C. T. WESTLAKE.

CAR UNDERFRAME.

APPLICATION FILED JULY 5, 1910.

1,023,486.

Patented Apr. 16, 1912.

Fig. 1.

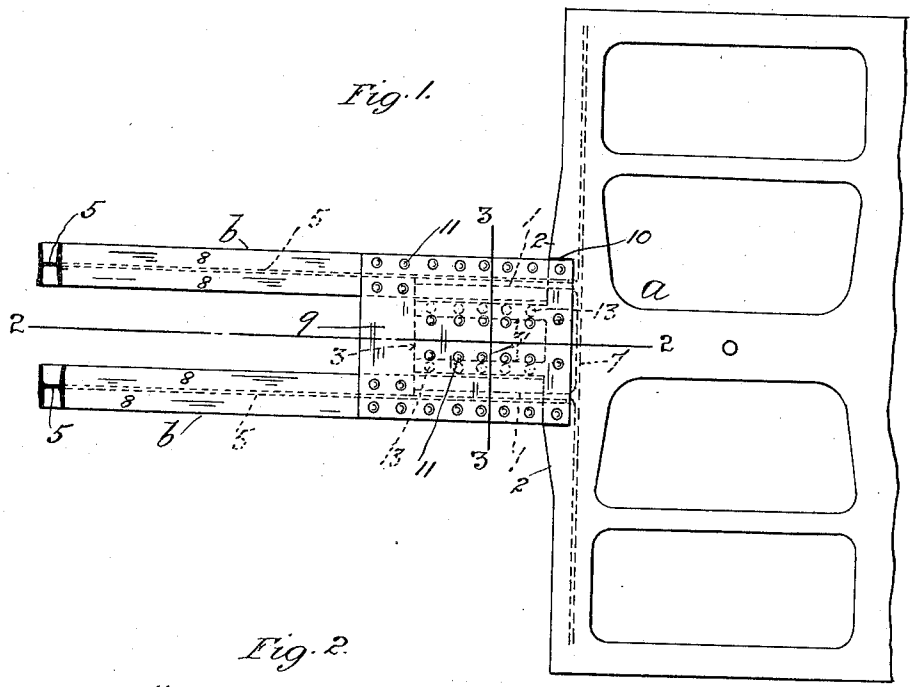


Fig. 2.

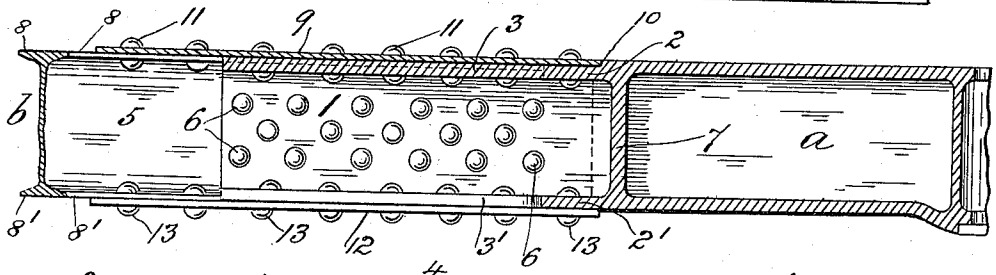


Fig. 3.

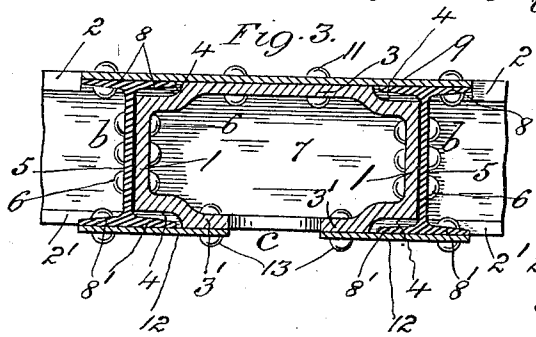
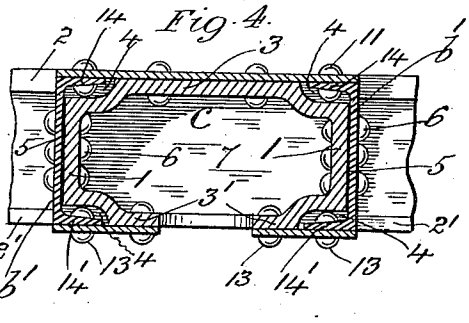


Fig. 4.



WITNESSES

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CAR-UNDERFRAME.

1,023,486. Specification of Letters Patent. Patented Apr. 16, 1912.

Application filed July 5, 1910. Serial No. 570,448.

To all whom it may concern:

Be it known that I, CHARLES T. WESTLAKE, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented a new and useful Improvement in Car-Underframes, of which the following is a specification.

My invention relates particularly to that class of metallic car underframe in which the longitudinal center-sills are intermediate to, and terminate at the rear sides of the body-bolsters, whether single or double, having rearwardly projecting members to which the end portions of the said sills are attached, such as shown in the United States Letters Patent relating to car underframes, Numbers 778,973, 1905, 889,234, 1908, and 936,159, 1909; and my invention has for its object to provide improved means for fixing the said parts together, whereby greater rigidity thereat is obtained and resistance of the underframe to end shock correspondingly increased.

The structure herein shown and described is an improvement on the structure shown and described in an application for United States Letters Patent filed by me July 1, 1910, Serial No. 569,886, and one of the principal features of my present invention is to provide grooves or pockets at the corners of the box like structure projecting rearward from the body bolster, and which grooves or pockets accommodate the inwardly projecting flanges of the center sills which are attached to the box like structure.

My invention consists in features of novelty as hereinafter described and claimed, reference being had to the accompanying drawing forming part of this specification, wherein,

Figure 1 is a top plan view of one of the body-bolsters and combined end portions of the two opposite longitudinal center-sills of a metallic car underframe constructed and fixed together according to my invention; Fig. 2, a vertical longitudinal section thereof to enlarged scale on line 2, 2, in Fig. 1; Fig. 3, a vertical transverse section of the same to enlarged scale, on line 3, 3, in Fig. 1, and Fig. 4, a similar view to Fig. 3, showing an alternative shape of the center-sills.

Like letters and numerals of reference denote like parts in all the figures.

a represents the body-bolster (broken away) which in the present case is preferably double body, and composed of cast steel integral throughout, and *b* the corresponding end portions of the two opposite longitudinal center-sills of the underframe which are preferably, as shown in Figs. 1, 2, and 3, I-shaped in cross section and either of rolled steel in one piece respectively, or built up of plates, angles, or other shapes riveted together.

According to my invention, the body-bolster *a*, which may be of any suitable configuration, is formed with preferably, two opposite rearwardly projecting upright side members or webs 1, of suitable height corresponding in the present case to the depth between the top and bottom horizontal flanges 2, and 2′, of the body-bolster *a*, one on each side of the longitudinal center of the underframe, a horizontal top member 3 intermediate and at right angles to the side members 1 in the plane, or thereabout, of the top flanges 2, and with preferably, a horizontal bottom member 3′ beneath the top member 3 and adjacent to each side member 1 in the plane of the bottom flanges 2′ of the bolster *a*, the side members 1, which are of less depth than the vertical distance between the top and bottom members 3, 3′, having their top and bottom longitudinal edge portions integrally united to the corresponding edge portions of the members 3, 3′, so as to form therewith a rearward projection *c* from the bolster *a*, box-shaped in cross section, and having external longitudinal top and bottom corner pockets or recesses 4, for the purpose of accommodating the inwardly projecting flanges of the sills attached to the box shaped structure and also for accommodating the heads of rivets or like fastening devices, which unite the inwardly projecting flanges of the sills with the overlying and under-lying plates hereinafter described.

In the attachment of the I-shaped center-sills *b* (Figs. 1, 2, 3) to the body-bolster *a* as above constructed, the web 5 of each sill *b* is laid against, and fixed by rivets 6, to the outer face of the corresponding upright side member 1 with the end of the web 5 approximate to the web 7 of the bolster *a* and the ends of the top and bottom flanges 8, 8′, respectively, of the center-sills *b* at, or approximate to the rear edges of the top and

bottom flanges or equivalent members 2, 2′, of the bolster *a*, while the end portions of the inner top and bottom flanges 8, 8′, of the sills *b* adjacent to their said ends lie within and along the pockets or recesses 4, respectively, of the projection *c* of the bolster *a*, in which position of the parts, the top horizontal member 3 of the projection *c* and top flanges 8 of the sills *b* are covered by a plate 9 which extends longitudinally beyond the outer rear end of the projection *c* and beyond the ends of the sills *b* for a suitable distance within a recess 10 which is preferably formed therefor in the top of the bolster *a*, the plate 9 being fixed to the latter and to the top member 3 of the projection *c* and outer top flanges 8 of the sills *b* by rivets 11. Furthermore, the bottom horizontal members 3′ respectively, of the projection *c*, bottom flanges 8′ of the corresponding sills *b*, and bottom of the bolster *a* are in like manner covered by an underlying plate 12 which is fixed thereto by rivets 13.

In Fig. 4, channel-shaped center-sills *b*′ having their top and bottom flanges 14, 14′, arranged inward, are substituted for the I-shaped sills *b* previously described, but otherwise the construction of their combined parts is similar to that shown in Figs. 1, 2, and 3, and needs no further description.

A great advantage of my invention is, that by forming the longitudinal corner pockets 4, in the projection *c* of the bolster *a*, so as to accommodate the flanges 8, 8′, of the sills *b*, and fixing the latter to the projection *c* by their webs 5, combined with the top and bottom splice-plates 9 and 12, the difficulty of adapting the projection *c* to the contour of the flanges 8, 8′, is obviated and a rigid connection of the sills *b* to the body-bolster *a* insured.

What I claim as my invention and desire to secure by Letters Patent is:—

1. In a car underframe, a cast metal body bolster, a box-like extension integral with and projecting rearwardly from said body bolster, which extension comprises a top plate, vertical side walls, horizontally disposed bottom flanges, the corners of which extension are grooved longitudinally to receive the flanges of center sills, and there being a recess formed in the top of the body bolster immediately adjacent the extension for receiving a portion of the cover plate applied to the top of the extensions and to the adjacent ends of the center sills.

2. The combination with a cast metal body bolster having an integral box-like extension projecting rearwardly from its center portion, said extension comprising top, bottom and side walls, the corners of which extension are grooved to receive the top and bottom flanges of the center sills, flanged center sills, the webs of which are riveted to the vertical walls of the extension, top and bottom plates riveted to the top and bottom walls of said extension and to the horizontal flanges of the center sills and there being a recess formed in the top of the body bolster adjacent the extension for receiving a portion of the top cover plate so that the top surface thereof lies flush with the top surface of the bolster.

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