H. C. PRIEBE.

CAR UNDERFRAME.

APPLICATION FILED MAY 13, 1909.

947,259.

Patented Jan. 25, 1910.

2 SHEETS—SHEET 1.

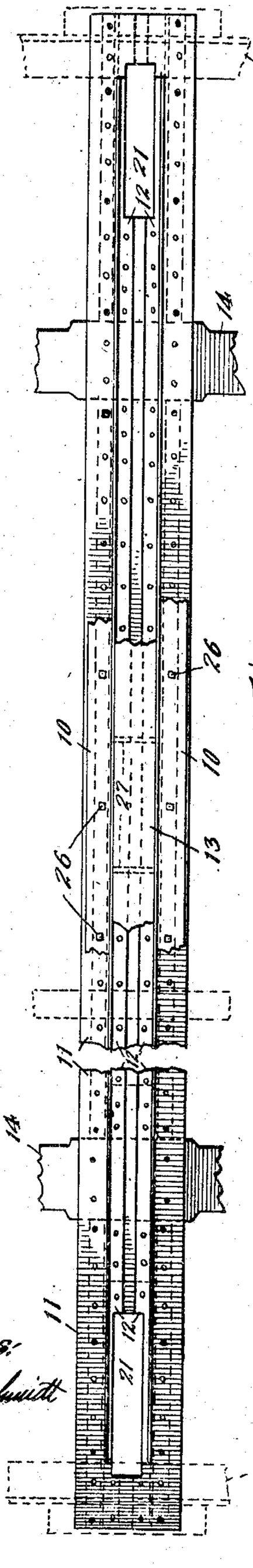

Fig. 1

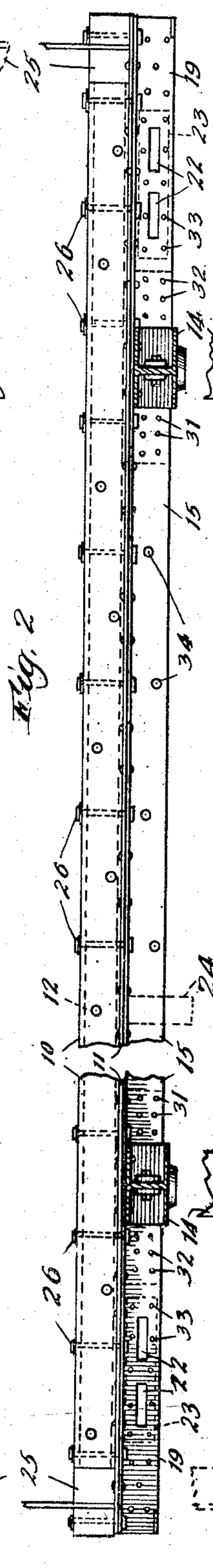

Fig. 2

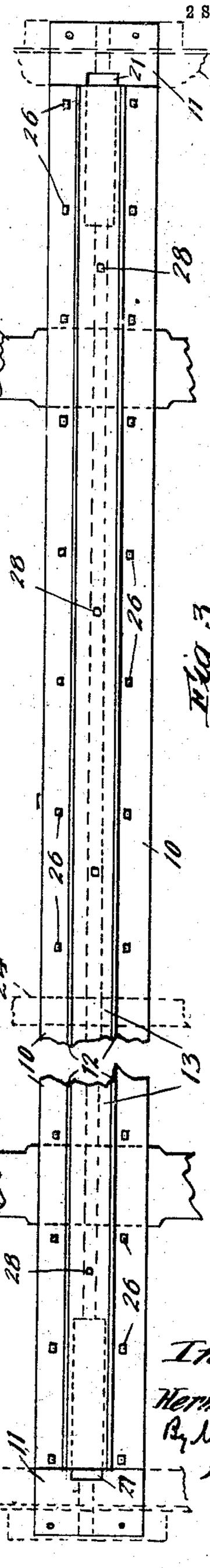

Fig. 3

Witnesses:

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By Munday, Evarts,

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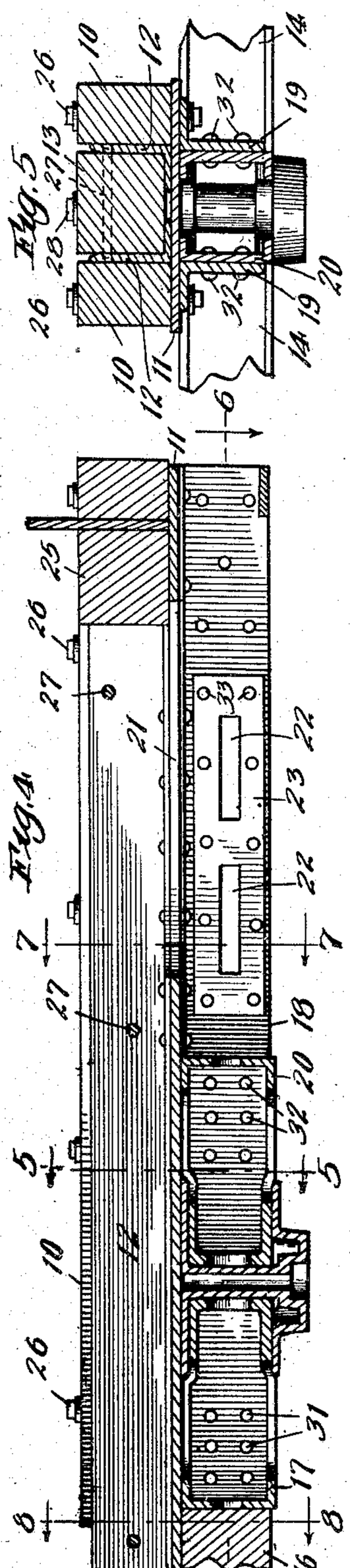

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UNITED STATES PATENT OFFICE.

HERMAN C. PRIEBE, OF CHICAGO, ILLINOIS.

CAR-UNDERFRAME.

947,259. Specification of Letters Patent. **Patented Jan. 25, 1910.**

Application filed May 13, 1909. Serial No. 495,603.

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 relates to steel underframing for wooden cars, and has for an object the providing of the wooden underframe with a steel reinforcing construction that shall be especially effective in securing the required additional strength and resistance to compression and draft and buffing strains and that at the same time shall be economical and readily applied without so cutting away the wooden underframing as to weaken the latter; and the invention has for further objects such other improvements in construction or function as may be found to obtain in the device 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 construction, with the wooden center-sills and the upper filler-beam broken away for the greater part of their length; Fig. 2 is a side elevation of the construction, with the bolster-beams sectioned; Fig. 3 is a top plan view of the construction with the wooden center-sills and upper filler-beam complete; Fig. 4 is an enlarged longitudinal vertical sectional view on the median line of the construction, from one end of the car to a point intermediate the body-bolsters, with the upper filler-beam omitted; Fig. 5 is a section on the line 5—5 of Fig. 4; Fig. 6 is a section on the line 6—6 of Fig. 4; Fig. 7 is a section on the line 7—7 of Fig. 4; and Fig. 8 is a section on the line 8—8 of Fig. 4.

10, 10 are the wooden center-sills of the wooden underframe of the car. 11 is a steel reinforcing plate running the entire length of said sills, applied under and supporting them, and spanning the space between them.

12, 12 are angle-irons, with their angles facing each other, applied longitudinally the entire length of the sills 10, 10, the horizontal flanges of said angle-irons resting upon the plate 11 and their vertical webs bearing outwardly against the opposed inner faces of the sills 10, 10. The filler-beam 13 occupies the space between the opposed angle-irons, 12, 12. The single-piece I-beam steel body-bolsters 14, 14 are applied underneath and transversely of the plate 11. Intermediate said bolster-beams, and underneath plate 11, are the auxiliary angle-irons 15, 15, with their angles facing each other, and with their horizontal flanges applied longitudinally under the horizontal flanges of the angle-irons 12, 12, and supporting the plate 11 intermediate the bolster-beams. The lower filler-beam 16 occupies the space between said angle-irons 15, 15. The castings 17, socketed in the inwardly facing channels of the I-beam bolster-beams. laterally underlap and socket the ends of the angle-irons 15, 15 and abut against the ends of the lower filler-beam 16.

At either end of the car, beyond the bolster-beams, the ends of the plate 11 are supported by two pairs of auxiliary longitudinal angle-irons, the inner pair 18, 18 having their angles facing each other and their vertical webs bearing against the vertical webs of the outer pair 19, 19, the horizontal webs of the inwardly facing pair bearing against the plate 11 under the horizontal webs of the upper angle-irons 12, 12, and the horizontal webs of the outwardly facing pair, 19, 19, bearing against said plate under the sills, 10, 10. The castings 20, socketed in the outwardly facing channels of the I-beam bolster-beams underlap and socket the inner ends of the angle-irons 19, 19 and abut against the inner ends of the angle-irons 18, 18. The horizontal flanges of the upper angle-irons 12, 12 and the plate 11 and the horizontal flanges of the inwardly facing pair of auxiliary angle-irons 18, 18, at either end of the car, are recessed or cut away, at 21, 21, to accommodate the yokes of the draft-rigging. And the two pairs of auxiliary angle-irons 18, 18 and 19, 19, at either end of the car, are slotted, at 22, 22, to accommodate the follower-blocks of the draft-rigging; and along such slotted sections the accessory reinforcing plates 23, 23 are applied to the opposed inner faces of the auxiliary angle-irons 18, 18. 24 indicates one of the needle-beams of the underframe, and 25, 25 the end sills of the car. Properly distributed bolts and rivets secure and bind together all of the members that bear against and support and stiffen each other, as fully appears in the drawings. Vertical bolts 26 pass through and bind together the reinforcing plate 11 and the sills

10, 10, and also, at the ends of the car, the horizontal flanges of the outwardly facing auxiliary angle-irons 19, 19. The horizontal bolts or rivets 27 bind together the vertical webs of the angle-irons 12, 12 and the filler-beam 13, and the vertical bolts 28 bind together said filler-beam and the plate 11 with the horizontal flanges of the angle-irons 12, 12 engaged between them. The bolts 29 bind the opposed flanges 30, 30 of the castings 17 and 20 on either face of the vertical web of each I-beam bolster-beam. The rivets 31 bind together the lateral faces of the castings 17 and the overlapping ends of the auxiliary angle-irons 15, 15. The rivets 32 bind together the lateral faces of the castings 20 and the overlapping ends of the auxiliary angle-irons 19, 19. And the rivets 33 bind together the two pairs of auxiliary angle-irons 18, 18 and 19, 19 on either side of the draft-rigging at each end of the car. Bolts 34 bind together filler-beam 16 and angle-irons 15, 15.

With variations in the construction of the wooden underframe of the car or of the manner of applying the draft-rigging, or to accommodate other special requirements, various of the members of the reinforcement may be modified or omitted, within the scope of the claims hereinafter made.

I claim:—

1. In a car-underframe in combination: center-sills; a longitudinal reinforcing plate immediately under and supporting said sills and spanning the space between them; and longitudinal angle-irons having their horizontal flanges free of said sills and secured to and reinforcing said plate; substantially as specified.

2. In a car-underframe, in combination: center-sills; a longitudinal reinforcing plate under and supporting said sills and spanning the space between them; and longitudinal angle-irons above and resting upon said plate and having their horizontal flanges free of said sills; and securing means to bind said parts together; substantially as specified.

3. In a car-underframe, in combination: center-sills; a longitudinal reinforcing plate under and supporting said sills and spanning the space between them; longitudinal angle-irons above and resting upon said plate and having their vertical webs facing opposed faces of said sills; a longitudinal filler-beam between said angle-irons; and securing means to bind all said members together; substantially as specified.

4. In a car-underframe, in combination: center-sills; a longitudinal reinforcing plate under and supporting said sills and spanning the space between them; longitudinal angle-irons above and resting upon said plate and having the outer faces of their vertical webs facing opposed faces of said sills; and securing means to bind all said members together; substantially as specified.

5. In a car-underframe, in combination: center-sills; a longitudinal reinforcing plate under and supporting said sills and spanning the space between them; said plate being recessed, between the car-end and bolster, to accommodate the draft-rigging; and securing means to bind all said members together; substantially as specified.

6. In a car-underframe, in combination: center-sills; a longitudinal reinforcing plate under and supporting said sills and spanning the space between them; longitudinal angle-irons above and resting upon said plate and having their vertical webs facing opposed faces of said sills; auxiliary longitudinal angle-irons under and supporting said plate; and securing means to bind all said members together; substantially as specified.

7. In a car-underframe, in combination: center-sills; a longitudinal reinforcing plate under and supporting said sills and spanning the space between them; longitudinal angle-irons above and resting upon said plate and having their vertical webs facing opposed faces of said sills; two pairs of auxiliary longitudinal angle-irons under and supporting said plate, the inner pair having their angles facing each other and their vertical webs bearing against the vertical webs of the outer pair; and securing means to bind all said members together; substantially as specified.

8. In a car-underframe, in combination: center-sills; a longitudinal reinforcing plate under and supporting said sills and spanning the space between them; longitudinal angle-irons above and resting upon said plate and having their vertical webs facing opposed faces of said sills; auxiliary longitudinal angle-irons under and supporting said plate; a longitudinal filler-beam between said auxiliary angle-irons intermediate the body-bolsters of the car; and securing means to bind all said members together; substantially as specified.

9. In a car-underframe, in combination: center-sills; a longitudinal reinforcing plate under and supporting said sills and spanning the space between them; longitudinal angle-irons above and resting upon said plate and having their vertical webs facing opposed faces of said sills; auxiliary longitudinal angle-irons under and supporting said plate; body-bolster beams under and transverse of said plate; castings socketed in and extending longitudinally from the faces of said bolster-beams and socketing the ends of said auxiliary angle-irons; and securing means to bind all said members together; substantially as specified.

10. In a car-underframe, in combination: center-sills; a longitudinal reinforcing plate

under and supporting said sills and spanning the space between them; longitudinal angle-irons above and resting upon said plate and having their vertical webs facing opposed faces of said sills; body-bolster beams under and transverse of said plate; auxiliary longitudinal angle-irons under and supporting said plate intermediate said bolster-beams, and other such angle-irons beyond said bolster-beams; and securing means to bind all said members together; substantially as specified.

11. In a car-underframe, in combination: center-sills; a longitudinal reinforcing plate under and supporting said sills and spanning the space between them; longitudinal angle-irons above and resting upon said plate and having their vertical webs facing opposed faces of said sills; body-bolster beams under and transverse of said plate; auxiliary longitudinal angle-irons under and supporting said plate intermediate said bolster-beams; two pairs of auxiliary longitudinal angle-irons under and supporting said plate beyond said bolster-beams, the inner pair having their angles facing each other and their vertical webs bearing against the vertical webs of the outer pair; and securing means to bind all said members together; substantially as specified.

12. In a car-underframe, in combination: center-sills; a longitudinal reinforcing plate under and supporting said sills and spanning the space between them; longitudinal angle-irons above and resting upon said plate and having their vertical webs facing opposed faces of said sills; body-bolster beams under and transverse of said plate; auxiliary longitudinal angle-irons under and supporting said plate intermediate said bolster-beams; two pairs of auxiliary longitudinal angle-irons under and supporting said plate beyond said bolster-beams, the inner pair having their angles facing each other and their vertical webs bearing against the vertical webs of the outer pair; castings socketed in and extending longitudinally from the faces of said bolster-beams and socketing the ends of said auxiliary angle-irons; and securing means to bind all said members together; substantially as specified.

13. In a car-underframe, in combination: center-sills; a longitudinal reinforcing plate under and supporting said sills and spanning the space between them; longitudinal angle-irons above and resting upon said plate and having their vertical webs facing opposed faces of said sills; body-bolster beams under and transverse of said plate; auxiliary longitudinal angle-irons under and supporting said plate intermediate said bolster-beams, and other such angle-irons beyond said bolster-beams; a filler beam between said auxiliary angle-irons intermediate said bolsters; and securing means to bind all said members together; substantially as specified.

14. In a car-underframe, in combination: center-sills; a longitudinal reinforcing plate under and supporting said sills and spanning the space between them; longitudinal angle-irons above and resting upon said plate and having their vertical webs facing opposed faces of said sills; body-bolster beams under and transverse of said plate; auxiliary longitudinal angle-irons under and supporting said plate intermediate said bolster-beams; two pairs of auxiliary longitudinal angle-irons under and supporting said plate beyond said bolster-beams, the inner pair having their angles facing each other and their vertical webs bearing against the vertical webs of the outer pair; a filler beam between said auxiliary angle-irons intermediate said bolsters; and securing means to bind all said members together; substantially as specified.

15. In a car-underframe, in combination: center-sills; a longitudinal reinforcing plate under and supporting said sills and spanning the space between them; longitudinal angle-irons above and resting upon said plate and having their vertical webs facing opposed faces of said sills; body-bolster beams under and transverse of said plate; auxiliary longitudinal angle-irons under and supporting said plate intermediate said bolster-beams; two pairs of auxiliary longitudinal angle-irons under and supporting said plate beyond said bolster-beams, the inner pair having their angles facing each other and their vertical webs bearing against the vertical webs of the outer pair; castings socketed in and extending longitudinally from the faces of said bolster-beams and socketing the ends of said auxiliary angle-irons; a filler beam between said auxiliary angle-irons intermediate said bolsters; and securing means to bind all said members together; substantially as specified.

16. In a car-underframe, in combination: center-sills; a longitudinal reinforcing plate under and supporting said sills and spanning the space between them; longitudinal angle-irons above and resting upon said plate and having their vertical webs facing opposed faces of said sills; body-bolster beams under and transverse of said plate; auxiliary longitudinal angle-irons under and supporting said plate intermediate said bolster-beams; two pairs of auxiliary longitudinal angle-irons under and supporting said plate beyond said bolster-beams, the inner pair having their angles facing each other and their vertical webs bearing against the vertical webs of the outer pair; said end pairs of auxiliary angle-irons having their vertical webs longitudinally slotted to accommodate the follower-blocks of the draft-rigging, and provided with reinforcing

plates at the section thus slotted; and securing means to bind all said members together; substantially as specified.

17. In a car-underframe, in combination: center-sills; a longitudinal reinforcing plate under and supporting said sills and spanning the space between them; longitudinal angle-irons above and resting upon said plate and having their vertical webs facing opposed faces of said sills; a longitudinal filler-beam between said angle-irons; body-bolster beams under and transverse of said plate; auxiliary longitudinal angle-irons under and supporting said plate intermediate said bolster-beams; two pairs of auxiliary longitudinal angle-irons under and supporting said plate beyond said bolster-beams, the inner pair having their angles facing each other and their vertical webs bearing against the vertical webs of the outer pair; castings socketed in and extending longitudinally from the faces of said bolster-beams and socketing the ends of said auxiliary angle-irons; a filler beam between said auxiliary angle-irons intermediate said bolsters; and securing means to bind all said members together; substantially as specified.

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

HERMAN C. PRIEBE.

Witnesses:

HENRY LOVE CLARKE,

H. W. MUNDAY.