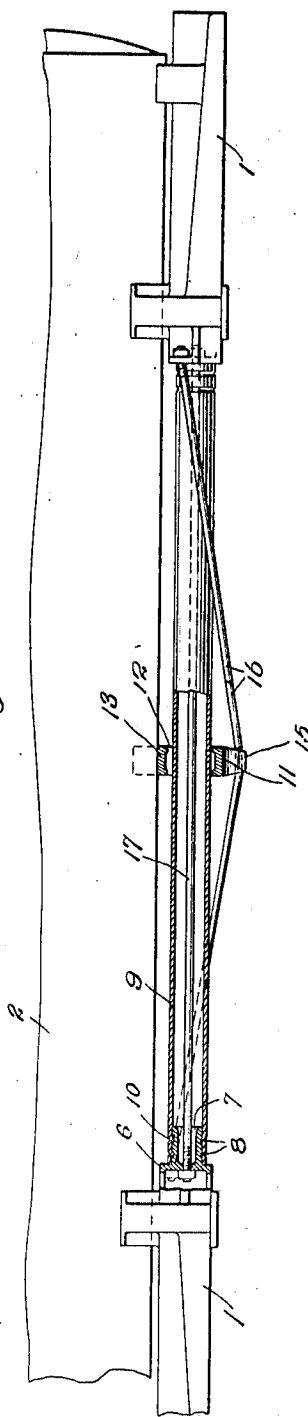
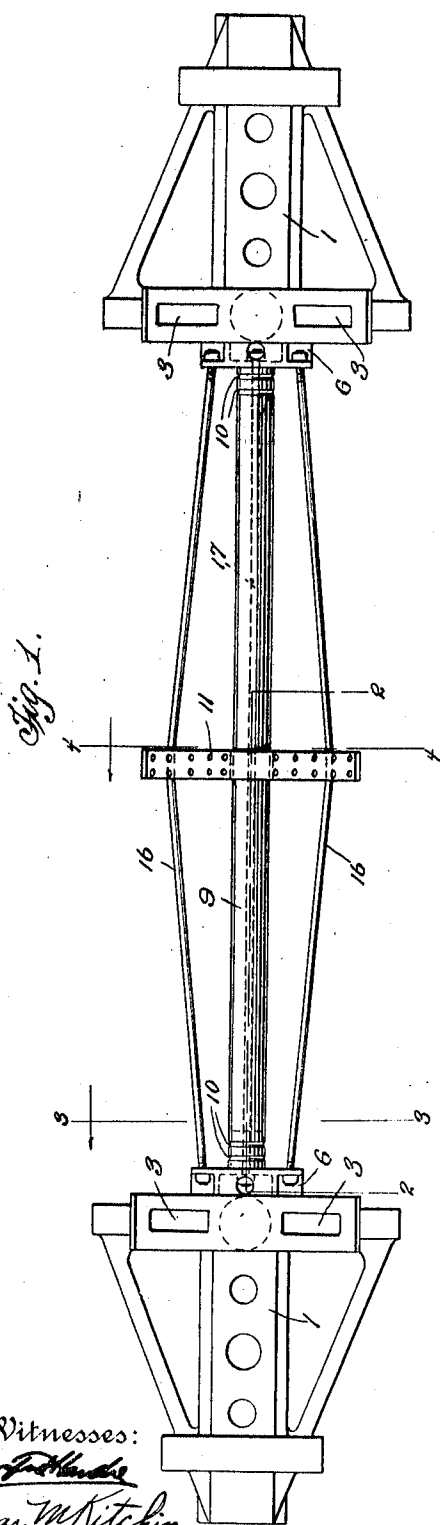


J. M. ROHLFING.
TANK CAR UNDERFRAME.
APPLICATION FILED MAR. 31, 1910.

993,552.

Patented May 30, 1911.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 3.

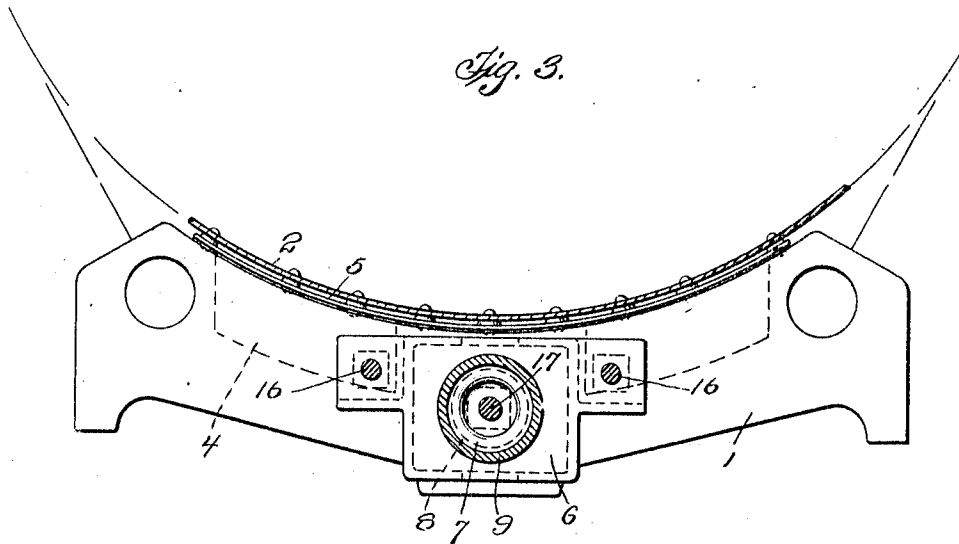


Fig. 4.

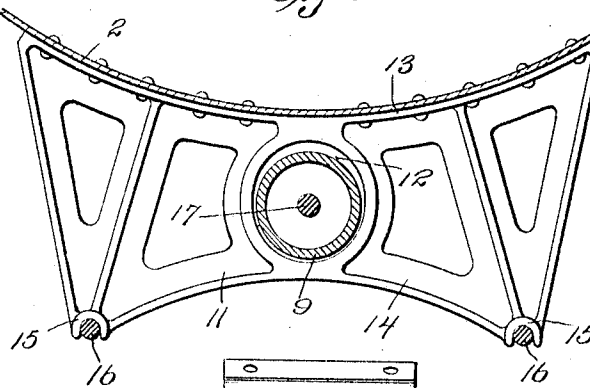
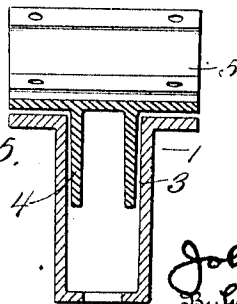


Fig. 5.



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UNITED STATES PATENT OFFICE.

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TANK-CAR UNDERFRAME.

993,552.

Specification of Letters Patent.

Patented May 30, 1911.

Application filed March 31, 1910. Serial No. 552,740.

To all whom it may concern:

Be it known that I, JOHN M. ROHLFING, residing at St. Louis, Missouri, and being a citizen of the United States, have invented certain new and useful Improvements in Tank-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 top plan view of an underframe embodying the features of the present invention, the tank being omitted. Fig. 2 is a fragmentary side elevation thereof, parts being seen in sections on the plane indicated by line 2—2 of Fig. 1. Fig. 3 is a transverse vertical section on the plane indicated by line 3—3 of Fig. 1, looking in the direction of the arrow. Fig. 4 is a similar section on the plane indicated by line 4—4 of Fig. 1, looking in the same direction. Fig. 5 is an enlarged detail vertical section illustrating the connection between the tank and the bolsters.

Referring to the drawing by numerals: 1, 1 indicates end castings, each comprising the usual buffer or striking plate, the diagonal braces, the draft sills and the bolsters all cast integral after the manner fully disclosed and covered in United States Letters Patent 943,803 issued to Herbert W. Wolff under date of December 21, 1909. Each of said bolsters has its upper surface curved to form a cradle for tank 2 and is provided with recesses 3, 3 into which extend projections 4, 4 depending from near each end of tank 2, the said projections 4 being formed integral with curved plate 5 riveted to the tank 2. Said projections 4 fitting sufficiently loosely into recesses 3 to accommodate such slight longitudinal expansion and contraction of the tank as may develop while insuring transmission of such draft stresses to the tank as may be necessary to overcome the inertia of the tank and its contents.

Projecting inwardly from each of the castings 1 is the flanged extension or casing 6, and extending inwardly from each of the

casings or extensions 6 is a tubular projection 7 having annular grooves 8, 8. A tubular beam 9 extends from one casing 6 to the other, and has its ends butting against the vertical walls of said casing and surrounding the respective tubular projections 7. The material of the beam 9 is depressed forming annular rings 10, 10 extending into the grooves 8 forming a connecting means between the beam 9 and the end castings 1 for maintaining the relative positions thereof and for insuring the transmission of buffing stresses through said beam 9. A cross bearer 11 extends transversely of beam 9 substantially midway of the length thereof, and is formed with a central opening 12 for accommodating beam 9, and through which the beam 9 extends without engaging the cross bearer. The cross bearer 11 comprises a cradle 13 riveted to the tank 2, and having depending posts and braces connecting the cradle with a bottom arch 14, the terminals of the arch being formed into saddles 15, 15. Obviously, cross bearer 11 may be formed in various ways but is preferably a casting formed of a flanged web producing the elements above mentioned and providing the aperture 12 for accommodating beam 9. Truss rods 16, 16 are anchored at their ends in extensions 6, by being passed through webs thereof and engaged by suitable nuts and the intermediate portions of the truss rods 16 extend beneath and engage the saddles 15, the rods being spread transversely to engage said saddles as the saddles are a greater distance apart than the distance between the points of engagement of the ends of the truss rods with the respective extensions 6. Thus in addition to taking up the tension stresses, rods 16 serve also to offer a proportionate centering stress. Extending centrally throughout tubular beam 9 is a rod 17 which extends through the respective projections 7 and through the vertical wall of extension 6 and is provided at each end with a retaining nut. Rod 17 is thus disposed for taking up draft stresses.

What I claim is:

1. In an underframe, the combination with buffers of a continuous single hollow beam for taking up buffing stresses therefrom, and independent means for taking up draft stresses.

2. In an underframe, the combination with draft and buffing means of a continu-

ous single hollow beam connecting the same for taking up the buffing stresses, and independent means connecting the same for transmitting draft stresses.

5 3. In an underframe, the combination with bolsters of a tubular beam disposed between said bolsters for taking up buffing stresses, and a rod connecting the bolsters for transmitting draft stresses.

10 4. In an underframe, the combination with bolsters of a tubular beam connecting same, and a rod having its ends connected to the bolsters and extending throughout the tubular beam.

15 5. In an underframe, bolsters, a center beam connecting the same, a cross bearer extending across and independent of said center beam, and truss rods connected to the bolsters and engaging said cross bearer.

20 6. In an underframe, the combination of bolsters and a center beam connecting the same, a cross bearer intermediate the length of said center beam independent of the bolsters, and truss rods connected at their ends to the bolsters and spread intermediate their length into engagement with said cross bearer.

25 7. In an underframe, the combination with bolsters, and a connecting center beam therefor, of a cross bearer intermediate the length of the bolster and independent thereof, and a truss rod connected to the bolsters and engaging said cross bearer.

30 8. In an underframe, the combination with bolsters, and a connecting beam therefor, of a cross bearer intermediate the length

of the beam and independent thereof, and trussing means connecting the cross bearer to the bolsters.

9. In an underframe, the combination 40 with bolsters, and a connecting beam therefor, of a cross bearer intermediate the length of the beam and independent thereof, and trussing means for the cross bearer.

10. In an underframe, the combination 45 with bolsters, and a connecting beam therefor, of a cross bearer extending across the beam intermediate the length thereof and formed with an opening, for the passage of the beam, of sufficient size for accommodat- 50 ing independent movement of the parts, and trussing means for the cross bearer.

11. In a tank car, the combination with bolsters, and a beam connecting the same, of a cross bearer intermediate the length 55 and independent of the beam, trussing means for the cross bearer, and a tank mounted upon the said bolsters and cross bearer.

12. In a tank car, the combination with 60 bolsters, and a connecting beam therefor, of a cross bearer intermediate the length and independent of the beam, trussing means for the cross bearer, and a tank mounted on said bolsters, and cross bearer, and means con- 65 necting the tank to the cross bearer.

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

JOHN M. ROHLFING.

Witnesses:

OSCAR HOCHBERG,
CARL ENGLISH.