O. T. GREGG.

CAR BRAKE MECHANISM.

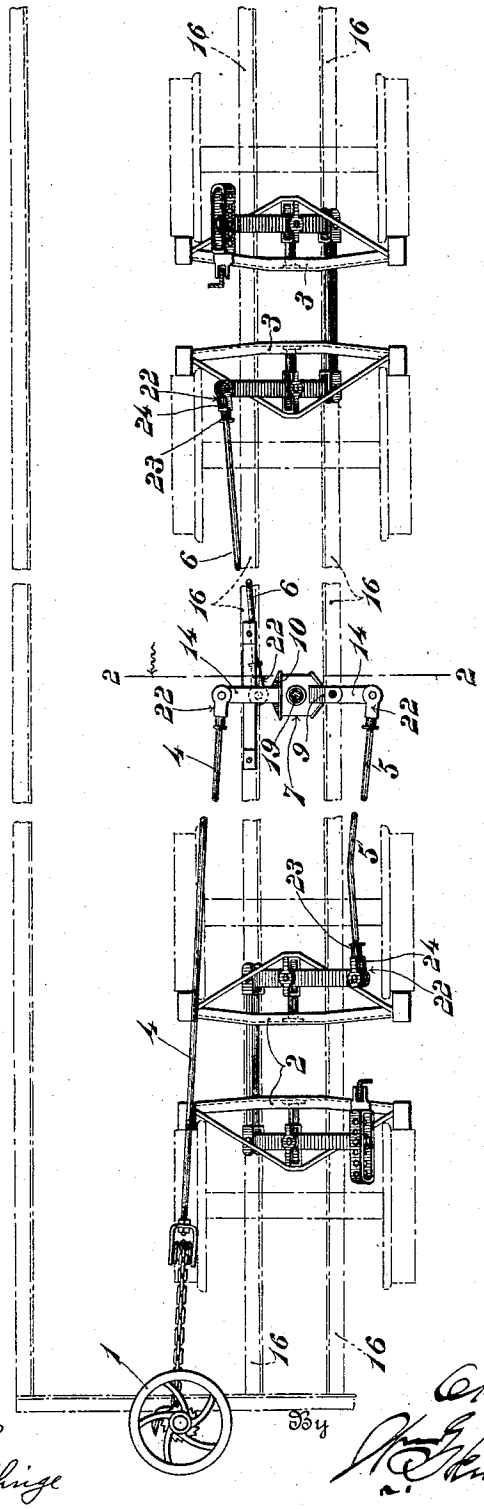
APPLICATION FILED JULY 14, 1913.

1,177,618.

Patented Apr. 4, 1916.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 2.

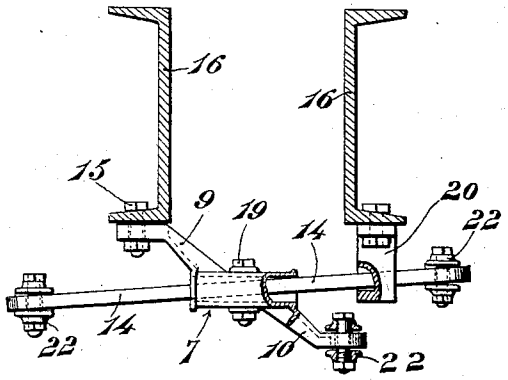


Fig. 3.

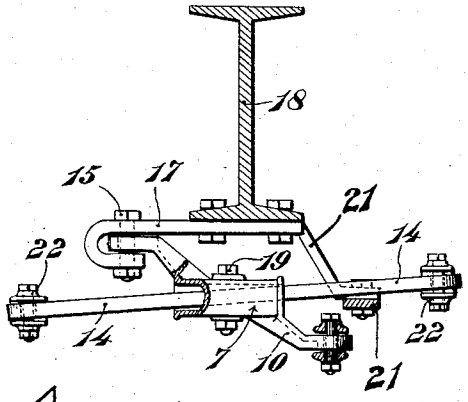


Fig. 4.

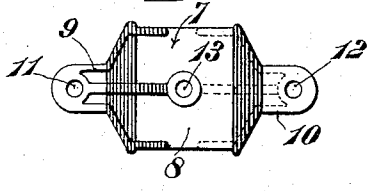


Fig. 5.

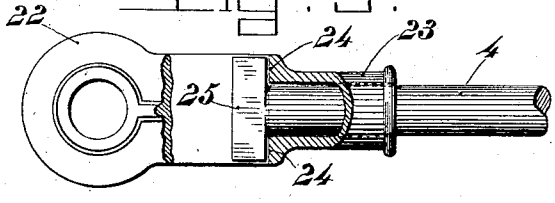
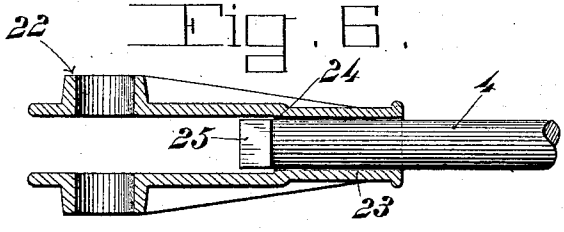


Fig. 6.



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CAR-BRAKE MECHANISM.

1,177,618. Specification of Letters Patent. **Patented Apr. 4, 1916.**

Application filed July 14, 1913. Serial No. 778,953.

To all whom it may concern:

Be it known that I, OTIS TIFFANY GREGG, a citizen of the United States, residing at Hackensack, in the county of Bergen and State of New Jersey, have invented certain new and useful Improvements in Car-Brake Mechanism; and I do declare the following to be a full, clear, and exact description of the invention, 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, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to car brake mechanism and has for its object in general to simplify the same and add efficiency thereto and at the same time cut down the cost; and in particular it has for its purpose to do away with the lateral play in existing constructions which permits the lever connections to rub against the lever guides and causes detrimental binding of the parts; and furthermore has in view to simplify and improve the mode of attaching the brake connection jaws to their associated rods.

To the accomplishment of the foregoing and such other objects as may hereinafter appear the invention consists in the features hereinafter particularly described and then sought to be clearly defined by the claims, reference being had to the accompanying drawings forming a part hereof, and in which—

Figure 1 is a plan view of a brake gear for both trucks of a double truck car having my invention applied, and showing so much of a brake gear as necessary to illustrate the present invention; Fig. 2 is a cross section, on the line 2—2 of Fig. 1, through the center sill of a four sill car, showing the floating and wheel levers embodying my invention; Fig. 3 is a similar view through the center sill of a three sill car, with my invention applied; Fig. 4 is a plan view of my new floating lever; Fig. 5 is a plan view of one of the brake connection jaws and associated rod, with the jaw in section, and illustrating the improved manner of attaching one to the other; Fig. 6 is a vertical section through the jaw, the rod being shown in full lines.

In the drawings the numeral 1 designates a brake hand wheel, 2 brake beam and shoe mechanism for a front truck, 3 brake beam and shoe mechanism for a rear truck, and 4, 5 and 6 brake rods, all of which may be of any approved type of construction.

The numeral 7 designates a swingingly supported member which for convenience may be designated as a combined lever and fulcrum. It is preferably made of malleable iron and has a central portion 8, which in the form illustrated is hollow, and from which at one end is an upwardly extending arm 9 and at the other end a downwardly extending arm 10, the arm 9 having an eye 11 to receive a pivot bolt or pin for attaching the "lever and fulcrum" to its support, the arm 10 having an eye 12 to receive a pin or bolt for attachment of the brake connection jaw of one of the brake rods, and its intermediate portion having an eye or opening 13 to receive a bolt which will pivotally connect thereto a lever 14 which will have connection with the brake wheel or other power means and truck connections for one of the trucks. The eyes 11, 12 and 13 are shown arranged in such relation to each other that a line drawn between the centers of the three eyes will be a straight line, which is preferable. The combined lever and fulcrum is pivotally connected to a suitable support by a pivot pin or bolt 15, for instance as shown in Fig. 2 to one of the center sills 16, or as shown in Fig. 3 to the center sill 18 by means of bracket 17, or otherwise, the lever being free to turn or swing at its pivotal point.

The lever 14, which for convenience may be termed a "brake wheel lever" or "power actuated lever", is pivoted or fulcrumed by a pin or bolt 19 to the combined lever and fulcrum. One end of the brake wheel or power lever rests upon and is guided by a guide-bracket 20 attached to one of the center sills as shown in Fig. 2, or a guide-bracket 21 attached to the center sill 18 as shown in Fig. 3.

The brake wheel or power lever is connected with the brake wheel or power means and also with truck brake mechanism of one truck by suitable means, for instance by the rods 4 and 5, respectively, and the arm 10

of the combined lever and fulcrum 7 is suitably connected with truck brake mechanism of the other truck, for instance by connecting rod 6.

With the various parts constructed and arranged as specified, when the brake wheel or power means is applied it pulls through its connections on the lever 14, thus drawing one end of said lever toward it and as the lever is pivoted or fulcrumed to the combined lever and fulcrum 7 the other end of lever 14 is moved in the opposite direction and being connected to the truck brake mechanism of one truck will operate to set the brakes of that truck. When the brakes at that end are set and the brake wheel or power means is continued or still further applied the lever 14 will pull forward or turn the combined lever and fulcrum 7 on its pivot, and cause it to draw through the rod connection 6, which is attached to the arm 10, by jaw 22, on the truck brake mechanism at the other end of the car and set the brakes at that end.

It will be observed that by reason of one end of the combined lever and fulcrum having a pivotal connection with its support, which may be the center sill, and the brake wheel or power lever being connected suitably with that lever, the combined lever and fulcrum cannot have lateral play other than that due to swinging in a circle, and the brake wheel or power lever being pivoted or fulcrumed to the combined lever and fulcrum cannot have lateral play other than that due to its own circular motion and the circular motion of the combined lever and fulcrum. Consequently all lateral or longitudinal play such as would tend to cause the connecting rods to rub and bind against guides or other parts is avoided. This construction also greatly simplifies the assembling of parts and dispenses with the exercise of the same care necessary in other constructions in ascertaining the pivotal connecting points of levers and rod connections.

It will be observed that the brake rods are connected to the floating lever and fulcrum and to the brake wheel or power lever as well as to certain levers of the truck brake beam and shoe mechanisms by brake connecting jaws 22. I make the jaw, which is preferably of cast metal, with a sleeve 23 and form between the cheeks of the jaw, next to the sleeve and at right angles to the faces of the cheeks, shoulders 24. The jaw is slipped over the end of the rod and then the end of the rod is heated and by forging, or otherwise, is formed preferably with an elongated or T shaped head 25 which will bear against the shoulders 24 when slid between the opposite faces or cheeks of the jaw. This formation also enables the faces of the cheeks to be brought relatively close to each other which is quite desirable when small levers are used in brake-gear mechanism. This T head formation also brings the bearing for the head on each side of the center of the jaw and enables the head to be made of less thickness in cross section so that there may be a space between its opposite sides and the inside faces of the jaw and thus permit the jaw to be turned through an angle of a few degrees without turning the rod in assembling the parts of the brake-gear mechanism.

I have illustrated and described with particularity the preferred details of construction of the various features of the invention but it is to be understood that I am not confined to such details except in the particulars that may be specified in the appended claims.

This combined lever and fulcrum may be applied to or used in connection with any suitable car frame construction, and is not restricted or limited to the particular details of truck brake-beam and shoe mechanism and connecting rods illustrated, the same having been selected merely for the purpose of illustrating a practical application of the invention.

Having described my invention and set forth its merits, what I claim is—

1. In a car brake mechanism, a combined lever and fulcrum pivoted to a support to swing circularly, and a lever pivotally supported or fulcrumed on the combined lever and fulcrum and having connections with a brake-wheel or power means and with brake truck mechanism.

2. In a car brake mechanism, a combined lever and fulcrum pivoted to a support, and a lever passing through the combined lever and fulcrum and pivoted or fulcrumed thereto, and connections between said levers and a brake-wheel or power means and truck brake-mechanism.

3. In a car brake mechanism, a combined lever, and fulcrum having upwardly and downwardly extending arms, one of said arms being pivotally connected to a support and the other having connection with a truck brake-mechanism, and a lever pivotally supported or fulcrumed on the combined lever and fulcrum and having connections with a brake-wheel or power means and with a truck brake mechanism.

4. In a car brake mechanism, a combined lever and fulcrum pivoted to a support, a lever pivotally supported or fulcrumed on the combined lever and fulcrum and having connections with a brake-wheel or power means and with truck brake mechanism, and a guide for the brake-wheel or power lever.

5. In a car brake mechanism, a combined lever and fulcrum having upwardly and downwardly extending arms, one of said arms being pivotally connected to a support and the other having a truck brake

mechanism pivotally connected with it, and a lever pivotally connected or fulcrumed to the combined lever and fulcrum, the said three pivotal points being arranged in relation to one another that a line drawn between the three pivot centers will be a straight line.

In testimony whereof I affix my signature in presence of two witnesses.

OTIS TIFFANY GREGG.

Witnesses:
WILLIAM C. GREGG,
HENRY N. GREENE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."