P. H. MURPHY.

CAR ROOF.

APPLICATION FILED SEPT. 23, 1907.

929,236.

Patented July 27, 1909.

3 SHEETS—SHEET 1.

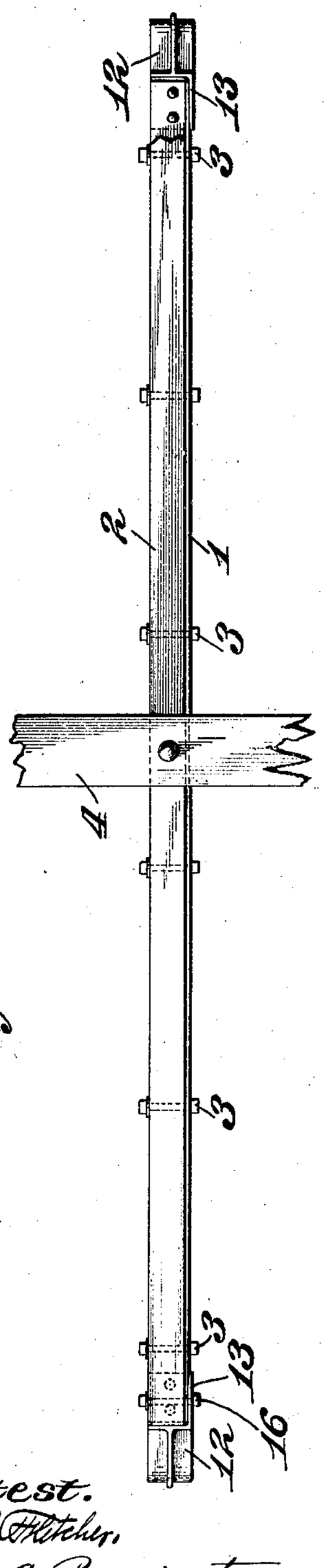

Fig. 1.

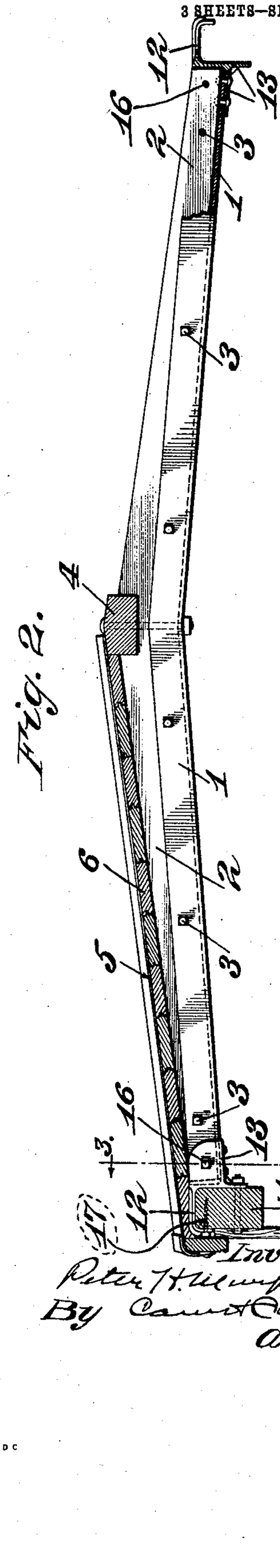

Fig. 2.

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3 SHEETS—SHEET 2.

Fig. 3.

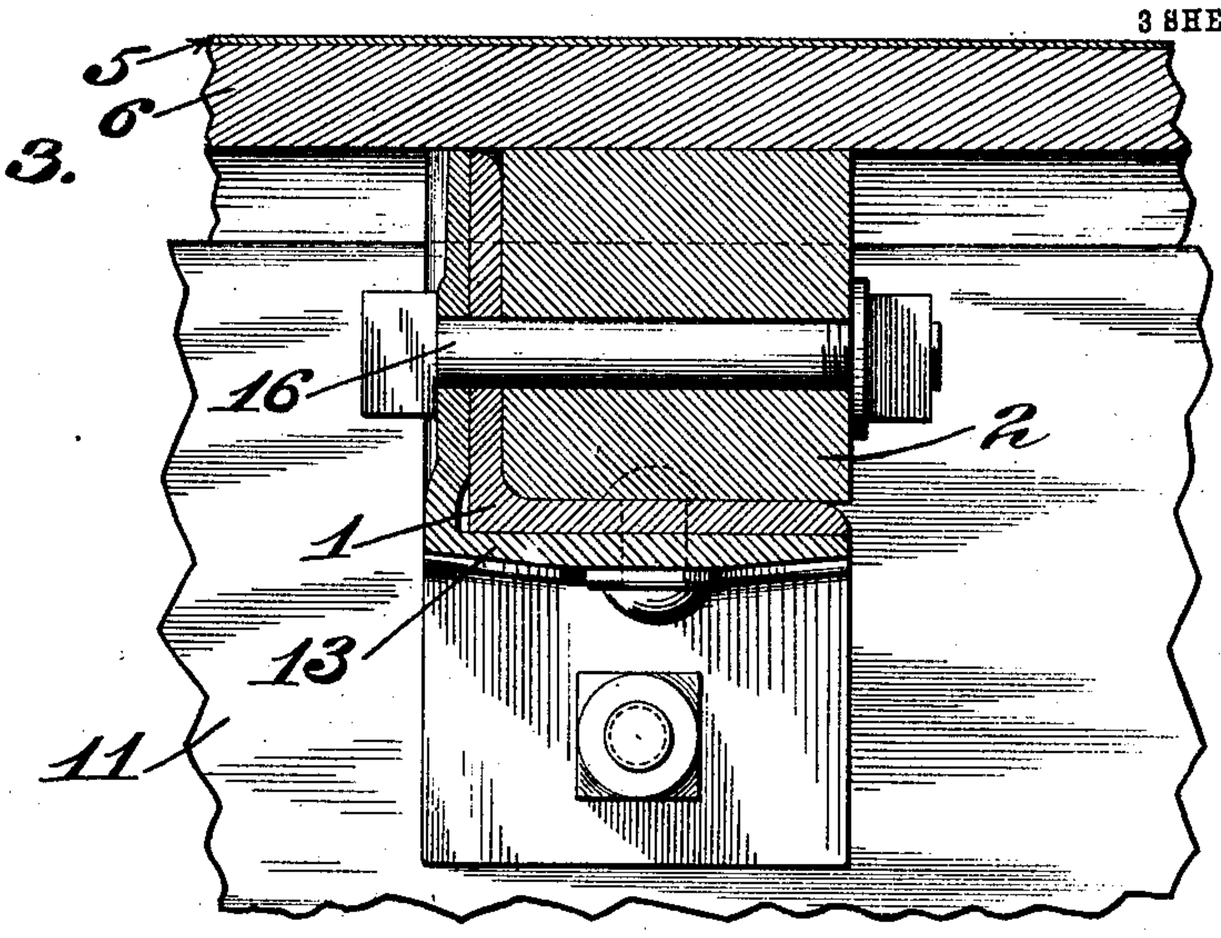


Fig. 4.

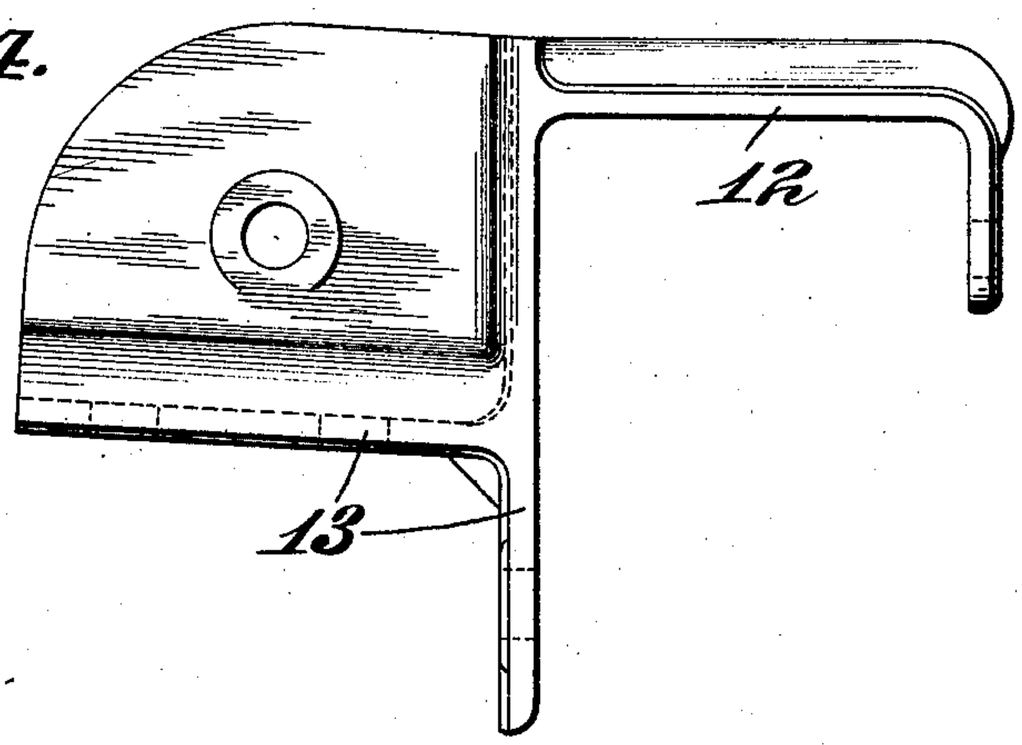
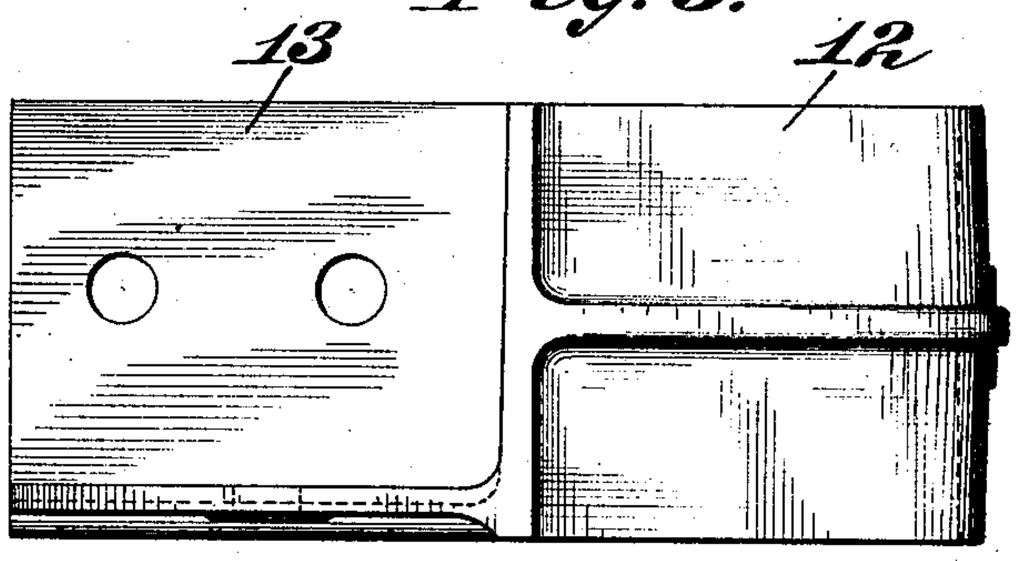


Fig. 5.



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3 SHEETS—SHEET 3.

Fig. 6.

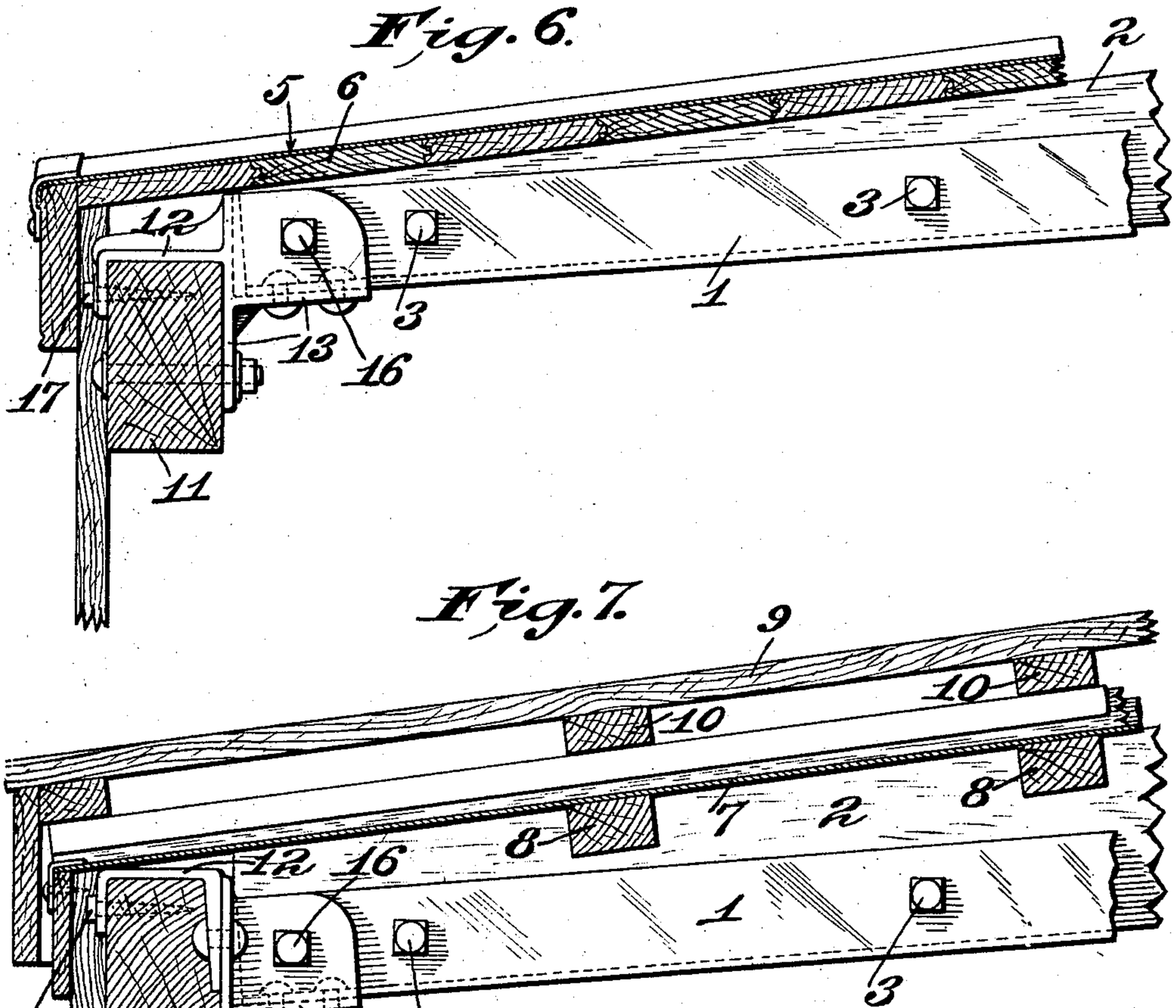


Fig. 7.

Fig. 8.

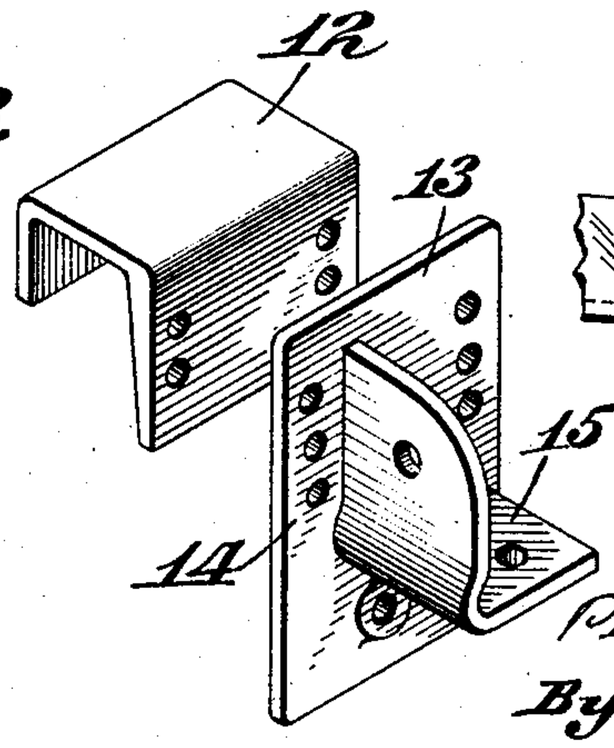
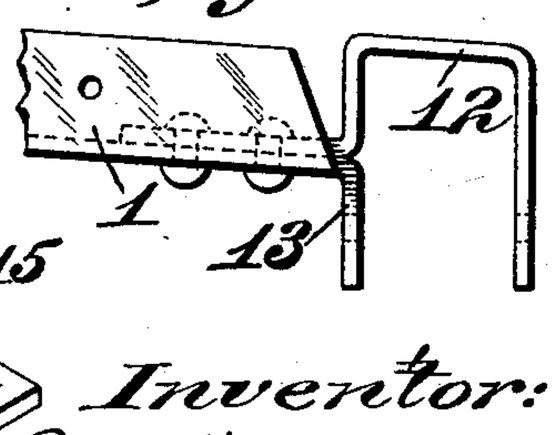


Fig. 9.



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UNITED STATES PATENT OFFICE.

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CAR-ROOF.

No. 929,236. Specification of Letters Patent. Patented July 27, 1909.

Application filed September 23, 1907. Serial No. 394,024.

To all whom it may concern:

Be it known that I, PETER H. MURPHY, a citizen of the United States, and a resident of the city of St. Louis and State of Missouri, have invented a new and useful Improvement in Car-Roofs, of which the following is a specification.

My invention relates to car roofs.

In the construction of freight cars, divers considerations enter into the determination of the most desirable height for the side plates; and heretofore the space required for the superimposed roof has been an important factor in limiting the height. For instance, a roof mounted on side plates of a certain height would be likely to strike the tops of tunnels and bridges; whereas the use of lower side plates would decrease the capacity of the car.

It is one of the principal objects of the present invention to provide for the mounting of the roof in such a way that, within certain limits, its height is independent of the height of the side plates.

Another principal object is to provide an improved carline; to provide novel means for securing the carline to the side plates and to attain other advantages hereinafter set forth.

It consists in the construction and arrangement of parts hereinafter described and claimed.

In the accompanying drawing, which forms part of this specification, and wherein like symbols refer to like parts wherever they occur, Figure 1 is a plan view of a carline embodying my invention and showing a portion of the ridge pole of the car; Fig. 2 is an elevation of my carline, the end portion of the carline and the adjacent portions of the car being shown in section; Fig. 3 is a cross-section through the carline and the adjacent portion of the roof on the line 3—3 of Fig. 2; Fig. 4 is a side elevation; and, Fig. 5 is a plan view of the casting at the end of the carline; Fig. 6 is a detail cross section illustrating an outside metal roof positioned at a distance above the side plate; Fig. 7 is a similar cross section illustrating my invention applied to an inside metal roof; Fig. 8 is a perspective view illustrating the end member of the carline as made in two pieces; and, Fig. 9 illustrates another modification.

The body of my carline is preferably composed of a steel beam 1 and a wooden beam 2 firmly fastened together. The steel beam is preferably of angular section and has its vertical member or flange turned upwardly above the horizontal member thereof. Preferably, the steel beam or angle plate is arched or inclined upwardly from its ends, so that the middle portion thereof is highest.

Resting upon the horizontal member of the steel beam or angle plate and abutting flatwise against the vertical member thereof is the wooden beam 2. This wooden beam is secured to the vertical member of the angle plate by means of horizontal bolts 3 extending through them. At the ends of the angle plate the upper surface of the wooden beam is substantially flush with the top of the angle plate; but the pitch or inclination of the upper surface of the wooden beam is steeper than that of the steel beam or angle plate, so that at the middle portion of the car, the wooden beam extends a considerable distance above the angle plate. Midway of its length, the wooden beam is provided with a transverse groove or mortise adapted to accommodate the ridge pole 4.

In the case of an outside metal roof, such for instance, as that illustrated in Letters Patent No. 554,287, granted to me under date of February 11, 1896, the metal sheets 5 rest upon a wooden sheathing 6. This sheathing consists of roof boards which are preferably arranged longitudinally of the car, in which case they are nailed directly to the wooden beam, as illustrated in Fig. 2. In the case of an inside metal roof, such for instance as that illustrated in Letters Patent No. 499,641, granted to me under date of June 13, 1893, the metal roof sheets 7 rest partly upon purlins 8 that fit in mortises provided therefor in the wooden beams or fillers. As illustrated in Fig. 7, the inside metal roof sheets are covered with a wooden sheathing 9 which rests upon purlins 10 that are fastened to the carlines. In both of these cases, the desired pitch of the roof is secured without any considerable arching of the carline, and the continuity of the wooden beam is not destroyed by the mortising thereof to accommodate the ridge pole and the purlins.

It is obvious that whether the roof is of the outside metal type or of the inside metal type, the metal sheets must cross over the side plates 11 of the car in order to properly drain the water. In order to properly position the carlines and strengthen the con-

struction of the car, the body portion of the carlines is provided at each end with a member adapted to secure it to the side plate of the car. This end member comprises a saddle portion 12 arranged to straddle the side plate of the car and a bracket portion 13 arranged to be secured to the side plate and constitute a seat for the carline. Preferably, these two portions of the end member are made in a single piece, as illustrated in Figs. 4, 5 and 6; but in some cases, it may be desirable to make them of two relatively adjustable parts as illustrated in Fig. 8.

The bracket portion comprises a vertical base 14 arranged to be secured flatwise against the inner face of the side plate and a horizontal or inwardly projecting portion 15 of angular section conforming to the angular steel member of the body of the carline to which it is rigidly riveted or otherwise fastened. The wooden beam is also secured to the bracket by a bolt 16 extending horizontally through the bracket piece as well as the intervening steel beam. The lower end of the vertical base portion extends below the inwardly projecting portion of the bracket and is provided with bolt holes for securing it to the side plate. All of the bolts are thus easily accessible.

The saddle portion of the end member of the carline is arranged to straddle the side plate of the top of the car. It comprises a horizontal portion whose outer end is turned down and provided with a hole for a lag screw 17 or other suitable fastening device for securing it to the side plate. The inner end of the saddle is preferably integral with the vertical base of the bracket portion; but, as illustrated in Fig. 8, it may be made separate therefrom and provided with a plurality of bolt holes, whereby it may be secured flatwise to said base at any desired elevation.

In practice, the end member of the carline is of such size as to fit against the top and two sides of the side plate of the car, whereby the carline effectively braces the side plates. The steel and wooden members of the carline act together as a beam in carrying the roof, that is, in transmitting the weight of the roof to the side plates of the car. The wide vertical bearing of the casting against the side plates causes the carline to act as a strut to prevent shrinkage. At the same time, the downturned end portions of the casting overlapping the side plates of the car cause the carline to act as a tie to prevent the spreading of the side plates. These several advantages are all elements of strength and rigidity. At the same time, the horizontal bolts which fasten the wooden beam in place are easily accessible, so that the wooden beam can be replaced and other common repairs made without removing the side sheathing or the side plates. The construction of the roof also has the advantage of securing a maximum amount of head room for the interior of the car.

In the construction illustrated in Fig. 2, the outside metal roof is applied to the car in such a way that the roof sheathing rests immediately on top of the side plate. This construction is particularly advantageous on railroads having low tunnels, as it permits the use of a high side plate.

The construction shown in Fig. 7 illustrates an inside metal roof located immediately above the side plate.

In the construction illustrated in Fig. 6, an outside metal roof is located at a distance above the side plate. This construction increases the head room in the car without raising the side plates.

In the construction illustrated in Fig. 7, the inner member of the carline is adjustable, so that the bracket portion can be raised or lowered relative to the saddle portion, whereas in the constructions illustrated in Figs. 2 and 6, the position of the bracket is predetermined.

Obviously, my device is capable of considerable modification within the scope of my invention, and therefore I do not wish to be limited to the specific construction shown and described. For instance, the end members may be made integral with the steel body portion of the carline instead of being made in separate pieces. So, too, as illustrated in Fig. 9, the horizontal portion of the steel beam may be bent vertically to form the bracket member; or it may be bent upwardly to form the saddle member, as desired.

What I claim is:

1. A compound carline whose body consists of an arched angular metal member and a wooden beam extending substantially the full length thereof and fitting and secured in the angle thereof, said metal member consisting of a horizontal bottom portion and an upwardly extending vertical portion at the edge thereof, said metal member being of substantially uniform cross section throughout its length.

2. A compound carline whose body consists of an arched angular metal member and a wooden beam extending substantially the full length thereof and fitting and secured in the angle thereof, said metal member consisting of a horizontal bottom and an upwardly extending vertical portion at the edge thereof, said metal member being of substantially uniform cross section throughout its length, and a wooden beam extending above said metal member by an amount which increases continuously from the ends to the middle thereof.

3. A compound carline whose body consists of an arched angular metal member and a wooden beam extending substantially the

full length thereof and fitting in the angle thereof, and detachable horizontal fastening devices for securing said members together, said angular member having a single flange extending upwardly at one edge thereof and being of substantially uniform section throughout its length.

4. A compound carline whose body portion consists of an arched metal member having an upwardly extending flange and a wooden beam fitting in and removably secured to said metal member by horizontal fasteners, and metal end members fixed to said arched metal member, each end member comprising a vertical web, an outwardly extending hook portion on the outer side of said web and an angular bracket portion on the inner side of said web fitting flatwise against the ends of said arched metal member, the ends of said wooden beam overlapping the bracket portions of the respective end members.

5. A compound carline whose body portion consists of an arched metal member having an upwardly extending flange and a wooden beam extending substantially the full length thereof and fitting and secured in the angle of said metal member by horizontal fasteners, and end members each consisting of an angular bracket portion fitting and secured to an end of said metal member, a vertical web and an outwardly extending hook portion on said web, the bracket being at a lower height than the hook portion.

6. A car comprising side plates and carlines whose end members have a saddle piece arranged to fit over the side plates, and a bracket piece constituting a seat for the body portion of the carline, said saddle piece and said bracket piece having vertical webs provided with series of riveting holes, whereby the elevation of the bracket with respect to the side plate may be varied.

PETER H. MURPHY.

Witnesses:
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