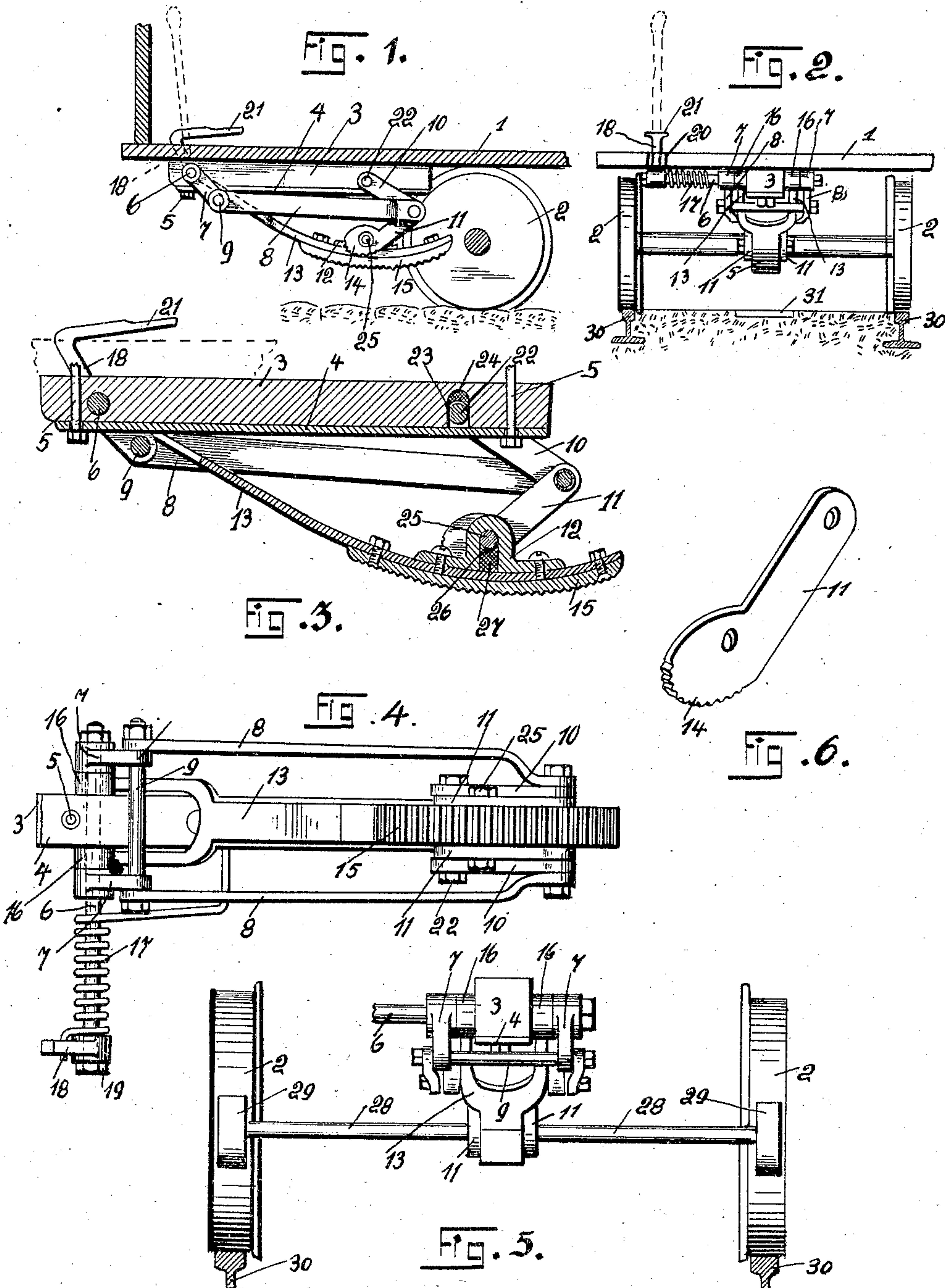


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H. POTH.
CAR BRAKE.

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CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 785,570, dated March 21, 1905.

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To all whom it may concern:

Be it known that I, HENRY POTH, a citizen of the United States of America, residing at Elliott borough, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Car-Brakes, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention has relation to car-brakes; and the particular object of the invention is to provide a car-brake in which a brake-shoe will contact with the surface of the ground or roadway or with a third rail between the wheels of the car.

In carrying my invention into effect I provide a brake-arm which is pivotally supported on a beam carried on the bottom of the car and which is caused to swing on its pivotal support by means of a pair of toggle-levers actuated by a crank and crank-shaft, which latter is given movement by means of the lever, that may be operated manually or by any desired mechanism, said arm carrying a brake-shoe that contacts with the roadway or with a third rail between the wheels of the car.

In a modified form of my invention I provide, in addition to the brake-shoe on the brake-arm, other brake-shoes, carried on arms projecting laterally from the main brake-arm, said last-named brake-shoes being adapted to bear on the tracks on which the car-wheels run.

The details of construction of my improvement will be fully set forth in the following specification; and my invention consists in the novel construction, combination, and arrangement of parts hereinafter described and claimed.

Referring to the accompanying drawings, Figure 1 is a side elevation of a car having my improvement applied thereto. Fig. 2 is an end elevation of the same. Fig. 3 is a detail sectional view of the braking devices on an enlarged scale. Fig. 4 is a bottom plan view of the braking devices on the same scale as Fig. 3. Fig. 5 is an end elevation, on the same scale as Fig. 4, of a modified form of

my invention; and Fig. 6 is a detail perspective view of one of the parts of the braking mechanism.

In the several views similar reference-numerals designate corresponding parts.

In the figures, 1 designates the bottom of a car which is mounted on wheels 2 2, the car, it being understood, being of the usual or any construction.

Upon the bottom 1 of the car is firmly secured a longitudinally-disposed beam 3, the beam being held in place by a heavy metallic plate 4 and vertical bolts 5. A shaft 6 is journaled in the beam 3, and this shaft carries rigidly-attached crank-arms 7 7, one on each side of the beam. Links 8 8 are pivotally connected to the crank-arms 7 7 by a cross-bolt 9, and these links are pivotally connected at their opposite ends to two sets of toggle-levers, each such set being composed of a member 10, pivotally attached to the beam 3, and a member 11, pivotally attached to a bracket 12, that is mounted on the upper side of a curved swinging brake-arm 13. The member 11 of each set of toggle-levers is formed with a toothed head 14, the toothed surface of the head coming into alinement when the toggle-levers are straightened out with the toothed surface of a curved brake-shoe 15, that is firmly fixed upon the lower side of the brake-arm 13. The brake-arm 13 is bifurcated at its upper end and embraces the beam 3, and the bifurcated ends of the brake-arm are formed with eyes 16 16, through which pass the shaft 6, which, as before stated, carries the crank-arms 7 7. The shaft 6 is surrounded by a strong spiral spring 17, one end of which is attached to the beam 3, while the other end thereof extends past the edge of a lever 18, that is rigidly secured on the shaft, being formed with a squared opening in its end to receive the squared end of the shaft, and held in position by a nut 19 on the end of the shaft. The lever 18 extends upwardly through a slot 20 in the bottom of the car and is preferably formed with a tread 21, upon which the motorman can place his foot, but, if desired, a suitable handle may be substituted for the tread 21 and this lever op-

erated by hand, or it may be connected to any suitable mechanism by which it can be rocked so as to rock the shaft 6.

The upper members 10 of the toggle-levers are pivotally attached to the beam 3 by a bolt 22, and the said bolt passes through a vertical slot 23 in the beam, and a block of rubber or other suitable elastic material 24 is arranged in the upper end of said slot 23, so as to afford a resilient seat for the said bolt. The lower members 11 of the toggle-levers are pivotally secured to the bracket 12 by a bolt 25, the said bolt passing through a slot 26 in the bracket, and a block of rubber or other suitable elastic material 27 is arranged in the slot 26 below the bolt 25, so as to afford a resilient seat for said bolt.

In Fig. 5 of the drawings I have shown a modified form of my improvement in which the brake-arm 13 is provided with laterally-extending arms 28 28, upon the outer ends of which are mounted brake-shoes 29 29, which when the brake-arm 13 is depressed bear upon the tracks 30 30, upon which the wheels 2 2 run.

If preferred, a third rail 31 may be arranged between the tracks, as shown in Fig. 2 of the drawings, so that the brake-shoe 15 will bear upon said third rail instead of upon the surface or ground upon the road-bed between the tracks.

In operation when it is desired to stop the car the brake is brought into action by moving the lever 18 rearwardly by depressing treadle 21. This movement of the lever 18 has the effect of rocking the shaft 6, and the rocking of the shaft imposes traction on the links 8, and this in turn has the effect of straightening out the two members of the two toggle-levers, this movement of the toggle-levers forcing the brake-arm 13 downwardly and causing the brake-shoe to be pressed forcibly against the surface of the ground or road-bed between the tracks or against the third rail when such third rail has been provided. Simultaneously with the downward movement of the brake-arm the straightening of the toggle-levers brings the notched edges of the lower members 11 in alinement or, if the movement of the lever 18 be continued, slightly below the serrated surface of the brake-shoe, thus affording, in addition to the grip which the brake-shoe will have upon the surface of the ground or road-bed, an additional gripping effect. When the brake-shoe is brought into contact with the ground or surface of the road-bed between the tracks, the car of course will be stopped, and when it is desired to release the car from the braking effect so produced it is only necessary to release the lever

18, whereupon the spring 17 will return the parts to their normal position.

When the modified form of my invention is employed, the brake-shoes 29 29 will be caused to bear on the tread-surface of the track 30 30 simultaneously with the bearing of the shoe 15 on the surface on the road-bed or on the third rail when such third rail is provided.

Having fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a device of the character described, a rocking shaft mounted on the bottom of the car, a lever mounted on said shaft and extending through the platform of the car, a crank-arm carried by said shaft, a link pivotally attached to said crank-arm, toggle-levers pivotally attached to said link, one of said toggle-levers being pivotally attached to the bottom of the car, and a brake-arm carrying a brake-shoe, said brake-arm being pivotally attached to the bottom of the car and pivotally attached to one of said toggle-levers, and a spring surrounding said shaft and adapted to return the brake-arm to its normal position after it has been depressed.

2. In a device of the character described, the combination with a car, of a beam attached to the bottom of the car, a rocking shaft mounted in said beam, a lever attached to said shaft, a spring surrounding the shaft, and connected at one end to said beam and at the other end to said lever, crank-arms carried by said shaft, toggle-levers pivotally secured to said beam, a link connecting said toggle-levers with said crank-arms, the lower of said toggle-levers being provided with a serrated head, a brake-arm pivotally mounted on said shaft and pivotally connected to said toggle-levers, the lower surface of said brake-arm being formed with a curved surface adapted to contact with the road-bed.

3. In a car-brake, the combination with a car-body, of a curved brake-arm pivotally supported from the car-body, a slotted bracket carried by said brake-arm, a pair of toggle-levers pivotally attached to the car-body and pivotally attached to said bracket, elastic material arranged in the bearings of said toggle-arms, a rocking shaft mounted on the car-body, connections between said shaft and said toggle-levers, and a lever connected to said shaft and extending above the bottom of the car.

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

HENRY POTH.

Witnesses:

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