R. E. FRAME.

END UNDERFRAME CONSTRUCTION FOR CARS.

APPLICATION FILED NOV. 23, 1910.

1,014,867.

Patented Jan. 16, 1912.

Fig. 1.

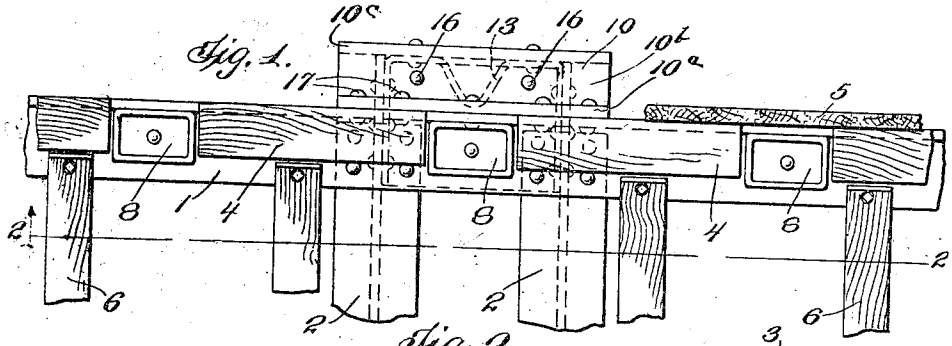


Fig. 2.

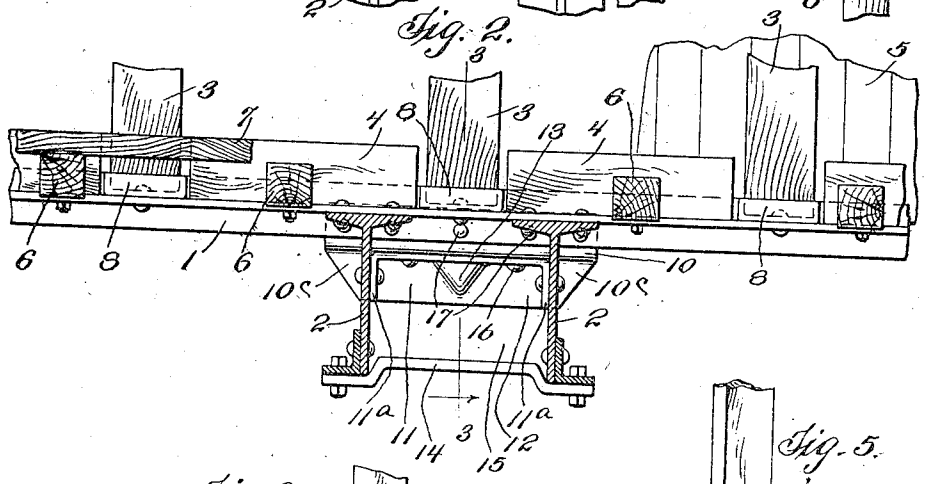
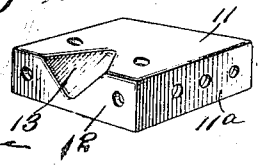


Fig. 5.

Fig. 3.

Fig. 4.



WITNESSES

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END UNDERFRAME CONSTRUCTION FOR CARS.

1,014,867. Specification of Letters Patent. Patented Jan. 16, 1912.

Original application filed July 18, 1910, Serial No. 572,509. Divided and this application filed November 23, 1910. Serial No. 593,969.

To all whom it may concern:

Be it known that I, ROBERT E. FRAME, residing at Chicago, Illinois, and being a citizen of the United States, have invented certain new and useful Improvements in End Underframe Construction 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 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 the end portion of the underframe of a car constructed in accordance with the invention. Fig. 2 is a vertical transverse sectional view taken on the plane of line 2—2, of Fig. 1. Fig. 3 is a vertical longitudinal sectional view taken on the plane of line 3—3, of Fig. 2, the central end post being omitted, and Figs. 4 and 5 are detail perspective views.

The object of this invention is to provide an end underframe construction for railway cars wherein end portions of draft sills are provided with end cover-plates connected with end sills of preferably commercial sections and reinforced as described in my application for Letters Patent, Serial No. 572,509, filed July 18, 1910, of which this application is a division.

Referring to the details; numeral 1 indicates the end sill of the structure; 2—2 the adjacent end portions of the draft sills; 3 the end posts of the superstructure; 4 the end nailing strip; 5 the end sheathing and 6 the longitudinal stringers to which the flooring 7 is fixed.

Each end sill 1 is preferably a T section horizontally disposed and carrying the wood nailing strip 4 which is formed in sections, the vertical end posts 3 extending downwardly between the sections and having their lower ends fitted into pockets 8 riveted to the web of the T section end sill.

The various sections of the nailing strip are notched along their forward lower edges to receive the upstanding flange of the end sill. The lower ends of each of the posts 3 are likewise notched as shown in Fig. 5. The forward face of the posts and of the upper portions of the nailing strip are thus brought to lie in a plane flush with the forward face of the end sill 1 and the sheathing 5 is fixed to said posts and to said nailing strip sections in any approved manner, and its lower edge is extended downwardly so as to overlap the forward face of the end sill as best seen in Fig. 3 of the drawings.

The position of the lower ends of the posts 3 in the post-pockets 8 fixed to the horizontal flange of the T end-sill, back of the upstanding flange of said sill, together with the fact that the several sections of the nailing strip 4 are likewise fitted behind said flange, renders it practically impossible for said members, and with them the end sheathing, to be forced or bowed outwardly, as is often caused by the shifting longitudinally of heavy loads within the car.

The T-shaped end-sill employed, beyond furnishing the upstanding flange for retaining the post-pockets and nailing strips as described, possesses numerous other advantages inherent to the T section over end-sills of other commercial shapes, among which advantages may be noted the fact that the stem or horizontal flange affords an excellent means of connecting the end-sill with the draft sills, and incidentally of connecting the top flanges of the draft sills. The downwardly extending portion of the vertical flange, aside from the fact that it adds greatly to the strength of the end frame, forms an abutment engaging vertical faces of the cut-out portions 9 of the draft sills for assisting the striking plate of the structure in withstanding the shocks of buffing and said depending flange, also forms an excellent means for receiving rivets by which the rear portion of the striking plate may be secured to the end-sill.

A further material advantage of the T section end-sill member is in the fact that the T section disposed as shown by applicant is considerably stronger for absorbing buffing thrusts than other available shapes of the same weight consistent with simplic-

ity of construction. Since the simplicity and weight of car underframes are important questions with the designer, this last point is very essential.

The draft sills 2—2 project beyond the end sill and said draft sills are notched or cut away at their upper outer corners, where they extend beyond the end sill as at 9. The T-shaped end sill rests with its web above and is riveted to the top flanges of the draft sills, with the lower part of its vertical flange resting in said cut-out portion and the upper part of said flange extending upwardly and serving to retain in position the nailing strip sections and the post pockets.

Connected with the draft sill extensions, beyond the end sill, is a Z-shaped plate 10 which has an upwardly extending flange 10^a outside of and parallel with the end sill, as shown in Fig. 3 and a horizontal web 10^b secured in position above the extended portions of the draft sills and a downwardly extending leg 10^c overlapping the vertical ends of said draft sills. Immediately below the plate 10 is fixed a spacing filler 11 shown detached in Fig. 4 which comprises preferably a pressed plate extending from the web of one draft sill to the web of the other draft sill and having pendent flanges 11^a riveted to said webs, the outer end of the plate being formed with a pendent flange 12 stiffened intermediate its length by a transverse depression 13. A draw bar carrier iron 14 is fixed to the under side of the draft sills and extends across and connects said sills beneath the filler 11, and may be offset upwardly between the draft sills as shown in Fig. 2.

The lower edge of the pendent flange 10^c of the striking plate 10 is spaced above the upper surface of the draw bar carrying iron 14, so as to form the usual draw bar opening as at 15.

It will be noted that the usual separate striking casting commonly secured to the end sill or to the ends of the draft sills is dispensed with, and the draft sills extending beyond the end sill, and end sheathing secured thereto, serve with the Z-plate 10 and filler 11 all the functions of said striking casting, at the same time said plate 10 and filler 11 serve to reinforce the end portion of the underframe and to secure the end sill and draft sills together. Rivets 16 pass through the horizontal web of the cover plate 10 and into the filler 11 while other rivets 17 serve to connect the vertical leg of said plate 10 with the pendent flange of the end sill, thus securely uniting these parts. The pendent leg 10^c of the plate 10 extends downwardly at the ends of the draft sills, against the pendent flange 12 of the filler 11, and is riveted thereto so that the extensions of the draft sills, beyond the end sill, is stiffened and so united to the contiguous parts as to be adapted to all conditions of service without the addition of such striking castings as are above referred to.

What I claim is:

1. In an end underframe construction for cars, an end sill of commercial shape, a wood-nailing strip thereon formed in sections, end posts, and post pockets fixed to the web of said sill, and disposed between the sections of the nailing strip for receiving said end posts.

2. In an end underframe construction for cars, an end sill comprising a flanged member, draft sills secured to the web of said end sill and extending beyond the end sill, said draft sills being notched to receive a flange of said end sill, and a cover plate fixed to the end sill, said cover plate depending across the ends of said draft sills.

3. In an end underframe construction for cars, an end sill comprising a flanged member, draft sills extending beyond the end sill and notched to receive a flange of the end sill, and a cover plate fixed to the end sill and extending along the draft sills to and depending across the end thereof, and a filler connecting the draft sills adjacent the ends thereof and fixed to the cover plate.

4. In an end underframe construction for cars, spaced sills and a filler connecting the same and comprising a plate having side flanges and an end flange extending from one sill to the other, the plate and end flange being depressed transversely intermediate the ends of the end flange.

5. In an end underframe construction for cars, an end sill of T-section, draft sills extending in part beyond said end sill, and means for tying said draft sills and said end sill, said means serving as a striking plate beyond the ends of said draft sills.

6. In an end underframe construction for cars, notched draft sills, a T-section end sill, and an end cover plate lapping said end sill and lapping vertical end portions of said draft sills and serving as a striking plate.

7. In an end underframe construction for cars, notched draft sills, a T-section end sill spaced from the outer ends of said draft sills and secured thereto, and an end cover plate secured to said end sill and extending downwardly beyond the ends of said draft sills.

8. In an end underframe construction for cars, notched draft sills, a T-section end sill fitted to the notched portions of said draft sills and a combined cover plate and striking plate connected with said end sill and extending beyond the ends of said draft sills.

9. In an end underframe construction for cars, notched draft sills, an end sill of T-section fitted to the notched portions of said draft sills and a Z-shaped combined cover plate and striking plate connected with said end sill and overlapping the ends of said draft sills.

10. In an end underframe construction for cars, the combination comprising a pair of notched draft sills, an end sill engaging the notched portions of said draft sills, a stiffening member interposed between said draft sills and connected thereto and a plate connected with said end sill and said stiffening member and overlapping the ends of said draft sills.

11. In an end underframe construction for cars, an end sill comprising a commercial T-section, a wood-nailing strip thereon partly behind a flange thereof, post pockets thereon behind said flange, and posts engaging said post pockets.

12. In an end underframe construction for cars, an end sill comprising a commercial T-section, a wood-nailing strip thereon partly behind a flange thereof, post pockets behind said flange, posts engaging said post pockets, and a sheathing engaging said posts and extending beyond said end sill.

13. In an end underframe construction for cars, an end sill comprising a commercial shape having vertical and horizontal flanges, said vertical flange extending in part above and in part below said horizontal flange.

14. In an end underframe construction for cars, an end sill comprising a commercial shape having vertical and horizontal flanges, said vertical flange extending in part above and in part below said horizontal flange, post pockets engaging the upper portion of said flange and a striking plate engaging the lower portion of said flange.

15. In a railway car, an end construction comprising an end sill of commercial shape, flanged draft sills secured to a horizontal web of said end sill, nailing strips substantially flush with the outer flange of said end sill, and posts substantially flush with said outer flange, said nailing strips, posts and end sill being so disposed that sheathing secured to said nailing strips will be in juxtaposition to the vertical face of said end sill.

16. In a railway car, the combination comprising an end sill having horizontally disposed web and vertical flange, nailing strips resting on said web and lapping said flange, draft sills secured to said web and extending beyond said flange and an end sheathing secured to said nailing strips and lapping said end sill.

17. In a railway car, flanged draft sills, end sills secured by their web portions to the flanges of said draft sills intermediate their ends and a cover plate extending from the end sills across the ends of the draft sills and secured to both.

18. In a railway car, flanged draft sills, a T-section end sill the web of which is horizontally disposed intermediate the ends of said draft sills and means connecting the draft sills and end sill.

19. In a railway car, flanged draft sills, a T-section end sill the web of which is horizontally disposed intermediate the ends of said draft sills, nailing strips resting on the webs of said end sills, and means connecting the draft sills and end sill.

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

ROBERT E. FRAME.

Witnesses:
HILLEL TIFF,
H. REEMER.