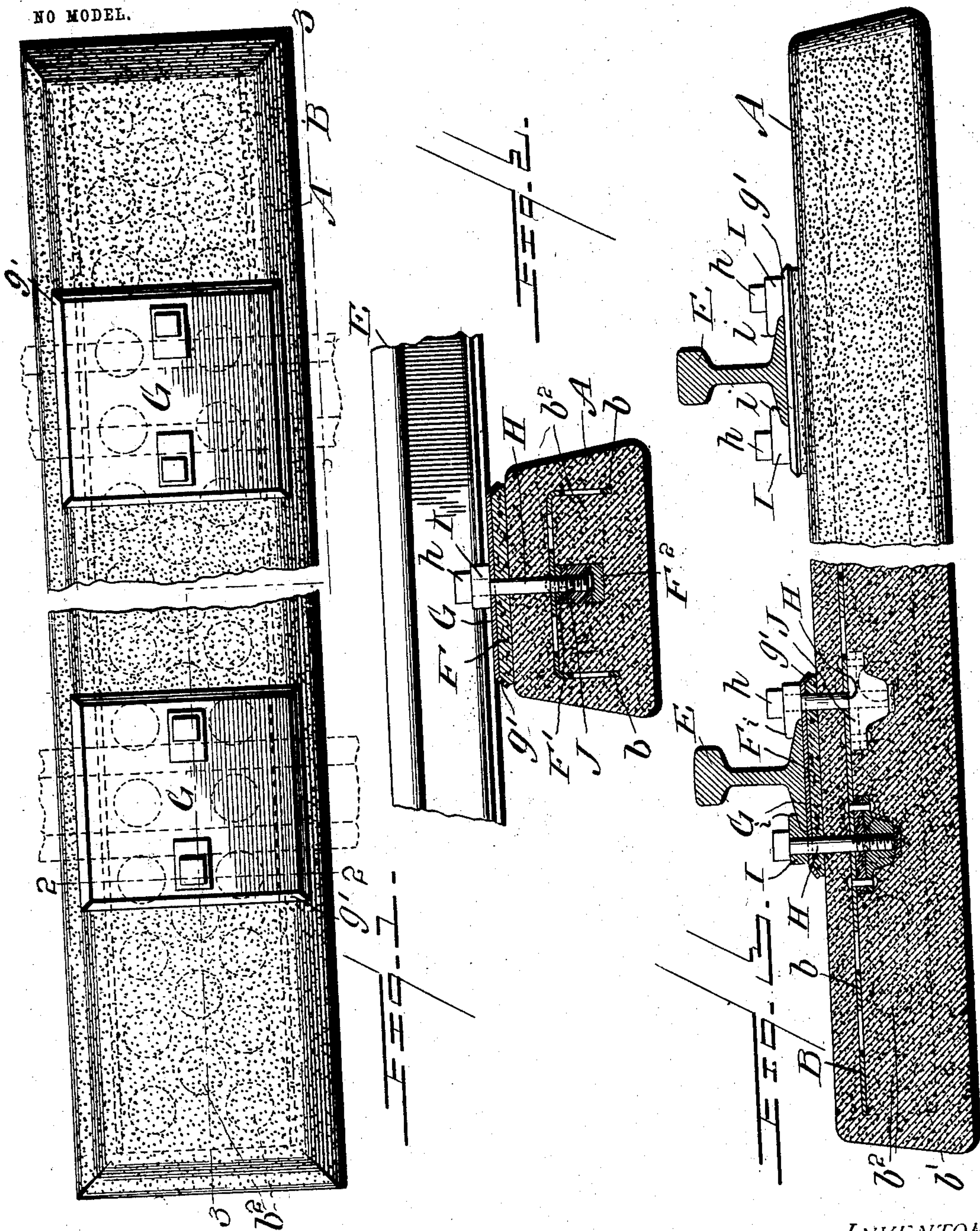


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PATENTED APR. 12, 1904.

L. & M. J. BEEZER.
RAILWAY CONSTRUCTION.
APPLICATION FILED JULY 6, 1903.

NO MODEL.



WITNESSES

WITNESSES
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F. R. Barker

INVENTORS

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UNITED STATES PATENT OFFICE.

LOUIS BEEZER AND MICHAEL J. BEEZER, OF PITTSBURG, PENNSYLVANIA.

RAILWAY CONSTRUCTION.

SPECIFICATION forming part of Letters Patent No. 756,816, dated April 12, 1904.

Application filed July 6, 1903. Serial No. 164,271. (No model.)

To all whom it may concern:

Be it known that we, LOUIS BEEZER and MICHAEL J. BEEZER, citizens of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented or discovered new and useful Improvements in Railway Construction, of which the following is a specification.

In the accompanying drawings, which make part of this specification, Figure 1 is a plan view of our invention, a central portion being removed. Fig. 2 is a cross-section of the tie, taken on the line 2 2 of Fig. 1. Fig. 3 is a longitudinal section taken on the line 3 3 of Fig. 1.

Our invention relates to railway appliances, and more particularly to railway-ties and rail-fastening devices.

It is the object of our invention to provide a substitute for the common wooden ties, which, owing to the growing scarcity of suitable wood and their increasing cost, must give way to a superior and permanent article. We have devised a tie which is not only cheaper, but one which, with its rail connections, is practically indestructible. Our tie being thoroughly waterproofed will not be affected by frost, and the parts are so strongly united that they will not become broken or separated. We also give the rails a suitable elastic bed, which not only makes the train less noisy and less injurious to the rolling-stock, but also prevents to a large degree the pounding action of the car-wheels from being transmitted so suddenly to the concrete portion of the ties, the result being that the ties will not be cracked or broken.

Referring to the drawings, A represents the tie as a whole, having beveled sides and ends, as shown in Figs. 1 and 2, which retain the tie more securely in the ballast. The corners of the tie are rounded, since angular corners are liable to be broken in ballasting. The body of the tie is made of slag-cement concrete or other plastic material which will set or become hard, and each tie has embedded therein when formed a steel channel-plate B, having the bottom b and the downwardly-extending sides or flanges b' . The plate has

numerous holes b^2 , which allow the concrete to pass through, so as to tie or bind the tie into a more solid and more homogeneous mass than would be the case if the concrete were unconnected along the entire surface of an unperforated plate. The plate B extends nearly the whole length of the tie.

Beneath each rail and resting on the tie are layers F of compressed cork or wood fiber covered by steel cap-plates G, having flanged edges g , bent so as to protect the edges of the layers F.

The layers F may be seated in a recess in the concrete, if desired, so as to prevent the expansion of the edges of said layers.

The rails lie directly on the cap-plates G and are held in place by the clips I, having thinned portions i lying on the rail-flanges.

Bolts H pass down through the clips, the cap-plates, the cork layers, the bottom b of the plates B, and the concrete above the plate B into the nuts J, riveted or otherwise secured to the under side of the bottom b of the plate B, from which they are separated by cork or other elastic cushioning material F'. In recesses in the concrete below the nuts are cushions F², similar to cushions F'. The cushions F' and F² give the rails and ties a greater degree of elasticity than when the cushion F alone is used. Practically all the sudden jars on the rails are taken up by the several cushions, and the noise of passing trains is much lessened, as all the connections between the rails and the ties are provided with cushions, which deaden the vibrations transmitted from the plates G and the nuts J.

The heads h of the bolts engage the tops of the clips and hold them securely on the rail-flanges.

The concrete we prefer to use is made of slag and cement; but we do not desire to be limited to this composition, as other plastic hardening compositions may be used.

Having described our invention, we claim—

1. In railway construction, a plastic material, a metal plate embedded therein, bolts for securing the rails to the plastic material, nuts for the bolts, and cushions for the nuts.

2. In railway construction, a plastic material, a metal plate embedded therein, bolts for

securing the rails to the plastic material, nuts for the bolts secured to the metal plate, and cushions between the plate and the nuts.

3. In railway construction, a plastic material, a metal plate embedded therein, bolts for securing the rails to the plastic material, nuts for the bolts, and a cushion between the nuts and the plastic material.

4. In railway construction, a plastic material, a metal plate embedded therein, bolts for securing the rails to the plastic material, nuts

in the plastic material below the metal plate, cushions between the nuts and the plate and between the nuts and the plastic material.

Signed at Pittsburg this 1st day of July, 1903.

LOUIS BEEZER.
MICHAEL J. BEEZER.

Witnesses:

F. N. BARBER,
A. M. STEEN.