

United States Patent Office.

CHARLES M. CRESSON, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR
TO AMERICAN WOOD-PROTECTION COMPANY.

Letters Patent No. 109,874, dated December 6, 1870.

IMPROVEMENT IN TREATING AND RECOVERING THE LIQUIDS USED IN SEASONING AND PRESERVING WOOD.

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

I, CHARLES MASSEY CRESSON, M. D., of Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented a Mode of Treating and Recovering Liquids Used in Seasoning Wood and Protecting it from Decay, of which the following is a specification.

Nature and Object of the Invention.

My invention consists of a process, too fully described hereafter to need preliminary explanation, whereby the liquids made use of in seasoning wood may be recovered and utilized.

General Description.

The first result of the application of heat to unseasoned timber is to convert the surface moisture into vapor. A portion of this vapor escapes into the surrounding atmosphere, while the remainder passes into the mass of the timber and is condensed, finally reaching the central portions, if the heat be continued long enough.

In this manner the pores in the surface of the timber are deprived of their liquid contents, and shrink in diameter, while those in the center are engorged with additional moisture and swell, so that the timber becomes cracked in the outer portions.

To prevent this cracking at the surface, and to impregnate the timber with a preserving liquid or liquids, I devised a mode of treatment for which Letters Patent were granted to me on the 7th day of July, A. D. 1868, and which may be briefly described as follows:

While the timber was being heated throughout its mass to 212° Fahrenheit the surface was kept coated with a mixture of liquids of various volatilizing points, which liquids were obtained from the condensation on the surface of the wood of vapors introduced into the chamber in which the wood was being heated.

I have also improved upon the above by showering the oils or other liquids upon the timber, instead of introducing them in the form of vapor only, which mode of treatment forms the subject of a separate application for a patent.

My present invention consists of a mode of recovering the greater portion of the liquids used for expelling the moisture from the wood.

I propose to allow the wood to remain in the chamber in which it has been subjected to the seasoning operation, and to cease using the shower of liquid, and gradually to allow the temperature to rise.

By carefully selecting the liquids by means of which the water is to be removed so that they include only those volatilizing between 250° and 300° Fahrenheit, they can be nearly all driven off and removed from the timber by thus raising the temperature, a sufficient amount only being retained to insure elasticity in the timber.

To remove the water requires a temperature of 212° Fahrenheit, and I propose to replace the latter by a series of liquids of various volatilizing points, those at the surface volatilizing say at 270° Fahrenheit, and those at the center at 212° Fahrenheit, with a graduated series intervening.

If, after the wood has been impregnated with these liquids, the surface temperature be raised to 271° Fahrenheit, and the center to 213° Fahrenheit, the liquids in the whole mass will necessarily be volatilized, and the expansion of these liquids at the center into vapor will force out the vapor of those surrounding, so that when the wood is removed from the chamber and cooled it will be found to contain only as much liquid as would be yielded from the vapor occupying its pores.

The products of volatilization, as they are removed from the chamber, are to be carried through a condensing apparatus for the recovery of the oils driven out from the wood.

Claim.

The recovery and utilizing, substantially as described, of liquids employed in seasoning timber.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES M. CRESSON, M. D.

Witnesses:

WM. A. STEEL,
JNO. B. HARDING.