

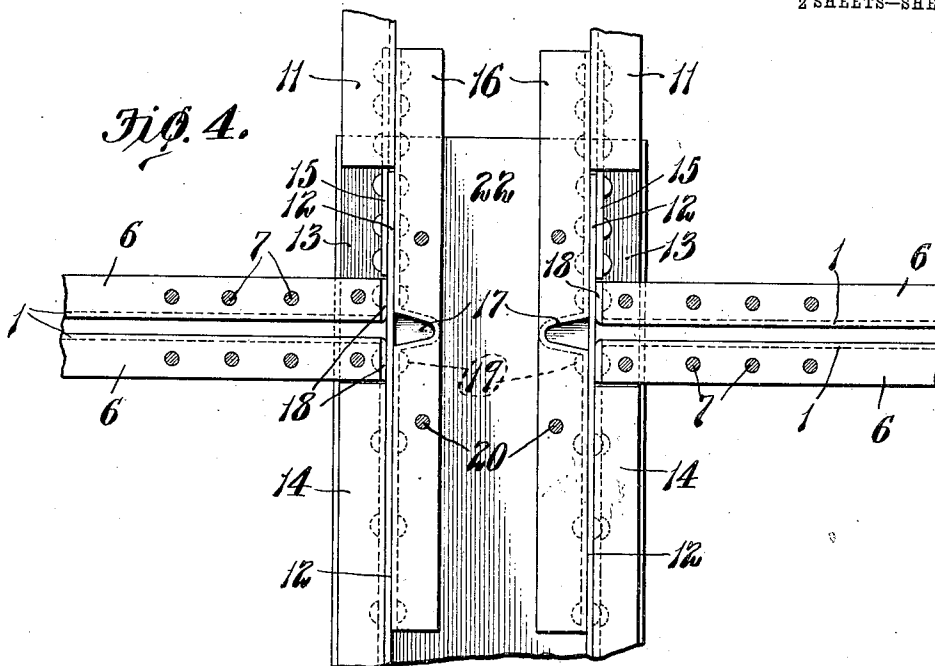
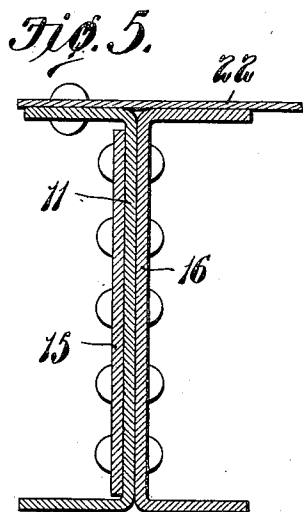
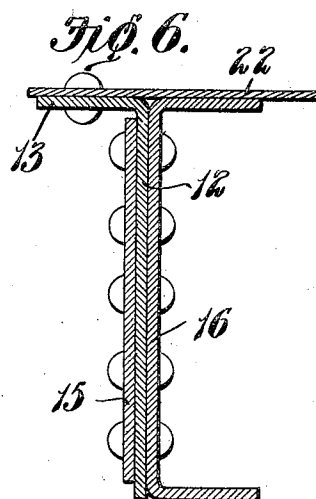
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PATENTED DEC. 3, 1907.

A. E. OSTRANDER.
CAR BOLSTER AND UNDERFRAME.

APPLICATION FILED AUG. 15, 1907.

2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

ALLEN E. OSTRANDER, OF PATERSON, NEW JERSEY, ASSIGNOR TO AMERICAN CAR & FOUNDRY COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF NEW JERSEY.

CAR BOLSTER AND UNDERFRAME.

No. 872,965.

Specification of Letters Patent.

Patented Dec. 3, 1907.

Application filed August 15, 1907. Serial No. 388,745.

To all whom it may concern:

Be it known that I, ALLEN E. OSTRANDER, a citizen of the United States, residing at Paterson, New Jersey, have invented a certain new and useful Improvement in Car Bolsters and Underframes, 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 side elevational view of a bolster constructed in accordance with my invention; Fig. 2 is a bottom plan view of the bolster and a portion of the underframe; Fig. 3 is a sectional view taken on the line 3—3 of Fig. 1; Fig. 4 is a view similar to Fig. 2 with the bottom cover plate of the bolster removed; and Figs. 5 and 6 are sectional views taken on the lines 5—5 and 6—6, respectively, of Fig. 3.

This invention relates to car underframes and particularly to the construction of the bolster of an underframe.

The main object of my invention is to provide a built-up bolster which is strong and light, and which is so designed that the parts thereof can be assembled and riveted together before the bolster is placed in operative position.

Referring to the drawings which represent the preferred form of my invention, 1 designates flanged diaphragms preferably formed of pressed metal, and arranged between the center sills and the side sills of the car. The bolster comprises four of these diaphragms 1 arranged in pairs, as shown in Fig. 2, and with their flanges projecting in opposite directions. The diaphragms of each pair are spaced apart to provide openings between their vertical webs to receive the member which ties the pairs of diaphragms together. This member preferably consists of a casting 2 provided with an integral king pin bearing 3 and with two upwardly projecting wedge-shaped wings or fins 4 that are interposed between the pairs of diaphragms and are secured to the vertical webs thereof by rivets 5. The member 2 is of greatest width at its middle portion and diminishes gradually in width towards the ends of the bolster, as shown in Fig. 2, said member forming the bottom cover plate or compression member of the bolster and being

secured to the lower flanges 6 of the diaphragms 1 by rivets 7. Flanges 8 project downwardly from the underneath side of the member 2 along the side edges thereof to impart greater strength to said member and also impart a finished appearance thereto. The tension member of the bolster consists of a plate 9 that extends from side sill to side sill and is secured to the upper flanges of the diaphragms 1 by rivets 10. This tension plate 9 is not secured to the diaphragms, however, until after the bolster has been placed in position and the center sills have been let down into the bolster and secured thereto.

With a construction of this description I am able to use a machine riveter for driving the rivets 5 and 7, which connect the compression member 2 and diaphragms 1 together, and after these parts have been assembled I arrange them in position and then place the center sills in position between the pairs of diaphragms.

The center sills which I prefer to use do not extend continuously from end sill to end sill of the car, but terminate intermediate the end sill and the bolster and are spliced to short draft sills. The draft sills 11 are preferably formed of pressed metal and are channel-shaped in cross section, and the center sills 12 are also formed from pressed metal, each of said center sills comprising a vertical web provided at its upper edge with an integral flange 13 and at its lower edge with an angle 14. The angle 14 does not extend the entire length of the vertical web of the center sill but terminates at the bolster so that the portion of the center sill which projects beyond the bolster has no lower flange. Each center sill is connected to its draft sill by an outside splice plate 15 and an inside splice plate 16 consisting of a pressed channel 16 preferably provided at its center with a pressed strengthening rib 17.

The center sills and draft sills are connected together by the splice plates 15 and 16 before they are let down into the bolster, and the end flanges 18 of the diaphragms 1 are secured to the vertical webs of the center sills by rivets 19, the lower flanges of the inside channel-shaped splice plates 16 being secured to the combined compression member and center bearing 2 by rivets 20. The rivets 20 are also used for connecting a center plate 21 to the underneath side of the combined center bearing and compression member 2.

After the center sills have been arranged in position, the center sill top plate 22 and the tension plate 9 of the bolster are put in place and are secured in position by rivets, as previously described, the tension plate of the bolster being secured to the upper flanges of the center sills as well as to the upper flanges of the diaphragms.

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

1. A bolster comprising pairs of members projecting laterally from the center sills of a car, and a member passing below the center sills and provided outside of the center sills with upwardly projecting fins, each of which is secured to both members of one of said pairs of laterally projecting members; substantially as described.

2. A bolster made up of members that project laterally from the center sills of a car, and a plate-like member arranged underneath the center sills and having upwardly projecting fins at approximately the longitudinal center thereof that are secured to the members first referred to above the lower edges thereof; substantially as described.

3. A bolster composed of members that project laterally from the center sills of a car, a tension plate secured to the upper edge portions of said members, and an approximately flat member passing below the center sills and provided at approximately its longitudinal center with upwardly projecting portions that are secured to said laterally projecting members above the lower edges thereof; substantially as described.

4. A bolster comprising pairs of diaphragms projecting laterally from the center sills of a car, and an approximately flat member passing below the center sills and having a pair of fins, each of which is secured to the webs of a pair of diaphragms; substantially as described.

5. A bolster comprising pairs of channel-shaped members projecting laterally from the center sills of a car, a member passing underneath the center sills and secured to the lower flanges of the members first referred to, and a pair of fins projecting upwardly from said connecting member and each being secured to the webs of one pair of said channel-shaped members; substantially as described.

6. A bolster comprising pairs of flanged diaphragms arranged on opposite sides of the center sills of a car and with their flanges projecting in opposite directions, a substantially flat plate-like member spanning the space between the center sills and having pairs of fins which are arranged between the webs of said diaphragms, and means for securing the webs of each pair of diaphragms to the fin that is arranged between them; substantially as described.

7. A bolster comprising pairs of pressed metal members that project laterally from the center sills of a car, a tension plate secured to the upper edge portions of said members, and a cast compression member spanning the space between the center sills and provided with upwardly projecting fins, each of which is secured to a pair of said laterally projecting members above the lower edges thereof; substantially as described.

8. A bolster comprising pairs of members which are secured at their inner ends to the center sills of a car, a tension plate secured to the upper edge portions of said members, a cast center bearing having upwardly projecting fins which extend between the members of each pair outside of the center sills, and means for securing both members of each pair to the fin that is arranged between them; substantially as described.

9. A bolster provided with a center bearing having upwardly projecting fins that are located outside of the center sills and which are adapted to be secured to the main carrying members of the bolster; substantially as described.

10. A bolster consisting of members which project laterally from the center sills of a car, and an approximately diamond-shaped cast center bearing having upwardly projecting fins which are secured to said members outside of the center sills; substantially as described.

11. A bolster provided with a center bearing member which is of greatest width at its middle portion, said member being provided with strengthening flanges and with fins which are adapted to be secured to the main carrying members of the bolster; substantially as described.

12. A bolster comprising two pairs of flanged diaphragms separated from each other to provide a space to receive the center sills of a car, a cast connecting member having fins which are arranged between the diaphragms of each pair outside of the center sills, means for securing said connecting member to the lower flanges of said diaphragms, and independent means for securing the webs of each pair of diaphragms to the fin that is arranged between them; substantially as described.

13. A bolster comprising two pairs of pressed metal diaphragms separated from each other to form a center sill opening, and arranged with their flanges extending in opposite directions, and a cast connecting member secured to the lower flanges of said diaphragms and having upwardly projecting fins which are secured to the webs of said diaphragms beyond the center sills; substantially as described.

14. In a car underframe, center sills, flanged members projecting laterally from the center sills, a cast combined center bear-

ing and compression member of plate-like form passing underneath the center sills and provided at approximately its longitudinal center with integral upwardly projecting fins, and means for securing said member to the webs and lower flanges of the flanged members; substantially as described.

15. In a car underframe, center sills, pairs of flanged diaphragms secured to the center sills and projecting laterally therefrom, a plate-like member passing below the center sills and provided with fins that are secured to the webs of the diaphragms, strengthening flanges on the underneath side of said member, and a tension plate secured to the center sills and to the top flanges of the diaphragms; substantially as described.

16. In a car underframe, a bolster, center sills projecting through said bolster, draft sills, and channel-shaped splice plates formed of pressed metal for securing the center sills to the draft sills; substantially as described.

17. In a car underframe, a bolster, center sills projecting through said bolster, draft sills, and channel-shaped splice plates formed of pressed metal for securing the center sills to the draft sills, said splice plates being provided with pressed strengthening ribs; substantially as described.

18. In a car underframe, center sills, draft sills, channel-shaped splice plates secured to the webs of the center sills and draft sills for connecting them together, flanged dia-

phragms projecting laterally from the center sills and secured thereto and to the splice plates, a compression member passing below the center sills, and means for securing said member to the webs of the diaphragms and to the lower flanges of the splice plates; substantially as described.

19. In a car underframe, center sills, draft sills, inside and outside splice plates secured to the webs of said sills for connecting them together, flanged diaphragms projecting laterally from the center sills, a member passing underneath the center sills and having portions which are secured to the webs of the diaphragms, and means for securing said member to the inside splice plates; substantially as described.

20. In a car underframe, center sills, members projecting laterally from the center sills and secured to the webs thereof, a cast center bearing having fins which are secured to the inside faces of said members above the lower edges thereof and beyond the center sills, and a separate center plate connected to the underneath side of said center bearing; substantially as described.

In testimony whereof I hereunto affix my signature in the presence of two witnesses, this 6th day of August 1907.

ALLEN E. OSTRANDER.

Witnesses:

F. H. GIBBS,
M. SANGER.