No. 860,312. PATENTED JULY 16, 1907.

H. A. MOORE.

DEVICE FOR BRAKING CARS.

APPLICATION FILED APR. 22, 1907.

Fig. 1.

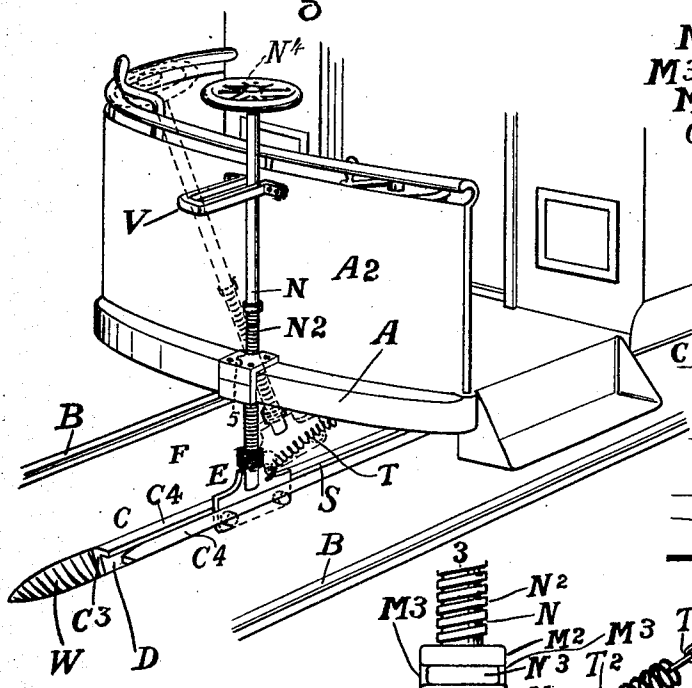


Fig. 3.

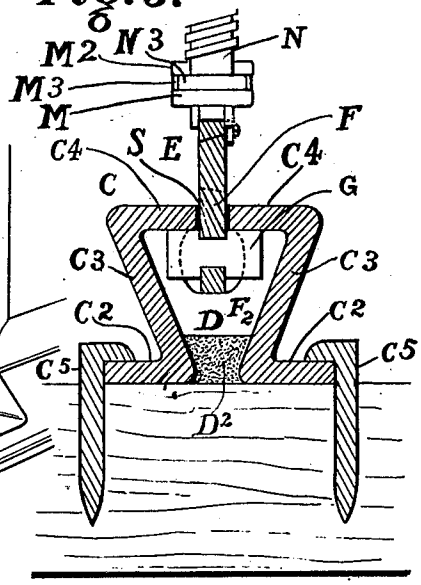


Fig. 2

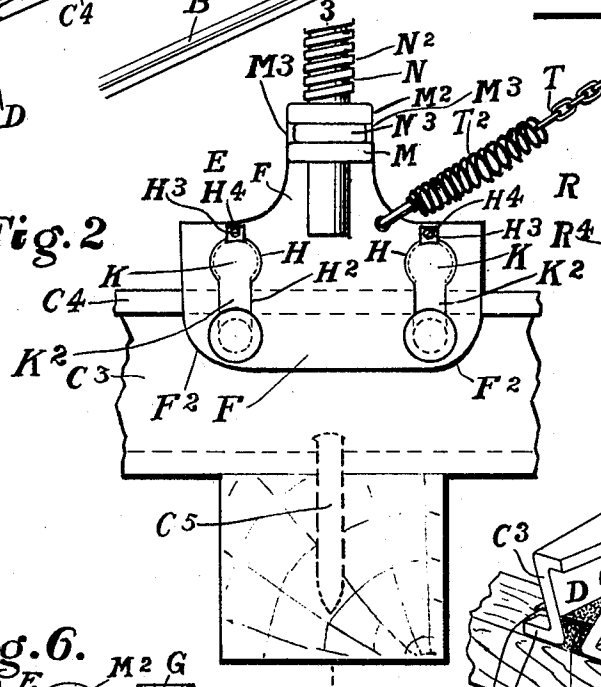


Fig. 5.

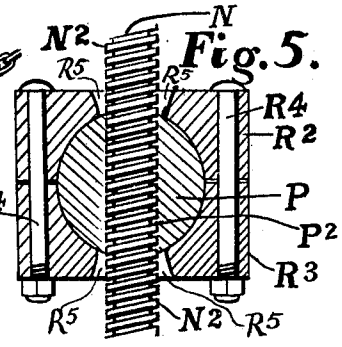


Fig. 4.

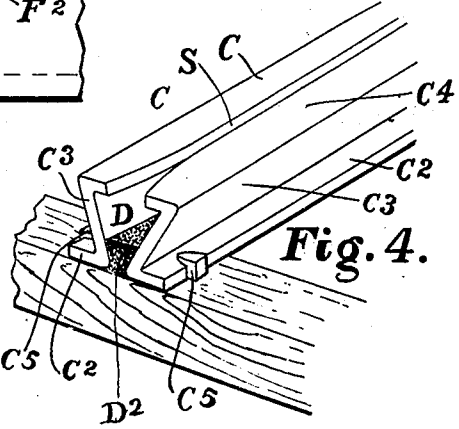


Fig. 6.

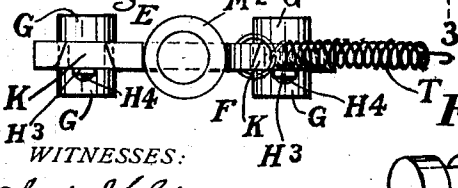
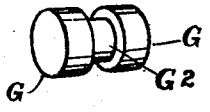


Fig. 7



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DEVICE FOR BRAKING CARS.

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To all whom it may concern:

Be it known that I, HARVEY A. MOORE, a citizen of the United States, and a resident of the city of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Devices for Braking Cars, of which the following is a specification.

The several features of my invention and the various advantages resulting from their use conjointly or otherwise will be apparent from the following description and claims.

In the accompanying drawings making a part of this specification,—Figure 1 is a view in perspective of the end of a car, and the adjacent portion of the track, illustrating my improvements. Fig. 2 is a side elevation of those parts of my devices which are more immediately connected to the mid-track channel device, also of my invention. Fig. 3 is a transverse vertical section of the device shown in Fig. 2, the said section being taken in the plane of the dotted line 3, 3, of Fig. 2. Fig. 4 is a view of an end portion of the mid-track channel device, duly supported upon a cross-tie. Fig. 5 is a vertical section of the ball and socket upholding the rod which connects below with the roller carrying plate, or "roller carrier". This section is made in the direction of the length of the car, and in the plane of the dotted line 5 of Fig. 1, but the screw thread of said rod is left in elevation. Fig. 6 is a top view of the said roller carrier and rollers, and of a spring for actuating the said roller carrier under conditions hereinafter mentioned. Fig. 7 is a perspective view of either one of the pairs of rollers, which are present in the roller carrier.

I will now proceed to describe my invention in detail.

A indicates the end of the platform of a car, made in any suitable or customary manner.

A^2 indicates the dash board of the car.

B, B respectively indicate the usual rails, on which the wheels of the car run.

I provide a mid-track channel piece or device C, which is preferably located at an equal distance from each of the rails B. The principal and necessary features of this mid-track piece C are that it must have a slot S in its upper or top part, that it must have on each side of the slot a projection wherewith the roller can engage the piece and thereby hold the car down, and that the end of the slot should open out to readily receive the roller carrier as it meets this mid-track piece. The preferred construction of this mid-track piece C is as follows: The piece is a compound one, being made in two parts symmetrically alike. Each piece in end view consists of a bottom flange C^2 extending horizontally outward, and of an upright body piece C^3 and of a top or flange piece C^4. The latter extends inwardly. The flanges C^4, C^4 of these opposing pieces do not touch each other, but are a sufficient distance apart to form a slot S wide enough to receive the roller carrier. The lower portion C^2 of each of these pieces C^2, C^3, C^4, is duly secured in position. Where wooden crossties are present, the lower flange portion C^2 is secured to the tie either by fishplates or the like secured in turn to the tie, or directly as shown in the drawing by spikes C^5, C^5, see Figs. 3, 2 and 4.

The roadbed between the ties is usually arched, being higher in the middle than at the sides, and the surface of the roadbed will usually be on a level with the top of the flanges C^4, C^4 of the channel piece. It is my purpose to fix the bottom of this channel piece so that water will not run down through it. To this end, I locate cement in the bottom portion of this piece C. The pieces C^3, C^3 of the piece C may be vertical, but I prefer them, each one, to incline downward and inward. Such an inclination contributes toward making the mid-channel device more compact and also makes a narrower and better channel between the lower portions of the vertical pieces C^3, C^3, for the location of the cement D^2. Cement being thus present, water running into the channel D cannot run down through between the pieces C^2, C^2, and form a trench in the roadbed below and gully said roadbed, but must run down in the channel D, and out at the lower end of this channel. The preferred construction of the device which this channel piece C is adapted to receive and enabled to operate is as follows:—I provide a roller carrier E, which consists of a comparatively thin piece of metal F, adapted to be received in the slot S and to slide therein freely, but yet to nicely and closely fit said slot S. I provide two pairs of rollers G, G. Each of these rollers is connected to the opposite one of its pair by a shaft or shank G^2. And the preferred mode of holding this roller in place, in the roller carrier, is by means of this shaft G^2. This shaft G^2 is located in a journal bearing F^2 of the sheet F of the carrier E. This journal bearing F^2 is shown by dotted lines in Fig. 2, and is plainly seen in the sectionized Fig. 3. Various constructions for enabling these rollers to be properly inserted in their respective places in the piece F may be employed, but a preferred convenient and efficient one is as follows: A hole H is made in the piece F, at a distance above the journal bearing hole F^2. This hole H is of a size large enough to admit either roller G of a pair. From this hole H a slot or opening H^2 extends to the hole F^2 of the journal bearing, and this slot H^2 is wide enough to allow the shank G^2 to pass down from the hole H to the hole F^2 and to be properly located therein. A key K is present, which has an upper part adapted to fit the hole H aforesaid of the piece F, and a shank or portion K^2 adapted to fit the slot H^2. The edge of the hole H and of the slot H^2 is beveled, and the key K and its shank K^2 are respectively correspondingly beveled. The lower end of the shank K^2 is concaved so that when it is

in place, it shall form with the rest of the hole F^2 a perfectly circular hole; in other words, a proper bearing for the shank G^2 of a pair of the rollers G, G.

In practice, the key K, K^2 having been removed, one of a pair of rollers G, G is inserted through the hole H until the shank G^2 is therein. This pair of rollers G, G, G^2 is now lowered, the shank G^2 passing down through the slot H^2, and finally reaching and resting in the bearing F^2. The key K, K^2 is now inserted, its beveled edges fitting the beveled edges of the aperture H, H^2. The lower end of this key K, K^2 is prevented from coming out of place by the fact that it is between the rollers G, G. The upper end is suitably fastened. A convenient means for such fastening consists of the lugs H^3 extending out and from the upper part K of the key, and being in contact with the carrier piece F, and a screw H^4 which extends through this lug and is screwed into the carrier piece F. In this way, the compound or double roller G, G^2, G is securely located in its working location. By withdrawing the screw H^4, removing the key K, K^2, and lifting up the said roller G, G^2, G, and drawing one end of the roller out through hole H, it can be readily removed from the carrier piece for repair, or to give place for a new pair of rollers to be located in its stead.

The rollers G, G, and their carrier E are held by a proper support capable of enabling the rollers and their carriers to be elevated or depressed. The preferred construction of support is as follows. A rod N is attached to a journal N^3 of the roller carrier E, and can rotate in said bearing. On the upper end of the roller carrier E is a bearing piece M. On this ring M the journal N^3 rests. Above the journal N^3 is an annular bearing piece M^2, and the bearing piece M is connected to the bearing piece M^2 by the flanges M^3. Thus the pieces M and M^2 are stationary (in one) with the roller carrier E, and the rod N with its journal N^3 is free to be rotated. This rod carries a screw thread N^2. On the car is a piece which contains a female screw P^2 engaging the screw thread N^2. By rotating this rod N by a crank or hand wheel N^4, this rod and with it the journal bearing and carrier are elevated or depressed at will.

A convenient mode of lifting the roller carrier and its rollers out of the way when not needed, and of lowering it when they are to be in use, is as follows: The screw thread P^2 aforementioned as engaging the screw thread N^2 of the rod N is located in a ball P, and the latter is in turn located in a socket R fixed to the car. This socket has a seat R^2 and a cap R^3, held to the seat R^2 by bolts R^4. By loosening the bolts the cap R^3 can be removed and the ball P and rod N removed. When the ball P and the rod N are replaced, the cap being replaced and secured, holds the ball P in position. The openings R^5 within cap R^3 and the seat R^2, where the rod N passes through them, are made larger than the rod, so as to enable the rod N to be inclined forward or backward as desired.

In order to enable the roller carrier and rollers to be lifted up and out of the way automatically, I provide a spring T^2 which forms a part of a connection T between one part of this carrier E and the car. I have shown such a spring fastened directly to the carrier E,—the other end of the spring being connected directly to a chain or other proper ligament connected to the car, but the spring T^2 may be located nearer to the car bottom, and a chain connection be located between the roller carrier and this spring.

A suitable guard V may be located on the car, here shown fast to the dashboard, to prevent the rod N when its upper part is moved out away from the dashboard and its inner end with roller carrier toward the cross mid-length of the car, from inclining beyond what is necessary.

The mode in which my invention is operated is as follows:—The slotted mid-track device is present on all hillsides. When a car is descending the hill or is stopped in ascending the hill, the wheels are liable to slip on the rails B, B of the track. As the car approaches the place where the mid-track is, the operator moves the rod N so that it shall be vertical, and if necessary lowers the carrier by turning the rod N in the right direction. The lower part of the carrier with its roller enters the scooped out place W in the roadbed, and next the carrier enters the slot S, as illustrated in Figs. 1 and 3. The rollers G, G are now under the flanges C^4, C^4 of the mid-track device. The operator turns the rod N so as to elevate it, and thereby draws the roller carrier up against the flanges C^4, C^4, and draws the car down so that its wheels bear hard against the rails. When these car wheels are braked, they cannot slip on the track, and hence the danger of the car sliding down the track upon its wheels rendered stationary by the brake mechanism is prevented.

What I claim as new and of my invention and desire to secure by Letters Patent, is:—

1. In means for assisting the braking of railroad cars, the outer track rails, a car whose supporting wheels rest respectively upon said rails, a mid-track device having a slot, a roller carrier connected to the car, and through the intermediation of the car to the said supporting wheels, this roller carrier extending through the slot, and rollers of said carrier running beneath the flanges adjoining the said slot, the roller carrier provided with means for raising and lowering the carrier at will, substantially as and for the purposes specified.

2. In means for assisting the braking of railroad cars, rollers and their carrier, and means whereby the carrier with rollers can be elevated or depressed, and means for automatically drawing up the carrier and rollers out of the way when out of use, and a track device provided with a slot, adapted to receive the roller carrier and allow the rollers of the carrier to engage the flanges at the sides of the slot, substantially as and for the purposes specified.

3. In a device for assisting in the braking of cars, the roller carrier and its rollers, the rod supporting the same, the ball and socket, whereof the socket is connected to the car and the rod is connected to the ball, a screw threaded engagement being present between the rod and the ball, substantially as and for the purposes specified.

4. In a device for assisting in the braking of cars, the roller carrier and its rollers, the rod for elevating and depressing the same, the journal N^3 of the rod, and the bearing M below the journal and the bearing M^2 above the journal, and connections M^3 uniting the bearing M to the bearing M^2, the rod having a screw thread engaging a screw carried by the vehicle, a device at the track for engaging the rollers of the carrier, substantially as and for the purposes specified.

5. In a device for assisting in the braking of cars, the roller carrier and its rollers, the rod for elevating and depressing the same, the journal N^3 of the rod, and the bearing M below the journal, and bearing M^2 above the journal, and connections M^3 uniting the bearing M to the bearing M^2, and a ball and socket joint, the rod having a screw thread engaging a screw in the ball, a device at the track for engaging the rollers of the carrier, substantially as and for the purposes specified.

6. In a device for assisting in the braking of cars, the

roller carrier and its rollers, the rod supporting the same, means for elevating and depressing the rod, and means for permitting it to oscillate, and a track device for receiving the roller carrier, and the rollers, and for enabling the elevation of the rod to draw the car forcibly against its track rails, substantially as and for the purposes specified.

7. In a device for assisting in the braking of cars, the roller carrier with its rollers, a track device for receiving them, a rod connected therewith, means for enabling the rod to be elevated or depressed, means for enabling the rod to be oscillated, means for automatically elevating the roller carrier with the rollers, when the latter are not in use, substantially as and for the purposes specified.

8. In a device for assisting in the braking of cars, the roller carrier and its rollers, the mid-track device having flanges and a slot between, and adapted to receive the roller carrier in the slot and the rollers beneath the flanges, a rod for supporting the roller carrier, a ball and socket, the rod connected therewith by a screw thread, a spring located in a connection between the roller carrier and the car, substantially as and for the purposes specified.

9. In a mid-track device, the pieces C^4, C^4, separated by a slot S, and the inclined pieces C^3, C^3, and the foundation pieces duly secured to the roadbed, and a roller carrier and rollers adapted to be received in this mid-track device, and provided with means for elevating and lowering the roller carrier, substantially as and for the purposes specified.

10. In a mid-track device, the pieces C^4, C^4, and the inclined pieces C^3, C^3, and the foundation pieces duly secured to the roadbed, and a cement floor between these pieces C^3, C^3, and a roller carrier and rollers adapted to be received into said mid-track device and means for elevating and lowering the carrier, substantially as and for the purposes specified.

11. In a mid-track device, the slotted channel compound piece, having below the slot a chamber running the length of the piece, and a cement floor between the side walls of this chamber, and the roller carrier and rollers adapted to be received in this mid-track device, and means for elevating and depressing the roller carrier, substantially as and for the purposes specified.

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K. SMITH.