

418

No. 830,401.

PATENTED SEPT. 4, 1906.

T. E. ADAMS.
FRAME FOR RAILWAY ROLLING STOCK.
APPLICATION FILED JAN. 22, 1906.

3 SHEETS—SHEET 1.

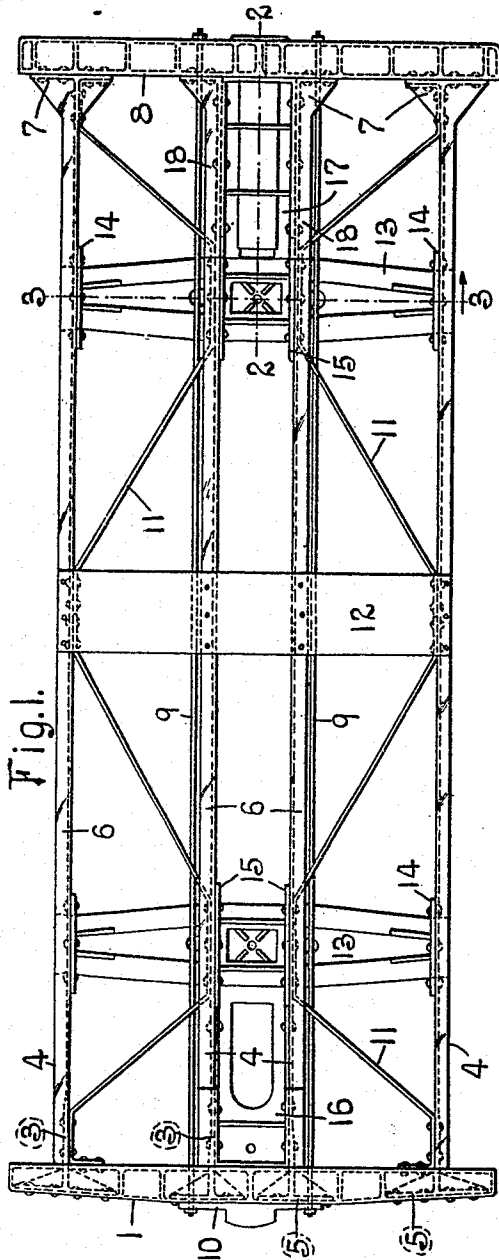
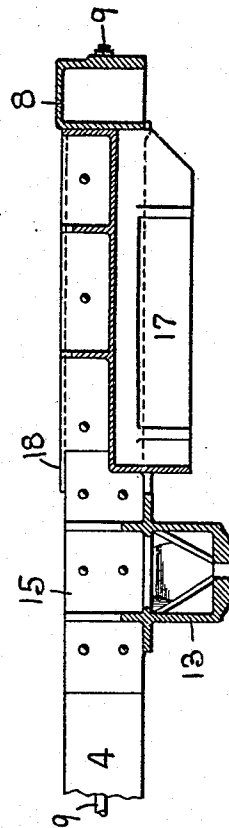


Fig. 1.

Fig. 2.



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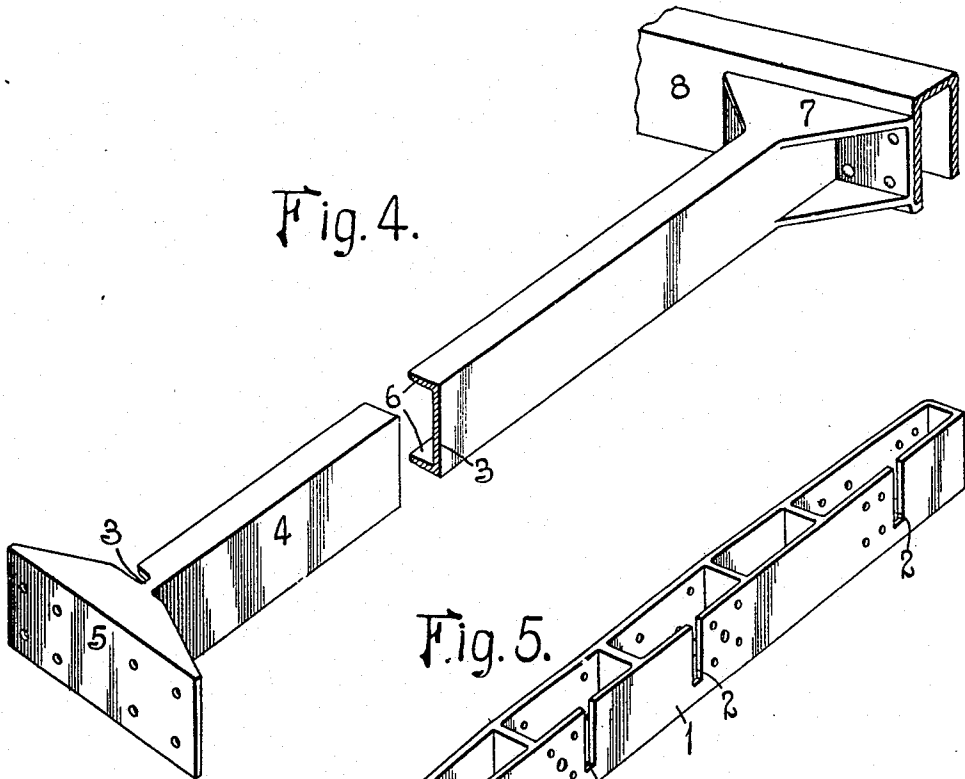
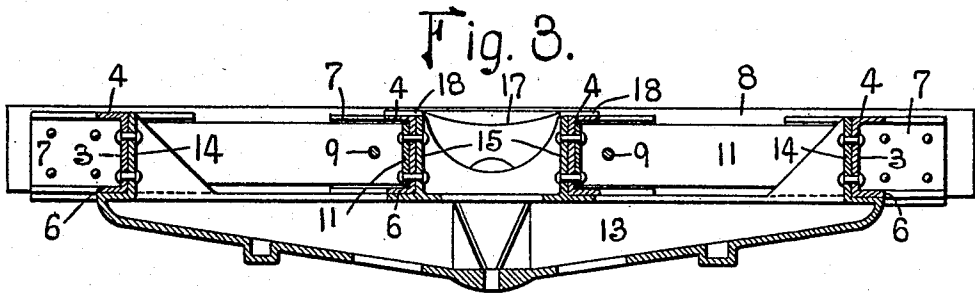
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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

Fig. 8.

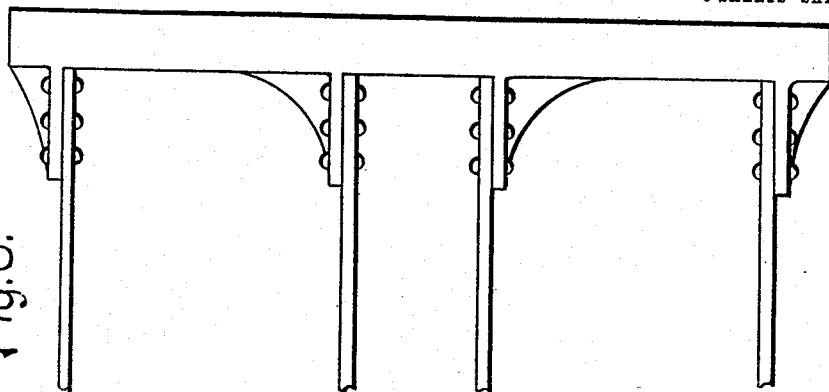


Fig. 6.

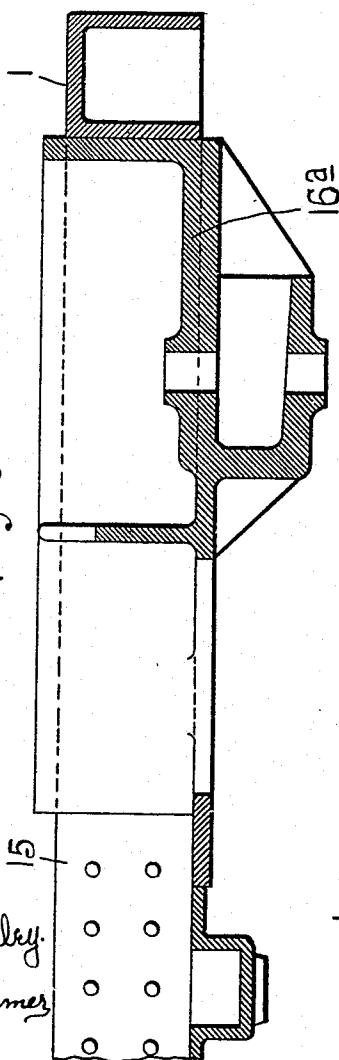
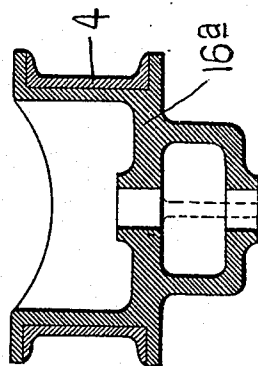


Fig. 7.



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UNITED STATES PATENT OFFICE.

THOMAS E. ADAMS, OF PINE BLUFF, ARKANSAS.

FRAME FOR RAILWAY ROLLING-STOCK.

No. 830,401.

Specification of Letters Patent.

Patented Sept. 4, 1906.

Application filed January 22, 1906. Serial No. 297,338.

To all whom it may concern:

Be it known that I, THOMAS E. ADAMS, a citizen of the United States, residing at Pine Bluff, Jefferson county, Arkansas, have invented a certain new and useful Improvement in Frames for Railway Rolling-Stock, 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 plan view of my improved frame. Fig. 2 is a sectional view on the line 2 2 of Fig. 1. Fig. 3 is a sectional view on the line 3 3 of Fig. 1. Fig. 4 is a detail view of one of the longitudinal sill members. Fig. 5 is a detail view of one of the end sills inverted. Fig. 6 is a longitudinal vertical sectional view through a modified form of box-casting forming the coupling-mount between the tender-frame and locomotive. Fig. 7 is a cross-sectional view through the same on the line 7 7 of Fig. 6, and Fig. 8 is a modified form of end sill and method of connecting the longitudinal sills thereto.

This invention relates to a new and useful improvement in frames for railway rolling-stock, the same being particularly designed as an improvement in frames for tenders of locomotives, although it is obvious that the same is useful in connection with different types of cars, such as box, flat, gondola, &c.

The objects of my present invention are to employ cast-steel as the material of which the principal parts of the frame are composed, said parts being interlocked and secured together in such manner as to add to the strength and rigidity of the frame in addition to the connecting-rivets or other fastening devices such as are usually employed.

With these objects in view the invention consists in the construction, arrangement, and combination of the several parts, all as will be hereinafter described, and afterward pointed out in the claims.

In a tender-frame the two ends are usually provided with different types of coupling devices, the end toward the locomotive having a draft-pocket for the reception of a link-and-pin coupler, while the other end, being the rear end of the frame, is provided with an approved form of pocket for coöperation with various styles of draft-rigging in com-

mon use, with which may be employed the well-known type of Janney coupler.

1 indicates the end sill of the frame, which is nearest the locomotive, said end sill, as shown in Fig. 5, being in the form of a casting strengthened by transversely-disposed webs, the bottom of the end sill being preferably left open. The inner side wall of the end sill is provided with notches or recesses 2, which are designed to receive the vertical webs 3 of the longitudinal sill members 4. The ends of these sill members where they extend into the end sill 1 are provided with heads 5, strengthened by flanges, as shown in Fig. 1, which heads are riveted to the outer walls of the end sill 1. The webs 3 of the longitudinal sills are preferably provided with integral flanges 6, as shown, forming substantially a channel-shaped structure, although it is obvious that these flanges may be extended on both sides of the web to produce an I-shaped structure.

The opposite ends of the longitudinal sills are provided with enlarged heads 7, which are fastened to the end sill 8 by suitable rivets. End sill 8 is preferably a casting shaped similar to sill 1, except that the notches or recesses 2 are omitted and the longitudinal sills do not pass through the inner wall of the sill.

9 indicates through-bolts which pass through the end sills and the heads of the central longitudinal sills, said bolts or rods having nuts on their outer ends impinging against the outer faces of the end sills or other parts secured thereto—such, for instance, as the buffer-block 10 secured to the outer face of the end sill 1. Rods 9 act as tie-rods and serve to add rigidity to the structure in the transmission of pulling and buffing strains.

11 represents plate-bars whose ends are bent and riveted to the end and side sills, as shown, said bars extending diagonally inwardly and being riveted to the vertical webs of the center sill and thence diverging outwardly and bent with their ends riveted to the side sills. These diagonal braces give considerable strength to the frame and resist twisting and torsional strains. A tie-plate 12 is preferably arranged across the center of the frame and riveted to the side and center sills to resist any bulging tendency of the side and center sills at this point.

13 represents the bolsters, preferably made of cast-steel, which bolsters, as shown in Fig. 3, are formed with shelf-like projections at their ends extending under the side sills, while upward extensions 14, near the ends, are riveted to the vertical webs of the side sills, said upward extensions being reinforced by strengthening-flanges, as shown. Vertical webs 15 also extend upwardly from the center of the bolster and are riveted to the center sills, the same set of rivets being employed for this connection as are used to secure the diagonal brace-plates 11 in position at this point.

16 indicates a box-casting forming the coupling-mount between the tender-frame and locomotive, which casting, as shown in Fig. 1, is provided with laterally-extending flanges resting upon the tops of the center sills, said flanges serving to hold the casting in position between the center sill. The casting 16 extends rearwardly and abuts against the bolster and its upwardly-projecting webs 15, the vertical side walls of the casting being riveted to the webs of the center sill, as shown.

17 is a casting constituting a mount for the draft-rigging at the rear end of the tender-frame, said casting also having flanges 18, which rest upon the tops of the center sills, the vertical walls of said casting lying adjacent the webs of the center sills and being riveted thereto. Casting 17 fits between the end sill and the bolster, said casting abutting against the web 15, extending up from the bolster. When castings 16 and 17 are arranged in position, they are introduced from the top of the underframe, and when the tender is in place there is no chance for the castings to work loose or become displaced.

While I have shown the main parts of my underframe as being made up of castings, it is obvious that rolled or built-up structures could be employed in lieu of castings, if desired.

In Figs. 6 and 7 I have shown a modified form of box-casting 16^a, which forms a mount for the coupling device between the tender-frame and the locomotive, which casting is provided with laterally-extending flanges extending above and below the center sills, said casting extending rearwardly and abutting against the bolster.

In Fig. 8 I have shown a modified form of end sill, in which the connecting-webs extend inwardly from the end sill, to which the longitudinal members may be riveted. By the use of this construction the longitudinal members may be made of commercially-rolled beams.

I am aware that minor changes in the construction, arrangement, and combination of the several parts of my device can be made and substituted for those herein shown and described without in the least departing

from the nature and principle of my invention.

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

1. In a frame for railway rolling-stock, the combination with a substantially channel-shaped end sill having open-ended slots in its inner wall which is disposed in a vertical plane, and longitudinal sills passing through said slots and secured in position within the end sill; substantially as described. 70
2. In a frame for railway rolling-stock, the combination with an end sill having recesses in its inner wall, and longitudinal sills passing through said recesses, said sills being provided with laterally-extending projections for attachment to the end sill; substantially as described. 75
3. In a frame for railway rolling-stock, the combination with an end sill having recesses in its inner wall, and longitudinal sills passing through said recesses, said sills having heads on their ends located within the end sill; substantially as described. 80
4. In a frame for railway rolling-stock, the combination with a recessed end sill, and a longitudinal sill having an enlargement at its end interlocking with the recess in said end sill; substantially as described. 85
5. In a frame for railway rolling-stock, the combination with a recessed end sill, and a longitudinal sill having a head at its end dovetailing into the recess in the end sill; substantially as described. 90
6. In a frame for railway rolling-stock, the combination with a hollow cast end sill having a recess in its inner wall, of a headed longitudinal sill passing through said recess and whose headed portion is secured to the outer wall of the end sill; substantially as described. 95
7. In a frame for railway rolling-stock, the combination with center sills having lateral projections on their ends for connection with the end sills, and a tie-rod passing through said lateral projections and connected to the end sills; substantially as described. 100
8. In a frame for railway rolling-stock, the combination with an end sill, a side sill, a diagonal brace whose end is bent so as to engage said sills, and fastening devices connecting said brace to said sills; substantially as described. 105
9. In a frame for railway rolling-stock, the combination with an end sill, a side sill, a center sill, a diagonal brace connected to said center sill and having its end bent to engage the side sill and end sill, and fastening devices connecting the brace to the end sill and side sill; substantially as described. 110
10. In a frame for railway rolling-stock, the combination with a recessed end sill, a longitudinal sill whose end engages the recessed portion of said end sill, and a diagonal 115

brace whose end is bent so as to be secured to said sills at their junction-point; substantially as described.

11. In a frame for railway rolling-stock, the combination with the center sills, of a casting constituting a mount for the draft appliances and being provided with integral flanges extending laterally from the upper edge thereof to rest upon the tops of the center sills; substantially as described.

12. In a frame for railway rolling-stock, the combination with end and center sills, of a bolster having vertical extensions between the center sills and secured thereto, and a casting constituting a mount for the draft appliances, said casting having laterally-extending flanges resting upon the tops of the center sills, and said casting abutting at its

ends against said end sill and said bolster extensions; substantially as described.

13. In a frame for railway rolling-stock, the combination with cast end sills, cast longitudinal sills connected to said end sills, cast bolsters having vertical extensions secured to said longitudinal sills, longitudinal tie-rods connecting the end sills, and diagonal braces connecting the side and center longitudinal sills and extending from end sill to end sill; substantially as described.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, this 11th day of January, 1906.

THOMAS E. ADAMS.

Witnesses:

B. M. KILROY,
F. R. CORNWALL.