

UNITED STATES PATENT OFFICE.

JOHN L. BOONE, OF SAN FRANCISCO, CALIFORNIA.

IMPROVEMENT IN RAILROAD TIES.

Specification forming part of Letters Patent No. 130,010, dated July 30, 1872.

SPECIFICATION.

To all whom it may concern:

Be it known that I, JOHN L. BOONE, of San Francisco city and county, State of California, have invented a Railroad Tie; and I do hereby declare the following description and accompanying drawing are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use my said invention without further invention or experiment.

My invention relates to improvements upon the Letters Patent No. 127,553, and which were granted to me on the 4th day of June, A. D. 1872, for an improved railroad tie and for improvements in fence-posts, telegraph-posts, &c. My improvement consists, first, in the employment of a wooden or other rigid center or stiffening-piece for the ties and posts, which will be properly prepared before using; and, secondly, in the employment either of the pure asphaltum or mixed with mineral or earthy matter for forming the tie or post.

In my former patent, No. 127,553, I mentioned that "foreign substances could be placed inside of the tie in order to stiffen it; but subsequent experiments have shown that when wood is used it should previously be prepared, in order to cause the asphaltum to unite properly with it. To prepare the wooden center I treat it with hydrocarbon-oil, coal-tar, pitch, or liquid asphaltum, so as to thoroughly saturate its outside or exterior. This piece of wood I then apply so that it shall be in the center of the tie or post and be completely surrounded by asphaltum when the block is made.

Instead of fiber and asphaltum, I have found that the pure asphaltum, when not too rich in

oil, can be used to form the tie or post; but when there is an excess of oil I mix sand or other mineral or earthy matter with the asphaltum, when it is heated, until the proper amount of oil is taken up by it. This addition also causes the block, when cool, to be much harder and to resist the heat of the sun much better.

The spikes or nails which are to be driven into this composition tie or post should be previously heated, so that they will enter more readily, and also that they will, by liquefying or melting the asphaltum immediately surrounding them, give them a much better hold; but the spikes should not be hot enough to burn the wooden center into which they are driven.

Having thus described my invention, I claim—

1. In combination with an asphaltum or composition tie, the wooden or other center, for the purpose above described.

2. The method or process for preparing said wooden or other center above described.

3. A railroad tie, fence-post, or equivalent block, composed of asphaltum either in a pure state or mixed with a mineral or earthy matter, either with or without the center.

4. The process of heating the spikes or nails before driving them into the tie or post, substantially as above described.

In witness whereof I have hereunto set my hand and seal.

JOHN L. BOONE. [L. S.]

Witnesses:

C. M. RICHARDSON,
GEO. H. STRONG.