No. 696,523. Patented Apr. 1, 1902.

H. A. WAHLERT.

BRAKE SLACK ADJUSTER.

(Application filed Aug. 3, 1901.)

(No Model.)

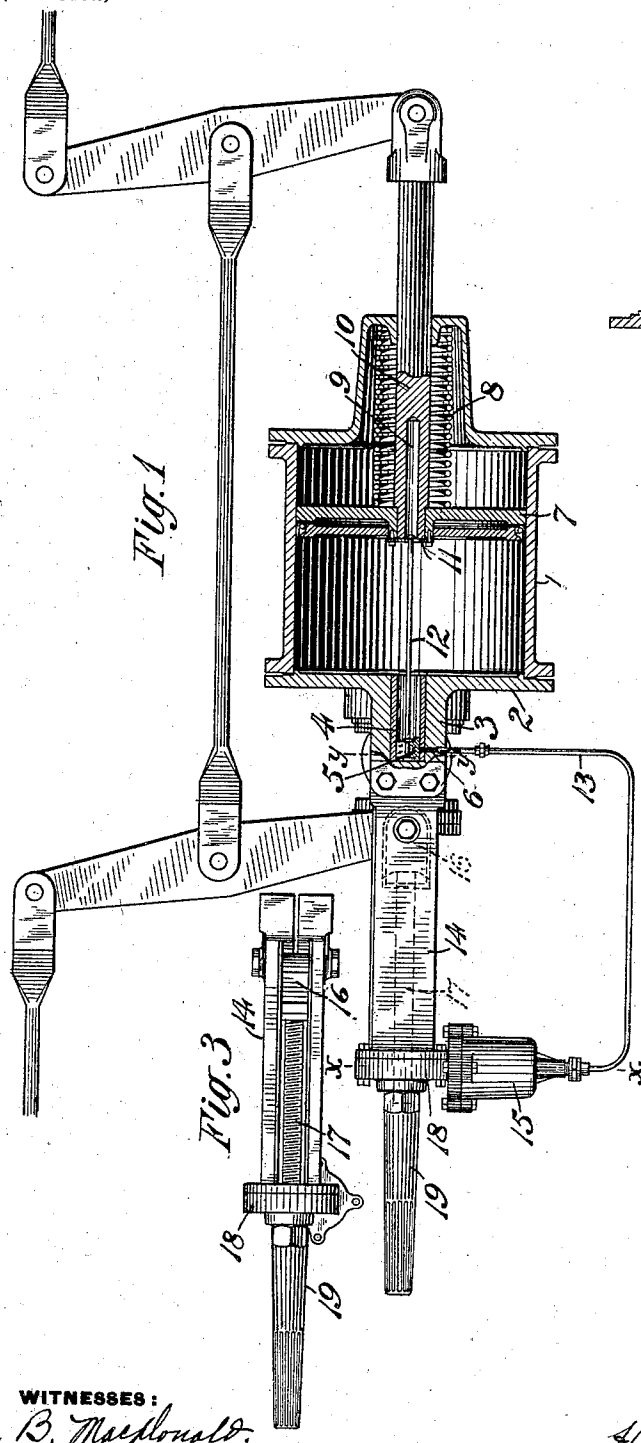


Fig. 1

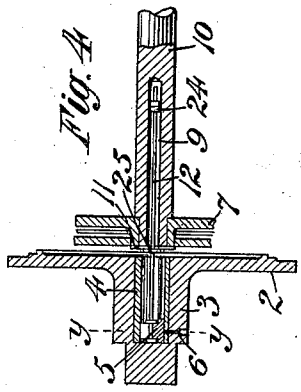


Fig. 4

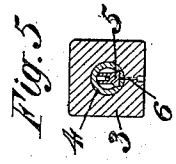


Fig. 5

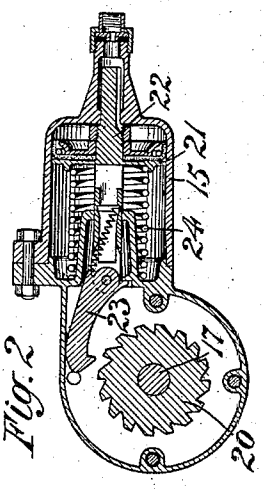


Fig. 2

Fig. 3

WITNESSES:

Jas. B. Macdonald.

J. S. Custer

INVENTOR,

Henry A. Wahlert

by E. W. Wright Att'y.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

HENRY A. WAHLERT, OF ST. LOUIS, MISSOURI, ASSIGNOR TO THE AMERICAN BRAKE COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF MISSOURI.

BRAKE SLACK-ADJUSTER.

SPECIFICATION forming part of Letters Patent No. 696,523, dated April 1, 1902.

Application filed August 3, 1901. Serial No. 70,755. (No model.)

To all whom it may concern:

Be it known that I, HENRY A. WAHLERT, a citizen of the United States, residing in the city of St. Louis, State of Missouri, have invented or discovered a certain new and useful Improvement in Brake Slack-Adjusters, of which improvement the following is a specification.

My invention relates to that class of slack-adjusters for railway-brakes in which air from the brake-cylinder is used to actuate a take-up motor for operating a ratchet-driven screw or other slack-adjusting mechanism; and it consists in providing an improved construction by means of which air from the brake-cylinder is admitted to the pressure-pipe of the take-up motor when the travel of the brake-cylinder piston becomes greater than desired.

In the accompanying drawings, Figure 1 shows a horizontal section of a brake-cylinder embodying my improved construction, the slack-adjuster and cylinder-levers being shown in plan view. Fig. 2 is a transverse section of the take-up motor, taken on the line $x\ x$ of Fig. 1. Fig. 3 is a side elevation of the slack-adjuster casing. Fig. 4 is a detail sectional view of a cylinder-head and piston, showing a slightly-modified form of my improvement; and Fig. 5 is a transverse section of the cylinder-head extension, taken on the line $y\ y$ of Figs. 1 and 4.

According to my invention the brake-cylinder 1 is provided with a head 2, having an extension 3, in which is located the bushing 4, forming a valve-seat for the slide-valve 5. The rod 10 of the brake-piston 7 is formed with a recess 9, extending lengthwise of the rod, the outer end of said recess being covered by a plate 11, which is secured to the piston. Through an opening in said plate passes the valve-stem 12, having a head which is adapted to engage the under side of plate 11 or the outer end of the recess 9 in the piston-rod.

As shown in modified form in Fig. 4, the valve-stem is provided with a collar 25, adapted to engage the outer side of the plate 11 when the brake-piston is in release position, and an adjustable nut 24 near the end of the valve-stem for engaging the under side of the plate when the brake-piston is forced outward to apply the brakes.

A port 6, normally closed by the slide-valve, is located in the extension 3 of the brake-cylinder head and connects with the pressure-pipe 13, leading to the take-up motor 15 of the slack-adjuster mechanism.

I have shown a slack-take-up mechanism comprising a casing 14, secured to the brake-cylinder head and forming a guide for the fulcrum-block 16, in which the dead cylinder-lever is pivoted. An adjusting-screw 17 is secured to the fulcrum-block and passes through a ratchet-nut 20, which is operated by the take-up motor 15, comprising piston 21, stem 22, pawl 23, and spring 24.

A cover 18 is provided for the ratchet-nut, and this nut may be formed with a hollow extension 19 for inclosing the end of the screw.

Various other forms of take-up mechanism may be used, however, and it is to be understood that this invention is not limited to any particular form, nor is the specific form of adjusting mechanism and take-up motor claimed in this application, as such construction forms the subject-matter of my copending application, Serial No. 70,753, filed of even date herewith.

In the operation of my device when upon an application of the brakes the brake-piston makes too long a stroke the head or nut on the valve-stem 12 is engaged by the plate 11 and the valve 5 is drawn away from its normal position sufficiently to uncover the port 6. Air under pressure from the brake-cylinder then passes to the take-up motor and causes the pawl 23 to engage with the teeth of the ratchet-nut. Then when the air is released from the brake-cylinder in the usual way the spring 8 returns the brake-piston to its inner position, but the port 6 remains open until the brake-piston has nearly reached the end of its inward movement, and the valve-stem engages the end of the recess 9, or the collar on the stem engages the plate 11. During this time the air has also been exhausted from the take-up motor, and the spring 24 operates to move the pawl and rotate the ratchet-nut, thus taking up the slack. The last part of the return movement of the brake-piston moves the slide-valve 5 to its normal

position and covers the port 6. This operation is repeated at each application of the brakes whenever the brake-piston moves far enough to cause the valve to uncover its port.

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

1. The combination of a brake-cylinder, a port therein adapted to be connected with a take-up motor of a slack-adjusting mechanism, a valve for normally closing said port and means operated by the brake-cylinder piston for opening said valve when the piston traverses beyond a certain point.

2. The combination with a brake-cylinder head having a port therein adapted to be connected with a take-up motor of a slack-adjusting mechanism, of a valve for normally closing said port and means operated by the brake-piston for opening said valve.

3. In a brake-cylinder, the combination with the cylinder-head having a hollow extension and a port therein, communicating with the take-up motor of a slack-adjusting mechanism, of a slide-valve for normally closing said port and means operated by the brake-piston when it passes a certain point of its traverse for opening said valve.

4. In a brake-cylinder, the combination with the cylinder-head having a port communicating with the take-up motor of a slack-adjusting mechanism, of a valve for normally closing said port, and a valve-stem connected to the piston for opening said valve at a certain point in the traverse of the piston.

5. In a brake-cylinder, the combination with the cylinder-head having a port communicating with the take-up motor of a slack-adjusting mechanism, of a valve for normally closing said port, a valve-stem for the valve, a piston having a hollow rod into which the valve-stem extends and a plate secured at the end of the hollow rod for moving the valve when the piston passes a certain point of its traverse.

6. The combination of a brake-cylinder, a take-up motor of a slack-adjusting device, a passage from the brake-cylinder to the take-up motor, a valve for normally closing said passage and means operated by the movement of the brake-piston for controlling said passage.

In testimony whereof I have hereunto set my hand.

HENRY A. WAHLERT.

Witnesses:
JAS. B. MACDONALD,
E. A. WRIGHT.