UNITED STATES PATENT OFFICE.

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PAINT FROM RESIDUUM OF VEGETABLE OILS.

SPECIFICATION forming part of Letters Patent No. 446,018, dated February 10, 1891.

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To all whom it may concern:

Be it known that I, GEORGE W. SCOLLAY, a citizen of the United States, residing in the city, county, and State of New York, have invented a new and useful Improvement in Making Paint from the Residuum or Impurities of Vegetable Oils Removed During the Process of Refining them, of which the following is a specification.

In certain Letters Patent heretofore granted to me, Nos. 377,406, 378,113, and 378,114, I have described different processes by means of which paint or paint stock is produced or obtained during the process of refining vegetable oils.

In a patent granted to me, No. 396,432, I have described a novel process of treating ordinary soap stock obtained in the process of refining vegetable oils with suitable substances to convert said soap stock into a paint or paint stock.

In each of the patents above referred to it will be seen that the product obtained is a paint or paint stock made of the residuum or impurities of vegetable oils removed during the process of refining them.

My present invention relates to the same general subject-matter; and it consists, among other things, of taking paint or paint stock made from the impurities of vegetable oil by either process described in my said patent or by any other suitable process and combining with it at any suitable stage in the process an acid uncombined or in the form of a salt in any suitable form or combination which will combine with the base of said paint, thereby forming a superior paint in colors of greater variety and brilliancy.

The practice of my invention by either process hereinafter described produces not only a superior paint which may be used alone or in combination with other suitable pigments and oils, but also confers upon the oil superior drying qualities.

I will now describe in such full, clear, and exact terms as will enable any one skilled in the art to which my invention appertains, or with which it is most nearly connected, to employ several different processes in which my present invention is present; but it will be understood that my invention is not limited to the exact processes described, but may be practiced with various modifications, involving, among other things, the use of chemical equivalents and different proportions without departing from the spirit of my invention or the scope of the claims concluding this specification. The following description will therefore be understood to be merely a statement of the methods which I now prefer to employ in the practice of my invention when making yellow, blue, and green paint, while the specific improvements which I desire to secure by these Letters Patent will be pointed out in the claims concluding this specification. Take, for example, the ordinary soap stock made during the process of refining vegetable oils and separated from the refined oil in any suitable way. In many instances this is discolored by exposure to the air, and I prefer in such cases to remove the dark color by exposing such soap stock to the action of sulphurous acid, either in solution with water or as a dry gas.

To make yellow paint of the soap stock above described after removing the dark color, I may proceed as follows: Add a sufficient quantity of acetate of lead or other suitable salts of lead to completely decompose the soluble soap and make it an insoluble soap or plaster, which is paint or paint stock. The acetate of soda which is formed at the same time is soluble. I may then add to this paint or paint stock an equivalent of bichromate of potassium or sodium or chromic acid to form chromate of lead. If bichromate of potassium or sodium be used, potash or soda soaps will be formed during the operation. In either case the acid combines with the metallic base of the paint stock and forms chromate of lead, which is a brilliant yellow color, mixed with oil. During the above operation the oil is made an excellent drying-oil. The potash or soda soap resulting from the reaction of bichromate of potassium or sodium on the lead paint stock may be decomposed by the addition of more soluble salts of lead, if necessary. The compound is then washed and dried and is ready for use. By washing the solubles—acetate of soda and potash, for example—are

removed from the mixture, and chromate of lead and oil with paint stock, which are insoluble, are left.

To produce blue paint of the soap stock above described, I may proceed as follows: After the soap stock has been, if desired, treated with sulphurous acid, add a solution of sulphate of iron or chloride of iron in sufficient quantities to decompose the soluble soap stock and form a paint or paint stock. Then add potassium or sodium ferro-cyanide—say from one-half ounce to one ounce. Then wash and dry and a brilliant blue color mixed with oil is the result.

To produce green paint of the soap stock described, I may proceed as follows: Take, for example, one pound of soap stock, one and one-half pound of water, and add one ounce of arsenious acid and boil one hour. Then add sulphate of copper until the soap stock is completely decomposed, forming in the presence of arsenious acid arsenite of copper, which is a vivid green color. Then wash and dry.

In making the above paints a moderate heat, ranging from 100° to 212° Fahrenheit, very greatly hastens and improves the operation.

The paints may be washed with water and dried at a moderate heat.

It is not at all essential that the use of the steps above described should be maintained in the order described—as, for instance, in making blue paint as above described the ferro-cyanide of potassium or sodium may be dissolved in the soap stock and the solution of iron added last, and in making green paint the copper soap may be made first and the solution of arsenious acid added last.

In making soap stock into paint stock a metallic salt in suitable form to unite with the oily residuum and make paint stock should be used. Chlorides, acetates, sulphates, &c., of the metals, or, in other words, metallic salts, both oxygen and haloid, operate, of course, in substantially the same way to produce the desired result, and are therefore equivalents. Any other forms of the metals operating in substantially the same way will be equivalent for those specified. In this treatment of soap stock, soda or potash, which is soluble, is formed, which may be immediately washed out; but I prefer to defer the washing process until all the chemical combinations are completed.

In making paint stock into a superior quality of mixed color and oil any suitable acid uncombined or in the form of a salt may be employed which will unite with the metallic base of the paint stock and form a desired color. The acid is the agent by which the desired result is accomplished, and hence it may be introduced as such, or it may be introduced in combination with other substances, as in the form of a salt—as, for instance, bichromate of potassium or sodium, or potassium or sodium ferro-cyanide, above described—in which case potash or soda salts will be formed, and these being soluble can be washed out; but if an uncombined acid be used—as, for instance, arsenious or chromic acid, above described—the action is the same, but no secondary product is formed.

I have not endeavored to describe all the equivalent substances which may be employed in the practice of my invention; but by pointing out what I understand to be the essential operation of the substances described I have clearly indicated to those skilled in the art the class of materials which are suitable for the purpose.

I have only specifically described the treatment of paint stock made from soap stock, and this is the manner in which I prefer to practice my invention; but it will be understood in reference to my patents above referred to that paint stock formed of the union of a metallic base in a suitable form and the residuum or refuse of vegetable oils separated therefrom in the process of refining them may be made in other ways, and these may be subjected to the above-described treatment with acid either uncombined or in the form of a salt to form an improved color and oil, as will be readily understood.

The general methods of refining different kinds of oils and the treatment of the residuum or impurities of such oils is substantially the same, although, as I have before fully explained in my patents, care must be taken in refining cotton-seed oil that no materials are employed which will injure the refined oil as an article of food. The same is not necessarily true of other oils, such as linseed-oil.

The paints above described may be used in the condition in which they are made as the result of these processes, or they may be used as oils and colors with ocher or other suitable pigments.

Having thus described several different processes, all of which embody my present invention and are sufficient illustrations thereof to enable other skilled persons to understand its nature and to practice it, what I claim, and desire to secure by Letters Patent, is—

1. The method of making paint, which consists of treating with an acid a pigment formed by the combination of a metallic base with the residuum or soap stock of vegetable oil, which combines with the metallic base of said pigment, forming a color of superior quaility.

2. The method of making paint, which consists of treating soap stock with a metallic salt which combines with said soap stock and forms an insoluble metallic paint, and of treating said paint with an acid which combines with the metallic base of said paint, forming a color of superior quality.

3. The method of making paint, which consists of treating soap stock with a metallic salt which combines with said soap stock and forms an insoluble metallic paint, and of treating said paint with an acid which combines with the metallic base of said paint, forming a color of superior quality, and of

treating said color with a metallic salt to render insoluble the soluble soap formed thereby.

4. The method of making paint, which consists of treating soap stock with a bleaching agent, such as sulphurous acid, then treating the same with a metallic salt which combines with said soap stock and forms an insoluble metallic paint, and treating said paint with an acid which combines with its metallic base, forming a color, and removing the solubles by washing.

5. The process of making paint, which consists in saponifying an acid of the fatty series by the solution of an alkali, treating the resulting soap with a solution of a salt of a heavy metal, and adding to the insoluble soap thus formed an acid to combine with the base of the soap and form a coloring-matter, substantially as described.

GEO. W. SCOLLAY.

Witnesses:
J. EDGAR BULL,
W. M. VALENTINE.