

No. 648,434.

Patented May 1, 1900.

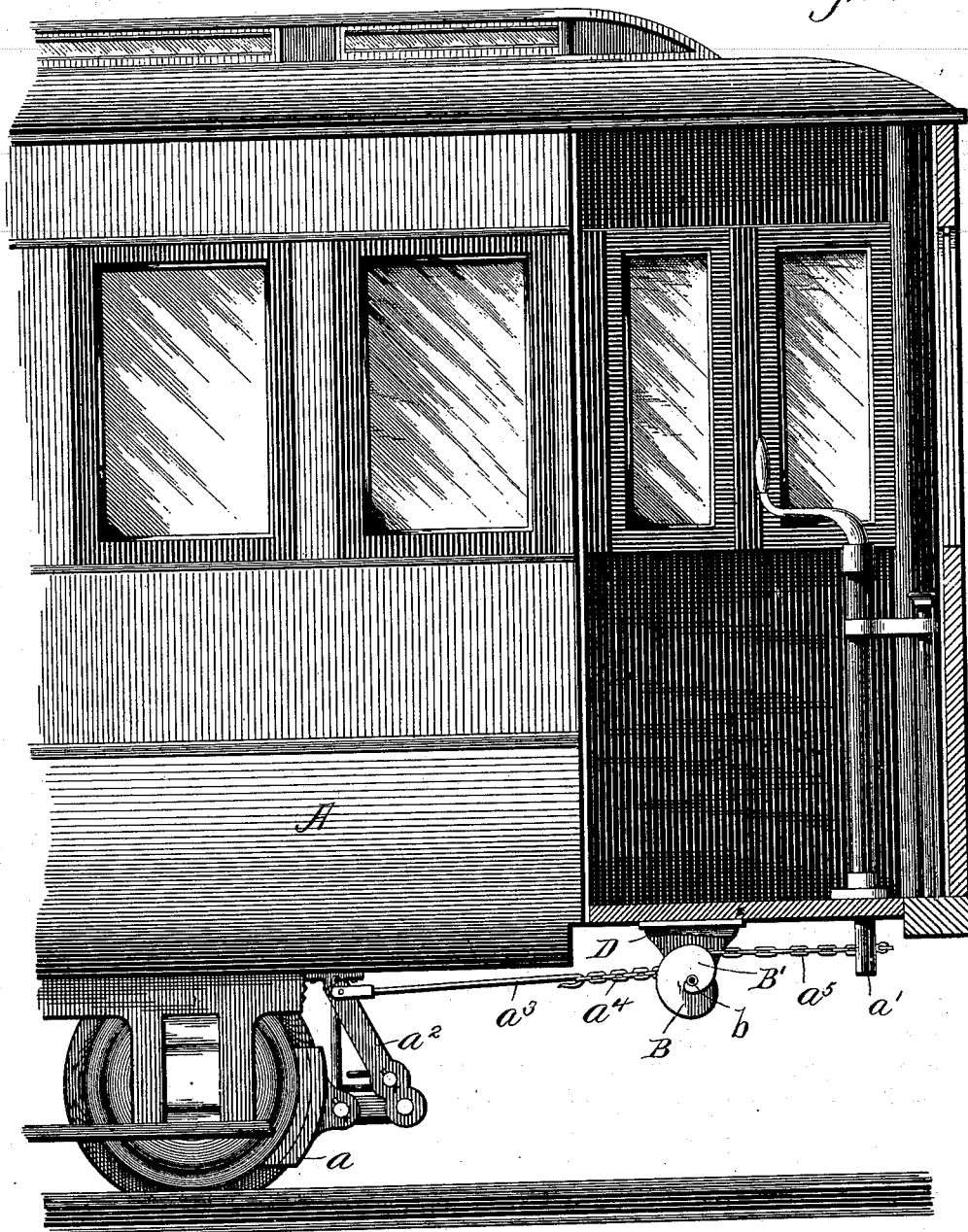
C. RICHARD.
CAR BRAKE.

(Application filed Dec. 6, 1899.)

(No Model.)

2 Sheets—Sheet 1

Fig. 1.



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2 Sheets—Sheet 2.

Fig. 2.

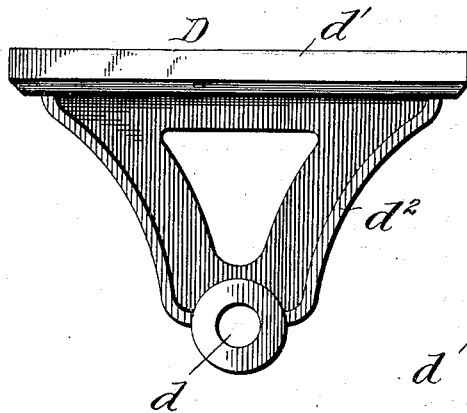


Fig. 3.

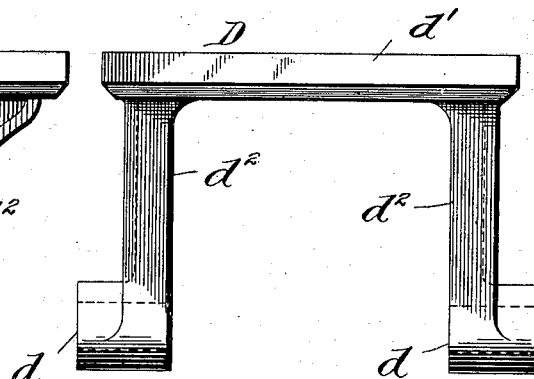


Fig. 4.

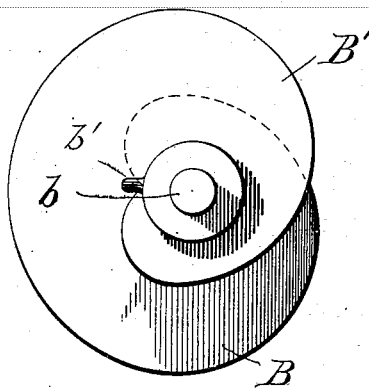
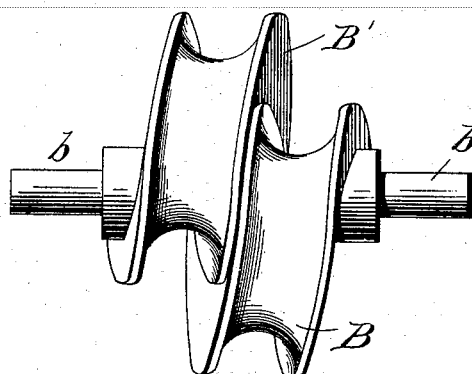


Fig. 5.



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UNITED STATES PATENT OFFICE.

CAMILLE RICHARD, OF MONTREAL, CANADA, ASSIGNOR TO L. M. LYMBURNER AND J. E. MATHEWS, OF SAME PLACE.

CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 648,434, dated May 1, 1900.

Application filed December 6, 1899. Serial No. 739,336. (No model.)

To all whom it may concern:

Be it known that I, CAMILLE RICHARD, a subject of Her Majesty the Queen of Great Britain, residing in the city and district of Montreal, Province of Quebec, Canada, have invented certain new and useful Improvements in Car-Brakes; and I do hereby declare that the following is 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.

This invention relates to car-brakes which are especially adapted for use on street-cars; and its object is to provide an improved brake mechanism which is simple in construction, effective and powerful in operation, and which may be manufactured at a moderate cost.

To these ends the invention consists in a brake mechanism constructed substantially as hereinafter illustrated and described, and defined in the appended claim.

Referring to the drawings, in which similar letters of reference indicate similar parts, Figure 1 is a view in elevation of the forward end of a street-car provided with a brake mechanism constructed in accordance with this invention. Fig. 2 is an end view of the hanger-frame. Fig. 3 is a side view thereof. Fig. 4 is an end view of a detail, and Fig. 5 is a side view thereof.

In the drawings, A represents a car which may be of any usual or preferred kind and provided with the usual brake *a* and the rotary brake-rod *a'*. To the brake-beam is pivotally connected the lower end of a suitable lever *a²*, which is pivoted at an intermediate point to a suitable support. To the upper end of the lever *a²* is attached a suitable rod *a³*, having a hook at its outer end, to which is connected one end of a chain *a⁴*, the other end of which is suitably secured to one portion of the double cam B B', sleeved upon the shaft *b* at the point of longest radius of said cam. The lower end of the brake-rod *a'* is simultaneously connected, by means of a suitable chain *a⁵*, to the other portion of the double cam B B', the connection being a simple hook *b'* or rivet or other suitable means. The double cam B B' is preferably splined upon the shaft *b*, which is journaled in suitable bearings *d*, formed upon the lower ends

of the hanger-frame D, which is secured at a suitable point upon the under side of the car A, as shown in Fig. 1. The frame D is preferably constructed of a base-plate *d'*, having depending arms *d²*, as shown in Figs. 2 and 3.

The double cam B B' is preferably formed in one piece, though it is obvious that each cam may be constructed separately and united in any suitable manner, as by means of bolts and rivets. Each cam is preferably in the form of a helix, and they are so mounted upon the shaft *b* that the longest radius of the one is adjacent to the shortest radius of the other, as is clearly shown in Fig. 5. By means of this construction there is provided a cam-lever for the chain *a⁵* and a separate lever for the chain *a⁴*, thus affording a powerful leverage occupying a comparatively-small space. It is obvious that by attaching the end of each chain to the cam at the point of longest radius the slack will be taken up quickly by the first movement of the hand brake-rod and the leverage increased, so that the subsequent movement of the brake-rod will effect a powerful braking action.

While I have herein shown a preferred form of carrying my invention into effect, yet I do not desire to limit myself to such preferred details of construction, but claim the right to use any and all modifications thereof which will serve to carry into effect the objects to be attained by this invention in so far as such modifications and changes may fall within the spirit and scope of my said invention.

I claim—

A brake mechanism, comprising a brake-shoe; a lever pivoted thereto; a hanger-frame; a double cam-lever journaled in said frame, said cams being constructed in the form of a helix and arranged side by side; a connection between said double cam-lever and the brake-lever; a brake-rod; and a connection between said brake-rod and said double cam-lever, substantially as described.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

CAMILLE RICHARD.

Witnesses:

J. A. MARION,
R. A. DE OLLOQUI.