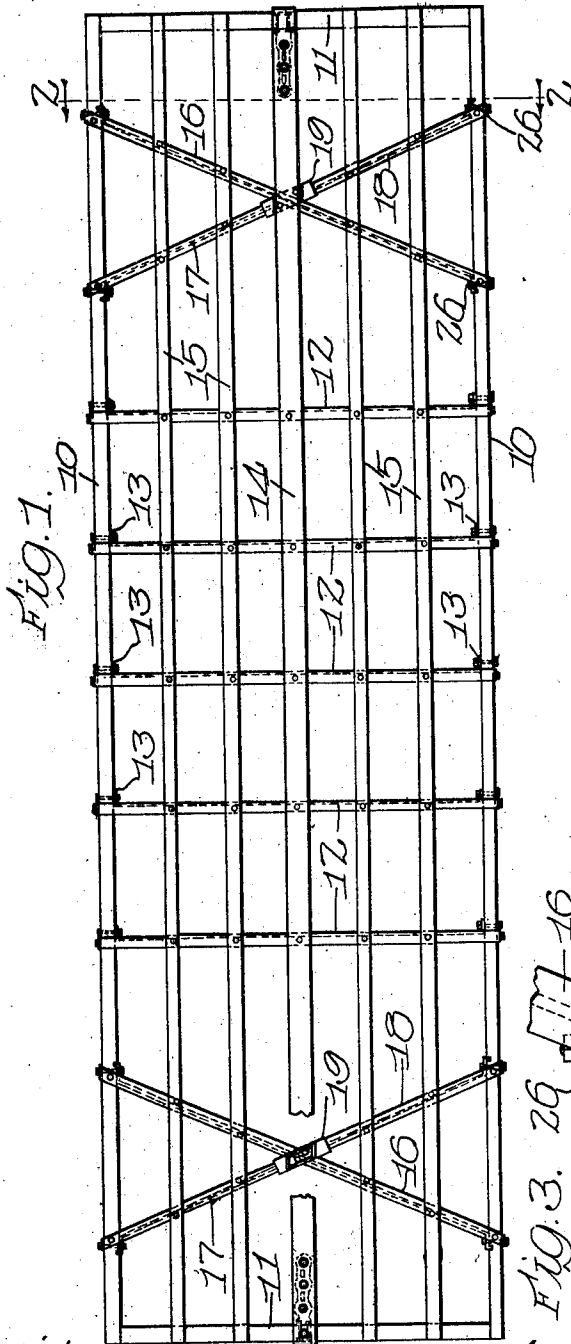


Fig. 2.

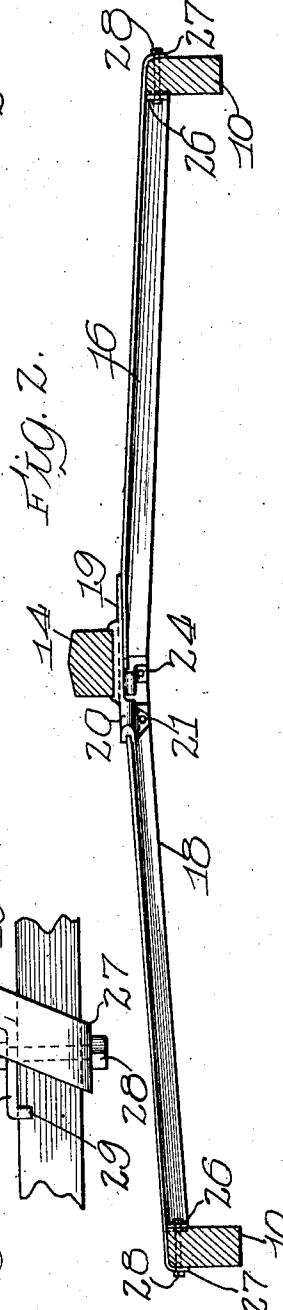
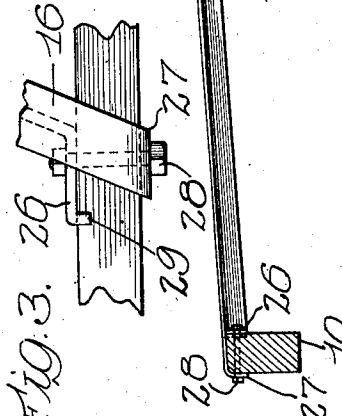


Fig. 3.



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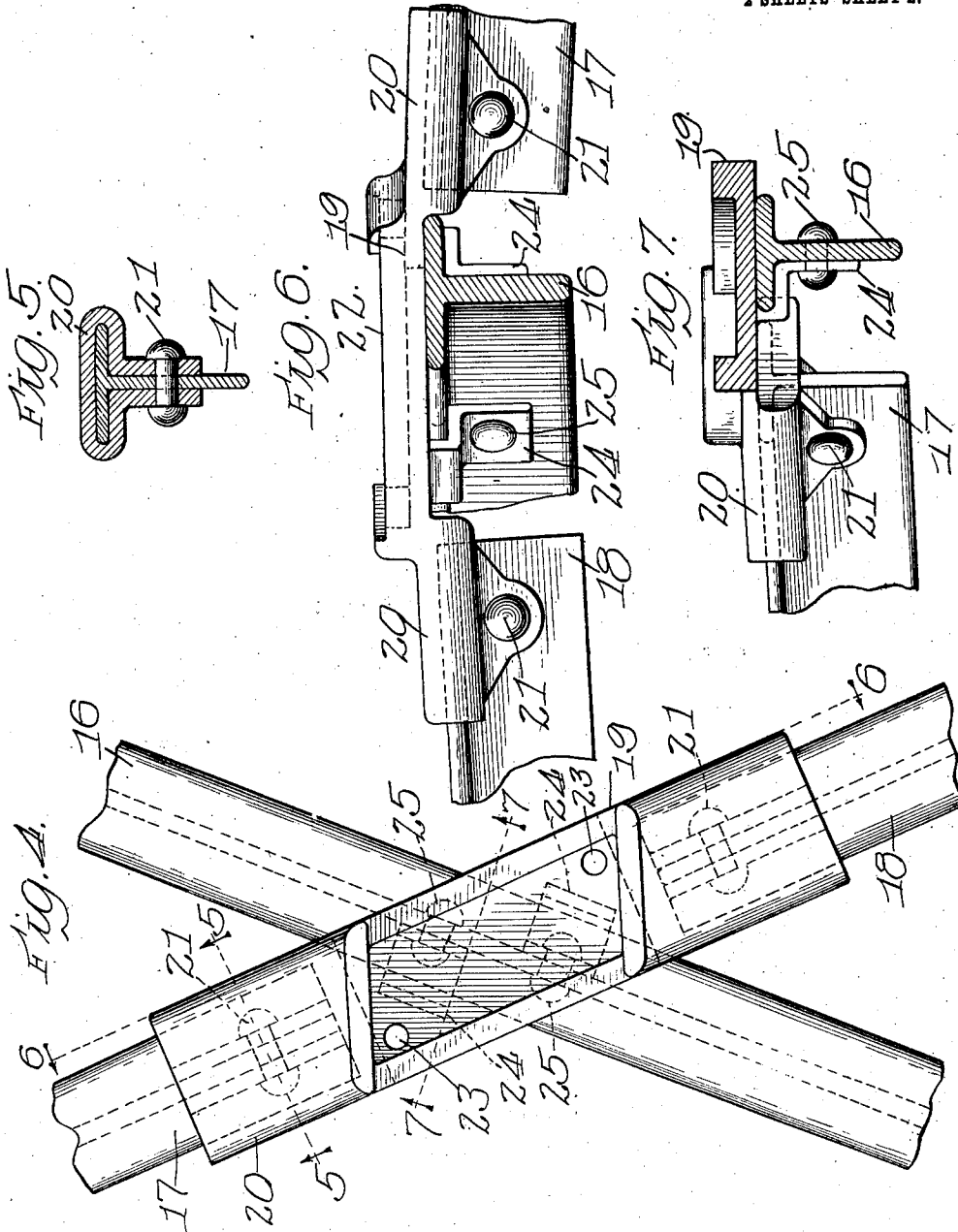
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CARLINE.
APPLICATION FILED SEPT. 5, 1912.

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2 SHEETS—SHEET 2.

1,093,652.



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UNITED STATES PATENT OFFICE.

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CARLINE.

1,093,652.

Specification of Letters Patent.

Patented Apr. 21, 1914.

Application filed September 5, 1912. Serial No. 718,654.

To all whom it may concern:

Be it known that I, THOMAS N. RUSSELL, a citizen of the United States, residing at Chicago, in the county of Cook, in the State of Illinois, have invented certain new and useful Improvements in Carlines, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to a new and improved construction of carline, the leading object of which is to add greatly to the strength of a car-roof to enable it to better withstand the racking strains to which such structures are commonly subjected. Briefly, I attain this end by making my improved carline in the form of a compound structure composed essentially of a diagonally-arranged member extending from side to side of the car, two other and shorter members in alinement with each other each extending from the central portion of the first-named member toward one side of the car and united at their inner ends by a bridge piece that extends over the said longer member—the structure as a whole being X-shaped.

The particular construction and arrangement of the parts are hereinafter described. That which I believe to be new will be set forth in the claims.

In the drawings,—Figure 1 is a top or plan view of the roof-supporting frame of a car embodying my improvements; Fig. 2 is a section through the side plates and ridge-pole of the car, taken at line 2—2 of Fig. 1, the purlins shown in said Fig. 1 being omitted; Fig. 3 is a detail being a plan view of an end of one of the diagonal members of the compound carline and illustrating the means employed for fastening such end in place; Fig. 4 is an enlarged plan view of the central portion of my compound carline; Fig. 5 is a cross-section at line 5—5 of Fig. 4; Fig. 6 is a cross-section at line 6—6 of Fig. 4; and Fig. 7 is a cross-section at line 7—7 of Fig. 4.

Referring to the several figures of the drawings in which corresponding parts are indicated by like reference numerals—10 indicates the side plates, and 11 the end plates of an ordinary freight-car framing. 12 indicates carlines which may be of any ordinary construction. As here shown they are each formed of a strip of angle-iron, the ver-

tical portion of which is, near each end, cut away from the horizontal part and bent to form tongues 13 that lie against the inner faces of the side plates 10 to which they are made fast by bolts, as shown,—the horizontal portions being continued over the said plates 10 and having their ends turned down and secured by still other bolts, as shown. 14 indicates the ridge-pole of the car-roof and 15 the purlins. These parts may be of any desired construction.

16 indicates one member of my improved compound carline and as shown, it consists of a T-shaped rail extending diagonally from side to side of the car. 17 and 18 indicate two other members of this compound carline, each consisting of a metal strip of the same cross-sectional appearance as the member 16. The members 17 and 18 are each approximately half the length of the member 16 and are arranged on opposite sides of the member 16 and so arranged with respect to said member 16 as to together make an X-shaped structure, the ends of which at each side of the car will occupy substantially the same positions on the plates 10 as would the ends of two ordinary carlines, such as 12. In other words this compound carline is intended to displace or take the place of two ordinary carlines arranged as are the carlines 12, but by reason of the bracing arrangement of the parts this compound structure prevents the roof from being injuriously affected by strains and shocks to a much greater extent than such old-style carlines.

It is necessary of course that the inner ends of the short members 17 and 18 be united, and for this purpose I provide a device that not only serves that end but serves also as a support for the ridgepole and as a means for locking the three members 16, 17 and 18 together. This device that permits all these ends to be attained I shall designate a bridge and it is indicated by the numeral 19. As shown best in Fig. 5 its end portions 20 are formed to fit snugly around the head and vertical web of the respective members 17 and 18, being secured to those members by suitable rivets 21 as shown. The central portion of the bridge 19 lies over and rests upon the diagonal member 16, and in its upper face is formed a shallow re-

cess 22 that provides a seat for the ridge-pole 14, the ridge-pole being adapted to be bolted in place by bolts passing through bolt-holes 23 arranged near opposite sides 5 and near the ends of the said recess or seat. Depending from the under face of the bridge 19, and preferably formed integral therewith are two heavy brackets 24 so arranged as to fit snugly against opposite sides 10 of the vertical web of the member 16 to which web they are to be secured by rivets 25 or otherwise. By thus connecting the inner ends of the two short members 17—18 by a bridge and securing such bridge to the 15 long member 16, as just described, a compound carline structure is produced having great rigidity and which when applied, one at each end of a car as shown in Fig. 1, will very strongly resist any tendency of the 20 roof as a whole to weaken under shock or strain. The diagonal arrangement of the members of my improved carline also lends itself to securing it in a firm manner to the side plates 10 by the use of but a single bolt 25 at each end of each member. As shown best in Fig. 3 the vertical and horizontal webs of the members 16—17—18 are separated at their outer ends to permit the vertical webs to be turned to form wings 26 that lie 30 against the inner faces of the plates 10 and the horizontal parts of the said members are extended over the upper faces of said plates and then turned to form flanges 27 that bear against the outer faces thereof. On account of the diagonal arrangement of the 35 members of the carline each flange 27 is brought in front of the adjacent wing 26 sufficiently to permit a single securing bolt 28 to be passed through the said flange and wing and the plate 10. Where a carline extends across the car parallel to the ends of the car, as in the case of the carlines 12 for example, the wing that is turned out from the vertical web will lie to one side of the 40 end flange and hence a single bolt cannot well be employed for securing both the wing and the flange to the plate. As an additional fastening means for the ends of the carline members, I turn the wings 26 at their outer ends to form on each a narrow 45 vertical flange 29 that is adapted to enter a correspondingly-shaped groove formed in the inner face of the plate 10.

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

1. A carline comprising a long member extending transversely across a car roof and having its ends secured to the side plates thereof, alined short members arranged at angles to the long member and on the opposite sides thereof and having their inner ends adjacent to said long member, and a bridge secured diagonally across the long member connecting the inner ends of the short members together, said bridge having 60 a seat arranged diagonally therein for the reception of the ridge pole of said car roof to hold the same from lateral displacement.

2. A carline comprising a relatively long member extending transversely across a car roof and having its ends secured to the side plates thereof, a pair of relatively short members arranged at angles to said long member and having their inner ends adjacent to the central portion of said long 75 member, and uniting means for securing the inner ends of the short members to the long member and constituting a support for the ridge pole of said car roof.

3. A compound carline comprising in combination, two members in alinement and spaced apart, a third member located between said two members, each of said three members being formed of a bar section having a horizontal web and a vertical web, a 85 bridge extending over the horizontal web of said third member and having end portions adapted to fit over the horizontal webs of the two alined members, and means for securing said bridge to the vertical webs of 90 all three of said members.

4. A metal carline formed of a strip having a horizontal and a vertical web which are separated near one end and the vertical web turned to form a wing with a narrow 95 outwardly-extending flange at its end and the end of the horizontal web having a downwardly-extending flange, whereby a side plate of a car can be secured between said wing and last-named flange with the 100 said narrow flange of the wing engaged in a groove in such side plate.

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