

(No Model.)

J. H. BURNS.

DEVICE FOR PREVENTING RAILROAD RAILS FROM SPREADING.

No. 480,998.

Patented Aug. 16, 1892.

Fig. 2.

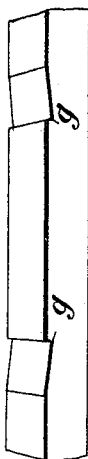


Fig. 4.



Fig. 1.

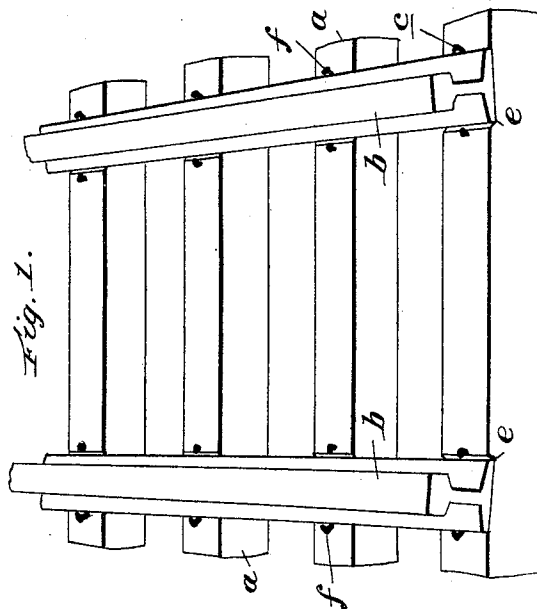
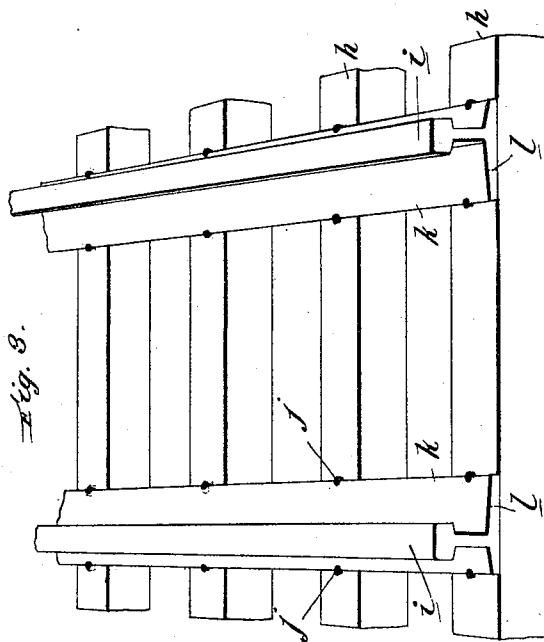


Fig. 3.



Witnesses:

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JAMES H. BURNS, OF SPOKANE, WASHINGTON.

DEVICE FOR PREVENTING RAILROAD-RAILS FROM SPREADING.

SPECIFICATION forming part of Letters Patent No. 480,998, dated August 16, 1892.

Application filed June 23, 1891. Serial No. 397,264. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. BURNS, of Spokane, county of Spokane, and State of Washington, have invented a new and useful
5 Improvement in Railroad-Rails, which improvement is for the purpose of keeping the rails of a railroad from spreading and to keep the rails in a correct and upright position at
10 right angles with the railroad-ties and to prevent the top of said rails from being lowered and inclined toward the track-center, and thus preventing the flange of the car-wheels
15 mounting the top of the rail or the wheel slipping from the rail on account of the inclined position of the rails, of which the following is a specification.

It is a well-known fact that the ordinary rails in general use on all railroads are, by the weight of the cars and freight which rest
20 more upon that part of the rails toward the track-center than on the outer side, displaced from their original position, so that the edges of the bases of the rails on the side next to the track-center are settled or pressed into the ties
25 much more than on the outer side of the rails. This uneven depression causes the rails to assume an oblique position, lowering the upper inside edges of the rails in many instances, so that the flange of the car-wheel runs upon the
30 top of the rail on one side of the track and at the same time the opposite wheel slips off the opposite rail and causes the car to leave the track. This oblique or twisting position is one of the principal causes of the rails spreading.
35 This oblique position into which the rail is forced is the source of many accidents and greatly increases the labor and expenses of operating a railroad, for the reason that employes are constantly at work putting
40 the rails back into proper position and placing strips of iron or wood under the inner edges of bases of the rails.

The nature of my invention consists in extending the bases of the rails on the sides toward the track-center to twice their usual
45 width, thus more than doubling the resistance to the pressure of the cars and freight on the inner part of the rails and keeping the rails in a position at right angles with the
50 railroad-ties and the upper inner edges of the rails in such position that the flanges of the

car-wheels cannot mount to the top of the rails, and also lessening the liability of the car-wheels slipping from the rails.

In the accompanying drawings, Figure 1 is 55 a section of railroad in the construction of which are used the rails now in common use. Fig. 2 is a railroad-tie after use, showing the indentations as made by the ordinary rail. Fig. 3 is a section of railroad in the construction 60 of which are used rails as improved by my invention. Fig. 4 is a railroad-tie after use, showing the uniform but slight indentations made by my improved rail.

To enable others skilled in railroad construction to understand and make use of my invention, I proceed more minutely to describe its construction and effect, explaining 65 with the drawings the defects and disadvantages in the common rail which are corrected and overcome by my invention. 70

In Fig. 1, *a* represents the ties, *b b* the rails, and the spikes holding the rails in place are represented by the black dots, as shown by *c*. The rails *b b* are in an oblique position, into 75 which they have been forced by the weight of the cars and freight, the inner edges of the bases making deep indentations into the ties, as shown by *e e*, and also by *g g* in Fig. 2, and the outer edges of the bases of the rails rising 80 and crowding out the spikes, as shown by *f f*.

In Fig. 2, *g g* represent the indentations made in the ties by ordinary rails, showing such indentations to be much deeper where 85 the inner edges of the rails rest than elsewhere.

In Fig. 3, *h h* represent the ties, *i i* the rails, and the spikes holding the rails in position are represented by the black dots, as shown by *j j*. *l l* mark the point in the rails from 90 which the base is extended, and *k k* represent the inner edge of the extension.

Now, as shown in Fig. 1, the effect of the pressure on the common rails is to turn them into an oblique position, which effect is due 95 to the fact that the pressure on the inner part of the top of the rails is greater than the resistance at the inner part of the base; and by my invention, as shown in Fig. 3, the resistance at the inner part of the base of the rail is greatly increased and the pressure fully 100 resisted by the broad base of the rail against the ties, thereby keeping the rails at right

angle with the ties and in their correct positions, and thus preventing the flange of the car-wheel from mounting the top of the rail or causing the wheel to slip from the rail, 5 and also avoids the drawing of the spikes on the outer side of the rail, as shown by *ff* in Fig. 1, to be done by the turning of the common rail.

What I claim as my invention, and desire 10 to secure by Letters Patent, is—

1. A railway-rail having its base expanded

or extended on its inner side, substantially as and for the purpose specified.

2. A railway comprising cross-ties and rails secured thereto, said rails having broadened 15 bases extending toward each other, substantially as and for the purpose specified.

JAMES H. BURNS.

In presence of—

S. P. DOMER,

FRED L. ALGER.