

UNITED STATES PATENT OFFICE.

RUDOLPH G. BÜRSTENBINDER, OF HAMBURG, ASSIGNOR TO PETER JOHANN
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PRESERVATION OF WOOD.

SPECIFICATION forming part of Letters Patent No. 266,092, dated October 17, 1882.

Application filed August 16, 1882. (No specimens.)

To all whom it may concern:

Be it known that I, RUDOLPH GOTTFRIED BÜRSTENBINDER, a citizen of the German Empire, residing at Hamburg, Germany, have invented a new and Improved Process for Impregnating Wood, of which the following is a specification.

This invention relates to a process for preserving wood; and it consists in exposing the timber to a current of steam under pressure, then removing the moisture by the production of a vacuum (marked on a barometer) about equal to a column of mercury of twenty-seven cubic centimeters, then introducing a solution of sulphate of zinc under pressure until the wood is saturated therewith, and removing the same by a vacuum, and, lastly, introducing a dilute solution of calcium-chloride.

In order to preserve wood from the effects of moisture, temperature, and the like by saturation with certain materials, it has heretofore been customary (after the moisture has been removed from the wood in vacuo) to saturate the wood with the material either with or without pressure, so as to preserve the wood by having its pores filled as thoroughly as possible with the preserving material. The desired effect is, however, only attained when the preserving material is produced by chemical action within the wood itself, and to accomplish this latter result is the object of my invention, according to which the wood is successively impregnated with two substances—first with solution of sulphate of zinc and then with solution of chloride of calcium. By this process, through the action of the two impregnating substances upon one another within the pores of the material to be preserved, the desired result is fully accomplished.

In carrying out my invention the wood to be impregnated is first steamed by being exposed to a current of steam for about two hours at a pressure of from five to eight atmospheres, until the pores of the wood are thoroughly opened and the condensed water flows off free from impurities. Within the vessels containing the steamed wood a vacuum of about twenty-seven cubic centimeters is then produced by means of an air-pump, whereby the moisture is removed from out of the wood:

Hereupon follows the impregnation with a solution of sulphate of zinc of 6° Baumé, by allowing said solution to act on the wood for about five hours under a pressure of about eight atmospheres. By again creating a vacuum with the air-pump the moisture now remaining in the wood is also removed out of the same, whereupon follows the treatment with a dilute solution of chloride of calcium, also under a pressure of about eight atmospheres, for a period of from two to three hours. Finally, the moisture is again removed from out of the wood by means of an air-pump, and the action of the two impregnating substances will have formed a preserving layer as well within the pores of the wood as upon its surface.

Variations in the above solutions, pressure, and the like will depend on the quality of the material to be treated, as wood having very fine pores is better penetrated by more dilute solutions under strong pressure than if the solutions are of too great a density.

I do not claim broadly the principle of successively impregnating wood with a solution of sulphate of zinc and a solution of chloride of calcium, but confine my invention to the order and manner of applying said substances and the subsequent treatment after said solutions have been introduced into the wood.

What I claim as new, and desire to secure by Letters Patent, is—

The process of preserving wood, which consists in exposing the timber to a current of steam under pressure, then removing the moisture by the production of a vacuum marked on a barometer about equal to a column of mercury of twenty-seven cubic centimeters, then introducing a solution of sulphate of zinc under pressure until the wood is saturated therewith and removing same by a vacuum, and, lastly, introducing a dilute solution of calcium-chloride, substantially as set forth.

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

R. G. BÜRSTENBINDER. [L. s.]
Witnesses:
PAUL MARTY,
RUDOLPH BÜRSTENBINDER,