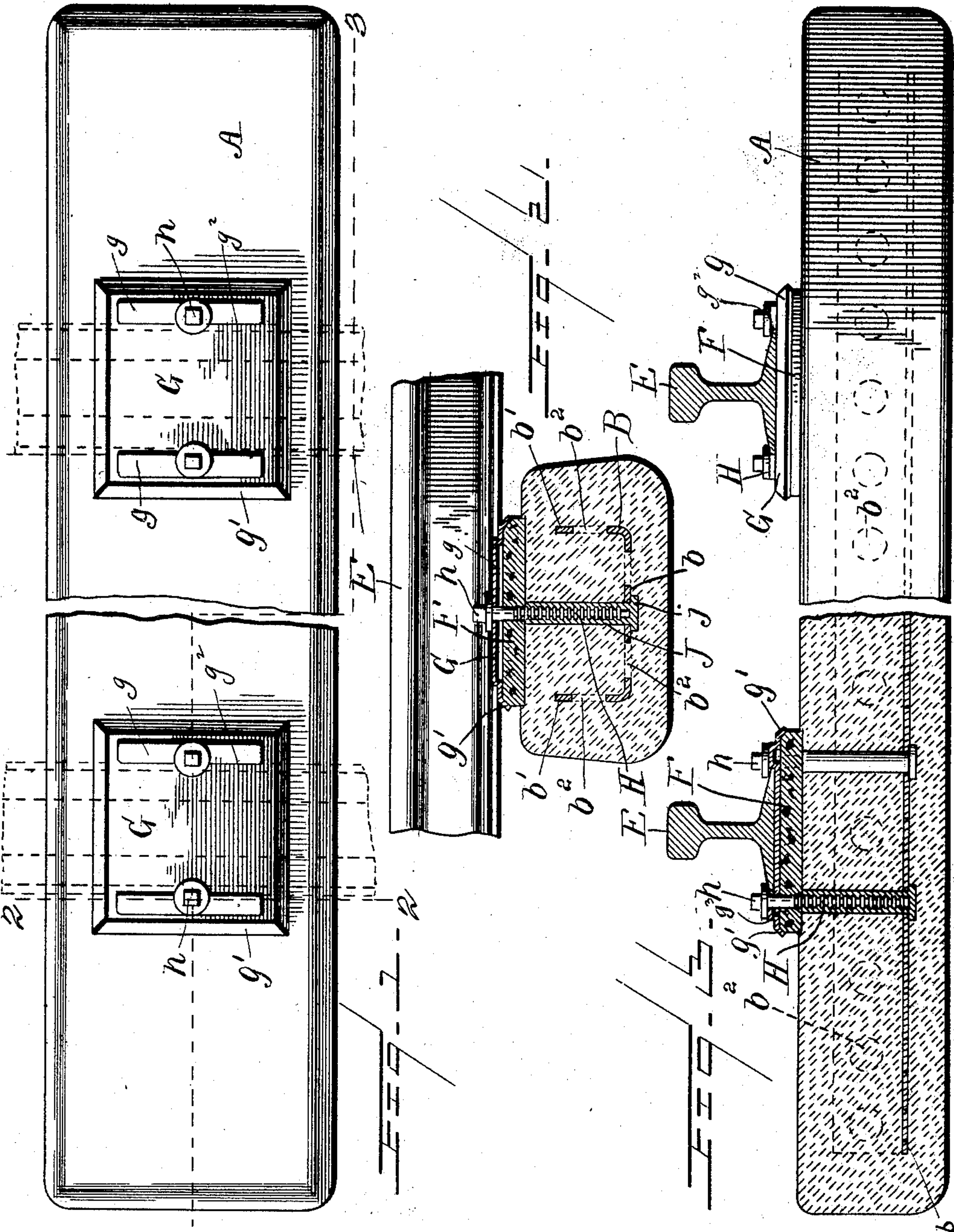


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L. & M. J. BEEZER.
RAILWAY CONSTRUCTION.
APPLICATION FILED JULY 6, 1903.

NO MODEL.



WITNESSES

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

RAILWAY CONSTRUCTION.

SPECIFICATION forming part of Letters Patent No. 756,815, dated April 12, 1904.

Application filed July 6, 1903. Serial No. 164,270. (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 in 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 upwardly-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 in a recess C in 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 even when the heaviest loads pass over the rails. The flanged edges g and the recess C serve to retain the cork or fiber in its original shape—that is, so that it will not squeeze out laterally.

The rails E lie directly on the cap-plate G and between the parallel ribs g , struck up from the plates. The rail-flanges abut against the inner or opposing shoulders or sides g^2 of the ribs and prevent any lateral movement of the rails on the plates. The ribs are provided with holes g^3 , preferably flush with the shoulders g^2 .

The bolts H screw down through the holes g^3 in the plates G and through the cork layers F into lead bushings L, seated in the concrete and having their heads l' engaging the under side of the bottom b of the channel-plate B. The bushings and the holes in the concrete, in which they are seated, taper upwardly in order to prevent the bolts from pulling the bushings out. The holes in the bushings are of such a size relative to the bolts that when the latter are screwed into the holes the lead will be tightly compressed and compelled to fit the bolt-threads and other contiguous parts perfectly. The bolts make for their reception the threads in the bushings, causing the lead to stick very closely to the bolts and preventing their accidental rotation.

The lag-bolts have heads H' , which when the bolts are screwed home tightly engage with the flanges of the rails and tightly clamp together the rails and the parts beneath the same. The heads are shown as having the broad round portions h , which rest when in place on the rail-flanges and the ribs g^2 , and the square

wrench-grasping projections h' above the round portions h ; but these shapes may be varied as desired.

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 soft-metal bushing therein, and a rail-securing bolt in said bushing.

2. In railway construction, a plastic material, a metal plate, and a soft-metal bushing embedded therein, the bushing having its lower portion with a larger cross-section, and a rail-securing bolt in said bushing.

3. In railway construction, a plastic mate-

rial, an unthreaded soft-metal bushing secured therein, and a rail-securing bolt screwed into the bushing.

4. In railway construction, a plastic material, a metal plate and a soft-metal bushing embedded therein, metal-capped elastic bases on the plastic material, rails on the metal caps, shoulders on the caps against which the rail-flanges abut, and bolts screwed into the bushings for securely holding the clips in place.

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

LOUIS BEEZER.

MICHAEL J. BEEZER.

Witnesses:

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