UNITED STATES PATENT OFFICE.

LOUIS BROWN, OF NEW YORK, ASSIGNOR OF THREE-FOURTHS TO LUCY N. WHITE, OF RYE, N. Y.

PROCESS OF METALLIZING WOOD, &c.

SPECIFICATION forming part of Letters Patent No. 304,069, dated August 26, 1884.

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To all whom it may concern:

Be it known that I, LOUIS BROWN, of New York, in the county of New York and State of New York, a citizen of the United States, have invented a new and useful Improvement in Plastic Processes of Metallizing Wood and Other Materials, of which the following is a full, clear, and exact description.

It is desirable for many purposes, and especially for ornamentation and protection, to cover the surface of wood, metals, iron, steel, paper, pasteboard, stone, and brick, pottery, textile fabrics, &c., with a layer, lacquer, or coating of metallic zinc.

Heretofore it has been common to apply zinc rolled in sheets to wood and other surfaces as a means of protection; but my invention does not appertain or relate to the application or use of zinc which has been previously rolled in sheets, for I have discovered the art of applying, in a plastic state, to the surface of any article metallic zinc in such a manner that the zinc is firmly united to the surface of such article, and can be polished or burnished thereon to give it the luster of zinc-plate or rolled zinc, so that a surface prepared or covered with plastic metallic zinc, as I shall herein indicate, will, when finished, have the appearance and possess all the qualities of zinc metal, and firmly adhere to the surface to which it is applied throughout its extent, and make a tenacious and more or less flexible coating or covering.

In practicing my invention, I use what I term "zinc dust" or "sublimated zinc," which is a zinc powder or dust of great fineness, and is formed in the process of reducing zinc ore, and is deposited in the various tubes or passages of the condenser, and has been heretofore of practically little value, almost entirely unknown in the arts, and has had little or no position in the trade. It has been utilized at zinc-works by being thrown into the furnace with the ore, and has been considered of so little value that considerable attention has been given to the construction of condensers to prevent the formation of the powder. It is an entirely different product from zinc-white or oxide of zinc. I take this powder and mix or grind it in linseed, fish, or mineral oil, varnish, a mixture of soap-water and glue, or any other suitable vehicle, using a sufficient quantity of the vehicle to give the composition a degree of plasticity sufficient to enable it to be applied by a brush, rolls, or by dipping, or in any other suitable mechanical way. The vehicle used, by drying or setting, firmly unites the particles of dust to each other and to the surface of the article to which the composition is applied.

As is obvious from what I have already said, I do not confine myself to any especial vehicle, but use the one which may be best for the particular use for which the metal surfacing is to be employed; neither do I confine myself to the quantity of the powder used with a certain quantity of the vehicle, but may vary that as circumstances may require.

If it is desired to obtain a very smooth finish and a high luster, it is necessary to sift or bolt the zinc-dust and use only the finest.

The composition, when spread upon or applied to the surface of any material, has a metallic appearance, and, in fact, provides the material with a coating of fine particles of metal held together by its vehicle. A very brilliant finish or luster is provided by rubbing the surface with pumice, rubber, or other material, so that the finished product shall resemble the solid zinc metal.

It will of course be desirable for some purposes to finish the surface, and also to varnish it to preserve the luster. Where the coating or surfacing is to be subjected to the influence of water or the weather the vehicle should of course be of a water-proof nature, and linseed-oil, or some equivalent oil, will of course be used as the vehicle. When the surfacing is not subjected to moisture, soap-water and glue can be used as a vehicle, a sufficient quantity of glue being added to the soap-water to give sufficient adhesiveness to the mixture; and the surfacing thus prepared and applied can be protected from moisture by being afterward varnished. The mixture can also be colored, so that instead of a plain zinc-metal finish, a colored metal finish is provided; and I have found for the purpose of coloring the composition that aniline colors are the best, both because of their brilliancy and because

of their permeating quality, which enables a very little to color a large mass.

Of course, for certain purposes it is not necessary that the filling of the composition be entirely of zinc-powder, and when such is the case I substitute for a portion of the powder zinc oxide, white lead, whitings, ochres, or other earths.

Among the uses to which this invention can be put are the decoration and interior finish of houses, including panel-work, dados, flooring, frames, &c., the protection of metal, iron, or wood work, or structures from the influence of water or moisture, the protection and ornamentation of stone and brick surfaces, the fire-proofing of any material, &c. It can be applied with equal ease to wood, metal, stone, pasteboard, paper, brick, or stone surfaces, textile fabrics, pottery, &c., and has, when applied and set, tenacious, coherent, and flexible qualities.

Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States—

1. The art of surfacing wood or other material with metallic zinc by means of a plastic composition of sublimed zinc and a suitable vehicle, substantially as described.

2. In the art of applying metallic zinc to wood or other surfaces, the coating thereof with thin plastic composition containing zinc-dust of the character described, and polishing said coating, as set forth, and then varnishing the same, all substantially as specified.

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Witnesses:
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