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CAR ROOF.

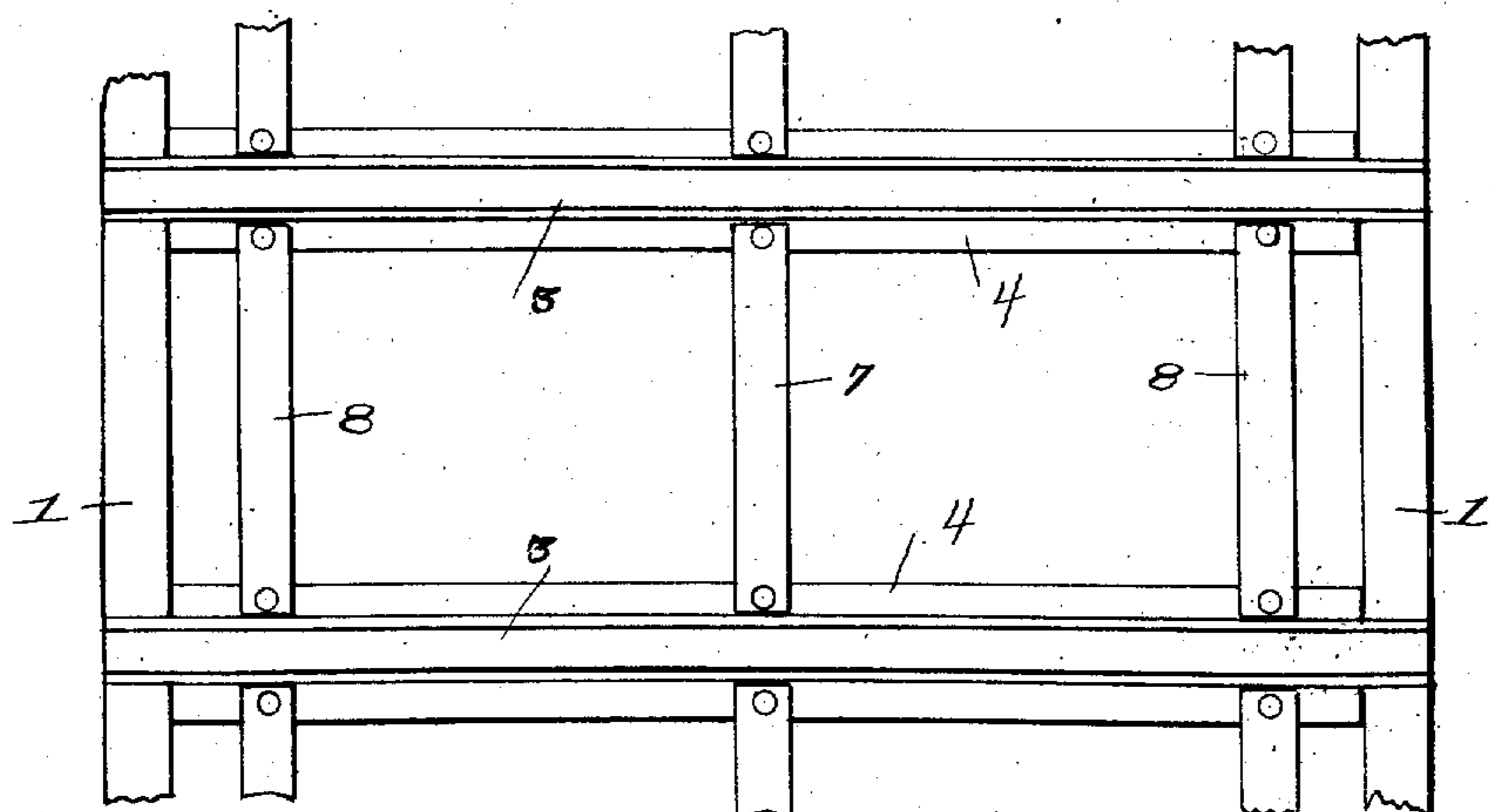
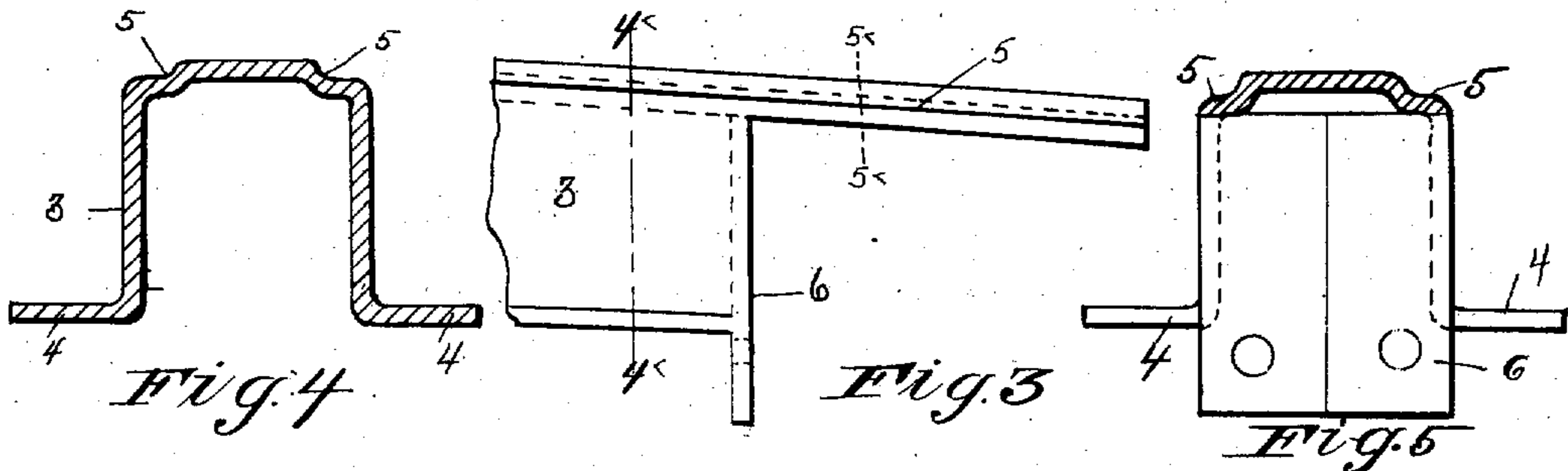
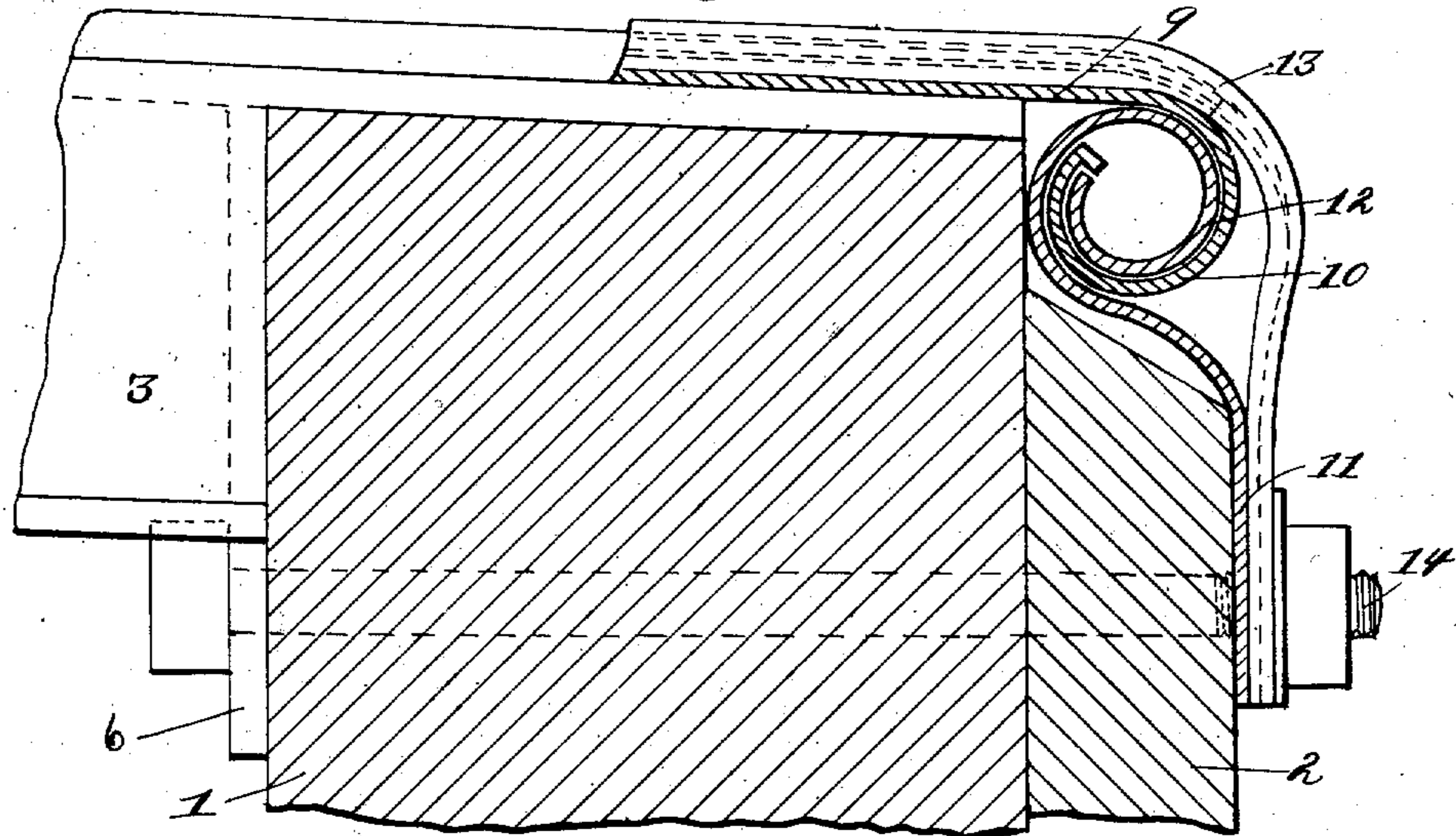
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2 SHEETS—SHEET 1.

Fig. 1



Witnesses.
Robert M. See
Geo. F. O'Brien

Fig. 6

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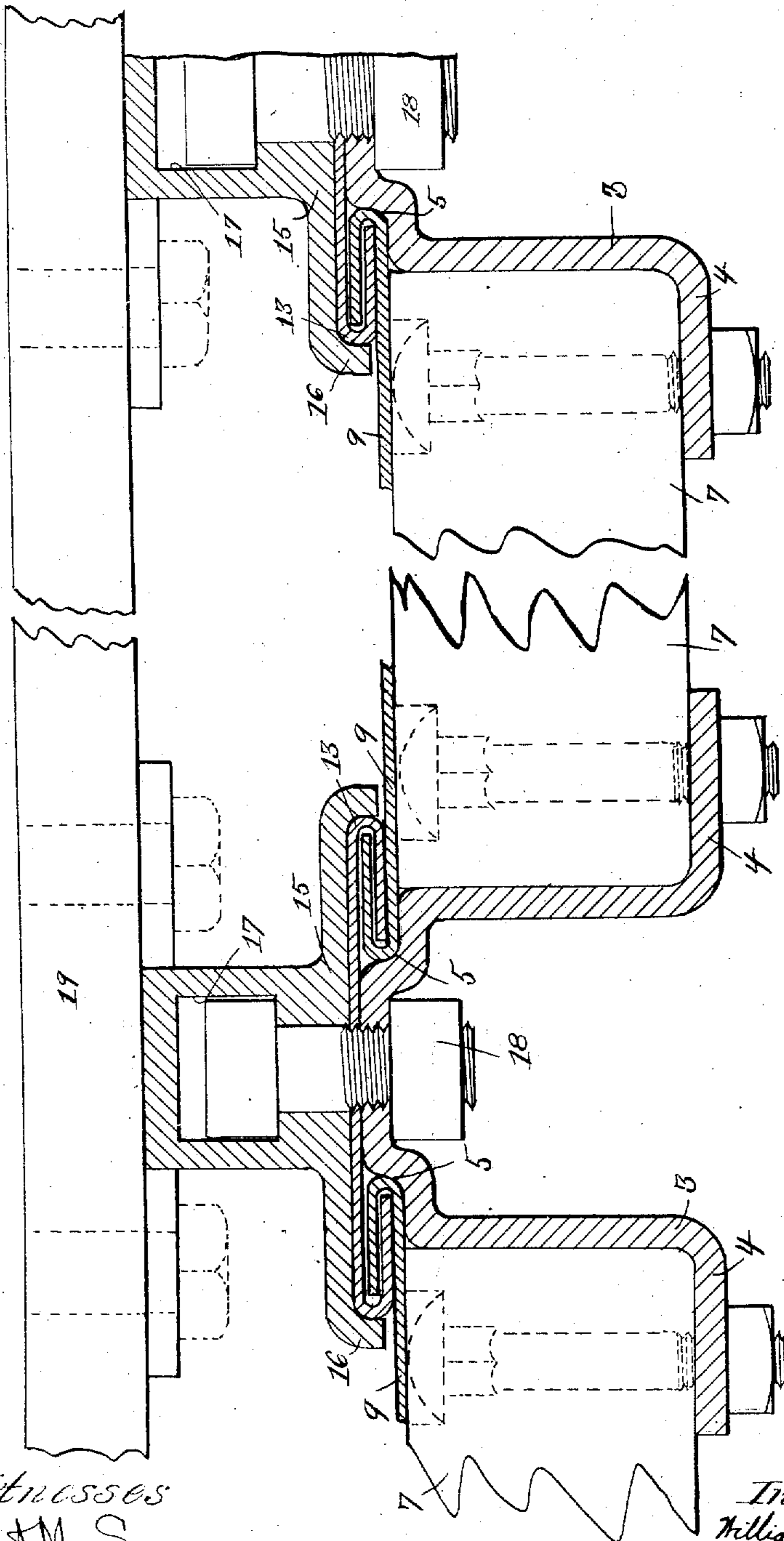
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2 SHEETS-SHEET 2.

Fig. 2



Witnesses
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UNITED STATES PATENT OFFICE

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CAR-ROOF.

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To all whom it may concern:

Be it known that we, WILLIAM J. OWEN, WILLIAM T. WESTALL, and WILLIAM WALLACE, all citizens of the United States, and residents of Collinwood, county of Cuyahoga, and State of Ohio, and of Cleveland, county of Cuyahoga, and State of Ohio, and of East Cleveland, county of Cuyahoga, and State of Ohio, respectively, have jointly invented a new and useful Improvement in Car-Roofs, of which the following is a specification, the principle of the invention being herein explained and the best mode in which we have contemplated applying that principle, so as to distinguish it from other inventions.

Our invention relates to a system of construction of roofs for railroad freight cars, and is particularly adaptable to box freight cars. In cars of this type, the roof members are usually rigidly nailed or screwed to the side plates; the constant vibration and strains to which these members are subjected cause them to break off along the edges of the car, entailing an enormous repair expense. Furthermore, the roof frame of these cars is generally composed of longitudinal members extending from one end of the car to the other which are tied together by comparatively few transverse members. Such a frame possesses neither sufficient strength, nor does it properly support the roof proper.

The general objects of the present invention are to avoid the defects mentioned and to improve the general construction of car roofs in other details which will appear in the specification.

To the accomplishment of these and related ends, said invention, then, consists of the means hereinafter fully described and particularly pointed out in the claims.

The annexed drawings and the following description set forth in detail certain mechanism embodying the invention, such disclosed means constituting, however, but one

of the various mechanical forms in which the principle of the invention may be used.

In said annexed drawings:—Figure 1 is a broken section on a vertical plane transversely of the car body; Fig. 2 is a broken vertical section taken on a longitudinal plane at the center of the car; Fig. 3 is a broken side elevation of a carline; Fig. 4 is a section on the line 4—4 in Fig. 3; Fig. 5 is a section on the line 5—5 in Fig. 3; and Fig. 6 is a broken plan of the roof frame.

Our construction embodies first the side plates 1 which extend longitudinally of the car and are supported by the usual posts, while outside of the side plates is secured the usual side sheathing 2.

The carlines which are employed in our construction are of a peculiar form and constitute part of the present invention. As shown in Figs. 3, 4 and 5, each carline 3 is of inverted U-shape, and at its bottom is formed with horizontal flanges 4 which extend outwardly from the U-shape in opposite directions, and on the top surface the carline is formed with oppositely facing shoulders 5. The U-shape portion of the carline does not extend entirely to the ends of the carline, but is blocked by plates 6, while the shouldered upper surface extends outwardly beyond the plates 6, thus forming angled ends of the carline. These carlines are supported by the side plates 1, the plates 6 lying against the inner side of the side plate, and the extensions of the upper surface lying across the top of the side plates. After the carlines are in place they are tied together by a series of ridge poles 7, and purlins 8 which are supported on, and bolted or riveted to, the flanges 4 of the adjacent carlines 3. It is apparent that the frame so constructed consists of the side plates, a plurality of carlines, and short sections of ridge poles and purlins between each two carlines.

After the frame has been constructed as described, the roof members 9 are placed in

position. One roof member is placed between each two carlines. The roof members are doubled back upon themselves along their edges, and these doubled edges fit into the shoulders 5 on the carlines as is clearly disclosed in Fig. 2, and at their ends, that is, at the sides of the car, the roof members are formed with a roll 10. A fascia 11 which is formed at its top with a roll 12 is slid along the side of the car so that the roll 12 fits within the roll 10 of the various roof members so that the fascia is securely interlocked with the several roof members.

We provide roof caps 13 which have their edges doubled under as is disclosed in Fig. 2, these roof caps having a length a trifle over half the width of the car. They are placed in such position that their doubled under edges interlock with the doubled over edges of the roof members 9; two roof caps 13 are employed to secure each two roof members together, the two roof caps being put in position from opposite sides of the car and one cap overlapping the other at the center of the car. The fascia 11 and the roof cap 13 extend down at the sides of the car, and a bolt 14 extends through the plate 6 of the carline 3, the side plate 1, the sheathing 2, the fascia 11, and the roof cap 13, and ties them all rigidly together.

A metal bracket 15 extends transversely of the car, one superposed on each roof cap 13, and the brackets are formed with bottoms 16 of such form as to substantially inclose the roof cap. On their under side these brackets are formed with holes 17 which, however, do not extend clear through the bracket, and a bolt 18 having its head disposed in an enlargement of the hole 17, serves to securely tie the bracket and roof cap to the carline. A running board 19 is bolted to the several brackets and extends longitudinally the length of the car.

The advantages of our improved construction may now be noted. In the first place we have provided carlines of such a form that they may be securely attached to the side plates in a much more effective manner than has heretofore been possible. They are furthermore of such construction that a plurality of them may be used in a single car and they may be then tied together by short sections of ridge poles and purlins. A frame so constructed is much more rigid than one in which a long ridge pole and purlins are used. By shouldering the upper surface of the carlines and fitting narrow roof members into the shoulders of adjacent carlines, the carlines enter directly into the construction of the roof proper and give to it greatly increased strength and rigidity. The roof members, instead of being rigidly secured to the side plates as heretofore, are interlocked

at the respective sides of the car with the fasciae which are bolted to the sides of the side plates, and roof caps join together adjacent roof members and serve to make a continuous roof, the caps in turn being bolted to the side plates along with the fasciae. Obviously, in a roof of this construction, the roof is secured to its supporting frame work entirely without the use of bolts. The fasciae, which are bolted to the side plates, are interlocked with the roof members and this interlocking connection allows a small degree of spring in the roof. The continued vibration and strain is taken up in the interlocking connection, and such a thing as the hitherto breaking off of roofs along the edges of the car becomes impossible.

The running board brackets are of such form and are so secured to the top of the car as to make it impossible for water or other substances to get into the bolt hole and hence into the interior of the car. These brackets which support the running board are in this way made to perform a very useful function in the roof construction.

Other modes of applying the principle of our invention may be employed instead of the one explained, change being made as regards the mechanism herein disclosed, provided the means stated by any one of the following claims or the equivalent of such stated means be employed.

We therefore particularly point out and distinctly claim as our invention:—

1. In a car, the combination of a fixedly secured fascia formed with an open coil, and a roof member coiled at its outer edge and extending within the coil of the fascia.

2. In a car, the combination with the side plate, of a fascia secured to the side thereof and formed with an open coil, and a roof member coiled at its outer edge and extending within the coil of the fascia.

3. In a car, the combination with the side plate, of a fascia secured to the side thereof and formed with an open coil, and a plurality of roof members coiled at their edges and extending within the coil of said fascia.

4. In a car, the combination with the side plate, of a fascia secured to the side thereof and formed with an open coil, a plurality of roof members coiled at their edges and extending within the coil of said fascia, said members being rebent along their lateral edges, and a roof-cap engaging the lateral edges of adjacent roof members and secured to the side of said plate.

5. A carline of inverted U-shape provided with parallel, oppositely facing shoulders on its upper surface.

6. A carline of inverted U-shape provided with parallel, oppositely facing shoulders on

its upper surface, and with flanges at its bottom extending outwardly in opposite directions.

5 7. A carline of inverted U-shape provided with parallel, oppositely facing shoulders on its upper surface, and with flanges at its bottom extending outwardly in opposite directions, and vertically disposed plates provided at the respective ends of the inverted

U-shape portion, the shouldered upper surface extending outwardly beyond said plates. 10

Signed by us, this 4th day of June, 1910.

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Attested by—

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."