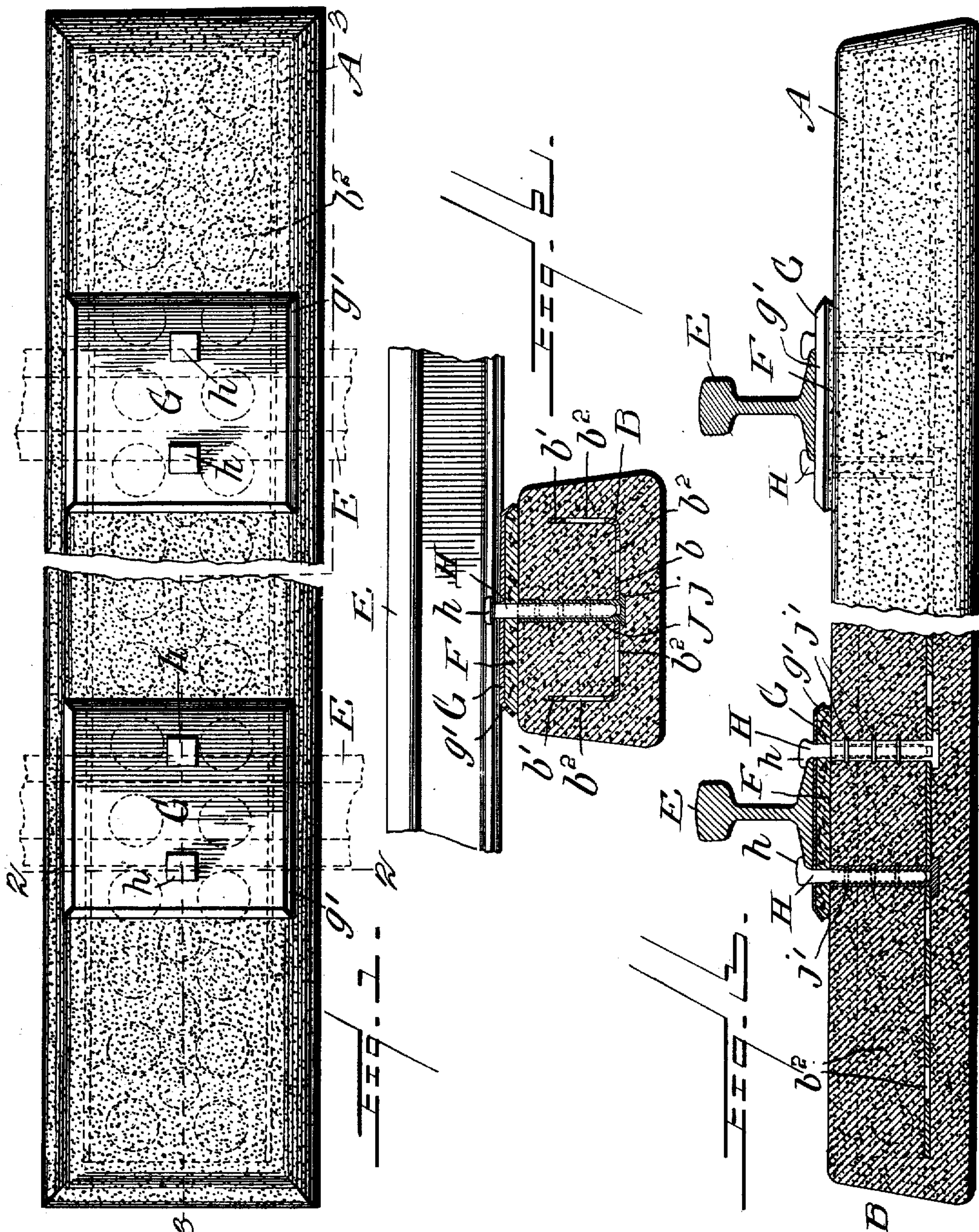


No. 756,817.

PATENTED APR. 12, 1904.

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

NO MODEL.



WITNESSES

Wm. F. Doyle.

F. or. Barker

INVENTORS

INVENTOR
Louis Beezer
Michael J. Beezer
BY Wm L. Pierce
Attorney

UNITED STATES PATENT OFFICE.

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

RAILWAY CONSTRUCTION.

SPECIFICATION forming part of Letters Patent No. 756,817, dated April 12, 1904.

Application filed July 6, 1903. Serial No. 164,272. (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 by effecting a great saving in maintenance, 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 to the ballast. The corners of the tie are rounded, since angular corners are liable to be broken in ballasting. The bodies of the ties are 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''*, 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 recesses in the concrete, if desired, to prevent the edges of the layers from squeezing out beneath the cap-plates G.

The rails E lie directly on the plates G and are secured thereon by spikes H, whose heads *h* engage the tops of the rail-flanges in the usual manner. The spikes are driven down in lead or other soft-metal sockets J, having heads *j* engaging the under side of the bottom *b* of the plate B to prevent their withdrawal. The lead sockets have one or more beads *j'* on their outside. As the concrete fits closely to the whole external surface of the sockets, the latter will by means of the beads be held securely in the concrete.

The sockets have longitudinal openings of a size to make a very tight fit with the spikes when they are driven in. The lead will flow so as to pack tightly about the spikes and to stick tenaciously to the same.

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, soft-metal sockets therein, rails, and spikes driven into the said sockets to secure the rails to the plastic material.

2. In railway construction, a plastic material, soft-metal sockets therein having exterior beads interlocking with the plastic material, and means in said sockets and in engagement with the rails to hold the latter in place on the plastic material.

3. In railway construction, a plastic material, a metal plate embedded therein, a soft-

metal socket having means engaging said plate to prevent its movement, and spikes in the sockets and in engagement with the rails to hold the latter in place on the plastic material.

4. In railway construction, a plastic material, compressed elastic wood on said material, metal cap-plates on said wood, rails on the cap-plates, soft-metal sockets in the plastic material, and spikes in the sockets and in engagement with the rails to hold the latter in place on the cap-plates.

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

LOUIS BEEZER.
MICHAEL J. BEEZER.

Witnesses:

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