Oct. 19, 1937. F. SCHAEFER 2,096,067

CONNECTING ROD

Filed June 29, 1936

Fig. 1.

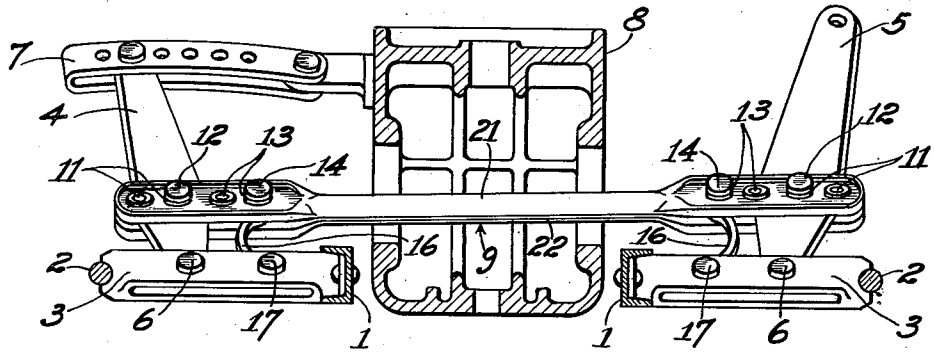


Fig. 2.

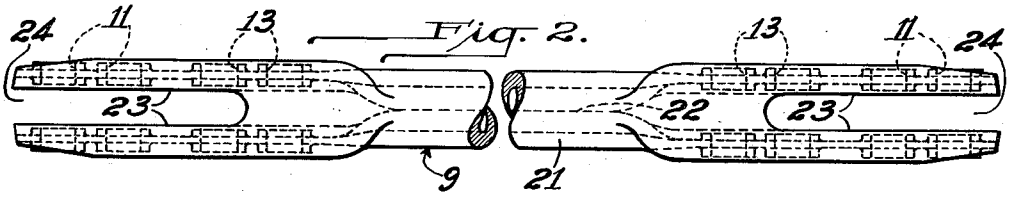


Fig. 3.

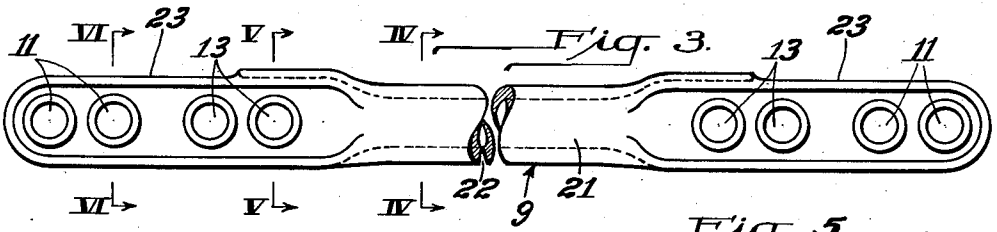


Fig. 4.

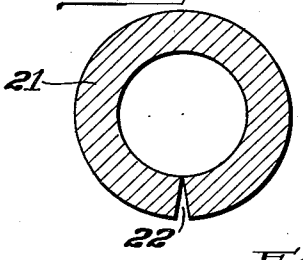


Fig. 5.

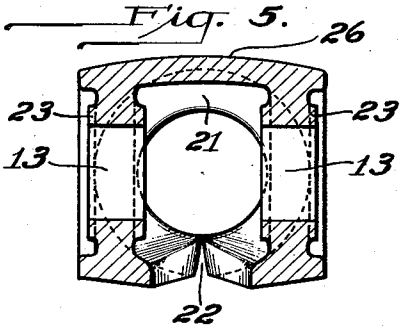
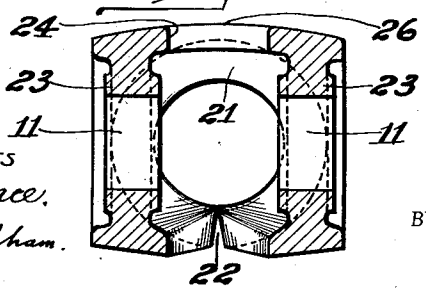


Fig. 6.



WITNESSES

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CONNECTING ROD

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1 Claim. (Cl. 74—579)

This invention relates to railway car brake rigging, and more particularly to connecting rods for the brake levers thereof.

In railway car brake rigging there is a tendency for the brake beams to tilt in a transverse vertical plane, thereby permitting the upper ends of the brake shoes to drag rather heavily against the wheels while the car is under motion with the brakes released. As a result, the upper ends of brake shoes have been worn considerably more than their lower ends and the shoes have required replacement more frequently than if the wear had been distributed uniformly over their surface. To correct this undesirable situation in some brake riggings, rigid links are pivotally connected at their ends to the brake beam struts and the connecting rod, the links being of such length that they maintain the brake beams level so that the upper ends of the brake shoes do not drag against the wheels. The connecting rod used with these leveling links must have relatively long bifurcated end portions in which to pivot the brake levers and the links. Consequently, there is danger of the end portions bending at their inner ends.

It is among the objects of this invention to provide a connecting rod, for use in brake rigging of the type described, in which the long bifurcated end portions of the rod are reinforced against relative lateral bending or deflection.

The preferred embodiment of the invention is illustrated in the accompanying drawing in which Fig. 1 is a vertical transverse section through railway car brake beams showing the levers, leveling links and connecting rod of the brake rigging; Fig. 2 is an enlarged plan view of the connecting rod; Fig. 3 is a side view of the rod; and Figs. 4, 5 and 6 are still further enlarged transverse sections of the rod taken on the lines IV—IV, V—V and VI—VI, respectively, of Fig. 3.

In accordance with this invention a brake rod has relatively long bifurcated or forked ends provided with a plurality of longitudinally spaced pairs of openings adapted to receive pins on which are pivotally mounted the brake levers and brake beam leveling links of brake rigging. The spaced side walls of each long bifurcated end portion are reinforced against bending by an integral portion of the rod that rigidly connects one edge only of those walls at the inner end thereof.

Referring to Fig. 1 of the drawing, a pair of brake beams, each formed from a channel 1 and a truss rod 2 connected together at their ends with their central portions spaced apart by a bifurcated strut 3, is actuated to apply or release the brake shoes (not shown) by brake levers 4 and 5 pivotally connected at their lower ends in the struts by pins 6. The upper end of the dead lever 4 is pivotally connected in a fulcrum bracket 7 which extends laterally from the truck bolster 8 to which it is pivoted. The upper end of the live lever 5 is pivotally connected in a well-known manner to an air cylinder (not shown) by which it is actuated.

The two levers are connected together adjacent their lower ends in the usual way by a connecting rod 9 having bifurcated or forked ends that straddle the levers, each end being provided with two longitudinally spaced pairs of openings 11 in either pair of which a pin 12 may be disposed for pivotally connecting the adjoining lever to the rod. Spaced inwardly from these openings at each end of the rod are two more longitudinally spaced pairs of openings 13 in either one of which a pin 14 may be disposed for pivotally connecting the upper end of a leveling link 16 to the rod. The lower end of each link is pivotally connected in the brake beam strut below it by a pin 17 adjacent channel 1. These links are of such length that they maintain the brake beams level and prevent them from tilting in a transverse vertical plane, whereby the upper ends of the brake shoes are prevented from bearing against the wheels with any more pressure than the lower ends of the shoes.

The connecting rod is preferably formed in the general manner disclosed in my patents Nos. 1,445,850 and 1,947,278 from a flat metal plate the ends of which are forged into shape and provided with openings 11 and 13, the plate then being bent into the shape of the connecting rod shown in Figs. 2 and 3. The rod preferably has a tubular body 21 (Fig. 4) in which the seam 22 extends lengthwise and opens up at the end portions of the rod where the edges of the plate from which the rod is formed are spaced apart to form substantially parallel spaced side walls or tines 23 (Figs. 2, 3 and 6). This causes openings 11 and 13 in these side walls to be arranged in longitudinally spaced pairs (Fig. 2) with the openings in each pair in axial alignment for receiving one of the pivot pins 12 or 14.

To permit a brake lever to extend transversely through the end of the rod between its spaced side walls in the manner shown in Fig. 1, the end portion of the rod on the side opposite to seam 22 is provided with an inwardly extending lever-receiving slot 24, as shown in Figs. 2 and 6. The end portions of the rod are thus bifurcated, and as provision is made for four pairs

of openings in each end, the bifurcated portions must be considerably longer than those of rods in which the two pairs of link openings are omitted.

It is a feature of this invention that the rod is not weakened materially by these extra-long bifurcated ends because means is provided for reinforcing them against lateral bending under strain. Accordingly, slots **24** are no longer than necessary to permit the required swinging of the upper portions of the levers therein. When the proportions of the various parts of the brake rigging are substantially as shown in Fig. 1, and the levers are pivoted in the second pair of openings from the end of the rod, the slots should extend inwardly to a point between the two innermost pairs of openings **13**. From that point inwardly to the tubular body the edges of side walls **23** are rigidly connected by a tie member or reinforcing web portion **26** integral therewith and with body **21**. Consequently, the side walls are spaced apart throughout their width except along one edge opposite the innermost pair of openings.

It will be understood that if levers of a different width, or connecting rods in which the longitudinal spacing of the pivot openings is different, are used, the length of slots **24** can be varied in a corresponding manner. In the rod shown in Fig. 1 the slots and reinforcing webs are at the top, and the upper ends of links **16** are disposed between the side walls directly below the webs. In rigging in which the connecting rod is disposed below the brake beams, the rod would be turned over to place the reinforcing webs at the bottom so that the links could project from its top.

A connecting rod formed in accordance with this invention is strong and rigid at its ends, in spite of their being bifurcated for a considerable distance, because reinforcing webs **26** rigidly connect side walls **23** at the inner end of one edge and prevent them from bending or spreading apart at that point.

According to the provisions of the patent statutes, I have explained the principle and construction of my invention and have illustrated and described what I now consider to represent its best embodiment. However, I desire to have it understood that, within the scope of the appended claim, the invention may be practiced otherwise than as specifically illustrated and described.

I claim:

A connecting rod for use in brake rigging provided with beam-leveling links, said rod being formed of a metal plate and having a tubular body provided with a longitudinal seam, the edges of the end portions of said plate being spaced apart to form substantially parallel side walls, said walls being provided with a plurality of longitudinally spaced pairs of openings, each of said end portions being provided with a central slot extending inwardly to a point between the two innermost pairs of said openings.

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