(No Model.)

L. P. LAWRENCE.

RAILWAY BRAKE.

No. 433,412. Patented July 29, 1890.

Fig. 1.

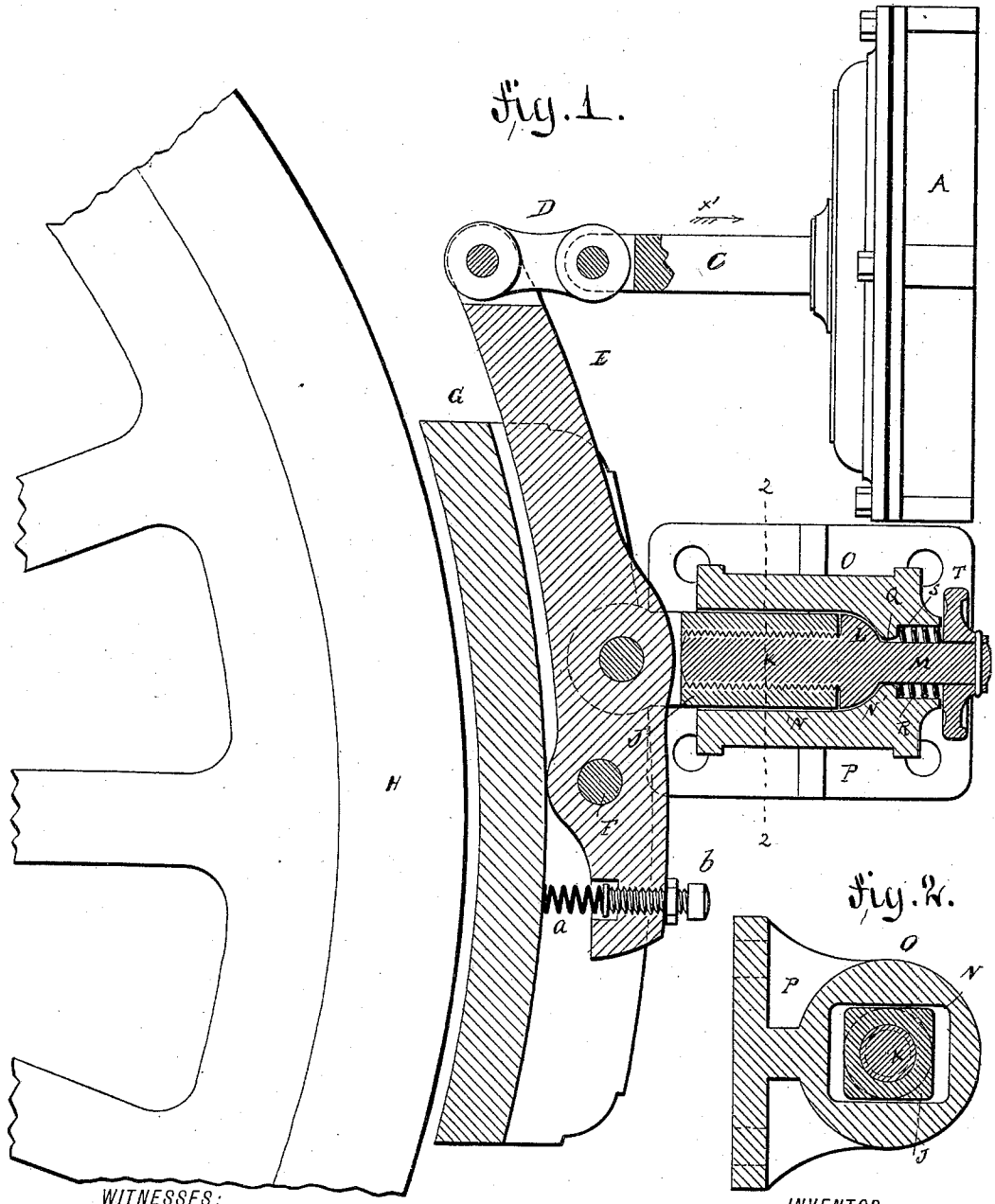


Fig. 2.

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RAILWAY-BRAKE.

SPECIFICATION forming part of Letters Patent No. 433,412, dated July 29, 1890.

Application filed November 21, 1889. Serial No. 331,105. (No model.)

To all whom it may concern:

Be it known that I, LOUIS P. LAWRENCE, of Passaic, in the county of Passaic and State of New Jersey, a citizen of the United States, have invented certain new and useful Improvements in Railway-Brakes, of which the following is a specification.

This invention relates to improvements in power-brakes for railways, and mainly to a brake for the driving-wheel of the locomotive.

The invention consists in the combination, with the cylinder, piston-rod, and brake-shoe, of a lever pivoted to the piston-rod and to the brake-shoe, and a fulcrum-bar at the side of the locomotive-frame.

The invention also consists in the construction and combination of parts and details, as will be fully described hereinafter, and finally be pointed out in the claims.

In the accompanying drawings, Figure 1 is a vertical transverse sectional view of my improved brake. Fig. 2 is a cross-sectional view on the line 2 2, Fig. 1.

Similar letters of reference indicate corresponding parts.

The cylinder or chamber A is bolted to the side plate of the locomotive and contains a diaphragm and piston of the usual construction, which need not be described here, and from said piston a rod C projects through an aperture in the head of the cylinder or chamber A. Said rod C is connected by a pivoted link D with the upper end of a lever E, pivoted at F to the brake-shoe G, which is located adjacent to the wheel-rim H. A greater or less distance above the pivot F, connecting the lever E with the brake-shoe, the outer end of a fulcrumed bar J is pivoted to the lever E, which fulcrum-bar is provided with a longitudinally-screw-threaded bore for receiving the threaded stem K, provided with a rounded shoulder or collar L and with an extension M. The fulcrum-bar J is inserted into a recess N of a block O, projecting from a bracket P, securely bolted to the side plate of the locomotive, which recess N is of such size transversely that the fulcrum-bar can swing laterally in the same. To prevent the fulcrum-bar J from turning, it is made of such shape that its sides rest against the top and bottom of the recess. The inner end of the recess N is rounded, as at N′, to form a seat for the rounded collar or shoulder L of the stem K, and at the inner end of said recess an aperture Q is formed in the block O, through which aperture the extension M of the stem K passes. A helical spring R is placed into the recess S in the rear end of the block O, and bears against a cross-piece or end plate T, fastened on the outer end of the extension M. The spring R holds the rounded shoulder L against the rounded inner end of the recess N quite snugly, thereby preventing undue rattling of the parts. A helical spring *a* is interposed between the back of the brake-shoe and a set-screw *b* in the lower end of the lever E for the purpose of maintaining the equilibrium of the shoe.

The operation is as follows: Either by exhausting the air from the cylinder A or by forcing compressed air or steam or any other suitable fluid into said cylinder the rod C is moved in the direction indicated by the arrow *x*′, whereby the brake-shoe is moved in the inverse direction of the arrow *x*′ and presses against the wheel-rim H, the pivot connecting the fulcrum-bar J and lever E being the fulcrum. In case the shoe G wears off, the same must be adjusted so as to at all times be the proper distance from the wheel-rim. To so adjust the shoe, the wheel or cross-piece T on the rear end of the extension M of the stem R is turned on its longitudinal axis. As the fulcrum-bar J cannot turn on account of its shape and the shape of the recess N, said fulcrum-bar must necessarily travel on the stem K in the direction toward the wheel-rim, and thereby the shoe is adjusted the proper distance from the wheel-rim. Any wear of the shoe can thus be taken up, so that the shoe will at all times be in the proper position in relation to the rim of the wheel. As the rounded collar L rests against the rounded inner end of the recess N in the block O, and as said recess N is wider than the fulcrum-bar J, said fulcrum-bar J can swing laterally in the recess N, and thus can move with the lever E, shoe G, and wheel-rim H when the same vibrate laterally, as almost constantly occurs on locomotive-wheels.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a power-brake, the combination, with

a cylinder or chamber, a piston-rod projecting from the same, and a brake-shoe, of a lever connected with the piston-rod and pivoted to the brake-shoe, and a fulcrum-bar held on the locomotive-frame adjustable toward or from the wheel-rim, adjacent to which bar the lever is pivoted, substantially as set forth.

2. The combination, with a cylinder or chamber, a piston-rod, and a brake-shoe, of a lever connected with the piston-rod and pivoted to the shoe, a block on the locomotive-frame, and a fulcrum-bar pivoted to the above-mentioned lever and located adjustably within said block, substantially as set forth.

3. The combination, with a cylinder or chamber, piston-rod, and brake-shoe, of a lever connected with said piston-rod and pivoted to the brake-shoe, a block held on the locomotive-frame, a fulcrum-bar located in said block and pivoted to the above-mentioned lever, and a screw for moving said fulcrum-bar toward or from the wheel-rim, substantially as set forth.

4. The combination, with a cylinder or chamber, piston-rod, and brake-shoe, of a lever pivoted to the piston-rod and pivoted to the brake-shoe, a block projecting from the locomotive-frame and having a recess, the inner end of which is rounded, a screw-threaded stem having a rounded shoulder resting against the rounded inner end of said recess, and a fulcrum-bar screwed on said threaded stem and connected with the above-mentioned lever that is pivoted on the brake-shoe, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

LOUIS P. LAWRENCE.

Witnesses:
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