

C. S. SHALLENBERGER.
UNDERFRAME FOR RAILWAY CARS.
APPLICATION FILED FEB. 26, 1909.

970,128.

Patented Sept. 13, 1910.

3 SHEETS—SHEET 1

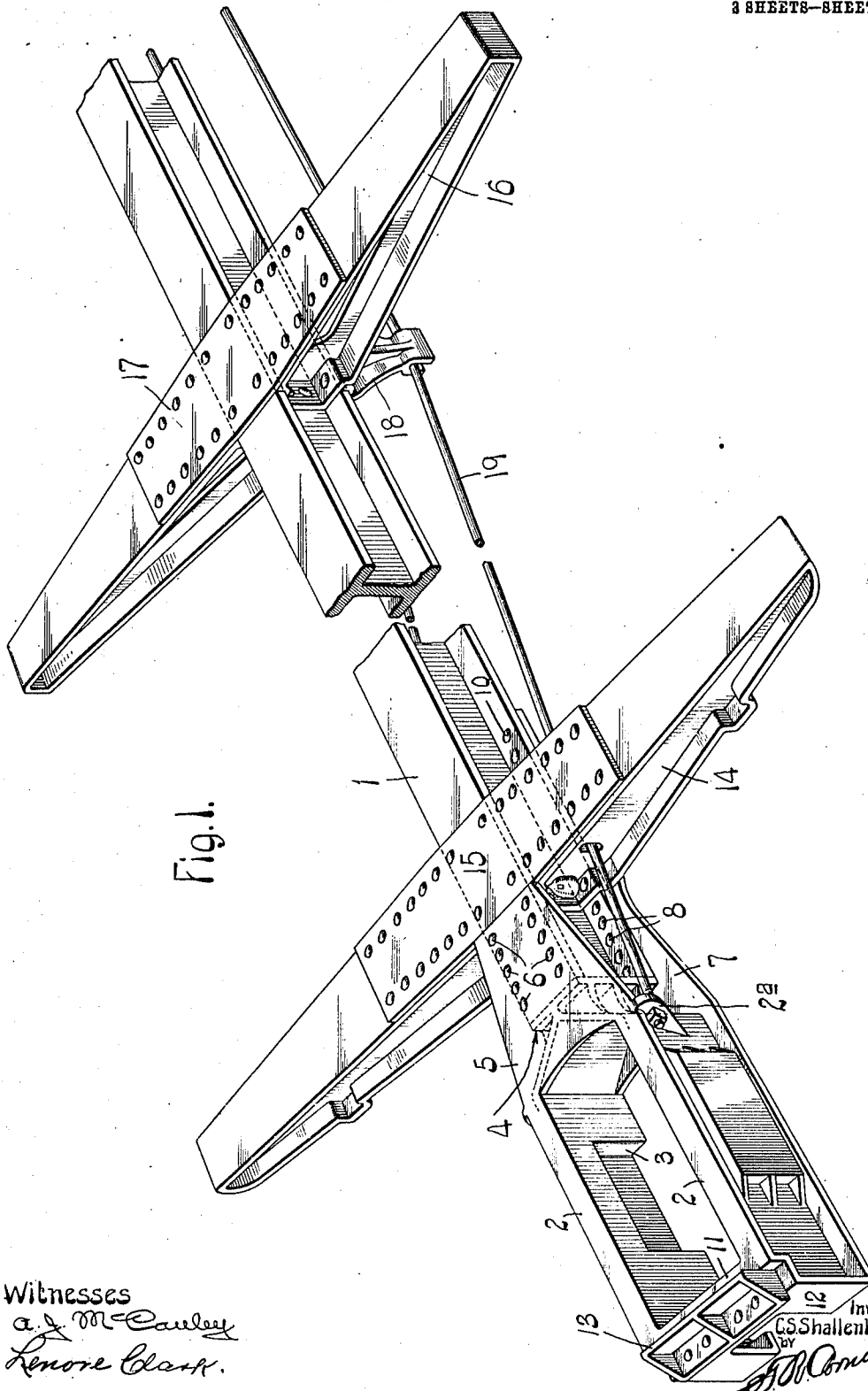


Fig. 1.

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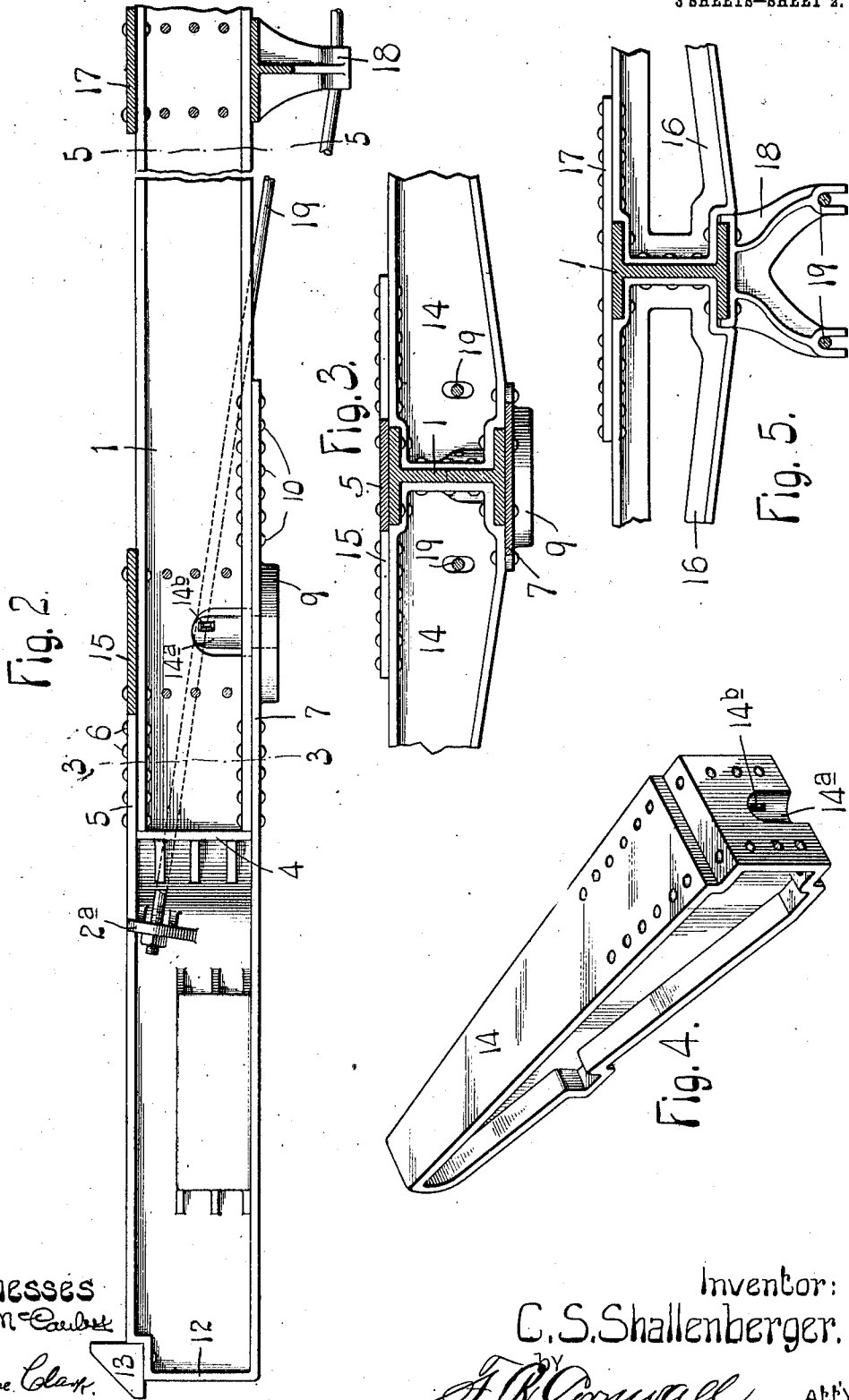
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3 SHEETS—SHEET 2.



Witnesses
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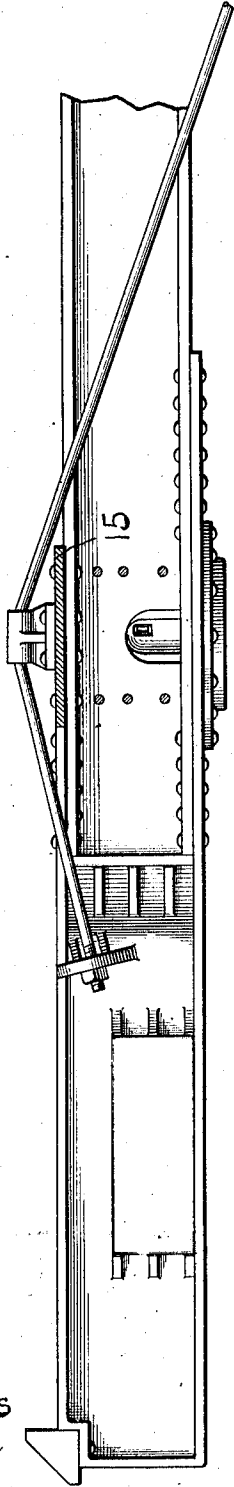
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3 SHEETS—SHEET 3.

Fig. 6.



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Fig. 8.

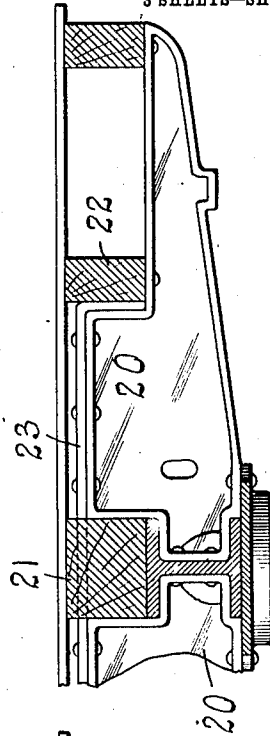
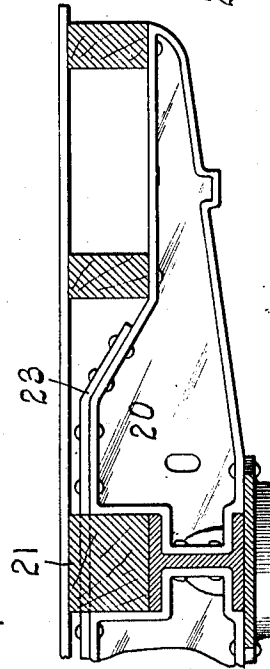


Fig. 7.



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UNITED STATES PATENT OFFICE.

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UNDERFRAME FOR RAILWAY-CARS.

970,128.

Specification of Letters Patent. Patented Sept. 13, 1910.

Application filed February 26, 1909. Serial No. 480,177.

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 Railway-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 a part of an underframe constructed in accordance with my invention. Fig. 2 is a side elevational view of one end of said underframe, partly in section. Fig. 3 is a sectional view on line 3—3, Fig. 2. Fig. 4 is a detailed view of one of the bolster sections. Fig. 5 is a sectional view on line 5—5, Fig. 2. Fig. 6 is a side elevational view illustrating one end of a modified form of underframe. Figs. 7 and 8 are detailed views of modified forms of bolster members.

This invention relates to a new and useful improvement in underframes for railway cars, the object being to construct an underframe wherein the center sill is preferably in the form of a single member, trussed, if desired, the ends of said center sill being connected to castings constituting the draft sills of the car, the outer ends of said draft sills being connected by a member which serves the function of a portion of the end sill, or the deadwood.

In the drawings, 1 indicates the center sill which is preferably constructed of a single rolled member of modified I-shape, though an ordinary I-beam, or a built-up center sill, may be used if desired.

2 indicate draft sills having shoulders 3 in the side walls thereof for the abutment of spring followers, said draft sills being cast together and being appropriately flanged and reinforced by webs and gussets. At the rear or inner ends of these draft sills is a thrust-block 4 against which the end of the center sill abuts. This thrust-block is appropriately strengthened by webs formed integral with the casting.

5 is a rearwardly extending top flange integral with the casting and riveted by means of rivets 6 to the top flange of the center sill.

This flange 5 is preferably a continuation of the top flange of the draft sills.

7 is a bottom plate, which is practically a continuation of the bottom flange of the draft sills, said bottom plate being secured to the bottom flanges of the center sill by means of the rivets 8. This bottom plate 7 extends rearwardly beyond the bolster so as to support the center-bearing plate 9, which may be riveted thereto or cast integral therewith. The inner end of plate 7 is secured to the bottom flange of the center sill by rivets 10.

The outer ends of the draft sills 2 are connected together by a member 11 formed integral with the draft sills, said member 11 and the front wall 12 of the draft sills forming a deadwood, the recess in said front wall accommodating the draw bar.

13 is a bracket casting which is preferably made separate and riveted to the member 11, said bracket casting constituting an upward projection of the deadwood against which the end sill of the car abuts.

14 indicate members of the bolster, which members are preferably castings essentially I-shaped in cross section and whose inner ends are seated in the center sill. A tension plate 15 riveted to the center sill and to said bolster members constitutes a top cover plate. The king-pin passes up through an opening in the center plate, the web and bottom flange of the center sill being cut away to receive said pin, the bolster members being also recessed as at 14^a to accommodate said pin. A cotter-pin or key may be passed through the opening 14^b to hold the king-pin in position.

16 indicate flying transoms which are preferably in the form of castings substantially like the bolster castings, except, of course, it is unnecessary to provide these flying transoms with the side bearings. A tension cover plate 17 is riveted to the top flanges of the center sill and to these flying transoms.

18 indicates a casting riveted to the under side of the center sill and preferably in the plane of the flying transoms. This casting has marginal lips extending up on each side of the bottom flange of the center sill, as shown in Fig. 5, said lips being located between the center sill and abutting shoulder

on the flying transoms. In this manner, it is impossible for the casting to be displaced laterally. The securing rivets hold it against longitudinal displacement. Casting 18 constitutes a double strut or divided queen post in which truss rods 19 are seated. The ends of these truss rods pass through openings in the webs of the bolster members and are secured to lugs 2^a extending laterally from the inner ends of the draft members. Nuts are provided to adjust the tension of these truss rods.

In Fig. 6 I have shown a modified form of truss rod arrangement in which the rods pass up over a block arranged on the cover plate 15, thus giving a greater depth to the truss.

My improved underframing as above described is primarily intended for use as a supplemental framing, the center sill being in the horizontal plane of the draft sills and directly transmitting buffing and pulling stresses. Thus, my improvement may be employed as a supplementary underframing for wooden cars provided with the usual longitudinal wooden sills and wooden end sill. It is obvious, however, that my improvement is capable of use in steel car construction in which event, the side sills can be connected to the ends of the bolster and flying transom members, or the sides of the car, acting as plate girders, can be relied upon to carry part of the load.

Where it is necessary or desirable, in connection with cars having wooden sills, to accommodate said sills, I may construct the bolster and flying transom members as shown in Figs. 7 and 8, wherein the castings 20 extend above the center sill, forming a pocket for the reception of the wooden center sill 21, the upper portion being either tapered, as shown in Fig. 7, to accommodate the intermediate sill, or formed with an abrupt shoulder, as shown in Fig. 8, against which the intermediate sill 22 rests. In the constructions shown in Figs. 7 and 8, a top cover plate 23 is employed which is riveted to the tapered or shouldered portions of the casting, as the case may be.

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 my invention, what I claim is:

1. In a car underframe, the combination with a center sill, of castings fixed to the ends of said sill, which castings each comprise top and bottom plates, draft sills integral with the outer ends of said top and bottom plates and an end plate integral with the outer ends of the sills.

2. In a car underframe, a center sill, end castings comprising top and bottom plates for attachment to the end of the center sill, and draft sills integral with the forward ends of the plates.

3. In a car underframe, a center sill, castings secured to and forming extensions on the ends of said center sill, said castings having draft sills formed integral therewith, struts intermediate the ends of the center sill and truss rods passing under said struts and whose ends are connected to said castings.

4. In a car underframe, a center sill, castings secured to and forming extensions on the ends of said center sill, and having integral draft beams, top and bottom plates, bolster members secured to said bottom plate and to said center sill, and a top tension plate uniting the inner ends of the bolster members and extending across the top of the center sill.

5. In a car underframe, a center sill member, castings having abutments for the ends of said center sill member, said castings having integral draft sills in the horizontal plane of the center sill member whereby buffing and pulling stresses are directly transmitted, and truss rods for the center sill connecting said castings.

6. In a car underframe, a center sill and a strut in the form of a divided queen post, said strut having lips extending on each side of the center sill.

7. In a car underframe, a center sill, flying transoms extending therefrom, a tension plate, and a strut, said strut having lips extending on each side of the center sill and between shoulders of the flying transom member.

8. In a car underframe, a metal center sill, a transom secured to the web thereof and extending above the top flange of said center sill so as to provide a shoulder for the superposed longitudinal center sill, and a tension plate secured to the upper face of said transom member.

9. In a car underframe, a metal center sill, a transom member secured to the web thereof and extending above the upper surface of said metal center sill so as to provide an abutment for a superposed wooden center sill, said transom member having its outer end reduced in height so as to accommodate superposed longitudinal sills, and a tension plate secured to the upper portion of said transom member.

10. A casting for end frames comprising draft sills connected together at their inner ends to form an abutment block for the center sill, top and bottom plates extending inwardly above and below said abutment block, the outer ends of said draft sills being connected together by an intermediate member, in combination with a bracket se-

cured to said connecting member and forming an abutment for a superposed intermediate sill.

11. In a car underframe, the combination with a trussed center sill, flying transoms extending therefrom intermediate its ends, castings secured to the compression member of said trussed center sill and to which castings the tension member of the trussed center sill is also secured, said castings being provided with abutment plates to take up the end thrusts of said compression member, draft sills formed integral with said abutment plates, and top and bottom plates integral with the castings whereby the same are secured to the center sill.

12. A casting for car underframes comprising a pair of horizontally disposed plates, a pair of vertically disposed plates forming draft sills on which draft sills are formed shoulders, a thrust block between the horizontally disposed plates and an end plate between the outer ends of the draft sills, all of which plates and block are formed integral.

13. A casting for car underframes comprising a pair of vertically disposed plates forming draft sills, a front plate uniting said pair of plates at one end, a bracket on top of said front plate, a pair of horizontally disposed plates integral with the opposite ends of the vertically disposed plates, and a thrust block between the horizontally disposed plates.

14. In a car underframe, the combination with a flanged sill of top and bottom plates fixed to the flanges of the sill at the ends thereof, draft sills integral with the top and bottom plates, and a truss rod on the center sill, the ends of which rod are attached to the draft sills.

15. In a car underframe, the combination

with a flanged center sill, of castings secured to the ends of the center sill, each casting comprising top and bottom plates and draft sills integral with said top and bottom plates, struts on the under side of the center sill, and truss rods bearing on said struts and having their ends attached to the draft sills of the end castings.

16. A casting for car underframes comprising top and bottom plates for attachment to the center sill, a pair of draft sills integral with the top and bottom plates, a front wall plate integral with the draft sills, and a bracket on the front wall plate.

17. A casting for car underframes consisting of top and bottom plates, draft sills integral therewith, there being shoulders formed on the inner faces of said draft sills, a thrust block integral with the top and bottom plates, a front wall plate integral with the outer ends of the draft sills and a bracket on the outer ends of the draft sills against which bracket the end sill of the car abuts.

18. A car underframe comprising a center sill, castings fixed to the ends of said center sill and forming extensions thereof, thrust blocks forming a part of the castings, and against which the ends of the center sill engage bolsters fixed to the end portions of the center sill, flying transoms fixed on the center sill, and truss rods for the center sill, the ends of which truss rods are fixed to the castings at the ends of said sill.

In testimony whereof I hereunto affix my signature in the presence of two witnesses, this 22nd day of February, 1909.

CHARLES S. SHALLENBERGER.

Witnesses:

A. J. McCAULEY,
LENORE CLARK.