(No Model.)

B. E. TILDEN.

CAR AND ENGINE REPLACING FROG.

No. 383,779. Patented May 29, 1888.

Fig. 1.

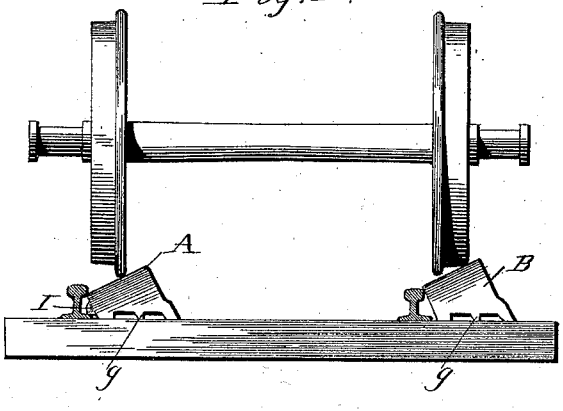


Fig. 2.

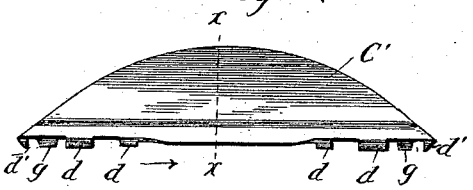


Fig. 3.

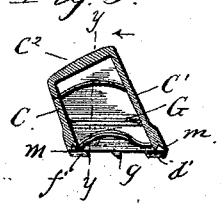


Fig. 4.

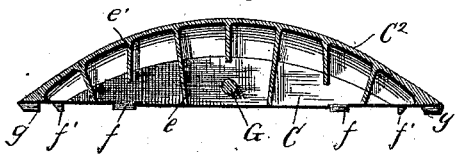


Fig. 5.

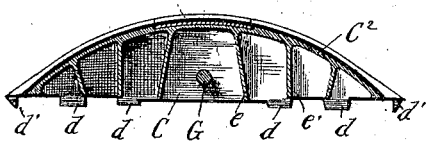
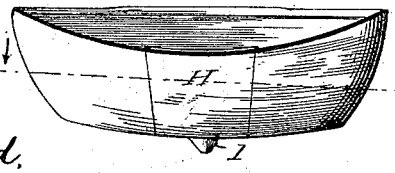


Fig. 6.



WITNESSES:
Chas. Baeder.
Van Buren Hillyard.

INVENTOR.
Burt E. Tilden.
BY
R. S. & A. P. Lacey.
ATTORNEY.

UNITED STATES PATENT OFFICE.

BURT E. TILDEN, OF YOUNGSTOWN, OHIO.

CAR AND ENGINE REPLACING FROG.

SPECIFICATION forming part of Letters Patent No. 383,779, dated May 29, 1888.

Application filed December 24, 1887. Serial No. 258,921. (No model.) Patented in England August 3, 1887, No. 10,698.

To all whom it may concern:

Be it known that I, BURT E. TILDEN, a citizen of the United States, residing at Youngstown, in the county of Mahoning and State of Ohio, have invented certain new and useful Improvements in Car and Engine Replacing Frogs, (for which I have obtained Letters Patent in Great Britain, No. 10,698, August 3, 1887;) and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to movable devices for replacing upon the track derailed cars and engines; and it consists in certain improvements upon the car-replacing frog patented to Jesse T. Fosdick October 30, 1885, No. 287,528, the same being a pair of segmental frogs cast hollow, and having inclined curved surfaces, so that when placed one outside and one inside of the opposite rails, and the derailed wheels are drawn thereon by the locomotive, or in the absence of locomotive the trucks are raised by jacks and the replacer placed thereunder, such derailed wheels will slide down such inclined surface to place upon the track.

The objects of the present improvements are to perfect the original design, to lessen the wear, to strengthen the mechanism, to better secure the frogs against movement when in use, and to supply the means for more conveniently carrying and handling the frogs. These objects I accomplish by the devices hereinafter more fully described and claimed, and shown in the accompanying drawings, in which—

Figure 1 is a transverse section of a track or a road-bed showing the application of the improvement; Fig. 2, a side view of a segment; Fig. 3, a cross-section on the line X X of Fig. 2, looking in the direction of the arrow; Fig. 4, a longitudinal section of the outer segment on the line Y Y of Fig. 3; Fig. 5, a longitudinal section of the inner segment on the line Z Z of Fig. 6; Fig. 6, a top plan view of the inner segment.

The car-replacer is composed of two segments, A and B, of corresponding shape and construction, which are adapted to be placed, the one against the inner side, the other against the outer side, of the rails of a track, the outer segment, B, being higher than the inner segment, A, to lift the flange of the car-wheel above the top of the rail, so that the track will gravitate readily to place on the rails. The two segments being constructed nearly alike, a description of one will suffice for both.

The segment is a shell composed of an inner wall, C, an outer wall, C′, and the top, C^2. The walls C and C′ are substantially parallel and incline to a vertical line, and the wall C′ is relatively higher than the wall C, so that the top, C^2, inclines to a horizontal plane, or to a plane touching the lower edges of the walls C and C′. By having the walls inclining to a vertical line they act in direct opposition to the weight placed on the segment and brace the segment against outward movement, so that the wheels of the truck or car are compelled to gravitate toward the lower side of the segment when replacing the derailed car on the rails. The shell is strengthened and adapted to withstand the great weight imposed thereon by ribs or braces extending from one wall to the other and having their top edges touching the inner side of the top, C^2. These braces may be separate pieces secured in position by suitable means, or they may be integral with the walls and top of the segment. This latter is the preferred construction, as the segment can be cast and thereby be made cheaply and without the expenditure of subsequent labor for finishing and putting of parts together. The braces may extend to the lower edge of the walls, as shown in Fig. 5, or each alternate one may be shortened, as shown in Fig. 4. Some of the braces, *e*, converge, and others, *e′*, extend in a vertical direction, to brace the top C^2 against vertical and longitudinal pressure. The lower edges of the walls are widened to strengthen them, and are provided with spurs to embed themselves in the ties or road-bed and hold the segment against longitudinal and lateral displacement. The wall C′ has a pair of spurs, *d*, near each end, which extend lengthwise of the segment, and a spur, *d′*, at each end, which is arranged at right angles to the length of

the wall. The wall C has a spur, *f*, near each end, parallel with the length of the wall, and a spur, *f'*, also near each end at right angles to the wall. The top is provided at each end with a transverse spur, *g*, which has a vertical wall on the side facing out to offer a great resistance against the outward movement of the segment. The lower edge of the walls between the middle spurs is extended to nearly a line passing through the edge of the locking-spurs, and is grooved longitudinally to form the parallel ribs *m*, which are beveled to an edge to bite into the ties or blocking between the ties and form additional points for holding the segments against lateral movement.

The walls C and C' of the shell are further strengthened by the cross-rod G, which is located midway between the ends of the segment and forms a handle, by means of which the segment can be conveniently carried. Thus a pair of segments can be carried with comparative ease by one man, one being held in each hand. The central location of the cross-bar enables it to support the load equally and prevent the walls C and C' from spreading.

In practice the segments are placed with the walls C' facing in the same direction. When the derailed cars are run up on the segments, they gravitate on the sloping tops thereof and approach the rail. If the segments rest against the rails or within several inches of the rails, according to the thickness of the wheels, the cars will be replaced thereon at one sitting of the segments. Otherwise the segments may be reset as often as necessary until the cars are rerailed. It makes no difference whether the cars are advanced or pushed back. The segments will operate in either direction.

It has been found that the greatest wear takes place at the top or crest of the segment; and to remedy this defect it has been found expedient to provide it with a wear-plate, H, of tempered metal—such as soft-center steel—having a polished surface to permit the cars to slide or gravitate readily thereon. These plates may be secured thereon in any approved manner and conform to the curvature of the segment, so as not to present a broken outline or give any very abrupt rise to the segment which would occasion any great jar to the smooth running of the car when riding on the segment. The crest of the segment is recessed and the edges of the recess converge and are undercut. The wear-plate H is dovetailed and fitted into the said recess, the smaller end of the plate being on the lower side of the segment and the longer end of the plate on the higher side.

From the foregoing the operation of the device will be readily understood. The inner segment is provided with a lug, I, which is adapted to overlap the foot of the rail and fit the space between the top and the foot of the rail, thereby preventing any toppling over of the segment, which will be readily appreciated, also preventing any separation of rails and cross-ties when weight of car or engine is on the frog.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A car-replacer composed of a shell having walls of different relative heights, and a curved or segmental top uniting the upper edges of the walls, the said top being curved transversely, substantially as described.

2. A car-replacer composed of walls substantially parallel and inclining from a vertical line, the walls being of different relative heights, the curved top uniting the upper edges of the walls and sloping from the higher to the lower wall, and the braces uniting the walls and resting against the inner side of the said top, substantially as and for the purpose described.

3. The combination, with the segmental shell, of the braces, some of the braces oblique and others vertical, substantially as and for the purpose described.

4. The combination, with the segmental shell, of the cross-rod centrally disposed to form a brace and a handle, substantially as described.

5. The combination, with the segmental shell, of the braces extending from one wall to the other and touching the top, and the cross-rod arranged midway between the ends of the segment, substantially as and for the purpose described.

6. The combination, with the segmental car-replacer, of the wear-plate located about midway between the ends of the car-replacer and arranged transversely thereof, substantially as specified.

7. The combination, with the segmental car-replacer having a recess in its crest, of the wear-plate fitted in the said recess, substantially as described.

8. The combination, with the segmental car-replacer having a recess in its crest provided with converging edges, of the wear-plate dovetailed in said recess, substantially as described.

9. The herein-described segmental shell, having the lower edges of the side walls thickened, substantially as described.

10. The herein-described segmental shell, having the side walls provided with a longitudinal groove in their edges, substantially as and for the purpose described.

11. The herein-described segmental shell, having the middle portion of its side walls thickened and extended downward, and having the lower edge of the said middle portion longitudinally grooved, substantially as and for the purpose described.

12. The combination, with the segmental car-replacer, of the projection I, square on its under side and rounding on its upper end, substantially as and for the purpose described.

13. The combination, with the car-replacer, of thin and wide locking-spurs located along each edge of the car-replacer, and having one side of the spurs in a vertical plane and the

other side beveled to form an edge, substantially as and for the purpose described.

14. The combination, with the car-replacer, of end and side locking-spurs, being thin and wide, the end locking-spurs being arranged with their greatest length at right angles to the greatest length of the side locking-spurs, and having the inner side of each locking-spur in a vertical plane and its outer side beveled inward to a straight edge, substantially as set forth.

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

BURT E. TILDEN.

Witnesses:
MARY E. MACDONALD,
JOHN H. CLARKE.