

UNITED STATES PATENT OFFICE.

JOSEPH SACHS AND ARMAND MÜLLER-JACOBS, OF NEW YORK, N. Y.

MINERAL COLOR.

SPECIFICATION forming part of Letters Patent No. 512,224, dated January 2, 1894.

Application filed March 8, 1893. Serial No. 465,205. (No specimens.)

To all whom it may concern:

Be it known that we, JOSEPH SACHS, a subject of the Grand Duke of Baden, and ARMAND MÜLLER-JACOBS, a citizen of the Republic of Switzerland, residing in New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Mineral Colors; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to mineral colors and its novelty consists in the new material which we have discovered.

A substitute for bronze powders and similar metallic powders for use in the manufacture of wall papers and similar purposes has long been sought for. Bronze powders are costly and heavy, they are affected by impurities in the atmosphere to which they may be exposed and they can only be made in a limited number of colors. We have, after many experiments, discovered a material which has the required luster, is lighter and cheaper than bronze powder, can be colored in many different tints, is very durable and not affected by sulphureted hydrogen and other common atmospheric impurities.

We have already fully explained in application for Letters Patent of the United States filed August 9, 1892, Serial No. 442,603, and in a similar application filed March 8, 1893, Serial No. 465,206, the processes whereby we make our novel product. These consist briefly in subjecting a mineral in a finely divided state to the action of an animalizing mordant and an organic dye simultaneously or in proper sequence. By this means the mineral is dyed in the true sense of the word. It is well known that certain fibers of vegetable origin, such as cotton, have affinities for some colors which they readily absorb and retain and antipathies for others which they repel. For instance, cotton does not receive methylviolet and magenta. Animal fibers like silk and wool do however receive and absorb such colors. If the vegetable fibers are treated with albumen and some similar materials a marked change in their nature takes place and they thereafter readily retain the colors

which they previously repelled. This treatment of vegetable fiber is called "animalizing."

It is well known that mineral substances which are insoluble in water can not be successfully colored for commercial purposes by bringing them into contact with solutions of coloring matter containing adhesive material, and heretofore it has been impossible to color them so that they may be used as colored mineral powders. We have discovered however that minerals of a micaceous nature, and probably some others, may be "animalized" by subjecting them to the action of albumen and similar mordants and thereafter may be dyed as cotton fibers have been. It is true that heretofore it has been attempted to color masses of ground mineral material by causing the colors to be mechanically retained in relation to such mineral mass by the adhesive powers of albumen, casein and similar products, but such a process does not dye the mass. It colors it merely and resembles rather the process of painting whereby a mass of opaque pigment is caused to adhere to the surface of the object treated. Our process is properly dyeing because it does not alter the surface of the mineral or its physical properties, and the resulting product, when powdered, may be printed upon wall paper, for instance, precisely like bronze powder, without losing any of its color or luster whereas mineral material which has been merely colored upon its surfaces can not be so printed because when moistened during the printing process, the colors employed are partly dissolved and produce stains.

Our product is not produced by the fixing of an insoluble pigment to mineral surfaces but by the dyeing of a mineral with soluble color when the mineral has been animalized and made receptive to the color.

After the dyed mineral has become prepared and ground to powder it may profitably be mechanically mixed with a certain proportion of ground metallic powder such as bronze powder, brocade, or bisulphite of tin. Indeed its use alone is not contemplated at first in order that those using it may gradually become accustomed to its superior lightness and other novel properties. When mixed with bronze powder, we prefer to use the dyed

mineral in about the proportion of twenty-five per cent. or less of the entire mass, though these relative amounts may be varied as the nature of the case may require.

5 Having described our invention, what we claim as new is—

1. As a new article of manufacture, powdered animalized mineral dyed with an organic dye.

10 2. As a new article of manufacture, the combination with powdered metallic pigment of powdered animalized mineral dyed with an organic dye.

3. The combination with bronze powder of about one fourth part by weight of powdered animalized dyed mica, substantially as described. 15

In testimony whereof we have signed this specification in the presence of two subscribing witnesses.

JOSEPH SACHS.

ARMAND MÜLLER-JACOBS.

[L. S.]

[L. S.]

Witnesses:

RUDOLPH SCHULDER,

RICHARD SCHULDER.