

UNITED STATES PATENT OFFICE.

GEORGE H. HULMES, OF CHARTIERS, ALLEGHENY COUNTY, AND WILLIAM SHOPE, OF MILLVALE, PENNSYLVANIA.

GRAINING WOOD.

SPECIFICATION forming part of Letters Patent No. 320,359, dated June 16, 1885.

Application filed March 7, 1885. (Specimens.)

To all whom it may concern:

Be it known that we, GEORGE H. HULMES, of Charters, Allegheny County, and WILLIAM SHOPE, of Millvale, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Graining Wood; and we do hereby declare the following to be a full, clear, and exact description thereof.

Our invention relates to the graining of wood surfaces for the purpose of imitating different kinds of wood upon the surfaces of cheaper or inferior grades of wood to improve their appearance, its object being to overcome certain very serious objections in the graining process as now practiced, and to expedite and cheapen said process.

The process of graining woods, as now generally practiced, consists in first priming the wood surface—that is, killing the knots—and then painting with ordinary lead paint to fill up the pores of the wood and give surface thereto, this priming operation being generally considered the same as one coat of paint, it being necessary to destroy the knots, because the resin therein will discolor the lead paint. After this coat is dried, two more coats of paint are applied to the surface to fill the cracks and imperfections in the wood and form a graining-surface, and it has been found practically impossible to apply these three coats of paint and provide a substantially perfect surface for the graining in less than fifteen days, a longer period being generally employed for the purpose, this long time being required for the reason that the paint dries and contracts slowly, and unless one coat is permitted to dry perfectly before the other is applied the contraction in drying will be uneven and cause strains in the painted surface, which, as it continues to dry, will cause the cracking and forming of imperfections in the finished grained surface. This cracking and breaking of the grained surface is well known to those skilled in the art. After this surface was formed, the regular graining color was applied and the surface grained according to the effect to be produced and the wood surface to be imitated, and the varnish was applied to protect the finished grained surface.

Our improvement in the art of graining can be carried out in two or three days, and

the surface formed is much more durable, as there is not the opportunity of its cracking and breaking.

Our invention consists in first coating the surface with what is termed transparent “fillers” to fill the pores of the wood and form a substantially smooth surface thereon; next, applying one or more coats of shellac or equivalent varnish to provide a graining surface, and finally applying the graining color and graining in the ordinary manner, and varnishing.

In carrying out our improvement in the art of graining, we generally take what is known as “hard-wood filler,” this being a transparent article used heretofore to fill the pores of hard wood in forming an oil-finish thereon. There are many different kinds of this filler manufactured for the above purpose, and the exact ingredients thereof need not be mentioned. This filler is employed to fill up the pores of the wood and impart thereto a smooth hard surface, resembling the surface of the harder woods which it is intended to imitate. This hard-wood filler is applied by a brush in the ordinary manner to the surface of the wood to be grained—the wood generally employed for the purpose being pine. The filler requires but little time to dry, and within a few hours the second step of the process may be carried out. For the second step we preferably employ “shellac varnish,” an article well known in the trade, and one or more coats of this shellac varnish are applied to the filled surface of the wood.

Instead of the shellac varnish other suitable varnish—such as “hard-wood varnish”—may be employed, but we have obtained the best results in the shortest time by the employment of the shellac varnish. The varnish imparts to the wood a graining-surface suitable to receive the graining color. The varnish, as generally employed, is transparent, and neither it nor the fillers changes the natural color of the wood, this natural color generally forming the under surface upon which the graining is done; and it has the advantage that the grainer, if skilled in the art, can bring out some of the natural advantages of the wood in his work. If desired, however, according to the surface to be imitated, the varnish may be tinted in order to impart a sur-

face of a different color for the graining operation. It requires but a short time for the varnish to dry properly for the next coat to be applied to it, the shellac varnish requiring less than an hour and the other varnishes requiring less than a day to dry properly, and we have found that both the fillers and shellac varnish may be applied within a single day and the surface beready for the graining operation.

We find that even though the knots are not destroyed the resin therein does not mar the surface of the graining-surface, as there is no lead therein to be discolored by the resin. As soon as the surface is sufficiently dried and contracted, the next step in the process is carried out, this being the application of the graining color to the graining surface formed by the fillers and varnish and the graining thereof in the usual manner according to the wood or other material to be imitated on the surface.

When the grained surface is properly dried, it is varnished in the usual manner to protect it from the action of the weather, &c.

In the practical working of our improved process we have found that the natural surface of the wood showing through the coating of the fillers and varnish forms a fine surface to grain upon in imitating all kinds of wood, and that it is not necessary to cover the surface, as the work can be brought out on this surface as well as on the usual painted surface. The natural surface of the wood does not show through the grained surface, except where the grainer intentionally exposes it in order to add to the beauty of his work, and in such cases the natural grain of the wood imparts a much handsomer appearance to the finished grained surface than can be obtained where that surface is imitated by the workman.

We have on the natural wood surface formed

many different imitations of wood, and we find that we can obtain much more natural imitations than where the grain of the wood is entirely covered up as in the old process. We also find that as we do away with the three coats of paint we do away with the cause of the cracking of the grained surface, and consequently that the surface formed is much more durable than the grained surface as heretofore formed. We also find that perfect work can be made and finished by this process within three days, thus saving at least fifteen days over the old process of graining, and we find that the grained surface so formed can be highly polished so as to impart to it an oil-finish equal to that employed with hard woods, which cannot be obtained on the ordinary grained surface.

The fillers and varnish employed to form the graining-surface are less expensive than the ordinary three coats of paint, and consequently the process can be performed much more rapidly and at less cost.

What we claim as our invention, and desire to secure by Letters Patent, is—

The herein-described improvement in the art of graining wood surfaces, consisting in applying transparent fillers, then applying varnish, graining on the surface so formed, and varnishing, substantially as and for the purposes set forth.

In testimony whereof we, the said GEORGE H. HULMES and WILLIAM SHOPE, have hereunto set our hands.

GEORGE H. HULMES.
WILLIAM SHOPE.

Witnesses:

J. M. KAY,
JAMES F. KAY.