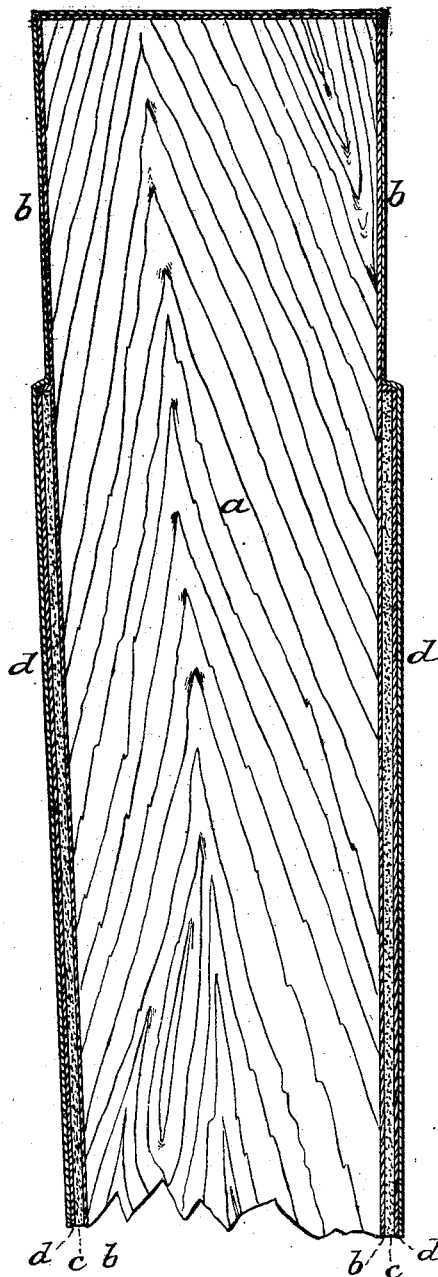


No. 46,049.

PATENTED JAN. 24, 1865.

L. J. HENRY.

MODE OF PROTECTING THE SURFACES OF WOODEN PILES.



Witnesses.

Geo. I. Knox
Henry Drenchfield

Inventor.

L. J. Henry

UNITED STATES PATENT OFFICE.

LEVY J. HENRY, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR TO JOSEPH BENRIMO, OF SAME PLACE.

IMPROVED MODE OF PROTECTING THE SURFACES OF WOODEN PILES.

Specification forming part of Letters Patent No. 46,049, dated January 24, 1865.

To all whom it may concern:

Be it known that I, LEVY J. HENRY, of the city of San Francisco, in the State of California, have invented, made, and applied to use a certain new and useful means for protecting the surfaces of wooden piles and other articles that are wholly or partially submerged from injury by worms, borers, or other marine insects; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the annexed drawing, making part of this specification, in which I have represented part of a pile with my improved protection applied thereto.

Various paints and sheathing have heretofore been applied to wood, when exposed under water, to prevent the adhesion of marine plants and the injury to the wood by insects.

The nature of my said invention consists in coatingsuch surfaces with asphaltum, upon which sand, earth, or similar material is spread after the asphaltum has been applied to the surface of such article, but before it has cooled or become hard. Thereby a hard surface is presented to the marine insects and the asphaltum protected by it, and the asphaltum keeps the pile almost dry, which greatly increases its durability. The surface of the pile, vessel's bottom, or similar articles is generally wet or damp, so much so that asphaltum will not adhere to the same, particularly when exposed to concussion of driving, as in the case of piles. I therefore attach upon such surface a sheet or sheets of felt, iron, or similar material that can be nailed or otherwise firmly secured in place, and upon which the asphalt will adhere and not be liable to scale or crack off.

I take the log of wood to form the pile, and remove, if not already done, the bark, so that the surface of the wood is clean, and to this I apply one or more coats of asphaltum or similar bituminous material, and while said asphalt is still hot sprinkle upon the same sand, gravel, or earth, and then apply another layer of asphaltum, and so on until sufficiently coated. I find that silicious material employed in this manner is much better than when mixed in with the asphaltum before it is laid upon the surface, because the asphalt is more easily applied when free from foreign substances, and a more perfect and uniform coating of sand can be laid upon

the asphalt. The pile or other article of wood, when thus protected with alternate layers of asphalt and silicious material, will answer in some localities and under some circumstances for protecting the wood; but for piles that have to be driven and are generally damp when ready for use the concussion is apt to crack or shake off the coating. I therefore make use of a sheet or sheets of felt, iron, or other suitable material applied to the surface to be protected, and said sheets may be nailed to the wood either upon a coating of asphaltum or the felt sheets may be saturated with asphalt and laid on the pile while hot. These sheets are to be stretched or drawn sufficiently tight and nailed at the edges and at suitable places so as to permanently secure them to the pile, after which asphalt is to be applied, as before specified, and sprinkled or rolled in sand or gravel, and any desired number of such layers or coatings may be applied to such surfaces.

It will be evident that asphalt and sand or felt may be applied in this manner to ships, bottoms and other articles exposed to the action of salt-water, and with metal or piles of hard wood the felt may be secured in place by sewing or otherwise.

In the drawing, *a* represents the pile or article to be coated; *b*, the asphalt and sand coating; *c*, the layer of felt, and *d* the asphalt and sand on the surface of such felt.

I do not claim asphalt applied as a waterproof coating to wood, stones, or other material, as this has been employed, but

What I claim, and desire to secure by Letters Patent, is—

1. The use of alternate layers of asphaltum and sand or earth applied to piles and other articles exposed to the action of marine insects or worms, for the purposes specified.

2. Coating or protecting piles and other articles from the action of salt-water by means of asphalt applied upon sheets of felt or other material attached to said articles, in the manner and for the purposes specified.

Dated this 12th day of October, A. D. 1864.

LEVY J. HENRY.

Witnesses:

GEO. T. KNOX,
HENRY DRESERFELD.