July 16, 1940.

O. K. KJOLSETH

2,208,424

RAILWAY TRUCK

Filed Jan. 19, 1939

2 Sheets-Sheet 1

Fig. 1.

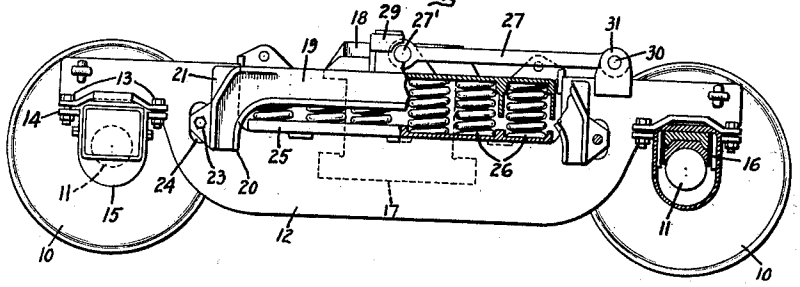


Fig. 2.

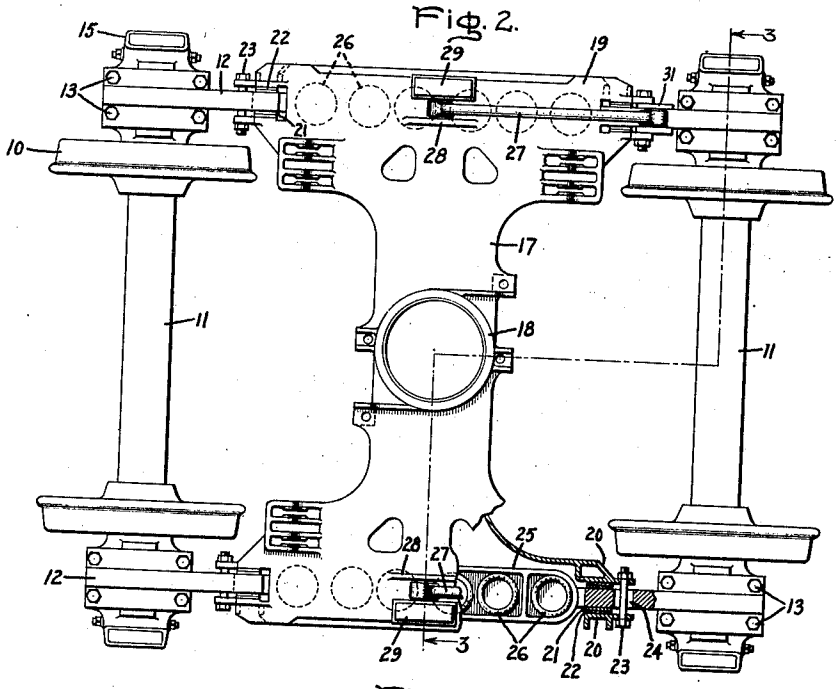
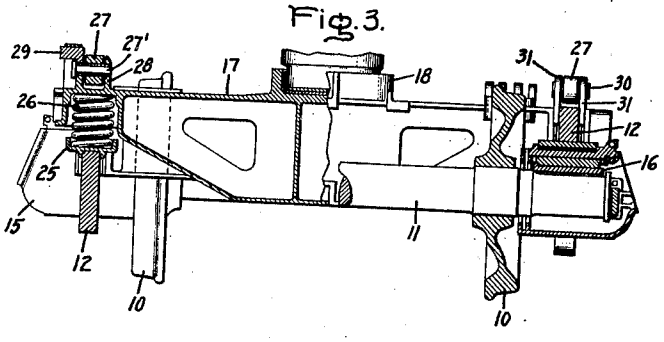


Fig. 3.



Inventor:
Ole K. Kjolseth,
by Harry E. Dunham
His Attorney.

July 16, 1940. O. K. KJOLSETH 2,208,424

RAILWAY TRUCK

Filed Jan. 19, 1939 2 Sheets-Sheet 2

Fig. 4.

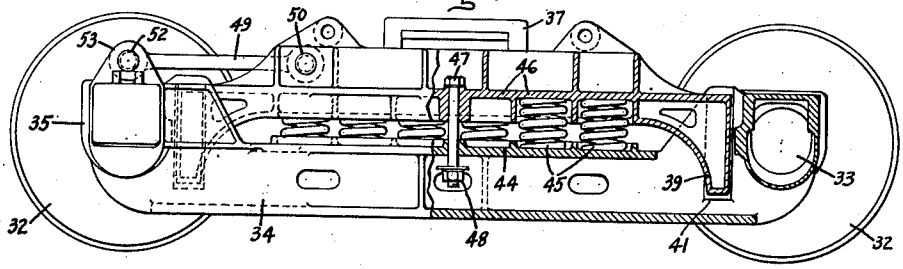


Fig. 5.

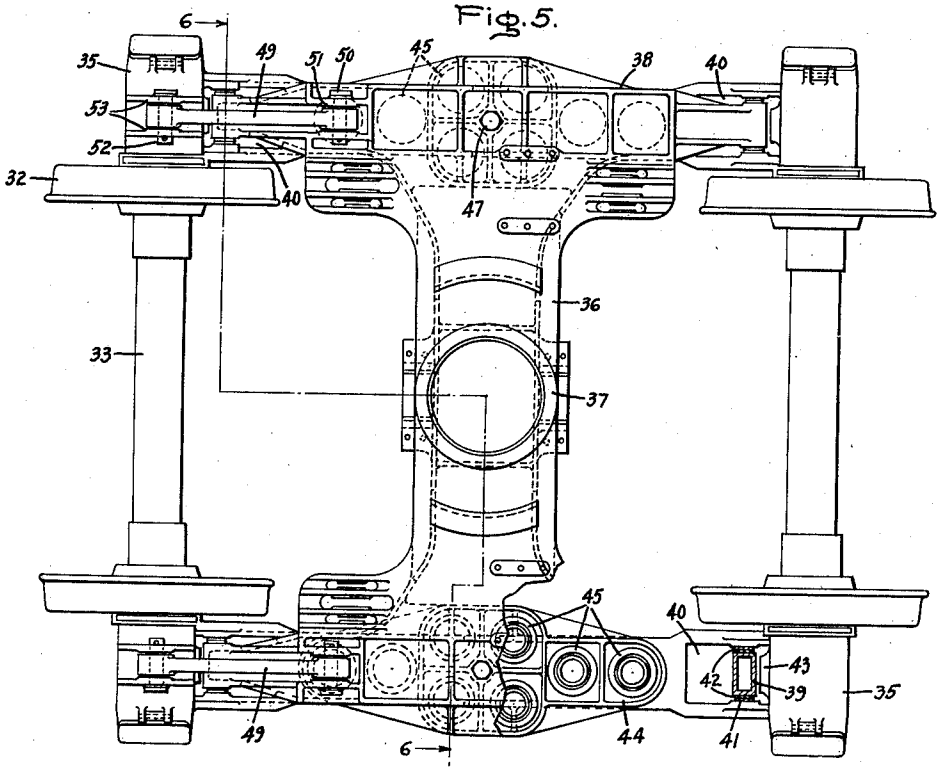
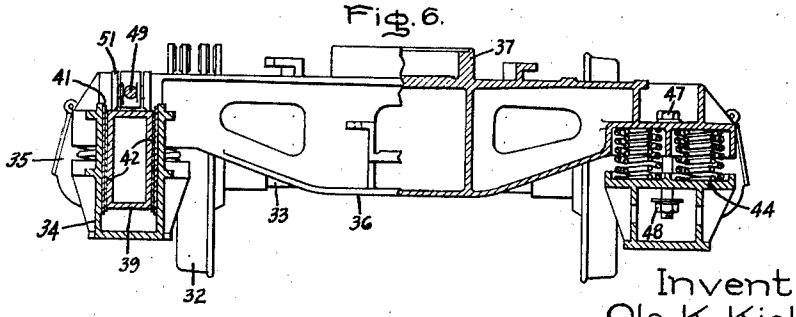


Fig. 6.



Inventor:
Ole K. Kjolseth,
by Harry E. Dunham
His Attorney.

Patented July 16, 1940

2,208,424

UNITED STATES PATENT OFFICE

2,208,424

RAILWAY TRUCK

Ole K. Kjolseth, Erie, Pa., assignor to General Electric Company, a corporation of New York

Application January 19, 1939, Serial No. 251,778

4 Claims. (Cl. 105—197.2)

My invention relates to trucks for railway vehicles.

An object of my invention is to provide an improved railway truck and bolster supporting arrangement for such a truck.

Further objects and advantages of my invention will become apparent and my invention will be better understood from the following description referring to the accompanying drawings, and the features of novelty which characterize my invention will be pointed out with particularity in the claims annexed to and forming part of this specification.

Referring to the drawings, Fig. 1 is a side elevation of a truck embodying my invention, partly broken away to show the supporting arrangement; Fig. 2 is a plan view of the truck shown in Fig. 1, partly broken away to illustrate the relative arrangement of the side frames and the cooperating bolster elements; Fig. 3 is a view taken along line 3—3 of Fig. 2; Fig. 4 is a side elevational view, partly in section, illustrating another embodiment of my invention; Fig. 5 is a plan view of the truck shown in Fig. 4, partly broken away to show the relative arrangement of the side frames and cooperating bolster elements; and Fig. 6 is an end view, partly in section, taken along line 6—6 of Fig. 5.

Referring to the drawings, I have shown a truck for railway vehicles having a pair of wheels 10 mounted on each of a pair of axles 11 arranged to support longitudinally extending side frames 12. These side frames are arranged as equalizers extending between the axles on each side of the truck with each end thereof secured by bolts 13 to flanges 14 formed on the sides of a journal box 15 arranged about an axle journal bearing 16. A bolster 17 extends transversely between the two side frames 12 and is provided with a center bearing plate 18 for supporting a railway vehicle on the truck. Each end of the bolster 17 is provided with a longitudinally extending portion 19, which is bifurcated at the ends and formed with downwardly extending arms 20 arranged about the side frames 12. Upwardly extending bearing plates 21 are provided on each side of the side frames adjacent the journal boxes 15, and the bolster arms 20 are provided with bearings 22 arranged to engage these bearing plates 21 to transmit only lateral forces between the bolster and the side frames. Such an arrangement provides for free relative vertical movement between the bolster and the side frames. Locking bolts 23 extend through openings 24 in the side frames 12 and secure together the arms 20 on each side of the side frame to limit the relative movement therebetween. The openings 24 are former as upwardly extending slots, and also are wider than the diameter of the bolts 23, so as to permit a predetermined limited free relative vertical and longitudinal movement between the side frames and the bolster.

In order to support resiliently the bolster 17, the side frames 12 are formed with spring seats 25 on which a plurality of coil springs 26 are seated with the upper ends thereof in engagement with the under side of the longitudinally extending members 19 of the bolster. This provides an arrangement for resiliently transmitting vertical forces between the bolster and the truck side frames.

Tractive and other longitudinal forces are transmitted between the bolster and the side frames on each side of the truck through a longitudinally extending link member 27, which is pivotally secured to the bolster by a pivot pin 27' rotatably mounted on bosses 28 and 29 and pivotally secured at the other end thereof to the side frame by a pivot pin 30 rotatably mounted in ears 31 secured to the side frame 12. These pivotally secured links 27 allow a predetermined amount of relative vertical movement between the bolster 17 and the side frames 12, while providing a rigid longitudinal connection between these members. In this manner I provide a simple truck construction which provides for the transmission of lateral, longitudinal, and vertical forces between the truck bolster and the side frames with a minimum number of parts, and thereby provide an improved strong and light-weight railway truck construction.

In Figs. 4, 5, and 6, I have shown another embodiment of my invention provided with the same general improved features as the truck shown in Figs. 1, 2, and 3, and of slightly heavier construction for use where it is deemed advisable to employ a more heavy duty truck. This truck is provided with pairs of wheels 32 mounted on each of a pair of axles 33 arranged to support longitudinally extending side frames 34. These side frames are arranged as equalizers extending on each side between the axles and are provided with journal boxes 35 at the ends thereof. These journal boxes extend about bearings supported on the ends of the axles 33 and are arranged so that a slight amount of relative vertical displacement may take place between the axles 33 on the two ends of the truck. A bolster 36 extends transversely between the two side frames 34 and is provided with a center bearing plate 37 for

supporting a railway vehicle on the truck. Each end of the bolster 37 is provided with a longitudinally extending portion 38 formed with downwardly extending arms 39 which project into openings 40 formed in the ends of the side frames 34 adjacent the journal boxes 35. Upwardly extending bearings 41 are provided on each side of the openings 40 in the side frames adjacent the arms 39, and these bolster arms 39 are provided with complementary bearings 42 arranged to engage the bearings 41 to transmit lateral forces between the bolster and the side frames. A bearing 43 also is formed on the journal box 35 adjacent the arms 39 and is adapted to engage the end surface of the arms 39 to transmit longitudinal forces between these arms and the journal boxes as the bolster moves longitudinally with respect to the side frames and these surfaces contact one another.

In order to support resiliently the bolster 36, the side frames 34 are formed with spring seats 44 on which a plurality of coil springs 45 are seated with the upper ends thereof in engagement with spring seats 46 formed on the under side of the longitudinally extending members 38 of the bolster. The bolster 36 is loosely secured to the side frames 34 on each side thereof by a bolt 47 which extends through an opening in each of these members, and a nut 48 is threaded on the end of the bolt 47 and spaced from the lower side of the spring seat 44 on the side frames so as to allow a predetermined amount of relative vertical movement between the side frames 34 and the bolster 36 and to limit such vertical movement to safe operating values. This provides an arrangement for resiliently transmitting vertical forces between the bolster and the truck side frames.

Tractive and other longitudinal forces are transmitted between the bolster and the side frames on each side of the truck through a longitudinally extending link member 49, which is pivotally secured to the bolster by a pivot pin 50 rotatably mounted in ears 51 formed on the bolster, and which is pivotally secured at the other end thereof to the side frame 34 by a pivot pin 52 rotatably mounted in ears 53 formed on the side frame. This pair of pivotally secured links 49 allows a predetermined amount of relative vertical movement between the bolster 36 and the side frames 34, while providing a rigid longitudinal connection between these members. In this manner I provide a simple and rugged truck construction which provides for the transmission of lateral, longitudinal, and vertical forces between the truck bolster and the side frames and utilizes a minimum number of parts, thereby providing a strong and relatively light-weight railway truck construction.

While I have illustrated and described particular embodiments of my invention, modifications thereof will occur to those skilled in the art. I desire it to be understood, therefore, that my invention is not to be limited to the particular arrangements disclosed, and I intend in the appended claims to cover all modifications which do not depart from the spirit and scope of my invention.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. A railway truck having side frames, means including a bolster extending transversely of said truck for supporting a railway vehicle thereon and having downwardly extending arms arranged adjacent each end of said side frames adapted to engage said side frames for transmitting only lateral forces between said bolster and said side frames, means including a longitudinally extending member pivotally connected to said bolster and said side frames for transmitting longitudinal forces therebetween, and means for resiliently supporting said bolster on said side frames.

2. A railway truck having an axle, side frames supported on said axle, oppositely disposed upwardly extending bearings arranged adjacent each end of said side frames, means including a bolster extending transversely of said truck for supporting a railway vehicle thereon and having an integrally formed pair of downwardly extending arms arranged on each side of said side frames adjacent each end thereof and adjacent said upwardly extending side frame bearings and adapted to engage said bearings for transmitting only lateral forces between said bolster and said side frames, means including a longitudinally extending member pivotally connected to said bolster and one of said side frames for transmitting longitudinal forces therebetween, and means for resiliently supporting said bolster on said side frames.

3. A railway truck having an axle, side frames supported on said axle, said side frames having upwardly extending openings therein adjacent each end thereof, oppositely disposed upwardly extending bearings arranged on said side frames in said upwardly extending openings, means including a bolster extending transversely of said truck for supporting a railway vehicle thereon and having downwardly extending arms arranged adjacent said upwardly extending side frame bearings and adapted to engage said side frame bearings for transmitting only lateral forces between said bolster and said side frames, means including a longitudinally extending member pivotally connected to said bolster and one of said side frames for transmitting longitudinal forces therebetween, and means for resiliently supporting said bolster on said side frames.

4. A railway truck having side frames provided with oppositely disposed upwardly extending bearings arranged thereon adjacent each end thereof, a bolster extending transversely of said truck and having longitudinally extending members with downwardly extending arms adjacent each end thereof, means including oppositely disposed bearings on said arms arranged adjacent said upwardly extending side frame bearings and adapted to engage said side frame bearings for transmitting only lateral forces between said bolster and said side frames, resilient means for supporting said bolster on said side frames, means including a longitudinally extending member on each side of said truck pivotally connected to said bolster and the side frame on the same side of the truck as said member for transmitting longitudinal forces therebetween.

OLE K. KJOLSETH.