

No. 691,848.

Patented Jan. 28, 1902.

J. D. EDWARDS.

BRAKE.

(Application filed Nov. 20, 1901.)

(No Model.)

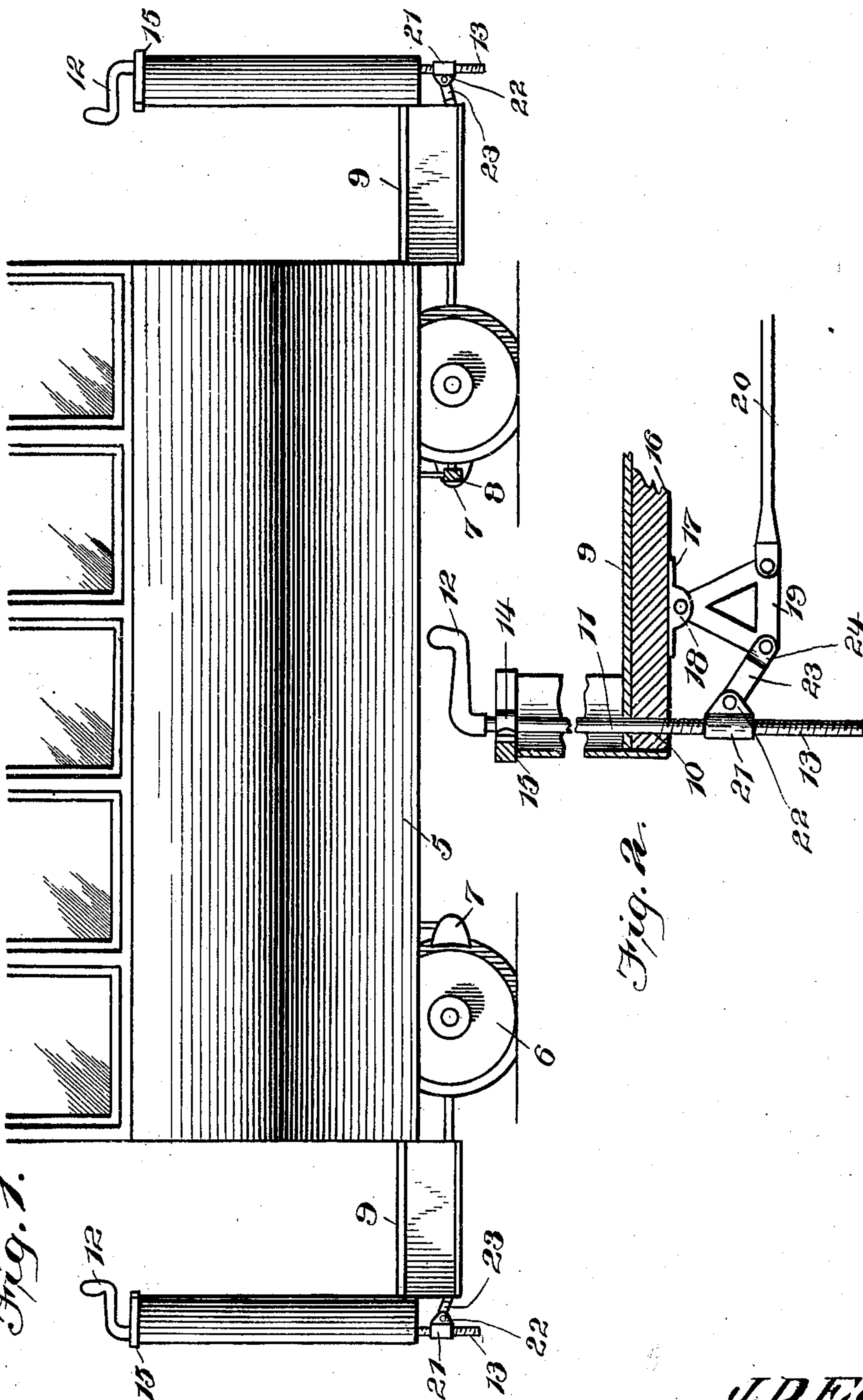


Fig. 1.

Witnesses

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Fig. 2.

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JAMES D. EDWARDS, OF ST. LOUIS, MISSOURI.

BRAKE.

SPECIFICATION forming part of Letters Patent No. 691,848, dated January 28, 1902.

Application filed November 20, 1901. Serial No. 83,003. (No model.)

To all whom it may concern:

Be it known that I, JAMES D. EDWARDS, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented
5 certain new and useful Improvements in Brakes; and I do hereby 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
10 the same.

This invention relates to brakes, and more particularly to that class employed upon cars and similar vehicles; and it has for its object to provide a construction wherein the shoes
15 will respond directly and immediately to the movements of the brake-handle, a further object of the invention being to provide a construction wherein as the brakes are applied the leverage will increase, owing to the
20 more direct pull of the elements of the structure.

Other objects and advantages of the invention will be understood from the following description.

25 In the drawings forming a portion of this specification, and in which like numerals of reference indicate similar parts in both views, Figure 1 is a side elevation showing a portion of a car having the present invention
30 in place thereon. Fig. 2 is a sectional view showing a portion of the brake-shaft and the nut with which it is engaged, also the lower bearing therefor.

Referring now to the drawings, there is
35 shown a car comprising a body portion 5, having wheels 6, attached to the body by means of the usual truck mechanism, and in operative relation to which wheels are the brake-shoes (shown at 7) carried by the beam 8, suspended in the usual manner.
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Upon the end platform 9 of the car is the vertical bearing 10, in which is rotatably mounted the vertical brake-shaft 11, having the usual handle 12 at its upper end, the shaft
45 being continued downwardly through the platform, and having its end below the platform threaded, as shown at 13. At the upper end of the shaft and directly below the handle is the upper shaft-bearing 14, fixed to the
50 dashboard 15. It will be noted that the lower shaft-bearing is in a longitudinal beam 16 at the under side of the platform, and against

the under side of the beam and near to the rear end thereof is secured the plate 17, having laterally-spaced and depending ears 18,
55 between which is pivoted the upper end of a triangular lever 19, this pivot being at the apex of the triangle, the base thereof being horizontal. Pivoted to the triangular lever 19, at the rear base-angle thereof, is a connecting-rod 20, which is connected with the
60 brake-beam for actuation thereof to move it with the shoes into and out of engagement with the car-wheels.

A nut 21 is engaged with the lower screw-
65 threaded end of the brake-shaft for movement vertically thereon as the shaft is rotated, and this nut has spaced ears 22, between which is pivoted one end of a link 23, the opposite end of which has ears 24, which receive between them the forward end of the
70 base of the triangular lever. Through the ears of the link and the lever is passed a pivot-pin. With this construction as the brake-shaft is rotated in one direction the nut is
75 raised, and the triangular lever is rocked, and the corner of the lever nearest to the shaft describes the arc of a circle which intersects the path of movement of the pivot between the
80 nut and link, so that as the nut moves upwardly the pull upon the lever approaches more nearly a straight pull, so that the efficiency of the lever increases as the resistance to movement of the brake increases. When
85 the shaft is rotated in a reverse direction, the nut is depressed, and the triangular lever is moved in an opposite direction to throw the brakes from the wheels. It will be noted that every movement of the shaft results in an immediate and positive movement of the
90 brake-shoes, there being no lost motion in the parts.

What is claimed is—

1. In a brake mechanism, the combination with a brake-shaft having bearings constructed and arranged to hold it against longitudinal movement, and having a handle above its upper bearings and having its lower end threaded, of a nut engaged with the threaded
95 portion of the shaft, a triangular lever pivotally mounted at its apex, a link pivoted to the nut and having pivotal connection with the adjacent base-angle of the lever, a brake-beam having shoes, and connections between
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the brake lever and beam, the arc of movement of the corner of the lever to which the link is attached, intersecting the path of the pivot of the nut.

- 5 2. The combination with a wheeled vehicle, of a brake-beam having shoes in operative relation to the wheels, a plate upon the under side of the vehicle having spaced ears, a triangular lever having its apex pivoted between the ears, a connecting-rod pivoted to
10 the rear base-angle of the lever, a link pivoted to the forward base-angle of the lever, a vertical shaft having a crank at its upper

end and having its lower end threaded, and a nut upon the threaded portion of the shaft 15 and having pivotal connection with the link, the curvature of the arc of movement of the forward base-angle of the lever intersecting the path of the pivot of the nut.

In testimony whereof I affix my signature 20 in presence of two witnesses.

JAMES D. EDWARDS.

Witnesses:

W. S. CASS,

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