

UNITED STATES PATENT OFFICE.

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COMPOSITION OF MATTER AND METHOD OF PRESERVING AND FIREPROOFING WOOD.

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Specification of Letters Patent.

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No Drawing.

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To all whom it may concern:

Be it known that we, FRIEDRICH SEIDENSCHNUR, chemist, and JULIUS DEHNST, chemist, subjects of the King of Prussia, German Emperor, residing at 12 Holtzendorff street, Charlottenburg, near Berlin, Kingdom of Prussia, German Empire, and 15 Joachim Friedrich street, Halensee, near Berlin, Kingdom of Prussia, German Empire, respectively, have invented a new and useful Improvement in Compositions of Matter and Methods of Preserving and Fireproofing Wood; and we do hereby declare the following to be a full, clear, and exact description of the same.

This invention relates to a composition of matter and a method of preserving and fireproofing wood.

Accidents in mines have demonstrated the necessity for rendering pit timbers non-flammable in order to prevent the great danger to human life from pit fires. At the same time the pit timbers have to be protected against rotting. In both cases the result is accomplished by impregnating the timbers; but the substances which render the wood unflammable are not the same as those which afford a sure protection against rotting. Consequently, the agents hitherto employed to lessen the inflammability and preserve the wood could not be introduced into the wood simultaneously. Even when substances are used that do not react chemically on each other, a separation of the individual substances from the impregnating liquid takes place. When separate impregnation is practised, the precipitation of the one substance prevents penetration by the solution of the second substance.

It now appears that protection of the wood against inflammability and rotting is secured when the wood contains simultaneously, salts of magnesium, salts of ammonium and salts of α -naphthalene sulfonic acid.

The impregnation of the wood with salts of α naphthalene sulfonic acid is new. It is true that zinc β -naphthalene sulfonate has already been used for preserving wood; but this substance cannot be used in presence of

salts of ammonium and magnesium, being salted out by the necessary quantities of other salts.

The property of α -naphthalene sulfonates utilized in the present method, namely that they are not salted out by salts of ammonium and magnesium, is the more surprising because α -naphthalene sulfonates are salted out by many salts, such as sodium chlorid, especially during cooling. Since when the wood and the hot impregnating liquor are brought into contact, the latter must necessarily undergo cooling, especially inside the cold wood, and a deposition of the α -naphthalene sulfonates in the outer layers of the wood was to be expected, the use of the α -naphthalene sulfonates did not initially seem to promise success.

Among the magnesium and ammonium salts, the sulfonates in particular have been found applicable, though the chlorids or phosphates can also be used. Even double salts may be employed, for example sodium magnesium sulfate. The salts may be those of different acids. Of the α -naphthalene sulfonates, the zinc and magnesium salts are especially suitable.

The method may be carried out by preparing a single solution of the three kinds of salts in the warm, and introducing it into the wood in the known manner. The salts may, however, be introduced into the wood separately. For example, zinc α -naphthalene sulfonates may be introduced first, and then a solution of ammonium and magnesium sulfates. Ammonium sulfate and magnesium sulfate may also be introduced in separate solutions and in any desired serial order; and the α -naphthalene sulfonate may be introduced last of all.

Example: Wood is treated, in accordance with one of the known methods of impregnation, pressure and a vacuum being used, with a hot solution of 200 parts of magnesium sulfate, 100 parts of ammonium sulfate, 25 parts of zinc α naphthalene sulfonate, in 1000 parts of water.

We claim:

1. The process for preserving wood and rendering it unflammable which consists 10

in impregnating the wood with salts of ammonium, salts of magnesium and salts of α -naphthalene sulfonic acid.

2. Solution for preserving wood and rendering it non-inflammable composed of an aqueous solution of salts of ammonium, salts of magnesium and salts of α -naphthalene sulfonic acid.

In testimony whereof, we have signed our names to this specification in the presence of two subscribing witnesses.

FRIEDRICH SEIDENSCHNUR.
JULIUS DEHNST.

Witnesses:

HENRY HASPER,
WOLDEMAR HAUPT.