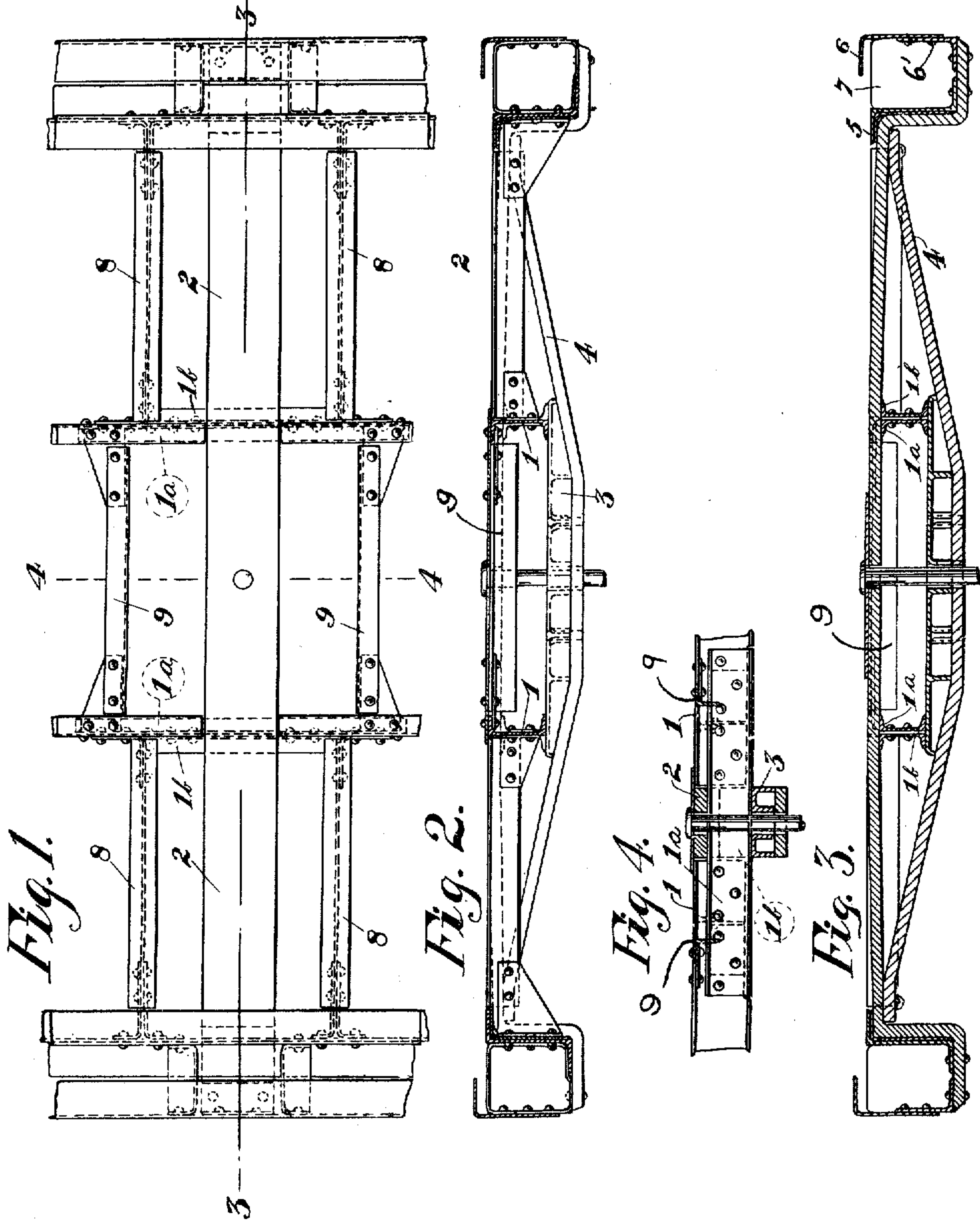


F. KOCH.
 BOLSTER CONSTRUCTION FOR CAR UNDERFRAMES.
 APPLICATION FILED APR. 19, 1909.

938,770.

Patented Nov. 2, 1909.



Witnesses
 Frank C. Miller
 M. B. Sifer

Inventor
 Felix Koch.

UNITED STATES PATENT OFFICE.

FELIX KOCH, OF BELLEVUE, PENNSYLVANIA, ASSIGNOR TO PRESSED STEEL CAR COMPANY, OF PITTSBURG, PENNSYLVANIA, A CORPORATION OF NEW JERSEY.

BOLSTER CONSTRUCTION FOR CAR-UNDERFRAMES.

938,770.

Specification of Letters Patent.

Patented Nov. 2, 1909.

Original application filed May 19, 1908, Serial No. 433,664. Divided and this application filed April 19, 1909. Serial No. 490,699.

To all whom it may concern:

Be it known that I, FELIX KOCH, a subject of the Emperor of Germany, residing at Bellevue, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Bolster Construction for Car-Underframes, of which the following is a specification.

The present application constitutes a division of my application filed May 19th, 1908, Serial No. 433,664, entitled improvements in passenger cars.

The present application relates to improvements in bolster construction for car underframes, the structure being especially adapted for use in passenger car construction.

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

Figure 1 is a plan view of the improved bolster construction, Fig. 2 is a front or rear elevation of the same, adjacent parts of the car underframe being shown in section, Fig. 3 is a transverse section through the car underframe or a longitudinal section through the bolster construction on the line 3—3, Fig. 1, Fig. 4 is a detail sectional view on the line 4—4, Fig. 1.

An object of the present invention is to provide a light, strong and durable bolster construction, and one comprising as few parts as is consistent with maintenance of strength.

The structure herein shown and described is one in which the underframing may be kept shallow without loss of strength, thus bringing the superstructure nearer the truck, making the same especially suitable for use in connection with street railway cars.

Referring now in detail to the drawings: 1 represents the car center sills, each comprising a plurality of center sill sections connected at the bolster points by flanged sections 1^a riveted or secured to their inner faces and flanged sections 1^b riveted or secured to their outer faces. The adjacent ends of the several sections of the center sills 1 are spaced from each other at the bolster points by the flanged sections 1^a, 1^b, to provide a transverse aperture in the center sills 1 for the upper tie member 2 of the

bolster construction. It will be noted that each of the sections 1^a and 1^b is of less depth than the main sections comprising the center sills 1 so that the tie member or tension member 2 in passing through the center sill construction 1 rests upon the upper flanges of the sections 1^a, 1^b. It will also be noted that the main sections of the center sills 1 have their lower inwardly projecting flanges cut away at the point of attachment, the lower flanges of the sections 1^a constituting a continuation of the lower flanges of the main sections of the center sills 1. By thus cutting away the lower flanges of the main section of the center sills 1, the parts are more readily and easily assembled as it is essential or desirable, for purposes of strength, to have a continuous lower flange or compressional chord for each center sill, and by cutting the main sections of the center sills 1 at the bolster points and employing section 1^a it is possible, as shown, to form a continuous chord throughout the length of the car, and yet divide the center sills into a plurality of parts which are more easily handled in assembling the parts than if the center sills were made continuous and notched at the bolster points. The sections 1^a, 1^b, and the main sections of the center sills 1 form as stiff a structure as though the center sills were continuous and did not comprise a plurality of sections, as sections 1^a, 1^b, compensate for any loss in strength of the center sills due to dividing the center sill and cutting or recessing that portion of the same above the neutral axis. By cutting the lower flange at the main sections of the center sills 1 at the bolster points, the use of a deeper commercial section 1^a is also permitted.

3 is the bolster center casting or plate extending from a point outside one of the center sills to a like point outside the other of the center sills, and in width about equal to the upper tie member 2. Casting or plate 3 provides a level seat upon which rests the center sills 1. Casting or plate 3 is provided with a horizontal center under-surface and tapered ends providing a snug seat for the lower tie member or compression member 4 of the bolster. The tension member or upper tie member 2 of the bolster extends from side sill to side sill, and at the side sills is bent down and under the side sill construc-

tion. The lower tie member or compression member 4 of the bolster extends substantially from side sill to side sill but stops short of the downward bend of the tie or tension member 2. The side sill construction may be of any suitable form, but is here shown as comprising inner and outer longitudinal flanged members 5, and 6 spaced from each other by brackets 7. The lower tie member or compression member 4 of the bolster is riveted to the inner longitudinal member 5, and is also riveted to the outer longitudinal member 6 through the medium of the angle 6'.

8 are transverse braces extending between the side sills and the center sills 1 in proximity to the tension member 2. 9 are like members extending between the center sills 1 out of alignment with the cross braces 8. Braces 8 and 9 on either side of the tension member 2 form trusses affording lateral stiffness to the bolster, and at the same time, in view of their proximity to the vertical plane of the tension and compression members they also afford a degree of vertical stiffness to the bolster. The braces 9 being farther apart from each other than the braces 8 are from each other, it will be seen that an arched truss is thus formed adding materially to the strength of the truss.

The bolster thus described constitutes a bolster of the truss type. As will readily be seen, the center sills 1 and center casting or plate 3 constitute the central strut of the bolster, and perform the function of a king post or queen post. The tension member 2, center casting or plate 3 and the compression member 4 are all perforated to receive the king pin.

It is obvious, without illustration, that this principle of construction might be applied to a truck bolster for a car, although the same is illustrated in connection with a body bolster.

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

1. In a car bolster, tension and compression members and center sill section connecting members forming struts between said tension and compression members.

2. In a bolster for cars having center sills, tension and compression members, and beams extending beyond said tension and compression

members in a line transverse said members and secured to the car center sills, said beams forming struts for said bolster.

3. A railway car bolster, in combination with a center sill comprising a main section on each side of said bolster and a separate and independent section connecting said main sections extending through said bolster.

4. A railway car bolster, in combination with a center sill construction comprising two pairs of main sections, each pair of sections being separated by said bolster and a pair of separate and independent sections connecting the sections of each main pair and extending through said bolster.

5. In a car bolster, a center sill comprising a plurality of main sections and a uniting section of less depth than said main sections, a truss member extending between said main sections above said uniting sections, and a second truss member extending beneath said center sill.

6. In a car bolster, a center sill comprising a plurality of main sections and uniting sections of less depth than said main sections, a truss member extending between said main sections above said uniting sections, and a second truss member extending beneath said center sill.

7. In a car bolster, comprising a center sill including spaced flanged main sections having their flanges removed at their adjacent ends, and a flanged uniting section having a flange forming a continuation of the flanges of said main sections.

8. In a car bolster, comprising a center sill including flanged sections having portions of the flanges of their adjacent ends removed, and flanged uniting sections, one of said sections having a flange in the plane of the removed portions.

9. In a car bolster, upper and lower truss members and a center plate having a horizontal upper surface and a lower surface extending in a broken line, and center sills seated upon said upper surface, said lower surface forming a seat for one of said truss members.

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

FELIX KOCH.

Witnesses:

G. C. LAMBE,

FRANK E. MILLER.