

UNITED STATES PATENT OFFICE.

GEORGE W. SCOLLAY, OF NEW YORK, N. Y.

PROCESS OF TREATING COTTON-SEED OIL.

SPECIFICATION forming part of Letters Patent No. 474,864, dated May 17, 1892.

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To all whom it may concern:

Be it known that I, GEORGE W. SCOLLAY, a citizen of the United States, at present residing in the city, county, and State of New York, have invented certain new and useful Improvements in the Art of Treating Cotton-Seed Oil and other Similar Vegetable Oils for the Purpose of Refining Them; and I do hereby declare the following to be such a clear, concise, and exact description of my invention as to enable any one skilled in the arts to which it appertains or with which it is most nearly connected to make and use the same.

My invention consists of an improved method of refining cotton-seed and analogous oil; and its object is to make a superior quality of refined oil. I have discovered that certain ochers—such as hematite and limonite or any similar pigment which does not injure the oil as an article of food—may be used for and are valuable agents in refining vegetable oils, such as cotton-seed oil. Suitable ocher, when properly manipulated and prepared for use, mixed and agitated with such oil in certain proportions take up the gum, resin, and coloring-matter contained in the oil which may be separated from the oil, thus purifying and refining it.

In the practice of my invention I may either employ said ochers alone as the refining agent, or I may employ in connection with them other materials by mixing said materials with the ocher and treating the oil with this mixture or by employing such materials as a preliminary or subsequent treating agent before or after the oil has been treated with the ocher.

Among the various methods which I may employ in the practice of my present invention the following may be enumerated as illustrations: I prepare the ocher by first evaporating or removing all uncombined water, and when the yellow ocher is used I continue the drying until the ocher assumes an orange color, and in the use of sienna and umbers I continue the heat or drying until the umber assumes a deep-brown color, and the sienna until it assumes a light-red color.

In the drying of the ocher, which is to be used to refine the oil, care should be taken not to continue the heat until all of the con-

stitutional water is removed, as in that case it will not so effectually remove the coloring-matter of the oil. When the ocher has been thus prepared, it is made as fine as possible. I then take the cotton-seed oil of commerce and mix with it the aforesaid ocher, varying the proportions from four to twelve parts of oil to one part of ocher, according to the amount of the impurities contained in the oil. I then agitate briskly the combined oil and ocher for forty minutes.

As soon as the combined oil and ocher has been sufficiently agitated and the refining completed, the oil may be separated from the ocher by means of any suitable filter-press, or it may be left to settle for twenty-four hours and then drawn off, leaving only the residuum to be filtered, which, as it comes from the press, is a stiff paste of ocher, oil, and its impurities in the form of a cake. A modified form of this process consists of grinding together in the first instance in an ordinary paint-mill, for instance, the ocher and cotton-seed oil, in necessary proportions to insure a thorough purification of the oil upon its delivery from the filter-press. In so far as the refining of the oil is concerned there is but little difference in the result of the two methods. In the practice of the process the temperature of the oil should be kept at about summer heat.

In some classes or varieties of the oil, notably those in which the oil has undergone more or less change by taking oxygen and is heavily charged with free fatty acids and other impurities, I prefer in the practice of my said invention to employ the following method: I reduce the ocher to a fine powder and take about ten per cent. of the amount to be used and put with it from one-half of one per cent. to one and a half per cent. of the oil dry caustic soda or biborate of soda, in a finely-powdered state. I mix this with the oil to be refined and agitate it briskly from ten to fifteen minutes. I then add about twice the weight of soda or of chloride of calcium in just enough water to dissolve it, and continue the agitation for ten or fifteen minutes longer. I now add the balance of the ocher necessary to complete the refining and agitate for from ten to fifteen minutes longer, keeping the

temperature at about summer heat. The oil is then ready for the filter. In this method it is not necessary to dry the ocher before it is used as above described.

- 5 Various other means of practicing my present invention may obviously be employed without departing from its spirit or scope. For instance, instead of using ocher alone or ocher in combination with other material, I
10 may form the ocher in the oil itself and use it as a refining agent after it is so formed. For example, each ounce of oil to be refined may be treated with an aqueous solution of four grains of chloride of iron and four grains
15 of either chloride of calcium or chloride of alumina, from which an ocher is subsequently precipitated by the addition of an alkali—as, for instance, soda-ash. The chloride of sodium resulting from the action of the alkali is
20 in solution, and is therefore subsequently separated from the paint-stock with the oil.

In the case of cotton-seed oil the presence of chloride of sodium in solution would not injure it as an article of food. If, however, it
25 is desired to remove the chloride of sodium from the cotton-seed or other vegetable oil it may be done by simple washing—that is to say, by adding water to the oil, thoroughly agitating the mixture, and then permitting it
30 to stand until by reason of the different specific gravities of the oil and brine they separate, when the oil may be drawn off. The water in the bottom of the vessel will contain all the salt in solution.

- 35 The methods which I have described are, however, sufficient illustrations to enable others skilled in the art to which my invention appertains to comprehend and practice the same, and further enumeration of the various

methods and modifications which may be employed is not considered necessary here.

My invention includes the use of any of that class of ochers or pigments that will remove the color and impurities from the oil, and it includes, also, the treatment of other
45 vegetable oils as well as cotton-seed oil, such as linseed, poppy-seed, and similar oils for the same purpose.

I am aware of the contents of the British provisional specification of Benjamin Full-
50 wood, No. 1,211 of 1855, and that in such specification the use of ochers in connection with other substances is mentioned as a material to be used in the purification of certain volatile matters in lieu of distillation, such as hydrocarbons, turpentine, and naphtha. I do
55 not, therefore, claim, broadly, the use of ocher as a refining agent for any and all matters; but I confine my claims to the use of ocher as a purifying agent in cotton-seed and analogous oils.
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Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The process of refining cotton-seed and
65 analogous oils, consisting in bringing the oil in intimate contact with ocher and then separating the refined oil and the ocher carrying the impurities.

2. The process of refining cotton-seed and
70 analogous oils, which consists in drying ocher and bringing the dried ocher and oil in intimate contact and then separating the refined oil and the ocher carrying the impurities.

GEO. W. SCOLLAY.

Witnesses:

J. EDGAR BULL,
ROBERT BARTLETT.