

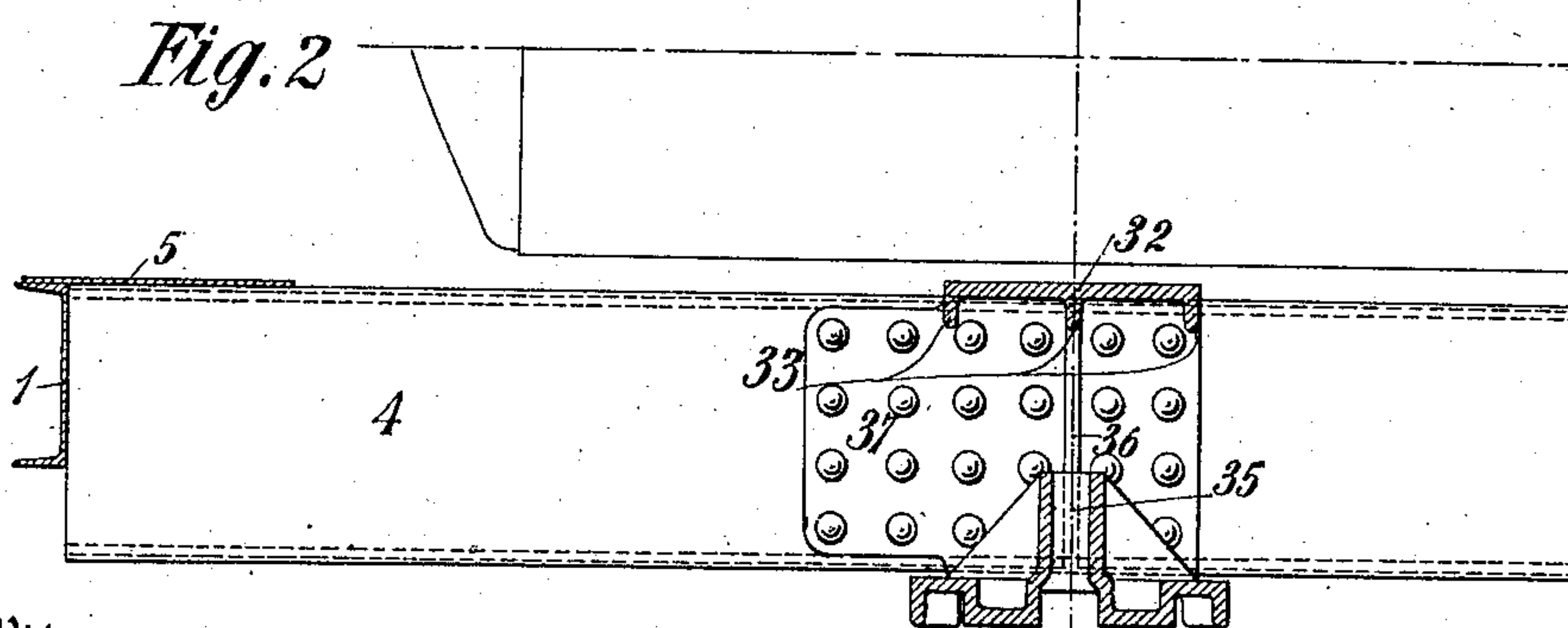
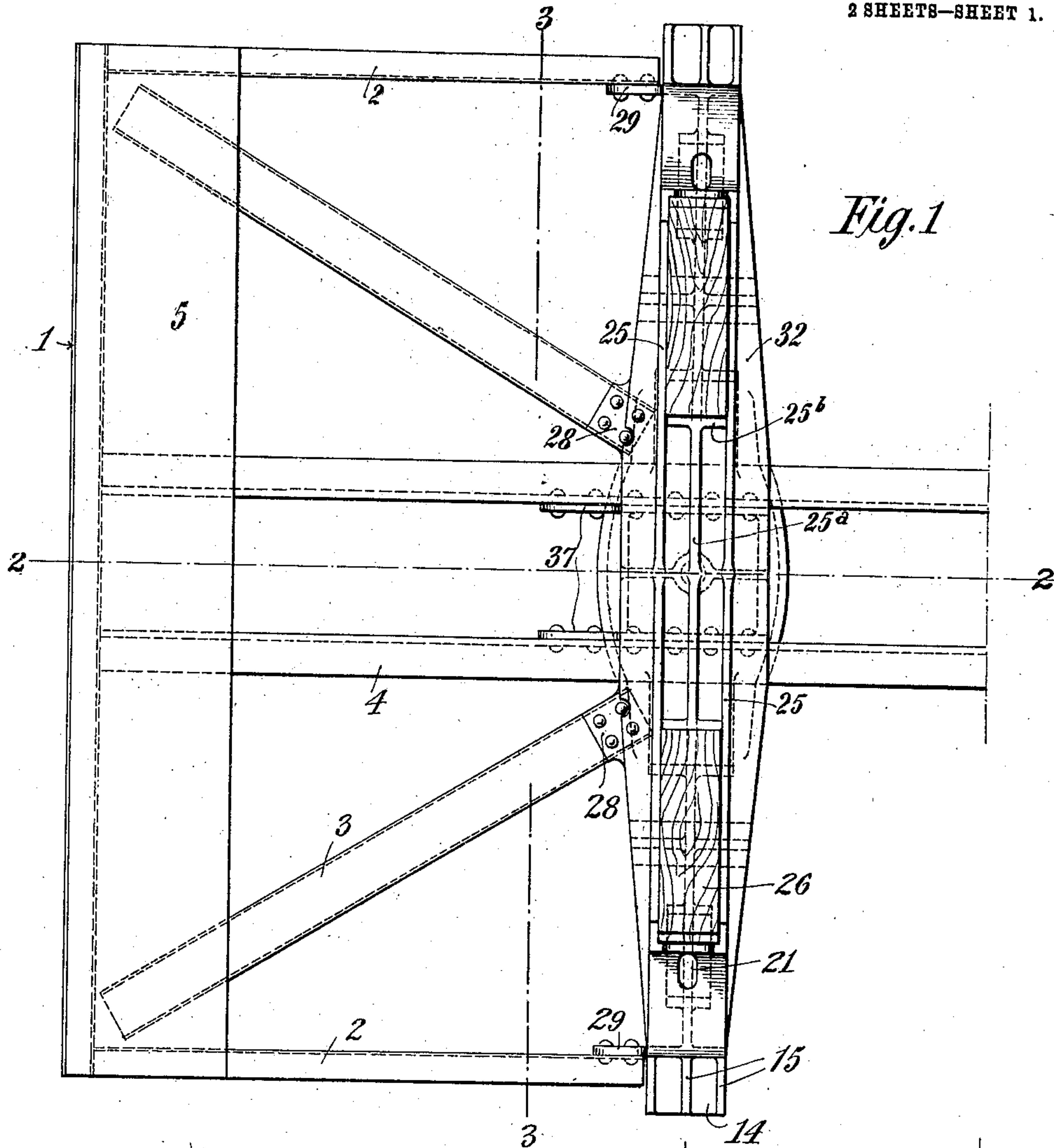
J. McE. AMES.  
CAR UNDERFRAME.

APPLICATION FILED AUG. 6, 1908.

928,925.

Patented July 27, 1909.

2 SHEETS—SHEET 1.



Witnesses:  
Raphael Ketter  
C.D. Morrill

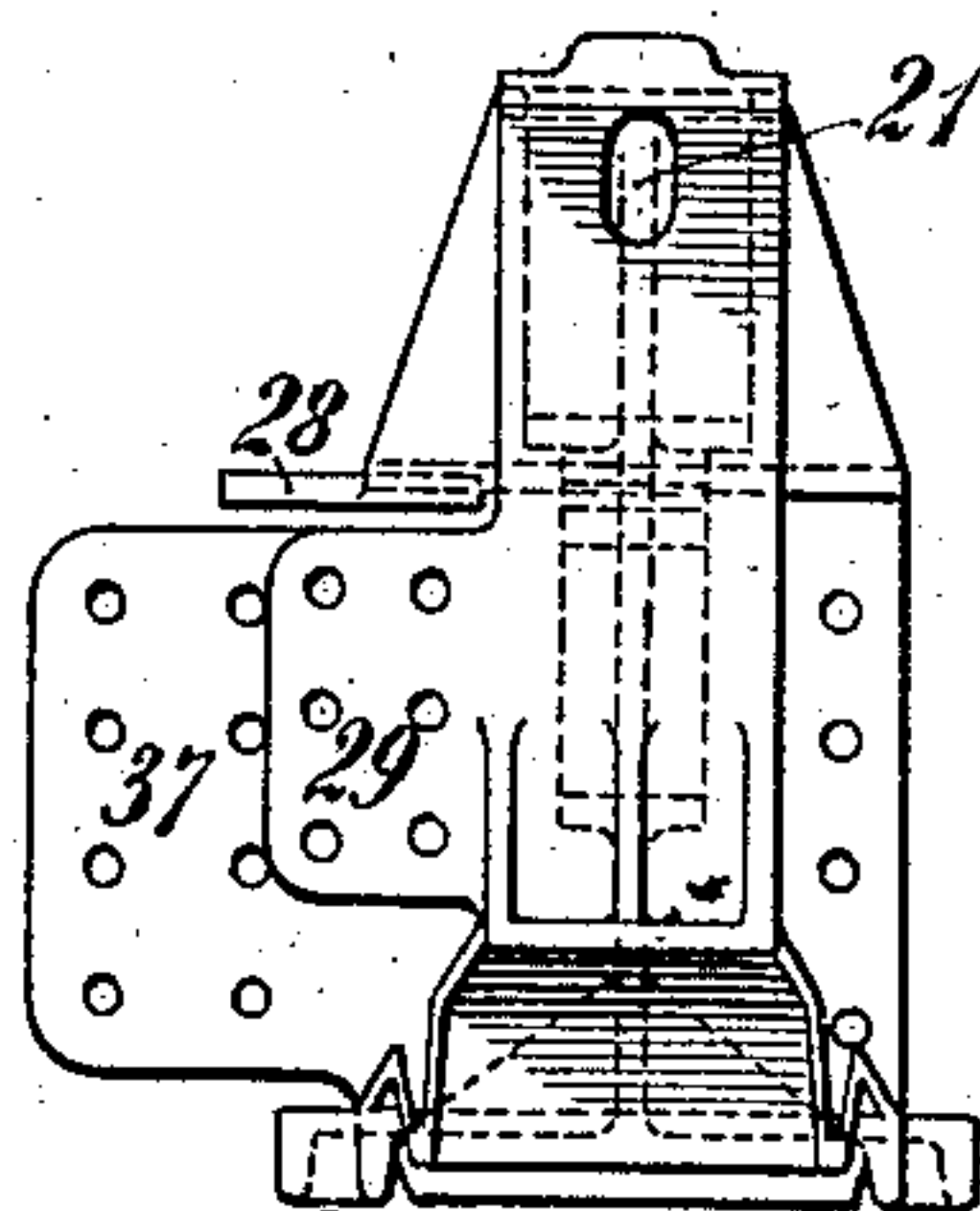
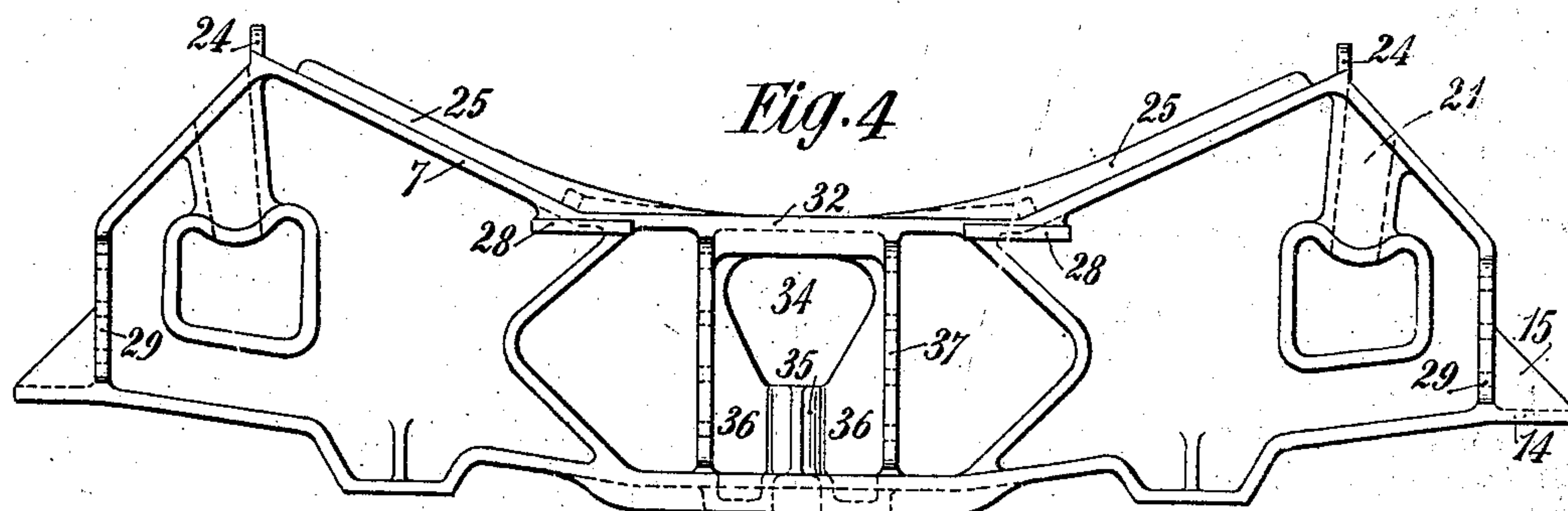
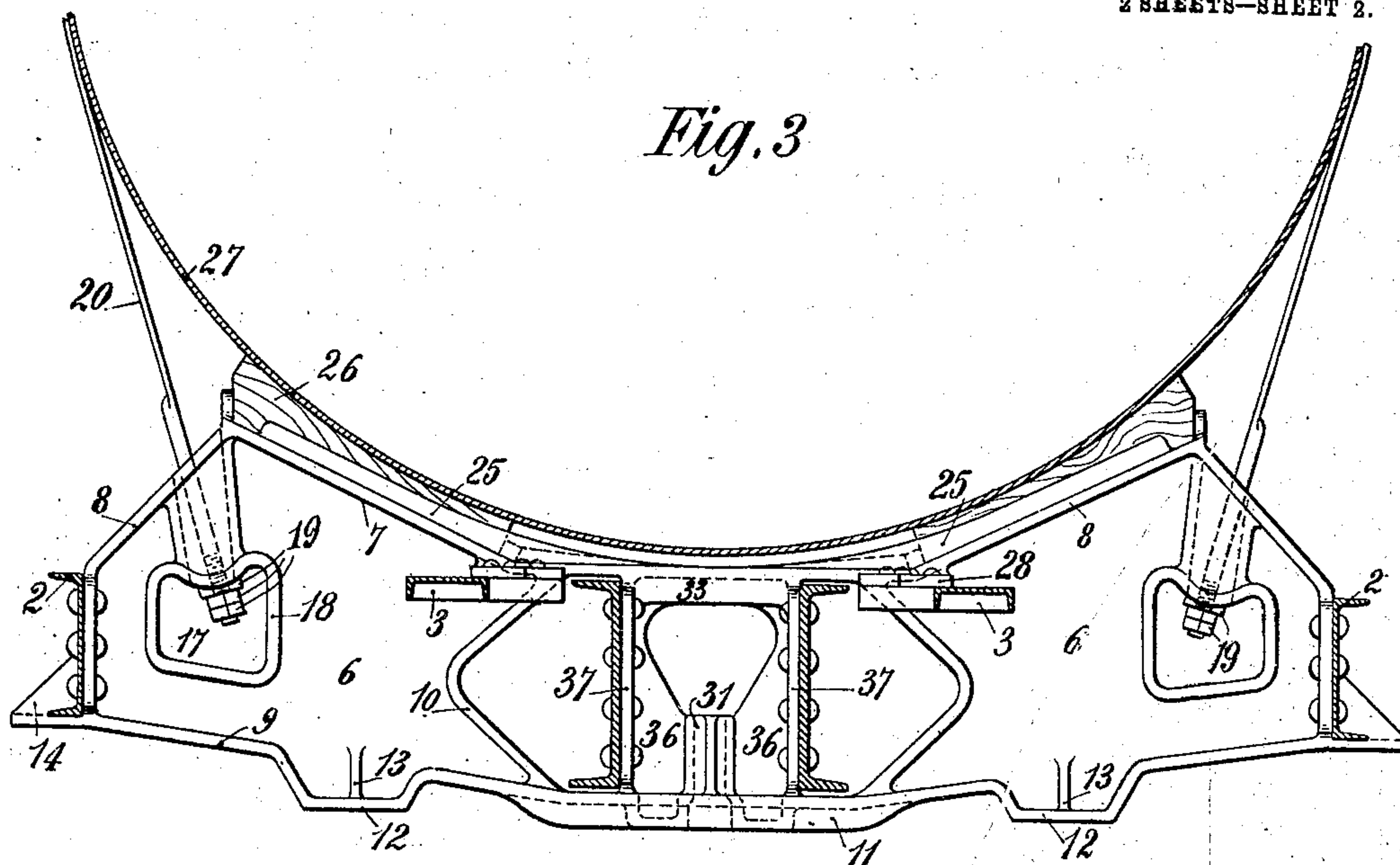
Inventor  
John McE. Ames  
By his Attorney J. H. Gibbs

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# UNITED STATES PATENT OFFICE.

JOHN McE. AMES, OF DONGAN HILLS, NEW YORK.

## CAR-UNDERFRAME.

No. 928,925.

Specification of Letters Patent.

Patented July 27, 1909.

Application filed August 6, 1908. Serial No. 447,202.

*To all whom it may concern:*

Be it known that I, JOHN McE. AMES, residing at Dongan Hills, Staten Island, New York, and being a citizen of the United States, have invented certain new and useful Improvements in Car-Underframes, 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 to use the same, reference being had to the accompanying drawings, which illustrate the preferred form of the invention, though it is to be understood that the invention is not limited to the exact details of construction shown and described, as it is obvious that various modifications thereof will occur to persons skilled in the art.

In said drawings: Figure 1 is a plan view of an underframe provided with my invention; Fig. 2 is a central longitudinal sectional view taken on line 2—2 of Fig. 1; Fig. 3 is a transverse vertical sectional view taken on line 3—3 of Fig. 1; Fig. 4 is a rear elevational view of the bolster member; and Fig. 5 is an end elevational view of the bolster without the sill members connected therewith.

The object of this invention is to provide an underframe equipped with a cast metal bolster which is adapted to serve as a combined body bolster and tank cradle when used with tank cars, the said bolster being equipped with integral flanged portions which are adapted to assist in the connection therewith of commercially shaped or built-up side sills and diagonal braces together with intermediate vertical flanges adapted for connection with and supports for center or draft sills of commercial shapes or built-up members.

For purposes of illustration I have shown end sills 1 of channel shape in cross section, side sills 2, diagonal braces 3 and center sills or draft sills 4, all of channel shape, though it is readily understood that other commercial shapes or built-up parts may be substituted therefor with equally good results, and extending across the end portions of the center sills, side sills, and diagonal braces is a platform plate 5. Said parts may be connected in any suitable manner, as by rivets or other equivalent.

Referring particularly to the bolster construction 6—6 are the web portions which

are surrounded on all sides by outstanding flanges 7—8—9—10—11 on respectively the top side, end portion, outer bottom side, intermediate side portions and intermediate bottom portion, the flanges 7—10 inclusive being laterally projecting flanges and the flanges 11 being vertically disposed.

Between the flanges 9—10 are side bearings 12 formed integral therewith and provided with vertically extending strengthening ribs 13 merging with the web portions 6 before referred to. Projecting laterally beyond the ends of the bolster proper are extensions 14 provided with vertical ribs 15 adapted to serve as jacking plates.

The web portions 6 are provided with transversely extending openings 17 having perimetrical flanges 18 which are slightly rounded at their upper portion so as to form bearing faces for the securing members 19 comprising washers and nuts on the lower ends of tank bands 20 which project through elongated openings 21 which extend downwardly through the top portion of the bolster to said opening 17, the openings being elongated to permit of the connection to the bolster of tank bands for securing tanks of different diameters thereto.

Extending relatively vertically above the body portion of the bolster in proximity to the openings 21 are flanges 24 which with side flanges 25 extending longitudinally of the bolster form sockets for the tank supporting timbers 26 which are shown in Figs. 1 and 3, on which timbers the tanks 27 are supported. Projecting forwardly from the bolster and preferably from or just below the upper flange 7 thereof are other flanges 28 which, as will be noted in Fig. 1, are obliquely disposed and of suitable size for the connection of the diagonal braces 3 before referred to. Projecting forwardly of the bolsters from end portions thereof are other flanges 29 which are provided for the purpose of connecting side sill members 2 thereto, said side sill members preferably terminating short of jacking plates 14, as shown in Fig. 1.

At the middle portion of the bolster, the portion of the bolster which is commonly called the center filler 31, but which in this construction is integral with the other portions thereof, is provided with an integral cover portion 32 having depending flanges



33 below which is an opening 34 for the insertion of a pin in the bearing 35 with web portions 36 extending longitudinally of the bolster and extending from the top plate to the bottom plate thereof.

Integral with the longitudinally extending web 36 are transversely extending flanges 37, which as best shown in Figs. 1 and 2, extend forwardly of the body portion of the bolster sufficiently far to serve as supporting means for the forwardly extending portions of the draft sills 4 thereby providing flanges 37 within and beyond the bolster, which flanges serve as struts to assist in supporting same and also serve as supporting means to prevent dropping of the end portions of the underframe and dispense with the sill cover plate which is now commonly used in this type of car to assist in supporting the end portions of its underframe.

As will be seen in Fig. 1, the flanges 25 extend substantially across the elevated outer portion of the bolster and the intermediate depressed portion thereof while an intermediate longitudinal flange 25<sup>a</sup> extends between the transversely extending flanges 25<sup>b</sup> which form the inner ends of the timber sockets.

What is claimed as new is:—

1. In a combined bolster and tank cradle an integral casting provided with perimetrical flange and inner web portions there being elongated tank bank sockets in said bolster web portions and openings in said webs registering with said sockets.

2. In a cast bolster, a perimetrical flange and separated web portions with relatively horizontal and oblique openings therein combined with longitudinally disposed timber sockets in its upper face.

3. In a cast bolster, a perimetrical flange and separated web portions with relatively horizontal and oblique meeting openings therein combined with a central filler including longitudinal flanges.

4. In a cast bolster, a perimetrical flange and separated web portions with relatively horizontal and oblique meeting openings therein combined with a central filler and center bearing with longitudinal flanges adapted to serve as struts between the top and bottom portions of said flange.

5. In a cast bolster, a perimetrical flange and separated web portions with relatively horizontal and oblique meeting openings therein combined with a central filler having radiating flanges and sill securing flanges integral therewith.

6. A cast metal bolster having a multi-form flanged perimeter with separated web portions and sockets for bearing blocks extending longitudinally of its upper face portion.

7. A bolster and tank cradle combined,

comprising an integral casting having a multi-form flanged perimeter with separated web portions and angularly disposed openings in said flange and web portions.

8. In a bolster, an integral casting comprising a flanged upper portion forming a tank cradle, a center filler member having sill attaching flanges and separated web portions, said web portions terminating in inner flanges diverging vertically from near the middle of their length and at a greater distance from the sill flanges near their middle than at their ends.

9. A cast metal bolster having a multi-form flanged perimeter with separated web portions and intermediate sill connection flanges serving as struts, and longitudinally disposed timber sockets in its upper face.

10. In a bolster, an integral casting comprising a flanged tank cradle and body portion, a center filler member in said body portion with sill attaching flanges thereon, bolster web portions at each side of said filler member, said webs converging at their top and bottom portions and being widely separated therebetween.

11. A bolster and tank cradle combined, comprising an integral casting having a relatively continuous multi-form marginal flange and a web portion having transverse and upwardly extending openings for connection of tank bands with said bolster at each side of its middle portion.

12. A cast metal bolster having a relatively continuous multi-form marginal portion, a plurality of web portions separated near the middle of said bolster, with transversely extending vertical flanges serving as struts and as sill connection means, combined with longitudinally extending timber sockets in the upper face of said bolster.

13. In a combined body bolster and tank cradle, an integral casting comprising a body portion having webs, with tank band sockets in the webs thereof and transverse openings to facilitate the connection of tank bands with said bolster.

14. In a bolster of cast metal, a body portion having transverse and upwardly extending meeting openings to facilitate the connection of tank bands with said bolster, combined with flanges surrounding the said transverse openings.

15. In a bolster and tank cradle, an integral casting with timber pockets in the upper face thereof, an integral web and surrounding flange with an opening formed centrally thereof to receive a pin, a pin socket within said opening with flanges extending laterally therefrom in the plane thereof and flanges at an angle to said socket flanges adapted to be connected with a sill member.

16. In a bolster of cast metal, a multi-form flanged portion and separated web portion



with curved flanges connected with the inner ends of said web portions, and timber sockets extending obliquely upwardly in the upper face of said bolster.

5 17. In a bolster and tank cradle, an integral casting with timber pockets in the upper face thereof, a multiform flanged perimeter and longitudinally separated web portions terminating in angularly disposed  
10 flanges with an interposed filler member having a pin socket and having transverse flanges in the plane of said socket serving as struts and sill connection members.

15 18. A tank car bolster of cast metal which is provided with top and bottom flanges and web portion with a plurality of cradle timber pockets formed by ribs integral with the top flange.

20 19. A tank car bolster of cast metal which is provided with top and bottom flanges and web portion with openings through the top flange and flanged openings in the web for convenience in connecting a tank band with said bolster.

25 20. A tank car bolster of cast metal which is provided with top and bottom flanges and web portion with openings for tank bands through said top flange tank band sockets in said webs and seats in the web portions for  
30 band securing means.

35 21. A tank car bolster of cast metal which is provided with top and bottom flanges and web portion, with cradle timber pockets in the upper face of said bolster and longitudinal ribs between said cradle timber pockets.

40 22. A tank car bolster of cast metal which is provided with top and bottom flanges and web portion, with cradle timber pockets formed by longitudinal and transversely extending flanges rising above said top plate.

45 23. A tank car bolster of cast metal which is provided with top and bottom flanges and web portion, with cradle timber pockets at each side of the central part of said bolster with a filler in said central part having means thereon for connection with center sills.

50 24. A tank car bolster of cast metal which is provided with top and bottom flanges and web portion, with cradle timber pockets extending longitudinally of said bolster and with tank band sockets in the body of the bolster.

55 25. A tank car bolster of cast metal which is provided with top and bottom flanges and web portion, with cradle timber pockets extending longitudinally of said bolster and with tank band sockets in the body of the bolster beyond the ends of said pockets.

60 26. A tank car bolster of cast metal which is provided with top and bottom flanges and web portion, with cradle timber pockets extending longitudinally of said bolster and with tank band sockets in the body of the  
65 bolster, said sockets having diverging walls.

27. A bolster for tank cars which is provided with conoidal tank band openings through the upper plate thereof at each side of the center of said bolster.

28. A bolster for tank cars which is pro- 70  
vided with conoidal tank band openings through the upper plate thereof and sockets in the web portion thereof at each side of the center of said bolster.

29. A bolster for tank cars which is pro- 75  
vided with conoidal tank band openings through the upper plate thereof at each side of the center of said bolster and with a center filler having flanges thereon for connection with centrally disposed sill members. 80

30. In a bolster, an integral filler with sill connection flanges, top timber pockets and openings extended through the top plate for connection with said bolster of tank bands. 85

31. In a car underframe, the combination comprising a cast bolster with perimetrical flange and separated web portions with relatively horizontal and oblique openings therein, and having forwardly projecting flanges 90  
near the middle portion thereof with sill members connected therewith.

32. In a car underframe, the combination comprising a cast bolster with perimetrical flange and separated web portions with relatively horizontal and oblique openings therein, and having outstanding vertical flanges and center sills connected therewith. 95

33. In a car underframe, the combination comprising a cast bolster with perimetrical flange and separated web portions with relatively horizontal and oblique meeting openings therein, and having outstanding vertical flanges adapted to support sill members beyond the body portion of said bolster. 100

34. In a car underframe, the combination comprising a cast bolster with perimetrical flange and separated web portions with relatively horizontal and oblique openings therein, and having outstanding vertical flanges and center sills connected therewith beyond the body portion of said bolster. 105

35. In a car underframe, the combination comprising a cast bolster with perimetrical flange and separated web portions with tank band sockets in said webs with openings below said sockets, and having outstanding vertical flanges and center sills connected therewith between the end sill and the body portion of said bolster. 110

36. In a car underframe, the combination comprising a cast bolster with perimetrical flange and separated web portions with relatively horizontal and oblique openings therein, and having outstanding vertical and horizontal flanges and sills and brace members connected with said flanges. 115

37. A cast metal bolster having a multiform flanged perimeter with separated web portions and sockets for bearing blocks ex- 120  
130



tending longitudinally of its upper face portion with vertical strut flanges extending beyond the body portion of said bolster.

38. A cast metal bolster having a multi-form flanged perimeter with separated web portions and sockets for bearing blocks extending longitudinally of its upper face portion with vertical flanges extending beyond the body portion of said bolster and adapted for connection with sill members.

39. A cast metal bolster having a multi-form flanged perimeter with separated web portions and sockets for bearing blocks extending longitudinally of its upper face portion with vertical, and obliquely disposed horizontal flanges adapted to project toward the end sill for connection with sills and oblique braces.

40. A cast metal bolster having a multi-form flanged perimeter with separated web portions and sockets for bearing blocks extending longitudinally of its upper face portion with parallel strut flanges extending through and beyond the body portion of the

bolster adapted to support the outer ends of center sills connected therewith.

41. In a cast bolster, an integral jacking casting having laterally extending base portion and vertical reinforcement.

42. In a cast bolster, integral forwardly extending side sill connection flanges forming an extension of vertical end flanges of said bolster, with an integral jacking casting extending longitudinally of the bolster beyond said sill connection flange.

43. In a tank car bolster and tank saddle combined, an integral casting comprising web portions, and a pair of elongated tank band sockets formed in the web portions open at their upper ends, there being enlarged registering openings in said webs below said sockets.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

JOHN McE. AMES.

Witnesses:

FRANK V. COOPER,

F. H. GIBBS.