(No Model.)

J. B. & H. E. DOWNING.

AUTOMATIC SLACK ADJUSTER FOR CAR BRAKES.

No. 578,978. Patented Mar. 16, 1897.

Fig 1.

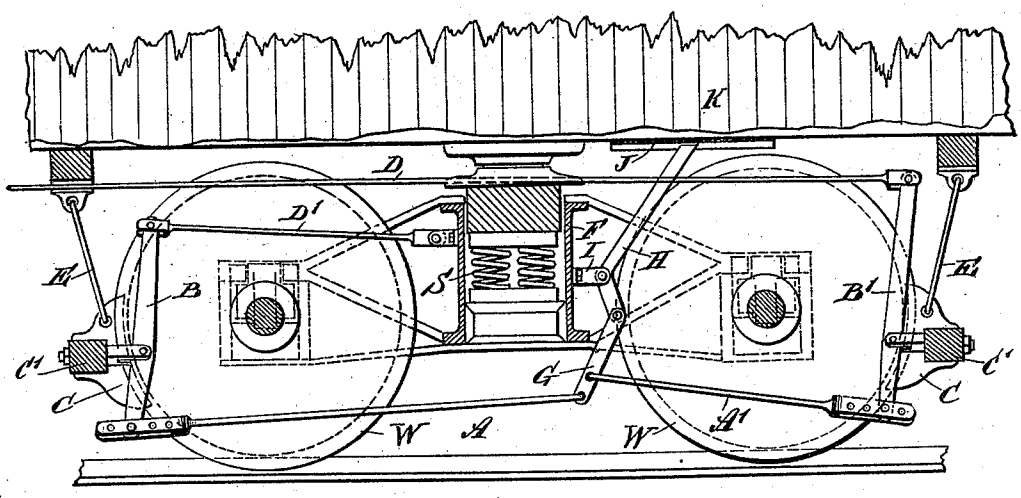
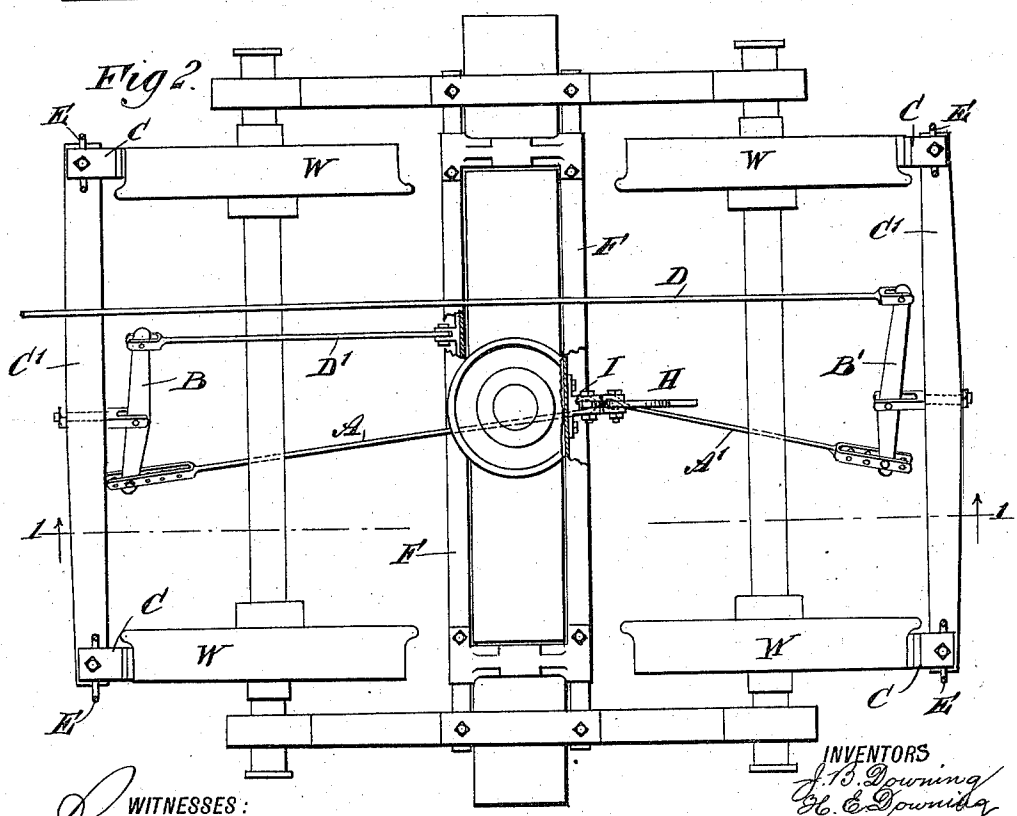


Fig 2.



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UNITED STATES PATENT OFFICE.

JAMES B. DOWNING AND HARRY E. DOWNING, OF ARKANSAS CITY, KANSAS.

AUTOMATIC SLACK-ADJUSTER FOR CAR-BRAKES.

SPECIFICATION forming part of Letters Patent No. 578,978, dated March 16, 1897.

Application filed January 20, 1897. Serial No. 619,843. (No model.)

To all whom it may concern:

Be it known that we, JAMES B. DOWNING and HARRY E. DOWNING, of Arkansas City, in the county of Cowley and State of Kansas, have invented a new and Improved Automatic Slack-Adjuster for Car-Brakes, of which the following is a full, clear, and exact description.

Our invention relates to means for utilizing the rise and fall of the car-body to automatically adjust the slack in the brake-operating mechanism.

In the form illustrated in the drawings and described in this specification it consists in making the bottom rod of two parts and connecting these to an equalizing-lever, which is operated upon to change its angle, and thus vary the lengths of the bottom rod, by a bell-crank lever, which is pivoted to the truck-frame and bears upon the bottom of the car-body.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in both the views.

Figure 1 is a side elevation of the device as applied to a car-truck, the truck being in section; and Fig. 2 is a plan view of a truck with the device applied thereto.

The brake-operating means as shown in the drawings is in the main the same as that in common use in connection with railway-cars. It consists of the brake-beams C′, carrying brake-shoes C and suspended by hangers E. To each brake-beam is connected a truck-lever B B′. The upper end of the dead truck-lever B is connected by a rod D′ to the truck-frame. The upper end of the live truck-lever B′ is connected by the rod D to the air-brake cylinder or to the floating-lever operated by the air-brake cylinder. The bottoms of these levers are ordinarily connected by a bottom rod which is in a single piece. This bottom rod according to our invention is divided into two sections A and A′. The inner ends of both of these sections are pivoted to an equalizing-lever G, which is suspended at one end upon a bell-crank adjusting-lever H, which is pivoted upon a bracket I, fastened to the truck-frame F, and has its upper end bearing upon a plate J, fixed to the under side of the car-body K.

As the car-body depresses the springs S upon the reception of its load the upper end of the lever H will be forced down, which will change the angle of the equalizing-lever G, so as to shorten the bottom rod. This will take up a little of the slack and result in keeping the slack between the brake-shoes and the wheels substantially the same.

It will be seen that the brake-shoes C bear upon the wheels W a little below their center. In consequence of this, if there was no change in the adjustment of the rods connecting the brake-shoes, there would be more slack between the shoes and the wheels when the car-body was depressed by its load than when it was empty and consequently somewhat raised.

The essential idea of the invention consists in utilizing the variation in height of the car-body to operate the equalizing-lever and thus to control the amount of slack. These levers may be so proportioned as to maintain the slack constant at all positions of the car-body. Our device will result in saving much time usually lost making this adjustment by hand, as is now often necessary. Our device may also be applied to any other form of brake-operating mechanism than that shown in the drawings.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. An automatic slack-adjuster for car-brakes, consisting of a bottom rod made in two parts, an equalizing-lever to which the two parts of the bottom rod are attached, and a bell-crank lever pivoted to the truck-frame, said bell-crank lever being connected at one end to the equalizing-lever and having its other end bearing against the bottom of the car-body, substantially as shown and described.

2. An automatic slack-adjuster for car-brakes, consisting of a bottom rod made in two parts, an equalizing-lever to which the two parts of the bottom rod are attached, and a lever pivoted to the equalizing-lever and operated by the variation in height of the car-body above the truck, to change the angle of the equalizing-lever and the length of the bottom rod, substantially as shown and described.

3. An automatic slack-adjuster for car-brakes, consisting of a bottom rod made in two sections, an equalizing-lever connected to both sections, and means operated by the variation in height of the car-body, to vary the position of the equalizing-lever and the length of the bottom rod, substantially as shown and described.

4. An automatic slack-adjuster for car-brakes, consisting of a bottom rod made in two sections, an adjustable connection between said sections adapted to vary the length of the bottom rod, and means operated by the variation in height of the car-body above the trucks, to operate said adjustment, substantially as shown and described.

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