





# UNITED STATES PATENT OFFICE.

HARDIN QUINCY HALL, OF LOUISVILLE, KENTUCKY.

## CAR-REPLACER.

SPECIFICATION forming part of Letters Patent No. 757,299, dated April 12, 1904.

Application filed September 23, 1903. Serial No. 174,327. (No model.)

*To all whom it may concern:*

Be it known that I, HARDIN QUINCY HALL, a citizen of the United States, residing at Louisville, in the county of Jefferson, State of Kentucky, have invented certain new and useful Improvements in Car-Replacers, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to a car-replacer, and particularly to a device embodying a replacing-block and a frog-block disposed in contact with the opposite rails of a track.

The invention has for an object to provide a novel and improved construction of the replacer-block whereby it may be formed in a single casting and rendered reversible in use by the shifting of the position of the elevating-bar and adapted to cooperate with a frog-block by which the lateral movement of the car to be raised is effected, so that the flanges of the wheels are adapted to rest within the track without the necessity of a sliding movement of the car or a sudden jar thereof.

A further object of the invention is to provide an improved formation of frog-block adapted to be formed of a single casting and provided with means for retaining the same in reversible position without the necessity of spiking or any other connection with the permanent road-bed or rail.

Other and further objects and advantages of the invention will be hereinafter set forth and the novel features thereof defined by the appended claims.

In the drawings, Figure 1 is a plan. Fig. 2 is an end view thereof looking toward the left. Fig. 3 is a detail perspective of the outer face of the replacer-block. Fig. 4 is a similar view of the inner face thereof. Fig. 5 is a perspective of the tie-bar for retaining the replacer-block against lateral movement. Fig. 6 is a similar view of the elevating-bar carried by the socket of the replacer-block. Fig. 7 is a top perspective of the frog-block. Fig. 8 is a bottom perspective thereof, and Fig. 9 is a bottom plan of the replacer-block.

Like letters of reference refer to like parts in the several figures of the drawings.

The letter A designates the opposite rails,

of the usual construction, which form the track and are secured upon the ordinary cross-ties A' in the usual manner. In connection with these opposite track-rails the replacer B is provided and adapted to cooperate with the outer face of one of the rails. This block is preferably formed as a single casting and is provided upon its face next the rail with a rib B', adapted to contact with the web of the rail, and with a recessed portion B<sup>2</sup> beneath said rib to receive the flange thereof. At the upper portion of the block the replacing-face B<sup>3</sup> is provided, so as to lie above the tread of the rail and extend slightly thereover, which face is curved or beveled from its center toward the opposite ends, as at B<sup>4</sup>, thus providing for the reversal of the block and also forming an incline to guide the flange of the wheel from the elevating-bar C over the tread of the rail. This elevating-bar is provided at one end with a rectangular horizontally-disposed head portion C', from which the upwardly-inclined face C<sup>2</sup> extends to the opposite end of the bar. The angular head C' of this bar is adapted to fit in a similar socket B<sup>5</sup>, one of which is provided at each side of the block, and the walls thereof are disposed at substantially a right angle to the bottom, so as to prevent any lateral movement of the bar within the socket and retain the latter in a straight line leading from the socket. For the purpose of preventing a longitudinal movement of the bar the lower end thereof may be provided with a pin or projection C<sup>3</sup>, if found desirable, to engage with the upper surface of the tie, whereby the bar will be held securely against any movement. The block B is provided at its outer face with a base-plate B<sup>6</sup>, from which parallel strengthening-ribs B<sup>7</sup> extend upward to the walls of the sockets B<sup>5</sup>, while upon the under face of this plate depending ribs B<sup>8</sup> are formed and adapted to rest between adjacent ties to prevent any movement of the block parallel with the rail. For the purpose of preventing movement of this block laterally of the rail a tie-bar D is provided, having a head D' provided at one end to engage the web of the rail, as shown in Fig. 2, and a recess D<sup>2</sup> beneath this head to receive the flange



of the rail, and the opposite end thereof is provided with an aperture  $D^3$ , adapted to receive a screw-bolt  $D^4$ , which is passed upward through the aperture  $B^9$  in the block  $B$  and there provided with securing-nuts  $D^5$ , so that the replacer-block is adapted for application and retention against any movement by the use of a single bolt and a tie-bar.

The frog-block  $E$  (specifically shown in Figs. 7 and 8) is provided upon its upper face with an inclined portion  $E^1$  and flattened horizontal portion  $E^2$ . Extending through the inclined portion is a groove  $E^3$  to receive the flange of the car-wheel, which groove after reaching the horizontal portion  $E^2$  is bifurcated, and two diverging grooves  $E^4$  extend therefrom. The outer wall of each of these grooves is cut away, as at  $E^5$ , so as to permit the tread of the wheel to ride upon the tread of the rail. This frog-block is reversible in position, and for that reason each face thereof is provided for a portion of its length with a rib  $E^6$ , adapted to fit and engage the web of the rail, while the flange thereof extends into a recess  $E^7$ , formed in the under face of the frog-block, while the upper portion of this frog-block beyond the cut-away ends  $E^5$  extends parallel and in contact with the side of the tread of the rail. For the purpose of preventing movement of this block longitudinally of the rail a series of downwardly-extending lugs  $E^8$  are provided upon the under face thereof and adapted to fit between the adjacent ties on the road-bed, as indicated by dotted lines in Fig. 1. It will be seen that these lugs retain the frog-block against longitudinal movement, while any vertical movement thereof is resisted by the contact of the rib with the web of the rail, particularly when the weight of the car to be elevated is placed thereon, so that any other fastening devices are unnecessary.

In the operation of the invention the car to be replaced upon the track will be brought into a position parallel therewith, as it has been found impracticable to attempt to replace a car upon a track when the wheels thereof are at an angle to the rails. The car is then placed parallel with the elevating-bar, so that the tread of the wheel will ride thereon, while the flange of the opposite wheel engages the groove in the frog-block, and the car is thus raised to the top of the rails, after which a lateral movement is effected by the movement of the flange of the wheel along the diverging groove in the frog-block until the end of the groove is reached, when the wheel-flange will be rested upon the tread of the rail without sliding or dropping thereon, so that injury to the replacing and frog block is prevented. It will also be obvious that the replacer-block carries the wheel riding thereon above the tread of the rail  $A$ , so that its flange may engage the inner face of this rail, while the frog-block is only of sufficient elevation

to place the tread of the wheel upon the rail-tread. It is also desirable to prevent any lateral movement or swinging of the elevating-bar, and for that reason the same is provided with an angular head adapted to fit in an angular recess in the replacing-block, so that it is secured in a fixed relation parallel to the rail, which is necessary to resist any side play or movement of the wheel imparted either by the frog-block or other means. Each of the blocks is adapted to be formed of a single casting and to be reversible in position, so that they can be used upon the inner and outer faces, respectively, of either rail, while they are effectually held against vertical movement by means of the ribs thereon engaging the web of the rail.

It will be obvious that changes may be made in the details of construction and configuration without departing from the spirit of the invention as defined by the appended claims.

Having described my invention and set forth its merits, what I claim, and desire to secure by Letters Patent, is—

1. A car-replacer, comprising a replacer-block having an elevating-bar extending therefrom parallel with the outer face of the rail, and a frog-block disposed parallel with the face of the opposite rail and provided with a groove therein diverging toward the rail at one end thereof.

2. In a car-replacer, a replacer-block having an elevating-bar extending therefrom parallel with the outer face of the rail, a frog-block disposed parallel with the face of the opposite rail and provided with a groove therein diverging in opposite directions at one end thereof, ribs upon the opposite faces of said frog-block adapted to engage the web of the rail, and a rib upon the inner face of the replacer-block adapted to engage the face of the rail.

3. In a car-replacer, a replacer-block having an elevating-bar extending therefrom parallel with the outer face of the rail, a frog-block disposed parallel with the face of the opposite rail and provided with a groove therein diverging in opposite directions at one end thereof, ribs upon the opposite faces of said frog-block adapted to engage the web of the rail, a rib upon the inner face of the replacer-block adapted to engage the face of the rail, and a tie-bar engaging the web of the rail opposite the rib upon the replacer-block and removably secured at its opposite end to said block.

4. In a car-replacer, a replacer-block having upon its upper face rectangular sockets, strengthening-ribs extending from said sockets to the base of the block, a replacing-face inclined in opposite directions and disposed at one side of the sockets in the block, and a web-contacting face extending below said replacing-face.

5. In a car-replacer, a replacer-block hav-



ing upon its upper face rectangular sockets, strengthening-ribs extending from said sockets to the base of the block, a replacing-face inclined in opposite directions and disposed  
5 at one side of the sockets in the block, a web-contacting face extending below said replacing-face, parallel lugs depending from the under face of said block, and a tie-bar having at one end a web-engaging head and provided at its opposite end with an aperture to receive a retaining device carried by the replacer-block.  
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6. In a car-replacer, a replacer-block having opposite angular sockets in its upper face  
15 and provided with means to prevent movement thereof longitudinally of the rail, means carried by said block to prevent lateral movement thereof relative to the rail, an elevating-bar having an angular head to fit said sockets,

and an inclined face extending from said head 20 to the opposite end of the bar.

7. In a car-replacer, a frog-block of substantially the height of a rail and having an inclined portion at one end with a groove extending therethrough and merging into diverging grooves extending to the edges at the opposite end of the block where the outer walls thereof are cut away, contact-ribs upon the opposite faces of the block disposed to engage the rail-web, and spaced holding-lugs 25 depending from the under face of the block. 30

In testimony whereof I affix my signature in presence of two witnesses.

HARDIN QUINCY HALL.

Witnesses:

ALONZO MEGLEMRY,  
CHARLES L. NIMAN.