

(No Model.)

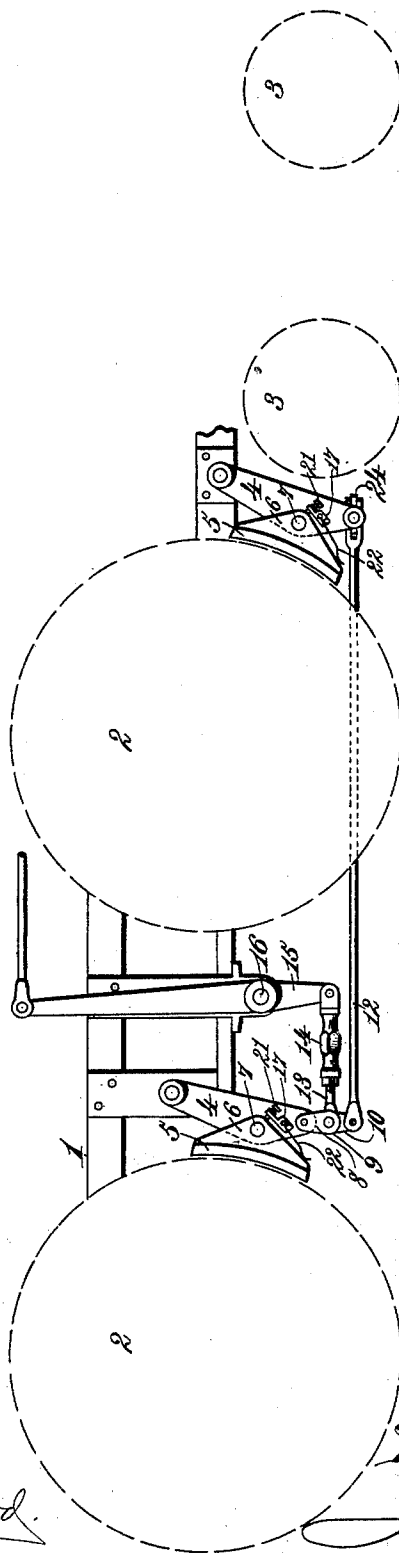
2 Sheets—Sheet 1.

J. E. NORMAND.
LOCOMOTIVE DRIVER BRAKE.

No. 468,254.

Patented Feb. 2, 1892.

Fig. 1.



Witnesses.

Robert Emmett.

J. A. Rutherford.

Inventor.

Joseph E. Normand.

By

James L. Norris.

Atty.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 2.

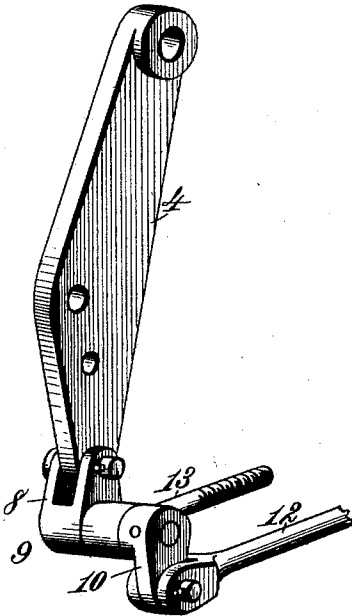
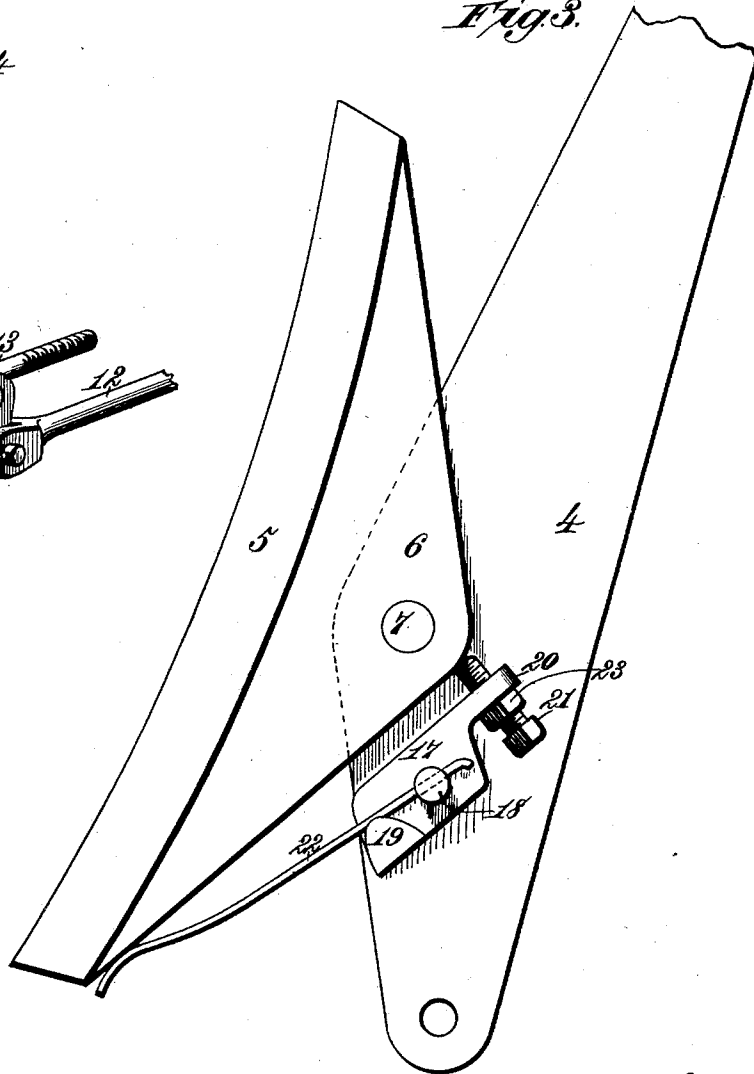


Fig. 3.



Witnesses.

Robert Smith,

J. A. Rutherford.

Inventor.

Joseph E. Normand,

By

James L. Norris,

Atty.

UNITED STATES PATENT OFFICE.

JOSEPH ELIE NORMAND, OF WATERTOWN, ASSIGNOR TO CHARLES GOODWIN EMERY, OF NEW YORK, N. Y.

LOCOMOTIVE-DRIVER BRAKE.

SPECIFICATION forming part of Letters Patent No. 468,254, dated February 2, 1892.

Application filed October 21, 1891. Serial No. 409,394. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH ELIE NORMAND, a citizen of the United States, residing at Watertown, in the county of Jefferson and State of New York, have invented new and useful Improvements in Locomotive-Driver Brakes, of which the following is a specification.

This invention relates to that type of locomotive-driver brakes wherein an equalizing-lever comprising two crank-arms is connected with pivoted hangers on which the shoe-brakes are mounted, for the purpose of producing an equalized pressure of all the brake-shoes on these several wheels. As heretofore constructed the equalizing-lever is pivoted to the brake-operating lever and the adjusting devices employed to compensate for wear of the brake-shoes are connected with one of the crank-arms of the equalizing-lever. In consequence of this when the adjusting devices are operated the equalizing-lever is moved and its position is varied relatively to the brake-operating-lever which carries such equalizing-lever.

The object of my invention is to provide a novel arrangement whereby the equalizing-lever is mounted on the hanger which carries a brake-shoe, and the adjusting devices are connected with the center of the equalizing-lever in such manner that the adjusting devices can be operated to compensate for wear of the brake-shoes without in any manner changing the position of the crank-arms of the equalizing-lever from their normal working position.

The invention also has for its object to provide a spring-carrying block for the purpose of preserving the face of a gravity brake-shoe concentric with the wheel, which spring-carrying block is so adjustably arranged on the hanger as to entirely avoid any forward projection of its adjusting set-screw which would interfere with the close arrangement of the truck-wheels relatively to the driver-wheels of the locomotive.

To accomplish these objects, my invention involves the features of construction and the combination or arrangement of devices hereinafter described and claimed, reference being made to the accompanying drawings, in which—

Figure 1 is a side elevation showing sufficient of a car to illustrate my invention. Fig. 2 is a detail perspective view of the equalizing-lever, the hanger to which it is pivoted, and the adjusting devices employed to compensate for wear of the brake-shoes; and Fig. 3 is a detail perspective view, on an enlarged scale, showing the spring-carrying block, the hanger, and the brake-shoe.

In order to enable those skilled in the art to make and use my invention, I will now describe the same in detail, referring to the drawings, wherein—

The numeral 1 indicates the frame-work of a locomotive, 2 the driver-wheels, and 3 the truck or pilot wheels. The frame-work is provided with suitable brackets, to which are pivoted the pendulous hangers 4, on which the gravity brake-shoes 5 are mounted. The shoe-backs 6 of the gravity brake-shoes are centrally pivoted to the pendulous hangers intermediate the extremities thereof, and to the lower end portion of the hanger, which is suspended between the driver-wheels 2, is pivoted one crank-arm 8 of an equalizing-lever 9. The other crank-arm 10 of this equalizing-lever is connected by a rod 12 with the lower end of the hanger 4, which is suspended between the front driver-wheel and the pilot or truck wheels.

The two crank-arms of the equalizing-lever are preferably arranged to stand in a perpendicular plane, and the center of this lever is connected with one section 13 of a turn-buckle, the other section 14 of which is pivoted to the lower extremity of an oscillatory brake-operating lever 15, which is hung intermediate its extremities, as at 16, to a suitable bracket on the frame-work of the locomotive.

The brake-operating lever 15 may be operated by means of fluid-pressure, as usual in driver-brakes, or it may be operated manually or in any other manner suitable for the conditions required, and therefore I do not deem it essential to illustrate or describe any particular mechanism for moving the brake-operating lever to actuate the brakes.

If the brake-operating lever 15 is moved in one direction, it transmits power through the adjusting device to the equalizing-lever, thereby swinging the pendulous hangers and

forcing the brake-shoes against the driver-wheels with an equalized pressure. When the brake-operating lever is released or moved in the opposite direction, the brake-shoes are released from the wheels.

The adjusting device is preferably composed of a turn-buckle wherein the screw-rod section 13 engages a screw-thread on the interior of the tubular section 14, so that by turning the section 14 the turn-buckle is lengthened or shortened to suit the conditions required for the proper action of the brake-shoes. When the brake-shoes become unduly worn, the adjusting devices can be operated to lengthen the turn-buckle and thereby move the brake-shoes toward the driver-wheels to compensate for wear.

In order to maintain the acting faces of the gravity brake-shoes concentric with the periphery of the driver-wheels, I provide each pendulous hanger 4 with a spring-carrying block 17, mounted centrally between its extremities on a stud or shaft 18, projecting from the hanger, so that the block can have a limited oscillating movement on the stud or shaft. The block is provided at one extremity with a lateral shoulder 19 and at the opposite extremity with a tail-piece 20, through which passes a set-screw 21, which bears at its inner end portion against the shoe-back in proximity to the pivot 7 thereof. A flat or leaf spring 22 is connected at one end to the stud or shaft 18 of the hanger, and between such stud or shaft and the free extremity of the spring the latter rests against the shoulder 19 of the block 17. The free extremity of the spring bears against the lower extremity of the gravity brake-shoe and sustains the latter in the position required to maintain the face of the brake-shoe concentric or parallel with the periphery of the driver-wheel. The power or tension of the spring can be regulated by adjusting the set-screw 21, and for the purpose of locking the set-screw in the position to which it is adjusted I provide a lock-nut 23, which engages the set-screw and is adapted to bear against the tail-piece 20 of the block 17.

By pivoting the spring-carrying block 17 on the laterally-projecting stud or shaft 18 of a pendulous hanger 4 and arranging the set-

screw to bear against the shoe-back in proximity to the pivot thereof I entirely avoid any undue projection of the set-screw in front of the pendulous hanger. This is important with respect to the hanger which is suspended between the front driver-wheel and the pilot or truck wheels, as it enables the latter to be closely arranged to the front driver-wheels without liability of striking the adjusting device of the spring-carrying block.

The drawings exhibit the arrangement at one side only of a locomotive; but in practice the parts are the same at each side and the forward hangers are preferably connected by a cross-beam or tie-bar 24.

I have shown and described a turn-buckle as constituting the adjusting devices; but any suitable rod connection which is lengthwise adjustable may be employed to connect the brake-operating lever with the equalizing-lever.

Having thus described my invention, what I claim is—

1. In a locomotive-driver brake, the combination, with a brake-operating lever and pendulous hangers carrying pivoted brake-shoes, of an equalizing-lever comprising two crank-arms, one of which is connected to a hanger, a connection between the other crank-arm and the other hanger, and adjusting devices connecting the brake-operating lever with the equalizing-lever, substantially as described.

2. The combination, in a locomotive-driver brake, of a pendulous hanger having a stud or shaft projecting laterally from one side, a gravity brake shoe pivoted to the hanger, a spring-carrying block pivoted on the lateral stud or shaft, a spring sustained by the block and acting on the lower portion of the brake-shoe, and an adjusting set-screw carried by the block and bearing against the shoe-back in proximity to the pivot thereof, substantially as described.

In testimony whereof I have hereunto set my hand and affixed my seal in presence of two subscribing witnesses.

JOSEPH ELIE NORMAND. [L. S.]

Witnesses:

GEORGE W. REA,

J. A. RUTHERFORD.