

UNITED STATES PATENT OFFICE.

SAMUEL B. BOULTON, OF LONDON, ENGLAND.

METHOD OF PRESERVING TIMBER.

SPECIFICATION forming part of Letters Patent No. 360,947, dated April 12, 1887.

Application filed November 10, 1886. Serial No. 218,480. (No specimens.) Patented in England December 12, 1883, No. 5,723; in France January 4, 1884, No. 159,567, and in Belgium January 7, 1884, No. 63,776.

To all whom it may concern:

Be it known that I, SAMUEL BAGSTER BOULTON, a citizen of England, residing at Cannon street, in the city of London, England, have
5 invented new and useful Improvements in Treating Timber with Antiseptic or Preservative Fluids, (for which I have obtained a patent in Great Britain, dated December 12, 1883, No. 5,723; in France, dated January 4, 1884,
10 No. 159,567, and in Belgium, dated January 7, 1884, No. 63,776,) of which the following is a specification.

In the specification to my United States Patent No. 247,602, of September 27, 1881, I
15 described a process of treating timber wherein this was subjected to the action of heated creosote or other oily or bituminous body inside a closed vessel, so as, first, to drive off the watery particles from the wood, and then
20 to impregnate them with the bituminous body.

According to my present invention, before treating the timber by the above-mentioned process I treat it, in the first instance, with
25 other antiseptic or preservative substances, such as a solution of metallic salts having antiseptic properties, such as chloride or sulphate of zinc, sulphate of copper, corrosive sublimate, or mixtures of these with tar acids, such as carbolic, cresylic, and other
30 acids, resulting from the treatment of the heavy oil of tar in the well-known manner, or the distillates of the heavy oil of tar after a temperature of about 500° Fahrenheit has been reached; or I treat the wood first with
35 the one class of antiseptics, such as the metallic salts, and then with the tar acids; or I employ the basic substance now known as "acridine," and other similar isomeric substances or other basic substances or alkaloids of the
40 quinoline or leucoline series, or other basic substances of the heavier tar acids, such as may be obtained from the distillates coming over at high temperatures, and which are valuable antiseptics. Among the tar acids I prefer to employ those which are less volatile
45 and less soluble in water than carbolic acid and cresylic acid. Some of the above substances I have occasionally found to be contained in distillates obtained at a temperature below
50 500° Fahrenheit. For the purpose of effecting

the impregnation of the wood with these several substances any known process may be used, and in some cases apparatus may be employed for the purpose similar to that described in my before-mentioned Patent No. 55 247,602. After the wood has been so treated, and without subjecting the same to any drying process when the solutions employed are of an aqueous nature, I subject the timber to the process described in my said Patent No. 60 247,602. By thus first treating the wood with a class of substances that have highly antiseptic and preservative properties, and then with an oily or bituminous substance that may or may not have antiseptic properties, the 65 first-named bodies become effectually inclosed within the pores of the wood, while the heat with which the second class of bodies is supplied, combined with the exhaust employed, will effectually remove all watery particles, 70 either originally contained in the wood or introduced by the aqueous solutions, such watery particles being replaced by the oily or bituminous substances, which will thus prevent the metallic salts or other substances first employed from being afterward dissolved out of 75 the timber by the incursion of moisture from the soil or atmosphere, and will also impede the entrance into the wood of any further destructive agents. 80

I am aware that it has been proposed to inject timber, first, with metallic salts in a state of watery solution, and afterward with an oily or bituminous fluid, as described in Bethel's British Provisional Specification No. 85 508 of 1853; but according to my improved process, instead of subjecting the timber after impregnation with a salt to a heating process in a drying-house to expel the moisture, which drying and heating process I consider to be 90 detrimental to the timber, I expel such moisture by directly subjecting the impregnated timber to the action of the heated or bituminous body, according to the processes described in my specification to my United 95 States patent above referred to.

In all cases my experience leads me to set the highest value for wood-preserving upon such antiseptics as are in themselves least volatile and least soluble in water, with an 100

admixture of bodies which solidify within the pores of the timber. Tannin and other astringent bodies derived from vegetable substances may be used with good effect.

5 Having thus described the nature of my invention and in what manner the same is to be performed, I claim—

1. The process herein described of preserving wood, which consists in impregnating it
10 with a solution of metallic salts and then expelling the moisture by directly subjecting the impregnated wood to the action of a heated bituminous body in a continuous partial vacuum in a closed vessel, substantially as set
15 forth.

2. In a process of preserving wood, the series of steps which consists in first impregnating it with a metallic salt in solution with carbolic or cresylic acid, then expelling the moisture
20 by directly subjecting the impregnated wood to a bath of hot bituminous fluid in a closed vessel wherein is maintained a continuous partial vacuum.

3. In a process of preserving wood, the series of steps which consists in first saturating the
25 wood with a solution of metallic salt in carbolic or cresylic acid, then expelling the moisture by directly subjecting the impregnated wood to a bath of hot creosote or bituminous fluid under a partial vacuum, followed by
30 pressure in a closed vessel.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 27th day of October, A. D. 1886.

S. B. BOULTON.

Witnesses:

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