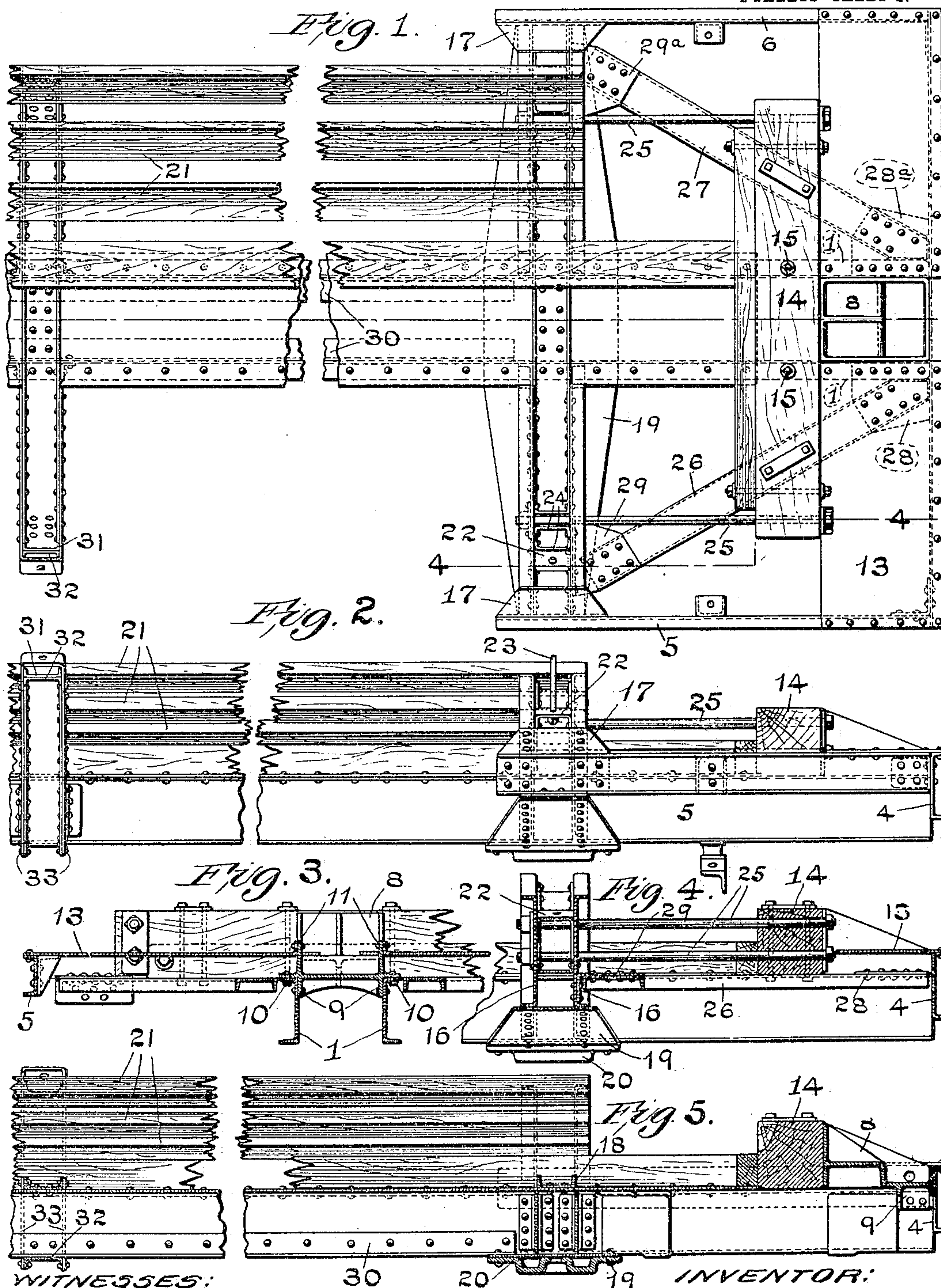


P. P. STURDEVANT.
TANK CAR.

APPLICATION FILED NOV. 11, 1904.

2 SHEETS—SHEET 1.



WITNESSES:

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B. F. Frank

INVENTOR:

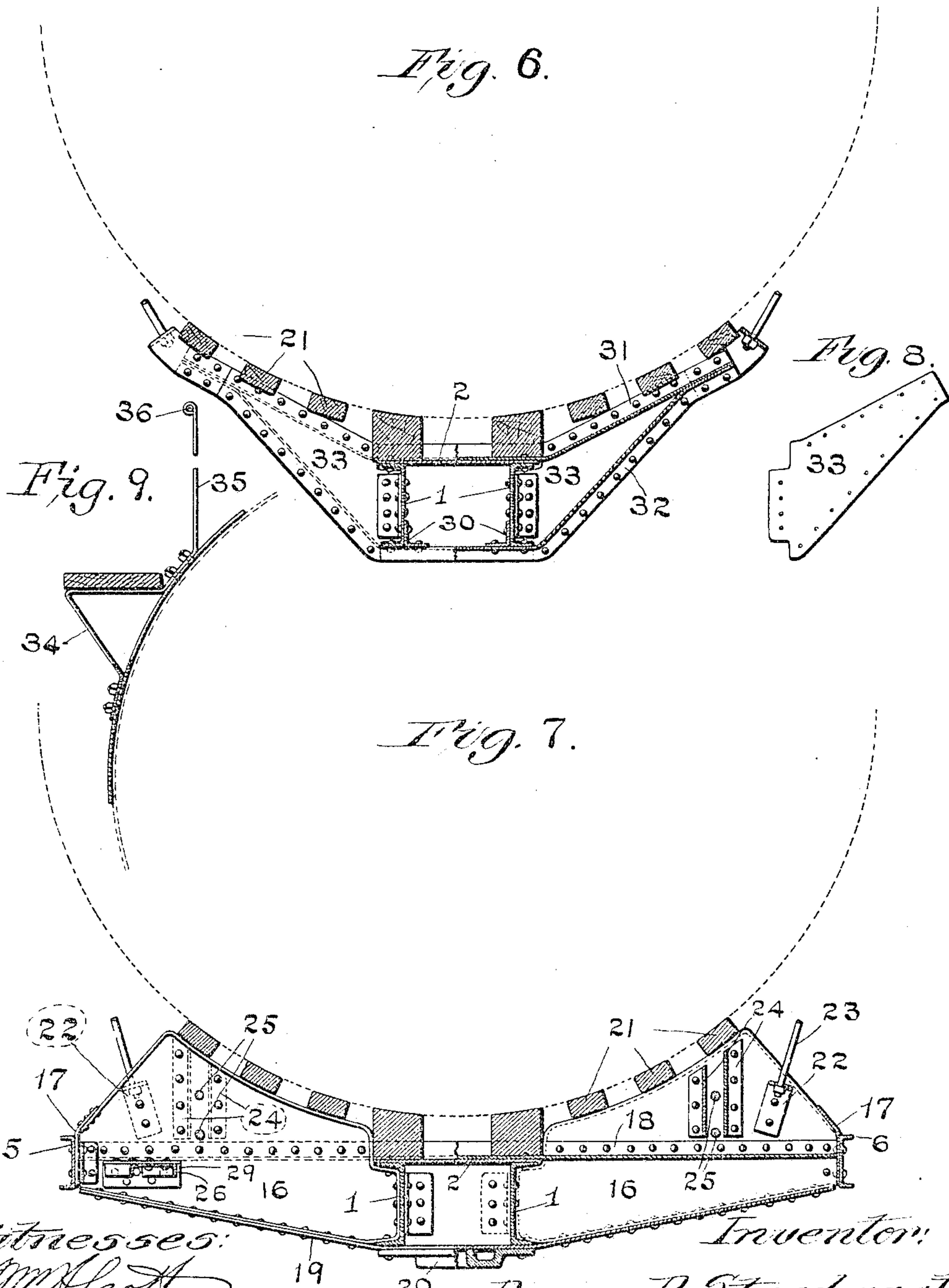
Payne P. Sturdevant
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2 SHEETS—SHEET 2.



Witnesses:

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B. F. Funk

Inventor:

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UNITED STATES PATENT OFFICE.

PAYNE P. STURDEVANT, OF PASSAIC, NEW JERSEY, ASSIGNOR TO AMERICAN CAR & FOUNDRY COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF NEW JERSEY.

TANK-CAR.

SPECIFICATION forming part of Letters Patent No. 787,130, dated April 11, 1905.

Application filed November 11, 1904. Serial No. 232,328.

To all whom it may concern:

Be it known that I, PAYNE P. STURDEVANT, a citizen of the United States, residing at Passaic, Passaic county, New Jersey, have invented a certain new and useful Improvement in Tank-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 top plan view of one end of a tank-car constructed in accordance with my invention, part of the tank-sills being removed. Fig. 2 is a side elevational view of one end of a tank-car constructed in accordance with my invention. Fig. 3 is a cross-sectional view through a portion of one end of the car, which section is taken through the casting forming the support for the wooden head-block. Fig. 4 is a sectional view on the line 4-4 of Fig. 1. Fig. 5 is a vertical longitudinal view through the car. Fig. 6 is a side elevational view, partly in section, of one of the cross-bearers. Fig. 7 is an elevational view of the bolster, partly in section. Fig. 8 is a perspective view of one of the side plates of the cross-bearer; and Fig. 9 is a fragmentary view of the tank, together with the running-board and its support.

This invention relates to a new and useful improvement in underframing for cars, but particularly to a metallic underframe for tank-cars.

The object of the invention is to provide a strong, durable, and efficient underframe capable of efficiently withstanding strains to which the underframe will be subjected, owing to the vibration of the car over the road-bed, as well as the weight of the tank which it supports.

As illustrated, the invention consists in a center sill comprising two channels 1, extending from one end of the car to the other. These channel members have their flanges turned outwardly and are provided with a top cover-plate 2. The end sills of the car are also shown as channels 4, which are connected

to the center sill and to the non-continuous side sills comprising the channels 5 and 6. The casting, which is designated by the reference-numeral 8, is provided with depending flanges 9, resting against the webs of the center sill-channels, the oppositely-disposed flanges 10 resting upon the upper flanges of said channels, and the parallel upwardly-extending flanges 11 are connected to the flanged ends of the end cover-plates 13, which cover-plates are also riveted to the outwardly-disposed flanges of the end sills and the side sills. Casting 8 forms an abutment against which rests the transversely-arranged head-block 14, which head-block is secured to the center sills by means of bolts 15, which pass through the same and through the flanges of said center sills.

The bolsters of the car consist of cast or pressed steel side plates and riveted to the center sills, the ends adjacent to the side sills being secured by the plates 17. The plates 16 are connected by the channels 18, which extend from side sill to side sill and rest upon the top of the cover-plate of the center sill. The bottom cover-plate 19 extends from side sill to side sill, but it is not connected thereto, said bottom cover-plate being riveted to the flanges of the side plates. The center bearing 20 for the bolster is fastened by suitable rivets, which pass through said center bearing, the bottom cover-plate for the bolster, and the lower flanges of the center sills. The side plates 16 extend beyond the compression members 18, being higher than the side and center sills, the top edges being curved on a suitable arc to receive the tank-sills 21. Brackets 22, which are fastened to the respective side plates, are adapted to receive the ends 23 of the tank-bands, so that the tank will be securely held upon its seat. In order to add strength and rigidity to the bolster, and particularly that part extending above the side and center sills of the car and serving as a tank-support, I provide the flanged tie-plates 24, which connect said plates and are vertically disposed.

The entire end of the car is braced by the

tie-rods 25, which pass through the head-block and through the side plates of the bolster. The diagonal braces 26 and 27 contribute to the bracing effect and diverge from the end toward the sides, said braces being in the form of channels and being connected to the center sill by the plates 28 or 28^a and at their opposite ends to the bolster by the plates 29 or 29^a, but not to the side sills.

As heretofore pointed out, the center sill-channels have their flanges oppositely and outwardly disposed, and these center sill-channels are braced at their lower flanges by inwardly-extending flanges of the angles 30.

The cross-bearers which are arranged intermediate the bolsters consist of top and bottom members comprising channels 31 and 32. The top or tension members 31 are bent so as to lie flat upon the cover-plate of the center sill, the opposite ends extending above the side sills to points practically in line with the tops of the side plates of the bolsters, and these compression members 31 have their webs connected for a portion of their lengths to the webs of the tension members 32, which tension members are bent so as to extend down beneath the center sills to which they are connected, it being understood that the tension members and the compression members of the side bearers are continuous, the flanges being connected by the side plates 33, which are riveted to the channel-flanges and to the webs of the center sills.

34 designates a running-board support, which is secured to the tank of the car and is provided with a continuous upstanding post 35, which supports the hand-rail 36 along said tank.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. An underframing for cars comprising bolsters which are not connected to each other at their ends, end sills, a center sill extending from end sill to end sill and connected to the bolsters, and side sills extending from the end sills to the bolsters only; substantially as described.

2. An underframing for cars, comprising bolsters which are not connected to each other at their ends, center sills and end sills in combination with non-continuous side sills extending from the end sills to the bolsters only; substantially as described.

3. An underframing for tank-cars comprising bolsters which are not connected at their ends to each other, end sills, center sills connected to the end sills and bolsters, side sills connected at their respective ends to the bolsters and to the end sills, and diagonal braces extending from the bolsters to the center sill and end sill; substantially as described.

4. An underframing for cars comprising bolsters which are not connected at their ends to each other, end sills, center-sill members

extending from end sill to end sill and connected to the bolsters, side sills connected at their respective ends to the bolsters and to the end sills, and diagonal channel-braces connected to the center sills and to the bolster; substantially as described.

5. An underframing for cars comprising center sills, bolsters and end sills, the end sills and bolster being connected, and the ends of the respective bolsters being spaced apart and free from connection, cross-bearers interposed between the bolsters, said cross-bearers comprising channels having their webs terminally abutting against each other, and means for connecting said channels; substantially as described.

6. In a tank-car, an underframing therefor comprising center sills, end sills and bolsters, a cover-plate over the center sills and terminating short of the end sills, a casting adjacent to each end sill and having flanges secured to the webs of the center-sill members, flanges resting on top of the center-sill members, an upwardly-extending abutment projecting above the center sill, a head-block resting against the casting and supported on the center sill, diagonal braces connected to the sides of the bolsters and converging toward the center sill to which they are secured, and tie-rods passing through the head-block and through the sides of the bolster; substantially as described.

7. An underframing for cars comprising center sills, bolsters and end sills, the end sills and bolsters being connected, and cross-bearers interposed between the bolsters, said cross-bearers comprising channels having their webs for a portion of their lengths abutting against each other, and means for connecting said channels; substantially as described.

8. A cross-bearer for cars comprising tension and compression members abutting against each other for a portion of their lengths near their ends, and spaced apart at the middle portion of the cross-bearer, and side plates connecting said compression and tension members; substantially as described.

9. A cross-bearer for cars comprising tension and compression members abutting against each other for a portion of their lengths near their ends, and spaced apart at the middle portion of the cross-bearer, side plates connecting said compression and tension members, and tank-rod clips connected to the ends of the cross-bearer; substantially as described.

10. A cross-bearer for cars comprising a channel compression member and a channel tension member, the webs of the compression and tension members being in engagement with each other near the ends of the cross-bearer, the tension and compression members being spaced apart near the middle of the cross-bearer, and side plates connected to the flanges of the compression and tension members; substantially as described.

11. A cross-bearer for cars comprising a

channel compression member and a channel tension member, the webs of the compression and tension members being in engagement with each other near the ends of the cross-bearer, the tension and compression members being spaced apart near the middle of the cross-bearer, side plates connected to the flanges of the compression and tension members, and tank-rod clips connected to the flanges of the tension and compression members; substantially as described.

12. In a tank-car, the combination with a center sill, a top cover-plate on the center sill, a compression member riveted to the cover-plate and having its ends extending outwardly and upwardly, a tension member secured to the bottom of the center sill and having its end extending outwardly and upwardly to points adjacent the ends of the compression

member, and side plates for connecting the compression and tension members; substantially as described. 20

13. A bolster comprising pressed-steel side plates having edge flanges which are outwardly disposed, in combination with channel compression members which are interposed between the top and bottom of said plates, tension members comprising cover-plates, and connecting devices above the compression member for connecting the upper portions of said side plates; substantially as described. 25 30

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, this 7th day of November, 1904.

PAYNE P. STURDEVANT.

Witnesses:

JOHN McE. AMES,

PHILIP B. SHERIDAN.