(No Model.) 2 Sheets—Sheet 1.

H. F. SHAW.

RAILWAY CAR BRAKE SHOE SLACK ADJUSTER.

No. 599,662. Patented Feb. 22, 1898.

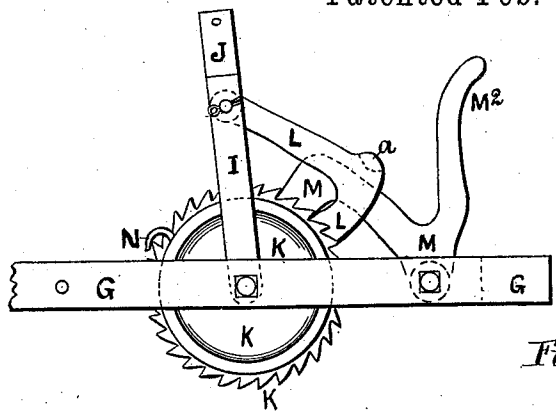


Fig. 1.

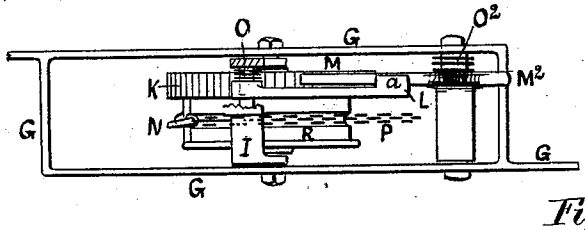


Fig. 2.

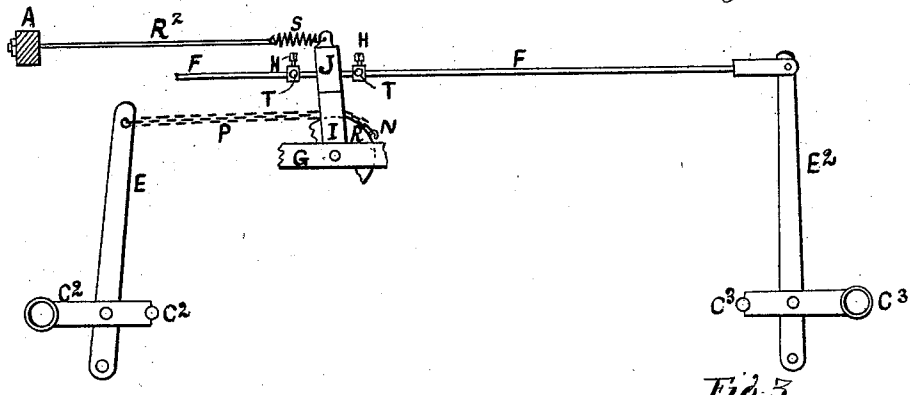


Fig. 3.

Witnesses

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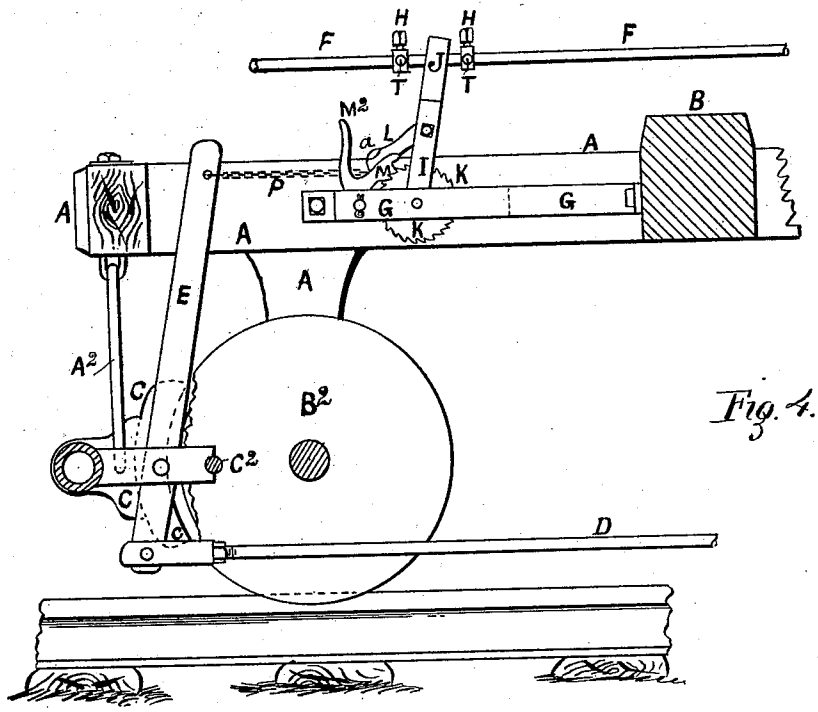


Fig. 4.

Witnesses

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UNITED STATES PATENT OFFICE.

HENRY F. SHAW, OF BOSTON, MASSACHUSETTS, ASSIGNOR OF TWO-THIRDS TO AMES A. LINCOLN, OF QUINCY, AND RALPH F. ALVORD, OF NEWTON, MASSACHUSETTS.

RAILWAY-CAR BRAKE-SHOE SLACK-ADJUSTER.

SPECIFICATION forming part of Letters Patent No. 599,662, dated February 22, 1898.

Application filed September 28, 1897. Serial No. 653,376. (No model.)

To all whom it may concern:

Be it known that I, HENRY F. SHAW, of Boston, in the county of Suffolk and State of Massachusetts, have invented an Improvement in Railway-Car Brake-Shoe Slack-Adjusters, of which the following is a specification.

The object of my invention is to provide means for automatically actuating the mechanical devices forming the brake-shoe slack-adjuster that when the brake-shoe is sufficiently worn away by contact with the periphery of the revolving car-wheel as to require adjustment of the shoe in relation to its most efficient position therewith, by which such wear may be compensated for, as to reestablish the normal position of the contact-surface of the brake-shoe with the car-wheel as to render such frictional contact instantaneous when the air-brake mechanisms are applied in the usual manner; and it consists in the construction, combination, and arrangement of the several parts of the device, as hereinafter more fully described, and specifically set forth in the claim.

To the drawings hereto annexed, which form a part of this specification, reference is made.

Figure 1 represents a side elevation showing a slack-adjuster constructed according to my invention detached from the brake mechanism. Fig. 2 represents a top plan of the same. Fig. 3 represents a side elevation showing a portion of the slack-adjuster in position with the actuating brake-rod connected to one of the brake-levers and connecting devices to actuate the other brake-lever. Fig. 4 represents a sectional elevation showing the slack-adjuster in position with a portion of the truck-frame, wheel, brake-shoe, and connecting tie-rod and brake-rod in position for use.

A represents the inward end portion of the truck-frame, provided with the bolster B, at which point the truck-frame is pivoted centrally to the car-body in the usual manner. The inward end of this truck-frame is provided with a pivoted suspension-link A^2, to the lower end of which is connected the truss-frame C^2, carrying the brake-head and brake-shoe C, and within this truss-frame is pivoted the vertical dead-lever E, to the extreme lower end of which is pivoted one end of the horizontal tie-rod D, the opposite end of which is pivoted to the lower end of the vertical live-lever E^3, pivoted within the opposite truss-frame C^3, as heretofore and now in general use, as shown in Figs. 3 and 4. To the upper end of the said live-lever E^2 is pivoted one end of the horizontal actuating brake-rod F, the opposite end being pivoted, as usual, to the horizontal floating lever, (not shown,) whereby the brakes are simultaneously applied upon the wheels B^2 at the opposite ends of the truck-frames A, when the brake mechanism is put in action as heretofore and now in general use for the purpose. Now in order that when the brake-shoe C becomes worn away upon its contact-face by friction on the periphery of the car-wheel B^2 through the action of the brakes when applied to stop the rotation of the car-wheels in the usual manner it is necessary that the brake-shoes should be frequently adjusted, as the faces of the same become worn away by such frictional contact with the car-wheels, to insure the instantaneous action of the brakes when applied, I provide the inward end portions of the truck-frames A with an automatic slack-adjuster consisting of a suitable horizontal frame G, bolted firmly to the truck-frame A and having pivoted therein centrally at its lower end the vertical actuating-frame I, having its top portion J extended a short distance and connected to one end of the check-spring S, the opposite end being connected to the horizontal rod R^2, the opposite end of which is secured to the truck-frame A, as shown in Fig. 3, for the purpose of checking the impact of the blow imparted thereto by the adjustable stops, strikers, or projections T, secured upon the brake-rod F by means of the set-screws H, as shown in Figs. 3 and 4, or in any suitable manner, as hereinafter described, to render the same effective. Within the said frame G is journaled the drum R, provided with a suitable peripheral groove to receive the chain P, one end of which is attached to the projecting hook N, as shown, or in any suitable manner desired, and the opposite end of said chain is attached to the up-

per end of the vertical dead-lever E, thereby making a flexible connection between the said dead-lever E and the drum R, as essential in the automatic operation of the slack-adjuster, as hereinafter more fully described. The said chain-drum R has formed integral therewith or secured thereto the ratchet K, and the said horizontal frame G has pivoted therein at one end the retaining spring-pawl M, engaging with the ratchet-teeth K by means of the spiral spring O^2, one end of which is secured to the frame G and the opposite end to the said retaining-pawl M. The removal of the pawls M and L from the ratchet is produced by means of the curved projecting handle M^2 being pressed downward by hand in order to release the chain P on the drum R when the full extent of the slack has been taken up, caused by wearing out the brake-shoe C, and in order to replace the same by a new one, as hereinafter described.

Now in order to actuate the chain-drum R and connected ratchet K automatically and frequently or at intervals as the brake-shoe C is worn away I provide the horizontal brake-rod F with the adjustable strikers or projections T, so that when the said brake-rod F is moved horizontally in applying the brakes the projection or upper end portion J of the frame I will be forcibly brought into contact with the said strikers T, so as to force the same forward or in the direction to permit the actuating spring hook-pawl L to pass over one of the ratchet-teeth and engage with the next tooth, the said actuating hook-pawl L, is pivoted at its upper end within the said operating-frame I and held in contact at its lower end by means of the coiled spiral spring O, one end of which is connected to the pivoted end of the hook-pawl L and the other end to the frame I, so that the reverse movement of the said brake-rod F imparts the opposite motion to the said frame I, and consequently the hook-pawl L, and thereby rotates the ratchet K and chain-drum R a short distance, and thus takes up the said chain P correspondingly, and thereby holds the said dead-lever E from returning to its normal or former position. This action serves to hold the brake-shoes close up to the car-wheels and frequently renew or relatively retain such close position with the wheels as often as the shoes are sufficiently worn to permit such automatic adjustment to take place until the brake-shoes become worn as to require removal of the same and the application of new shoes instead. It will be seen that when the said pawl M is raised up by its handle a sufficient distance a projection *a*, provided upon the said actuating hook-pawl L, contacts with the upper surface of the said retaining-pawl M, so that when the handle M^2 is forced downward sufficiently by one hand both pawls L and M are disengaged from the ratchet-teeth simultaneously, as desired. The said check-spring S and horizontal rod R, as shown in Fig. 3, may also be extended to the right or in the opposite direction, or a check-spring may be provided at each side of the actuating-frame J, if desired, or the same may be omitted altogether without departing from the essential features of my invention. It will be seen and understood that the said handle M^2 upon the retaining-pawl M is a matter of convenience in disengaging the spring-pawls from the ratchet in order to release the chain-drum.

It will be seen and understood that a part of the pivoted vertical frame I J is differently shown in Figs. 1, 3, and 4, the part J being shown as a slight modification, as desired, to effect the same result when in operation.

Having thus described my invention, what I claim is—

A slack-adjuster for railway-car brake-shoes consisting of a dead brake-lever provided with a chain connected to a rotary drum and ratchet, and an oscillating frame having an actuating-pawl provided with a horizontal projection near the free lower end thereof, the retaining-pawl extending beneath said horizontal projection and engaging with the teeth of the ratchet on the same side with the actuating-pawl and provided with a lever-handle, whereby both pawls may be disengaged from the teeth of the ratchet by pressure on the handle, so as to release the chain as described, for the purposes set forth.

HENRY F. SHAW.

Witnesses:
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G. C. SLEEPER.