

UNITED STATES PATENT OFFICE.

CHARLES HOWARD, OF NEW YORK, N. Y.

PROCESS OF PRESERVING WOOD.

No. 899,400.

Specification of Letters Patent.

Patented Sept. 22, 1908.

Application filed March 18, 1908. Serial No. 421,806.

To all whom it may concern:

Be it known that I, CHARLES HOWARD, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Processes of Preserving Wood, of which the following is a specification.

My invention relates to an improved process of preserving wood, and it consists in the steps and processes herein described and claimed.

An object of my invention is to provide an improved process whereby an efficient preservation of the wood fibers will be obtained uniformly throughout a mass of any size.

A further object of my invention is to provide an improved process adapted to operate with a minimum of expense and time for preserving wood of any size and character, without danger of injuring the wood fibers or of subsequent deterioration thereof.

In the operation of my invention, the wood is subjected to heat for a sufficient time to evaporate any water which may have been absorbed by the wood, and also the relatively volatile aqueous constituents thereof. The heated wood is then treated with a cool aqueous solution of magnesium sulfate having a strength of from 2% to 20%, according to the character of the wood. During this step, the aqueous vapor entangled among the wood fibers as a result of the previous heating will be condensed by the cool solution; thereby producing a partial vacuum in the interstices of the wood and causing a rapid and thorough permeation of the wood by the solution. The wood is then subjected to heat for expelling the excess moisture, and treated with a heated aqueous solution of barium chlorid having a strength of from 1% to 6%. The solution is then drawn off, and the aqueous portion of the warm solution then evaporated.

An important advantage of my invention is the thorough and uniform deposition of the barium chlorid rendered possible by evaporating the moisture from the wood preliminary to treating it with a heated aqueous solution of barium chlorid. In carrying out these steps, the slight solubility of magnesium sulfate in a heated aqueous solution prevents removal of said compound from the wood

fibers during treatment with the heated solution of barium chlorid. All danger of so removing the magnesium sulfate, or of causing an irregular distribution thereof through the wood, by the action of the heated barium chlorid solution is obviated; thereby insuring a uniformity of condition throughout the wood, and also preventing deterioration of the excess amount of barium chlorid solution which is necessarily employed in the treatment.

By my improved process, the magnesium sulfate is transformed to magnesium chlorid, which becomes fixed or united with the albuminous constituents of the wood and constitutes an efficient preservative; the barium chlorid being transformed to barium sulfate, which, intermixed with the magnesium chlorid, fills the pores of the wood uniformly throughout the mass of the latter. My invention provides, therefore, means for obtaining a regular distribution of the preservative agent and a uniform filling of the pores of the wood throughout the mass of the latter by the insoluble barium sulfate. This obviates the defects found in existing wood-preserving processes, in which the interior portions of the wood become deteriorated and rotted by the absorption and retention of water admitted thereto by cracks or spike holes in the wood.

I have described a preferred and satisfactory method of carrying out my invention, but obviously changes could be made within the spirit and scope of the invention.

Having thus described my invention, what I claim as new and desire to secure by Letters-Patent is:

1. The herein described process of preserving wood, which consists in drying the wood, treating the dried wood with a cool aqueous solution of magnesium sulfate, expelling excess moisture from the wood, and treating the wood with a hot aqueous solution of barium chlorid.

2. The herein described process of preserving wood, which consists in subjecting the wood to heat, treating the heated wood with a cool aqueous solution of magnesium sulfate, heating the wood to expel excess moisture, and treating the heated wood with a hot aqueous solution of barium chlorid.

3. The herein described process of pre-

serving wood, which consists in subjecting
the wood to heat, treating the heated wood
with a cool aqueous solution containing be-
low 20 % of magnesium sulfate, heating the
5 wood to expel excess moisture, and treating
the heated wood with a hot aqueous solution
containing below 6 % of barium chlorid.

In testimony whereof I affix my signature
in presence of two witnesses.

CHARLES HOWARD.

Witnesses:

G. AYRES,

H. G. ROBINETTE.