

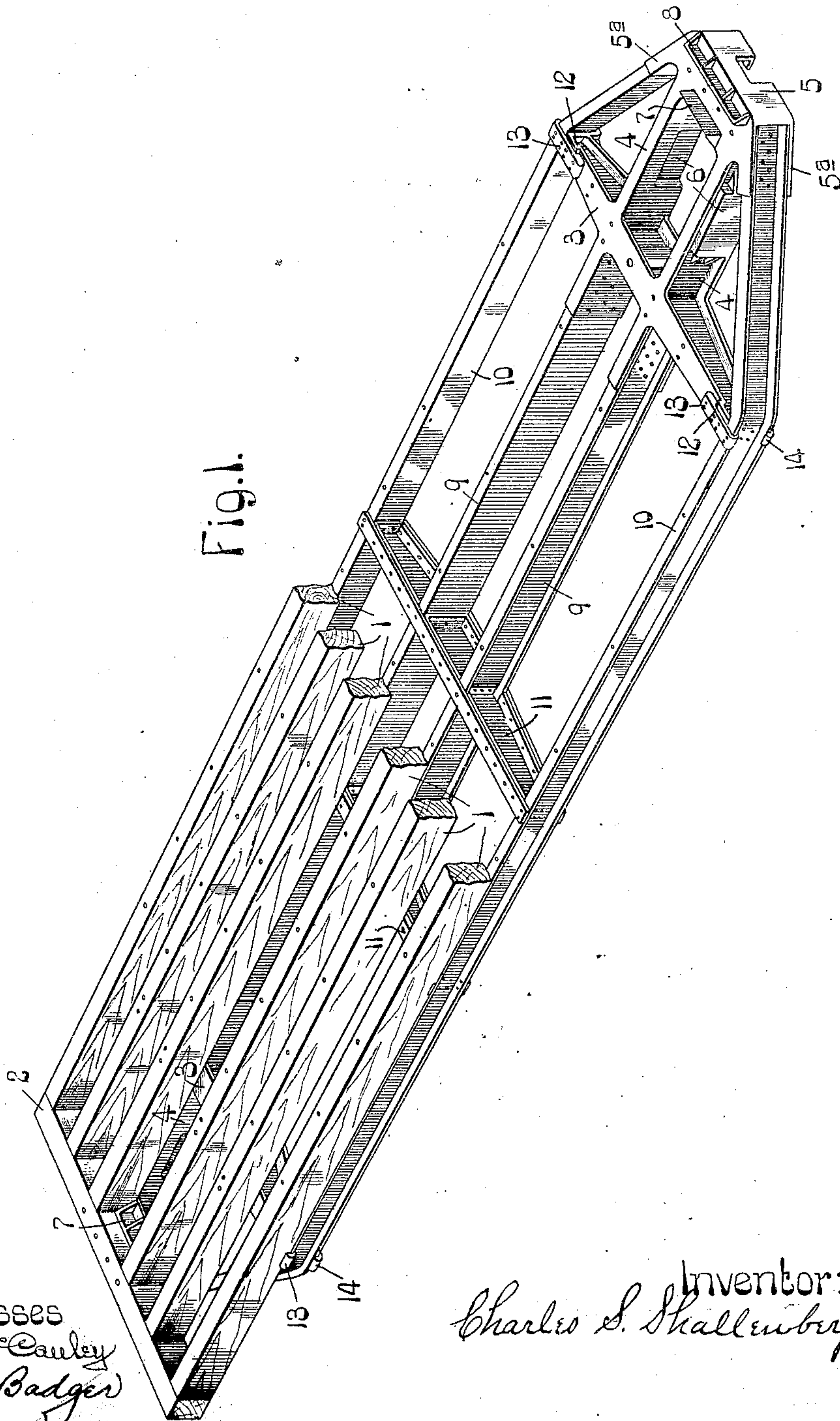
No. 891,295.

PATENTED JUNE 23, 1908.

C. S. SHALLENBERGER.  
UNDERFRAME FOR CARS.  
APPLICATION FILED DEC. 2, 1907.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses  
A. J. McCauley  
Cora Badger

Inventor:  
Charles S. Shallenberger

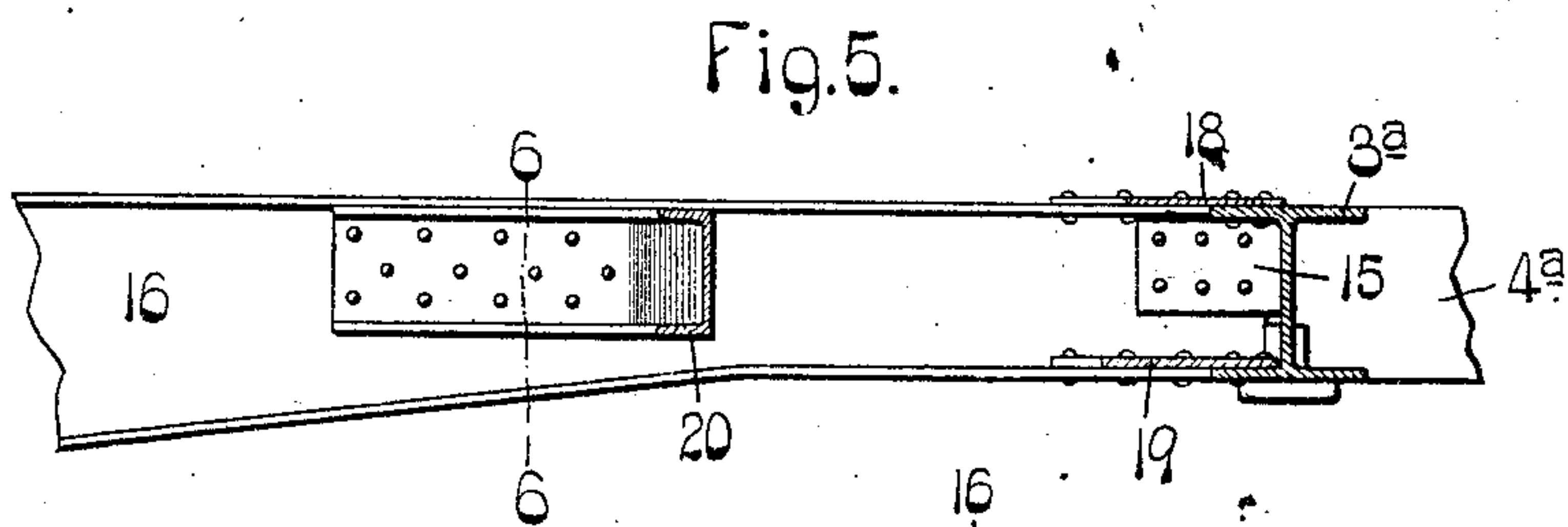
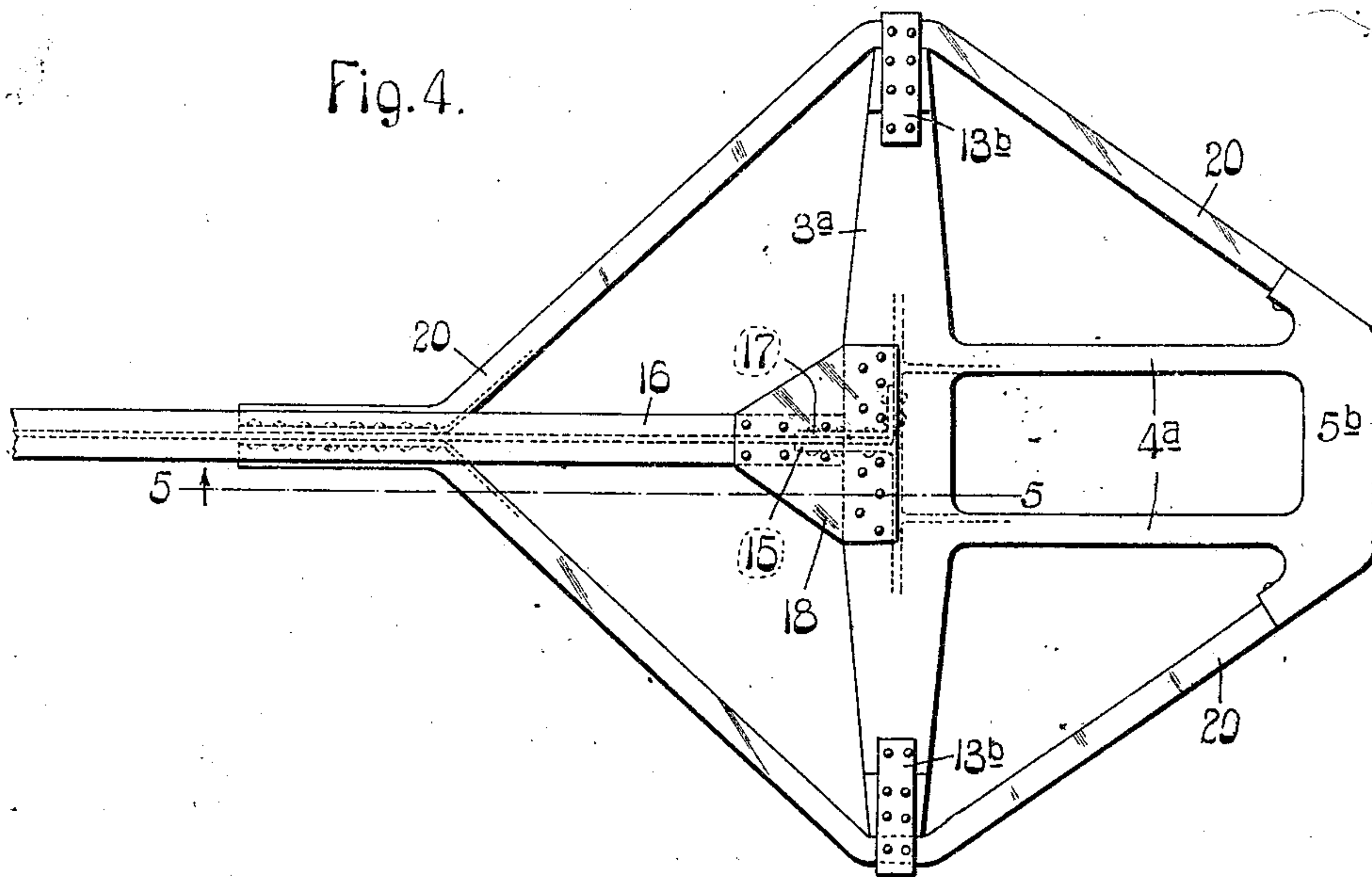
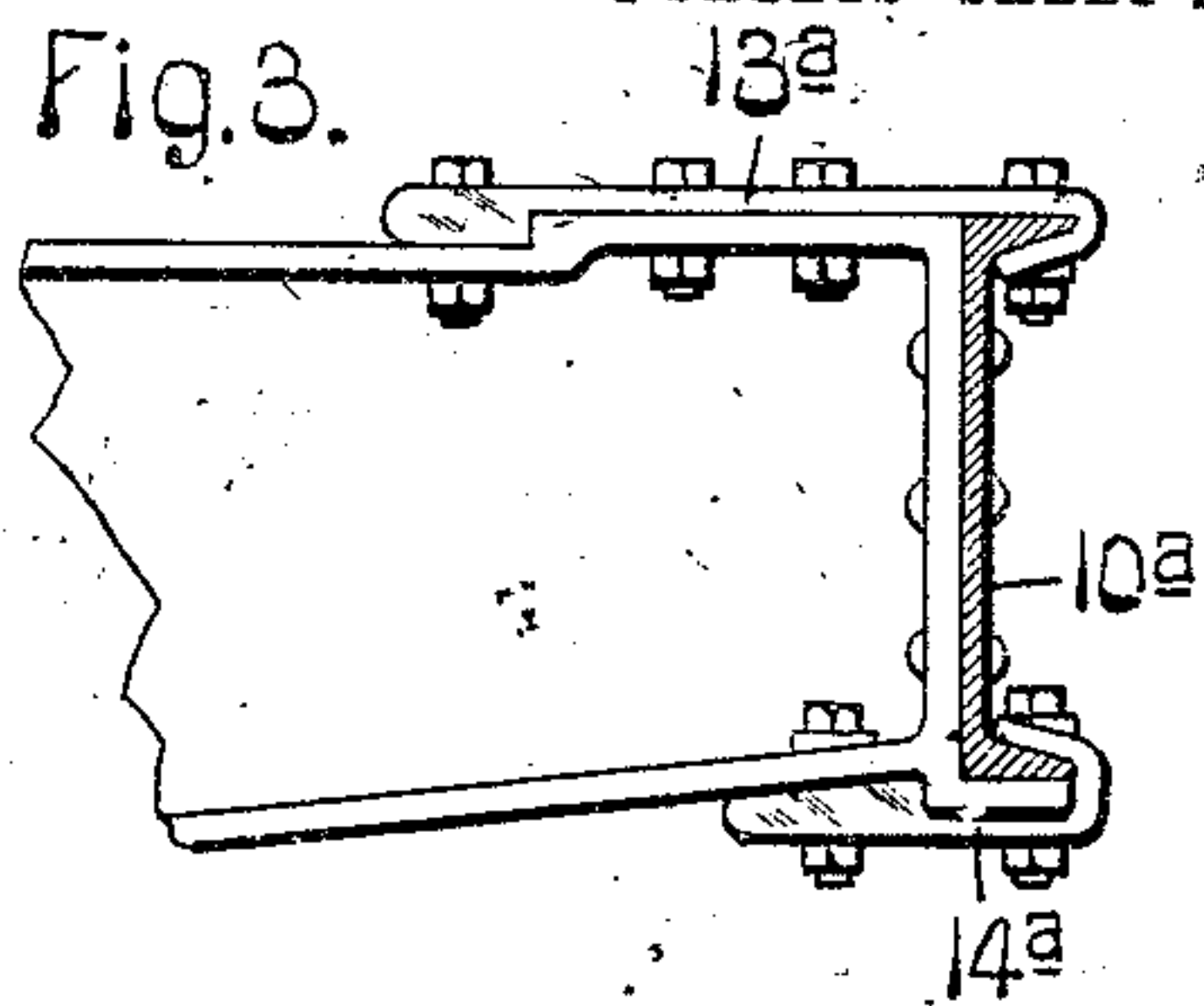
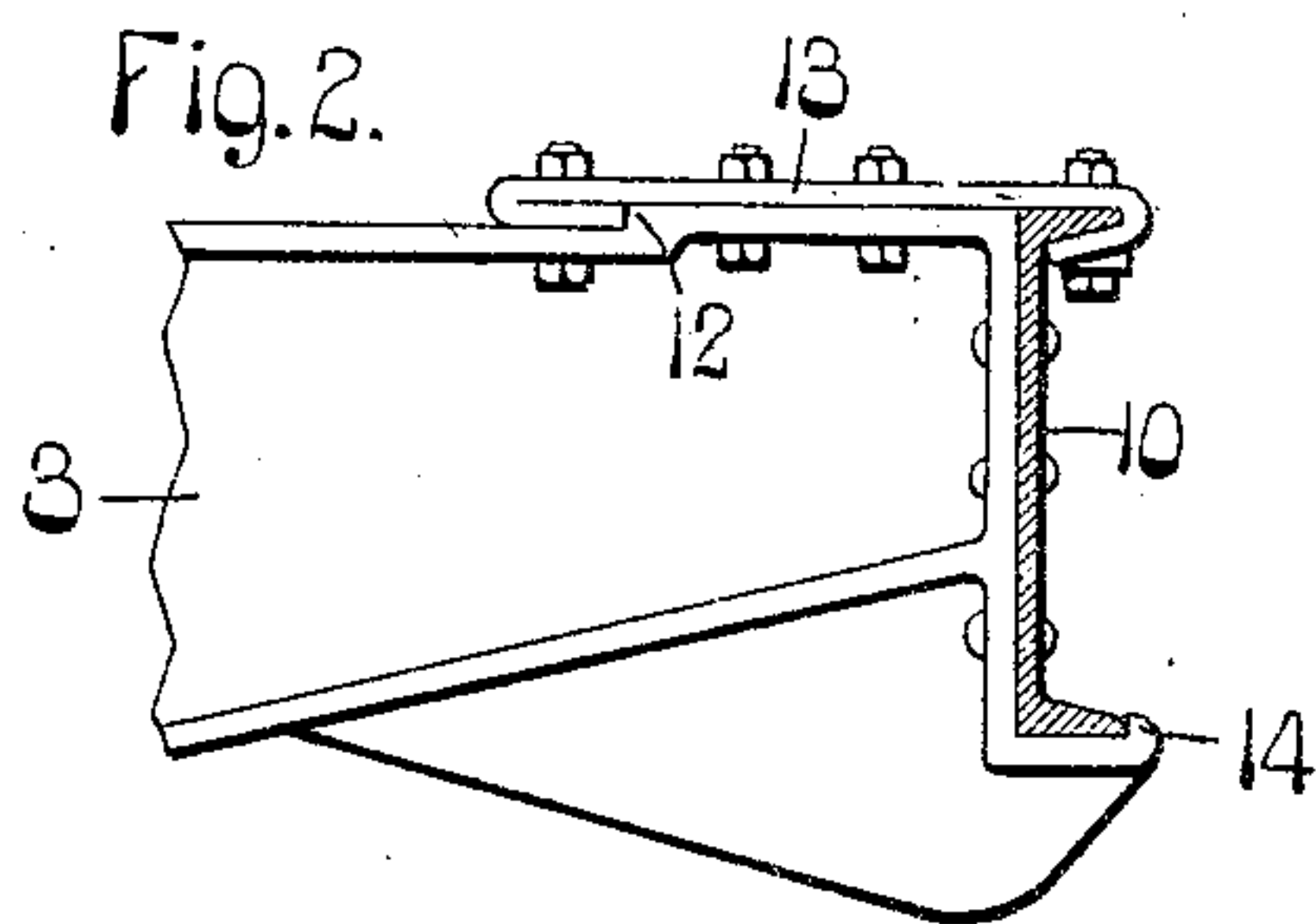
No. 891,295.

PATENTED JUNE 23, 1908.

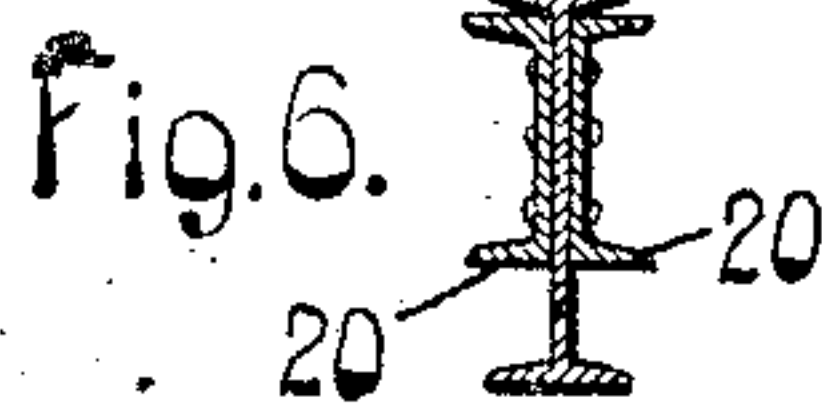
C. S. SHALLENBERGER.  
UNDERFRAME FOR CARS.

APPLICATION FILED DEC. 2, 1907.

2 SHEETS—SHEET 2.



Witnesses  
A. M. Caulley  
Cora Badger



Inventor:

Charles S. Shallenberger



# UNITED STATES PATENT OFFICE.

CHARLES S. SHALLENBERGER, OF ST. LOUIS, MISSOURI.

## UNDERFRAME FOR CARS.

No. 891,295.

Specification of Letters Patent.

Patented June 23, 1908.

Application filed December 2, 1907. Serial No. 404,722.

*To all whom it may concern:*

Be it known that I, CHARLES S. SHALLENBERGER, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Underframes for Cars, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a perspective view of my improved underframe for cars; Fig. 2 is a detail of the means for connecting the side sills to the body bolster; Fig. 3 is a view similar to Fig. 2 illustrating a modified form; Fig. 4 illustrates a modified form of underframe; Fig. 5 is a longitudinal sectional view taken on the line 5—5 of Fig. 4; and Fig. 6 is a transverse sectional view taken on the line 6—6 of Fig. 5.

This invention relates to new and useful improvements in underframes for cars.

There are many wooden cars in use today, which, on account of the high price and scarcity of proper timber, are being abandoned because it is almost impossible to obtain the proper timber necessary for repairs.

One of the principal objects of my invention, therefore, is to provide a metallic underframe of maximum strength and minimum weight which can be used in wooden car construction, said underframe being capable of being placed under existing cars.

My improved underframe is composed of a small number of parts which are easy to assemble, and is adapted for use on various types of cars both new and old.

Referring to Fig. 1 of the drawings which illustrates my improved underframe applied to a wooden car in such manner that it constitutes an auxiliary underframe for supporting the car body, 1 indicates the longitudinal sills of the wooden underframe and 2 is the end sill thereof. This wooden underframe is supported by and secured to the auxiliary underframe.

3 is a body bolster, and 4 indicates short draft or center sills which are connected together at their outer ends by means of a short end sill or buffer block 5, said draft sills being provided with pockets 6 for the reception of a draft rigging. Where I refer to the

buffer block 5 in the claims I mean to include a short end sill as well as a buffer block.

The draft sills, bolster and buffer block are preferably in the form of a single casting which constitutes the main end element of the underframe. When applied to a wooden car this end casting is preferably provided with abutments 7 and 8 on its upper face, which abutments engage the inner and outer faces respectively of the wooden end sill. Center sills 9 extend from bolster to bolster and are secured to inwardly extending portions of the end castings.

10 indicates side sills which are secured to the bolsters and have their end portions bent diagonally from the ends of the bolsters to the buffer blocks 5, the latter forming abutments for the ends of the side sills and being provided with wings 5<sup>a</sup> which are fastened to said sills.

If desired, cross bearers 11 may be secured to the longitudinal sills intermediate the bolsters.

As the buffing shocks which are delivered to the ends of the side sills tend to force these sills outwardly from the bolsters, I deem it advisable to provide means for rigidly securing them to said bolsters. While this securing means may be constructed in various ways, I prefer the form shown in Figs. 1 and 2. In this form the upper face of the bolster is provided with a shoulder or abutment 12, and a bar 13 which is bolted to the bolster has one of its ends folded under or enlarged to engage said abutment 12 and its opposite end bent under the top flange of the side sill and bolted thereto. The lower flange of the side sill rests on the bolster and is prevented from moving outwardly by a lug 14 formed integral with the bolster. If desired, the side sill may also be secured to the bolster by means of rivets.

Fig. 3 illustrates a modified form of the means for securing the bolster to the side sills, in which bars 13<sup>a</sup> and 14<sup>a</sup> are secured to the bolster and bent around the flanges of the side sill 10<sup>a</sup>.

In the underframe illustrated in Figs. 4, 5 and 6, side sills connecting the body bolsters are dispensed with. The end casting used in this form is substantially the same as the casting shown in Fig. 1, said casting comprising a bolster 3<sup>a</sup>, short draft sills 4<sup>a</sup> and a buffer block 5<sup>b</sup>. The bolster 3<sup>a</sup> is provided



with an integral wing 15 which is riveted to the web of a center sill 16. The center sill is also connected to the bolster by means of an L-shaped member 17, said member being riveted to the web of the bolster and to the web of the center sill. 18 and 19 respectively indicate plates which are riveted to the top and bottom flanges of the bolster 3<sup>a</sup> and to the flanges of the center sill. Side members 20 which are preferably rolled channels are connected to the buffer block 5<sup>b</sup> and extend diagonally from said buffer block to the ends of the body bolsters and thence inwardly to the center sill. The inner ends of the side members 20 lay against the center sill and are secured thereto. Bars 13<sup>b</sup> connect the members 20 to the bolster. The form of underframe just described is particularly adapted for use on tank cars or wooden cars in which it is not deemed necessary to employ auxiliary side sills.

My improved underframe eliminates a large percentage of the material usually employed in the end portion of an underframe as the side sills which extend from the ends of the bolster to the buffer block form the outside margin of the underframe at this point. When this underframe is used as an auxiliary underframe on wooden cars, the wood sills can be relied on to support the load beyond the diagonal end portions of the side sills.

I am aware that minor changes in the construction, arrangement and combination of the several parts of my device can be made and substituted for those herein shown and described without in the least departing from the nature and principle of my invention.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. A railway car having a metallic underframe, the ends of which are substantially V-shaped, and a rectangular wooden underframe which extends beyond the inclined margins of the metallic underframe supported by said metallic underframe; substantially as described.

2. A railway car having a metallic underframe, the ends of which are substantially V-shaped, and a wooden underframe which extends from end to end of the car supported by said metallic underframe, said wooden underframe including sills which extend beyond the inclined margins of the metallic underframe; substantially as described.

3. A railway car having a metallic underframe, the ends of which are substantially V-shaped, and a wooden underframe including side sills which extend from end to end of the car supported by said metallic underframe; substantially as described.

4. A railway car having a metallic underframe, the ends of which are substantially V-shaped, and a wooden underframe which ex-

tends from end to end of the car supported by said metallic underframe, the corners of the wooden underframe being arranged outside of the margin of the metallic underframe; substantially as described.

5. A railway car having a metallic underframe including bolsters, buffer blocks and side sills, the end portions of the side sills being bent diagonally from the ends of the bolsters to the buffer blocks, and a wooden underframe which extends beyond the inclined margins of the metallic underframe supported by said metallic underframe; substantially as described.

6. An underframe for cars comprising castings, each consisting of draft sills, a body bolster and a buffer block, diagonal members connecting the ends of the bolsters to the buffer blocks, said diagonal members forming part of the margin of the underframe, and a longitudinal sill or sills connecting said castings; substantially as described.

7. An underframe for cars comprising castings, each consisting of draft sills, a body bolster and a buffer block, diagonal members connecting the ends of the bolsters to the buffer blocks, said diagonal members being riveted in position, and a longitudinal sill or sills connecting said castings; substantially as described.

8. An underframe for cars comprising castings, each consisting of draft sills, a bolster, and a buffer block, and side sills, the end portions of said side sills being bent inwardly and connected to said castings; substantially as described.

9. An underframe for cars comprising castings, each consisting of draft sills, a bolster, and a buffer block, and side sills, the end portions of said side sills being bent inwardly and connected to said buffer blocks; substantially as described.

10. An underframe for cars comprising a center sill or sills, bolsters, and side sills, the end portions of the side sills being bent inwardly beyond the body bolsters, integral parts of the bolsters serving to prevent the side sills from moving outwardly; substantially as described.

11. A railway car having an underframe, the ends of which are substantially V-shaped, and a casting in each end portion of said underframe, each of said castings constituting a bolster, draft sills and a buffer block; substantially as described.

12. A railway car having an underframe, the ends of which are substantially V-shaped, a casting in each end portion of said underframe, each of said castings constituting a bolster, draft sills and a buffer block, and longitudinal sills connecting said castings; substantially as described.

13. An underframe for cars having a diagonal side sill connected to a bolster by means of a member which partly embraces



the side sill, said member being secured to the bolster; substantially as described.

14. An underframe for cars having a flanged side sill and a bolster, said sill and bolster being connected together by means of a member which is folded under a flange of the side sill and secured to the bolster; substantially as described.

15. An underframe for cars having a side sill provided with flanges which project outwardly, and a bolster, said sill and bolster being secured together by means of a clip which partly embraces the side sill, said clip being secured to the bolster; substantially as described.

16. An underframe for cars having a side sill provided with flanges which project outwardly, and a bolster, said sill and bolster being secured together by means of a member which is folded under a flange of the side sill, said member being secured to the bolster; substantially as described.

17. An underframe for cars having side sills, bolsters, abutments on said bolsters, and members which cooperate with said abutments connecting the side sills to the bolsters; substantially as described.

18. An underframe for cars having side sills, bolsters, abutments on said bolsters, and means for connecting the side sills to the bolsters, said means including members which cooperate with said abutments and extend partly around the side sills; substantially as described.

19. An underframe for cars having side sills, bolsters, the side sills being bent inwardly beyond the bolsters, and means for connecting the bolsters to the side sills, said means including members which partly embrace the side sills, said members being secured to the bolsters; substantially as described.

20. An underframe for cars comprising side sills having flanges which project outwardly, bolsters, the side sills being bent inwardly beyond the bolsters, and means for connecting the side sills to the bolsters, said means including members which embrace flanges of the side sills; substantially as described.

21. An underframe for cars having bolsters, and side sills bent inwardly beyond the bolsters, the end portions of the bolsters forming a seat for the side sills and being provided with lugs which engage the outer face of the side sills; substantially as described.

22. An underframe for cars having bolsters, and side sills bent inwardly beyond the

bolsters, the end portions of the bolsters forming a seat for the side sills and being provided with lugs which engage the outer face of the side sills, and members which partly embrace the side sills secured to the bolsters; substantially as described.

23. An underframe for cars comprising bolsters, draft sills, a center sill connecting said bolsters, and diagonal braces connecting the ends of the bolsters to the center sill and extremities of the draft sills respectively; substantially as described.

24. An underframe for cars comprising bolsters having integral draft sills, a commercially-rolled longitudinal sill connecting said bolsters, diagonals connecting the extremities of the bolsters and the longitudinal sills; substantially as described.

25. An underframe for cars comprising bolsters having integral draft sills, a commercially-rolled longitudinal sill connecting said bolsters, and separate diagonals connecting the ends of the bolsters with the extremities of the draft sills; substantially as described.

26. An underframe for cars, bolsters, draft sills, buffer blocks at the extremities of the draft sills, a center sill member, and continuous brace members connected to the buffer block and to the center sill member, said brace members passing around the ends of the bolsters; substantially as described.

27. In an underframe for cars, a casting comprising a bolster, draft sill members, and a buffer block all integrally connected together, and a separate brace member connecting the ends of the bolster and said buffer block; substantially as described.

28. In an underframe for cars, bolsters, draft sills, and buffer blocks, a flanged center sill connecting the bolsters, and flanged brace members connected to said center sill and said buffer blocks, said brace members passing around the ends of the bolsters; substantially as described.

29. In an underframe for cars, bolsters, draft sills, a flanged center sill connected to said bolsters, flanged braces which extend parallel to said center sill for a short distance and are connected thereto, said braces being also connected to the ends of the bolsters; substantially as described.

In testimony whereof, I hereunto affix my signature in the presence of two witnesses, this twenty ninth day of November, 1907.

CHARLES S. SHALLENBERGER.

Witnesses:

CORA BADGER,

A. J. McCAULEY.