Jan. 23, 1934. C. HANKINS 1,944,509

BRAKE RIGGING FOR RAILWAY CARS

Filed March 26, 1931

Fig. 1.

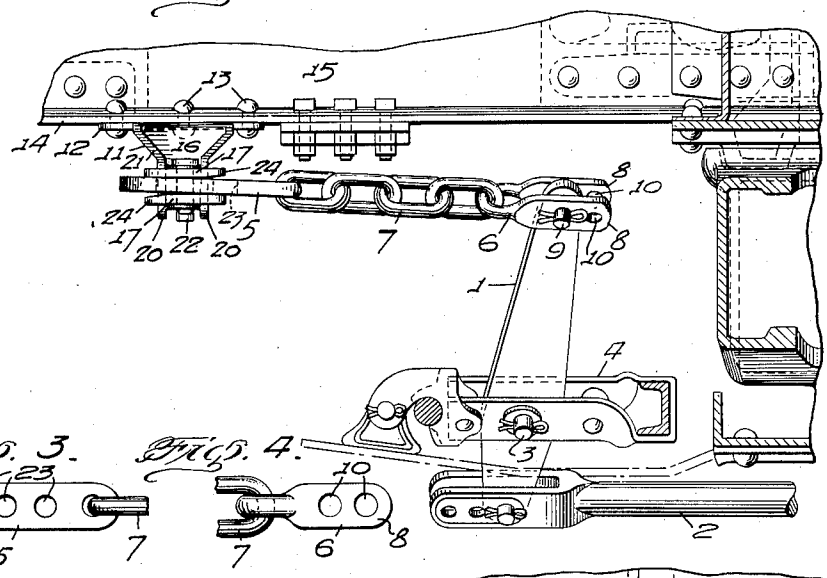


Fig. 3.

Fig. 4.

Fig. 2.

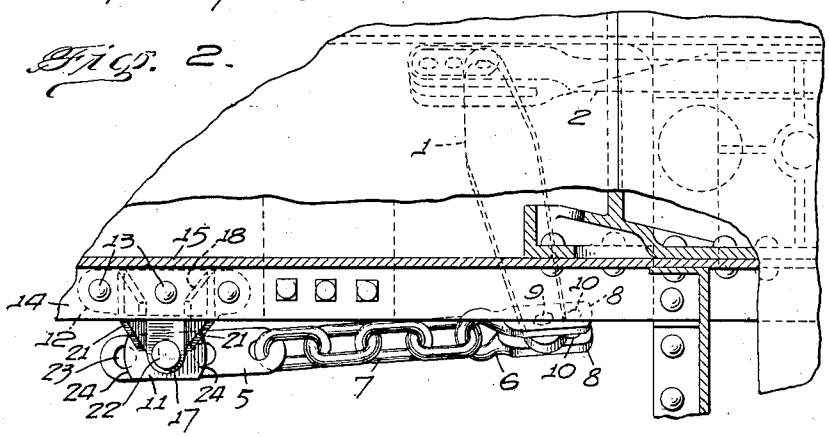


Fig. 5.

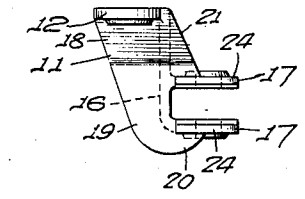
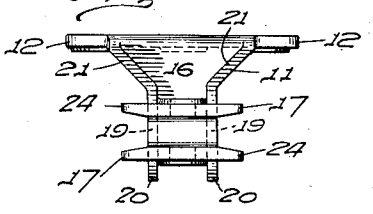


Fig. 6.



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BRAKE RIGGING FOR RAILWAY CARS

Cyrus Hankins, Washington, D. C.

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Serial No. 525,532

6 Claims. (Cl. 188—206)

My invention relates to railway cars and more particularly to improvements in the brake rigging thereof.

A principal object of the invention is to provide means for flexibly connecting the dead lever of the brake rigging to the underframe of the car in such manner that the lever may be free to move angularly with respect to the longitudinal axis of the underframe in substantially all directions to compensate for relative movement between the underframe and the car truck.

Another object of the invention is to provide the flexible connecting means with means for taking up slack in the brake rigging.

A primary feature of the invention consists in providing means for flexibly connecting the dead lever to the underframe of the car involving a member connected by a pin to a bracket which is rigid with the underframe and a chain for flexibly connecting the dead lever to the member, the latter being provided with a plurality of pin receiving apertures whereby it may be connected to the bracket in different positions of adjustment to take up slack in the brake rigging.

Another feature of the invention consists in connecting to the upper end of the dead lever a member provided with a plurality of apertures whereby it may be connected thereto by a pin in different positions of adjustment, a chain being employed for flexibly connecting the member to the car underframe.

A still further feature of the invention consists in providing means for flexibly connecting the dead lever to the underframe involving a bracket, members respectively connected to the dead lever and bracket, a chain for flexibly connecting said members and the latter being respectively provided with a plurality of apertures whereby they may be connected by pins to the bracket and dead lever in different positions of adjustment, the distance between the centers of the apertures in one of said members being greater than the distance between the centers of the apertures in the other of said members.

Other and more specific features of the invention residing in advantageous forms, combinations and relations of parts will hereinafter appear and be pointed out in the claims.

In the drawing illustrating a preferred embodiment of the invention:

Figure 1 is a fragmentary, vertical sectional view of a railway car showing my invention applied thereto.

Figure 2 is a plan view, partly in section, of a portion of the construction illustrated in Figure 1.

Figure 3 is a plan view of one of the members of the dead lever connector and the link adjacent thereto.

Figure 4 is a side elevational view of another of the members of the dead lever connector and the chain link adjacent thereto.

Figure 5 is an end elevational view of the bracket secured to the car underframe.

Figure 6 is a side elevational view of the bracket.

As is well known the conventional brake rigging for railway cars consists of a fluid pressure cylinder rigidly mounted on the underframe of the car and a system of connected rods or levers for transmitting force from the cylinder to brake beams carrying shoes adapted to engage the car wheels. The brake beams are pivotally connected to and actuated by brake levers, which, as is known, are inclined at an angle of approximately forty degrees to the vertical. One of these brake levers, namely, the one to which the brake applying force is first transmitted from the brake cylinder, is commonly termed the live lever while the other brake lever, namely, the one anchored or connected to some part of the car, is commonly termed the dead lever. As the invention only relates to the means for connecting the dead lever to the car only a portion of the brake rigging and adjacent parts of the car have been illustrated.

Referring more particularly to the drawing 1 indicates the dead lever and 2 a push rod which connects the lower end of the dead lever with the live lever (not shown). As is customary the dead lever is pivotally connected by a pin 3 to a brake beam 4.

The means for connecting the upper end of the lever to the car underframe comprises a member 5 carried by the underframe, a member 6 carried by the dead lever and a chain 7 which flexibly connects these two members. The member 6 is preferably of U-shape having arms 8 which are spaced a sufficient distance apart to receive the upper end of the dead lever. A pivot pin 9 whose axis is substantially perpendicular to the plane of normal operation of the dead lever may advantageously be employed for connecting the arms and dead lever. In order that member 6 may be connected to the lever in different positions of adjustment to take up slack in the brake rigging, the arms 8 are provided with a plurality of pairs of registering apertures 10, any pair of which is adapted to receive the pivot pin 9.

The member 5 of the dead lever connector is preferably in the form of an elongated plate and is mounted on a bracket 11 rigid with the underframe. The bracket may advantageously be formed with a substantially horizontal top flange or plate portion 12 which may be conveniently secured by rivets 13 to the bottom flange 14 of an adjacent center sill member 15 of the car underframe. Extending downwardly from the top flange is a substantially vertical web or plate portion 16 which is integrally formed adjacent its lower end with laterally projecting vertically

spaced jaws 17 between which the plate-like member 5 of the tension connector is interposed. If desired, the bracket may be reinforced by providing the marginal edges of the web portion 16 thereof with inwardly extending flanges, the upper portions 18 of which converge downwardly to adjacent the upper one of the jaws 17 while the lower portions 19 of which are substantially parallel and may extend for a short distance, as indicated at 20, beneath the lower one of the jaws 17. The upper jaw may be rigidified by flanges 21 which converge downwardly and progressively increase in depth from adjacent the top flange 12 of the bracket and constitute continuations of the reinforcing flanges 18.

The member 5 is connected to the jaws 17 of the bracket by a substantially vertical pivot pin 22 which extends through registering apertures in the jaws and a suitably formed aperture 23 in the member. The jaws are provided with projecting shelf-like portions 24, the inner surfaces of which are inclined slightly to engage relatively large areas of the member 5 and thereby afford extended bearing areas for supporting the latter. Instead of forming the member 5 with only one aperture 23 for receiving the vertical pivot pin 22 it is preferably formed with a plurality of such apertures, any one of which is adapted to receive the pin so that the member may be pivotally connected to the bracket in different positions of adjustment. The distance between the centers of these apertures is greater than the distance between the apertures 10 in the member 6 so that a very fine degree of adjustment may be obtained in taking up whatever slack may occur in the brake rigging.

By flexibly connecting the members 5 and 6 by a chain it will be appreciated that the dead lever is free to move in substantially all directions with respect to the underframe of the car to compensate for relative movement between the car truck and car body. Moreover, by forming the members 5 and 6 with apertures which are spaced a greater distance apart in one of them than in the other a very fine degree of adjustment may be obtained to take up slack in the brake rigging.

I claim:

1. In a railway car brake rigging, the combination with the underframe of a car, of a dead lever, a bracket rigid with the underframe and integrally provided with vertically spaced jaws, a plate-like member having a portion interposed between and supported by said jaws, pivot means connecting said plate member to the jaws and adapted to permit said member to swing in a substantially horizontal plane, and means involving a chain for flexibly connecting the upper end of the dead lever to said plate member, the latter being provided with a plurality of pin receiving apertures whereby it may be connected to the jaws in a plurality of different positions to take up slack in the brake rigging.

2. In a railway car brake rigging, the combination with the underframe of a car, of a dead lever, a bracket rigidly secured to the underframe and integrally provided with vertically spaced jaws, a plate-like member interposed between and supported by said jaws, a substantially vertical pin pivotally connecting the plate member to the jaws for permitting said member to swing in a substantially horizontal plane, and flexible means involving a chain for connecting the upper end of the dead lever to said member, the latter being provided with a plurality of pin receiving apertures whereby it may be connected to the jaws in different positions of adjustment to take up slack in the brake rigging.

3. In a railway car brake rigging, the combination with the underframe of a car, of a dead lever, a bracket rigid with the underframe, members respectively mounted on the bracket and dead lever, pins for respectively connecting said members to the bracket and dead lever, each of said members being provided with a plurality of pin receiving apertures whereby it may be connected to its associated part in different positions of adjustment, the distance between the centers of the apertures in one of said members being greater than the distance between the centers of the apertures in the other of said members, and means involving a chain for flexibly connecting said members.

4. In a railway car brake rigging, the combination with the underframe of a car, of a dead lever, a bracket rigid with the underframe, a member movably mounted on the bracket, a pin for pivotally connecting said member to the bracket, a member mounted on the upper end of the dead lever, a pin for connecting said last-named member to the dead lever, said members being respectively provided with a plurality of pin receiving apertures whereby they may be connected to the bracket and lever in different positions of adjustment, the distance between the centers of the apertures in one of said members being greater than the distance between the centers of the apertures in the other of said members, and means involving a chain for flexibly connecting said members.

5. In a railway car brake rigging, the combination with the underframe of a car, a bracket rigid with the underframe and integrally provided with spaced jaws, a member interposed between said jaws, a pin for connecting said member to the jaws, a member movably mounted on the upper end of the dead lever, a pin for pivotally connecting said last-named member to the dead lever, said members being respectively provided with a plurality of pin receiving apertures whereby they may be connected to the bracket and dead lever in different positions of adjustment, the distance between the centers of the apertures in one of said members being greater than the distance between the centers of the apertures in the other of said members, and means involving a chain for flexibly connecting said members.

6. In a railway car brake rigging, the combination with the underframe of a car, of a dead lever, a bracket rigid with the underframe and integrally provided with spaced jaws, a member interposed between said jaws, a substantially U-shaped member having arms overlapping opposite faces of said dead lever, and pins for respectively pivotally connecting said members to the bracket and lever, said members respectively having a plurality of pin receiving apertures whereby they may be connected to the bracket and dead lever in different positions of adjustment, the distance between the centers of the apertures in one of said members being greater than the distance between the centers of the apertures in the other of said members, and means involving a chain for flexibly connecting said members.

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