

Dec. 28, 1926.

1,612,271

E. R. EDSON
RAILWAY TRUCK AND RAIL
Filed Sept. 2, 1926

Fig. 1.

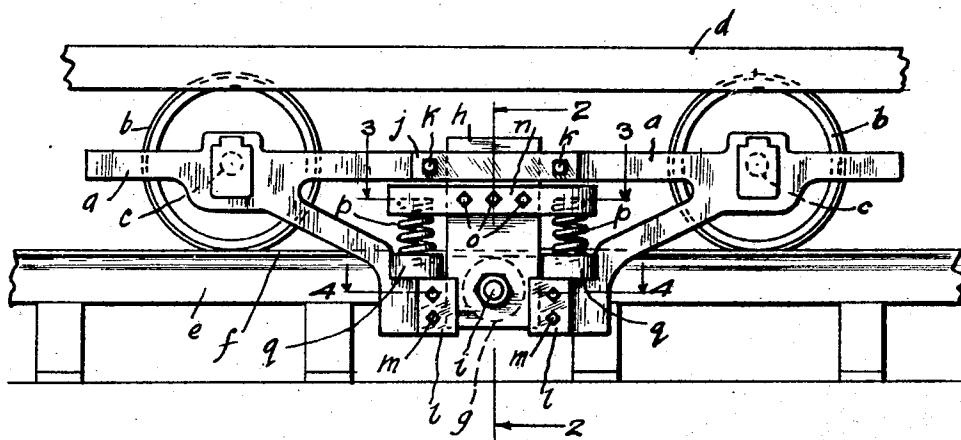
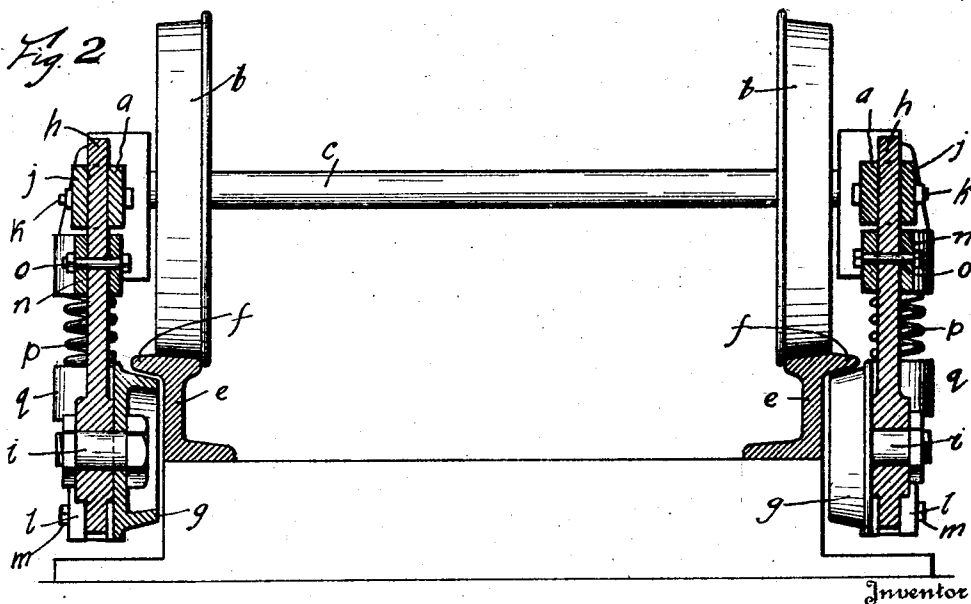


Fig. 2.



Inventor

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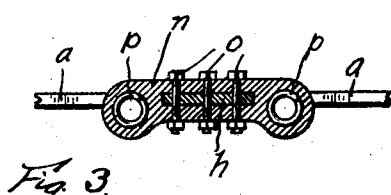


Fig. 3.

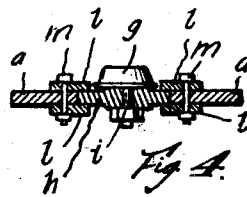


Fig. 4.

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UNITED STATES PATENT OFFICE.

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RAILWAY TRUCK AND RAIL.

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My invention relates to an improvement in railway trucks and rails with the particular object of preventing derailment (especially when cars are moving at super-speeds) by means of a safety-wheel attached to the truck-frame and operating on the under surface of the flanged tread of a special flanged-rail.

I attain this object by employment of the mechanism illustrated in the accompanying drawings. Figure 1 is a side view of the railway truck, showing the safety wheel in position on the under surface of the flange of the safety-rail. Figure 2 is a vertical cross-section on the plane 2—2 (see Fig. 1) illustrating the construction of the safety-wheel device, the form of the flange-rail, and the operation of the safety-wheel in relation to this rail. Figure 3 is a plan view (on horizontal section) of a portion of the truck on the plane 3—3 (see Fig. 1). Figure 4 is a plan view (horizontal section) of a portion of the truck on the plane 4—4 (see Fig. 1).

Similar reference symbols indicate similar parts in all the drawings.

The following is a more detailed description of the drawings and parts shown therein:—Figure 1 is a side view of the railway truck. A portion of the car-body is represented diagrammatically by the part (*d*). The truck wheels (*b*) are resting on the rail (*e*). The ends of the axles are shown as (*c*). The part (*a*) is a lateral beam in the truck frame. The remainder of the drawing represents special features of construction for which it is desired to obtain patent. Directly in the middle of this drawing is seen a flat, vertical metal plate (*h*) which projects slightly above the upper margin of the truck frame and extends downwards almost to the lower margin of the truck frame. On the inner aspect of this member (*h*) the safety-wheel (*g*) is mounted, being journaled therewith by a proper bearing for the stub-axle (*i*). The member or plate (*h*) operates in a channel which permits movement in a vertical direction only, the channel being formed by attaching a guide-plate (*j*) to the outer surface of the upper truck-beam (*a*) by means of the bolts (*k*), and also (below) by attaching the guide-plates (*l*) to the lower portion of the truck frame by means of the bolts (*m*). Slightly above the center of the plate (*h*), and on its outer surface, is placed

a horizontal bracket (*n*) which contains a pocket at either end for seating the upper ends of the coil-springs (*p*), the bracket being securely fastened to the plate (*h*) by means of bolts (*o*). The lower ends of the springs are seated in pockets located in the lower brackets (*q*) which are a part of the truck frame proper, and are therefore immobile. It can readily be seen, therefore, that the safety wheel (*g*) is mounted upon a base-plate (*h*) which permits a certain degree of vertical movement in its channelled bearing, such movement being limited and regulated by the springs (*p*) which act as a buffer between the upper bracket (*n*) and the lower brackets (*q*). The result of such construction is, that when the truck is moving at high speed and bounces up from the track, the wheels (*b*) cannot be derailed because of the safety-wheel (*g*) operating along the under surface of the flange (*f*). Also, unnecessary jarring and strain are prevented by the springs (*p*) which are compressed when the main truck frame moves upwards, and as the safety-wheel is lowered as to its relative position on the truck frame.

Figure 2 is a vertical cross-section of the truck frame, safety-wheel and flange-rail, on the line 2—2 (see Fig. 1). The precise shape of the flange-rail (*e*) is shown in this drawing, the outer lip (*f*) of the tread being extended outwards in order to afford a flanged tread on its under surface for the safety-wheel (*g*). Also, the outer surface of the web and base of the rail is vertically straight in order to provide proper space for the operation of the safety-wheel. It should be noted that the safety-wheel does not, ordinarily, come in actual contact with the flange, for this wheel is only intended to actively engage the rail when the truck wheels (*b*) bounce or raise from the track.

The vertical sliding base-plate (*h*) is shown retained in its upper channelled bearing between the truck-beam (*a*) and the upper guide-plate (*j*). The springs (*p*) are seated in pockets in the upper bracket (*n*) and in the lower brackets (*q*). The upper bracket (*n*) is secured to the member (*h*) by the bolts (*o*). The lower brackets (*q*) are an integral part of the truck frame proper. At the extreme lower part of the drawing, the lower guide-plates (*l*) are shown secured to the truck-frame by the bolts (*m*).

Figure 3 is a plan view taken on the plane

3—3 (see Fig. 1). This shows the upper bracket (*n*) with a pocket at either end for the reception of the upper part of the coiled springs (*p*), the bracket being secured to the member (*h*) by the bolts (*o*). The relation of this bracket to the truck frame (*a*) is also shown.

Figure 4 is a plan view of the lower part of the truck-frame, on the plane 4—4 (see Fig. 1). The member (*h*) is shown, with a bearing for the stub-shaft (*i*) of the safety-wheel (*g*). The lower guide-plates (*l*) are firmly secured to the truck-frame (*a*) by the bolts (*m*) and form a channel 15 for the member (*h*) to slide in.

The particular kind of spring employed to regulate the vertical movement of the member (*h*) (which carries the safety-wheel (*g*) mounted on it) is not essential. A leaf 20 spring would also answer the purpose.

An essential feature of the device is the fact the member (*h*) (carrying the safety-wheel) can readily be removed by unbolting and detaching the guide-plates (*j*) and (*l*).

It should be clearly noted that the flanged 25 rail is a necessary part of this complete safety device for operation of a railway truck, and consequently that patent to same can be claimed as a joinder of inventions as per paragraph 41 of the Rules of Practice. 30

Having given this description of the several features of my invention, I claim:—

The combination, in a railway truck, of a safety-wheel mounted on a vertical base-plate by means of a stub-shaft properly 35 journaled therein; said base-plate having a limited range of vertical motion in a channel formed by guide-plates secured to the truck frame, and being provided with springs to regulate such motion smoothly; 40 the safety-wheel operating on the under surface of the flange of a special flanged rail, substantially as set forth in the annexed specifications.

In witness whereof, I have hereto affixed 45 my signature on this the 28th day of August, 1926.

ELMER ROCKWOOD EDSON.