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H. M. PFLAGER

ARTICULATED CAR

Filed Dec. 28, 1922

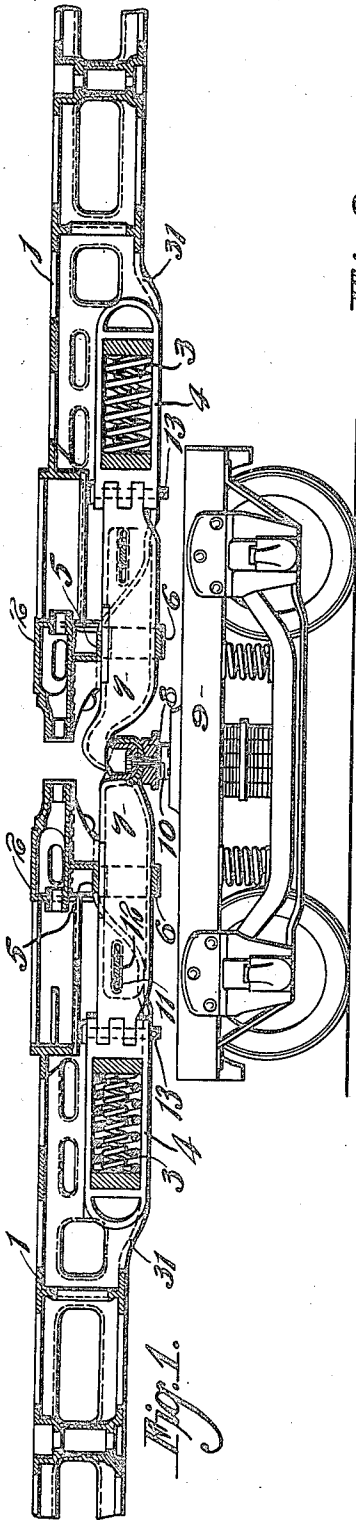


Fig. 1.

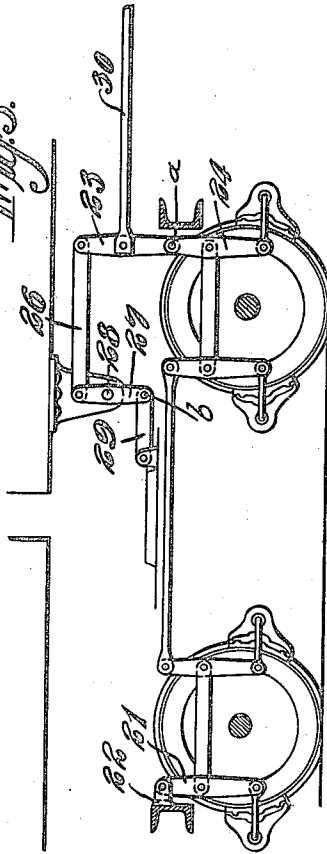


Fig. 2.

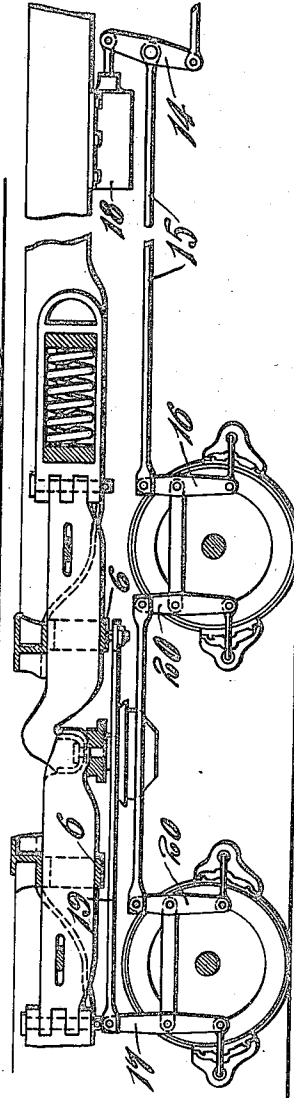


Fig. 3.

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# UNITED STATES PATENT OFFICE.

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## ARTICULATED CAR.

Application filed December 28, 1922. Serial No. 609,521.

*To all whom it may concern:*

Be it known that I, HARRY M. PFLAGER, a citizen of the United States, residing at the city of St. Louis and State of Missouri, have invented a certain new and useful Improvement in Articulated Cars, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this application.

This invention relates to railroad rolling stock, and consists in improvements in articulated car construction. The object of my invention is to mount the adjacent ends of two cars upon a single truck so that two cars may have such independent movement as is necessary or desirable to absorb the draft and buffing stresses incident to railroad operation.

Since my invention necessarily contemplates the relative movement of the cars and the common truck upon which they are mounted, an additional object of my invention is to provide for the operation of brake rigging for the truck wheels from the car in the usual manner.

Detail objects of my invention will also appear from the specification and an inspection of the drawings accompanying the same, in which,—

Figure 1 is a vertical longitudinal section through the platform and adjacent underframe members of two cars mounted upon a single truck.

Figure 2 is a similar section in which the brake rigging is shown.

Figure 3 is another arrangement of the brake rigging adapted for the same truck and car body assembly.

The portions of the car body illustrated in my drawings consists of one piece steel castings 1 of a familiar type having platform and buffer portions 2 and draft arm portions 31 which mount individual draft gears 3 provided with draft yokes 4.

Each casting has a downwardly facing surface 5 adjacent to its forward end and mounts a carry iron 6 vertically alined with the surface 4 but spaced below the same far enough to receive a draw bar 7. Draw bars 7 are of novel form, having their rear

ends tenoned in the forward ends of yokes 4 and having their forward ends provided with contours similar to the ordinary car body center plate contours. Each draw bar is of substantial depth and of a size and shape to form a rigid member adapted to support a car body through surface 5 and the underframe casting 1. The draw bars 7 differ from each other in the contours of their forward ends, that of the left hand draw bar having its end shaped to fit into the center plate 8 of the truck 9 and to receive the lower portion of the correspondingly shaped end of the right hand draw bar. The forward ends of draw bars 7 therefore serve as center plate elements for their respective cars and also as couplers for the cars. They are retained in position on the truck center plate 8 by a king-bolt 10.

Each of the underframe castings 1 is provided with elongated horizontal slots 11 alined with a corresponding slot of shorter length in the draw bar, and a yoke key 12 passes through the three slots and serves to limit the travel of the draw bar relatively to the car. Assembly of draw bar 7 and yokes 4 is maintained by suitable pins 13. Obviously, the two car bodies are just as free to move to and from each other a limited distance as they would be if mounted upon individual trucks in the usual manner. At the same time all of the advantages of the articulated construction are maintained by the substitution of a single truck under the draw bars for duplicate trucks under the car body bolsters.

The above assembly of the car bodies and the truck creates a problem in the application of the brakes, which occasions the constructions such as shown in Figures 2 and 3 in which the brake rigging is shown as containing the usual cylinder lever 14, live lever connecting rod 15, live lever 16, dead lever 17 and the usual truck levers, connecting rods and brake beams between the live and dead levers. Cylinder lever 14 is operated by the piston of an air cylinder 18 mounted on the right hand car body in the usual manner.

In Figure 2 I show the truck dead lever 17 anchored to the same car body on which is mounted cylinder 18 by a connecting rod 19 having its end secured to the under surface of carry iron 6 of the right hand car. It

will be understood that the portions of the brake rigging of the left hand car which operated the truck replaced by truck 9 will be idle when the articulated construction shown is used.

With this anchoring of the dead lever, movement of the truck and the brake rigging mounted on the truck longitudinally of the right hand car will not produce any operative movement of the brake rigging, as truck levers 16, 17 and 20 will swing about their upper ends like the elements of a parallel ruler, and their lower ends, remaining the same distance apart, will not set the brakes.

If for any reason, it is necessary or desirable to anchor the truck dead lever to the truck frame instead of to the car body, as shown in Figure 2, the construction illustrated in Figure 3 may be used, in which the truck dead lever 21 is anchored to the truck frame at 22 and the compensating elements consisting of a cylinder connecting rod floating lever 23 having one end secured to the truck live lever 24 and having its opposite end connected by a rod 26 to a compensating lever 27 fulcrumed on the car body at 28 and having its opposite end secured to the truck bolster by a connection 29. The cylinder lever rod 30 is connected to lever 23 intermediate the ends of the latter. In this construction, the additional elements 23, 26, 27 and 29 secure the same result as the anchorage shown in Figure 2. For instance, movement of the truck to the left will shift points *a* and *b* accordingly and turn levers 23 and 27 about their fulcrums without affecting the position of connecting rod 30.

Various other arrangements of the brake rigging adapted to compensate for the relative movement of the truck and body will suggest themselves to those familiar with brake installations, and modifications of the draft arm construction will also be suggested in the commercial development of my invention, and I contemplate all such variations as fall within the scope of my invention as expressed in the appended claims.

I claim:

1. In a railway car, a slidable draw bar and a center plate on said draw bar.
2. In a railway car, a slidable draw bar

and a center plate on the outer end of said draw bar.

3. In a railway car, a draw bar slidably mounted thereon and adapted to be supported upon a truck and to support one end of the car.

4. In combination, a car truck, a car body, a draw bar secured to the car underframe at a point spaced from the car end, extending beyond said car body with its outer end supported on said truck, said draw bar supporting the end of said car body.

5. In combination with a car truck provided with an upwardly facing center plate, a car body, a slidable draw bar mounted on said car body and extending beyond the same and provided with a downwardly facing center plate adapted to fit and rest upon said truck center plate.

6. In a railway car, an underframe member having a transverse slot and a downwardly facing surface in front of said slot, a draw bar having a slot alined with said member slot, and a bearing surface engaging said member surface, a key through said slots, and a center plate on the outer end of said draw bar.

7. In an articulated car, car bodies, connecting draw bars slidably mounted on their respective bodies, interengaging center plates on said draw bars, and underframe members supported by said draw bars.

8. In an articulated car, a truck, two car bodies the ends of which respectively project over said truck, draw bars slidably mounted on said bodies having their outer ends supported on said truck and supporting one end each of said bodies over said truck.

9. In a railway car, a body, a member on said body adapted to support the body from a truck and having movement longitudinally of said body.

10. In a railway car, a body, a slidable draw bar and a truck supporting said body through said draw bar.

11. In a railway car, a slidable draw-bar provided with integrally formed coupling and center plate members.

In testimony whereof I hereunto affix my signature this 5th day of Dec., 1922.

H. M. PFLAGER.