

UNITED STATES PATENT OFFICE.

WALTER B. ALLEN, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO ALLEN, HALL & CO., OF READING, MASSACHUSETTS, A COPARTNERSHIP.

MEDIUM FOR OIL-COLOR.

960,141.

Specification of Letters Patent.

Patented May 31, 1910.

No Drawing.

Application filed November 6, 1907. Serial No. 400,927.

To all whom it may concern:

Be it known that I, WALTER B. ALLEN, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented new and useful Improvements in Mediums for Oil-Color, of which the following is a specification.

My invention relates to the process of compounding a medium for the application of oil colors, and its object is to prevent any material absorption of said oil colors by the surface to be painted.

It consists in mixing in the particular manner hereinafter described, the following named ingredients:—First: a non-absorptive ingredient, or substance incapable of being absorbed to a substantial extent by any porous surface to which oil paint is commonly applied, that is, plaster walls, wood-work, wall paper, etc. Second: a binding ingredient, or substance which is ordinarily used by painters for the purpose of causing oil color to adhere permanently to said surfaces. Third: an intermediary ingredient, or fluid capable of dissolving the said ingredients and forming a homogeneous mass possessing the non-absorptive and binding qualities of said ingredients.

I have discovered that the non-absorptive and binding ingredients cannot be effectively combined except through the use of an intermediary ingredient, and to accomplish the desired result I find it necessary, first, to add the intermediary ingredient to either of the other ingredients before a solution of the three can be effected. If the three ingredients be commingled simultaneously, or if the non-absorptive ingredient is first added to the binding ingredient, it is impossible to form my medium,—the result of either proceeding being to break up the physical composition of said ingredients and thus prevent a homogeneous solution being formed. The only manner in which a stable solution of the several ingredients can be produced is carefully and thoroughly to mix the intermediary ingredient with the non-absorptive ingredient, or to mix the intermediary ingredient with the binding ingredient, and then to combine with the remaining ingredient. Preferably the binding and intermediary ingredients are first brought together and the resulting solution is then mixed with the non-absorptive ingredient.

It is a matter of common knowledge that oil paint is absorbed to a considerable degree by the underlying surface when applied to walls, woodwork, or other objects, and that in order to secure the proper depth and permanency of color, it is necessary to apply several coats. Several hours are required for drying, and a considerable odor of paint is present for several days. In some instances a coat of sizing is first applied to prevent the oil from striking in, but any paint covering the same soon becomes glossy and brittle, and likely to peel off in small flakes after a short time. So far as I am aware no one has heretofore been able to mix oil paint with sizing, and to apply the mixture to the wall. This difficulty is due to the fact that the water or varnish in the sizing will not combine with the oil in the paint; and it has always been found necessary first to apply the sizing, and after the same has become thoroughly dry, to cover the surface with the oil paint,—a rather tedious and lengthy process. Furthermore, white-lead is largely used, it being the pigment most extensively employed in house-painting, both interior and exterior. It is white in color, but may be mingled with other ingredients to form colors of various shades. Zinc-white is also used, but does not possess the body of white-lead, and requires more to cover the surface. These pigments are so expensive that the need of a cheap substitute has long been recognized, but there is at present nothing on the market that will effectively serve the purpose. I believe myself to be the first to have discovered the means of practically combining a non-absorptive ingredient with oil color so that the oil would not be absorbed by the painted object to any substantial extent, and also to have discovered a compound both cheaper and more efficient than white-lead when used for the purpose above described.

For the non-absorptive ingredient, I prefer to use some substance which when mixed with water forms a gelatinous non-absorptive paste, for example, starch or flour paste. For the binding or adhesive ingredient, I prefer to use a mixture of wax or the like with any well known paint reducer, such as paint oil and turpentine or benzin. For the intermediary ingredient, I prefer to use a solution of water and soap; but if de-

sired, only part of the constituents of the soap, that is, either the alkali or the fatty substances, may be used in certain cases.

To produce the non-absorptive ingredient,
5 I first boil the water in an open kettle or
cauldron, and gradually stir in the starchy
constituent until the water is saturated.
Care should be taken that the solution is
not scorched by the fire. At the same time
10 the binding ingredient is formed by placing
in another open kettle or cauldron the wax,
pulverized or cut in small pieces, pouring
thereon the paint reducer, and lightly heat-
ing these constituents until the wax is dis-
15 solved. To form the intermediary ingre-
dient, I boil the water as in the case of the
non-absorptive ingredient, but introduce
soap instead of the other element. In this
case, however, saturation of the water is
20 not necessary, though a strong solution is
desirable. While the ingredients are still
warm, I slowly pour the intermediary in-
gredient into the binding ingredient, or vice
versa, and stir the same until they are thor-
25 oughly dissolved. I then slowly mix this
latter compound with the non-absorptive
ingredient preferably by stirring until all
the ingredients are closely associated. These
steps being accomplished, the composition
30 is ready for use as a medium for oil paint,
which is mixed with the said composition
in such quantities as may be desired for the
effect to be produced, and the mixture is ap-
plied to the surface to be painted by a brush
35 or by other well known means. In some
cases, particularly where dark color is to be
used, I prefer to add a small amount of am-
monia to the intermediary ingredient. This
I find desirable because in such cases so
40 much more oil is present than under ordi-
nary conditions where the lighter shades are
used, that the presence of an alkali like
ammonia contributes largely to the accom-
plishment of the solution of the several in-
45 gredients.

Although I prefer to use heat in the formation of my several ingredients and in the combining of the same, I do not desire so to limit my invention, since I am at
50 times able to dispense with heating part or all of the ingredients. For instance the starch may be treated with some strong acid such as sulfuric or muriatic acid, or heated dry to a sufficient extent to enable
55 the said starch to mix with cold water. If the soap is introduced into cold water and left it will, as is well known, dissolve after a time without the application of heat, and the same is true of the wax and paint re-
60 ducer. I am able therefore to combine together all of the said ingredients while cold, but of course care should be taken that the intermediary ingredient should be first added to either the binding or non-ab-
65 sorptive ingredients, and the compound then

ing water containing starch until the same is dissolved, heating wax with paint reducer until the wax is held in solution, heating water and soap until the same are in solution, and then combining the two latter solutions and thereafter mixing the same while warm with the first named solution.

2. In a process for compounding a medium for the application of oil color, heating wax with paint reducer until the wax is held in solution, heating water containing soap and ammonia until the same are in solution, and pouring one of said solutions into the other while both are in a heated condition, boiling water containing starch until the same is dissolved, and then stirring the starch solution and pouring the mixture of the two first named solutions into the same while the stirring is taking place.

3. The process of compounding an oil color medium composed of a paste ingredient formed by dissolving a substance which when dissolved is incapable of being absorbed by a porous surface, of a fluid ingredient formed by dissolving wax in paint

reducer, and of a liquid ingredient formed by dissolving soap in water, consisting of first commingling said liquid ingredient with one of the other ingredients, and then mixing with said compound the remaining ingredient.

4. The herein described composition of matter, consisting of pure water two and three-quarter pints, starch two ounces, wax four and one-half ounces, paint reducer two and three-quarters pints, and soap nine ounces.

5. The herein described composition of matter, consisting of pure water two and three-quarters pints, starch two ounces, wax four and one-half ounces, turpentine and paint oil two and three-quarters pints, and soap nine ounces.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses, this eighteenth day of October 1907.

WALTER B. ALLEN.

Witnesses:

K. M. SULLIVAN,
CHAS. F. PERKINS.