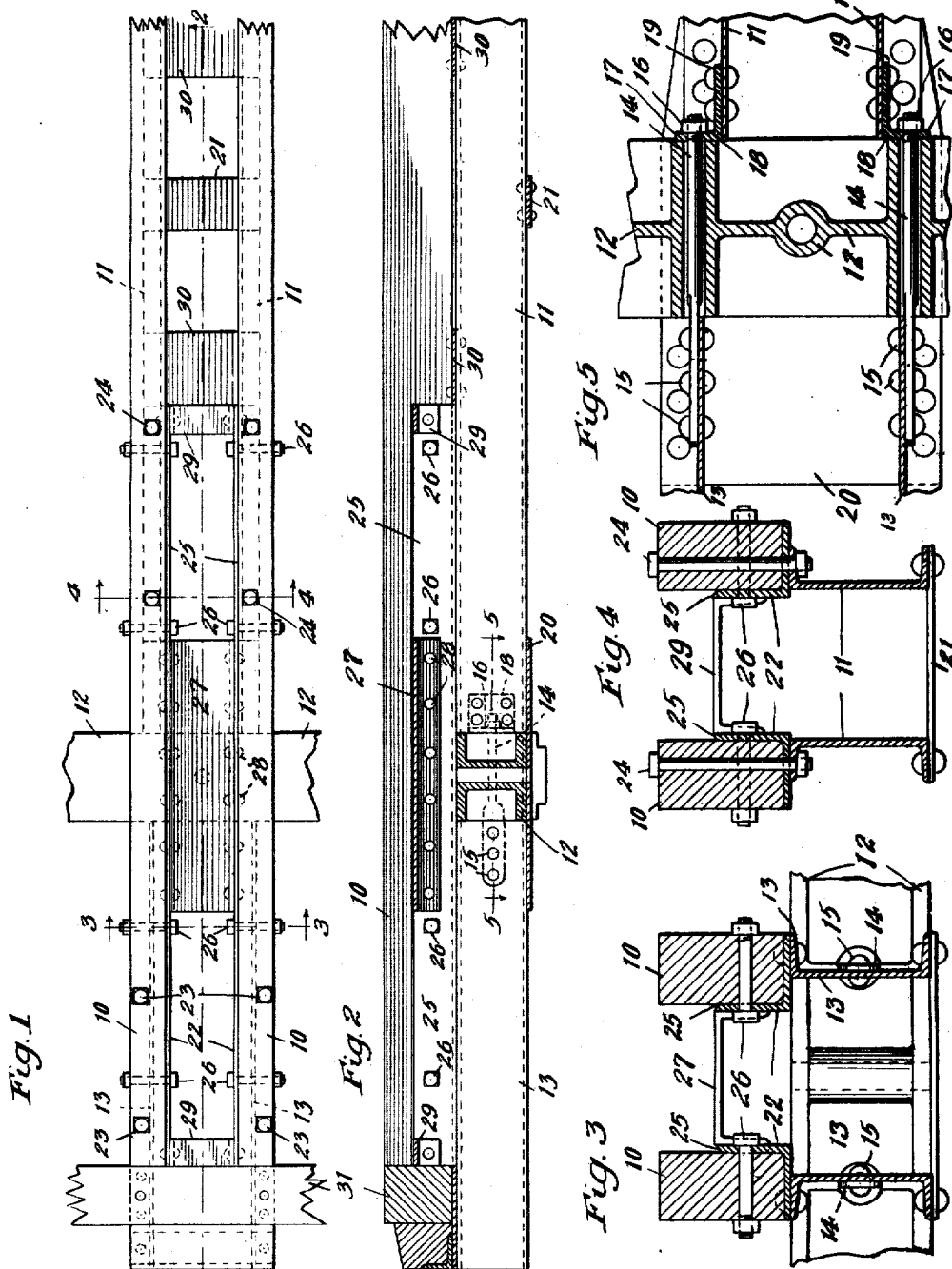


1,012,014.

H. C. PRIEBE.
CAR UNDERFRAME.
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UNITED STATES PATENT OFFICE.

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CAR-UNDERFRAME.

1,012,014.

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To all whom it may concern:

Be it known that I, HERMAN C. PRIEBE, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Car-Underframes, of which the following is a specification.

My invention has for an object the providing of wooden railroad cars with a metallic underframe wherein the metallic draft-sills may be permitted a wider spread than the metallic center-sills intermediate the bolsters and in which said center-sills abutting the inner face of the bolsters and said draft-sills abutting the respective outer faces of the bolsters are tied together across the top of the bolsters and at the same time secured to the wooden center-sills by the same tie-members; and the invention has for further objects such other improvements in structure or function as may be found to obtain in the devices hereinafter described or claimed.

In the accompanying drawings, forming a part of these specifications, and in which like numerals indicate like parts in all of the figures, Figure 1 is a top plan view of the structure extending from the end of the car to about midway the body-bolsters, the outer ends of the body-bolsters being broken away; Fig. 2 is a longitudinal sectional view taken on the line 2, 2 of Fig. 1; Fig. 3 is a transverse sectional view taken on the line 3, 3 of Fig. 1; Fig. 4 is a transverse sectional view taken on the line 4, 4 of Fig. 1; Fig. 5 is an enlarged fragmentary horizontal sectional view taken on the line 5, 5 through the body-bolster of Fig. 2.

10, 10 are the wooden center-sills of the wooden underframe of the car.

11, 11 are the channel-iron center-sills, extending from one to the other of the two body-bolsters 12 of the car, as indicated in Figs. 1 and 2.

13, 13 are the channel-iron draft-sills, a pair at either end of the car and extending from the body-bolster to the end of the car and abutting the outer transverse faces of the transverse members constituting the body-bolster, as indicated in Figs. 1, 2 and 5. These channel-iron draft-sills have their upper flanges on the same level as the upper flanges of the channel-iron center-sills and as the top face of the body-bolster between such draft-sills and metallic center-sills, but

the inner vertical faces of said draft-sills are spaced considerably wider apart than are the mutual opposed inner faces of the channel-iron center-sills. The vertical webs of said draft-sills and channel-iron center-sills, respectively abutting opposite transverse vertical faces of the body-bolster, are tied together through the body-bolster by the tie-bolts 14, 14, one of said tie-bolts having one of its ends riveted to the outer face of the vertical web of the associated draft-sill, by the rivets 15, and having its other end bolted, by the bolt-nut 16, to the flange 17 of the angle-iron 18, whose other flange 19 is riveted to the outer face of the vertical web of the associated channel-iron center-sill, the first named flange of said angle-iron abutting the inner transverse face of the body-bolster at the point where said tie-bolt is thrust through said bolster.

The bottom flanges of the respectively opposed draft-sills and channel-iron center-sills, on opposite sides of the body-bolster, are tied together underneath the bolster by the tie-plate 20, whose center is of course perforated to admit the king-bolt into the body-bolster. And the bottom flanges of the channel-iron center-sills are also tied together transversely at several points intermediate the body-bolsters, by narrow tie-plates 21 riveted to said flanges.

The upper flanges of the respectively opposed draft-sills and channel-iron center-sills, abutting opposite transverse faces of the top of the body-bolster, are tied together across the top of the body-bolster, and secured to the wooden center-sills of the car, by the angle-irons 22, which extend for a considerable distance on either side of the body-bolster. The horizontal flanges of said angle-irons are seated against the bottom faces of the respective wooden center-sills, and each such flange is wide enough to span both the upper flanges of the channel-iron center-sills and the more widely separated upper flanges of the draft-sills. The vertical bolts 23 pass through and bind together the said wooden center-sills and horizontal flanges of said angle-iron tie-members and the upper flanges of the draft-sills; and the similar vertical bolts 24 pass through and bind together the said wooden center-sills and horizontal flanges of said angle-iron tie-members and upper flanges of the afore-

said channel-iron center-sills. The vertical flanges 25 of said angle-iron tie-members are seated against the respectively opposed inner vertical faces of the wooden center-sills and

5 are bolted thereto by the transverse horizontal bolts 26. Directly over the bolster and for a short distance on either side thereof, the said mutually-opposed vertical flanges 25 of these angle-iron tie-members are tied
10 together by the short section of channel-iron 27 whose downwardly turned vertical flanges are respectively riveted, by the rivets 28, to the inner faces of said vertical flanges 25 of said tie-members, said tie-members
15 being thus rigidly tied together and spaced apart. Similarly formed but narrow transverse channel-iron tie-pieces 29 tie together and space apart the extreme ends of said mutually-opposed vertical flanges 25 of the
20 aforesaid angle-iron tie-members. Intermediate the body-bolsters and beyond the inner ends of said angle-iron tie-members, the upper flanges of the channel-iron center-sills are tied together and spaced apart
25 transversely by several short transverse tie-plates 30, bolted to said upper flanges, the upper faces of said tie-plates bearing against and additionally supporting the under faces of the wooden center-sills. The outer ends
30 of the angle-iron tie-members abut against the inner vertical faces of the respective end-sills 31 of the wooden underframe.

This construction provides an exceedingly rigid steel underframe for reinforcing the
35 wooden underframe of the car, and is of such simple form and so arranged that it may be applied to the wooden frame of an old car without requiring any appreciable cutting away or weakening of the wooden
40 center-sills thereof, and at the same time accommodates a standard type of bolster and draft-sill construction, and also minimizes the total weight of steel members required to effect the necessary reinforcement of the
45 wooden underframe to which said steel sub-frame is applied. The construction may be modified within the scope of the terms of the claims hereinafter made.

I claim:

50 1. In a car-underframe, in combination: wooden center-sills; metallic body-bolsters thereunder; angle-iron center-sills intermediate and abutting the inner transverse faces
55 of said bolsters; angle-iron draft-sills beyond and abutting the outer transverse faces of said bolsters; tie-devices secured to the mutually-adjacent ends of the vertical webs of said metallic center-sills and draft-sills
60 at each bolster; angle-iron tie-members spanning the top of each bolster, the horizontal flanges of said tie-members supporting the under faces of the wooden center-sills and being secured upon the top flanges of the
65 mutually-adjacent ends of the metallic center-sills and draft-sills, and the vertical

flanges of said tie-members being opposed to the vertical faces of said wooden center-sills; and bolts binding said tie-members and wooden center-sills together; substantially as specified.

2. In a car-underframe, in combination: 70 wooden center-sills; metallic body-bolsters thereunder; channel-iron center-sills intermediate and abutting the inner transverse faces of said bolsters; channel-iron draft-sills beyond and abutting the outer transverse faces of said bolsters, tie-devices secured to the mutually-adjacent ends of the vertical webs of said metallic center-sills and draft-sills at each bolster; angle-iron tie-
75 members spanning the top of each bolster, the horizontal flanges of said tie-members supporting the under faces of the wooden center-sills and being secured upon the top flanges of the mutually-adjacent ends of the
80 metallic center-sills and draft-sills, and the vertical flanges of said tie-members being opposed to the vertical faces of said wooden center-sills; and bolts binding said tie-members and wooden center-sills together; substantially as specified. 90

3. In a car-underframe, in combination: wooden center-sills; metallic body-bolsters thereunder; channel-iron center-sills intermediate and abutting the inner transverse
95 faces of said bolsters; channel-iron draft-sills beyond and abutting the outer transverse faces of said bolsters; tie-bolts passing through each bolster and secured to the mutually-adjacent ends of the vertical webs of
100 said metallic center-sills and draft-sills at each bolster; angle-iron tie-members spanning the top of each bolster, the horizontal flanges of said tie-members supporting the under faces of the wooden center-sills and
105 being secured upon the top flanges of the mutually-adjacent ends of the metallic center-sills and draft-sills, and the vertical flanges of said tie-members being opposed to vertical faces of said wooden center-sills; and bolts binding said tie-members and
110 wooden center-sills together; substantially as specified.

4. In a car-underframe, in combination: 115 wooden center-sills; metallic body-bolsters thereunder; angle-iron center-sills intermediate and abutting the inner transverse faces of said bolsters; angle-iron draft-sills beyond and abutting the outer transverse faces
120 of said bolsters; tie-devices secured to the mutually-adjacent ends of the vertical webs of said metallic center-sills and draft-sills at each bolster; angle-iron tie-members spanning the top of each bolster, the horizontal
125 flanges of said tie-members supporting the under faces of the wooden center-sills and being secured upon the top flanges of the mutually-adjacent ends of the metallic center-sills and draft-sills, and the vertical flanges of said tie-members being opposed to 130

the mutually-opposed inner vertical faces of said wooden center-sills; transverse tie-plates spanning the space between the opposite tie-members above each bolster; and bolts binding said tie-members and tie-plates and wooden center-sills together; substantially as specified.

5. In a car-underframe, in combination: wooden center-sills; metallic body-bolsters thereunder; channel-iron center-sills intermediate and abutting the inner transverse faces of said bolsters; channel-iron draft-sills beyond and abutting the outer transverse faces of said bolsters; tie-devices secured to the mutually-adjacent ends of the vertical webs of said metallic center-sills and draft-sills at each bolster; angle-iron tie-members spanning the top of each bolster, the horizontal flanges of said tie-members supporting the under faces of the wooden center-sills and being secured upon the top flanges of the mutually-adjacent ends of the metallic center-sills and draft-sills, and the vertical flanges of said tie-members being opposed to vertical faces of said wooden center-sills; bolts binding said tie-members and wooden center-sills together; and a tie-plate underneath each bolster and spanning and secured to the under faces of the lower flanges of the mutually-adjacent ends of the metallic center-sills and draft-sills; substantially as specified.

6. In a car-underframe, in combination: wooden center-sills; metallic body-bolsters thereunder; channel-iron center-sills intermediate and abutting the inner transverse faces of said bolsters; channel-iron draft-sills beyond and abutting the outer transverse faces of said bolsters; tie-devices secured to the mutually-adjacent ends of the vertical webs of said metallic center-sills and draft-sills at each bolster, the horizontal flanges of said tie-members supporting the under faces of the wooden center-sills and being secured upon the top flanges of the mutually-opposed inner vertical faces of center-sills and draft-sills, and the vertical flanges of said tie-members being opposed to the mutually-opposed inner vertical faces of said wooden center-sills; transverse tie-plates spanning the space between the opposite tie-members above each bolster; bolts binding said tie-members and tie-plates and wooden center-sills together; and auxiliary narrow transverse tie-plates spanning and secured to the flanges of the metallic center-

sills at intervals intermediate the bolsters; substantially as specified.

7. In a car-underframe, in combination: wooden center-sills; metallic body-bolsters thereunder; channel-iron center-sills intermediate and abutting the inner transverse faces of said bolsters; channel-iron draft-sills beyond and abutting the outer transverse faces of said bolsters; tie-bolts passing through each bolster and secured to the mutually-adjacent ends of the vertical webs of said metallic center-sills and draft-sills at each bolster; angle-iron tie-members spanning the top of each bolster, the horizontal flanges of said tie-members supporting the under faces of the wooden center-sills and being secured upon the top flanges of the mutually-adjacent ends of the metallic center-sills and draft-sills, and the vertical flanges of said tie-members being opposed to the mutually-opposed inner vertical faces of said wooden center-sills; and transverse tie-plates spanning the space between the opposite tie-members above each bolster; bolts binding said tie-members and tie-plates and wooden center-sills together; and narrow transverse tie-plates spanning and secured to the flanges of said metallic center-sills at intervals intermediate the bolsters; substantially as specified.

8. In a car-underframe, in combination: wooden center-sills; metallic body-bolsters thereunder; angle-iron center-sills intermediate and abutting the inner transverse faces of said bolsters; angle-iron draft-sills beyond and abutting the outer transverse faces of said bolsters; angle-iron tie-members spanning the top of each bolster, the horizontal flanges of said tie-members supporting the under faces of the wooden center-sills and being secured upon the top flanges of the mutually adjacent ends of the metallic center-sills and draft-sills, and the vertical flanges of said tie-members being opposed to vertical faces of said wooden center-sills; and bolts binding said tie-members and wooden center-sills together; substantially as specified.

In testimony whereof I hereunto set my hand in the presence of two subscribing witnesses.

HERMAN C. PRIEBE.

Witnesses:

PEARL ABRAMS,
HENRY LOVE CLARKE.