

Case No. 720. BADISCHE ANILIN & SODA FABRIK v. CUMMINS.
[4 Ban. & A. 489.]¹

Circuit Court, D. Massachusetts.

Sept, 1879.

PATENTS FOR INVENTIONS—INFRINGEMENT—NEW PROCESS OF
MANUFACTURE.

1. The complainant's patent was for an article produced from anthracene, called by the patentees "artificial alizarine," and the patent described two modes of its production, by means of bromine. Subsequently, it was discovered

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that the article could be produced more cheaply by using sulphuric acid, or other agents, instead of bromine: *Held*, that the article produced by the sulphuric acid process was an infringement of the complainant's patent.

[Cited in *Cochrane v. Badische Anilin & Soda Fabrik*, 111 U. S. 298, 4 Sup. Ct 457.]

2. The words "artificial alizarine" in the claim describe the product produced by the process, and do not necessarily mean chemically pure alizarine, and the claim is valid as being for a new article of manufacture.

[In equity. Bill for injunction by the Badische Anilin & Soda Fabrik against Thomas K. Cummins. Temporary injunction granted, restraining further infringement of complainant's patent No. 95,465. For adjudication on the same patent, but in another suit, see *Badische Anilin & Soda Fabrik v. Cochrane*, Case No. 719, reversed in 111 U. S. 293, 4 Sup. Ct. 457; *Same v. Hamilton Manuf'g Co.*, Case No. 721; and *Same v. Higgin*, Id. 722.)

J. Van Santvoord, for complainant

Dickerson and Beaman, for defendant

LOWELL, Circuit Judge. The patent in suit is division B of reissue 4,321, dated April 4, 1871, for the article called artificial alizarine. Alizarine was known to chemists as the substance which gave the principal value to madder as a dyestuff. The patentees, Graebe and Liebermann, assignors of the plaintiff corporation, made the brilliant discovery, in 1869, that this dyestuff, or something which would do substantially the same work, could be artificially produced from anthracene, which was one of the numerous products of coal tar. To effect this metamorphosis, it was necessary to add oxygen to the anthracene, and the patent describes two modes of doing this by means of bromine. Within a year after this process was patented, the patentees, with the assistance of a third chemist, Caro, discovered an easier and cheaper process, in which sulphuric acid is used instead of bromine. Mr. Perkin, an English chemist, discovered a similar modification at about the same time, and other persons have patented other similar processes, all of which depended upon the original discovery of these patentees, so far as one can ever affirm such a conclusion. The result of these discoveries has been that artificial alizarine has replaced madder to a very large extent, and that a great stimulus has been given to the art of dyeing, and to the science connected with it; but the original bromine process is never used.

The American patent of Graebe and Liebermann, granted in 1869, No. 95,465, was for the bromine process, or processes, and the reissue was in two parts; one, A, for the same processes, and one, B, for the product.

Whether the sulpho-acid processes, by which artificial alizarine is now made, are the equivalents of the original bromine processes, is not important to be considered at present, excepting as concerns the resulting product, because the article is always made in Europe. This suit is directed against the use and sale of the product. The question, therefore, is, whether division B of the patent is invalid.

In case of a discovery of the originality and beauty of that which these patentees are admitted to have made of one mode of producing alizarine from the almost worthless material, anthracene, it would seem reasonable that a valid patent might be obtained for that product derived from that source, although the artificial alizarine, when produced, should be identical with alizarine made from madder. But counsel on both sides agree, for the purposes of this motion, that, by the law of the United States, one who produces an old article, though from the most unexpected source, can only patent the mode of producing it. Granting this to be the law, Judge Shepley, though he appears to have understood the fact to be that pure alizarine had not been produced before 1869, excepting in laboratories, decided [*Badische Anilin & Soda Fabrik v. Hamilton Manuf'g Co.*, Case No. 721] that, at any rate, this patent was valid, because he found that the artificial alizarine, thus produced, was a new article, differing in important particulars from the dyestuffs made from madder. Judge Wheeler, sitting in the southern district of New York, has made two similar decisions, [*Badische Anilin & Soda Fabrik v. Cochrane*, Case No. 719; *Same v. Higgin*, Id. 722,] reserving, however, his opinion upon the question whether the patent might not be good, though the alizarine should be identical with an old product I give no opinion upon this point.

It seems to be beyond doubt that what the patentees sought to discover, and supposed they had discovered, was the dyestuff of madder; and if it be true, as it has heretofore three times been held to be true, that they discovered something more, then, if the law be as it is taken to be, for the purposes of this motion, they have, by a sort of accident, obtained a valid patent for an incident of a most valuable discovery. Accidental justice, however, may be better than none.

Upon this motion the questions have been tried and discussed again with all the care and fulness of a new case, and many facts, not known at the time of the first suit, have been brought out; but not much that was not before Judge Wheeler at the last hearing. [*Badische Anilin & Soda Fabrik v. Cochrane*, Case No. 719.] The construction of the patent has been very fully argued, and a great amount of expert testimony has been given concerning it, intended to prove that the claim for "artificial alizarine" means, or does not mean, a claim for a certain definite substance represented by a certain formula. In my opinion, as in that of both judges who have considered the point before me, these words do not need, and will not admit of, expert interpretation. The words "artificial

alizarine" are used by the patentees in their claim to describe the product which is the result of their process, and mean exactly what "artificial madder," or any other name which they might have chosen, would have meant. "Artificial alizarine" was not a term of art at the date of the patent, though it may have become so since that time. If it has become so, it is by reason of the numerous experiments and investigations that have followed this discovery, and have determined the meaning by determining the nature of the product. In 1869, it was begging the question to say that the claim was for chemically pure alizarine. Even now the term seems to be commonly used to include all forms of the product from anthracene, while chemists sometimes use it more narrowly to signify alizarine as distinguished from isopurpurine, etc. No patent, deed or contract would be construed so narrowly, at this day, as to hold that if the patentees made a new article they should not hold it because they thought it an old one.

It has been proved that artificial alizarine contains important dyeing substances, not mere impurities, which are not found in madder. Judge Shepley, following the witnesses, called these substances anthrapurpurine and isopurpurine. These two are really one. Still, this one and another, which is now called flavopurpurine, are found in artificial alizarine and not in madder or any of its extracts, and are important materials, giving some valuable results which the extracts of madder cannot give. Witnesses on both sides fully prove this, and, though some of the defendant's witnesses seem to assert that there is nothing which the new article can effect which cannot be as well done by the old dyestuffs, the defendant's experts say that the stability of certain shades of color depends on the presence of the new purpurines. There is purpurine in madder, and its chemical formula is the same as that of isopurpurine and of flavopurpurine, but the three are wholly distinct substances, and purpurine is much inferior to the others as a dyestuff. It is not contained in alizarine, though it can be made from it by adding something.

By constant experiment and effort, these facts concerning the new purpurines have been discovered since 1869, and they can now be separated and produced in a pure state, or nearly so. The defendant, however, insists that these new purpurines are not found in the artificial alizarine made by the bromine processes, but only in those made by the more recent methods. This is the only point upon which the evidence, when carefully examined, is found to be in much conflict. Unfortunately the scientific men who have investigated alizarine and its products, without reference to this litigation, have had no occasion to examine this particular question; and, of course, all their experiments have been made with the alizarine which they find in the market, and that is made by the sulphuric acid processes. Many of the witnesses for the defendant say that Graebe and Liebermann, in a report which they made to the Vienna Exhibition of 1873, truly stated that these purpurines were a product of the sulphuric acid processes, meaning to have it understood, as some of them positively assert, that these gentlemen there stated that these purpurines

could only be made by those processes. I have searched the Vienna report in vain for any such statement; and I find that Judge Wheeler was equally unsuccessful. He found, as I do, general statements that the processes produced, or were supposed to produce, an identical article; but nothing definite on the precise point in question.

Perkin, one of the discoverers of isopurpurine, published a "History of alizarine and allied coloring matters, and their production from coal tar," In The Journal of the Society of Arts, London, May 30, 1879, which was handed me by the defendant's counsel, with a passage underscored, which I suppose was thought to contain a statement like that attributed to Graebe and Liebermann. I think it means almost exactly the contrary. It is this: p. 580, "But it was gradually found, when manufacturing artificial alizarine on the Large scale, that the smaller the amount of sulphuric acid used to convert the anthraquinone into sulpho acids, the temperature being also kept as low as practicable, that the coloring matter made from such a product yielded with mordant shades of color more nearly approaching those produced with madder, until eventually the unexpected result was arrived at, that it was necessary to have a monosulpho acid of anthraquinone for the preparation of pure alizarine, and that the disulpho acid does not yield this substance at all, so that, in the production of pure alizarine, the following reactions take place: monosulphanthraquinonic acid is first decomposed into monoxanthraquinone; and this, when further heated with an alkali, is oxidized into alizarine. We thus see that this formation of alizarine differs entirely from that originally discovered by Graebe and Liebermann, both as regards the chemicals employed, and the chemical changes which take place. We also see that monoxanthraquinone is an intermediate product, and not a secondary one."

Now, I understand Mr. Perkin to mean, that the process by which pure alizarine is obtained is new, and that the process of Graebe and Liebermann would not produce it. I do not mean to say that he is distinguishing between the bromine and the sulphuric acid processes of Graebe and Liebermann, though he says nothing about Caro, but I do suppose him to mean that he, or some one else, long after 1869, discovered the mode of making pure alizarine. And I think the evidence is that pure alizarine, pure isopurpurine and pure flavopurpurine are all

new products since 1869, though all contained in the patented article.

Whatever the meaning of Perkin, or whatever the fact may be, I do not find it to be proved in this case that the process or processes of the patent produce chemically pure alizarine. I do not undertake to account for the different results which witnesses of skill and integrity have reached on the one side and the other. It does appear, if I understand the evidence, that one set of witnesses took one of the alternative processes described in the patent, while the other set took the other. Whether this fact, if it be one, has anything to do with the difference of results, I do not know. What I find is, that upon the evidence as it stands before me, including the scientific reports and other books, the artificial alizarine of the patent is different in some important respects from any article known before. Whether the alizarine, strictly so called, when obtained from anthracene, is identical with the alizarine obtained from madder, is said by Auerbach, in 1877, to be a disputed question. "Anthracene, etc. By G. Auerbach. Translated by Crookes," Lond., 1877, p. 155. Auerbach himself thinks it is identical; I have assumed it to be so; but the point is unimportant at this time. I agree with Judges Shepley and Wheeler, that the claim is for a new article of manufacture, which was new in fact.

The remaining questions argued are the same that have been passed upon in the other cases. The fact of infringement appears to be made out by evidence not contradicted.

Temporary injunction granted.

¹ [Reported by Herbert A. Banning, Esq., and Henry Arden, Esq., and here reprinted by permission.]