(No Model.)

W. C. FARNUM.

CAR BRAKE REGULATOR.

No. 468,562. Patented Feb. 9, 1892.

Fig. 1

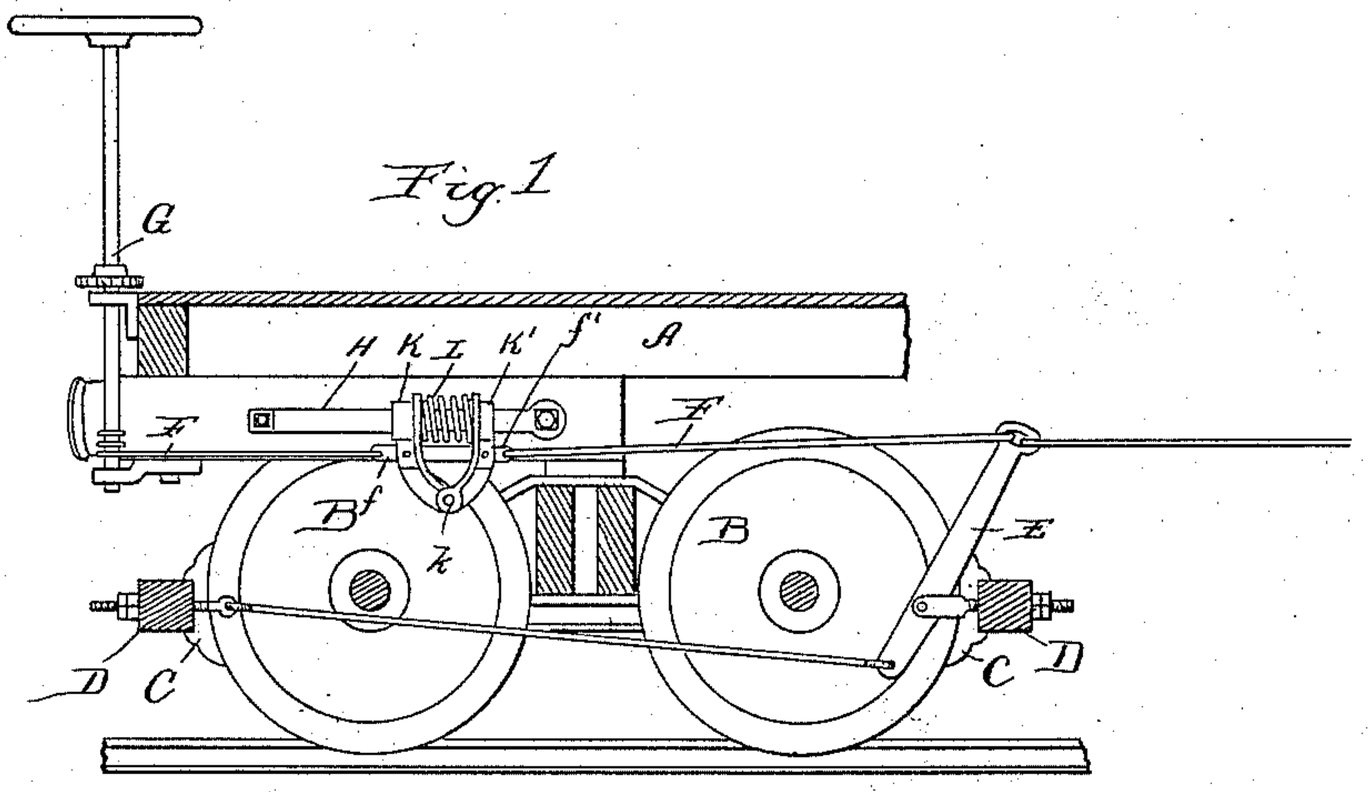


Fig. 2

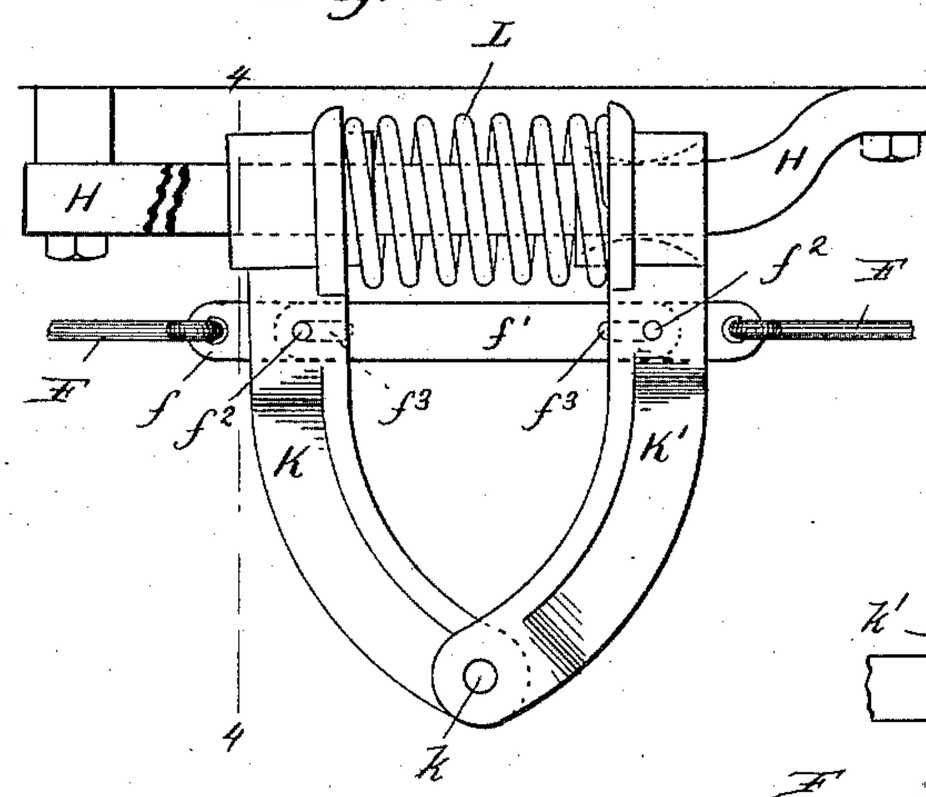


Fig. 4

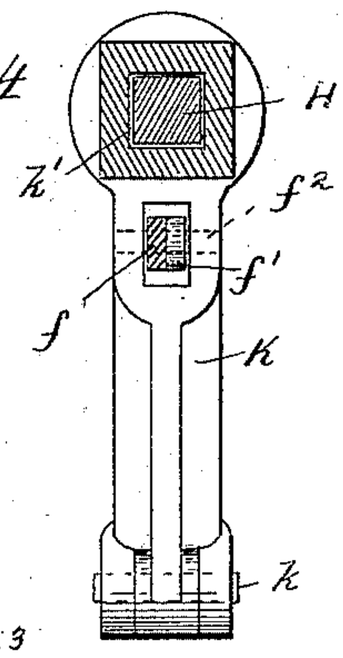


Fig. 3

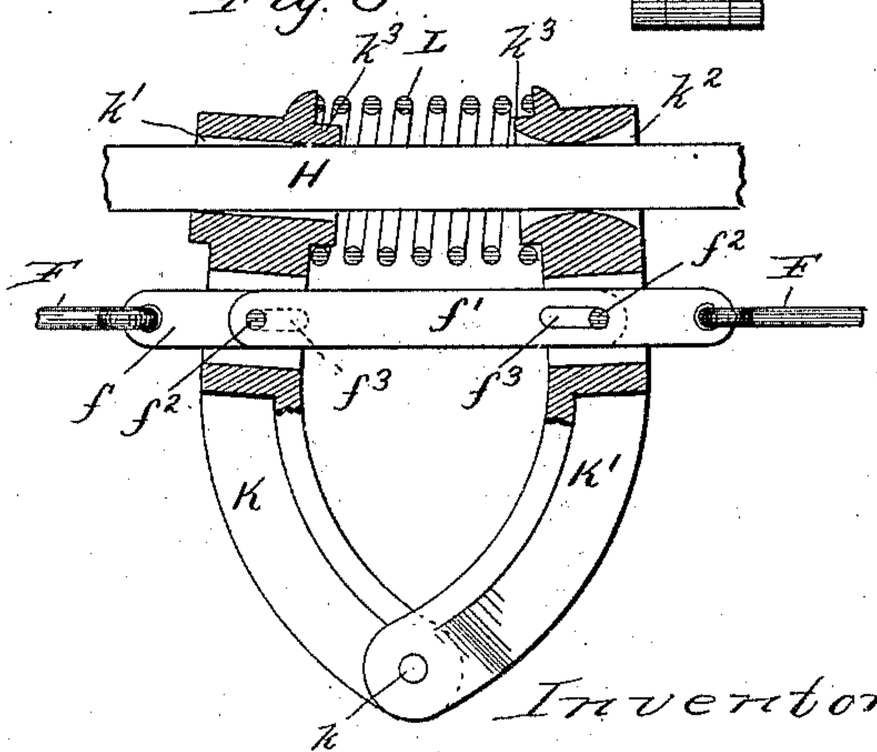
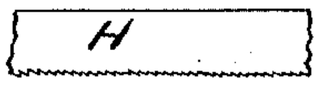


Fig. 5.



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UNITED STATES PATENT OFFICE.

WILLIAM C. FARNUM, OF ARLINGTON, VERMONT.

CAR-BRAKE REGULATOR.

SPECIFICATION forming part of Letters Patent No. 468,562, dated February 9, 1892.

Application filed March 16, 1891. Serial No. 385,165. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM C. FARNUM, a citizen of the United States, residing at Arlington, in the county of Bennington and State of Vermont, have invented a new and useful Improvement in Car-Brake Regulators, of which the following is a specification.

My invention relates to devices for limiting the amount of pressure exerted by the brake-shoe upon the wheel of the car or other vehicle to which the brake is applied.

The object of my invention is to provide a device of a simple, durable, and efficient construction which will operate to automatically control or regulate the amount of pressure or force transmitted from the hand-wheel, air-cylinder, or other source of power to the brake, which may be readily and easily applied to any form of brake mechanism now in use, and which will operate equally well and without requiring special adjustment throughout all ordinary changes in the adjustment of the brake mechanism itself from wear, &c.

To this end my invention consists, in connection with the brake mechanism and its pull or power transmitting-rod, of a stop rod or bar secured rigidly to the frame-work of the car or car-truck, or other vehicle, and a clamp adapted normally to slide freely on the stop-rod, and furnished with a spring adapted to withstand the normal strain without compression, the compression of which when the strain exceeds the normal amount causes the clamp to bite or become fixed to the stop-rod, and thus prevent the transmission of extra force to the brake-shoe, while at the same time the brake is continually held applied with the normal or proper amount of force. The stop-rod is made long enough to accommodate all varying conditions of wear and adjustments of the brake mechanism, so that no special adjustment either of my device or of the brake mechanism with which it is combined is necessary.

My invention further consists, in connection with a brake and brake-rod, stop-bar, and spring, of a clamp consisting of two levers pivoted together and furnished with sockets adapted to slide on the stop-bar when the levers are held in their normal position by the spring between them, but which, or one of which, bites the stop-bar when the spring compresses.

My invention also consists in the novel devices and novel combinations of parts and devices herein shown and described, and more particularly pointed out in the claims.

In the drawings, which form a part of this specification, and in which similar letters of reference indicate like parts, Figure 1 is a side elevation of a device embodying my invention, showing part of one end of a railway-car. Fig. 2 is enlarged side elevation. Fig. 3 is a vertical section, and Fig. 4 is a cross-section, on line 4 4 of Fig. 2. Fig. 5 is the stop-bar provided with ratchet-teeth.

In the drawings, A represents a portion of the frame-work of the car or truck; B, the wheels; C, brake-shoes; D, the brake-beams; E, the brake-levers, and F the brake rod or connection between the brake-lever and the windlass or other source of power.

In the drawings the source G of power is, for convenience, represented as being an ordinary hand brake or windlass.

H is the stop bar or rod, secured rigidly and firmly to the frame-work A. On the stop-bar H is a reciprocating or sliding dog or clamp K K′, which is adapted, when the two parts K K′ are held in their normal relation to each other or to the stop-bar, to slide freely on the stop-bar H without biting or engaging the same, but which when the parts K K′ are moved out of their normal relation to each other or to the stop-bar to clamp, bite, or engage the stop-bar and thus prevent the transmission of any further power to the brake-shoe. A spring L, preferably a coiled spring and surrounding the stop-bar H, holds the two parts of the clamp K K′ in their normal relation to each other and to the stop-bar. This spring L is of such strength as to withstand the normal strain or force desired to be transmitted to the brake-lever without compression. The clamp K K′ is inserted in the brake connection F, leading from the source of power to the brake-lever, so that the force transmitted acts against the spring L, which holds or tends to hold the two parts of the clamp in their normal position or relation to each other and to the stop-bar. The clamp

K K′ may of course be of any suitable form or construction known to those skilled in the art, and adapted to have the operation and perform the function set forth in my combination; but I prefer to construct the clamp as follows, and herein my improvement in part consists: Each part K K′ of the clamp consists of a lever, the same being pivoted together at *k*. The levers K K′ are furnished with sockets or holes *k′ k²*, adapted to fit and slide on the stop-rod H. The levers are further furnished with bosses or shoulders *k³* to receive the opposite ends of the coiled spring L, which fits between the two ends of the levers. The levers K K′ are connected by slotted links *f f′* with the brake rod or connection F, and pins *f²*, secured to the levers K K′ and fitting in the slots *f³* of the links *f f′*, limit the extent the levers K K′ can be separated by the spring L. The socket or hole *k²* in the lever K′ may preferably be rounded, as shown in the drawings at Figs. 2 and 3, so that only the lever K will bite or engage the stop-bar H when the spring L compresses.

The operation is as follows: When less than the normal or maximum amount of force desired is being exerted or transmitted to the brake-lever, the two clamp-levers K K′ will remain in their normal position in respect to each other and to the stop-bar H—that is to say, at right angles to the stop-bar, as shown in Figs. 1 and 2—and thus slide freely back and forth on the stop-bar as the rod or connection F is drawn up or released in the ordinary operation of the brakes. The moment, however, more than the normal or maximum amount of force is exerted by the source of power upon the rod or connection F the spring L will begin to compress, thus causing the pivoted levers K K′ to be drawn together, as indicated in Fig. 3, and the levers rocked or tilted out of their right-angle relation to the stop-bar H, so that the clamp-socket *k′* of the lever K will bite or engage the stop-bar H, and thus fix the clamp rigidly to the stop-bar and prevent the transmission of any further power to the brake-lever, while at the same time the brake-shoe is constantly held applied to the wheel with the required or proper amount of pressure. By this means the full efficiency of the brakes is secured, while at the same time the injury to the wheels by sliding or spotting the same on the track is prevented, and no changing or adjustment of the brake mechanism is required. It is preferable to make the bar H smooth. If desired, it may be roughened or furnished with ratchet-teeth, as indicated in Fig. 5.

I claim—

1. In a brake, the device for regulating or weighing the amount of pressure exerted by the brake-shoe, consisting in the combination, with a brake and its power-transmitting rod or connection, of a stop-bar and a clamp inserted in said brake connection, adapted normally to slide back and forth freely on said stop-bar, said clamp being furnished with a spring adapted to yield under an abnormal strain, and thus cause said clamp to bite or engage the stop-bar, and thereby prevent the transmission of an abnormal force or pressure to the brake-shoe, while at the same time the brake is held applied, substantially as specified.

2. The combination, with a brake mechanism, of its power-transmitting rod or connection, a stop-bar, and a dog or clamp adapted to slide back and forth freely on said stop-bar normally and to bite or engage said stop-bar when an abnormal force or strain is exerted, and a device for holding said clamp normally in its free or sliding position, substantially as specified.

3. The combination, in a brake, of a power-transmitting rod or connection F with a stop-bar H and a pair of clamp-levers K K′, pivoted together and furnished with sockets adapted to fit and slide on said stop-bar, and a spring L, substantially as specified.

4. The combination of brake connection F with stop-bar H, clamp-levers K K′, and spring L, substantially as specified.

5. The combination of brake connection F with stop-bar H, clamp-levers K K′, spring L, and slotted connecting-links *f f′*, substantially as specified.

6. The combination of brake connection F with stop-bar H, clamp-levers K K′, spring L, and slotted connecting-links *f f′*, said levers K K′ being furnished with stop-pins *k³*, substantially as specified.

7. The combination, with brake connection F, of stop-bar H, pivoted clamp-levers K K′, having sockets fitting on said stop-bar, and spring L, one of said clamp-levers having a rounded or curved socket, so that it will not bite or engage the stop-bar when the spring yields, substantially as specified.

8. The combination, with stop-bar H, of pivoted clamp-levers K K′ and spring L, substantially as specified.

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