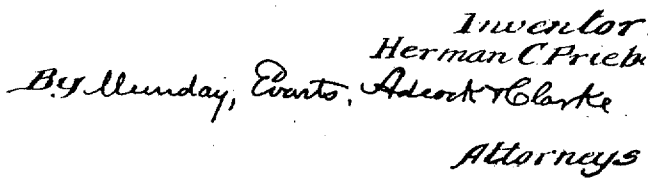


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UNITED STATES PATENT OFFICE.

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CAR-UNDERFRAME.

1,012,013.

Specification of Letters Patent.

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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 a wooden underframe with a reinforcing metallic underframe, both underframes being in the line of draft and the reinforcing draft-sills being permitted a wider spread than the reinforcing center-sills and at the same time being rigidly secured to and constituting prolongations of said center-sills between the wooden center-sills, and the said wooden center-sills being preserved intact intermediate the body-bolsters; and the invention has for further objects such other improvements in structure or functions as may be found to obtain in the devices hereinafter described or claimed.

In the accompanying drawings, forming a part of this specification, and in which like reference numerals indicate like parts in all of the figures, Figure 1 is a top plan view of the structure; Fig. 2 is a longitudinal sectional view on the median section line 2—2 of Fig. 1; Fig. 3 is a sectional view on the line 3—3 of Fig. 1; and Fig. 4 is a sectional view on the line 4—4 of Fig. 1.

10, 10 are the wooden center-sills of the wooden underframe of the car, said sills extending the entire length of the car and being positioned in the line of draft, their spacing from each other being just sufficient to accommodate the draft rigging. 11 is one of the transverse body-bolsters that immediately support said sills and are bolted thereto by the vertical bolts 12.

13, 13 are reinforcing angle-iron center-sills, positioned between the wooden center-sills and extending, across the bolsters, from the inner end of the draft rigging at one end of the car to the inner end of the draft rigging at the other end of the car. These reinforcing angle-iron center-sills are positioned with their inner angled faces toward each other and with the outer faces of their vertical webs bearing against the inner faces of the opposed wooden sills,

the said vertical webs of these angle irons being bolted to the said sills by the horizontal transverse bolts 14. The horizontal flanges along the bottom of these angle-iron center-sills rest upon the upper face of each bolster.

15, 15 are reinforcing angle-iron draft-sills, positioned between the wooden sills at each end of the car and extending from the end of the car to a point considerably to the other side of the adjacent body bolster, these angle-iron draft-sills being faced outwardly and having both their vertical webs and their horizontal flanges gained into the opposed faces of the wooden sills that they bear against. By reason of the gaining of these angle-iron draft-sills into the wooden sills, the required reinforcement of the ends of the wooden sills is effected without narrowing the free space required to accommodate the draft gearing; and for a considerable distance both the angle-iron draft-sills and the angle-iron center-sills extend across the bolsters, the said angle-iron draft-sills being permitted to underlap the angle-iron center-sills and additionally reinforce the wooden sills in the vicinity of the bolsters. The reserving of the free space required for the draft rigging may necessitate the gaining of the angle-iron draft-sills into the ends of the wooden sills, as above stated; but the wooden sills are preserved intact, and at the same time reinforced by the angle-iron center-sills, for nearly the entire length of the car intermediate the body-bolsters. The vertical webs of the angle-iron draft-sills are bolted to the wooden sills by the transverse horizontal bolts 16. At either side of each bolster, for about the space within which the angle-iron draft-sills and angle-iron center-sills lap each other, there are secured below said angle-irons, and closely abutting the opposite transverse edges of the top part of the bolster, the reinforcing tie-plates 17, 17, the said tie-plates being riveted to the horizontal flanges of the superimposed angle-irons, by the rivets 18, and being extended outward under and supporting the wooden sills, spanning the entire distance from the outer longitudinal edge of one wooden sill to the outer longitudinal edge of the other

wooden sill. These tie-plates thus bind together all of the angle-iron sills and brace them against the transverse edges of the bolster, and also additionally support the wooden sills. To further tie the angle-iron center-sills together, there are spaced along them at intervals, intermediate the bolsters, the accessory narrow tie-plates 19, riveted, by the rivets 20, to the under faces of the horizontal flanges of said angle-iron center-sills, and extending out under and additionally supporting the wooden sills. To further tie together the outer ends of the two angle-irons constituting each pair of angle-iron draft-sills, there are provided the downwardly flanged accessory tie-plates 21, positioned to tie together the tops of the vertical webs of the mutually opposed draft-sills near the end of the car, each said tie-plate having its downwardly bent flanges riveted to the opposed inner faces of the vertical webs of said draft-sills, in a position high enough to clear the draft rigging that is adapted to be interposed between said draft-sills. The tie plates 17 and angle irons 15 and wooden sills 10 are further bound together by the vertical through-bolts 22.

It is obvious that this construction permits extremely effective reinforcing of the wooden underframe with the steel underframe, when both underframes are required to be in the line of draft, as often happens in reinforcing the underframe of a wooden car that has been originally constructed with its wooden underframe in the line of draft; and at the same time the necessary space or spread to accommodate the draft gear between the ends of the sills is preserved without requiring the wooden sills to be cut away or gained out except at their ends, the said wooden sills being preserved intact for nearly their entire length intermediate the bolsters. The connection of both underframes with the bolsters is reinforced and strengthened to a maximum extent.

My invention is hereinabove set forth as embodied in one particular form of construction, but I do not limit it thereto or to less than all the possible forms in which the invention as hereinafter claimed may be embodied and distinguished from any prior devices for like purpose.

I claim:—

1. In a car underframe, in combination: wooden center-sills; body-bolsters under and secured to and supporting said sills; longitudinal angle-irons within and having the outer faces of their vertical webs secured to the inner faces of said sills intermediate said bolsters; other longitudinal angle-irons reversely faced and underlapping the ends of the aforesaid angle-irons at the bolsters, and extending beyond the bolsters to the

respective ends of the said sills, said other angle-irons being gained into the abutting faces of the sills and secured thereto; and tie-plates spanning the space between and secured to the flanges of the angle-irons on either side of each bolster; substantially as specified.

2. In a car underframe, in combination: wooden center-sills; body-bolsters under and secured to and supporting said sills; longitudinal angle-irons within and having the outer faces of their vertical webs secured to the inner faces of said sills intermediate said bolsters; other longitudinal angle-irons reversely faced and underlapping the ends of the aforesaid angle-irons at the bolsters, and extending beyond the bolsters to the respective ends of the said sills, said other angle-irons being gained into the abutting faces of the sills and secured thereto; tie-plates spanning the space between and secured to the flanges of the angle-irons on either side of each bolster; and accessory tie-plates spanning the space between and secured to the sills and angle-irons at intervals intermediate the bolsters; substantially as specified.

3. In a car underframe, in combination: wooden center-sills; body-bolsters under and secured to and supporting said sills; longitudinal, angle-irons within and having the outer faces of their vertical webs secured to the inner faces of said sills intermediate said bolsters; and other longitudinal angle-irons reversely faced and underlapping the ends of the aforesaid angle-irons at the bolsters, and extending beyond the bolsters to the respective ends of the said sills, said other angle-irons being gained into the abutting faces of the sills and secured thereto; substantially as specified.

4. In a car underframe, in combination: wooden center-sills; body-bolsters under and secured to and supporting said sills; longitudinal, angle-irons within and having the outer faces of their vertical webs secured to the inner faces of said sills intermediate said bolsters; and other longitudinal angle-irons reversely faced and underlapping the ends of the aforesaid angle-irons at the bolsters, and extending beyond the bolsters to the respective ends of the said sills, said other angle-irons being secured to the abutting faces of the sills, substantially as specified.

5. In a car underframe, in combination: wooden center-sills; body-bolsters under and secured to and supporting said sills; longitudinal, angle-irons within and having the outer faces of their vertical webs secured to the inner faces of said sills intermediate said bolsters; other longitudinal angle-irons reversely faced and underlapping the ends of the aforesaid angle-irons at the bolsters, and extending beyond the bolsters to the

respective ends of the said sills, said other
angle-irons being secured to the abutting
faces of the sills, and an accessory tie-plate
between the tops of the vertical webs of the
5 angle-iron draft-sills; substantially as speci-
fied.

In testimony whereof I hereunto set my

hand in the presence of two subscribing wit-
nesses.

HERMAN C. PRIEBE.

Witnesses:

HENRY LOVE CLARKE,
H. M. MUNDAY.