

UNITED STATES PATENT OFFICE

CHARLES F. MAUER, OF SAN FRANCISCO, CALIFORNIA

WATER AND MOISTURE PROOF COATING MATERIAL AND METHOD OF MAKING SAME

No Drawing.

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This invention relates to a water and moisture proof coating material composed chiefly of clays and starchy binding products permeated with a compound which renders the clays and starches water repellent, and the invention further relates to the method of making the same.

The object of the present invention is to provide a coating material composed chiefly of clays combined with a binder, such as starch or products thereof, such as dextrine, glucose or the like; and further to permeate the clays and binder and each and every particle thereof with a compound which will render the clays, as well as the binder, both water and moisture repellent, thereby enhancing very materially the value of the coating material and providing a material suitable for coating paper, wall board, plaster board, wood work, sheet metal work, etc.

In the paper coating industry, it is common practice to combine either imported or domestic china clays with satin white and blanc fixe with a binder for the purpose of preparing colour for the purpose of coating paper so as to fill the necessary requirements for lithographing in numerous colors on offset presses as well as other high class printing on block presses. For high grade printing work the binder employed is casein, while on cheaper work starchy products are employed.

The present invention fills every requirement in the paper coating industry with the following decided advantages:

It is far more economical to use; it works smoother on the coating machine; it spreads better on the paper, leaving no brush marks; it produces a smoother finish on the coated paper; it takes less ink in printing; the ink does not strike in or penetrate as on casein products; the paper takes a higher gloss when varnished; the finished paper is more flexible and folds easier; the prepared colour or coating material will keep sweet and usable for weeks, while casein colour or coating material will disintegrate and spoil in a few days.

The coating material forming the subject matter of the present invention is admirable

for interior decorating of buildings. When combining clay, satin white and blanc fixe with a binder and a water proofing material, it makes a beautiful snow white body which can be successfully applied to wall board, plaster board, wood work, sheet metal work, etc. It will bond or adhere perfectly to any of these materials and produces a lasting finished surface which can be readily cleaned with a damp cloth or the customary wall cleansers. The same results are obtained except to whiteness by using clay only, either imported or domestic. By adding pigment colors any desired shade may be obtained and the material can be applied with brush or spray the same as any other coating material.

In preparing the coating material, I may proceed along a variety of lines, depending upon the specific material to be coated. When coating paper which will fill the necessary requirements for lithographing, etc., I prefer the following formula:

Clay	50 lbs.
Satin white	25 lbs.
Blanc fixe	25 lbs.

To this I add from 20 to 25 lbs. of cooked starch or product obtained therefrom, such as glucose, dextrine, etc. The strength of the starch controls the quantity used.

To render these ingredients impervious to water and moisture, I employ approximately 3 lbs. of vegetable wax, preferably japan wax, 3 lbs. of glue, either a vegetable glue such as gum arabic or any animal glue as desired, 6 oz. of sodium phosphate and 1 lb. of alum.

The water proofing ingredients are first separately mixed with a sufficient quantity of warm water to thoroughly dissolve the same, the wax being dissolved in water by adding the sodium phosphate to cut the wax. The several ingredients when thoroughly dissolved are mixed in the following order:

The wax is first poured into the glue, then the alum into the glue and the wax, care being taken that the several ingredients are thoroughly agitated or mixed as each is added. This mixture is then slowly added to the cooked starch product while hot, stirring continuously. The resultant composition is

rather thick or pasty, particularly when cold. It is desirable to thoroughly impregnate the clays or combination of clay, satin white and blanc fixe with the water proofing compound or mixture. The dry clay should, according-
 5 ingly, first be dissolved by stirring or agitating it in approximately its own weight of water and then adding enough water in connection with the water proofing compound to make a paste of uniform texture and proper consistency for coating purposes. In this manner every particle of the clay or other material employed, together with the starchy binder, becomes impregnated with the water
 15 proofing compound and when the coating material becomes dry, every particle thereof is impervious to water and moisture.

To obtain any desired tint, it is only necessary to add the proper colors in the form of
 20 pigments or aniline dyes.

The proportions by weight of the ingredients specified are, of course, only approximate and may be varied to a considerable degree. Clay alone may be used with the ingredients specified. Satin white may also
 25 be used alone. In either case the proportion would be 100 lbs. of each. Clay and satin white may be combined in many proportions. Again, satin white and blanc fixe may be
 30 used, or all three may be combined. The water proofing material or compound obtained by the mixture of vegetable wax, glue, sodium phosphate and alum does not only serve the purpose of water proofing the material but it also adds adhesive qualities to the coating material when it dries as it renders the coating more tenacious, adhesive and
 35 tough.

While I prefer to employ starch or its products, such as dextrine, glucose, etc. as a binder,
 40 it should be understood that other binders may be employed, such as glues, gums, etc., derived either from a vegetable or an animal base. By starch or its products, it should be
 45 understood that I do not limit myself to corn starch as I may employ any of the starches obtained from potatoes, rice, wheat, tapioca and in fact any of the starches or binders coming under the general heading of carbohy-
 50 drates.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:—

1. A new article of manufacture, consisting of a mixture of clay and a carbohydrate binder impregnated with a waterproofing compound, comprised of dissolved sodium phosphate, vegetable wax, glue, and alum.
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2. A new article of manufacture, consisting of a mixture of clay and starch impregnated with dissolved sodium phosphate, vegetable wax, glue and alum.
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3. An article of manufacture consisting of a base coated with a mixture of clay and
 65 a carbohydrate binder impregnated with a

waterproofing compound, comprised of dissolved sodium phosphate, vegetable wax, glue and alum.

4. An article of manufacture consisting of a base coated with a mixture of clay and starch impregnated with a waterproofing compound, comprised of dissolved sodium phosphate, vegetable wax, glue and alum.
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5. An article of manufacture comprising paper coated with a mixture of clay and a carbohydrate binder impregnated with a waterproofing compound, comprised of dissolved sodium phosphate, vegetable wax, glue and alum.
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6. An article of manufacture comprising paper coated with a mixture of clay and starch impregnated with a waterproofing compound, comprised of dissolved sodium phosphate, vegetable wax, glue and alum.
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7. An article of manufacture comprising a base coated with a mixture of clay, satin white, blanc fixe and starch impregnated with dissolved sodium phosphate, vegetable wax, glue and alum.
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8. An article of manufacture comprising a base coated with a mixture of clay, satin white and starch, impregnated with dissolved sodium phosphate, vegetable wax, glue and alum.
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9. An article of manufacture comprising a base coated with a mixture of satin white, blanc fixe, and starch, impregnated with dissolved sodium phosphate, vegetable wax, glue and alum.
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CHARLES F. MAUER. 100

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