

UNITED STATES PATENT OFFICE.

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PROCESS OF PRESERVING AND COLORING WOOD.

1,043,582.

Specification of Letters Patent.

Patented Nov. 5, 1912.

No Drawing.

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To all whom it may concern:

Be it known that I, CARL J. FALLER, a citizen of Switzerland, residing at Zürich, in the Canton of Zürich, Switzerland, have invented certain new and useful Improvements in Processes of Preserving and Coloring Wood, of which the following is a specification.

My invention consists in an improved process of impregnating wood, and has for its general object to provide a simple and efficient process of impregnation whereby the wood, either in a green or dry state, may be thoroughly and uniformly permeated with the liquid medium, and wherein the impregnating solution is of nature to serve well as a vehicle for dye or coloring matter, to render the wood practically immune from the attack of insects and decay, and is non-poisonous.

Heretofore in impregnating or dyeing wood, which was to be completely permeated, the wood has had to be taken when freshly felled, so as to contain all of the sap, and subjected to a bath of a thin or watery solution of the desired resistance or coloring matter, usually poisonous, maintained under high pressure so as to force the solution into and through the wood in imitation of the circulation of the sap.

By my improved process either dry or green wood may be impregnated so that every part of the wood body is affected by the solution, which may or may not be colored. As a basic essential ingredient of a solution for this purpose I employ a form of hydro-carbon, preferably a mineral oil. Specifically I have found a petroleum distillate, called "ganzol", which is a kerosene distillate having a boiling point of about 100° to 105° Celsius, and a specific weight of about 0.78, to be an advantageous and satisfactory agent, well adapted for the carrying of coloring matter, as it is of peculiar penetrating qualities, is highly preservative, and imparts to the wood treated therewith a hardness and smoothness of texture which for many purposes greatly enhances the value of the wood. Where a coloring matter is employed I prefer that it shall be an anilin coloring matter, added in suitable proportion to the ganzol or other hydro-carbon and thoroughly mixed therewith. For preservative impregnation other ingredients such as phenol may be added to

enhance the preservative effect, but this is not essential.

To impregnate the wood it is placed in a tank filled with the solution of hydro-carbon impregnating medium, such as ganzol, with or without dissolved coloring matter, so that the wood is entirely covered, and the stock is kept in the fluid until it is completely permeated. For shortening to a degree the time of treatment, the receptacle or tank in which the process is carried out may be closed and maintained under pressure preferably of several atmospheres, and the solution may also be maintained in heated condition preferably above boiling point with good results.

As a practical example of the application of my improved process I have submerged pine railroad ties in a dyeing mixture of five hundred (500) liters of ganzol, having dissolved therein ten (10) kilograms of brown anilin color, inclosed in a suitable retort and boiled under a pressure of three atmospheres for about 24 hours, with excellent results.

The solution may be used more than once, it being only necessary for its employment as a second bath to add say fifty (50) liters of ganzol to the charge, without any additional coloring matter. Under such conditions the solution heated slightly is found thoroughly to dye the wood in twenty four (24) hours.

After treatment in the bath the wood is taken out and left to drain until suitably dry. It then may be worked or employed in any usual manner and will be found to be uniform in color throughout its cross section.

Having described my invention, what I claim is;

1. The process of dyeing wood in a green or dry condition which consists in immersing the wood in a bath composed of a petroleum distillate and an anilin coloring matter, subjecting said bath and the immersed wood to a pressure above atmospheric pressure, and boiling said fluid while under said pressure.

2. The process of coloring wood which consists in submerging the wood in a green or dry state in a solution consisting wholly of petroleum distillate and suitable coloring matter therefor, until the wood is permeated through and through by the color-carrying petroleum distillate.

3. The process of coloring wood which consists in submerging wood, in a green or dry state, in a solution consisting wholly of petroleum distillate and a coloring matter
5 soluble in petroleum distillate, until the wood is permeated through and through by the color-carrying petroleum distillate.

In testimony whereof I hereunto set my hand in the presence of two witnesses.

CARL J. FALLER.

In presence of—

MAX HIRSH,
JOSEPH SIMMS.