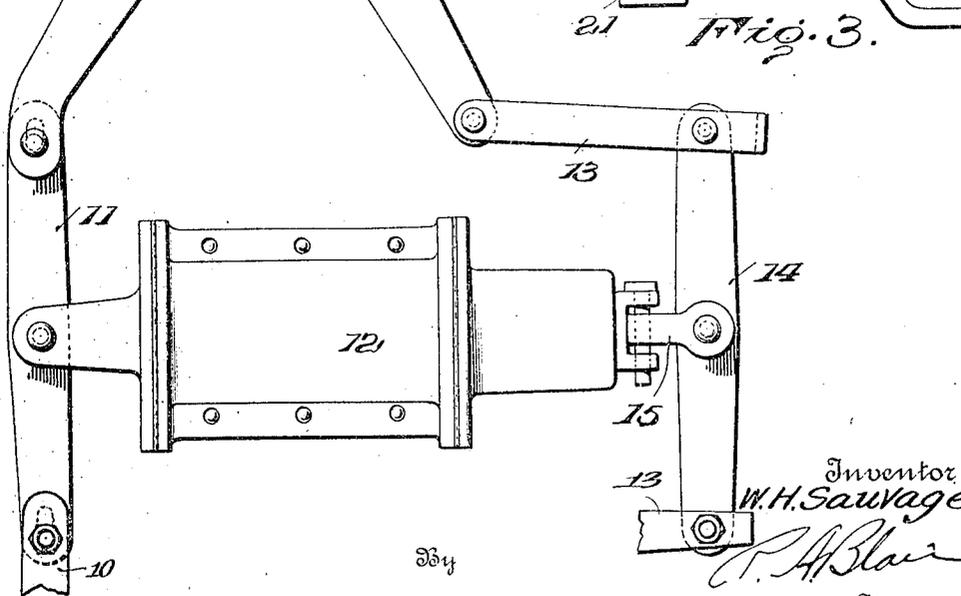
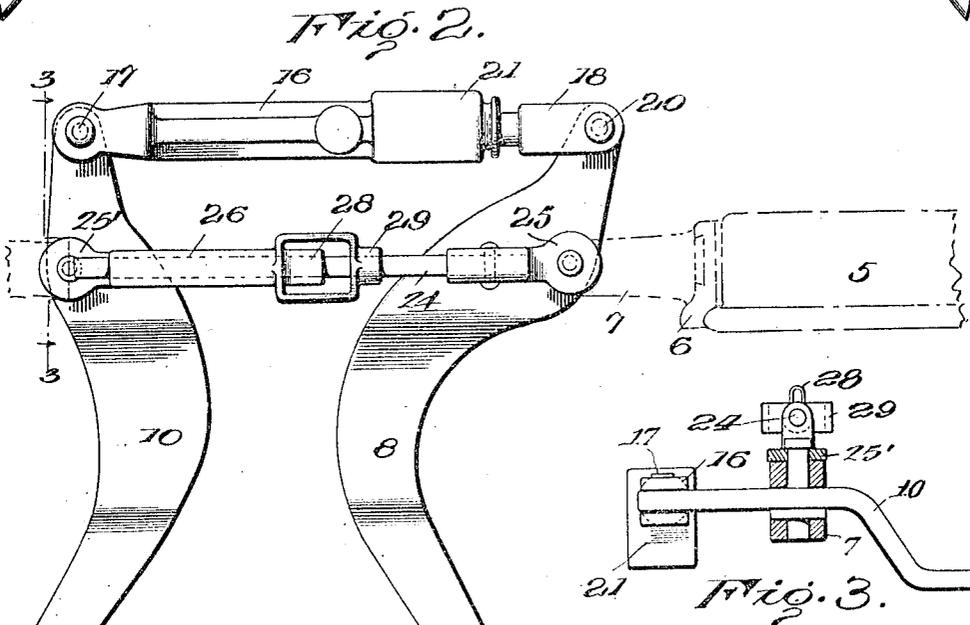
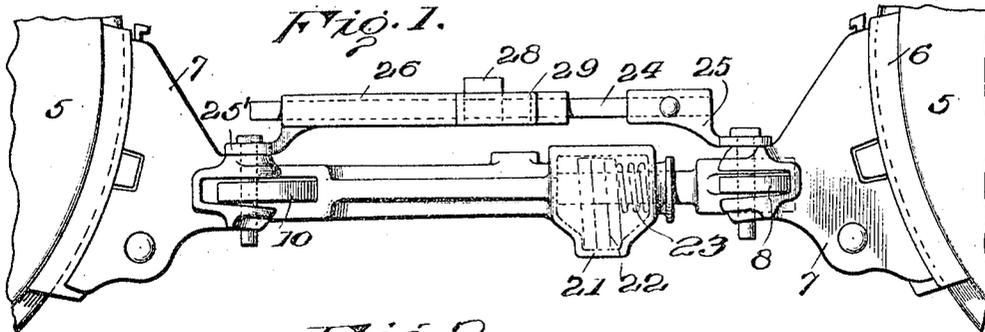


W. H. SAUVAGE,
SLACK ADJUSTER.
APPLICATION FILED JAN. 31, 1918.

1,298,573.

Patented Mar. 25, 1919.



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SLACK-ADJUSTER.

1,298,573.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WILLIAM H. SAUVAGE, a citizen of the United States of America, residing at Flushing, Long Island, in the county of Queens and State of New York, have invented certain new and useful Improvements in Slack-Adjusters, of which the following is a specification.

This invention relates to slack adjusters, particularly adapted to take up the slack due to wear of the parts of the brake rigging associated with locomotive trucks.

One of the objects of the present invention is to provide an automatic slack adjuster for the pony trucks of a locomotive which may be easily applied to the trucks now in use. Another object is to provide an apparatus of the above character of simple and practical construction and having relatively few parts which will be inexpensive to manufacture and assemble. A further object is to provide an automatic slack adjuster of the first above mentioned type of compact arrangement and adapted to be positioned at either side of the truck and operate uniformly by a single source of power.

Other objects will be in part obvious from the annexed drawings and in part indicated in connection therewith by the following analysis of this invention.

This invention accordingly consists in the several features of construction, combination of parts and in the unique relations of the members and in the relative proportioning and disposition thereof; all as more completely outlined herein.

To enable others skilled in the art so fully to comprehend the underlying features thereof that they may embody the same by the numerous modifications in structure and relation contemplated by this invention, drawings depicting a preferred form have been annexed as a part of this disclosure, and in such drawings, like characters of reference denote corresponding parts throughout all the views, of which:

Figure 1 is a side elevation of such parts of a locomotive pony truck and the associated brake rigging as are necessary to understand the present invention;

Fig. 2 is a plan view of one half of the brake rigging, the other half being similar thereto;

Fig. 3 is a detail sectional elevational view

of some of the parts shown in Fig. 2, taken substantially along the line 3—3, Fig. 2.

Referring now to the drawing in detail and more particularly to Fig. 1, 5 denotes the wheels of the pony trucks adapted to be engaged by brake shoes 6 carried by heads 7. These heads are actuated by live and dead levers 8 and 10 respectively, the dead levers at each side of the truck being connected by means of a link 11 supported from an air pressure cylinder 12, while the live levers are each connected by means of an auxiliary link 13 to a cross link 14 pivotally connected with a spring returned piston 15 of the usual cylinder 12. These levers are supported in any desired manner from the truck framing, not shown.

The two brake shoe heads 7 at each side of the truck are connected by means of a slack adjuster. This includes a telescopic take up rod or push rod. One part 16 is of tubular construction and is pivotally connected at 17 with one end of the dead lever 10, while the other part 18 is solid and telescopes therewith. This member 18 is pivotally connected at 20 with the free end of live lever 8.

The tubular member 16 is provided near one end with an enlarged chamber or housing 21 carrying a plurality of permanent take up and holding devices such as dogs 22, each of which consists of a rectangular piece of sheet metal having a central opening with case hardened edges through which the take up rod 18 is adapted to pass. It will be noted that these dogs are held against any material endwise movement by a restricted portion of the housing as clearly shown in Fig. 1 and are normally held in canted position by means of a spring 23 coiled about the rod and reacting against one end of the chamber. This case may be provided, if desired, with a suitable unlocking or dog release lever, as shown, for example, in my prior Patent #1,227,940, dated May 29, 1917.

These parts are so constructed, positioned and arranged as to permit a relative expansion of the take up rod as the brake shoes and associated parts wear, and give uniform piston travel yet positively prevent an inward telescopic movement thereof until the dogs are released as when replacing the shoes.

The automatic extension of the telescopic push rod is obtained by means of an adjusting rod 24, one end of which is fixed or permanently secured to a casting 25 pivoted at the point of connection between the brake shoe head 7 and the live lever 8, while the opposite end is adapted to slide through a tubular casting 26 pivotally supported at 25' on the upper side of the dead lever 10 at the point of connection 27 between the lever 10 and its associated head. Intermediate the casting 26 and the adjusting rod 24 is a temporary take up device, preferably in the form of a friction spring clamp 28 adapted to coact with the rod with a sufficient degree of pressure to cause a longitudinal extension of the push rod when it is necessary permanently to take up the slack due to the wear of the parts. This clamp 28 normally moves back and forth with an inclosure 29 formed in the casting 26 without operating the slack adjuster at each operation unless there is slack to be taken up.

Due to the relative location of the adjusting rod 24 and the take up rod 16, it will be seen that when abnormal piston travel takes place due to the wear of the parts and particularly the shoes, the friction spring clamp 28 which is of less width than the distance between the ends of inclosure 29 of the casting 26, for the purpose of providing certain lost motion for brake shoe clearance, it will be moved along the adjusting rod 24 an amount corresponding to this excess travel, thus occupying a different relative position after the brakes are applied. When the braking power is released the brake shoe first drops clear of the wheels, as provided for by the lost motion after which the friction clamp engages the left hand side of the bifurcated part or inclosure 29 of the casting 26 which thereafter acts as a fulcrum so that the complete return movement of the live lever to normal position under the action of the cylinder spring will cause an extension of the take up rod a corresponding amount.

It is believed from the above that the construction, operation and method of use of a device or apparatus of this character will be clear. The apparatus is entirely automatic in its operation and will take up the slack during the normal applications of the brakes as such slack develops, no matter how slight. When it is necessary to apply new shoes, the holding means or dogs within the housing are released, as explained in my prior patent, for example, and a bar is inserted between the shoe and wheel to force the parts of the take up push rod back into telescopic relation. New shoes may then be applied and a single application of the brakes will move all of the parts to adjusted position without further manipulation.

It is thus seen that the present invention provides a simple and practical slack adjuster adapted to insure uniform piston travel and automatically take up the slack as it develops in a practical and reliable manner. In short, the invention is designed to accomplish, among others, all of the objects and advantages herein set forth.

Without further analysis, the foregoing will so fully reveal the gist of this invention that others can by applying current knowledge readily adapt it for various applications without omitting certain features that, from the standpoint of the prior art, fairly constitute essential characteristics of the generic or specific aspects of this invention, and therefore such adaptations should and are intended to be comprehended within the meaning and range of equivalency of the following claims.

I claim:

1. In an apparatus of the character described, in combination with a locomotive truck, an air brake cylinder mounted on the truck, live and dead levers associated with said cylinder, and a slack adjuster at each side of the truck connected therebetween and adapted to automatically take up the slack on application of the brakes, said slack adjuster including a two-part longitudinally extensible push rod connecting said levers and a two-part frictional yielding adjusting rod connecting said levers.
2. In an apparatus of the character described, in combination with a locomotive truck, a power cylinder, an automatic slack adjuster at each side thereof adapted to coact with the wheels of the truck at each side of the cylinder, and two pairs of live and dead levers connected with the cylinder for applying the brakes supporting the slack adjuster.
3. In an apparatus of the character described, in combination with a locomotive truck, power means mounted upon the truck between the opposite pairs of wheels, live and dead levers directly connected with opposite ends of said means, brake shoes carried by said live and dead levers coacting with the wheels, and an automatic slack adjuster connected with the live and dead levers adapted to take up the slack due to wear of the parts.
4. In an apparatus of the character described, in combination with a locomotive truck, power means mounted upon the truck between the opposite pairs of wheels, live and dead levers directly connected with opposite ends of said means, brake shoes carried by said live and dead levers coacting with the wheels, and an automatic slack adjuster connected with the live and dead levers adapted to take up the slack due to wear of the parts, said slack adjuster comprising a telescopic take up rod, permanent

holding means associated therewith, and adjusting means adapted to actuate the telescopic rod on release of the brakes.

5. In an apparatus of the character described, in combination with a locomotive truck, an air brake cylinder, a pair of wheels at each side, live and dead levers at each side directly connected with opposite ends of said cylinder, brake shoes carried by said live and dead levers coacting with the wheels, automatic slack adjusters connected with the live and dead levers, adapted to take up the slack due to wear of the parts, each slack adjuster comprising an extensible push rod connecting the ends of one pair of the live and dead levers, and holding means adapted to permit an effective change in length thereof in one direction only, and an adjusting rod connected with said live and dead levers adjacent their point of connection with the brake shoes adapted to actuate said push rod when said brakes are released.

6. In an apparatus of the character described, in combination with the pony truck frame of a locomotive, two pairs of horizontally disposed live and dead levers supported from said frame, a power cylinder carried by said frame and connected with said levers, brake shoes carried by said live and dead levers, and slack adjusters positioned between each pair of live and dead levers, said slack adjusters including permanent take up and holding mechanisms and a two-part extensible adjusting rod, the parts of said adjusting rod having a lost motion yielding frictional connection with each other.

7. In an apparatus of the character described, in combination with the pony truck frame of a locomotive, two pairs of horizontally disposed live and dead levers supported from said frame, brake shoes carried by said live and dead levers, slack adjusters positioned between the ends of each pair of live and dead levers, each slack adjuster comprising a telescopic push rod and an adjusting rod for actuating the same.

8. In an apparatus of the character described, in combination with the pony truck frame of a locomotive, two pairs of horizontally disposed live and dead levers supported from said frame, brake shoes carried by said levers, and a slack adjuster positioned at each side of the truck between the live and dead levers, said slack adjuster comprising a telescopic push rod connected with said live and dead levers, and an adjusting rod associated therewith, said adjusting rod being pivotally supported at its ends from the live and dead levers and provided with a friction clamp adapted to yield on application of the brakes and to actuate the push rod to take up the slack on release of the brakes.

9. In combination with the pony truck frame of a locomotive, an air brake cylinder mounted on the truck frame, brake levers extending horizontally from each side of said cylinder to the wheels at the opposite sides of the truck, an automatic slack adjuster mechanism associated with said levers adapted to automatically take up the slack on application of the brakes.

10. In combination with the pony truck frame of a locomotive, a pair of wheels at each side of said frame, an air brake cylinder mounted on the truck frame centrally with respect to said wheels, oppositely and horizontally extending dead levers connected with one end of said cylinder, oppositely and horizontally extending live levers connected with the piston of said cylinder, brake shoes carried by said levers adapted to coact with the adjacent surfaces of the wheels and automatic slack adjuster mechanism associated with said levers adapted automatically to take up the slack due to wear of the brake shoes.

In testimony whereof I affix my signature in the presence of a witness.

WILLIAM H. SAUVAGE.

Witness:

G. H. DIETZ.