J. G. BOWER.

RAILWAY CAR UNDERFRAME.

APPLICATION FILED OCT. 28, 1909.

951,934.

Patented Mar. 15, 1910.

2 SHEETS—SHEET 1.

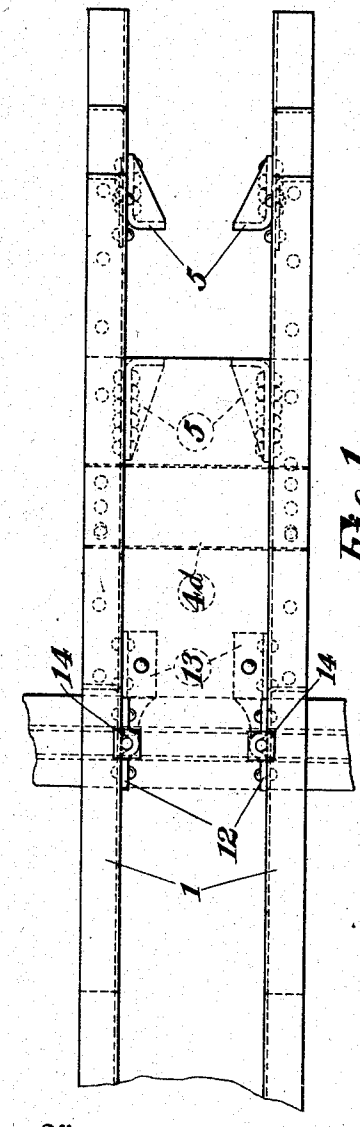

Fig. 1.

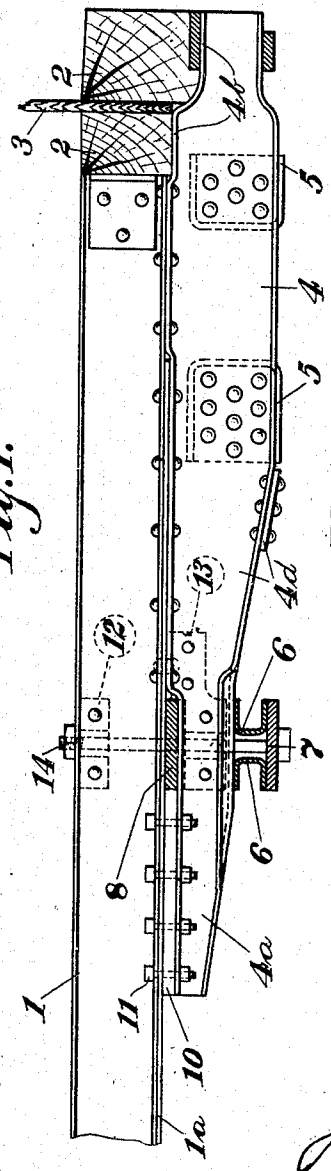

Fig. 2.

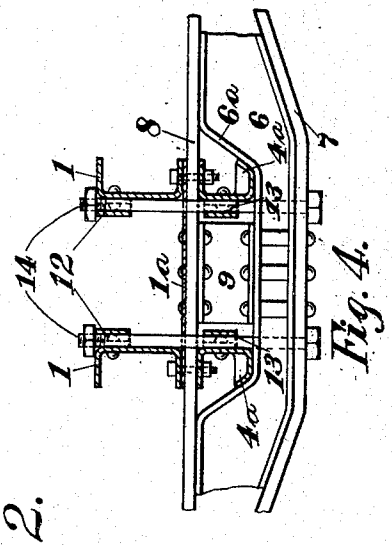

Fig. 4.

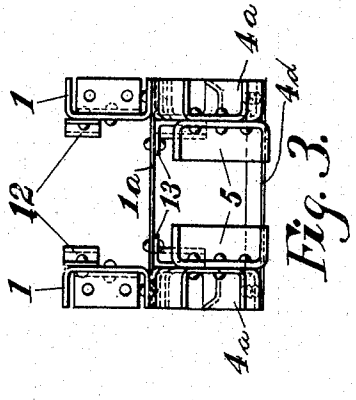

Fig. 3.

Witnesses

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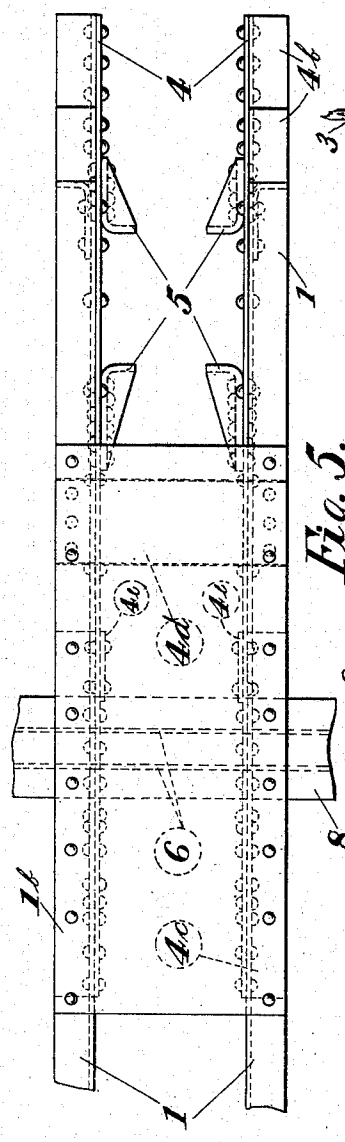

Fig. 5.

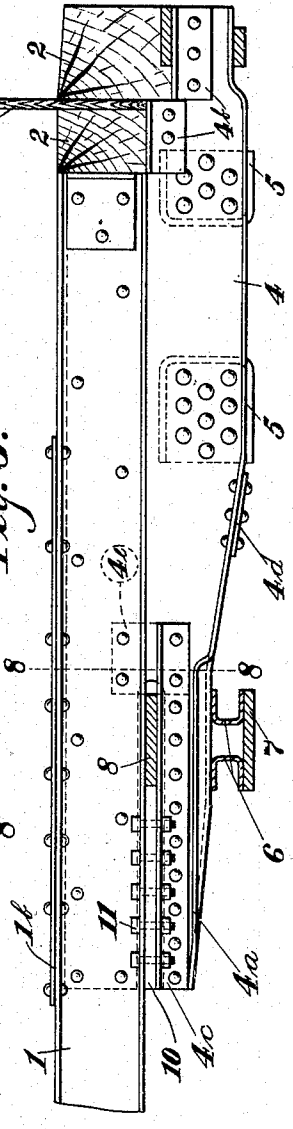

Fig. 6.

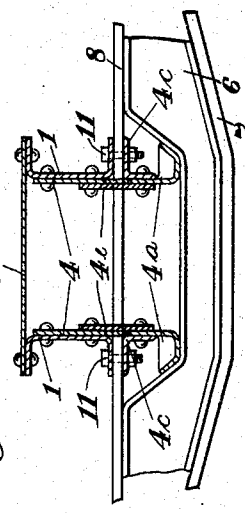

Fig. 8.

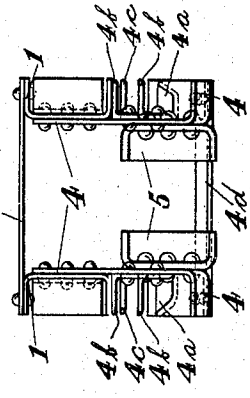

Fig. 7.

Witnesses

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UNITED STATES PATENT OFFICE.

JEROME G. BOWER, OF CHICAGO, ILLINOIS, ASSIGNOR TO PRESSED STEEL CAR COMPANY, OF PITTSBURG, PENNSYLVANIA, A CORPORATION OF NEW JERSEY.

RAILWAY-CAR UNDERFRAME.

951,934. Specification of Letters Patent. Patented Mar. 15, 1910.

Application filed October 28, 1909. Serial No. 525,145.

To all whom it may concern:

Be it known that I, JEROME G. BOWER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Railway-Car Underframes, of which the following is a specification.

An object of the present invention is to provide an improved bolster, center and draft sill construction for railway cars, which construction is especially designed to permit of its being manufactured independently of the remaining portions of the car and applied thereto or to an existing car without necessitating the complete disassembling of all of the parts of the car construction, but, when applied to an old car, necessitating only the removal of the old bolster, center and draft sill construction for which it is to be substituted.

The construction may be used in connection with new cars, but is especially designed for the purpose of supplying existing old cars, such as old wooden cars, with a metallic backbone and underframe.

The invention is fully and clearly described in the accompanying specification and shown on the accompanying drawings, in which like reference characters refer to like parts, and in which—

Figure 1 is a plan view of the construction, showing also a portion of a car bolster; Fig. 2 is a side elevation of the same, showing the car end sill and a portion of the car end wall in section; Fig. 3 is a front elevation of the structure shown in Fig. 1; Fig. 4 is a transverse section of the same at the bolster point; and Figs. 5 to 8, inclusive, are views similar to Figs. 1 to 4, respectively, showing a slightly modified construction.

Referring now in detail to the drawings, and to the construction shown in Figs. 1 to 4, inclusive, 1 represents the center sills, 2 the end sill of a car to which the underframing is to be applied; 3 the end wall of such car. 4 are the draft beams which are the equivalent of the draft timbers of old wooden car construction, the same being located in a lower plane than the center sills 1, and being adapted to carry the draft gear of a car. Draft beams 4 are provided with the usual draft lugs 5. 6 is the web, 7 the lower tie member and 8 the upper tie member of the bolster. Web 6 is provided with a central depression 6^a. 1^a is the bottom cover plate connecting center sills 1. 9 is a central angular strut, plate or spacer riveted or secured to the flanged web plates 6 and also riveted or secured to the upper tie member 8 of the bolster.

Center sills 1, shown in the drawings, are of channel form, one of the draft beams 4 being riveted to each of said channels. Draft beams 4 are provided at their inner ends with narrowed extensions 4^a, the upper edges of which are dropped below the horizontal plane of the upper edges of the forward portions of the draft beams 4. Draft beams 4 are spaced by transverse plates 4^d and by the lower cover plate 1^a of the center sills 1; at their forward ends draft beams 4 may be suitably shaped to provide a seat 4^b for the end sill of the car, for which purpose they project forwardly beyond the center sills 1. Seat 4^b may be stepped as shown in the drawings.

The special formation of the extensions 4^a of the draft beams 4 provides a space, when the draft beams 4 are riveted to the center sills 1, to receive the upper tie member 8 of the bolster. This space is closed by a filler 10, and securing bolts 11 or other suitable means are passed through the lower flanges of center sills 1, through the fillers 10 and through the upper flanges of the extensions 4^a. The lower flanges of the extensions 4^a are turned to conform to the shape of the upper flanges of the web plates 6 of the bolster at the recess points, and when the parts are assembled, the extensions 4^a rest in the recesses in the bolster and form struts between the upper tie member 8 and the upper flanges of the web plates 6.

12 are bolt-eye-plates on the center sills 1 in line with the center of the upper tie member 8 of the bolster when the parts are assembled, and 13 are similar eye-plates on the draft beams 4 in line with the plates 12. 14 are bolts extending through the upper tie member 8, the bottom cover plate 1^a of the center sills 1 and through plates 12.

The fillers 10 with their securing bolts 11 and bolts 14 are designed to securely lock the bolster to the center sills and draft beams. When the parts are assembled it is preferable to first rivet the center sills 1 and the draft beams 4 to each other. The upper tie member 8 of the bolster is then inserted in the recesses formed between the extensions 4^a and the center sills 1, and bolts 14 are passed up through plates 13, tie member 8, the bottom cover plate 1^a and plates 12. The nuts having been applied to bolts 14, the fillers 10 and their securing bolts 11 are then inserted, after which the web member 6, the lower tie member 7 and the central struts 9 may be applied and riveted or secured together, after which the framing is ready for securing the superstructure of the car thereto. It will be noted that the center sills, being located in a horizontal plane above the upper tie member 8 of the bolster, form securing means for the car superstructure against lateral shifting of said superstructure on its underframe, as the stringers and the side sills of the superstructure will be in substantially the same horizontal plane as the center sills 1 when the underframe is applied to the car. It will also be noted that the end sills 2 of the car, being in substantially the same horizontal plane as the center sills 1, the car is also secured against longitudinal shifting relative to its underframe. It will also be seen from Figs. 1, 2 and 3 that the bolt eye-plates 13 are extended or flanged horizontally and riveted to the bottom cover plate 1^a of the center sills, thereby increasing the stiffness of the construction.

The form of construction as shown in Figs. 5, 6, 7 and 8 differs but slightly from that shown in Figs. 1 to 4, inclusive, the sole difference being that the draft beams 4 are extended upwardly and riveted to the inner face of the webs of the center sills 1; the recess for receiving the upper tie member 8 of the bolster being formed by longitudinally cutting or recessing the draft beams 4, and the upper flanges of the extensions 4^a being formed by separate angles 4^c which are bolted through spacers or fillers 10 by bolts 11 to the lower flanges of the center sills 1. The end of this recess is reinforced and each center sill 1 and draft beam 4 are further secured to each other by a vertical plate 4^e which is riveted to sill 1 and beam 4. This plate is designed to receive and transmit end shocks from and to upper tie member 8. The forward end of the draft beams 4, which project beyond the center sills 1, are also formed by cutting, and the seats for the end sill 2 are formed by separate angles riveted to the stepped upper edge of the draft beams 4. The form of construction shown in Figs. 5 to 8, inclusive, employs a top cover plate 1^b instead of a bottom cover plate 1^a, as shown in Figs. 1 to 4, inclusive. In other respects the construction is the same as that shown on Figs. 1 to 4, inclusive, and the method of assembling is the same.

An important advantage of both forms of construction herein shown is that it enables the disassembling of the parts for the purpose of repair or replacement.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. In a railway car underframe, the combination with a built-up bolster comprising a lower tie member, web members having central depressed portions and a straight upper tie member in combination with center sills passing over said upper tie member, draft beams secured to said center sills and passing through the depressed portions of the webs of said bolster to a point beyond the bolster and removable fillers between said center sills and draft beams for locking the parts to each other.

2. In a railway car underframe, a built-up bolster comprising web members having central depressed portions and a straight tie member extending over said depressed portions in combination with center sills extending over said upper tie member, draft beams secured to and beneath said center sills and having extensions extending through the depressed portions of said webs, said extensions having lower flanges shaped to conform to the contour of said depressions and a filler located between said extensions and center sills to lock the parts to each other.

3. In a railway car underframe, the combination with a bolster having a perforation, of center sills extending over said bolster, draft beams secured to and extending below said center sills and extended also through the perforation in said bolster, and removable fillers between the extended portions of said draft beams and the center sills to lock said parts to each other.

4. In a railway car underframe, the combination with a bolster having a central opening between its top and bottom surfaces, of center sills extending over said bolster, draft beams secured to and extending below said center sills and extended also through said opening, and fillers secured between the center sills and the extended portions of said draft beams to lock said parts to each other.

5. As an article of manufacture, a metallic center construction for railway car underframes comprising a center sill portion and a draft gear supporting portion beneath

each end of the center sill portion, said draft gear supporting portions each having an inwardly extended end spaced throughout its length from the center sill portion, the inwardly extended ends of said draft gear supporting portions being also of sufficient length to receive, back of the bolsters, fillers between them and the center sill portion for locking said article of manufacture to the bolsters of a railway car.

In testimony whereof I affix my signature in presence of two witnesses.

JEROME G. BOWER.

Witnesses:
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ARTHUR B. McCOY.