V. M. SUMMA.

BOLSTER.

APPLICATION FILED OCT. 15, 1912.

1,066,549.

Patented July 8, 1913.

2 SHEETS—SHEET 1.

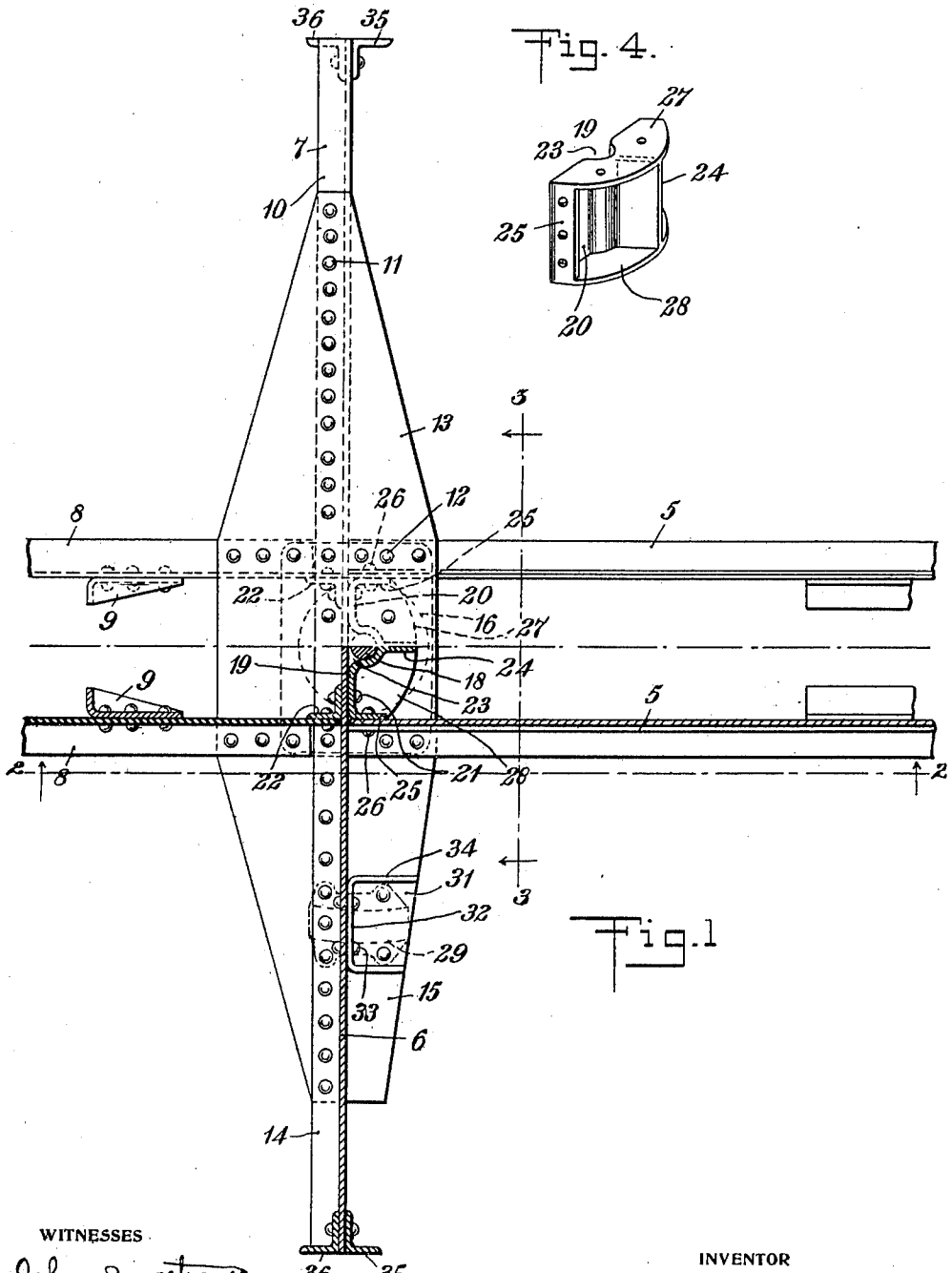

Fig. 4.

Fig. 1

WITNESSES

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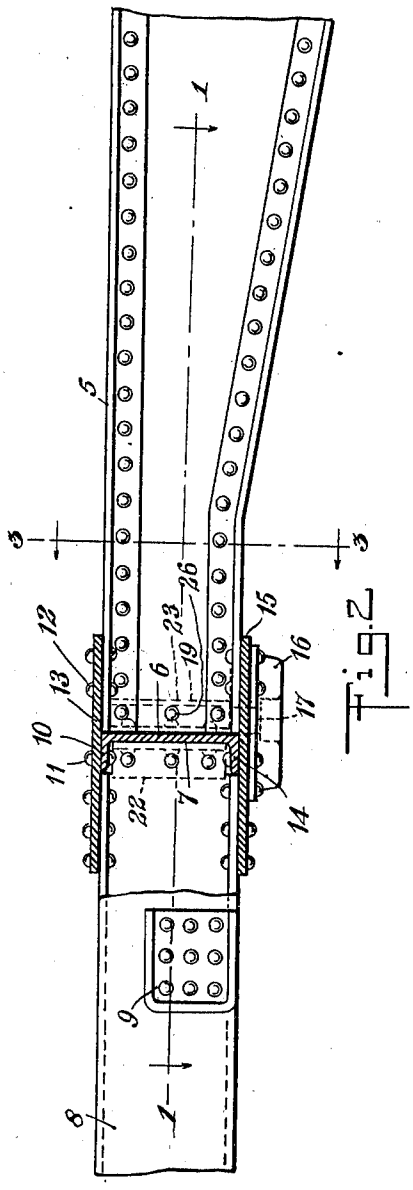

Fig. 2.

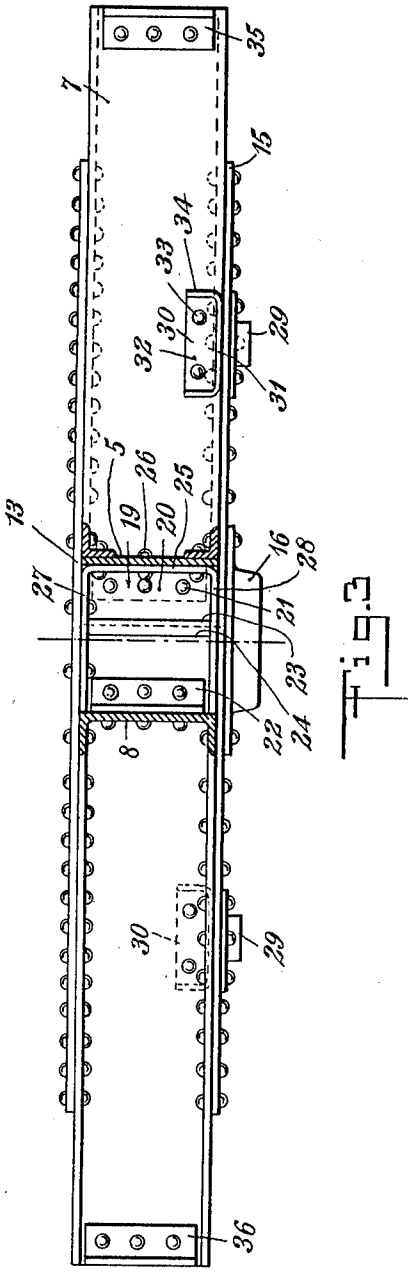

Fig. 3.

WITNESSES

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BOLSTER.

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To all whom it may concern:

Be it known that I, VICTOR M. SUMMA, residing at St. Louis, Missouri, and being a citizen of the United States, have invented certain new and useful Improvements in Bolsters, 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 view looking down upon a portion of an underframe including a bolster, half of the view shown in plan and the other half shown in section on the line 1—1 of Fig. 2. Fig. 2 is a longitudinal vertical sectional view taken on a plane indicated by the line 2—2 of Fig. 1, showing the sill members and center bearing in elevation, and the transverse bolster members in transverse section. Fig. 3 is a transverse sectional view taken on the line 3—3 of Figs. 1 and 2, showing the rear face of the bolster in elevation and the longitudinal center sill members in section, and Fig. 4 is a detailed perspective view showing the bolster filler and king pin retaining member.

My invention relates to a car underframe, and more particularly relates to the bolster elements thereof.

It is an object of my invention to provide a bolster of this character which shall be light, utilizing a minimum amount of material and which is braced in those portions thereof carrying the center and side bearings, and a further object of my invention is to provide an interlocking and bracing of a bolster of this character with the conventional form of center sills.

A still further object of my invention is to provide a simple structure which, in connection with the bolster, will maintain the king pin in position, and, with the least amount of material, will take up and transmit to the center sills all stresses in the same set up by the pull on the king pin, and a still further object of my invention is to preserve all the functions and advantages of the old form of I-beam bolsters, and at the same time eliminate unnecessary metal from the lower rear flange, as well as effectually brace the bearings, both side and center, from the bolster with the least amount of material.

It has been usual with devices of this character to provide a bolster having a member in the form of an I-beam, the rear flanges of which are usually cut away in order to accommodate the king pin, but it has been found that this arrangement materially weakens the flanges of the bolster. In my improved device I have omitted these old form of cut-away flanges entirely, bracing the lower cover plate in the vicinity of the bearings directly from the vertical web of a main bolster element, thereby attaining all of the functions of the old form of I-beam construction by means of a more economical arrangement of necessary bracing members.

As both ends of the underframe embodying the preferred form of my improved bolster are substantially alike, but one portion of the underframe will be described in detail, and as shown in the several figures there is illustrated a conventional form of spaced apart center sills 5, abutting an end of which and extending transversely thereof is the rear face of the vertical web 6 of the channel shape member 7, which member forms the main element of the bolster. Having the ends of their vertical webs positioned between the channel 7 and forming in effect a continuation of the center sills 5, are the draft sills 8 affixed to the inner face of which and in advance of the bolster are the rear draft sill stops 9. Resting on top of the top flange 10 of the channel 7, riveted thereto by means of the rivets 11 and also resting on top of the top flanges of both the draft and center sills and fastened thereto by means of the rivets 12, is a top cover plate 13, which, as shown in Fig. 1, terminates short of the end of the channel member 7, and is shown relatively wide between center and draft sills converging toward opposite transverse ends. Similarly there is positioned below the lower flange 14 of the channel 7, and fastened to the same and to the lower flanges of the draft and center sills a lower cover plate 15. The same rivets which hold the lower cover plate to the center and draft sills may also be utilized to fasten to the underside of the lower cover plate 15, and between the longitudinal

sill members, a center bearing 16 of conventional form. It will be noted, especially from Fig. 2, that the centrally disposed pin opening 17 in the lower bearing 16 is disposed in the rear of and adjacent the vertical member 6 of the channel 7, so that the king pin 18 journaled in the opening 17 will lie against or abut the rear face of the channel, as shown in half section and dotted lines in Fig. 1. In order to retain this pin in its vertical position, and at the same time to maintain the center sills braced in their spaced apart position at the bolster, and to afford a reinforcement for the lower cover plate 15 above the center bearing 16, there is positioned between the center sills and backed to the flange 6 an integral bolster filler 19 in the form of a casting or pressing, shown more particularly in Fig. 4. This casting has a vertically extending face plate 20, the major portion on each transverse side of which abuts the rear face of the channel 6 and is fastened thereto by the rivets 21. These rivets constitute the means for fastening the angles 22, preferably used for connecting the draft sills to the channel 7 on the side of the web thereof opposite the integral filler member 19, and coacting with said member 19 to brace the web of the channel vertically between the center sills.

The central portion of the face plate 20 is recessed rearwardly to form a channel or grcove 23, substantially semi-circular in cross section and adapted to afford a bearing for the vertically disposed king pin 18. This face plate 20 is reinforced by a vertically extending web 24 integral with the plate 20 and top and bottom flanges hereinafter described, and extending rearwardly therefrom and in the direction of the pull of the king pin 18, so that the pull of the king pin in one direction will be taken up by the relatively wide channel member 7, and in the opposite direction by means of the longitudinally extending web 24, forming part of the face plate 20.

Opposite transverse sides of the casting 19 are outlined by side plates 25, abutting a vertical element of the adjacent center sill and fastened thereto by means of the rivets 26. This casting also contains a horizontally disposed top plate 27, which is disposed in the same plane as the top flange 10 of the channel 7, and forms in effect an extension of the tension member of the bolster between the center sills. Similarly this casting includes a lower plate 28, which forms in effect an extension of the lower flange 14 of the channel 7 between the center sills, and in this space acts as an extension of the compression member of the bolster.

The plate 27 is suitably fastened to the underside of the upper cover plate 13. Side bearings 29 depend from and are fastened to the bottom cover plate 15, as is usual with structures of this character, but as shown in dotted line, Fig. 1, the forward portion of each side bearing is disposed beneath the lower flange 14 and extends for some material distance in rear of the vertical web 6 of the channel 7.

In order to brace the lower cover plate 15 adjacent the projecting portion of the side bearings, there is positioned on top of the plate directly over the side bearings a scoop-shape reinforcing member 30. This member has a flat bottom portion 31 resting on the plate 15 and riveted thereto, preferably by means of the rivets which fasten the side bearings to the bottom cover plate 15, and has a rear upwardly extending wall 32, riveted by means of the rivets 33 to the rear face of the vertical web 6 of the channel 7. Integral with the bottom plate 31 and forming a continuation of the rear wall 32 are spaced apart side walls 34 extending upwardly from the bottom plate 31 and substantially in vertical alinement with the outer edges of the side bearing 29. It will be noted from this structure that the bottom plate 15 is braced adjacent the side bearings by means of the bottom flange 14 on one side of the web 6 and by the scoop-shape member 30 disposed on the opposite side of the web 6.

Of course, it is within the limits of the invention to omit the bottom cover plate 15 entirely, and fasten the center and side bearings directly to the channel 6 and bracing members 19 and 30.

Opposite ends of the bolster are affixed to the side sills, not shown, by angle members 35 and 36 riveted on opposite sides of the end of the web 6.

What I claim is:

1. In a car underframe, a bolster including a continuous channel having a vertical web and outwardly extending flanges, a king pin contacting with the back of said web, spaced center sills, and a casting disposed between said sills and forming with said web a housing for said king pin.

2. A reinforcement for a center bearing, comprising a bolster having a lower flange, a vertical web outlining one side of said flange, a vertically flanged member fastened through one of its flanges to said web and forming an extension to said lower flange, and a center bearing carrying plate fastened to said lower flange and supporting said flanged member.

3. In a car underframe, a continuous bolster comprising a channel having a vertical uniplanar web and forwardly extending flanges, a king pin contacting with the back of said web, and means containing said pin to maintain the same in position.

4. In an underframe, spaced center sills, a channel-shaped bolster member passing through said sills, an integral member dis-

posed between said sills in the rear of said member, and having upper and lower flanges forming respectively continuations of the tension and compression members of said bolster member.

5. The combination with a continuous bolster element, of a bolster filler member adapted to be positioned between center sills and in rear of said element forming a reinforcement for a bearing member, said filler member having a recess adapted to contain a king pin, and an integral strengthening rib disposed in the line of pull on said king pin.

6. A bolster filler member comprising top and bottom flanges, side flanges affording means for attaching the member to sills, a face plate adapted to be attached to a bolster element having a king pin pocket therein, and a web reinforcing said plate adjacent said pocket.

7. In an underframe, spaced center sills, a channel bolster member extending across said sills, means including a vertical face plate fastening said bolster member to said sills, said plate having a recess therein forming with said bolster member a king pin pocket.

8. A bolster including a vertically disposed uniplanar plate, and a king pin housing backed to said plate and adapted to be held between spaced center sills.

9. In an underframe, a bolster comprising a continuous single channel member, a bottom cover plate, a bearing depending from said cover plate beneath said channel, and a member carried by said channel reinforcing said cover plate above said bearing.

10. In a bolster, a bottom cover plate, a bearing affixed to the underside thereof, a continuous bolster member disposed above said plate bracing the same transversely, and a bolster filler member attached to said member reinforcing said plate in the vicinity of said bearing.

11. A bolster having a king pin socket therein formed of an open-socketed bolster filler, and a channel extending across the socket in the filler.

12. An integral bolster filler casting comprising a face plate having a recess therein adapted to contain a king pin, side attaching plates and top and bottom plates attached to said side and face plates.

13. The combination with spaced center sills, of a bolster comprising a continuous member channel shaped to the outside of the sills and substantially an I-beam between the sills.

14. The combination with spaced center sills, of a bolster comprising a continuous member channel shaped to the outside of the sills and substantially an I-beam between the sills and top and bottom cover plates.

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

VICTOR M. SUMMA.

Witnesses:
OSCAR HOCHBERG,
JAMES J. COOPER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."