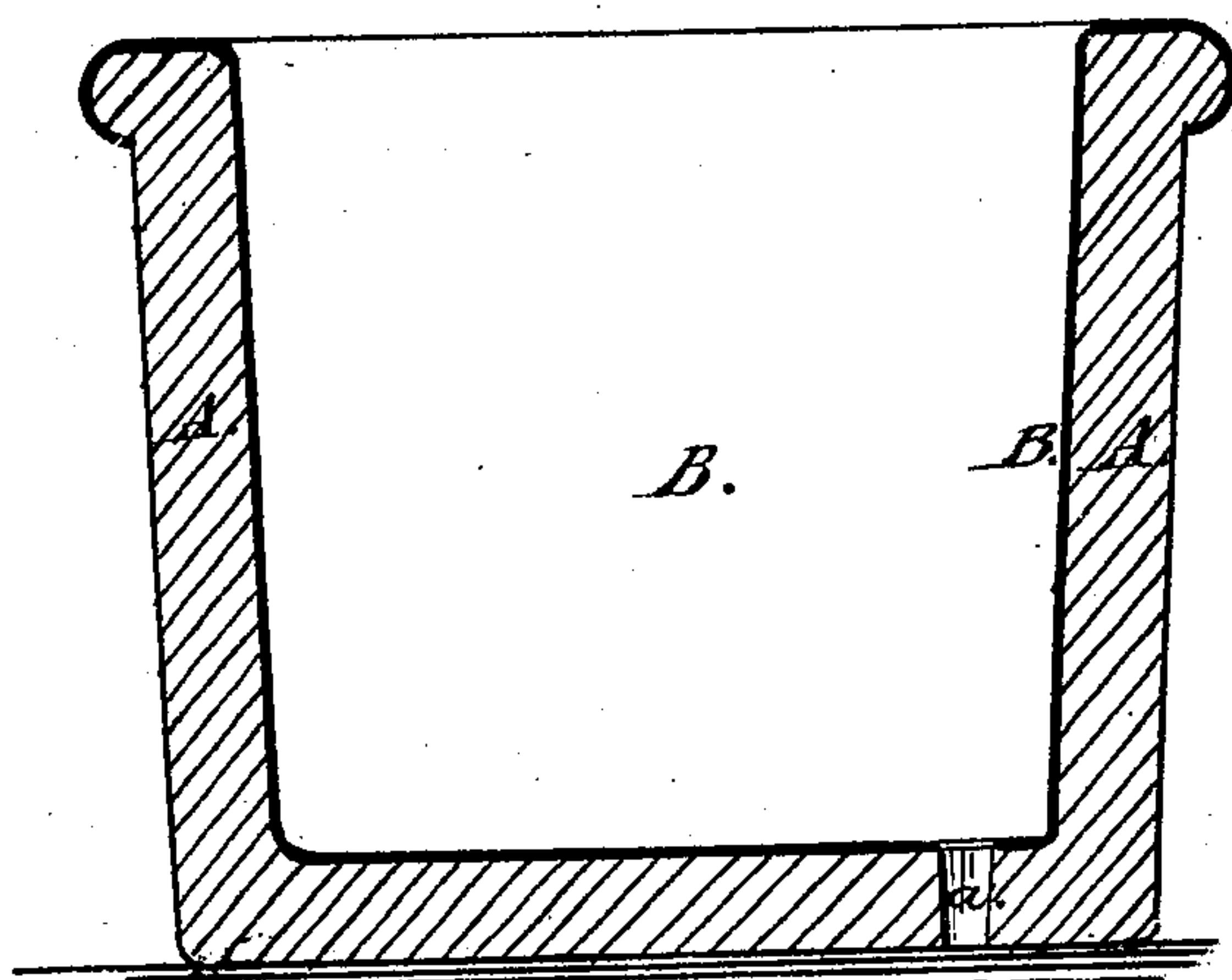


H. Champenois,

Dyers Vat.

No. 95425.

Patented Oct. 5. 1869.



WITNESSES:

M. M. L. Mupkin

T. B. Beecher
(11)

INVENTOR:

H. Champenois

United States Patent Office.

H. CHAMPENOIS, OF NEW YORK, N. Y.

Letters Patent No. 95,425, dated October 5, 1869.

IMPROVED DYERS' VAT.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, H. CHAMPENOIS, of the city, county, and State of New York, formerly of Lyons, France, have invented a new and improved Dyers' Vat; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, which forms part of this specification.

My invention relates to an improved vat, designed particularly for the use of dyers.

Before my invention, dyers' vats were commonly made of wood, or of wood lined with metal, such as copper, and in some instances they were made of glass, and also of blocks of granite, into which the proper-sized cavity was made. All of these possessed serious disadvantages: The wooden vats absorbed the colors, and consequently a single vat could not practically be used for a different color; the metallic or copper-lined vats were injured or destroyed by the chemicals used, and the colors themselves injured thereby; the glass vats were very expensive, owing to the cost of the material, and the difficulty in making them large enough for practical use; the granite vats were also impracticable, for the reason that it was difficult to obtain blocks of the requisite size without flaws; and, moreover, the interior surface was either too rough when first made, or soon became so by the partial action of the chemicals, so that the soaked threads of the fabrics being dyed, were liable to become torn by contact with such roughened surfaces.

The object, therefore, of my invention is to produce a large and cheap dyers' vat, which, practically, will not be affected by the chemicals used in the dyeing-matter, and which can be quickly cleaned and used many times a day, if necessary, for different colors. To such end,

My invention consists in a new article of manufacture of a dyers' vat, having a vitrified or enamelled inner surface; that is to say, it consists in the combination, with the interior surface of a dyers' vat, of a coating that is practically incorrodible by the chemicals used in dyeing.

The drawing is a vertical cross-section of a dyers' vat, made according to my invention.

A designates the body of the vat, and it is made of any suitable argillaceous earth or clay, (either with or without an admixture of silica,) and it is made in the desired size and form, in any suitable manner, as, for instance, by means of a mould or moulds.

The body having been so made, is placed in an oven and baked to the required degree of hardness, depending upon the nature of the earths used.

B designates the incorrodible coating, which may be properly termed an enamel, produced by vitrification of the ingredients of which such composition is composed.

The coating or enamel to be used depends almost entirely on the character of the argillaceous earth or clay of which the body A of the vat is made, and the color of the coating desired.

The vat may of course be provided with any suitable drawing-off aperture *a*, provided with a plug, or any suitable closing-device.

In the drawing, I have illustrated a body, A, as made of fire-brick, and I have found that the following ingredients constitute a suitable incorrodible coating for such material, to wit:

Fusible clay, (*i. e.*, not kaoline-clay,) five parts.

Pulverized slate, two parts.

Galena, three parts.

This composition, after having been rendered pasty, by the addition of water, or any other suitable liquid, is applied to the interior surfaces of the vat A by a brush, trowel or otherwise, and the whole baked in a furnace until it is vitrified, so as to form a coating, B, over the interior surface of the body A, as shown in the drawing. It will of course be understood that more than one coat, (after one has properly dried,) may be applied before baking.

The body may be composed of the following substances; that is—

Raw clay of bollena, three parts.

Raw clay of Macon, three parts.

Cement of baked clay, four parts.

Cement of cazette, four parts.

Such composition, it will be observed, consists, in a general way, of a portion of raw clay, previously pulverized, and a larger proportion of cement, the latter consisting of baked clay, of the same nature as the raw clay, or even of a different nature, such as fragments of bricks, crucibles, tiles, cazettes, &c., which, when pulverized, may be used instead of cement to thin the fatness of the raw clay. A vat made in this way, is of course baked in substantially the way previously described.

And I have found that the following ingredients produce a suitable incorrodible coating or enamel for a vat made of the hereinabove last-specified material, to wit:

Peroxide of manganese, two parts.

Silica, four parts.

Minium, or red lead, five parts.

Galena, ten parts.

Water or other suitable liquid being used in sufficient quantity to render pasty the composition.

This coating or enamel is applied to the interior surface of the body, and vitrified thereon, in substantially the way hereinabove specified.

I will here remark that the incorrodible coating or enamel may be applied to the body before the latter is baked, and the whole baked together, but preferably, I apply the coating after the body has been

baked, and subject the article to a second baking, as in the former case there is liability of unequal contraction or expansion of the body and the coating or enamel, whereby the enamel is cracked.

Of course it will be understood that in the manufacture of my improved dyers' vat, suitable precautions are to be observed in respect to the shaping or moulding of the body, and the smoothness of the interior surface, as well as to the application of the incorrodible coating or enamel, the degree of heat required for baking the different varieties of material of which the body of the article, as well as the coating or enamel may be composed, and for the graduation of the cooling before removal from the oven.

I am well aware that it is not new to glaze or vitrify pottery-ware, and I do not therefore claim the vitrifying of plastic earths or clays. I am not, how-

ever, aware that a dyers' vat has ever before been made as hereinabove specified, and much experiment was necessary to enable me to produce an article of the size and capacity of a dyers' vat, of the construction hereinabove described.

What I claim as my invention, and desire to secure by Letters Patent, is—

The new article of manufacture, of a dyers' vat, made substantially as herein specified, that is to say, the combination, with the interior surface of the body of a dyers' vat, made of plastic earth, of an incorrodible coating or enamel, substantially as herein specified.

H. CHAMPENOIS.

Witnesses:

M. M. LIVINGSTON,
T. B. BEECHER.