

UNITED STATES PATENT OFFICE.

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ART OF COLORING WOOD.

939,014.

Specification of Letters Patent.

Patented Nov. 2, 1909.

No Drawing.

Application filed November 6, 1907. Serial No. 400,989.

To all whom it may concern:

Be it known that I, WILLIAM A. HALL, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented or discovered certain new and useful Improvements in the Art of Coloring Wood, of which the following is a specification.

This invention has for its object to produce from some of the cheaper or more common varieties of hard woods, such as birch, beech or maple, ornamental or variegated woods of highly attractive appearance and somewhat resembling in colors some of the high-priced variegated tropical woods, such as tulip wood and koa, so that they are very desirable for interior finish. This result is effected by treating the wood with two or more solutions which have different degrees of capillary activity or different dialyzing effects; and thus the solutions having the highest degrees of capillary activity will quickly penetrate into the interior portions of the wood, and will color the same accordingly, while the solutions having less capillary activity will not penetrate so deeply and will impart to the wood their own special colors in zones or streaks. These different solutions will preferably be mixed together, so that the wood may be treated simultaneously with all of them, or the wood may be separately treated with each solution, as may be found most desirable.

As an instance of one manner in which the invention may be carried into effect I will mention a mixture of solutions such as picric acid, ferrous sulfate and nigrosin. These three are all acid solutions, and it has been discovered that picric acid has the highest degree of capillary activity, penetrating all portions of the wood, whether hard or soft, and staining it a bright yellow. Ferrous sulfate has the next highest degree of capillary activity, entering into all but the very hardest parts of the wood; and this solution, which, by itself, would stain the wood a silver gray, produces, in combination with picric acid, a grass green color. Hence wood permeated with a mixture of picric acid and ferrous sulfate would be colored green, with some streaks or lines of yellow in the very hardest portions of the wood. Nigrosin has very much less capil-

lary activity than the other two solutions mentioned, and as it stains the wood black this color will appear only in the more porous portions of the wood; so that when the three solutions mentioned are mixed together and the wood is treated with the mixture it will be colored in streaks of yellow, green and black. These different colors will blend into each other more or less, so as to give a pleasing appearance which renders the wood very desirable commercially.

In place of nigrosin, in the mixture referred to, hypernic extract, or any other coloring matter which dissolves in weak acids may be used. If hypernic extract be used in place of nigrosin, in the solution referred to, wood with yellow, green and red streaks would be produced; and these different colors, running together or blending, more or less, produce effects which are highly ornamental and very pleasing.

In carrying the invention into effect the wood is first thoroughly seasoned, and is then placed in a closed receptacle and subjected to the action of a vacuum of preferably 25 inches or higher, for the purpose of extracting the air therefrom and rendering the same absorbent. The mixed solution containing ingredients of varying capillary activity will then be introduced into the chamber of the receptacle; and to expedite the coloring operation a high pressure may, if preferred, be applied to the chamber of the receptacle, to force the coloring ingredients into the wood quickly; and as these different ingredients, as above suggested, have different degrees of capillary activity or penetration, variegated colored effects, as described, will be produced.

The invention is not to be understood as being limited to the use of any particular chemicals or solutions for the purpose of producing woods of variegated colors, as many varieties of different colors may be produced by the use of a great variety of chemical solutions of different capillary activity, each solution producing a certain color different from the other or others.

Having thus described my invention or discovery I claim and desire to secure by Letters Patent:

1. The herein described process of producing variegated wood, consisting in treat-

ing the wood with a solution comprising ingredients of different capillary activity or different penetrating qualities.

2. The herein-described process of producing variegated colored wood, consisting in treating the wood, in a closed receptacle, and with the aid of vacuum and high pressure, with a solution comprising ingredi-

ents of different capillary activity or different penetrating qualities.

10

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

WILLIAM AUGUSTUS HALL.

Witnesses:

C. M. SWEENEY,

J. D. KLINGE.