June 17, 1930. E. R. EDSON 1,764,941

SAFETY RAILWAY TRUCK

Filed April 11, 1928

Fig. 1

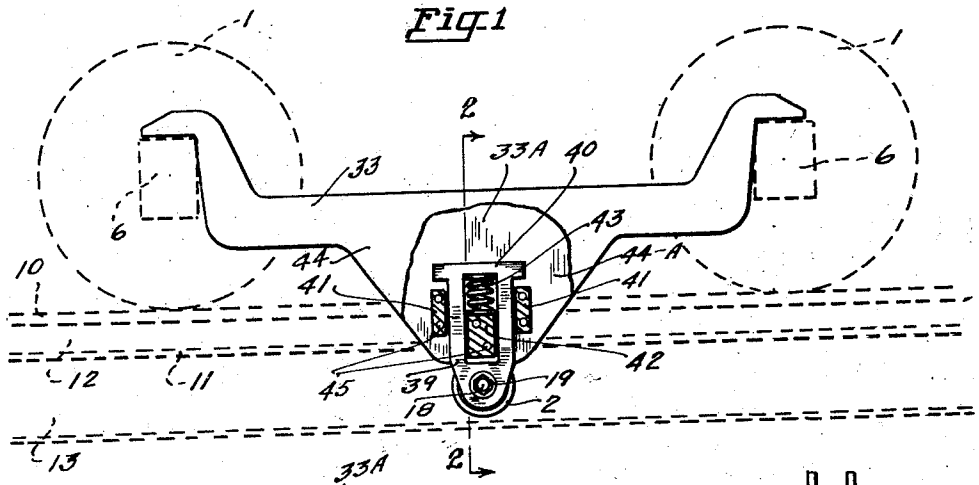
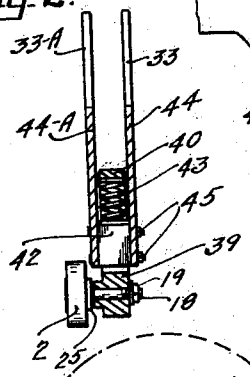


Fig. 2.



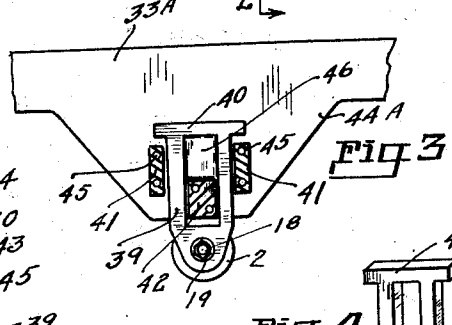
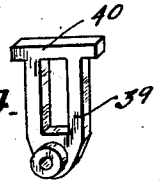


Fig. 3

Fig. 4.



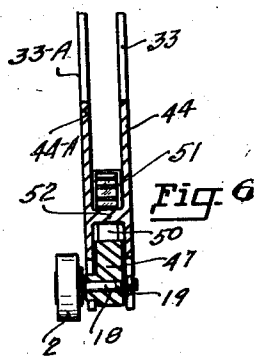
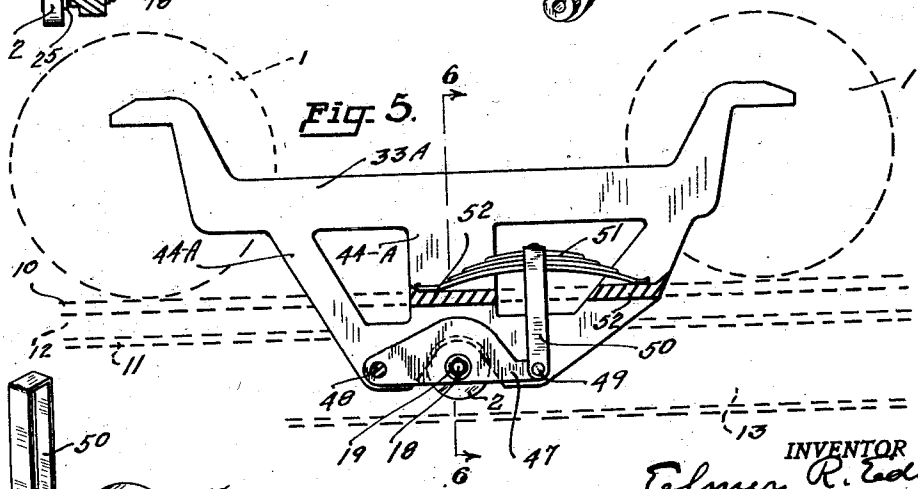


Fig. 6

Fig. 5.



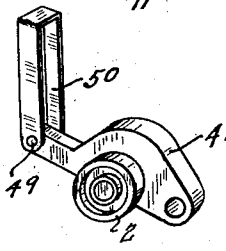


Fig. 7.

INVENTOR

Elmer R. Edson

Patented June 17, 1930

1,764,941

UNITED STATES PATENT OFFICE

ELMER ROCKWOOD EDSON, OF PORTLAND, OREGON

SAFETY RAILWAY TRUCK

Application filed April 11, 1928. Serial No. 269,133.

This application relates to a high speed railway vehicle suitable for operation upon a railroad of the character disclosed in the following United States patents granted me, to-wit: A switching device, issued May 15, 1928, No. 1,669,741; railway roadbed and track construction, issued June 26, 1928, No. 1,674,893; and a railway switch, issued May 15, 1928, No. 1,669,742.

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 and operating on the under surface of a special flanged rail-tread.

A further object of my invention consists in providing means to prevent unnecessary jarring and jolting of the safety-wheels against their rail treads, through the use of suitable springs, rubber bumpers and the like.

Referring to the drawings.

Figure 1 is a side-view of one type of my safety-wheel device (partially cut away), with the truck-wheels, rail, and girder shown in broken outline.

Figure 2 is a sectional end view taken on the line 2—2 of Figure 1, and looking in the direction indicated.

Figure 3 is a side view of another type of construction of the safety device, showing a block of rubber or similar elastic material acting as a bumper for the safety-wheel bearing-block (instead of employing a spring).

Figure 4 is a perspective of the sliding safety-wheel bearing-block.

Figure 5 is a side view of still another form of construction of the safety device, the stub-shaft for the safety-wheel being mounted upon a horizontal arm which is hinged at one end to the safety-wheel supporting frame, and is attached at the other end to a vertical U-shaped link which is suspended from above by a leaf-spring.

Figure 6 is a sectional end view, taken on the line 6—6 of Figure 5, the outer equalizing bar and its extension for supporting the safety-wheel being added to the view.

Figure 7 is a side view in perspective of the safety-wheel, hinged bearing-arm, and U-shaped link.

Similar reference symbols indicate similar parts in all the drawings.

The following is a more detailed description of the drawings and parts shown therein:

In Figure 1, the broken lines show the truck wheels 1 mounted upon the rail 10 which is provided with a web 12 and with a basal flange 11, the rail resting upon the longitudinal girder 13. The journal-boxes are at 6, with the ends of the equalizer 33 supported thereon. Portions of the outer equalizer 33 and of the safety-wheel supporting frame 44 have been cut away in order to show this method of mounting the safety-wheel 2. The safety-wheel 2 is journaled by a suitable bearing upon the stub-shaft 18 which is mounted through the lower part of the sliding safety-wheel bearing-block 39, being secured thereto by the lock-nut 19. This bearing-block 39 is shown with two vertical arms, having a middle guide-block 42 placed in the interval between them, with a lateral guide-block 41 at either side, the arms of the bearing-block 39 terminating above in a horizontal block-head 40, and with the spring 43 set vertically between the block-head 40 and the middle guide-block 42, the parts just mentioned being housed between the safety-wheel supporting frames 44 and 44—A. Consequently, a vertical channelled bearing is provided for the bearing-block 39 which operates between the frame elements 44 and 44—A and also slides between the lateral guide-blocks 41 and the middle guide-block 42, all of the guide-blocks being securely fastened to the safety-wheel supporting frames 44 and 44—A by the bolts 45. The coiled spring 43 is placed between the block-head 40 and the middle guide-block 42, so that when the truck bounces on the rails the safety-wheel 2 will not jolt or jar unnecessarily against the under surface of the flange 11. While the safety-wheel can be operated in practically continuous contact with the under surface of the flange 11, if such is desired, it is believed that the best results will be obtained by allowing an interval be-

tween the rim of the safety-wheel 2 and the flange 11.

The vertical descent of the bearing-block 39 is limited by the block-head 40 coming into contact with the upper surfaces of the guide-blocks 41. The guide-blocks 41 and 42 also act as spacers between the outer supporting frame 44 and the inner supporting frame 44—A.

Figure 3 merely shows a slight modification of the construction illustrated in Figures 1 and 2, the only essential difference being that a block 46 of rubber or similar elastic material is substituted for the spring 43.

Figure 5 shows another form of construction of the safety device. The truck-wheels 1, rails 10, rail-web 12, rail-flange 11, and girder 13 are shown by broken lines. The outer equalizer 33 has been removed, and only the inner equalizing-bar 33—A remains, with the supporting frame 44—A depending therefrom as an integral part thereof. Near the lower edge of this supporting frame 44—A is seen a horizontal bearing-arm for the safety-wheel 2, said arm being hingedly mounted between the two supporting frame elements 44 and 44—A on a horizontal bearing-pin 48, thus permitting an upward and downward movement of the free end of the bearing-arm 47. The stub-shaft 18 is mounted near the middle of the arm 47, fixed in a suitable aperture therein, and being secured thereto by the lock-nut 19, with the safety-wheel 2 journaled on the inner end of the stub-shaft 18 by means of a suitable bearing. The movable end of the bearing-arm 47 is secured by the pin 49 to the vertical U-link 50, forming a hinged bearing therewith, the U-link 50 being supported at its upper extremity by the leaf-spring 51 which in turn is supported at either end by the webs 52 extending between the two supporting frames 44 and 44—A. This form of construction provides another form of movable support for the safety-wheel 2, and also a different spring mechanism. It has the advantage of being relatively free from any tendency to bind as the safety-wheel oscillates up and down.

Having given this description of the several features of my invention, what I claim as novel is as follows:—

1. The combination, in a railway truck having equalizer bars, of supporting frames depending from said equalizer bars, a bearing block located between the supporting frames, guide blocks providing a vertical guideway for the bearing block, a block head designed to engage the upper surfaces of certain guide blocks, a spring seated between the block head and one of the guide blocks, a stub shaft secured to the bearing block proximate its lower extremity, and a safety wheel journaled upon said shaft, and so disposed that it will engage a suitable tread.

2. The combination in a railway truck, of supporting frames depending therefrom, a bearing block designed for vertical movement carried by said frames, guide blocks providing a vertical guideway for said bearing block, a block head arranged to engage certain guide blocks, a yieldable member seated between the block head and one of the guide blocks, a stub shaft projecting from said bearing block, and a safety wheel journaled upon said stub shaft.

3. The combination, in a railway truck having equalizer bars, of supporting frames depending from said equalizer bars, a safety wheel supporting member held between the lower portions of the supporting frames, a safety wheel journaled to said supporting member, said supporting member being capable of movement to permit of a restricted raising and lowering movement of the safety wheel, and a yieldable member constantly resisting the lowering movement of the safety wheel.

4. The combination in a railway truck provided with equalizer bars, of an anti-derailment device so located that it may travel upon a tread provided therefor, embodying a safety wheel to travel upon such tread, a stub shaft carrying such wheel, a bearing block carrying said stub shaft, supporting frames depending from the aforesaid equalizing bars carrying said bearing block, said bearing block having a limited range of vertical motion relative to the supporting frames, guide blocks so placed that the bearing block can oscillate in a vertical direction, a block head which limits downward movement of the bearing block by contacting with the upper surface of the guide blocks, and a spring seated between the block head and one of the guide blocks.

5. A device of the class described for railway trucks possessing equalizer bars, embodying a downwardly directed frame carried by the equalizer bars, a guard wheel supporting member carried by said frame, a guard wheel carried for rotation by said supporting member, such guard wheel being adapted to travel along a tread provided therefor, said guard wheel supporting member being constructed to allow the guard wheel to be moved up and down, and means constantly resisting downward movement of the guard wheel.

6. A device of the class described for railway trucks possessing equalizer bars, embodying a downwardly directed frame secured to said equalizer bars, said frame forming a support for a guard wheel supporting member, a guard wheel supporting member carried by said frame, and a guard wheel journaled to said supporting member.

ELMER R. EDSON.