

(No Model.)

2 Sheets—Sheet 1.

O. BATES & B. B. CARTER.
DEVICE FOR STOPPING AND DERAILING CARS.

No. 498,611.

Patented May 30, 1893.

Fig. 1.

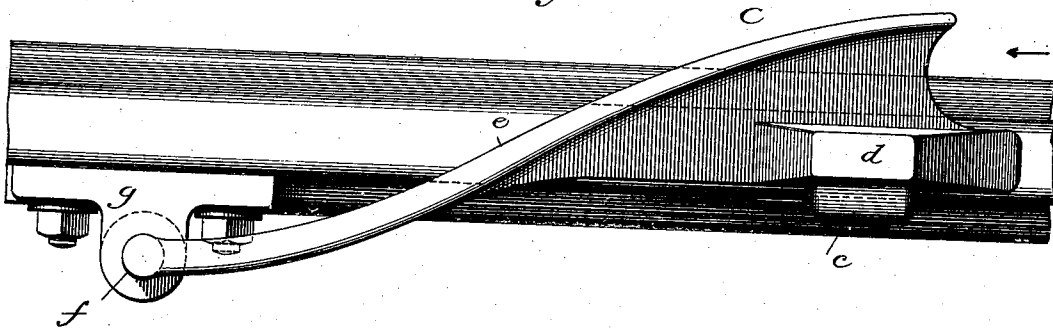


Fig. 2.

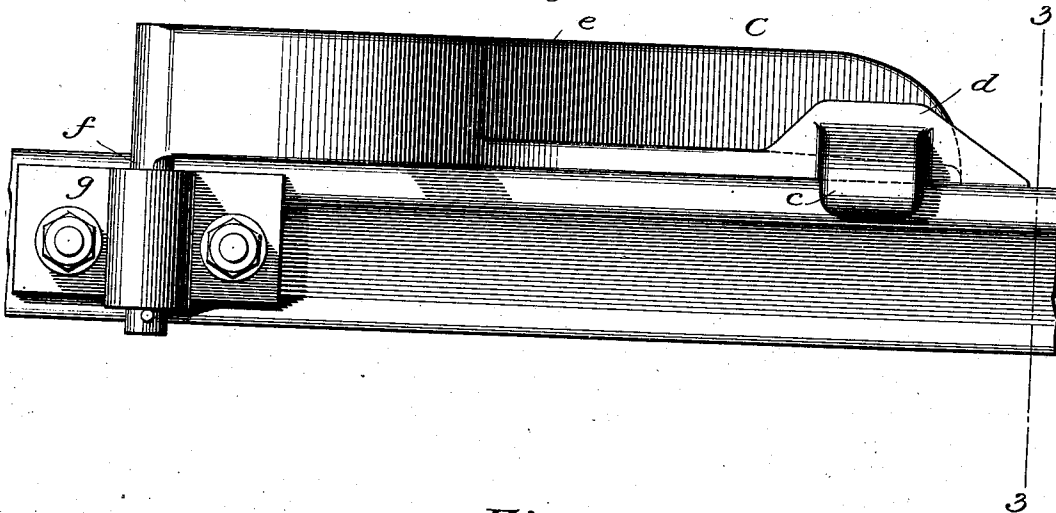
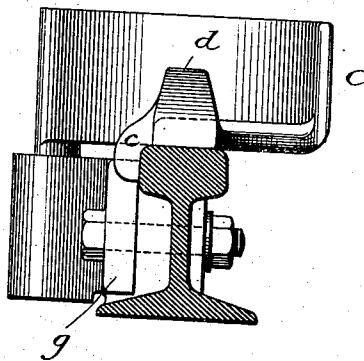


Fig. 3.



Witnesses

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Fig. 4.

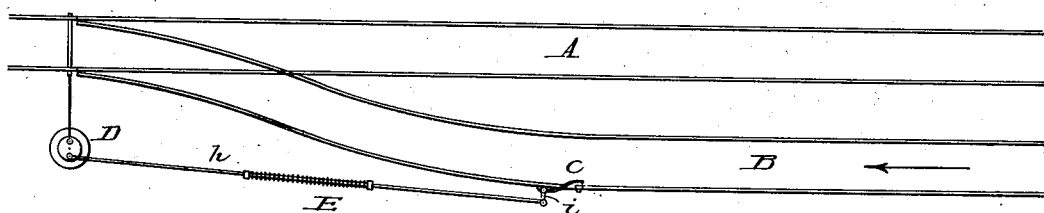


Fig. 5.

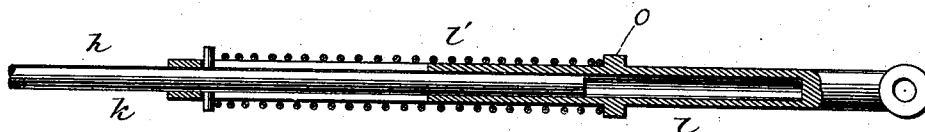


Fig. 6.

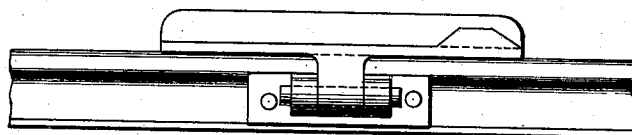


Fig. 7.

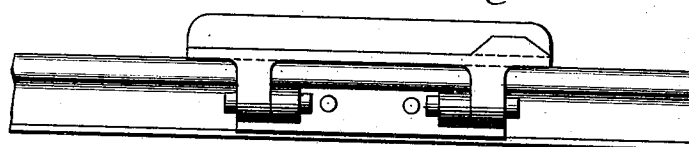
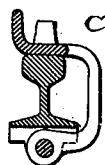


Fig. 8.



Witnesses

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UNITED STATES PATENT OFFICE.

ONWARD BATES AND BYRON B. CARTER, OF CHICAGO, ILLINOIS, ASSIGNORS
TO THEMSELVES AND WILLIAM W. CHRISIE, OF SAME PLACE.

DEVICE FOR STOPPING AND DERAILING CARS.

SPECIFICATION forming part of Letters Patent No. 498,611, dated May 30, 1893.

Application filed October 20, 1892. Serial No. 449,451. (No model.)

To all whom it may concern:

Be it known that we, ONWARD BATES and BYRON B. CARTER, of Chicago, county of Cook, and State of Illinois, have invented a new and useful Improvement in Devices for Stopping and Derailing Cars, of which the following is a specification.

In the handling of rolling stock on railways much trouble and injury to life and property have been caused by cars on a side track accidentally moving from their proper positions under the influence of gravity, wind or unforeseen causes, on to the main track, or in dangerous proximity thereto.

To avoid this objectionable action of the side-tracked cars is the aim of the present invention, which consists primarily of a guard constructed to be applied to the rail in position to be encountered by one of the wheels of the car and to guide the same from the track or arrest its progress.

The invention also consists in so constructing and applying the guard that it will be rendered inoperative by the movement of the car in one direction but will act to derail the same when moving in the opposite direction.

The invention also consists in connecting the guard to a switch-stand in such manner that when the switch is operated to open the siding the guard will be rendered inoperative, and vice versa.

The invention also consists in the details of construction and combinations of parts hereinafter described and claimed.

In the accompanying drawings,—Figure 1 is a top plan view of a section of a track having our invention applied thereto in its simplest form. Fig. 2 is a side elevation of one of the rails with the guard thereon. Fig. 3 is a cross-section through the rail on the line 3—3, showing the guard in end elevation. Fig. 4 is a plan view of a section of the main track and siding, showing our invention applied thereto and connected to the switch-stand. Fig. 5 is a detail showing one form of flexible connection between the switch-stand and guard. Figs. 6, 7 and 8 are views of modifications showing different means for hinging the guard.

Referring more particularly to Fig. 4, A represents the main track; B, the siding; C, the guard; D, the switch-stand, and E the

connection between the switch-stand and guard. As shown in Figs. 1, 2 and 3, the guard C is formed preferably of cast steel, and is adapted when in use to rest upon the top of the rail and when not in use to be moved away from the same to an inoperative position. At its forward end it is provided with a depending lip *c*, arranged to encounter the outer side of the head of the rail when in an operative position, and is further provided on its top adjacent to the lip with a block or lug *d*, having its front and rear faces beveled, as shown. The guard is extended laterally inward a short distance beyond this lug, and has its edge turned upward in the form of a vertical flange *e*, which extends rearward diagonally across the rail. At its rear end the guard is formed with a vertical depending journal *f*, arranged to enter a vertical socket formed in a plate *g*, bolted to the web of the rail on its outer side. From this it will be seen that when in an operative position the guard rests on the top of the rail with the lip against the outer side, and may be swung outward on its journal over the rail, the lip serving as a stop to prevent the guard from being moved too far inward.

The operation is as follows: Assuming that the guard is in an operative position and that a car is approaching in the direction indicated by the arrow in Fig. 1, if the speed is not great the tread of the wheel will encounter the lug on the guard and the motion of the car will be arrested. If, however, it has acquired considerable momentum the wheel will ride up the beveled forward face of the lug on to the guard and the flange be caused to engage with the outer side of the vertical flange *e*, on the guard, which owing to its diagonal form will cause the wheel to move gradually to one side as it advances until it is finally derailed. If, however, a car is approaching from the opposite direction the tread of the wheel will encounter the inner side of the vertical flange *e*, and as the former advances it will gradually move the guard on its journal outward free from the rail. It will thus be seen that when traveling in one direction the car is derailed while when traveling in the opposite direction it acts to render the guard inoperative.

In Fig. 4 we have represented our guard

connected to the switch-stand, the connections being such that when the switch is operated to open the siding the guard will be automatically moved to an inoperative position so that the cars on the siding may pass to the main track or vice versa. This connection may consist of a link or rod *a*, having one end attached to the switch-stand and its other end pivoted to an arm *i*, extended laterally from the rear end of the guard, or it may be made in various other ways, provided the guard will be moved to an inoperative position when the stand is operated to open the siding.

In the drawings we have shown the connection as flexible that is to say, so formed that the guard may yield momentarily without affecting the position of the switch. This is effected by making the rod *h*, telescopic, and on reference more particularly to Fig. 5, it will be seen that the rod is in two sections *k* and *l*, the latter consisting of a longitudinally slotted tube pivoted at one end to the arm *i* of the guard. The section *k* consists of a rod having one end connected to the switch-stand and its opposite end extended within the tube and provided with a pin extending transversely through the slot therein. A spiral spring *l'* encircles the tube and bears at its opposite end respectively against the pin and a shoulder *o*, on the tube. Under this arrangement it will be seen that when the switch-stand is operated and the rod moved to turn the guard to an inoperative position the pin thereon will engage the end of the slot in the tube, and the two sections will move bodily together. When the switch-stand is operated to close the siding the rod moving in the opposite direction will, through the medium of the spring, transmit motion to the tube and cause the guard to assume an operative position. It will be further seen that the guard may yield momentarily from its operative position without affecting the position of the switch, inasmuch as the spring will be compressed and the tube telescoped on the rod. This is of advantage where after having closed the siding and a car is left in rear of the guard, it is desired to move the same beyond the guard without operating the switch-stand.

It is to be understood that our invention is not to be confined to the particular details illustrated and described as various changes which will suggest themselves to the skilled mechanic may be made without departing from the limits of our invention, provided the operation is substantially as set forth. For example, we have represented in Figs. 6, 7 and 8 different forms of hinges for the guard. In Fig. 6 the guard is provided with a lip mounted on a horizontal pivot at the side of the rail. In Fig. 7 the guard is provided with two lips at opposite ends, each mounted to turn on pivots at the side of the rail. In Fig. 8, the guard is provided with a lip which ex-

tends beneath the rail where it is mounted on a pivot.

Having thus described our invention, what we claim is—

1. The improved guard of the type described, adapted to overlie the rail and provided on its upper side with the upwardly-extending block and the guiding flange.

2. The combination with the rail of the horizontally swinging guard, provided on its outer side with a depending lip and on its upper side with the wheel guiding flange.

3. The improved guard of the type described, adapted to be mounted near its rear end on a vertical axis adjacent to the rail and to overlie the same, and provided at its forward end with an upwardly-extending block and with a vertical guiding flange, said flange extending from the inner side of the rail diagonally toward its opposite side.

4. The combination with the main track, the siding, the switch and the switch operating devices, of the movable guard applied to the track rail of the siding, connections between the switch operating mechanism and the guard for operating the latter when the switch is moved, and a yielding section in said connections to permit the guard to be moved without moving the switch.

5. The improved guard for railway tracks comprising a movable block supported adjacent to the track rail and overlying the same in operative position, the said block constructed with a shoulder to arrest a car moving in one direction, and having beyond said shoulder a diagonal guide whereby a car wheel passing the stop shoulder is deflected from the rail.

6. The improved guard for railway tracks comprising a movable block supported adjacent to the track rail and overlying the same in operative position, said block having on its upper side a diagonal guide-flange, whereby a car wheel passing in one direction is deflected from the track, and whereby a wheel moving in the opposite direction removes said block from the rail.

7. The combination with the switch operating devices, of the movable guard and yielding connections between the same.

8. The combination of the switch operating devices, the guard mounted at its rear end on a vertical axis and provided with a laterally-extending arm, telescopic sections connected respectively to the switch operating devices and the arm, and the spring sustained by said parts and bearing at its ends on the telescopic sections.

In testimony whereof we hereunto set our hands, this 9th day of September, 1892, in the presence of two attesting witnesses.

ONWARD BATES.
BYRON B. CARTER.

Witnesses:

G. DAVIN,
C. E. COMBS.

It is hereby certified that the name of the last-mentioned assignee in Letters Patent No. 498,611, granted May 30, 1893, upon the application of Onward Bates and Byron B. Carter, of Chicago, Illinois, for an improvement in "Devices for Stopping and Derailing Cars," was erroneously written and printed "William W. Chrisie," whereas said name should have been written and printed *William W. Christie*; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 3d day of May, A. D., 1904.

[SEAL.]

E. B. MOORE,
Acting Commissioner of Patents.