

UNITED STATES PATENT OFFICE.

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WALL-COVERING AND PROCESS OF MAKING SAME.

1,044,322.

Specification of Letters Patent.

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No Drawing.

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To all whom it may concern:

Be it known that I, JOSEPH N. WIGGIN, of East Orange, in the county of Essex, and in the State of New Jersey, have invented a certain new and useful Improvement in Wall-Coverings and Processes of Making Same, and do hereby declare that the following is a full, clear, and exact description thereof.

The object of my invention has been to provide a wall covering and process of making the same, which wall covering shall have among others the following advantages: that it shall have permanency of color for the lighter tints; that its face shall be sufficiently insoluble so that dirt and dust can be washed therefrom without injury thereto; that it shall have a thread effect free from blemishes; that it shall have printing thereon with waterproof color; that its face shall be of such a nature that decorations of various kinds can be applied thereto, such as calcimine, or oil, or water color, without having the decoration run or spread into the face of the covering; and to such ends my invention consists in the wall covering hereinafter specified.

I shall describe that embodiment of my invention which is the best embodiment known to me, but such description is to be taken as only illustrative of the many embodiments of which my invention is capable.

In the illustrated embodiment, I use as a base a fabric which I prefer to make of cotton. When the color to be given to the face is dark enough, the cotton is dyed the same color as it is to have on the face when finished. With lighter colors the fabric is not dyed. If the natural weave of the fabric were permitted to show in the finished wall covering, the unavoidable irregularities in the thickness of the thread and in the weaving would make very objectionable blemishes. If the fabric were used in its natural condition, the cotton would soften when paste was applied to the fabric, so that it would stretch and wilt, and lose its shape, and could not be accurately cut to fit the baseboard, picture rail or ceiling, and adjacent strips of wall covering. For this reason the fabric is treated as hereinafter stated.

In the manufacture of my said wall covering according to my said process, the fol-

lowing operations are preferably performed, and preferably in the following order: The fabric preferably bleached is first preferably wet or "watered" in a padder, with hot water. This wetting shrinks and washes the goods, and the subsequent drying opens the pores. This puts the goods in better condition to take the dye stuffs. The fabric is next dried by being run over heated cylinders. The fabric is then dyed (if the color desired is sufficiently dark to permit dyeing), the fabric being dipped in the dye, and both sides receiving the color. This is done on a padder with dye liquor preferably composed of an aqueous solution of dye stuff, and a stiffener, which latter may be glue, casein, dextrine, starch, flour, soluble gums (as tragacanth or arabic), or other stiffening material, or a combination of the foregoing. The solution is preferably applied hot. Next the fabric is dried, preferably over heated cylinders, the goods being preferably stretched laterally during this operation. A coating is put on the back of the fabric by a coating machine, the purpose of which coating is to enable the fabric to retain its shape after it is pasted and cut and while it is being hung, while also permitting the paste to get sufficient hold on the fabric to secure good adhesion. This back coating may be of any well-known composition, as my invention does not relate specifically to it. A size of any well-known composition is then put on the face of the goods by means of a printing machine. The goods are then calendered, preferably by means of a stack calender. The first coat of color is then put on the face of the fabric by a printing machine having an intaglio printing surface and known as a pin roller. The composition of this coating is preferably as follows: 20 parts cooked until homogeneous: 6 parts cornstarch; 48 parts water; 12 parts solution, (1 part gum tragacanth, 16 parts water.) 4 parts solution, (2 parts fine mica, 3 parts water.) Necessary coloring matter.

The above ingredients and proportions may be considerably varied from this formula, although I prefer them as stated. The fabric is then calendered, after which a second run of color is applied to the face of the fabric, said last-mentioned run preferably having the same composition as the

first-mentioned face run of color. The fabric is next wet on the back with water as by a printing machine, after which it is embossed. After having been embossed, the relief portions of the embossing are printed on the face with oil colors as on a printer.

The composition of the water-proof colors may be varied within wide limits. The formula which I prefer to use for this purpose is as follows: 1 part by weight of lithographic varnish, 1 part by weight of English patent drier. Necessary coloring matter, coloring matter composed of pigment, ground in Japan.

I have found that the color printed according to the above water-proof formula is water proof, and yet can be printed in the desired form on the covering, without either having it spread beyond the outlines desired, or fail to take hold of the surface. In each of the above formulæ, the proportions given are all by weight.

My wall covering has among others the following advantages: I have found by actual experience and severe tests that I secure an unusual permanency of color, even for the lighter tints. Ordinarily the lighter tints fade to a very objectionable extent. My covering holds the color for the lighter tints in a very satisfactory way. I have found by actual experience under trying circumstances, such as in the soft coal regions, that the surface of my covering can be cleaned without injury, to remove soot and dirt. For some reason (chiefly due to the mica, I believe, which the pressure seems to laminate) the surface is comparatively impervious, and it is removed to only a slight extent when the covering is washed, so that the bulk of the face coating remains, and as the mica is transparent to some extent, the color beneath the outer surface of the mica shows through, and thus while it is protected by the mica, the color is able to produce its desired effect.

The natural weave of the fabric is sufficiently covered up by the mica, so that any weaving defects which may appear in the cloth are concealed, and the thread effect is due alone to the embossing, and thus a thread effect is produced which is free from blemishes.

The colored surface of my covering is of such a permanent and impervious nature that decorations of various kinds can be successfully applied to it after it is on the wall. Calcimine, or oil, or water colors, can be applied without having the decoration run or spread into the back.

I am aware that very many changes can be made in the above-described embodiment of my invention, and I desire not to be limited

beyond the necessary intendment of my claims and the requirements of the prior art.

I claim:

1. The process of rendering a woven fabric washable, comprising sizing the fabric, coating such fabric with a water-soluble mica mixture, embossing said fabric throughout its extent to produce a design having raised portions, and to effect stratification of the mica laminae and printing upon the raised portions of such embossing with water-proof color.

2. A wall covering, comprising a sized woven fabric, having a face coating of a water-soluble mica mixture, said fabric being embossed to produce a lamination of the mica.

3. A wall covering, comprising a sized woven fabric, having a face coating of a water-soluble mica mixture, said fabric being embossed to produce a lamination of the mica, and having a printing of water-proof color upon the raised portions of said embossing.

4. The process of making a covering from fabric, consisting in applying a color to one surface, embossing a pattern of elevations and depressions in general continuity on said fabric on the colored side and then applying another color to the elevations, merely.

5. The process of making a covering of woven fabric, consisting in stiffening said fabric, applying color to its surface, embossing a thread effect thereon, and then applying another color to the elevations of the embossing.

6. A coated fabric covering, comprising a woven and stiffened fabric having a color applied to its surface, and a thread effect embossed thereon, and having a different color applied to the relief portions.

7. The process of making a covering from fabric consisting in applying color to one surface and embossing a pattern of elevations and depressions in general continuity on said fabric on the colored side, and then producing a different color effect on the elevations merely.

8. A coated fabric covering, comprising a stiff fabric having a color applied to its surface, a pattern of elevations and depressions embossed in general continuity on said fabric on the colored side, and a different color effect on the relief portions merely.

In testimony that I claim the foregoing I have hereunto set my hand.

JOSEPH N. WIGGIN.

Witnesses:

JOHN R. WINANS,
FLORENCE E. SEWELL.