E. WEBB.

Preserving Wood.

No. 108,659. Patented Oct. 25, 1870.

Fig. 1.

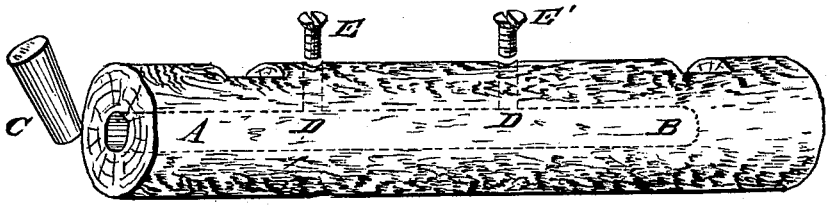


Fig. 2.

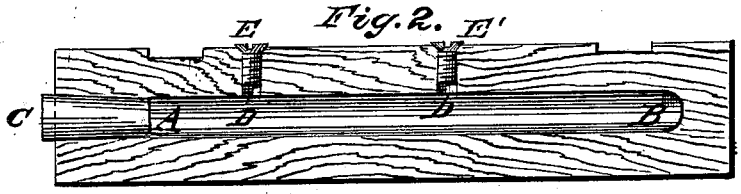


Fig. 3.

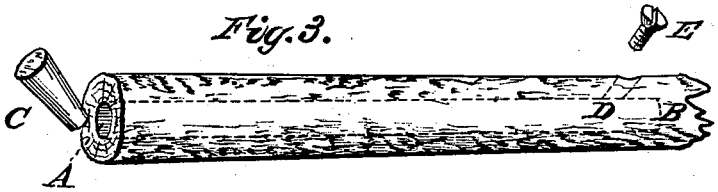


Fig. 4.

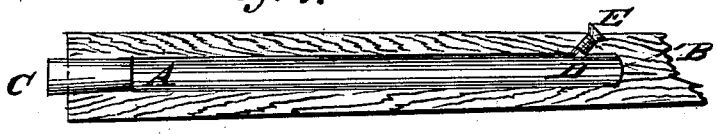
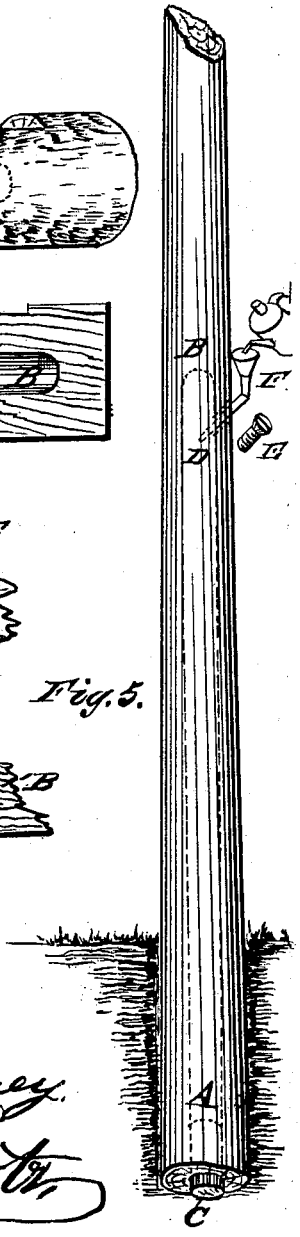


Fig. 5.



Witnesses:

John F. Clark.

F. Clark.

Inventor:

Ezra Webb

By his Attorney.

Henry Hirter.

United States Patent Office.

EZRA WEBB, OF NEW YORK, N. Y.

Letters Patent No. 108,659, dated October 25, 1870.

IMPROVEMENT IN PRESERVING WOOD.

The Schedule referred to in these Letters Patent and making part of the same.

I, EZRA WEBB, of the city of New York, county of New York and State of New York, have invented a certain Process for the Preservation of Wood, of which the following is a specification.

This invention consists—

First, in using certain new and improved liquid combinations of chemical agents, by means of which I effect, or accomplish simultaneously, the preservation of wood from decay, and the seasoning thereof by chemical means in brief time.

Secondly, in an improved mode of introducing such liquids into pieces of wood or timber.

The classes of preservative or antiseptic agents which I use are individually in use already, my improvements consisting in my modes of combining the same, so as to accomplish effects or results which have not heretofore been combined in the same process.

I combine together in the same solution, for example, the products of the distillation of coal, or gas-tar, such as carbolic acid and compounds thereof, with products of the distillation of wood or wood-tar, such as pyroligneous acid and salts of the latter, like pyrolignite of iron. In combination with either, or at times with both of these, I use also another agent, which effects a simultaneous seasoning of the wood, this agent being one which has also been in use for many years, though not in my improved combinations. This agent is the chloride of barium. As heretofore used, it has been merely for the purpose of impregnating the wood with insoluble sulphate of baryta, by applying successively this salt and a solution of a sulphate. My own use of it is a consequence of the observation that it has the power of preventing subsequent shrinkage in wood impregnated with it.

My improved mode of introducing these combinations, or any other liquid agents having similar preservative or seasoning effects, or both, into timber, is by forming, either by boring or otherwise, a closed chamber or chambers, within a piece of timber, arranged longitudinally in, or nearly in the direction of the fiber, and extending from near one end to near the other end of such parts or lengths of the timber as it is desired to preserve, and making, also, a lateral or transverse perforation, aperture, or lead, from the lateral surface of the timber, extending to the longitudinal closed chamber, through which lateral perforation or aperture the preservative liquid is conveniently introduced, such aperture or lead being afterward closed, preferably in such manner that the stopper may be readily removed, and additional liquid introduced. A second lateral aperture is sometimes convenient, to allow air to escape as the liquid enters.

One way in which my invention may be applied in practice, is by boring longitudinally from one end of the timber a sufficient distance toward the other end, and forming the closed chamber called for by my principle, by plugging up the open end of the bore. The lateral aperture or lead may also be made, if preferred, by boring, or in any other way familiar to mechanics. For closing the lateral aperture to confine the liquid, I prefer an iron-screw plug.

Some of the advantages and conveniences of my improved mode of introduction, which give it superiority over all other plans hitherto devised, may be thus set forth:

My experiments have shown that timber is much more rapidly and thoroughly impregnated by liquids when in horizontal than in vertical or inclined positions. The greater uniformity of action, when horizontal, is obvious, for in a vertical chamber the pressure is greater toward the lower end, and the level of the liquid also continually sinks. In my method absolute uniformity is conveniently secured by simply rolling or turning over the timber from time to time. It is also much more convenient and economical to handle, pile, and manipulate logs and timbers when horizontal than vertical.

I am also enabled more conveniently and practicably to treat timbers already fixed in place horizontally, as in trestle work, dock and bridge timbers, railroad-ties, and so on. In another application will be specified an improved auger, which may be used in the carrying out of my method, and with which holes of great depth may be bored, as it clears its own chips.

Again, in cases of railroad-ties or other timbers in use, the lateral aperture may at any time be used for a second or extra treatment, even while the road is in service, without interference with its business. Hence the use of the iron-screw plug, already specified.

It is to be remarked that I use neither hydraulic pressure nor heat, in my methods of preparation. Natural capillary force is the only agent I appeal to in any case. Hence the integrity of the fiber can in no case be impaired.

Description of the Accompanying Drawing.

Figure 1 represents a stick of rough timber, for example, a railroad-tie ready for treatment, A B representing the longitudinal perforation, C, the plug, which is driven in to convert the same into a close chamber; D D', my lateral apertures or leads, through which the preservative liquid is fed; and E E', the iron-screw plugs which are used to secure the same.

Figure 2 represents the same in section, with the plug C driven into place, and the screw-plugs E E' screwed home, preferably so that their heads are flush with the surface.

Figure 3 represents the lower end of a telegraph-

pole, in which the chamber A B is so situafed as to extend to some distance both above and below the surface of the earth, when the pole is set, with the object of protecting especially that portion of its length which is most exposed to the destructive action of conjoined air and moisture. In this case, I sometimes prefer to make my lead, or lateral feed-aperture, inclined toward the base of the pole, as here represented, which renders more convenient the replenishment of the preservative liquid, if desired, after the pole is erected.

Figure 4 represents the same object as fig. 3, in section, with the plug C driven in, and E screwed into its seat.

Figure 5 represents the base of a telegraph-pole, when set, with the mode of replenishing the chamber a second time, after the removal of the screw-plug E, and the insertion of a funnel, F, with a bent neck.

I do not claim, broadly, the introduction of preservative liquids into holes bored into or through timber, this being a very ancient device; nor do I claim any novel device or invention covered by A. B. Tripler, under his patent granted June 28, 1870, No. 104,917; but

What I claim as of my invention is—

1. The combinations of the products distilled from coal-tar, such as carbolic acid, with products distilled from wood-tar, such as pyroligneous acid, in the preservation of wood.

2. Chloride of barium, in combination with the products of distillation of coal-tar, or with pyroligneous acid or salts thereof, or with both.

3. The method of preserving timber by forming a longitudinal chamber extending nearly from end to end of the timber to be preserved, and furnished with lateral apertures or leads, through which any preservative liquid may be introduced, in the manner and for the purposes specified.

In testimony whereof, I have signed my name before two subscribing witnesses.

EZRA WEBB.

Witnesses:

STEPHEN CHESTER,

VAN ZANDT DAMES.