

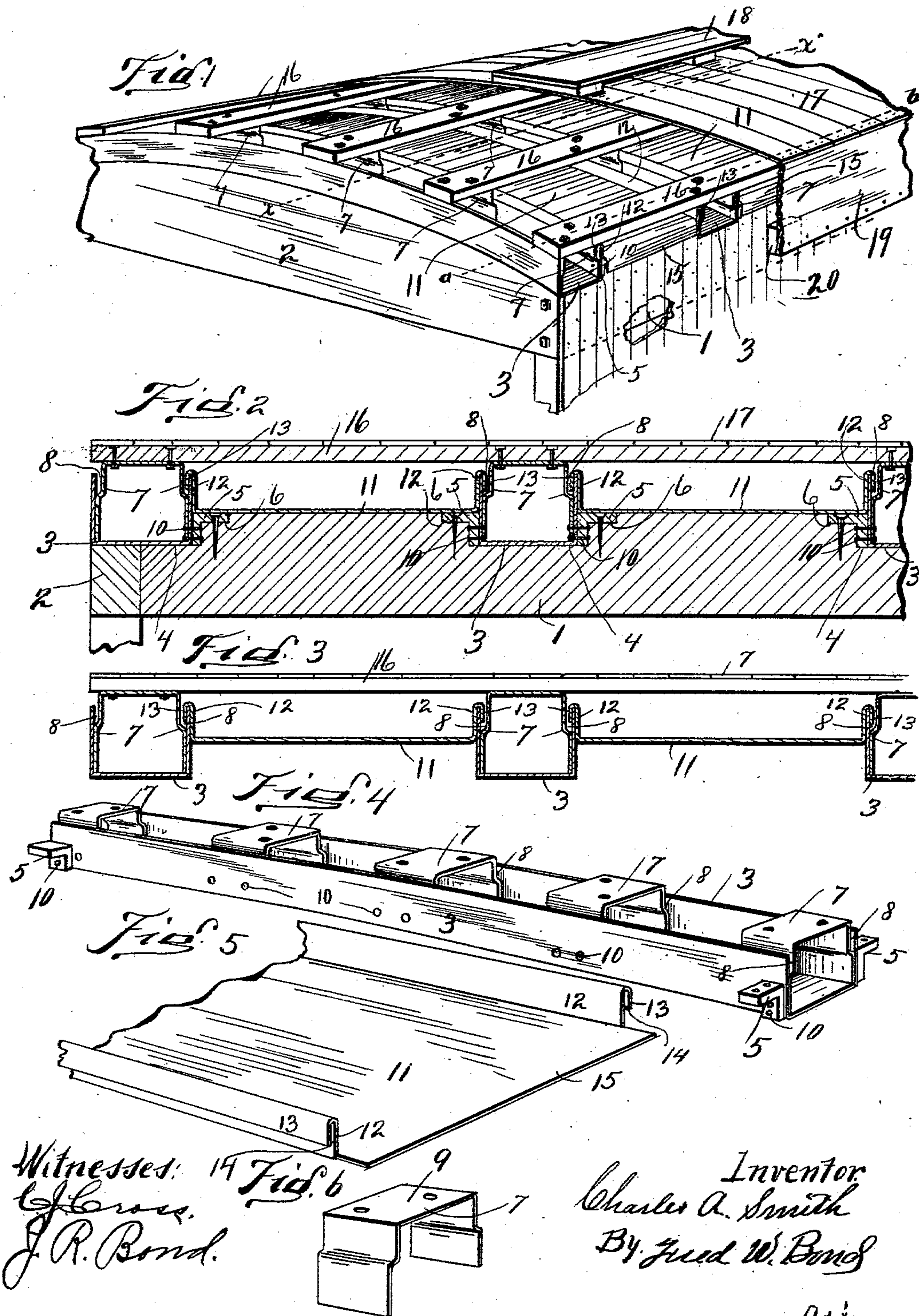
No. 629,877.

Patented Aug. 1, 1899.

C. A. SMITH.
RAILWAY CAR ROOF.

(Application filed Mar. 11, 1899.)

(No Model.)



Witnesses:
J. R. Bond.

Inventor
Charles A. Smith
By Fred W. Bond
Atty.

UNITED STATES PATENT OFFICE.

CHARLES A. SMITH, OF NEW PHILADELPHIA, OHIO.

RAILWAY-CAR ROOF.

SPECIFICATION forming part of Letters Patent No. 629,877, dated August 1, 1899.

Application filed March 11, 1899. Serial No. 708,638. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. SMITH, a citizen of the United States, residing at New Philadelphia, in the county of Tuscarawas and State of Ohio, have invented certain new and useful Improvements in Railroad-Car Roofs; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the figures of reference marked thereon, in which—

Figure 1 is a perspective view showing a portion of a car and illustrating a portion of the upper roof removed and showing parts broken away. Fig. 2 is a section through line *ab*, Fig. 1. Fig. 3 is a section through line *xx*, Fig. 1. Fig. 4 is a detached view of one of the carlines. Fig. 5 is a view showing a portion of one of the roofing-sheets. Fig. 6 is a detached view of one of the combined carline-braces and purlin-supports.

The present invention has relation to railroad-car roofs; and it consists in the different parts and combination of parts hereinafter described, and particularly pointed out in the claim.

Similar numerals indicate corresponding parts in all the figures of the drawings.

In the accompanying drawings, 1 represents the side beams and 2 the end beams, which beams are connected together and to the frame of the car in the usual manner and are of the usual construction, reference being had to connecting and attaching any improvements.

The carlines 3 are substantially of the form shown in the drawings, and are preferably made of sheet metal bent or stamped to form channel-bars, and are of a length corresponding substantially to the width of the car designed to be constructed.

For the purpose of providing a roof that will conduct the water to the sides of the car the carlines 3 should be arched, as shown in the drawings; but to carry out the object just above described it is not absolutely necessary that they have the exact form shown in the drawings, except that they should be channel-bars.

The beams 1 are provided with the notches or recesses 4, which notches or recesses are for

the purpose of receiving and holding the ends of the carlines 3 in proper relative position, and for the purpose of securely holding the carlines the ends of said carlines are provided with the angled flanges 5, which angled flanges are connected to the carlines, as hereinafter described.

Notches or recesses 6 are cut or formed in the beams 1, which notches or recesses are for the purpose of allowing the horizontal portions of the angled flanges 5 to be seated into said notches, which notches are so formed that the top or upper sides of the angled flanges 5 will come flush with the top or upper sides of the beams 1, as illustrated in Fig. 2.

For the purpose of bracing the carlines and at the same time forming a rigid structure the braces 7 are provided, which braces are formed at their bottom or lower ends of a width to correspond with the distance between the inner faces of the carlines, and the upper portions of said braces are narrowed for the purpose of forming a space, such as 8, between the inner faces of the carlines and the outer faces of the braces 7, said braces 7 being for the purpose hereinafter described. The top or upper parts or portions of the braces 7 are connected together by the plate 9, said plate being formed integral with the braces 7.

For the purpose of properly connecting the angled flanges 5 and the braces 7 to the carlines 3 the bolts or rivets 10 are provided, which bolts or rivets are passed through the angled flanges, the sides of the carlines, and the braces, as illustrated in Fig. 2, thereby securely connecting all of said parts together.

It will be understood that the angled flanges 5 are to be located only at the ends of the carlines; but the braces 7, located between the end braces of the carlines, are to be riveted or bolted to the carlines for the purpose of holding all of said braces in proper relative position.

The roofing-sheets 11 are formed of a length to correspond with the width of the car and are each provided with the upturned flanges 12, which upturned flanges are provided with the bent-over portions 13, said bent-over portions being so formed that spaces or grooves 14 will be formed, which grooves are for the

purpose of receiving the top or upper edges of the carlines 3, as illustrated in Figs. 1, 2, and 3.

The roofing-sheets 11 are placed in position 5 by moving said sheets endwise; but before said sheets are moved endwise it will be understood that the grooved flanges 12 are to be properly located with reference to the flanges of the carlines, and when said sheets are 10 brought into their normal positions the portions 15 of said sheets are bent downward and over the outer sides of the beams 1, by which arrangement the sheets will be held in their proper positions.

15 By forming the top or upper portions of the braces 7 somewhat narrower than the distance between the inner faces of the carlines the sheets 11 can be easily moved endwise and placed in proper position.

20 Another object in forming the carlines so that the sheets can easily be placed in position is to provide a means for removing old sheets and placing new ones in position.

The braces 7 are also for the purpose of 25 providing supports for the purlins 16, which purlins are formed of a length to correspond with the length of the car and are securely bolted or riveted to the upper portion or plate 9 of the braces 7, said point of attachment being directly above the carlines, and 30 should any water find its way through the purlins at the points where they are connected the carlines will conduct the water and drain it to the sides of the car.

35 The purlins 16 are for the purpose of supporting and holding the upper roof 17, which upper roof is constructed in the usual manner and is also provided with the ordinary running-board 18.

40 For the purpose of allowing the water to escape that is conducted from the under roof proper to the sides of the car the facia-boards 19 are set out a short distance from the beam

1 and the sides of the car and blocks 20 provided for the purpose of providing a means for 45 properly attaching the facia-board.

It will be understood that by my peculiar manner of attaching the under roof to a car the sheets 11 are not rigidly connected and that as the car-frame is sprung the sheets are 50 free to come and go or slide upon the carlines without injury to the sheets.

In the construction of car-roofs where the sheets are securely attached to the top of the car they are liable to become sprung or buckled, but by my construction this is overcome by the reason of there being no rigid 55 connection between the sheets and their carlines.

For the purpose of holding the purlins a 60 short distance above the carlines the braces 7 are extended a short distance above said carlines, so that when the purlins are connected to the plates or portions 9 of the braces a short space will be formed between the bot- 65 tom or under sides of the purlins and the upper edges of the carlines; by which arrangement the sheets 11 can be placed in proper position without interfering with the purlins.

Having fully described my invention, what 70 I claim as new, and desire to secure by Letters Patent, is—

The combination of the under roof composed of the sheets 11 provided with grooved flanges, carlines formed of sheet metal and 75 provided with braces, and purlin-supports, and the angled flanges secured to the carlines and to the beams, substantially as and for the purpose specified.

In testimony that I claim the above I have 80 hereunto subscribed my name in the presence of two witnesses.

CHARLES A. SMITH.

Witnesses:

WM. GRAHAM,
H. H. PORTER.