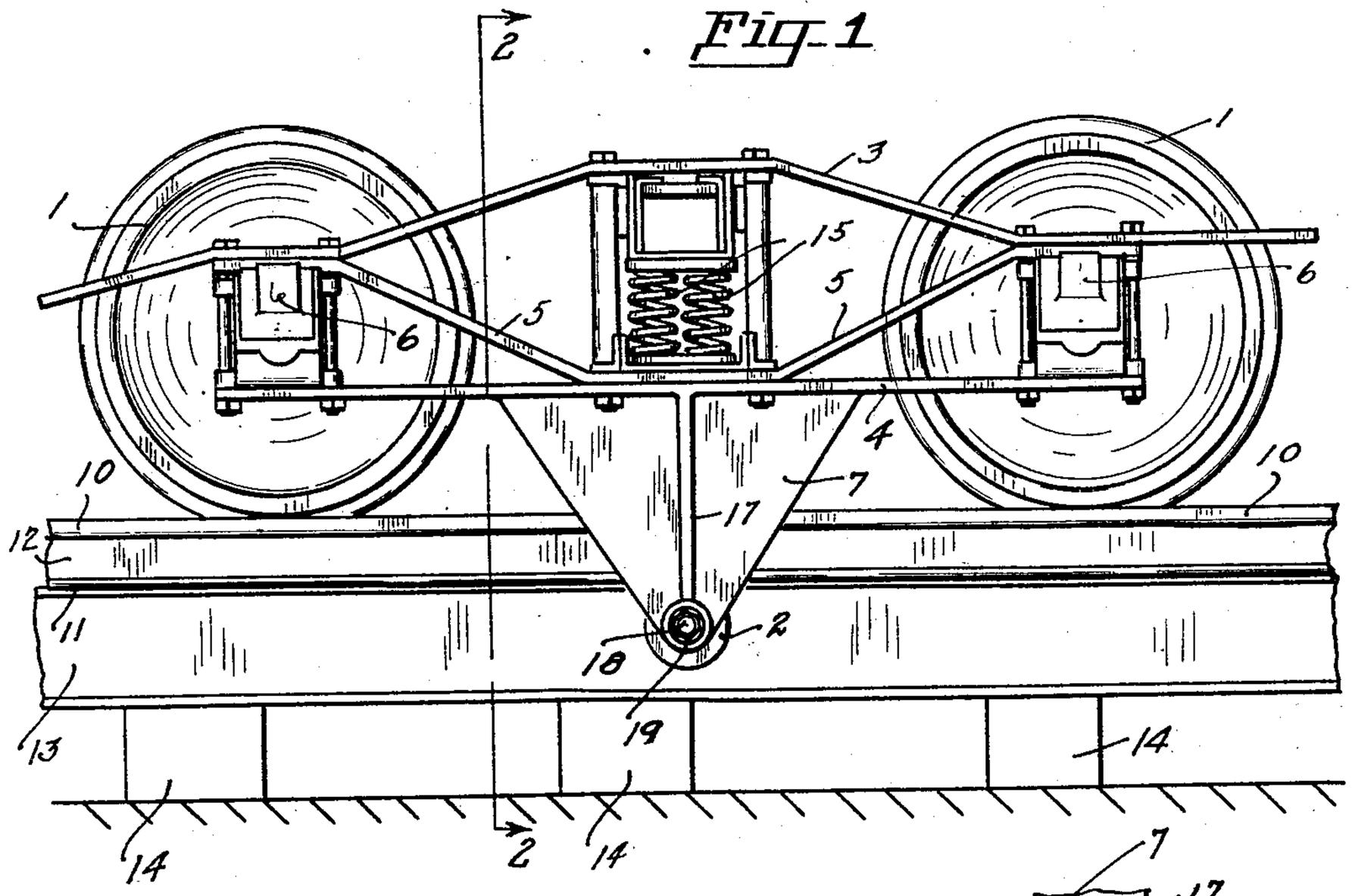
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SAFETY RAILWAY TRUCK

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Fig. 1



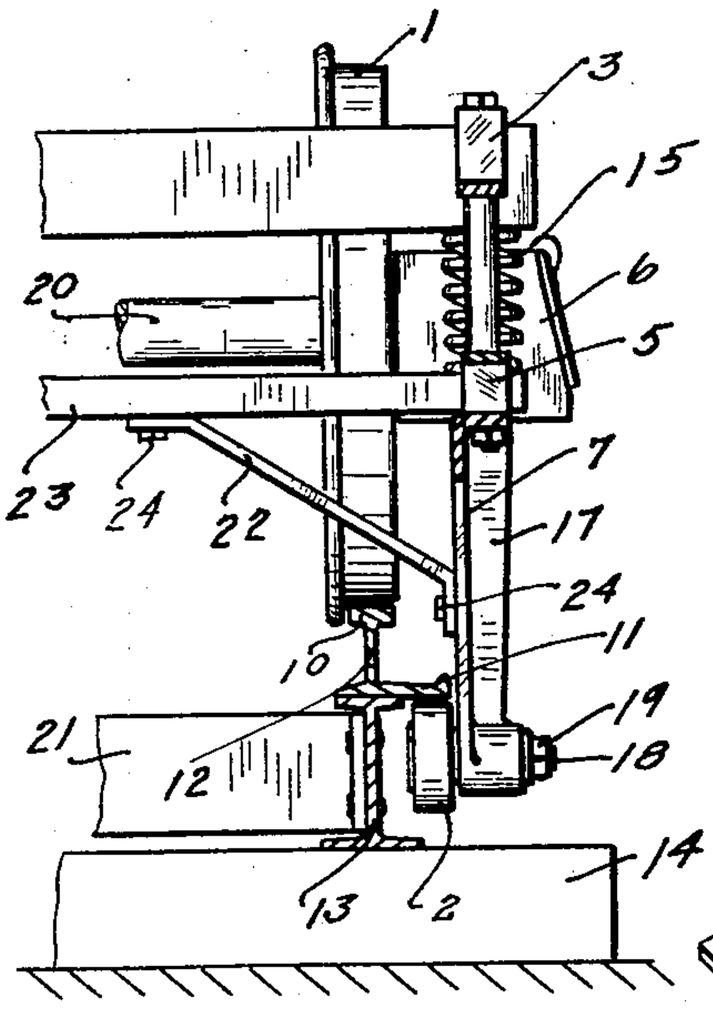




Fig. 2

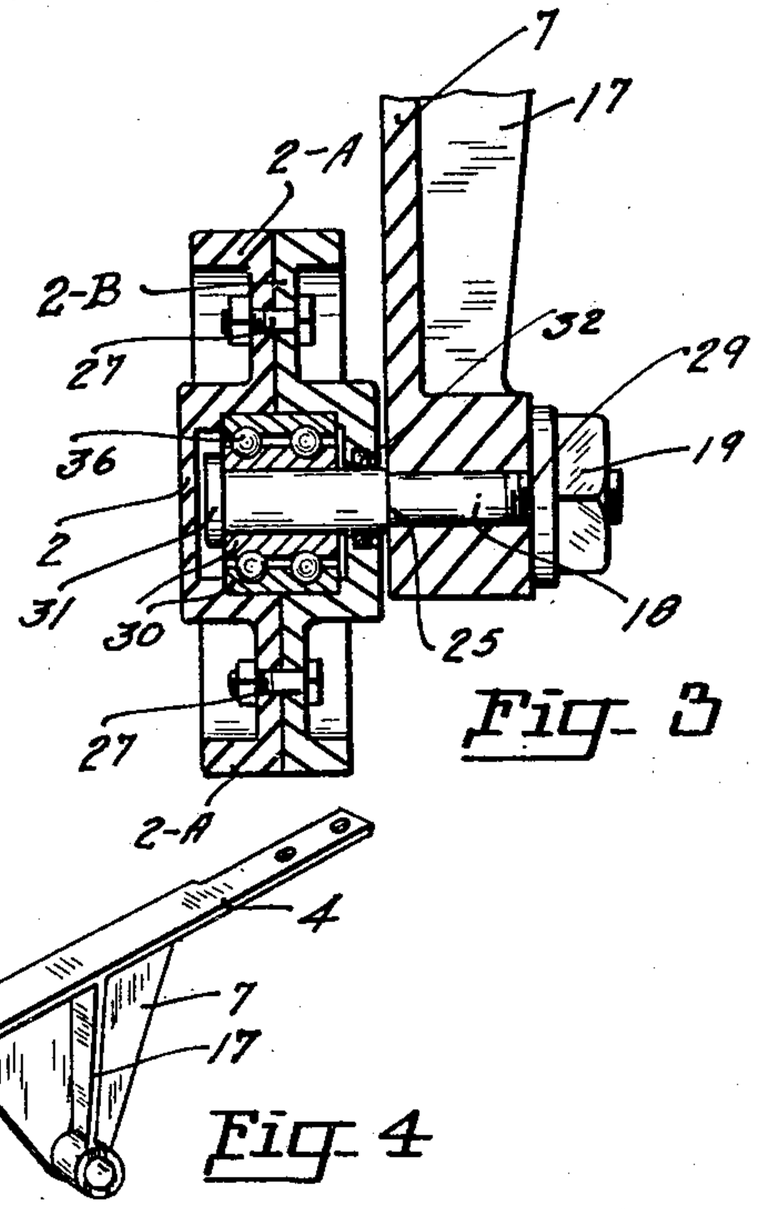



Fig. 3

Fig. 4

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Fig. 5

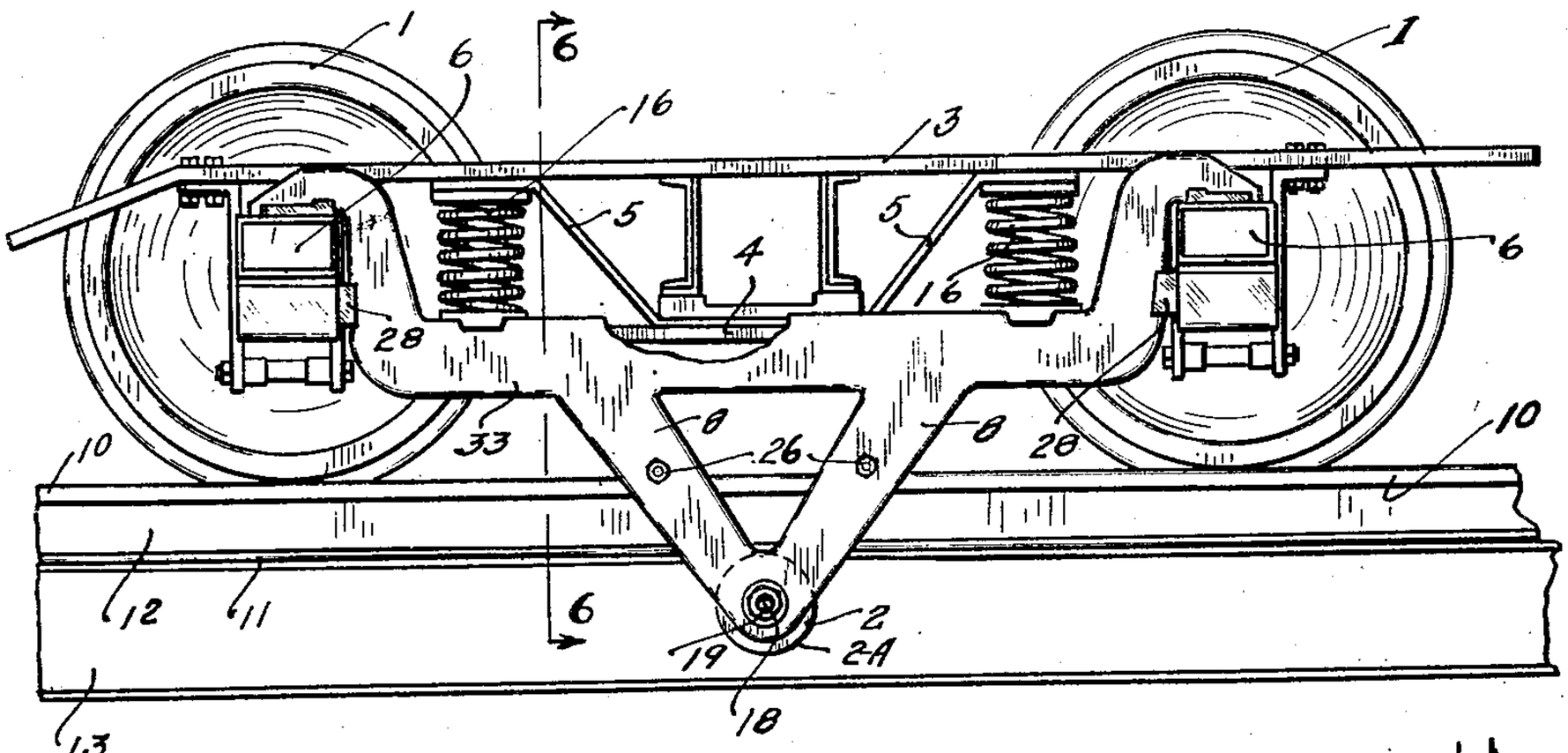
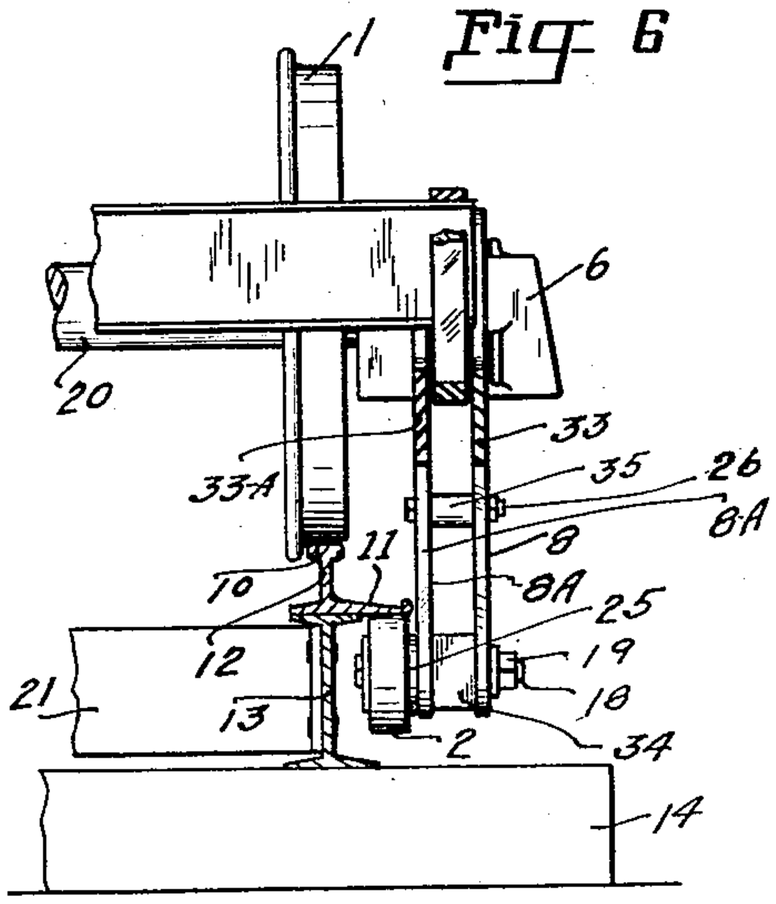



Fig. 6



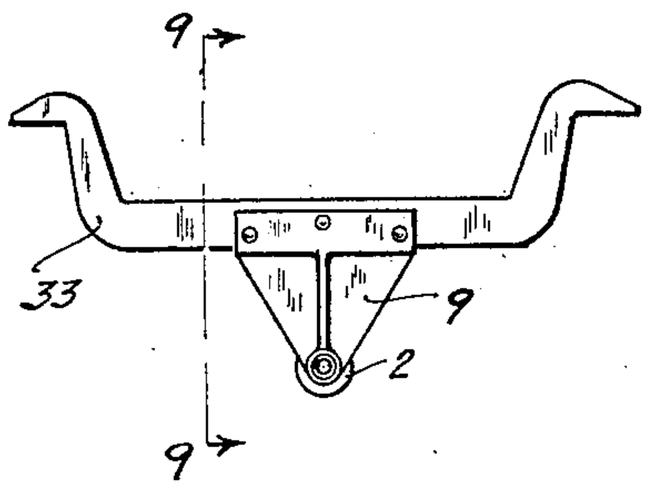




Fig. 8

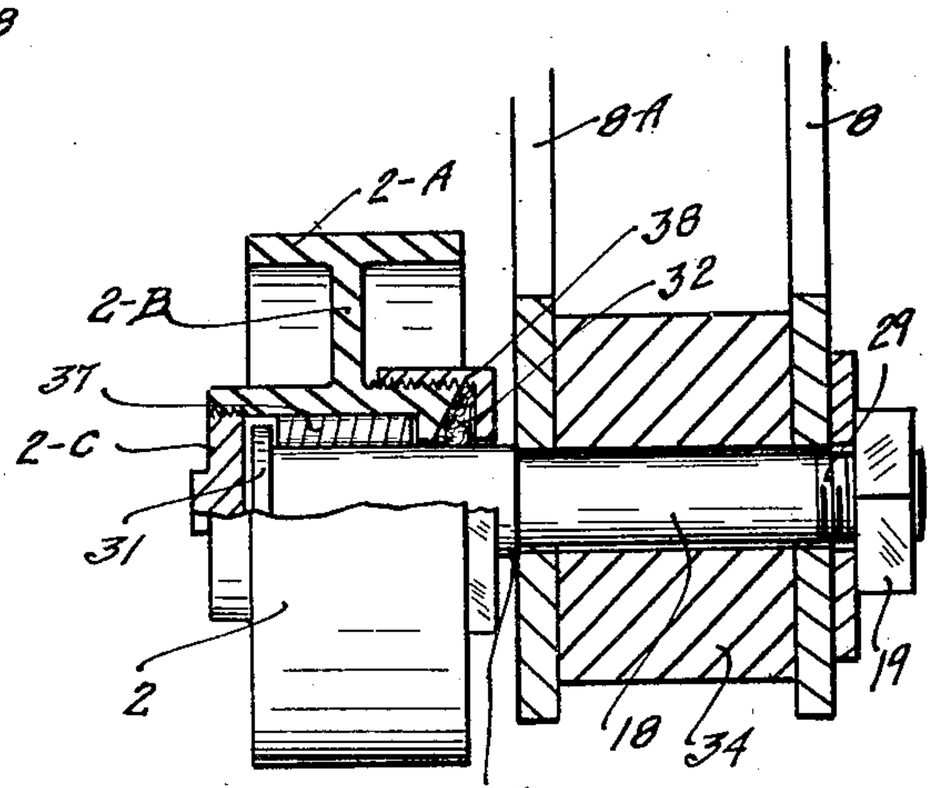



Fig. 7

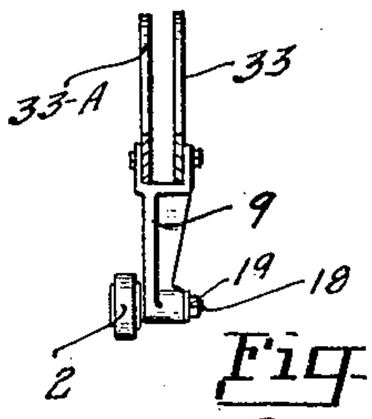



Fig. 9

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# UNITED STATES PATENT OFFICE

ELMER R. EDSON, OF PORTLAND, OREGON

## SAFETY RAILWAY TRUCK

Original application filed April 11, 1928, Serial No. 269,133. Divided and this application filed April 25, 1929. Serial No. 358,143.

This application is a division of a certain pending application heretofore filed by me, entitled "Safety railway trucks," filed April 11, 1928, Serial Number 269,133.

This application relates to the following United States patents which have been granted me: railway roadbed and track construction, issued December 11, 1928, No. 1,694,811, and to my patent issued December 28, 1926, No. 1,612,271. This application also relates to the following applications filed by me and now pending in the United States Patent Office: a switching device, Serial Number 184,685, filed April 18, 1927; a railway switch, Serial Number 184,687, filed April 18, 1927; railway roadbed and track construction, Serial Number 184,686, filed April 18, 1927; and a railway cross-over, Serial Number 240,164, filed December 15, 1927.

The primary object of my invention consists in the prevention of derailment of railway vehicles, especially when cars are moving at high speeds, and I attain this object by the employment of safety-wheels securely attached to the trucks of such cars and operating on the under surface of a special tread.

Referring to the drawings:

Figure 1 is a partial side view of a safety railway truck of the diamond arch type, showing the safety wheel in position on the under surface of a flanged rail tread;

Fig. 2 is a sectional end view taken on the line 2—2 of Figure 1, looking in the direction the arrows point;

Fig. 3 is a vertical cross section of the safety wheel, stub shaft, bearing, and supporting bracket;

Fig. 4 is a perspective of the supporting bracket for the safety wheel, and the pedestal tie bar, showing them constructed of one piece;

Fig. 5 is a side view of a fairly typical four-wheel electric railway passenger truck, partially broken away, with the safety device added thereto;

Fig. 6 is a sectional end view, taken on line 6—6 of Figure 5, looking in the direction the arrows point;

Fig. 7 is an enlarged cross section of a preferred form of safety wheel bearing and support therefor;

Fig. 8 is a side view of a detachable safety wheel bracket which may be secured to the equalizer bars as an alternative form of construction of the support for the safety wheel stub shaft; and

Fig. 9 is a sectional end view of this detachable bracket and safety wheel, as seen from the line 9—9 on Figure 8, looking in the direction the arrows point.

Similar reference numerals indicate similar parts throughout the several views.

Figure 1 shows my invention being utilized upon one of the common types of freight trucks. In this instance the truck is provided with the common and well known members constituting a part thereof, such as wheels 1 which rest upon track rails 10, the journal boxes 6, side frame 3, bolster springs 15, side frame truss 5, and pedestal tie bar 4. In this instance, the tie bar 4 is provided with a downwardly projecting integrally formed member or bracket 7. Viewed from the side, the bracket is seen to be a triangular or V-shaped member provided with a substantial reinforcing rib 17. Added strength is given the bracket 7 by means of the brace 22 which extends between the bracket 7 and a cross beam 23 of the truck. Fastening means for securing brace 22 to the bracket and cross beam are indicated by the numeral 24, and these means may be bolts, rivets, set screws or any other means found suitable for the purpose.

The bracket 7 is intended for carrying a guard or safety wheel, such as the wheel 2, which travels along an under surface tread. It is, of course, necessary to provide a special tread for guard wheel 2, which in this case forms a part of the rails 10. Rails 10 have the usual web 12 and base flanges, the outer base flange 11 being widened sufficiently to provide a tread for wheel 2 on its, or the outer portion of its, under surface. To allow wheel 2 to clear ties 14, rail 10 is elevated on sleepers such as the I-beams 13. It will be seen that the vertical alignment of the inner side of bracket 7 is such that it clears the flange 11.

The bottom or point of the bracket is pro-

vided with a bore or socket which is occupied by the shaft or spindle 18. Shaft 18 has a shoulder 25 which bears against the inner face of the bracket. A nut 19 threaded upon the threaded end 29 of the shaft holds it in position.

Two forms of safety wheels are here shown. That shown in Figure 3 being formed of two complementary members 2A held together by the bolts 27 extending through the web 2B of the wheel 2. The wheel 2 is mounted on shaft 18, and balls 36 are provided within the hub thereof to secure an anti-friction bearing. The shoulder or flange 31 on shaft 18 forms a retaining means for the wheel 2. A second and preferred form of safety wheel is shown in Figure 7. In this instance the shaft 18 is substantially identical to the shaft shown and described heretofore. The wheel in this instance, is a single member instead of two complementary members as has just been described. Roller bearings are substituted for ball bearings. A lubricant 32 is supplied to the bearings by screwing the cap 38. A cap or plate 2C when unthreaded permits the wheel to be taken from shaft 18 when such shaft is free of its supporting bracket or frame.

It may not always be advantageous to provide brackets upon the tie bars 4, especially in those instances wherein the trucks are provided with equalizing bars. In such an event a bracket 9 shown in Figures 8 and 9 may be provided. This bracket is to all intents and purposes similar to bracket 7 save that it is attachable or detachable. It will be seen that this type of bracket readily lends itself to attachment to trucks without the necessity of making any radical changes in such trucks.

Figure 5 and its derivatives show modifications of my invention to enable it to be used in connection with trucks provided with equalizing bars, to the extent that the bracket or its equivalent, a frame or arms, performs the same function as the bracket 7. In this instance the truck has the usual elements going into its construction, such as wheels 1, journal boxes 6, equalizing bars 33, 33A, side frame 3, truss 5, pedestal tie bar 4 and equalizer springs 16, all well known in the art. The equalizing bars are in spaced pairs 33 and 33A respectively. Extending downwardly from each equalizing bar are two arms, 8 and 8A for the respective equalizing bars, which join and form a V-shaped structure. Correspondingly directed arms on the equalizing bars are spaced apart and so held by spacing blocks 35 which are positioned midway their length, such blocks being held in position by the bolts 26. At the base or point of the arms is another spacing block 34 through which the shaft 18 extends. The shaft 18 is secured to the arms and block 34 in the manner heretofore described, and carries a safety wheel as previously described.

Having described the several features of my invention, what I claim as novel is:—

1. In combination with a railway truck, a downwardly directed frame composed of inclined arms to provide a V-shaped bracket, said arms being in like directed pairs spaced apart, spacing blocks extending between the midportion of each pair of arms, a spacing block at the point of said bracket, said bracket and the last mentioned spacing block having a corresponding bore, a spindle provided with a shoulder intermediate its ends, said spindle extending within said bore sufficiently to permit said shoulder to bear upon said bracket, a nut threaded upon said spindle drawing said shoulder against said bracket and a safety wheel designed for travel on the undersurface of a suitable tread, journaled upon said spindle.

2. In combination with a railway truck, a downwardly directed frame composed of inclined arms to provide a V-shaped bracket, said arms being in like directed pairs spaced apart, spacing blocks extending between the midportion of each pair of arms, a spacing block at the base of said arms, said bracket and the last mentioned spacing block having a corresponding bore, a spindle seated in said bore, and a safety wheel, designed for travel on the undersurface of a suitable tread, journaled upon said spindle.

3. The combination with a railway truck, of a downwardly directed frame, said frame being composed of two V-shaped members each provided with correspondingly inclined arms and being so arranged that the arms of one member are spaced from the like arms of the other, fastening members extending between corresponding arms and between the bases of the two members, a spindle mounted to the bases of said members, and a safety wheel, designed for travel on a guard rail, journaled on said spindle.

ELMER R. EDSON.