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UNITED STATES PATENT OFFICE.

JOHN E. SIEBEL, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN DEPILATING HIDES AND PRESERVING WOOD.

Specification forming part of Letters Patent No. 116,638, dated July 4, 1871.

To all whom it may concern:

Be it known that I, JOHN E. SIEBEL, of Chicago, in the county of Cook and State of Illinois, have invented certain Improvements in the Utilization of Refuse Gas-Lime, of which the following is a specification:

The bluish-green mass which is produced in the purification of illuminating-gas, and which is considered a very obnoxious refuse by gas-makers, I term "refuse gas-lime," a name by which this substance is generally known. This substance consists of sulphide and sulphydrate of calcium, and small quantities of the lime-salts of carbonic and subsulphurous acid. The two first-named ingredients—viz., sulphide of calcium and sulphydrate of calcium—render this refuse applicable for the purposes specified herein.

Mixed with water this refuse forms a mixture which, on account of its containing sulphydrate of calcium, I use as a cheap and effective depilatory, especially useful for tanneries, to free the hides to be tanned from the hair. For this purpose the gas-lime (as soon as possible after it leaves the refining apparatus of the gas-factory) is mixed with water to form a thick liquid or paste, in which the hides are immersed until the hair becomes loose and can be removed by a blunt knife.

Extracted by water, the refuse gas-lime produces a solution which (especially when made from fresh refuse) contains large quantities of sulphide and sulphydrate of calcium. This solution I use in connection with a solution of either sulphate of zinc, or ferrous sulphate, or ferric sulphate, for the preservation and impregnation of lumber in the following manner: After the wood is freed from sap, and its pores opened by steaming the same, I impregnate the wood (by the use of force-pumps in the usual manner) with a solution of either sulphate of zinc, or of ferrous sulphate, or of ferric sulphate, the strength of the solution varying according to requirements, say one-half pound of sulphate to one gallon of water, more or less. After this impregnation has taken place another impregnation is made into the wood by

the solution obtained by treating gas-lime refuse with water, say in the proportion of one pound of gas-lime refuse to one gallon of water, more or less. If in the first impregnation ferrous or ferric sulphate were used, the second impregnation will produce within the pores of the wood insoluble deposits of sulphate of lime and black sulphide of iron; but if sulphate of zinc be used in the first injection the deposits formed will be sulphate of lime and sulphide of zinc, which are also both insoluble in water, but of a white color. The use of zinc-sulphate in this process is therefore recommendable in case the wood to be preserved is not desired to be stained or colored. If desired, the first impregnation of the wood may be made with the watery extract of the gas-lime refuse, and the second impregnation with a solution of any one of the above-mentioned three sulphates.

The serious objections which exist against an older process used occasionally for preserving wood, and which process consists in the successive impregnation of ferrous sulphate and burned lime in watery solution, cannot be quoted against my process. The objection referred to is the very small solubility of burned lime in water, which allows but an almost insignificant portion to enter the wood; while the sulphide and sulphydrate of calcium, which are the essential agents brought to bear in my process, are very soluble in water, and can therefore be imparted to the wood in any desired quantity.

What I claim is—

1. The use of refuse gas-lime as a depilatory, especially for the use of tanneries, substantially as set forth.

2. The use of refuse gas-lime in connection with either one of the three following substances, viz.: sulphate of zinc, ferrous sulphate, or ferric sulphate, for the impregnation and preservation of wood, substantially as set forth.

JOHN E. SIEBEL.

Witnesses:

C. PROEBSING,
WM. GLAENZER.