

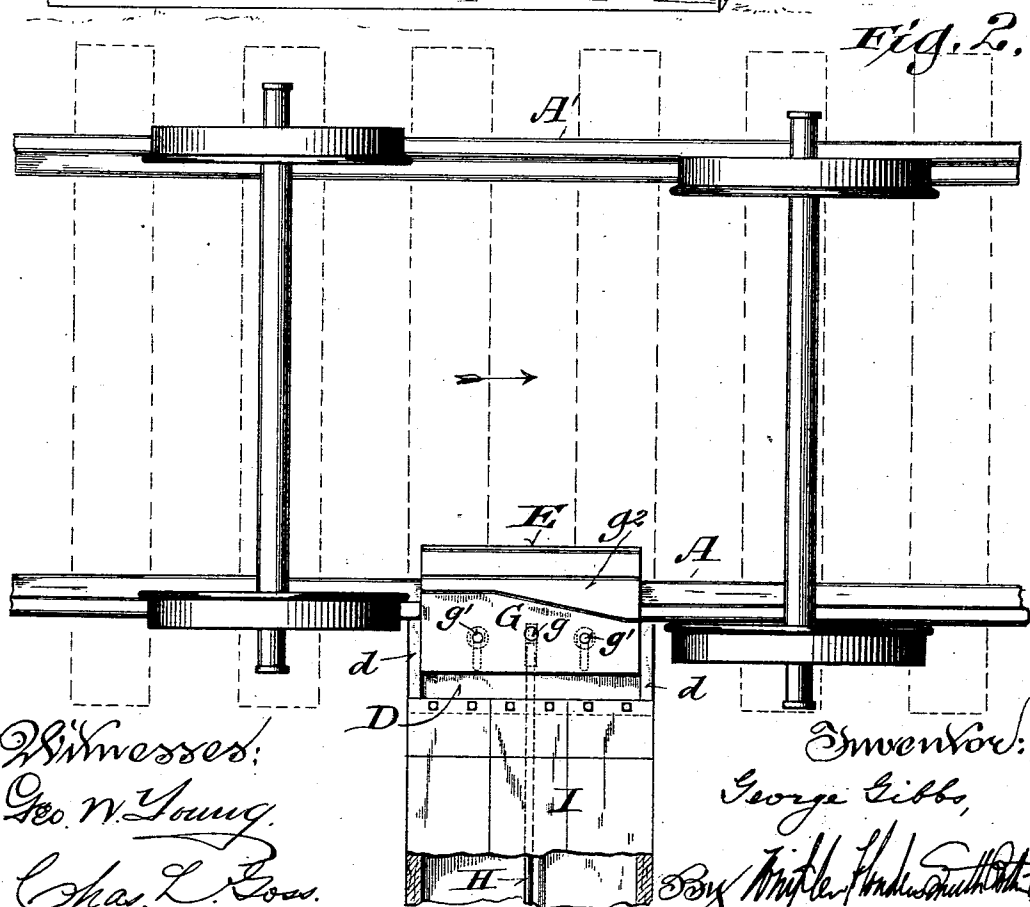
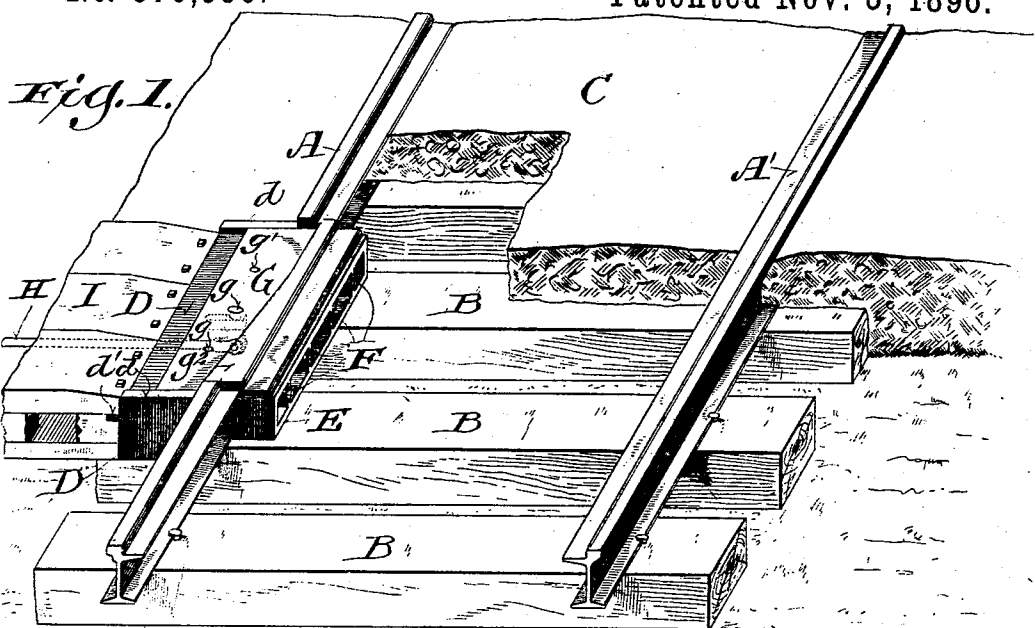
(No Model.)

2 Sheets—Sheet 1.

G. GIBBS.
DERAILING DEVICE FOR RAILWAYS.

No. 570,596.

Patented Nov. 3, 1896.



Witnesses:
Geo. W. Young,
Chas. L. Ross.

Inventor:
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Attorneys.

(No Model.)

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Fig. 3.

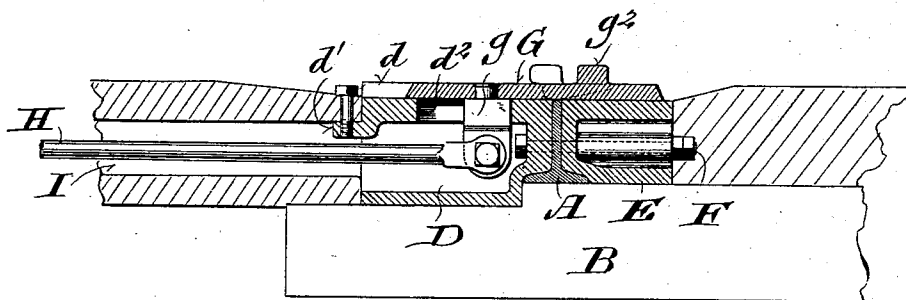


Fig. 4.

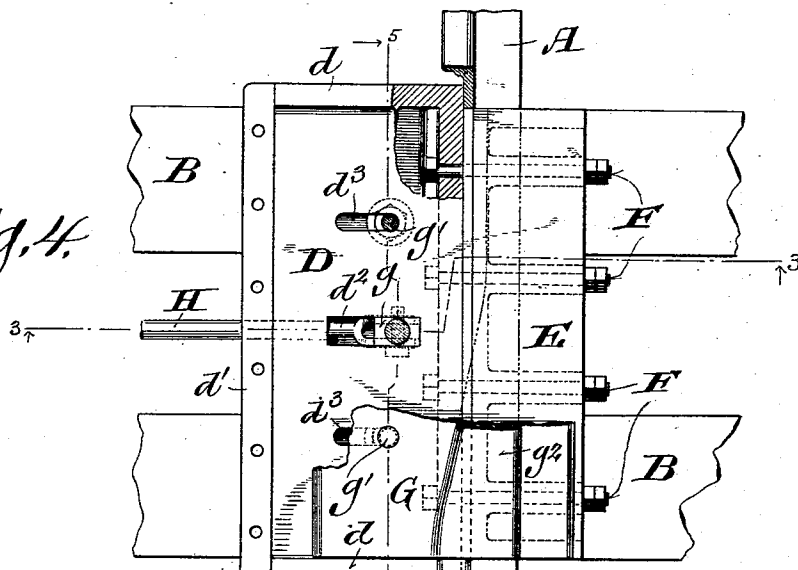
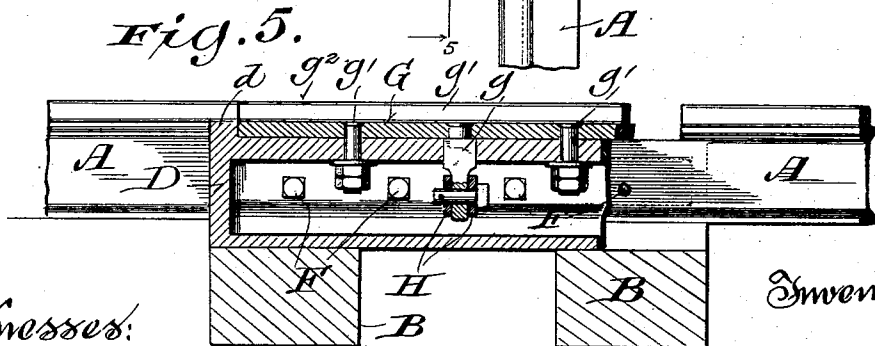


Fig. 5.



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UNITED STATES PATENT OFFICE.

GEORGE GIBBS, OF MILWAUKEE, WISCONSIN.

DERAILING DEVICE FOR RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 570,596, dated November 3, 1896.

Application filed July 18, 1896. Serial No. 599,714. (No model.)

To all whom it may concern:

Be it known that I, GEORGE GIBBS, of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Derailing Devices for Railways; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The main object of my invention is to provide means that will operate with certainty, under all conditions, to derail cars running on tram-rails in the streets of cities or other places where the heads of the rails are laid approximately flush with the street surface, and, in the attainment of that end, to avoid joints in the track-rails and obstructions to the passage of ordinary vehicles, and to prevent freezing or clogging of the movable parts and operating connections of the device.

It consists, essentially, of a rail having a portion of its head removed and provided with a laterally-movable part which, in its normal position, constitutes a continuation of the rail-head, and in abnormal position presents an incline or turnout and an opening through the rail-head in the path of the wheel-flanges; and it consists, further, of certain novel details in the construction and arrangement of component parts of the device, as hereinafter particularly described, and pointed out in the claims.

In the accompanying drawings like letters designate the same parts in the several figures.

Figure 1 is a perspective view of a portion of a railway-track and road-bed to which my improved derailing device is applied, a portion of the pavement being removed to more clearly disclose the device. Fig. 2 is a plan view of the same, showing two car-trucks or pairs of wheels, one of which is approaching the derailing device upon the track and the other is derailed by the operation of the device, which is represented in its open or abnormal position. Fig. 3 is a vertical cross-section of the device on the line 3 3, Fig. 4. Fig. 4 is a plan view showing portions of the

device broken away; and Fig. 5 is a vertical longitudinal section on the line 5 5, Fig. 4.

A A' designate the rails, and B B the ties, of an ordinary street-railway track. I have shown, for the purpose of illustration, a common form of rail having an inwardly-projecting flange slightly below the head for the accommodation of wagons; but my device is applicable to other forms of rails, such as are commonly employed for steam and street railway service.

C designates the paving, which, with this class of railways, is usually laid with its surface approximately flush or a little below the heads of the rails.

D is a hollow casting open on the outer side and fitted on the opposite side to the outside of the rail A, so as to bear against the web and upon the flange or base of the rail, as clearly shown in Fig. 3. It is formed on the upper side with end ribs or flanges *d d* at right angles with the rail-head, and between these flanges it is made or finished plain and smooth. On its outer side, a little below the top, it is formed with an outwardly-projecting horizontal flange *d'* for the attachment of the plank or plate which covers the box for the operating-rod or connection of the device, as hereinafter explained.

E is a block or casting fitted to the inner side of the web and base of rail A and secured to the casting D by bolts F F, by means of which said castings are firmly clamped to opposite sides of the rail, with their upper surface in the same plane approximately at a level with the top of the rail-web. The head of the rail is cut away between the two castings a distance equal to the length of the casting E; but the web and base are left intact and continuous with those portions of the rail extending from both ends of the derailing device. To avoid unnecessary weight and consumption of material, the casting E may be recessed in the inner side, sleeves or bearings being formed the full width of the casting around the clamping-bolts F, as shown.

G is a plate fitted on its under side to rest and slide upon the top surface of the castings D and E, which constitute a base or foundation therefor, and at its ends it is fitted between the end flanges *d d* of the casting D

and the ends of the rail-head, which terminate flush with said flanges. It is formed or provided on its under side with a lug or perforated ear g , which projects through a transverse slot d^2 in the top of casting D, and to which the operating-rod H is attached. This lug or ear may be riveted to the plate G, as shown, or it may be cast integrally therewith. The plate G is held down in place upon its base by bolts $g' g'$, projecting downwardly through transverse slots $d^3 d^3$ in the top of casting D, and provided with retaining-nuts and washers below said slots, as shown in Fig. 5. It is formed or provided on its upper side with a longitudinal rib or bar g^2 , which is straight on the inner side, and, in the normal or closed position of the device, constitutes a continuation of the head of rail A from end to end of the break therein. On the outer side it is formed for a certain distance from the end toward which cars approach it straight or parallel with the inner side, and for the remainder of its length it is inclined or turned outwardly, so that in the open or abnormal position of the device it will engage the inner side of the flange of a car-wheel which passes over the break in the rail and turn it out of its course, thereby forcing the car or motor to which it belongs off from the track, as shown at the right of Fig. 2. The straight portion of the outer side of said rib or bar is made of sufficient length to allow a wheel-flange to clear the adjacent end of the rail-head before it engages the outwardly-inclined portion of said bar, thereby preventing the sticking or binding of the wheel-flange between said bar and the rail-head or the breaking of the wheel-flange. When the plate G is moved inwardly into its open or abnormal position, as shown in Figs. 1 and 2, an opening is presented in the path of the wheel-flange through the rail between the narrow end of the bar g^2 and the adjacent end of the rail-head. The plate G is made of sufficient width to cover in either position the slots on the top of casting D, and is beveled on the sides, as shown in Fig. 3, so as to form sharp edges next to the base D E, upon which it rests and slides, and thereby loosen and remove from said base ice, dirt, or other obstructions which may form or accumulate thereon and tend to clog or obstruct the movement of said plate.

The operating-rod H is connected in the usual or any suitable manner with a lever in a signal or watchman's tower, or at any other convenient point, for the operation of the device, and is inclosed where it passes under the surface of the street or roadway in a shallow box I, which may be conveniently constructed of planks, the plank forming the cover being bolted to the flange d' of casting D. Either or both the lug or ear g or the bolts $g' g'$ constitute stops, which, by engagement with the ends of the slots d^2 and d^3 , limit the movement of the plate G in both directions at the proper points and prevent strain

upon and injury to the operating connections of the device. The outward movement of said plate is arrested when the inner side of the rib or bar g^2 is in line with the inner side of the head of rail A, and its inward movement is arrested when said rib or bar is approximately in the position shown in the drawings.

In the construction and application of my device to a railway-track the continuity of the rail web and base is preserved, a portion only of the head of the rail being cut away, thereby avoiding breaks and joints in the rails, as in the case of the ordinary forms of frogs and switches, which for this reason are difficult and expensive to maintain. The exposed upper face of the device, being practically flush with the roadway and without projections, offers no obstruction to wagons and ordinary vehicle traffic, and consequently the exposed parts of the device are not pounded out of surface by such traffic. The necessity of providing a deep box and foundation below the ties, thus forming a pocket or well for catching drainage, is avoided. The operating-rod H and its connection with the plate G are thoroughly protected from dirt and freezing, the openings in the top of casting D, containing said connection, being at all times closed by the plate G. Clogging or obstruction to the operation of the device by dirt or ice is thus effectually prevented.

I do not wish to be understood as limiting myself to the details of construction herein shown and described, as they may be variously modified within the spirit and intended scope of my invention.

I claim—

1. A derailing device, consisting of a fixed bed-plate or base, a plate movably mounted thereon and formed or provided on its upper side with a rib constituting in the normal or closed position of the device a continuation of the inner and upper sides of the head of a rail, and having on its outer side an incline or turnout adapted in the abnormal or open position of the device to engage the inner sides of wheel-flanges and turn them from their course off from the track-rails substantially as and for the purposes set forth.

2. A derailing device consisting of a base composed of two parts adapted to be clamped to opposite sides of the rail-web, a laterally-movable plate mounted upon said base and formed or provided on the upper side with a rib which is straight on the inside and inclined or turned outwardly on the outside, said rib constituting in the normal or closed position of the device a continuation of the inner and upper sides of the rail-head, and a connection for moving said plate laterally on said base, substantially as and for the purposes set forth.

3. A derailing device consisting of a base, adapted to be secured to a railway-track, and a laterally-movable plate mounted to slide thereon and provided on its upper side with

a rib which is straight on the inside and inclined or turned outwardly on the outside, said plate having beveled edges adapted to clear obstructions from the face of the base upon which it slides, substantially as and for the purposes set forth.

4. A derailing device consisting of a hollow or recessed base, having a transverse slot in the upper side, a laterally-movable plate mounted thereon and provided on its upper side with a rib which is straight on the inside and inclined or turned outwardly on the outside, and on the under side with a projection which is adapted to traverse the slot in said base and by engagement with the ends of said slot to limit the movement of said plate in either direction, substantially as and for the purposes set forth.

5. In a derailing device the combination with a railway-rail having its head cut away for a certain length, of a base composed of two blocks clamped to opposite sides of the rail-web from which the head is removed, a laterally-movable plate mounted upon said base and formed or provided on its upper side with a rib which is straight on the inside and inclined or turned outwardly on the outside, said rib normally filling the break in the rail-head and constituting a continuation thereof, substantially as and for the purposes set forth.

6. A derailing device consisting of a base, a plate provided on its upper side with a rib straight on the inside and for a portion of its length outside, which from the termination of its straight portion is inclined or turned outwardly, said rib being adapted to serve in its normal position as a part or continuation of the head of a railway-rail, substantially as and for the purposes set forth.

7. In a derailing device the combination

with a railway-rail having its head cut away for a certain length, of a laterally-movable plate or bar, forming in normal position a continuation of the rail-head over the break therein, and presenting in abnormal position an incline or turnout on the outside and an opening in the path of the wheel-flanges, substantially as and for the purposes set forth.

8. The combination with a railway-rail having its head cut away for a certain distance, the web and flange being left continuous and unbroken, of a derailing device secured to that part of the rail web and flange from which the head is removed and comprising a laterally-movable plate or bar adapted in normal position to close the break in the rail-head and form a continuation thereof on the inside, and in abnormal position presenting an incline or turnout for engaging the wheel-flanges on the inside and forcing them out of their course off from the rail, substantially as and for the purposes set forth.

9. A derailing device consisting of a railway-rail having a portion of its head cut away and continuous unbroken web and flange, and a part movably connected therewith so as to constitute in normal position a continuation of the head which is integral with the web and flange, and in abnormal position to present an incline or turnout and an opening through the rail-head in the path of the wheel-flange, substantially as and for the purposes set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

GEORGE GIBBS.

Witnesses:

E. V. WRIGHT,
CHAS. L. GOSS.