

(No Model.)

G. W. TURNER.
CAR BRAKE.

No. 461,107.

Patented Oct. 13, 1891.

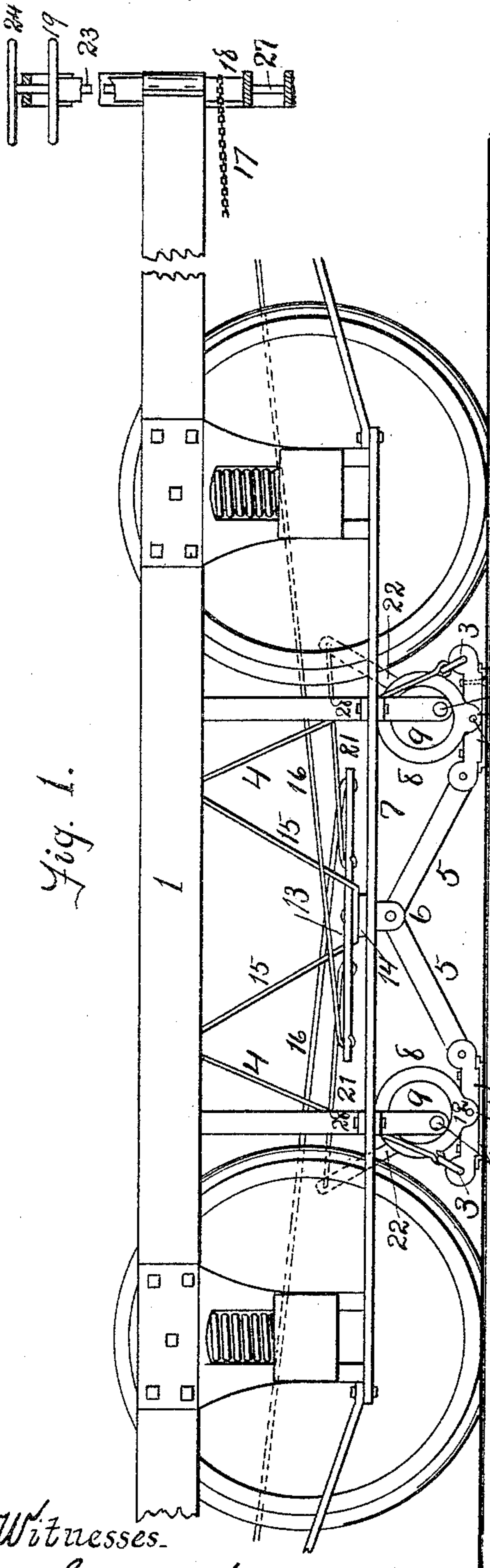


Fig. 1.

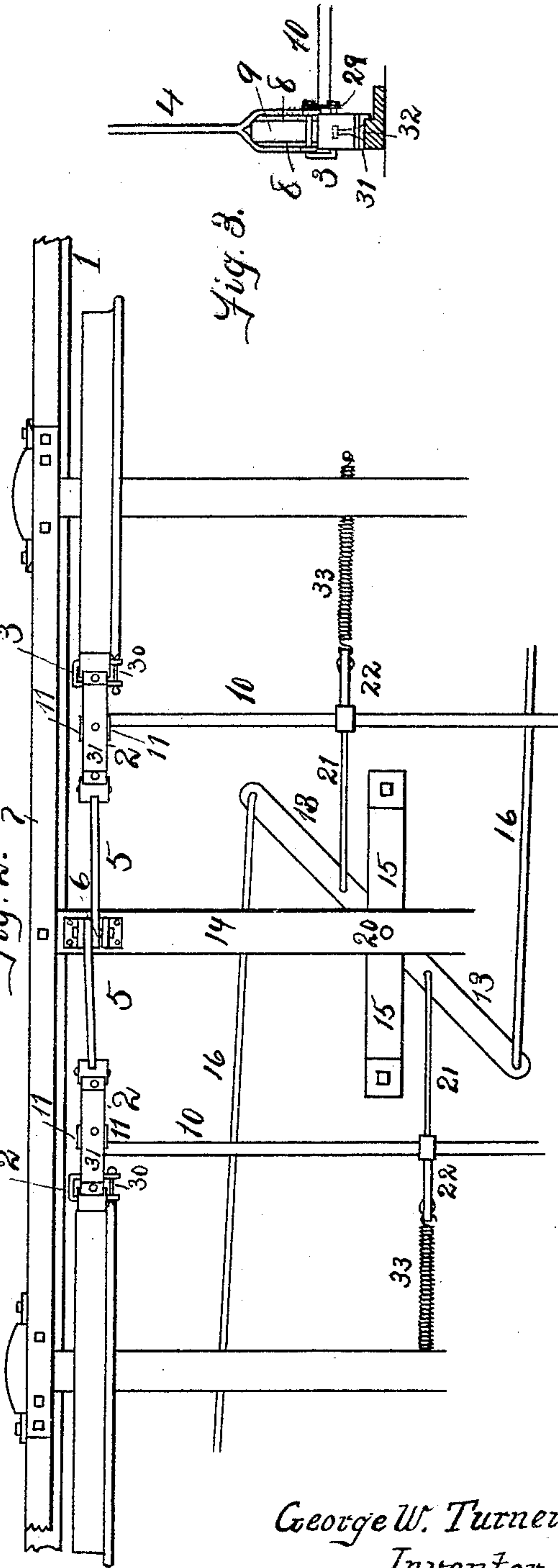


Fig. 2.

Fig. 3.

Witnesses.

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By *J. H. Jones* Attorney.

UNITED STATES PATENT OFFICE.

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JOHN C. HERRIGAN, OF SAME PLACE.

CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 461,107, dated October 13, 1891.

Application filed May 11, 1891. Serial No. 392,536. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. TURNER, a citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Car-Brakes; 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 figures of reference marked thereon, which form a part of this specification.

This invention relates to car-brakes of that class in which the brake-shoe engages with the track-rail; and the object of the invention is to provide means for checking or stopping the movement of the car, without danger of injury to the car-wheel, by stopping its rotation and allowing it to slide upon the track, and also to furnish a device whereby a greater extent of frictional surface may be applied with a greater degree of pressure to stop the movement of the car in cases of emergency or otherwise. The invention is designed especially for use in cases where the ordinary wheel-brake is insufficient by reason of the short contact-space between the wheel and rail, and to this end is so designed as to be capable of use in conjunction with the wheel-brake without change or interference.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a portion of a car provided with my improved track-brake; Fig. 2, an under side view of the same; and Fig. 3 a detail showing an end view of the brake-shoe and the eccentric by means of which it is operated.

The invention consists, principally, of two pairs of brake-shoes suspended from the car-frame so as to hang just inside the wheels, and which are operated by means of eccentrics bearing directly upon the shoe.

In the drawings, 1 represents the car-frame, from which are suspended the brake-shoes 2 in the following manner: In the outer end of each shoe is inserted a clevis or equivalent device 3, into which is hooked or otherwise loosely secured the lower end of a hanger-rod 4, extending upwardly at an inward incline

and attached to the frame of the car. The inner ends of the shoes are pivotally secured to the extremities of braces 5, suspended, as at 6, from the side bar 7 of the car. The shoe is thus free to move slightly in an endwise direction, but is still so supported by the brace and hanger as to be kept in proper position when set upon the track, one of the two acting as a draw and the other as a thrust bar, according to the direction in which the car is moving.

To the middle of each shoe is attached an eccentric yoke or strap 8, closely fitting an eccentric 9, the eccentrics of opposite brakes being mounted upon the same shaft 10, extending across underneath the car. The eccentric-yokes are preferably made in two parts, each consisting of a ring fitting in a rabbet formed in the edge of the eccentric and having an ear 11, between which two ears the shoe is hung by a pivot or pin 12, passing through the ears and shoe. By the rotation of the eccentric-shaft the shoe is lifted above or forced down against the tread of the rail, the eccentric bearing directly on the back of the shoe.

The brake-lever 13 is mounted in the ordinary manner upon a cross-bar 14, extending from one side bar 7 to the other, and is further supported by means of a brace or braces 15. The opposite ends of said lever are connected in the usual manner, by rods 16 and chain 17, with brake-shafts 18, having operating-wheels 19 at opposite ends of the car. At points near the fulcrum 20 of the brake-lever it is connected by rods 21 with crank-arms 22 upon each eccentric-shaft 10. By this system of compound leverage almost any degree of power may be obtained, the ratio of the longer to the shorter arm of the lever in each instance being preferably about four to one, the length of the crank-arm 22 usually bearing about that relation to the throw of the eccentric.

For convenience in operating when used as auxiliary to the ordinary wheel-brake, I have shown a novel arrangement of winding-shafts and hand-wheels. The shaft 23 and wheel 24 of the wheel-brake may be mounted in the ordinary manner at the end of the car, and the auxiliary brake-shaft 18 is in the

form of a tubular sleeve surrounding the same, having its hand-wheel 19 located a short distance below that of the wheel-brake. The wheel-brake shaft projects below the tubular shaft, as at 27, for a sufficient distance to wind up the brake-chain. The two brakes may thus be conveniently controlled, simultaneously or singly, by one operator, thus saving valuable time in case of emergency.

10 The eccentric-shafts are mounted at each side in bearings formed in hangers depending from the car-frame, and additionally braced and secured against thrust by being bolted to the side bars, as at 28. The clevises 15 3, by which the shoes are attached to the hangers, may be kept from spreading and retained in proper position by means of a tie-plate 29, secured by a cotter-pin 30 or by screw-thread and nut. The hangers 4 are forked, as shown 20 in Fig. 3, thus supporting the shoe-head upon each side.

The shoe-heads are preferably formed of cast-iron, but have a wearing-face composed of wrought metal, rubber, or any desired material. This face 31 is secured to the head 25 by means of taper-bolts, as 32, which serve to retain the face in position until entirely worn out, when the face may be replaced with a new one at slight trouble and expense.

30 Springs 33, secured to the end of the crank-arms 22 and to some fixed point upon the car, act to restore the parts to normal position when released.

I claim as my invention—

1. In a car-brake, the combination, with 35 brake-shoes pivotally connected at their outer extremities with hangers depending from the frame of the car and braces pivotally connected with the inner ends of said shoes and with a cross-bar supported at a distance below 40 the body of the car, of eccentrics carried by rock-shafts in position to act upon the back of said shoes, eccentric-yokes pivotally connected with said shoes, and means for rocking said shafts, substantially as specified. 45

2. In a car-brake, the combination, with brake-shoes pivotally suspended by hangers from the body of the car in position to bear upon the track just inside the contact-point of the car-wheels, of rock-shafts mounted just 50 above said shoes and extending from one side to the other of the car, eccentrics carried by said shafts in position to act upon said shoes and having yokes pivoted to said shoes, a brake-lever horizontally pivoted between said 55 rock-shafts, arms upon said shafts of greater length than the throw of said eccentric, rods connecting said arms with said lever at points near to and on opposite sides of its fulcrum, brake-rods attached to said lever at opposite 60 extremities, and means for operating said brake-rods, substantially as specified.

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

GEORGE W. TURNER.

Witnesses:

F. W. LANE,

JOHN F. MERRILL.