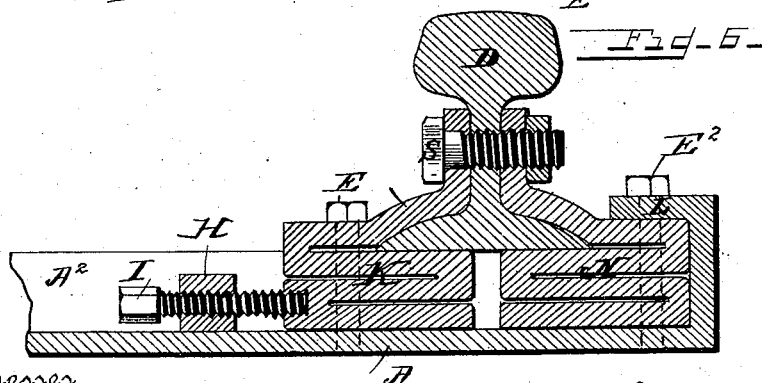
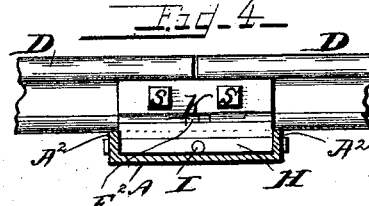
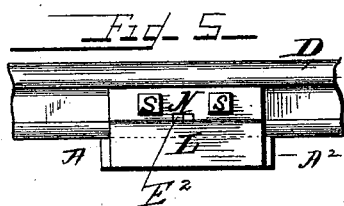
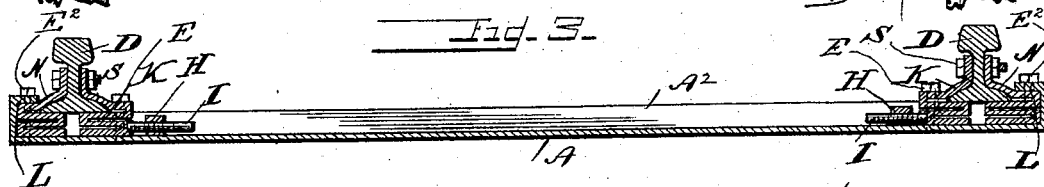
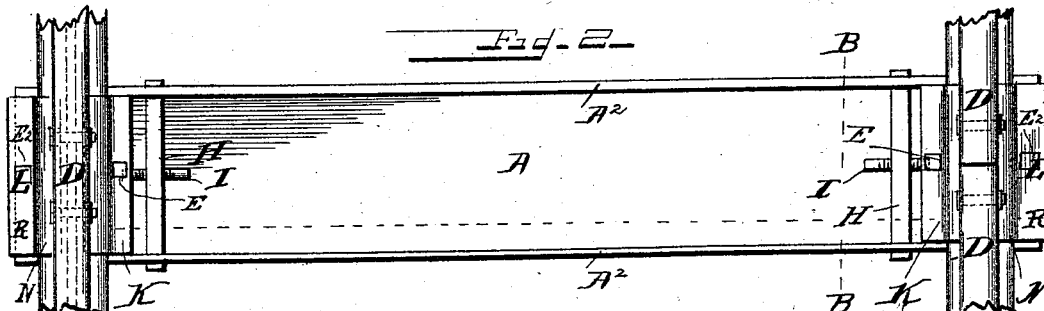
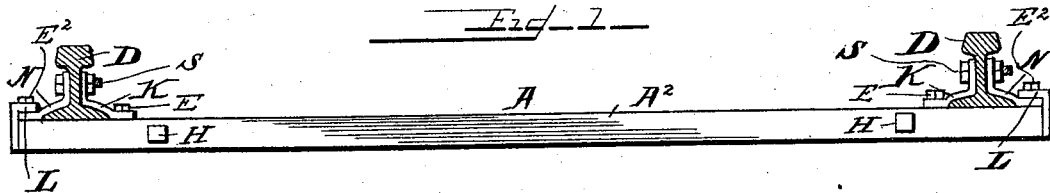


(No Model.)

C. P. HOWELL.  
RAILROAD TIE.

No. 456,096.

Patented July 14, 1891.



Witnesses

G. A. Tauberschmitt.  
S. P. Whitaker.

Inventor

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# UNITED STATES PATENT OFFICE.

COMMODORE P. HOWELL, OF CHATTANOOGA, TENNESSEE.

## RAILROAD-TIE.

SPECIFICATION forming part of Letters Patent No. 456,096, dated July 14, 1891.

Application filed February 14, 1891. Serial No. 381,458. (No model.)

### *To all whom it may concern:*

Be it known that I, COMMODORE P. HOWELL, a citizen of the United States, residing at Chattanooga, in the county of Hamilton, in the State of Tennessee, have invented a new and useful Improvement in Railroad-Ties, of which the following is a full, clear, and exact description.

The object of this invention is to provide means for preventing the spreading of the tracks of railroads and the consequent derailment of cars. In attaining this object I make use of a wrought-iron or steel tie, and chairs applied thereto to bind the rails to it.

I will describe the principle of my invention first and the best manner in which I have contemplated applying that principle, and will then particularly point out and distinctly claim the part or improvement which I claim as my invention.

In the accompanying drawings, illustrating my invention, in the several figures of which like parts are similarly designated, Figure 1 is a side elevation. Fig. 2 is a top plan view.

Fig. 3 is a longitudinal section taken in the plane of line R R, Fig. 2. Fig. 4 is a cross-section taken in the plane of line B B, Fig. 2. Fig. 5 is an end elevation, and Fig. 6 is a longitudinal section similar to Fig. 3 of one end.

The tie A is made of wrought-iron or steel, and as a trough having its bottom designed to rest upon or in the road-bed and provided with side flanges A<sup>2</sup>, upon which the rails D D rest, and also having upturned and overturned ends L, forming pockets to receive the outside rail-chairs N. The inner rail-chairs, K are substantially counterparts of the chairs N, and are secured to the tie by any suitable means—for example, vertical bolts E tapped into the tie or otherwise held in place. In order to drive the chairs K home to the rails, I may employ a sort of jack-screw, here shown as composed of a bar H passed through holes in the flanges of the tie and provided with a

screw I, which may be turned in the bar H and, bearing and pressing against the base of the chair, move it to place until the vertical bolt is set, when the jack-screw may be removed. These jack-screws themselves may be the chair-fastenings instead of the vertical bolts, and in that case it might be well to let the screws I into the bases of the chairs. When used on bridges, the ties may be secured thereto in any suitable manner—as, for example, by vertical bolts E<sup>2</sup> passed through the ends.

In connection with my tie I may use any suitable form of chair; but I prefer to use a chair constructed of wrought-iron or steel plate folded back and forth upon itself, as clearly seen in Figs. 3 and 6, to form an elastic rest for the rails. Bolts S S may be employed to secure the chairs to the web of the rail.

What I claim is—

1. A railroad-tie of wrought-iron or steel having side flanges and upturned and overturned end flanges, substantially as described.

2. A railroad-tie having side flanges and upturned and overturned end flanges, combined with chairs arranged within the trough of the tie, and means to force and hold such chairs in place, substantially as described.

3. A railroad-tie having side flanges, combined with a chair, a cross-bar inserted in holes in said flanges, and a screw in said bar to bear upon the chair and set and hold it in place, substantially as described.

4. A chair for railroad-rails, constructed of wrought metal folded back and forth upon itself to form an elastic rest for the rails and to bind the foot of the rail, substantially as described.

COM. P. HOWELL.

Witnesses:

J. P. WHITAKER,  
G. A. TAUBERSCHMIDT.