

(No Model.)

L. GUILLEMET.
SLACK TAKE-UP FOR AIR BRAKES.

No. 482,040.

Patented Sept. 6, 1892.

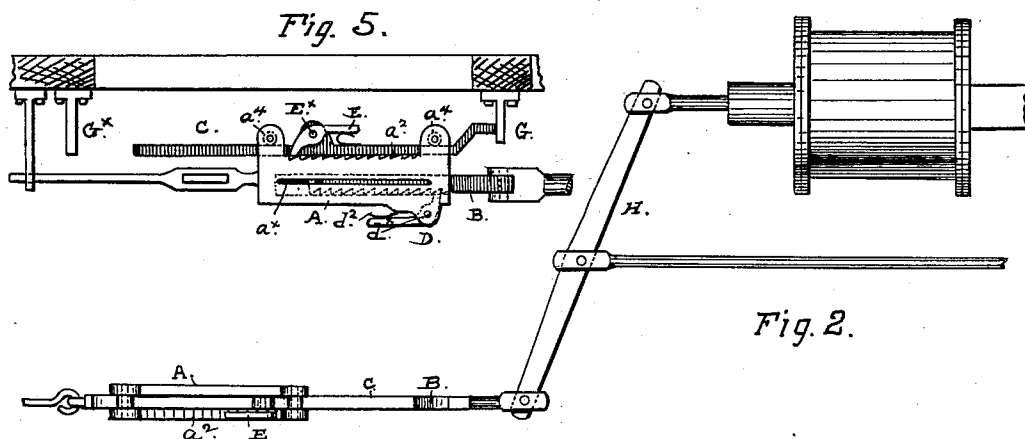
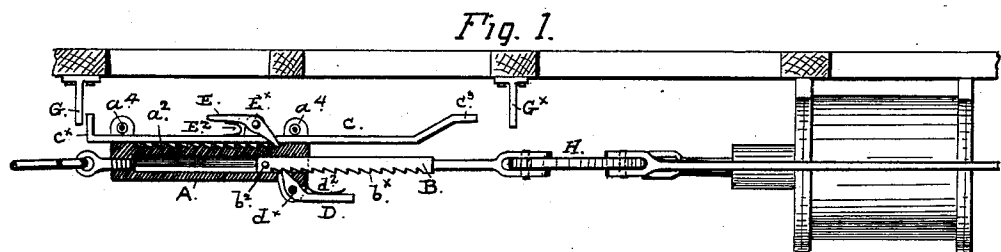


Fig. 2.

Fig. 3.

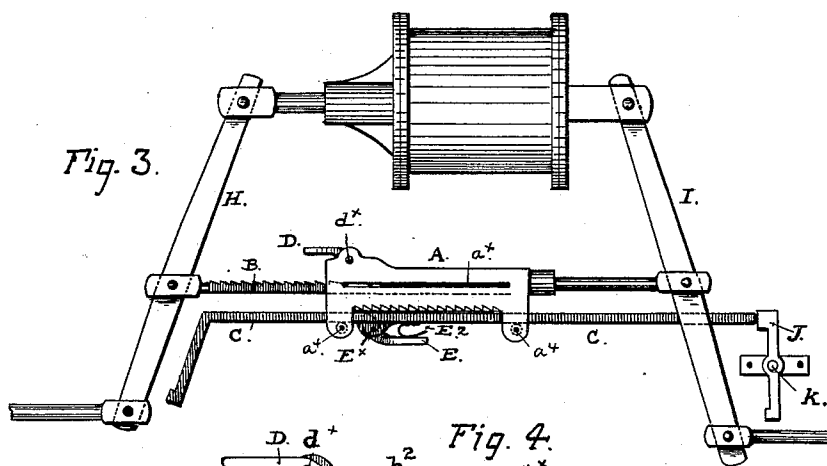
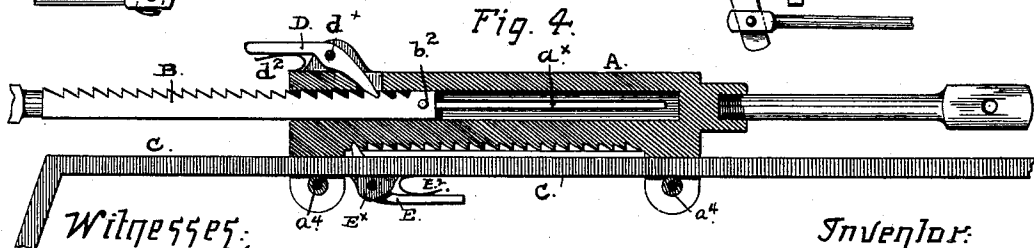


Fig. 4.



Witnesses:

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UNITED STATES PATENT OFFICE.

LEONIDAS GUILLEMET, OF SAN FRANCISCO, CALIFORNIA.

SLACK-TAKE-UP FOR AIR-BRAKES.

SPECIFICATION forming part of Letters Patent No. 482,040, dated September 6, 1892.

Application filed December 9, 1891. Serial No. 414,452. (No model.)

To all whom it may concern:

Be it known that I, LEONIDAS GUILLEMET, a citizen of France, residing in the city and county of San Francisco, State of California, have invented certain new and useful Improvements in Automatic Slack-Take-Ups for Air-Brakes, of which the following is a specification.

My invention relates to improvements in means or devices for taking up the slack or lost movement in the connections between the piston of the brake-cylinder and the brake-beam in the mechanisms of air or vacuum brakes, such as the Westinghouse brake; and my improvements consist in certain novel construction of parts, comprising a telescopic or two-part extensible rod or bar, the parts of which are locked together by pawls and ratchet-teeth, in combination with the brake-operating levers and with self-regulating mechanism, as hereinafter fully described, whereby the length of the two-part connecting rod or bar is automatically varied, according as the wear of the brake-shoes or other parts of the apparatus call for an increase in the length of travel of the piston.

The nature of my said improvements and the manner in which I proceed to construct, apply, and carry out the same will be understood from the following description and the accompanying drawings.

Figure 1 represents the slack-take-up mechanism in elevation set in position under the car between the brake-piston lever and the connecting-rod of the brake-beam. Fig. 2 is a plan. Fig. 3 shows in plan a modification of the slack-take-up with the brake cylinder and levers. Fig. 4 is a longitudinal section on an enlarged scale. Fig. 5 represents a construction in which the parts receive a pushing force, or one acting in the opposite direction to that in Fig. 1.

A B are two rods or bars connected by a telescopic or sliding joint to move longitudinally upon each other, but locked by a set of teeth or notches on one part and a pawl or pawls on the other part, the teeth being of such shape that they permit the two bars to slide in but not to draw out.

In the present construction (represented in Figs. 1 and 2 of the drawings) the bar or part

A is bored or slotted longitudinally to take the part B. A pawl D, pivoted at d^x on the part A and held up by a spring d^2 , sets against a rack b^x , formed on the bar B. A guide-pin b^2 on the end of the bar B is fitted to slide in a groove or slot a^x to keep the two sliding parts from separating.

Mounted on the part A is a slide-bar C, having independent movement, to a limited extent, in a longitudinal direction and projecting at both ends beyond the part A and in line with two fixed stops or abutments G G^x on the car-timbers. Movement of the slide-bar C in one direction is prevented by ratchet-teeth a^2 on the part A and a pawl E, carried by the bar; but the form of the teeth permits the bar to slide on the part A in the opposite direction. The pawl is pivoted at E^x to a lug on the bar C, and is held into the rack by a spring E^2 . The bar is held by rollers a^4 a^4 , between which and the face of the bar it is fitted to slide smoothly. The ends of the two-part sliding bar are connected to the levers H I of the brake mechanism or are placed in some other similar position in the brake apparatus where it will apply a pulling strain to another lever or part of the mechanism. When the brakes are off, the end c^x of the slide C sets against the fixed stop G, and as the brakes are applied a pulling strain on the bar causes the opposite end to advance toward the fixed stop G^x . The parts are so adjusted that if the brakes are brought full on by the normal or ordinary travel of the piston the end c^3 of the slide will approach but will not strike the stop G^x . Any increase in this length to travel beyond this point, however, will bring the slide-bar against the stop G^x and shift the pawl of the slide one or more teeth on the ratchet. By this movement the opposite end of the slide is set forward, or toward the stop G, and consequently on the return stroke, by which the brakes are taken off, the slide will strike and be arrested by the stop and will hold the part A, while the part B is moved in the space of one or more notches on the ratchet b^x . The two-part connecting-bar is thus shortened during the return movement of the brake-levers in releasing the brakes.

The modification represented in Figs. 3 and

4 has the slide-bar arranged to engage with and be moved by the brake-levers instead of directly by the fixed stops. The slide at one end sets in line with one end of a free lever 5 J, that is placed behind the brake-lever I, with its opposite end just back of the outer end of that lever and in position to be struck on the backward movement of the brake-lever, while the opposite end of the bar C is in 10 front of the lever H, to which the piston is directly connected. The lever J is pivoted at $\frac{1}{2}$ on the bottom of the car. The ends of the slide-bar, coming in contact with the levers H and J, shift the slide-bar on the part A and 15 regulate the throw or movement of that part in the same manner as the fixed stops G G^x before described.

Fig. 5 is constructed to bear a pushing force, the racks being set in reverse direction to 20 those in the construction Figs. 1 and 3. This mechanism could be connected at one end to the piston-rod and at the other to the brake-lever, as illustrated in Fig. 5, or it can be set in any other position where it will sustain a 25 pushing force. The slack-take-up thus constructed is susceptible of being placed in a variety of positions to operate in connection with most of the present forms and arrangements of brake-levers, and it can be placed to 30 connect a lever with a lever or with a rod or with its fulcrum-point. It will take a longer throw of the piston-rod beyond its normal or ordinary travel before the pawl of the slide-bar will act on the ratchet-teeth if the device 35 is placed at the end of a lever that has less amount of travel than the piston-rod; but the teeth can be made suitably fine or short to cause the pawl to act as soon as the travel of the piston-rod exceeds by an inch or less its 40 regular throw. Strong springs on the pawl are employed to produce considerable friction and hold the pawls in the teeth, so that they shall not slip out of position.

Having thus fully described my invention

what I claim, and desire to secure by Letters 45 Patent, is—

1. The herein-described slack-take-up for air-brakes, consisting of the two-part bar or part A B, the ratchet-teeth and pawl as a means of connecting the said parts to permit 50 longitudinal movement of one part on the other in one direction, but to lock them together against movement in the opposite direction, the slide-bar C, of greater length than the two-part bar, and means by which the same 55 is locked to the two-part bar in one direction and is allowed to slide in it in the opposite direction to shift it longitudinally thereon, and stops or abutments setting in the path of said slide-bar to engage the ends thereof and 60 limit its movement, constructed and combined for operation substantially as described.

2. In a slack-take-up for air-brakes, the combination, with the lever of the brake-piston and the lever, rod, or other part to be operated 65 thereby, of the two-part rod or bar A B, one part or section connected to the brake-lever and the other part to the rod, lever, or part to be moved, the two parts sliding in opposite directions one on the other, ratchet-teeth on 70 one part and a spring-pawl on the other part as a means of connecting said parts together to allow longitudinal movement of the parts on each other in one direction, but to lock them in the opposite direction, and the slide c and means for locking it to the said parts to afford 75 longitudinal movement in one direction and to lock it on said part in the opposite direction, and stops or abutments arranged for operation in the path of said slide to limit the 80 movement thereof, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand and seal.

LEONIDAS GUILLEMET. [L. S.]

Witnesses:

EDWARD E. OSBORN,
CHAS. E. KELLY.