

S. B. MOORE.
 PROCESS OF PRESERVING WOOD.
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1,388,877.

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Fig. 1.

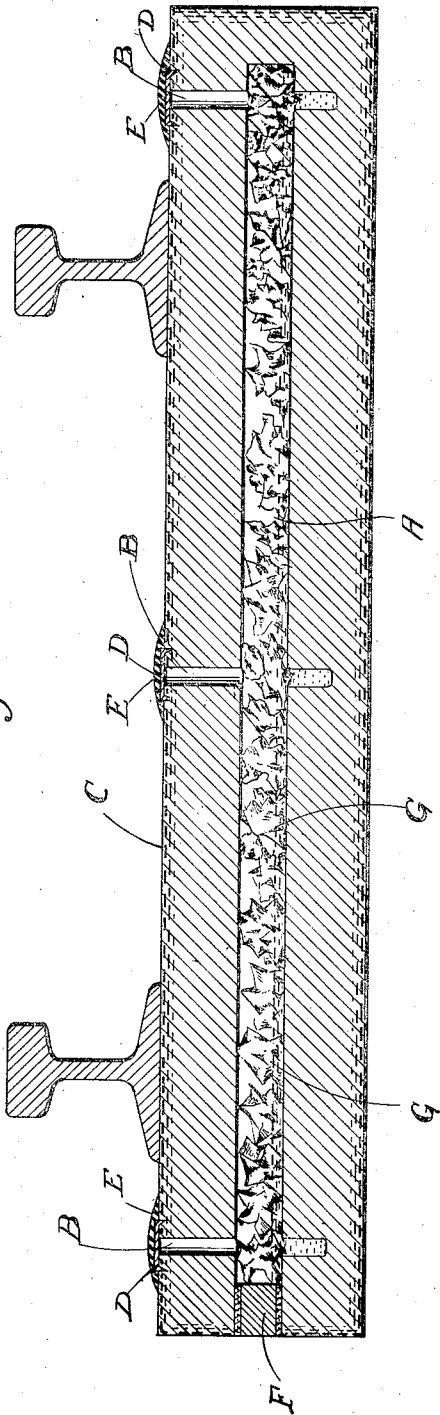


Fig. 2.

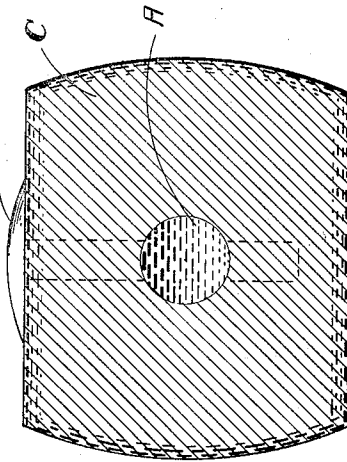
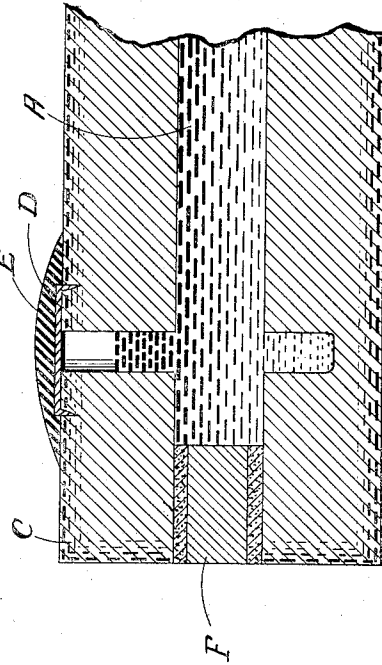


Fig. 3.



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To all whom it may concern:

Be it known that I, STUART B. MOORE, a citizen of the United States, and resident of Houston, in the county of Harris and State of Texas, have invented certain new and useful Improvements in a Process for Preserving Wood, of which the following is a specification.

My invention relates to a process for preserving wood, and more particularly to means for treating railway ties to prevent the fungi of decay.

Various solutions have been used to treat ties, but nearly all of these solutions used have been more or less subject to leaching out, due to the action of the weather. Therefore, various other solutions have been used to re-treat the ties to penetrate the pores of the wood and set or cement the first solution in the wood to protect the fungi-destroying solution and prevent the same from either washing out, due to the action of rain upon the tie, or from drying out, due to the action of the sun and wind.

This seemed to solve the problem theoretically, but in practice it worked out differently. These solutions which were used to cement or set the first solution, expanded and cracked the tie open, due possibly to temperature or absorption of water. While they protected against the fungi of damp rot, the fungi of dry rot developed in the interior of the tie, it being absolutely shut off from ventilation.

It had also been the practice heretofore in some of the processes, to drill holes into the tie, through which an additional supply of fungicide could be injected or added to the piece of timber from time to time, to assist in preserving the same. This method, however, did not prove completely successful, due to two things: first, if the tie is treated with a cementing solution, the pores are filled and cannot absorb the fungicide completely into the fibers of the tie; second, if the tie is not treated with a cementing solution, the pores are left open to the atmosphere and the liquid fungicide is either rapidly washed out, or dried out by the action of the wind and sun. As most fungicides are of a corrosive nature, they have a disastrous effect upon the rails of the track if they are washed out and consequently come in contact therewith. Also, if the outer fibers are left absorbent and the tem-

perature is such that it freezes, after a rain, for instance, the tie is burst open, due to ice expansion.

In order to properly treat a tie, it must first be seasoned,—that is, it must be thoroughly dried out so that the pores are all open and all of the sap and moisture evaporated. The fungicide can then penetrate to the heart of the tie. After treating, if the tie is to be re-treated it must again be seasoned. Each seasoning process requires not less than four months, and consequently this requires a great plant with a large storage space. It is obvious, therefore, that the initial investment to carry on such an enterprise would prohibit any but very large corporations engaging in this business.

Having briefly summed up the present state of the art, I will now describe my process, the practice of which overcomes the numerous objections mentioned heretofore. Many advantages will appear hereinafter, and in order to more clearly illustrate and describe my invention, I will refer to the drawings, in which—

Figure 1 is a longitudinal section of a railway tie treated in accordance with my improved method;

Fig. 2 is a transverse section thereof; and

Fig. 3 is an enlarged section of one end of the tie.

In carrying out my process I propose, on receiving a tie at the treating plant, to immediately drill therethrough a center hole A. This hole, as illustrated in the drawings, extends centrally of the tie from one end thereof and stops at a point adjacent the other end thereof. Additional vertical openings, indicated by the letter B, are provided and communicate with the central opening A. These openings in the tie produce an added ventilation and materially decrease the time required for seasoning the tie. I then propose to treat the tie with a fungicide from the outside as well as from the inside. In this manner I am enabled to more completely penetrate the fibers of the wood.

I then seal the holes drilled in the tie to admit the first mixture, to prevent the penetration of the second mixture into the interior of the tie, which would block the future absorption of the first mixture. I then give the tie a treatment of a cementing mixture, which cementing mixture is preferably

crude oil having an asphalt base. This forms an outer coating or shell upon the tie, as illustrated by C, the oil or other cementing solution penetrating the wood a slight distance throughout the surface thereof. By so coating the tie and thereby forming thereon an exterior shell, the tie is theoretically transformed from a solid to a vessel, the cubical contents of the vessel being the capacity of the pores of the wood plus the capacity of the interior reservoir and holes.

By referring to the drawings it will be seen that I seal the openings B by a metal plate or lid D, which may be easily forced into place over the opening and the same sealed by a coating of hot asphalt E. The advantages of this are obvious. The lid may be opened at any time and re-sealed, thereby making the reservoir absolutely tight. As shown, the reservoir A may be closed at one end thereof by a plug F, set in concrete or other cementing material.

In Fig. 1 I have illustrated the reservoir as containing crystals G of fungicide, so that when water is supplied to this reservoir, either intentionally or by absorption, this water or moisture will dissolve the crystals of fungicide and become deadly to the fungi of decay. In practice a small amount of water will be contained in the reservoir with the crystals.

In Fig. 3 I have illustrated the reservoir as containing a liquid fungicide. It is obvious that this reservoir may contain a constant supply of liquid fungicide, so that the fibers of the tie may at all times be saturated with this solution.

A tie treated and constructed as described hereinbefore has the following advantages: There would at all times be a freedom of expansion, due to the fact that the interior reservoir would not be full. In either case, whether the reservoir contained a small amount of liquid and the crystals G, or a larger amount of liquid fungicide, this reservoir would allow for expansion. Dry rot could not develop in the interior of the tie because of the continual presence of a liquid. The liquid could not wash out or dry out due to the impervious shell, and the tie could always be furnished with a fresh supply of fungicide, either in crystals or liquid.

It is obvious from the foregoing that a

tie treated in accordance with my method will be provided with an exterior impervious to atmospheric conditions, and will contain a reservoir in which a solution will be held which will constantly tend to re-treat the fibers of the tie to prevent the fungi of decay. The impervious shell, together with the method of sealing the holes, eliminate all possibility of the fungicide evaporating or being washed out.

While I have described my invention as one for treating ties, it should be understood that it may be used equally as well for treating fence posts, piles, and the like. Various details of my improved method may be changed without departing from the spirit and scope of the invention, and I particularly reserve this right.

Having thus described my invention, what I claim is:

1. The process of treating wood, which consists of forming a central reservoir therein, penetrating the fibers of the wood with a fungicide, sealing the entrance to said reservoir, and then impregnating the wood with a cementing mixture.

2. The process of treating wood, which consists of forming therein a central reservoir, treating said wood with a fungicide from the inside and from the outside, sealing the entrances to said reservoir, and thereafter impregnating the surface of the wood with oil.

3. The process of treating a railway tie, which consists of forming a reservoir centrally thereof, treating the wood fibers of said tie with fungicide from the inside and from the outside of said tie, sealing the openings to said reservoir, and impregnating the surface of said tie with a cementing solution of crude oil to form a shell-like coating thereon, and thereafter retaining a constant supply of fungicide in said reservoir.

4. A railway tie having formed therein a central reservoir, said reservoir being open at one end, vertically disposed openings communicating with said reservoir, said reservoir being adapted to contain fungicide for treating the wood fibers of said tie, means for sealing said vertically disposed openings, comprising a plate and a sealing substance, and a plug for closing the end of said reservoir.

STUART B. MOORE.