

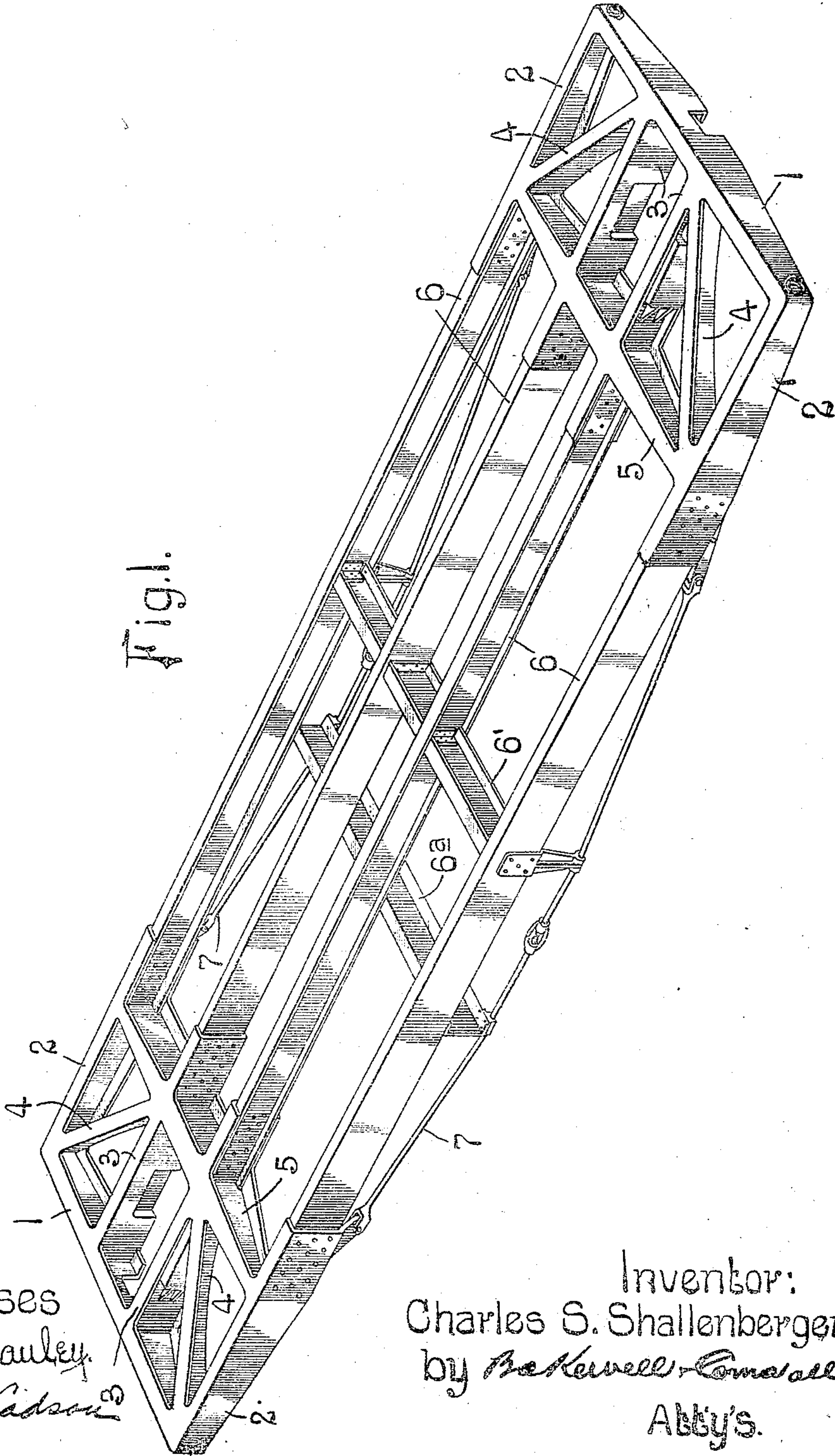
No. 873,800.

PATENTED DEC. 17, 1907.

C. S. SHALLENBERGER.
UNDERFRAME FOR CARS.
APPLICATION FILED FEB. 15, 1907.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses
A. J. McCauley
Geo. R. Ladson

Inventor:
Charles S. Shallenberger
by *Baker & Small*
Atty's.

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2 SHEETS—SHEET 2.

Fig. 2.

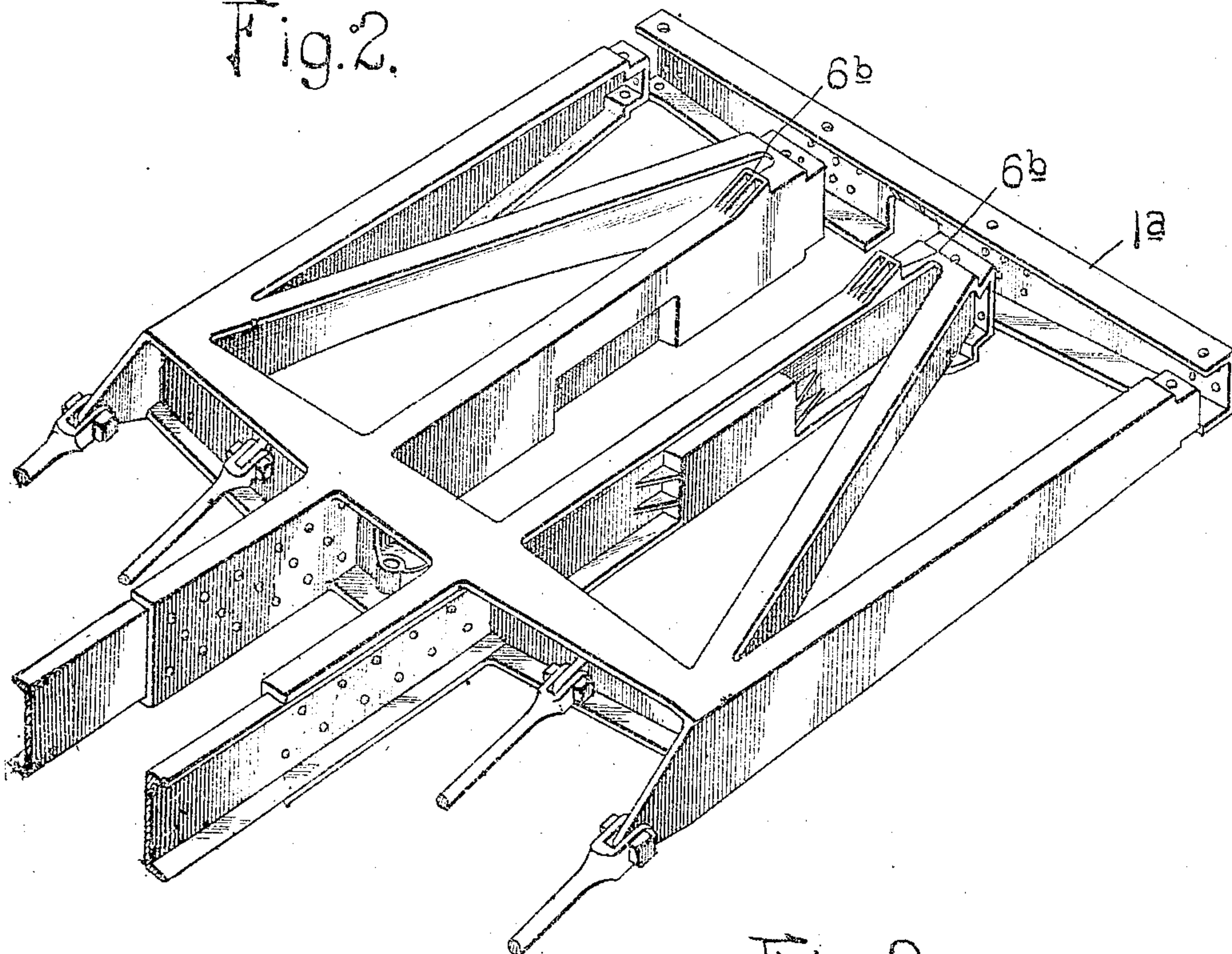


Fig. 3.

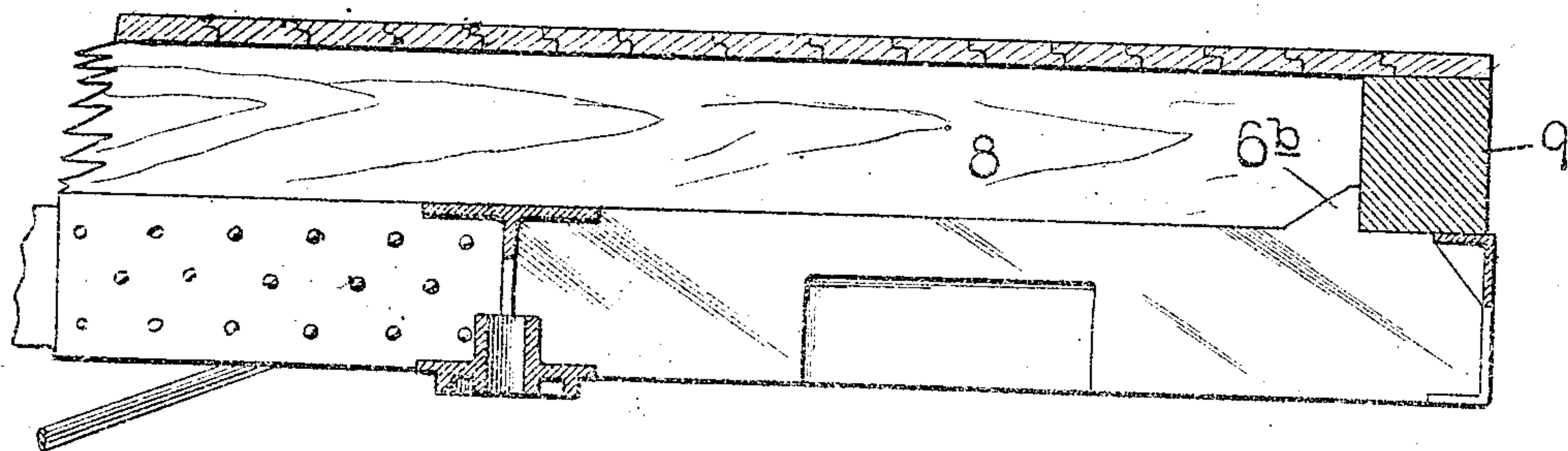
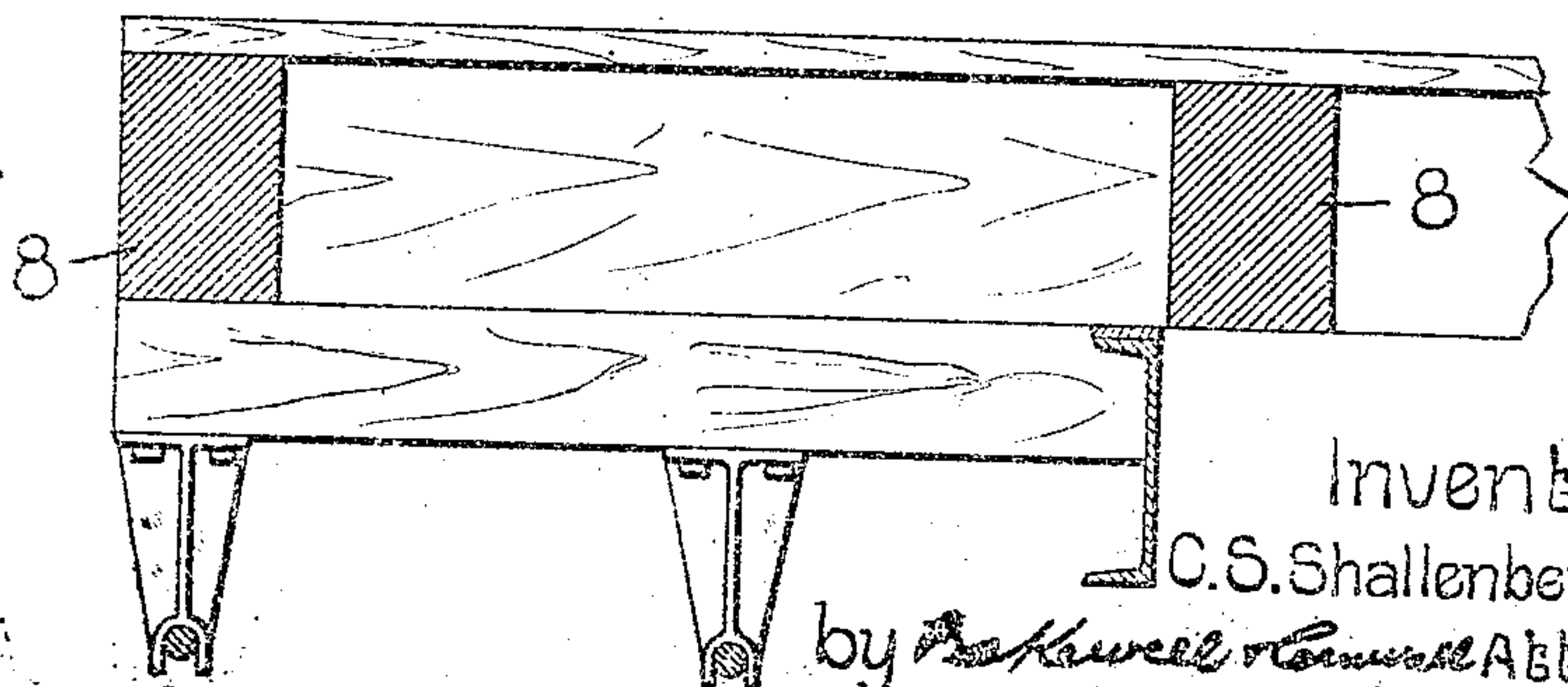


Fig. 4.



Wm. H. 85886
O. J. Caulley.
H. Cadson.

Inventor:
C. S. Shallenberger
by *Wm. H. 85886* & *O. J. Caulley* Attys.

UNITED STATES PATENT OFFICE.

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

UNDERFRAME FOR CARS.

No. 873,800.

Specification of Letters Patent.

Patented Dec. 17, 1907.

Application filed February 15, 1907. Serial No. 357,595.

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; Fig. 2 is a similar view showing the end portion of a modified form of underframing; Fig. 3 is a horizontal sectional view through the end portion of the frame shown in Fig. 2; and Fig. 4 is a cross sectional view through the underframe shown in Fig. 2 showing the arrangement of the needle beam.

This invention relates to a new and useful improvement in underframes for cars, the object being to construct an underframe which may be employed in connection with existing forms of wooden box cars. Many railroads at the present time have adopted steel underframes as standard in the major part of their rolling stock, and where steel under frames are employed in certain types of cars, such as hopper bottom and gondola, it is desirable to use steel floor sheets and side walls, as this material readily lends itself to the new requirements. In box car construction, however, a steel under frame is practically a separate entity in that it affords a support for the entire load, whereas in gondola and hopper car constructions the side walls are frequently relied upon to carry the major part of the load. Where steel under frames are used in box cars according to the new requirements it is possible to employ trussed frames consisting of posts, diagonals and side plates made up of commercially rolled members which are connected to the underframe. This makes a very strong and desirable construction. There are, however, many box cars in use today which, on account of the high price and dearth of the proper timber, are being abandoned because it is almost impossible to obtain the wooden sills necessary for repairs.

One of the principal objects of my invention, therefore, is to provide an underframe which can be used in box car construction, said underframe possessing the requisite

strength to support the load, and being capable of being placed under existing cars. As the principal function of a steel underframe, where a wooden box car superstructure is used, is to support the load, it will be obvious that old box cars can be placed on my underframe and connected thereto, and in this manner the life of the superstructure will be greatly extended. Where the existing forms of box cars are provided with the wooden longitudinal sills, these sills can be appropriately cut out so as to keep the center of gravity low, and the entire superstructure can be fitted on the underframe and connected thereto by suitable fastening devices. Of course, in such new relation the truss rods, needle beams, and other reinforcing devices would be eliminated as they would not be necessary where my improved underframe is arranged under the car.

For the sake of cheapness in manufacture, simplicity and enabling the underframe to be quickly repaired, I prefer to construct my improved underframe essentially of two end castings which comprehend the bolster, draft sill, diagonal, and short side sill elements, the entire casting being what is known as a skeleton casting, that is, the above-mentioned parts are connected together at their ends. These end castings are provided with inwardly projecting members to which are riveted commercially rolled channels forming the connecting members. These channels may be trussed if desired. The end sill may be integral with the end casting as shown in Fig. 1, or separate, as shown in Fig. 2.

In the drawings, particularly Fig. 1, the casting constituting the end portion of the underframe consists of an end member 1 in the form of an end sill, side members 2 in the form of side sills, draft members 3 in the form of draft sills, diagonals 4 in the form of braces, and transversely arranged member 5 in the form of a bolster. These members are all formed integral with each other and are composed of web and flanged portions suitably reinforced by strengthening webs of brackets at points where such are necessary or desirable.

The end sill may be provided with usual push pole pockets and may also have an extension in the nature of a buffer block if desired. The draft members are preferably recessed to form abutments for the draft rigging. The bolster member may have inte-

gral side bearings and an opening for the king pin. The draft and side sill members extend inwardly beyond the bolster, to which extensions are secured longitudinal sills 6 of the underframing, these sills being preferably in the form of commercially rolled members in the form of channels, angles, I-beams or other shapes. These longitudinal sill members; however, may be of pressed metal or built up, as is well known in this art. At approximately the center of the underframe is a transverse tie member 6' constituting a transom or cross bearer which may lie in the horizontal plane of the sill members of the underframe, as shown in Fig. 1, or said cross bearer may be in the form of a needle beam lying under the longitudinal sills of the underframe, as shown at 6^a in Fig. 1.

If desired, truss rods 7 pivotally connected to the end castings may be employed to strengthen the underframe, said truss rod cooperating with king or queen posts arranged under the longitudinal sills of the car or connected to the cross bearers in a well known manner.

While I have shown castings constituting the end portions of the end frame as being integral, it is obvious that the same can be made up of two or more parts appropriately connected together.

In Fig. 2 I have shown a modified form of casting in which the end sill 1^a is removable, thus enabling said end sill to be made of pressed commercially rolled or other material. In Fig. 2 I have also omitted the rolled longitudinal side sills and have provided the draft sills with abutments 6^b near their ends which cooperate with the end sill of the car.

One of the principal objects of my invention is to reduce the number of parts entering into the construction of the metal underframe for railway rolling stock. By making the end portions of the underframing of castings it is obvious that the two castings, one at each end of the car, and the four sill members shown in Fig. 1, constitute the main members of the underframe.

In Figs. 3 and 4 I have shown a wooden superstructure, that is, one having the usual component parts of a wooden car, such as the longitudinal sills 8 and an end sill 9 mounted on my improved framing. This superstructure is supported by the underframing and may be connected thereto in any suitable manner. Where wooden longitudinal sills are used the metallic side sills of the underframe may be dispensed with and the wooden superstructure supported by truss rods in a well known manner. I prefer, however, to retain a metallic center sill for the purpose of transmitting buffing and pulling stresses. Where the metal floor sheets and side walls are used in conjunction with my improved underframing it is obvi-

ous that the underframing will be constructed so as to readily adapt itself to meet the requirements demanded by metal structures.

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

1. An underframe for cars in the form of a trussed structure, the same comprising longitudinal sills which form the compression members of the truss, castings connected to the ends of said longitudinal sills, the tension members of the truss being connected to said castings, each of said castings consisting of a body bolster formed integral with short longitudinal sills, and an end sill connecting said short sills; substantially as described.

2. An underframe for cars comprising longitudinal sills which form the compression members of a truss, and castings connected to the ends of said longitudinal sills, the tension members of said truss being connected to said castings, each of said castings consisting of a body bolster, end sill and short longitudinal sills; substantially as described.

3. An underframing for cars comprising end portions in the form of castings, an intermediate portion in the form of a longitudinal sill or sills connected to said end portions, and truss rods also connected to said end portions and cooperating with the longitudinal sills at a point or points intermediate the end portions; substantially as described.

4. An underframing for cars, the same comprising end portions in the form of castings, each of said castings consisting of a bolster integrally connected to short longitudinal sills, an end sill connected to said short sills, and an intermediate portion in the form of truss rods and longitudinal sills connected to said end portions; substantially as described.

5. An underframing for cars, the same comprising end portions in the form of skeleton castings, each of said castings consisting of a bolster integrally connected to short longitudinal sills, an end sill connected to said short sills, and a trussed beam or beams connecting said end castings together; substantially as described.

6. An underframe for cars comprising longitudinal sills which form the compression members of a truss, and castings connected to the ends of said longitudinal sills, the tension members of said truss being connected to said castings, each of said castings consisting of a body bolster, end sill, diagonal braces and short longitudinal sills; substantially as described.

7. An underframe for cars having longitudinal sills which constitute compression members, tension members cooperating with said longitudinal sills, and castings connected to the ends of said longitudinal sills, each of said castings being in the form of a skeleton frame and consisting of a body bol-

ster, short longitudinal sills and an end sill; substantially as described.

5 8. In an underframing for cars, an end sill member, and draft members integrally connected together in the form of a skeleton casting, said draft members being provided with abutments on their upper faces adjacent the end sill members; substantially as described.

10 9. An underframe for cars comprising longitudinal sills having top flanges which constitute compression members, castings connected to the ends of said longitudinal sills,

and tension members which coöperate with said compression members connected to said castings, each of said castings being in the form of a skeleton frame and consisting of a body bolster, short longitudinal sills and an end sill; substantially as described. 15

In testimony whereof I hereunto affix my signature in the presence of two witnesses, this eleventh day of February 1907. 20

CHARLES S. SHALLENBERGER.

Witnesses:

F. R. CORNWALL,

GEORGE BAKEWELL.