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2,516,082

RAILWAY TRUCK

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Fig. 1.

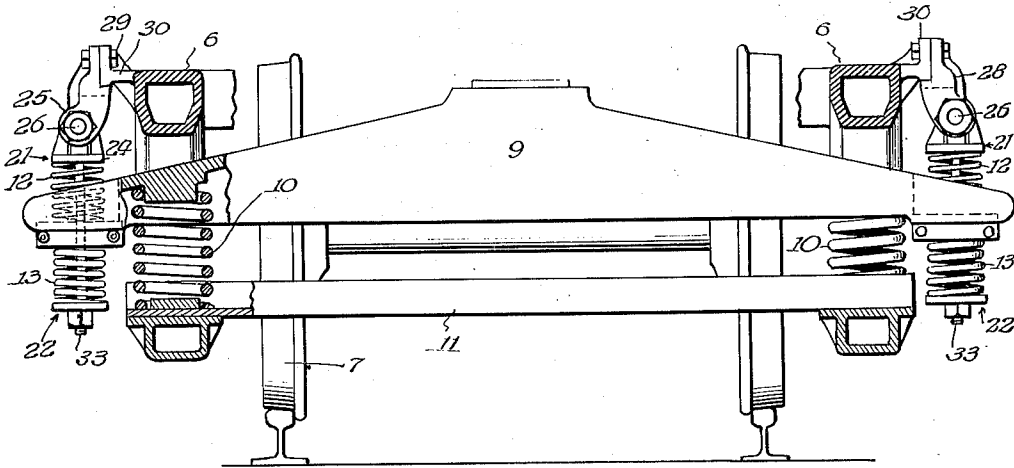
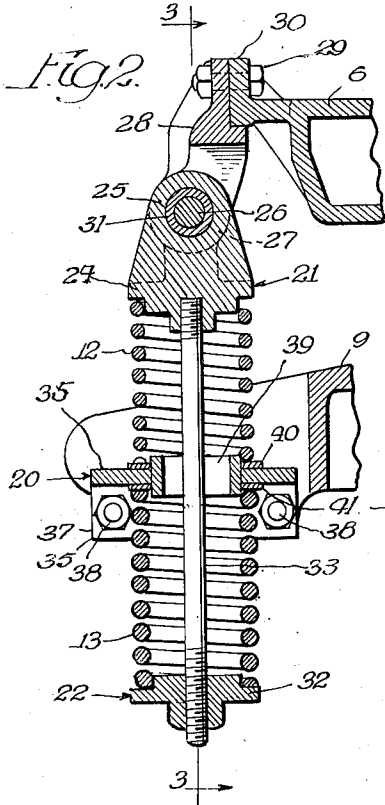
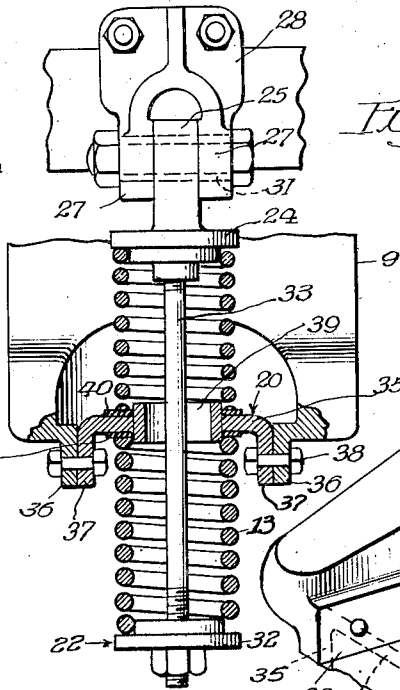


Fig. 3.

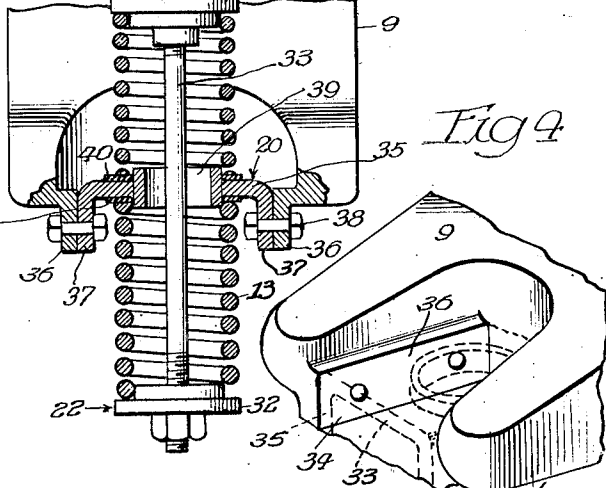


Fig. 4.

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RAILWAY TRUCK

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3 Claims. (Cl. 105—193)

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The invention relates to railway trucks.

One object of the invention is to provide a railway truck which comprises side frames and a bolster which is supported by cushion springs, with improved supplemental cushioning and shock-absorbing devices between the outer ends of the bolster and the side frames, which include opposed compression coil springs for efficiently absorbing shocks.

Another object of the invention is to provide supplemental shock-absorbing devices of this type, which are simple in construction, efficient in absorbing vibration and shock, and are readily accessible for installation and repair.

Other objects of the invention will appear from the detailed description.

The invention consists in the several novel features hereinafter set forth, and more particularly defined by claims at the conclusion hereof.

In the drawings:

Fig. 1 is a transverse section of a railway truck embodying the invention;

Fig. 2 is a vertical transverse section through one of the supplemental shock-absorbing devices;

Fig. 3 is a section taken on line 3—3 of Fig. 2, parts being shown in elevation; and

Fig. 4 is a perspective of one end of the bolster and the abutment plate for the shock-absorbing springs.

The invention is exemplified in a railway car truck which comprises side frames 6, wheels 7 on axles extending into journal boxes vertically slidable in the side frames, a bolster 9 on which the car body is pivotally sustained and which is mounted for vertical sliding movement in the side frames, and is supported on cushion springs 10 which are carried by a spring plank 11, which extends between the side frames 6. All of these parts may be of usual or standard construction, as well understood in the art.

Two (2) supplemental shock absorbing devices of like construction are provided at the outer sides of the side frames respectively and between the outer ends of the bolster and the side frames. Each of these shock absorbing devices comprises a vertically aligned pair of upper and lower opposed compression springs 12 and 13, an abutment, generally designated 20, between the contiguous end of the opposed springs, which is rigid with the bolster, an abutment, generally designated 21, pivotally suspended from a side frame from the upper end of the upper spring and an abutment, generally designated 22, suspended from said upper abutment, for lower end of the

lower spring, all disposed at the outer side of one side frame. Upper springs 12 absorb the upward or rebound shock and lower springs 13 cushion the shock loads against the bolster and are of greater magnitude than the upper springs.

Abutment 21 for the upper end of upper spring 12 includes a head 24 against the underside of which the upper end of spring 13 is seated and an integral upstanding ear 25 which is pivotally supported by a pin which extends longitudinally of the track frame through said ear 25 and depending ears 27 of a fork bracket 28 which is secured by bolts 29 to a lug 30 secured to and projecting transversely from bolster 9. An elastic sleeve 31 around pin 26 extends through ear 25 on head 24 and ears 27 on bracket 28.

Abutment 22 is in the form of a head 32 on which the lower end of lower spring 13 is seated. A stem 33 has its upper end fixedly secured in head 24 and head 32 is screw threaded to the lower end of said stem for vertical adjustment of abutment 22.

Abutment 20 is formed of a plate of metal 35 which fits between lugs 36 in the fork end of the bolster and has integral downturned flanges 37 which are secured in the forked ends of the bolster by bolts 38. Plate 35 is provided with an enlarged opening 39 through which stem 33 extends freely to permit lateral or angular movement of said stem relatively to said plate. A wear plate 40 is interposed between the lower end of upper spring 12 and the upper face of plate 35 and a wear plate 41 is interposed between the lower face of plate 35 and the upper end of spring 13.

In operation, the plates 35 which form abutments 20 on the ends of the bolster 9, are yieldingly held between the opposed springs 12 and 13, both of which are normally under compression so that both relative up and down movements between the bolster and the side frames will be yieldingly resisted. The lower springs 13 are normally under compression and carry some of the load from the bolster which is also supported on the main cushion springs 10. Lower springs 13 absorb some of the shock produced on the wheels, by the rails. The upper springs 12 yieldingly resist the rebound movements of the bolster. The combined action of the upper and lower springs 12, 13, breaks up any harmonic action in the bolster spring and efficiently prevents shocks in the railway truck. The pivotal connections between brackets 28 on the side frame and the upper heads 24 permit relative lateral motion between the bolster and the side

frames, and stem or rod 33 is free to move laterally in the hole 39 in the abutment plate. This permits the springs 12 and 13 to be flexed transversely between their ends for the relative lateral or swaying movement between the bolster and the side frames.

The auxiliary cushioning devices described, are readily accessible for installation on the truck. The heads 32 are accessible for adjustment on stem or rod 33 for varying the normal compression of springs 13. The construction is simple and is adapted for application for railway trucks of standard construction.

The bracket 28 is detachable from the side frame and plate 35 is detachable from the bolster, so that each supplemental shock-absorbing device can be readily removed for repair and replacement.

The invention is not to be understood as limited to the details described, since these may be modified within the scope of the appended claims without departing from the spirit or scope of the invention.

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

1. A pair of shock absorber devices between the outer ends of a bolster and the side frames of a railway car truck, respectively, each of said devices comprising upper and lower vertically aligned and opposed compression coil springs, an abutment plate removably and rigidly secured to one of the outer ends of the bolster and interposed between the contiguous ends of the upper and lower springs, an abutment for the lower spring, an upper abutment for the upper spring, a bracket secured to one of the side frames and to which the upper abutment for the upper spring is pivotally connected for transverse movement, and a stem extending through the springs and the abutment plate and rigidly connected to the upper abutment for the upper spring and the lower abutment for the lower spring, the abutment plate being provided with an opening for lateral or angular movement of the stem responsive to relative transverse movement of the bolster and the side frames.

2. A pair of shock absorber devices between the outer forked ends of a bolster and the side frames of a railway car truck, respectively, each of said devices comprising upper and lower vertically aligned and opposed compression coil springs, an abutment plate removably and rigidly secured in one of the forked outer ends of the bolster and interposed between the contiguous ends of the upper and lower springs, an abutment for the lower spring, an upper abutment for the upper spring, a bracket secured to one

of the side frames to which the upper abutment for the upper spring is pivotally connected for transverse movement, and a stem extending through the springs and the abutment plate and rigidly connected to the upper abutment for the upper spring and the lower abutment for the lower spring, the abutment plate being provided with an opening for lateral or angular movement of the stem responsive to relative transverse movement of the bolster and side frames.

3. A pair of shock absorber devices between the outer forked ends of a bolster and the side frames of a railway car truck, respectively, each of said devices comprising upper and lower vertically aligned and opposed compression coil springs, an abutment plate removably and rigidly secured in one of the forked outer ends of the bolster and interposed between the contiguous ends of the upper and lower springs, an abutment for the lower spring, an upper abutment for the upper spring, a bracket removably secured to one of the side frames, and to which the upper abutment for the upper spring is pivotally connected for transverse movement, and a stem extending through the springs and the abutment plate and rigidly connected to the upper abutment for the upper spring and the lower abutment for the lower spring, the abutment plate being provided with an opening for lateral or angular movement of the stem responsive to relative transverse movement of the bolster and the side frames, each device being unitarily removable from the truck by disconnection of the abutment plate from the bolster and the bracket from the side frames.

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