Sept. 29, 1925. 1,555,561

H. E. DOERR

RAILWAY CAR TRUCK

Filed Aug. 4, 1924

Fig. 1

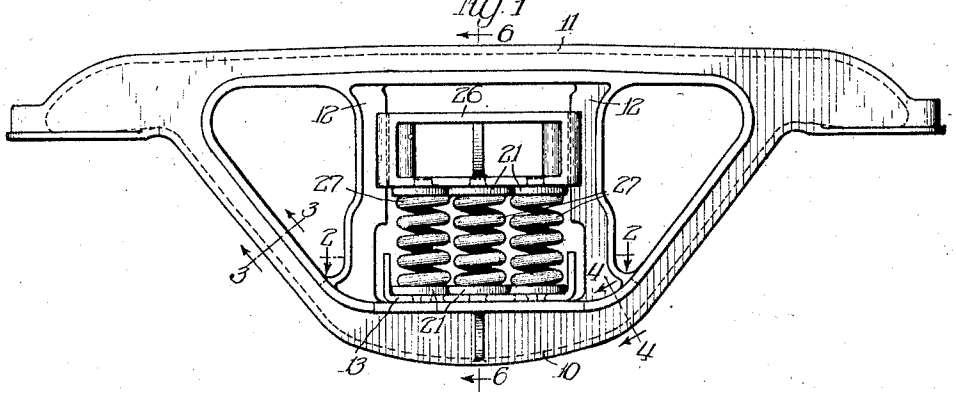


Fig. 3

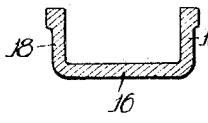


Fig. 2

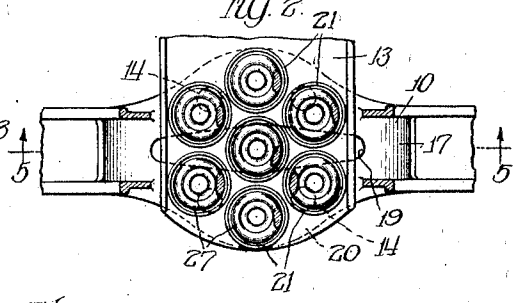


Fig. 4

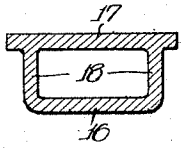


Fig. 5

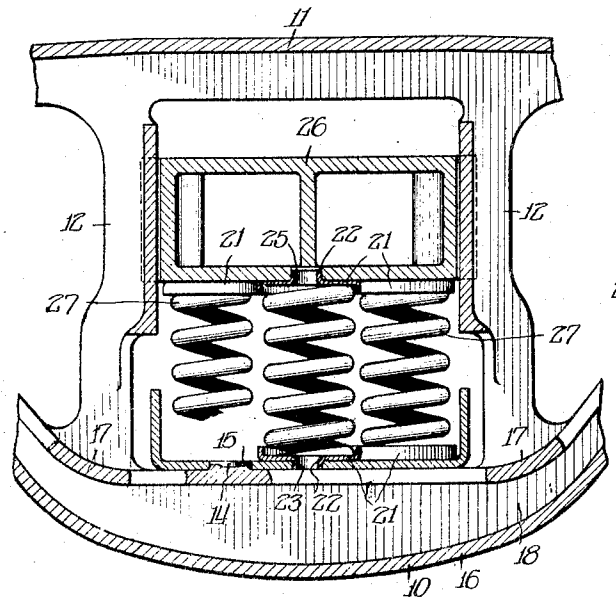
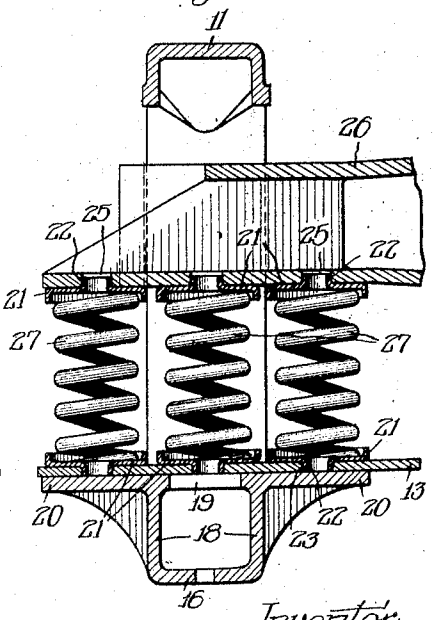


Fig. 6



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UNITED STATES PATENT OFFICE.

HARRY E. DOERR, OF ST. LOUIS, MISSOURI, ASSIGNOR TO SCULLIN STEEL COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF MISSOURI.

RAILWAY-CAR TRUCK.

Application filed August 4, 1924. Serial No. 729,900.

To all whom it may concern:

Be it known that I, HARRY E. DOERR, a citizen of the United States, residing in the city of St. Louis and State of Missouri, have invented certain new and useful Improvements in Railway-Car Trucks, of which the following is a specification.

This invention relates to a railway car truck.

As is well known in the art, that portion of the tension member between the bolster columns is subjected to bending stresses in addition to tension stresses. Consistent with other features of design, the distance between the bolster columns, accordingly, should be reduced as much as possible and a proper distribution of metal made throughout the tension member to counteract and equalize such stresses. In cases in which it is desired to increase the spring capacity, with all springs being located between the bolster columns, some special arrangement preferably is used for maintaining the distance between the bolster columns at a minimum.

One object of the invention is to provide a simple truck arrangement in which the spring capacity is increased, while at the same time the distance between the bolster columns and also the wheel base is minimized, the side frame made of maximum strength and minimum weight and ample brake clearance is provided.

Another object is to provide a simple and efficient truck of high spring capacity and in which the tension and bending stresses in the tension member are counteracted or equalized by a proper distribution of the metal.

Another object is to provide simple and efficient means for properly anchoring the springs in the bolster and spring plank.

Another object is to provide a simple and efficient truck of high spring capacity adapted to meet the various requirements under service conditions.

These and other objects are accomplished by means of the arrangement shown on the accompanying sheet of drawings in which—

Figure 1 is a fragmentary side elevation of a railroad car truck embodying my invention.

Figure 2 is a sectional view taken in the plane of line 2—2 of Figure 1.

Figure 3 is a sectional view taken in the plane of line 3—3 of Figure 1.

Figure 4 is a sectional view taken in the plane of line 4—4 of Figure 1.

Figure 5 is a sectional view taken in the plane of line 5—5 of Figure 2, a1d

Figure 6 is a sectional view taken in the plane of line 6—6 of Figure 1.

The various novel features of the invention will be apparent from the following description and drawings and will be particularly pointed out in the appended claims.

Referring to the figures of the drawings, it will be noted that my invention is illustrated in connection with a railway car truck including a tension member 10, a compression member 11, and bolster columns 12, all cast in a single piece. A spring plank 13 spans the distance between the side frames (only one being shown) and is anchored thereto by lugs 14 extending upwardly from the tension member and passing into openings 15 in the spring plank. As shown particularly in Figure 2 of the drawings there are 7 springs 27 arranged in three transverse rows, the middle row including three such springs and each of the other rows including two springs. An increased number of springs over the usual number, accordingly is provided for increasing the spring capacity of the truck. It will be appreciated, of course, that more or less than seven springs may be used for accomplishing the same purpose.

The tension member in addition to being subjected to tension stresses is subjected to bending stresses. The casting therefore, is somewhat complex in the tension member and particularly in the tension member between the bolster columns and just outwardly therefrom. In order to properly counteract the stresses set up in the tension member and to distribute the metal to the best advantage in counteracting and equalizing such stresses, the tension member directly under the bolster columns, and also a little outwardly therefrom, is box-shaped in section, that is to say, the tension member at such points has a bottom wall 16, top wall 17, and side walls 18, as best shown in Figure 4. Outwardly therefrom, the tension member is U-shaped in section, having only the bottom wall 16 and side walls 18 as best shown in Figure 3. Inwardly from the box-

shaped sections, the tension member is U-shaped in section and relatively deep, having the bottom walls 16 as shown in Figure 6. In other words, the top wall of the tension member between the bolster column 12 is apertured as shown at 19, making the section lighter between the points in question. The upper ends of the U-shaped section of the tension member terminate in oppositely arranged, outwardly extending flanges 20 for providing an increased area for the increased number of springs. The flanges are widest at the mid point between the bolster columns 12 as shown in Figure 2, said flanges gradually tapering off to a point outwardly from said bolster columns 12. By means of the various sections of the tension member between the bolster columns and outwardly therefrom, the metal is properly distributed to counteract and equalize the various stresses set up in said tension member.

Preferably, the springs 27 are seated in spring caps 21, the lower ones of which are provided with downwardly extending projections 22 fitting in corresponding openings 23 in the spring plank and the upper ones of which are provided with projections 22 fitting in corresponding openings 25 in the bolster 26, which rests upon said springs, whereby the springs are properly anchored in place and are prevented from rubbing against each other to prevent wear thereof.

By means of the arrangement hereinabove described, a strong, durable, yet light, truck side frame is provided in which the spring capacity is increased and the distance between the bolster columns and the wheel base of the truck are minimized, the springs being anchored in a manner to meet all of the requirements under service conditions.

I claim:

1. In a railway car truck, a side frame having tension and compression members and bolster columns all cast in a single piece, said tension member under said columns being box-shaped in section and between said columns being U-shaped in section to properly counteract and equalize stresses set up in said tension member, the upper parts of the U terminating in outwardly extending horizontal flanges to provide an increased area for an increased number of spring seats, a spring plank resting upon said flanges, a nest of springs mounted on said spring plank, and caps in which said springs are seated and having interlocking engagement with said spring plank.

2. In a railway car truck, a side frame having tension and compression members and bolster columns all cast in a single piece, said tension member under said columns being box-shaped in section and between said columns being U-shaped in section to properly counteract and equalize stresses set up in said tension member, the upper parts of the U terminating in outwardly extending horizontal flanges to provide an increased area for an increased number of spring seats, a spring plank resting upon said flanges, a nest of springs mounted on said spring plank, caps in which said springs are seated and having interlocking engagement with said spring plank, a bolster, and caps for said spring having interlocking relationship with said bolster.

3. In a railway car truck, a side frame having tension and compression members and bolster columns, a spring plank having interlocking relationship with said tension member, springs carried by said spring plank, and caps in which said springs are seated and having projecting portions extending into apertures in said spring plank for anchoring said springs.

4. In a railway car truck, a side frame having tension and compression members and bolster columns, a spring plank having interlocking relationship with said tension member, springs carried by said spring plank, caps in which said springs are seated having projecting portions extending into apertures in said spring plank, a bolster, and caps having projections extending into apertures in said bolster whereby said springs are anchored in place.

Signed at St. Louis, Missouri, this 31st day of July, 1924.

HARRY E. DOERR.