

# United States Patent Office.

ALFRED PARAF, OF NEW YORK, N. Y., ASSIGNOR TO EDWARD SABINE RENWICK, TRUSTEE, OF SAME PLACE.

Letters Patent No. 111,142, dated January 24, 1871; antedated December 29, 1870.

## IMPROVEMENT IN OBTAINING MADDER EXTRACTS.

The Schedule referred to in these Letters Patent and making part of the same.

*To all whom it may concern:*

Be it known that I, ALFRED PARAF, of France, now residing in the city, county, and State of New York, have made an invention of a new and useful Improvement in the Process of Obtaining Madder Extract for dyeing and printing by the use of oils; and that the following is a full, clear, and exact description and specification of my said invention.

The object of this invention is to obtain an aqueous solution of the coloring matter of madder directly from the crude-madder material without intermediate precipitation of the coloring matter.

The crude-madder material that is preferred for this process is damp acid garancine, by which is meant garancine in the damp acid condition in which it exists after it has been washed, and before the free acid in it has been neutralized with chalk.

The process may be practiced as follows:

Mix one part by weight of damp acid garancine with four parts of kerosene or refined oil of petroleum, in a copper boiler, which can be heated externally by steam. Boil the mixture for three-quarters of an hour. Shut off the steam and permit the mixture to settle. Draw off the solution and filter it. Boil the material in the boiler a second time with four additional parts of the oil for half an hour, and separate the solution as above directed. Boil the material in the boiler a third time with four additional parts of refined petroleum and separate the solution as before. Place the residuum remaining in the boiler in bags, and press them. Filter the expressed solution, and add to it the filtered solutions obtained as above directed.

Casks or vats are provided, to each of which a steam-pipe with a stop-cock is fitted, so that the contents of the casks can be boiled by blowing steam into them. These casks or vats are filled nearly half full with water, and common soap in shaving is added to the water in the proportion of three-quarters of a pound to every gallon of water.

The liquid is boiled by letting in steam until the soap is dissolved. Then a quantity of the filtered oil solution, obtained as above described, and equal to

the soap solution in each cask or vat, is added thereto, and the whole is thoroughly agitated, after which the mixture is permitted to settle.

In these operations the coloring matter leaves the oil and combines with the soap solution, leaving the oil floating at the top. The oil may then be separated by decanting the oil or by drawing off the soap solution.

This soap solution is the aqueous solution of the coloring matter of the madder, and may be used for dyeing and printing fibrous and textile articles.

If its color be not sufficiently deep, it may be charged with additional quantities of coloring matter by applying to it, while boiling hot, additional charges of the oil solution above described, the mixture being agitated and permitted to settle after each application of a charge of oil solution, and the oil being afterward separated as above described.

This charging of the soap solution with the coloring matter of the madder may be continued until the soap solution becomes saturated with the coloring matter, so as to obtain a very concentrated compound of the soap and madder extract, which may be used to make dark or light printing-colors, according as a greater or lesser quantity of it is used.

Although I prefer treating the madder material with kerosene to obtain the oil solution, there are other oils that may be used for the purpose, as, for example, oil of turpentine, sometimes called spirits of turpentine, cotton-seed oil, and sunflower oil.

What I claim as the invention to be secured by Letters Patent, is—

The process of manufacturing an aqueous solution of madder extract from the madder material by means of oil and soap solution without intermediate precipitation, substantially as before set forth.

In testimony whereof I have hereto set my hand this 14th day of June, A. D. 1870.

ALFRED PARAF.

Witnesses:

JULIUS GERSON,  
JOHN EASTWOOD.