

No. 684,344.

Patented Oct. 8, 1901.

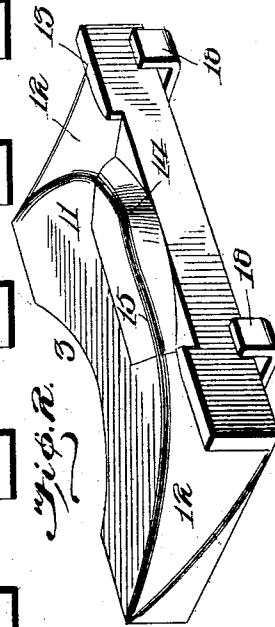
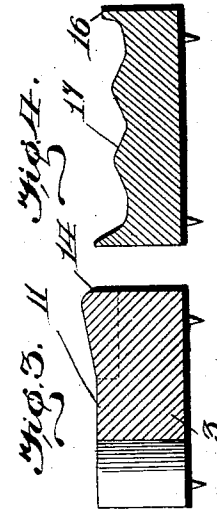
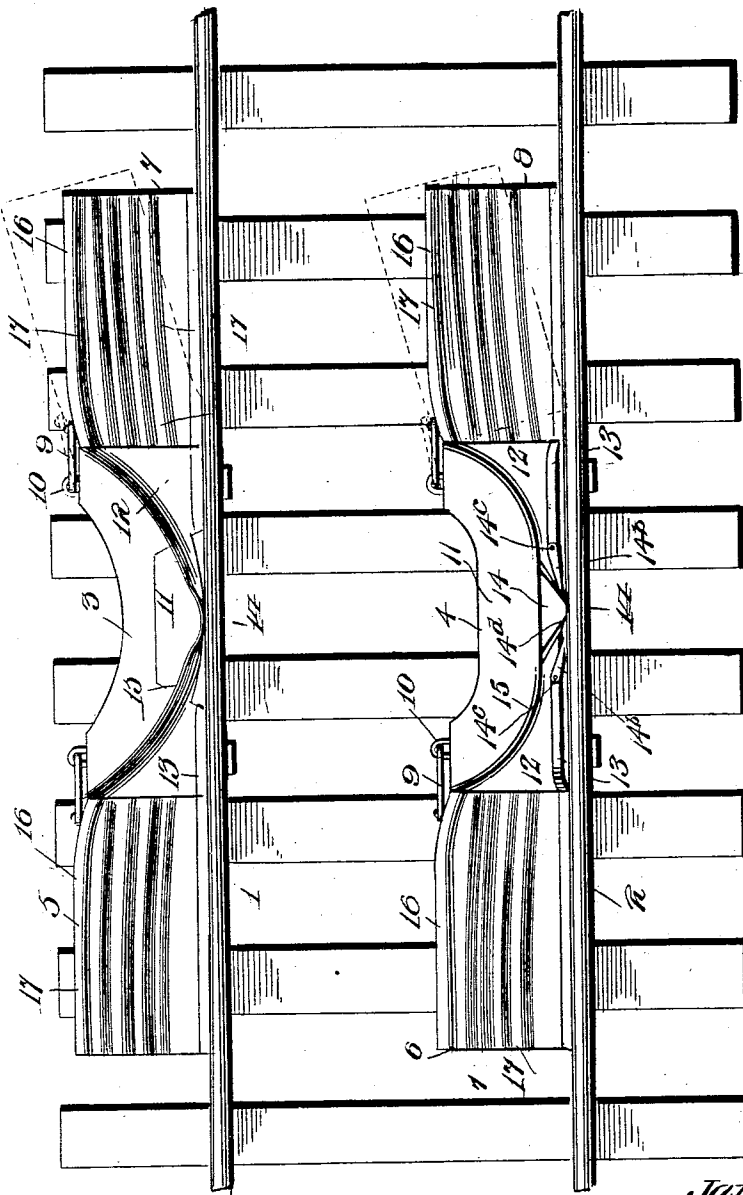
J. BIRDWELL & W. O. VANCE.

CAR REPLACER.

(Application filed Oct. 29, 1900.)

(No Model.)

2 Sheets—Sheet 1.



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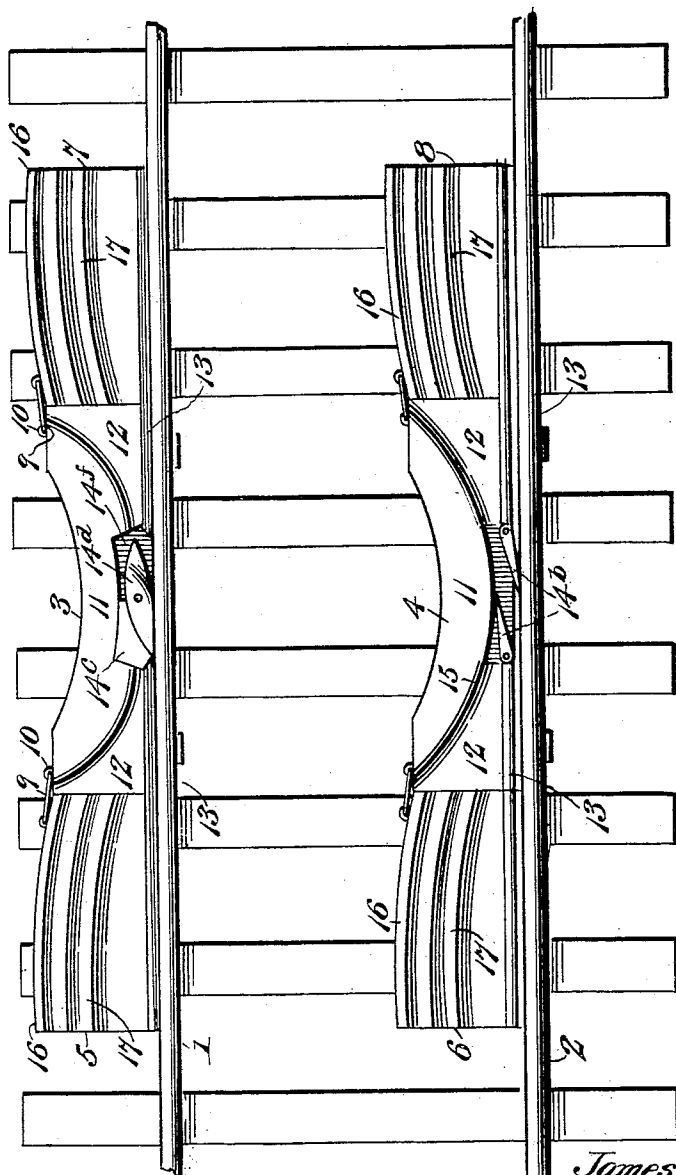


Fig. 6.

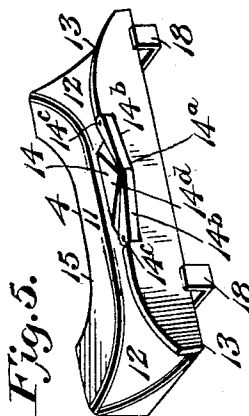


Fig. 5.

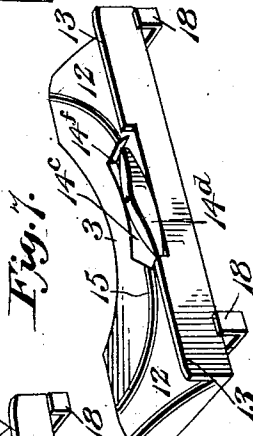


Fig. 7.

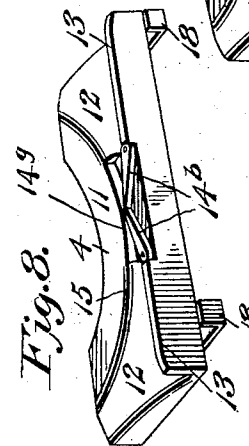


Fig. 8.

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UNITED STATES PATENT OFFICE.

JAMES BIRDWELL AND WILLIAM O. VANCE, OF NEW ALBANY, INDIANA.

CAR-REPLACER.

SPECIFICATION forming part of Letters Patent No. 684,344, dated October 8, 1901.

Application filed October 29, 1900. Serial No. 34,778. (No model.)

To all whom it may concern:

Be it known that we, JAMES BIRDWELL and WILLIAM O. VANCE, citizens of the United States, residing at New Albany, in the county of Floyd and State of Indiana, have invented a new and useful Car-Replacer, of which the following is a specification.

Our present invention relates to a novel car-replacer, the object in view being to produce a simple and inexpensive car-replacing device or wrecking apparatus designed to effect the replacement of the derailed car upon the rails.

A further object of the invention is to provide as adjuncts for the wrecking-frogs peculiarly-constructed approach-blocks having flexible connection with the frogs and designed to be placed at various angles for the purpose of facilitating the approach to the frogs of cars whose wheels are located at considerable distances from the tracks.

To the accomplishment of these objects the invention consists in the construction and arrangement of parts to be hereinafter described, illustrated in the accompanying drawings, and defined in the appended claims.

In said drawings, Figure 1 is a top plan view of a section of railway-track, showing our replacing devices applied as in use, the adjusted positions of the approaches being indicated by dotted lines. Fig. 2 is a detail view, on a somewhat-enlarged scale, of the outer wrecking-frog. Fig. 3 is a central transverse section therethrough. Fig. 4 is a similar view of one of the approach-blocks. Fig. 5 is a detail view of the inner frog. Fig. 6 is a view similar to Fig. 1, but showing slightly-modified forms of frogs; and Figs. 7 and 8 are detail views of modified outer and inner frogs.

Referring to the numerals of reference employed to designate corresponding parts in the several views, 1 and 2 indicate a pair of rails comprising a section of railway-track.

3 and 4 indicate the outer and inner wrecking-frogs, and 5, 6, 7, and 8 the approach-blocks. In use the frogs and approach-blocks are arranged in sets—that is to say, each of the frogs is provided at each end with an approach-block flexibly connected thereto—as,

for instance, by hooks 9, carried by the approach-blocks at the side thereof opposite the adjacent track and designed for engagement with staples 10 or other suitable keepers projecting from the frogs. As shown in Fig. 1 of the drawings, one set of devices, comprehending a frog and two of the approach-blocks, is located adjacent to the inner side of one rail, and the other set is located adjacent to the outer side or face of the other rail, this relation of the replacing devices to the rails being obviously necessary, as the wheels at the opposite sides of a derailed car will be located, respectively, between the rails and beyond the outer side of one of them.

Each of the wrecking-frogs 3 and 4 is a solid block of forged steel of generally oblong form and of a height sufficient to bring the upper face 11 of said frog flush with the upper surface of the track when the frog is positioned upon the ties. For the purpose of facilitating the travel of the car-wheels to the upper surface of the frog the opposite ends of the latter are provided with flaring recesses which define inclined approach-faces 12 and vertical rail-flanges 13. At the center of the frog the flanges 13 are cut away and intermediate of them is located a replacing-nose 14, constituting a continuation of the inclined approach-faces 12 and having one longitudinal edge 15 curved, as shown. The center of the nose of the outer frog 3 is located in the vertical plane of the track side of the frog and in a horizontal plane somewhat above the upper surface of the frog. This peculiarity of form of the nose 14 is designed with a view to causing the elevation of the wheel sufficiently above the track to permit the wheel-flange to pass over the track for location at the opposite side thereof.

The construction of the inner frog 4 is somewhat different from that of the outer frog, for the reason that the latter is designed to lift the wheel-flange over the track, while the former is intended to draw the car laterally for the purpose of presenting the flanges of the inside wheels against the side of the rail, it being obvious that since the wheel-flanges are located at the inside of the wheels there is no necessity for lifting the flange of

the wheel passing up the inside frog, except so far as may be necessary to bring the tread of the wheel in the horizontal plane of the upper face of the track. The nose 14 of the frog 4 is therefore not elevated above the upper surface of the frog, but, on the contrary, is slightly depressed, and its center instead of being located in the plane of the track side of the frog is extended slightly beyond the face of the frog adjacent to the track, as indicated at 14^a, and the face of the frog is vertically inclined, as shown, for the purpose of presenting sufficient space between the upper portion of the frog and the track to permit the proper manipulation of a pair of switch-points 14^b. The switch-points 14^b constitute, in effect, pivoted sections or extensions of the flanges 13, being pivoted at their outer ends adjacent to the inner ends of the rail-flanges 13, as indicated at 14^c, and having their tapering ends or points disposed normally against the face of the nose 14. It will be noted, further, that the approach-faces 12 of both the inner and outer frogs have an upward inclination from the ends of the frog to the nose 14 and that they have a transverse inclination tending to cause the car-wheels to gravitate toward the track as they are advanced toward the nose, the rail-flanges 13 serving as guards to prevent the wheels from abutting against the rails before they are drawn up the inclines of the nose of the outer frog for elevation above the track or against the front faces of the inner frog to be drawn toward the track.

The approach-blocks 5, 6, 7, and 8 are all identically constructed, and a description of one will therefore serve to give a clear understanding of the construction of the others. Each block is of substantially oblong form, as shown, but is preferably somewhat widened at its outer end to give the blocks a greater range of use without adjustment. The upper face of each block is inclined, as shown, from its outer end to the inner end thereof, which latter is located in substantially the horizontal plane of the outer end of the adjacent approach-face 12 of the frog. For the purpose of preventing accidental displacement of the wheels from the blocks the latter are provided at their opposite sides with vertical longitudinal guard-flanges 16, and the upper face of the block is preferably corrugated longitudinally, as indicated at 17, to define longitudinally-disposed and somewhat oblique lead-grooves to cause the wheel as it is drawn over the face of the block to move toward the rail. It will now be seen that as the derailed car is drawn forward its wheels will be presented to the lower outer ends of the approach-blocks and will be drawn up the inclined surfaces of the blocks until they are deposited upon the inclined approach-faces 12 of the frogs. Continued movement of the car will cause the wheels to travel up the faces 12 and to move toward the rail-flanges 13, finally coming in contact with the

replacing-noses 14, which will guide the wheels to positions above the tracks to effect the replacement of the car. As premised, however, the manner in which the two frogs guide the car-wheels is somewhat different, as the wheels traversing the outside frog will ride upon the nose thereof until their flanges are passed over the adjacent track, while those wheels traversing the inside frog will present their flanges between the front face of the frog and the adjacent switch-point, the curvature of the frog serving to urge the wheel laterally, which swings the switch-point against the inner side face of the track, as stated. It will be seen that as the wheel-flange passes beyond the end of the switch-point which has guided it to place it will be permitted to continue its movement without obstruction from the other switch-point which has not been brought into use and which still lies against the face of the frog and out of contact with the track, leaving sufficient intervening space for the passage of the wheel-flange.

In Fig. 1 we have shown in dotted lines the manner in which the approach-blocks may be swung around at an angle to the rails when the wheels of the derailed car are located at considerable distances from the tracks. If desired, the under faces of the frogs and approach-blocks may be provided with depending pins designed to aid in the fixed retention of the replacing devices; but such retaining means may or may not be employed, in accordance with the individual ideas of the manufacturer. The frogs may also be provided with track-engaging hooks 18, as shown.

In Figs. 6, 7, and 8 we have illustrated our wrecking apparatus in a slightly-modified form. In this form the outer frog 3 instead of being provided with a fixed nose is surmounted by a centrally-pivoted switch-nose 14^a, located between the inner ends of the flanges 13 and designed to be shifted for the purpose of bringing either end into close contact with the rail, according to the direction of movement of the car being replaced. This switch-nose is retained in its shifted position by a reversible locking-block 14^c, designed to fit snugly within either end of a recess 14^f, immediately behind the switch-nose. The locking-block is of angular form, as shown, and is designed to be placed loosely in either end of the recess for the purpose of retaining the nose in either of its adjusted positions. The inner frog 4 illustrated in these last three figures is identical with the corresponding frog illustrated in the preceding figures, except that the face adjacent to the track is not vertically inclined and the nose 14^c does not extend to the track side of the block, but is removed therefrom in order that the switch-points may be normally moved to a point within the plane of the side face of the frog adjacent to the track. The mode of use of this modified form of the apparatus is

precisely the same as that described in connection with the preferred form and need not, therefore, be reiterated.

From the foregoing it will be observed that we have produced a simple, durable, inexpensive, and efficient car-replacing device adapted to accomplish the several objects hereinbefore enumerated; but while the present embodiment of the invention appears at this time to be preferable we wish to reserve the right to effect such changes, modifications, and variations as may be comprehended within the scope of the protection prayed.

What we claim is—

1. A car-replacing device comprising a wrecking-frog formed with a plain upper surface extended laterally at its center to define a replacing-nose and having longitudinally and laterally inclined approach-faces constituting continuations of the side faces of the nose, and guard-rails disposed along one side of the frog and having their inner ends in spaced relation to the nose to permit the wheel-flanges to approach the track in the interval between the replacing-nose and one of the guard-flanges.

2. A car-replacing device comprising a wrecking-frog having inclined approach-faces extending from its ends, and a pivoted replacing device intermediate of the approach-faces, and located directly at that side edge of the frog designed to be placed against the track.

3. A car-replacing device comprising a wrecking-frog having inclined approach-faces extending from its ends, guard-flanges disposed along one side thereof, and a pivoted replacing member disposed intermediate of the guard-flanges, and located at the side edge of the frog.

4. In a car-replacing device, the combination with a wrecking-frog provided with inclined approach-faces, a laterally-disposed replacing-nose intermediate thereof, and guard-rails terminating in spaced relation to the nose, of approach-blocks flexibly connected to the opposite ends of the frog and capable of being shifted laterally, the upper faces of said approach-blocks being longitudinally inclined to constitute approaches to the approach-faces of the frog.

5. In a car-replacer, the combination with a wrecking-frog provided with longitudinally and laterally inclined approach-faces extending from its ends, vertical guard-rails disposed at one side of the frog and opposite the approach-faces thereof, and a replacing-nose located intermediate of the guard-flanges and of the approach-faces and oppositely inclined from the center toward its ends to constitute continuations of said faces, the apex of the

replacing-nose being located in the vertical plane of one side of the frog and in a horizontal plane above the upper face thereof, of approach-blocks located at opposite ends of the frog, each of said blocks being provided with guard-flanges constituting continuations of the guard-flanges of the frog, the upper faces of said approach-blocks being inclined longitudinally and constituting continuations of the approach-faces of the frog.

6. An approach-block for car-replacers formed with vertical flanges at its opposite edges and having its upper face longitudinally inclined and provided with oblique corrugations defining lead-grooves for the reception of wheel-flanges.

7. A car-replacing device comprising a locking-frog having a replacing-nose at its center adjacent to one side edge thereof, and pivoted switch-points disposed opposite the nose.

8. A car-replacing device comprising a locking-frog having a replacing-nose at its center and adjacent to one side edge thereof, inclined approach-faces extending from the opposite ends of the frog to the replacing-nose, rail-flanges located at one side edge of the frog, and pivoted switch-points constituting continuations of the flanges at the inner ends of the latter and opposed to the face of the replacing-nose.

9. A car-replacing device comprising a locking-frog having a replacing-nose at its center and projecting beyond the edge thereof, said edge being vertically inclined, longitudinally and transversely inclined approach-faces extending from the opposite ends of the frog to the replacing-nose, vertical track-flanges constituting guards disposed along one longitudinal edge of the frog at the ends thereof, and terminally-pivoted switch-points located at the inner ends of the track-flanges and normally disposed against the face of the nose.

10. In a car-replacing device, the combination with an outer frog provided with inclined approach-faces and a replacing-nose located at the center of one side edge of the frog and extended above the upper face of said frog, of an inner frog provided with inclined approach-faces, an intermediate nose located adjacent to one side edge of the frog, and a pair of pivoted switch-points opposed to the face of said nose.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

JAMES BIRDWELL.
WILLIAM O. VANCE.

Witnesses:

WILLIAM J. BLURT,
REUBEN RONE.