

UNITED STATES PATENT OFFICE.

EDOUARD DODÉ, OF MONTREUIL, (NEAR PARIS,) FRANCE.

BRIGHT-GILDING IRON AND OTHER METALS.

SPECIFICATION forming part of Letters Patent No. 230,864, dated August 10, 1880.

Application filed May 24, 1880. (Specimens.) Patented in France October 11, 1878.

To all whom it may concern:

Be it known that I, EDOUARD DODÉ, of Montreuil, (near Paris,) France, chemist, have invented a new and improved process for obtaining upon cast or wrought iron and other metals bright gilding without burnishing the coated metal; and I do hereby declare that the following is a full, clear, and exact description of the same.

In the ordinary process for gilding cast or wrought iron by electroplating or immersion previous operations are necessary: First, scraping operation, followed by a complete cleaning, which is often to be made several times before the metal is ready for the gilding operation; second, the piece so cleaned is electroplated with copper, and it is upon this coating that gilding is obtained by electrocoating or immersion.

It is quite unnecessary to describe other processes employed only by some gilders, and consisting in gilding directly iron. These processes give but very imperfect results.

What I desire to be well understood is, that all gildings obtained either directly upon iron or upon a previous metallic coating are always dead, and that when they are required to be bright further burnishing is necessary, which causes considerable expense.

By my process I obtain bright gilding upon the piece as soon as it is taken out of the bath, and whether the metal be coated by electroplating process or simply by immersion.

Operation: The piece to be gilded having been previously scraped and cleaned, a uniform coating of enamel is brushed upon the spots to be coated with gold. For enamel any ordinary enamel employed in painting glass and porcelain, as commonly sold, can be used. Such enamels as are referred to in Booth & Moffit's Encyclopedia of Chemistry, seventh edition, Philadelphia, 1872, page 593, will serve the purpose. The enamel must be employed when impalpably ground and diluted in essence of turpentine mixed with a small quantity of fat oil of turpentine.

In order to make the thickness of the coating uniform a brush of fitchet-pile similar to those used in painting earthenware is used. The piece so treated is dried by moderate heat and subsequently baked in muffle-furnaces

similar to those employed in baking porcelain. The same principles as for porcelain are observed, and it is necessary that any piece does not come in contact with the others. The muffle-furnace is heated with wood or coal, and at a suitable degree, according to the enamels which have been employed. Of course, if the enamel employed is one of those used for porcelain, the piece must be heated to the same degree as porcelain, and when one of the enamels commonly used for painting glass is employed the muffle must be heated only at the degree used in baking ornamental glass. When baked the pieces are slowly cooled. They come out of the muffle with a bright appearance if the enamel coating has a sufficient thickness. When the coating is too thin the pieces look dead. In the former case the further gilding would be bright and in the latter it would be dead-looking.

Gilding operation.—In order to obtain without further burnishing a bright gilding either by electroplating or by immersion only, the pieces taken out of the muffle are brushed with a platiniferous liquid, the composition of which is underneath stated. The pieces brushed in that manner are brought in a drying-room and afterward baked, as before stated, but at a lower degree, in order to leave the enamel unmelted. When the pieces are cooled they are bright silvered-looking. The pieces are then gilded by placing a copper or brass wire in contact with the parts brushed with the platiniferous liquid. This precaution being taken, the piece is gilded by the ordinary processes, either by electroplating processes or simply by immersion. The electroplated gilding is preferable, but it causes a higher expense, and for that reason I commonly use gilding by simple immersion. The gold laid upon the platinum is quite adherent, and possesses a brightness which is not to be obtained with tools, as cavities are as bright as embossments.

Preparation of platinum.—Two hundred grams of pure and crystallized chloride of platinum are dissolved in forty grams of distilled water heated in a sand-bath. When the dissolution is made heat is increased till water is evaporated. The mixture has then a dark-red appearance, and no bubbling is to be seen. The chloride so treated is withdrawn from fire and

cooled. The product so obtained is pulverized and mixed in a porcelain capsule with about six hundred grams lavender-oil dropped while stirring the mixture. After this operation the mixture is left unagitated during a few hours and then decanted, when the product is ready to be used.

I do not confine myself to this preparation of platinum, but I prefer it, as it gives best results. Fluxes can also be added to the solution, but they need not ordinarily be employed.

I claim—

The process herein described of bright-gilding metals, said process consisting in first coating the pieces to be gilt with enamel, then baking the same, then applying over the enamel a coating by means of platiniferous liquid, then baking again, but at a lower degree of heat, and finally in applying the gold, substantially as herein shown and described.

EDOUARD DODÉ.

Witnesses:

ROBT. M. HOOPER,
EUGÈNE HEBERT.