UNITED STATES PATENT OFFICE.

CLARENCE H. HOWARD, OF ST. LOUIS, MISSOURI, ASSIGNOR TO LOCOMOTIVE TENDER FRAME COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF DELAWARE.

CAST-STEEL UNDERFRAME FOR CARS.

1,038,753.


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To all whom it may concern:

Be it known that I, CLARENCE H. HOWARD, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Cast-Steel Underframes for Cars, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it pertains 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; Fig. 2 is a longitudinal sectional view on the line 2—2; Fig. 3 is a cross sectional view on line 3—3; Fig. 1; Fig. 4 is a cross-sectional view on line 4—4, Fig. 1, and Fig. 5 is a sectional view on line 5—5, Fig. 1.

This invention relates to a new and useful improvement in cast steel underframes for locomotive tenders and other railway rolling stock, the object being to construct a cast steel frame for use in connection with cylindrical tanks.

In the drawings, 1 indicates the longitudinal members and 2 the bolster members, these latter, as shown in Fig. 4, being concave to accommodate the cylindrical tank and being provided with center plates and side bearings, as shown. The upper curved member 3 of the bolster is strengthened by preferably four parallel vertical webs 4 connected by top and bottom flanges, the extremities of these top flanges being braced by the vertical webs of the longitudinal members, beyond which are strengthening webs 5. Openings are arranged in the top and bottom plates to support the cores in position during the process of molding. The upper flanges of the longitudinal members 1 are flared outwardly and upwardly in the plane of the top flanges at the ends of the bolster member, as shown.

6 is the front end sill whose ends are braced by diagonal bracket extensions 7 extending from the longitudinal members, the pockets 8 for the coupler in this instance being above the plane of the bottom flanges of the longitudinal members and reinforced by horizontal webs and radial strengthening webs 14 as shown, there being two lateral pockets 9 to accommodate the safety chains. The rear end sill 9 has its ends braced by diagonal members 10.

11 is a housing for the draft rigging which extends between the longitudinal members and is connected at its lower edge, by horizontal flanges 12, to the bottom flanges of the longitudinal members. The side walls of this housing are braced by diagonal braces 13, there being a number of such braces on each side thereof, as shown. The end sill is reinforced at its center by diverging diagonal braces 14, substantially parallel to the braces 13.

A tender frame constructed as above described is exceedingly simple and strong, and is not liable to be broken in service. It may readily be molded, and, as the parts are all cast integral, the absence of fastening devices prevents the parts from becoming loose.

I claim:

1. In a cast steel underframe the combination of longitudinal members having top and bottom flanges extending upwardly and outwardly, a bolster member having a curved top plate coincident with said top flanges and a bottom plate coincident with said bottom flanges, said bolster member having webs connected at their ends to said longitudinal members and throughout their length to said top and bottom plates.

2. In an underframe having longitudinal draft members a bolster member comprising a curved top plate, a bottom plate, transversely disposed webs connecting said top and bottom plates, said top and bottom plates having openings therein between said webs, and longitudinal members whose vertical webs are connected to the ends of said transversely disposed webs.

3. In an underframe having longitudinal draft members, a bolster comprising upper and lower plates secured at their extremities to the draft members, a bolster comprising upper and lower plates secured at their extremities to the draft members, said upper plate being concave and said lower plate being shaped to form a center bearing.

4. In an underframe having longitudinal draft members, a bolster comprising upper and lower plates connected at their extremities to the draft members, transverse webs connecting said upper and lower plates and secured at their extremities to the draft members, said plates being provided with series of openings intermediate said webs.

5. An underframe having longitudinal draft members provided with upper and lower flanges; and a bolster comprising an upper plate connected at its extremities with
the upper flanges of the draft members, a lower plate connected at its extremities with the lower flanges of the draft members, vertical webs connecting said upper and lower plates, said plates being provided with series of openings intermediate said webs.

6. An underframe having longitudinal draft members provided with upper and lower flanges; and a bolster having a concave upper plate connected at its extremities to the upper flanges of said draft members, and a lower plate connected at its extremities to the lower flanges of said draft members, said lower plate being shaped to form a center bearing.

7. In an underframe having longitudinal draft members composed of vertical webs and horizontal flanges, a bolster comprising webs connected at their ends to the webs of the draft members, and upper and lower plates connected at their extremities to the flanges of the draft members and to the transverse webs throughout the length of said transverse webs.

In testimony whereof I hereunto affix my signature in the presence of two witnesses, this 13th day of June, 1911.

C. H. HOWARD.

Witnesses:

I'AL C. BELLVILLE,
B. L. CROWLEY.