

UNITED STATES PATENT OFFICE.

JOHN W. HYATT, OF NEWARK, NEW JERSEY.

APPLYING DESIGNS TO ARTICLES MADE OF PLASTIC MATERIAL.

SPECIFICATION forming part of Letters Patent No. 239,792, dated April 5, 1881.

Application filed November 1, 1880. (No specimens.)

To all whom it may concern:

Be it known that I, JOHN W. HYATT, of Newark, in the county of Essex and State of New Jersey, have invented a new and useful Improvement in Applying Designs to Articles made of Plastic Material, of which the following is a specification.

The invention relates to an improved process of applying designs, lettering, &c., to articles which are made by subjecting material in powdered form to pressure in heated molds. It is confined to articles which are made by the use of powdered materials and substances, and to such powders as are plastic or weldable under heat. I have been able to produce satisfactory results in connection with a number of substances; but I especially recommend the material known as "bousilate," which I have used with marked success.

The novelty of my process consists, essentially, in the employment, in connection with heat and pressure, of a powder that is plastic under heat, and an ink or sizing which is composed of or carries a color.

The design is applied to the mold or die in ink or a sizing, and the mold filled with the powdered material, by preference while the ink or sizing is in an undried condition. The pressure and heat are then applied and the article completed, or the pressure is applied first long enough to cause an absorption of the ink or color, and the heat applied afterward.

The ink or sizing may be put on the mold in many ways. It may be printed by means of type or designs of elastic material, or applied by hand or otherwise, as may be convenient. I prefer, however, where it is practicable, to cut or engrave the lettering or design in the face of the mold or die, and apply the ink to the design, as is customary in the art of plate-printing.

The preferred method is fully described hereinafter, and I recommend its employment, particularly where a superior order of ornamentation is desired.

The inks or dyes commonly used in printing and dyeing, or sizings which contain the colors of which such inks or dyes are made, may be used.

While, as is evident, my process may be practiced in many different ways, I prefer and

recommend the following where the mold is of such a shape that the steps I describe are practicable.

I cut or engrave the design in intaglio in the face of the die, finishing it the same substantially as an ordinary steel plate. I then apply the ink in any convenient way and wipe the plate carefully. The design having been properly inked the mold or die is filled with the powdered material and the pressure and heat applied and continued until the article is completed.

If preferred, which may be desirable in some instances, the pressure may be applied first to cause an effectual absorption of the ink, and the heat and pressure afterward applied together.

I have made use of a pressure of from a ton to two tons to the square inch; but whatever pressure is sufficient to complete the article will be sufficient to effectuate the objects of my process.

I am also able to produce a bronze effect by mixing the bronze with a varnish or drying-oil and applying the compound to the die or mold according to the process above described.

In the case of a flat article, if it be found when it is taken from the mold that the design is raised to too great an extent, the objection may be corrected by subjecting the article to pressure in a plain mold having no engraved surfaces, similar in shape to that in which the article has been formed.

In some instances it may be found expedient to apply the powder to cover the ink or sizing before filling the mold, in which event it will be sifted upon the ink or sizing and the mold then filled and the heat and pressure applied, as above set forth.

I am aware that molds with intaglio or intagliated surfaces filled with different-colored materials have been employed heretofore in the ornamentation of articles, which I do not claim.

I do not limit my claim to any method of applying the design to the mold, nor to the treatment of any particular material or substance; neither do I confine myself to any specific ink or sizing; but

What I do claim is—

1. A process of applying designs, &c., to articles which are made by pressing a powder

that is plastic under heat in heated molds, which consists in, first, applying the design to the mold in ink or a sizing; second, filling the mold with the powder of which the article is
5 intended to be formed; and, third, completing the article and application of the design by means of heat and pressure, substantially as set forth.

2. A process of applying designs, &c., to articles which are made by pressing a powder
10 that is plastic under heat in heated molds, which consists in, first, cutting the design in intaglio in the face of the mold; second, inking or coloring it; third, filling the mold with
15 the powder of which the article is intended to be formed; and, fourth, completing the article and application of the design by means of heat and pressure, substantially as set forth.

3. A process of applying designs, &c., to articles which are made by pressing a powder
20 that is plastic under heat in heated molds, which consists in, first, applying the design to the mold in ink or a sizing; second, filling the mold with the powder of which the article is
25 intended to be formed; and, third, completing

the article and application of the design by means of heat and pressure, first applying pressure to effect an absorption of the ink or color, and then applying both heat and pressure, substantially as set forth. 30

4. A process of applying designs, &c., to articles which are made by pressing a powder that is plastic under heat in heated molds, which consists in, first, applying the design to the mold in ink composed of bronze and a
35 varnish or drying-oil; second, filling the mold with the powder of which the article is intended to be formed; and, third, completing the article and application of the design by means of heat and pressure, substantially as
40 set forth.

In testimony that I claim the foregoing improvement in applying designs to articles made of plastic material, as above described, I have
45 hereunto set my hand this 29th day of October, 1880.

JOHN W. HYATT.

Witnesses:

CHAS. C. GILL,

T. WALTER FOWLER.