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Opinion of the Court.

District Court make no such intimation or suggestion. We are therefore not authorized to assume that our decree would interfere with the orderly process of the election.

MANDEL BROTHERS, INC. *v.* WALLACE.

CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR
THE SEVENTH CIRCUIT.

No. 16. Argued October 14, 1948.—Decided November 8, 1948.

1. Certain claims of Wallace and Hand Patent No. 2,236,387, for an improved cosmetic preparation to retard or inhibit perspiration, held invalid for want of invention. Pp. 291–296.
 2. Since the use of urea as an anticorrosive agent in other compounds was already a matter of public knowledge, its use in antiperspirants to reduce the likelihood of skin irritation or garment corrosion was merely the application of an old process to a new use and was not invention. Pp. 293–296.
- 164 F. 2d 861, reversed.

In a patent infringement suit, the District Court held the claims invalid for want of invention and dismissed the complaint. 67 F. Supp. 814. The Court of Appeals reversed. 164 F. 2d 861. This Court granted certiorari. 333 U. S. 853. *Reversed*, p. 296.

Leonard S. Lyon argued the cause for petitioner. With him on the brief was *Thomas A. Sheridan*.

Charles J. Merriam argued the cause for respondent. With him on the brief was *Bernard A. Schroeder*.

MR. JUSTICE BLACK delivered the opinion of the Court.

The respondent, owner of Wallace and Hand patent No. 2,236,387, filed a complaint against this petitioner for

infringement of claims 1 to 6, 8 to 13, 15 and 16. The District Court held the claims invalid for want of patentable invention and dismissed the complaint. 67 F. Supp. 814. The United States Court of Appeals for the Seventh Circuit held the claims valid and reversed. 164 F. 2d 861. The United States Court of Appeals for the Second Circuit had previously affirmed a district court's invalidation of the same patent. *Wallace v. F. W. Woolworth Co.*, 45 F. Supp. 465; 133 F. 2d 763. To resolve the conflict we granted certiorari.

The patent is for an "improved" cosmetic preparation to retard or inhibit perspiration. Prior to application for the patent (1938), many antiperspirants were on the market containing acid salts of a metal, usually aluminum chloride or aluminum sulfate. The acidity produced by these acid-reacting salts is an astringent which retards perspiration. But, as stated in the patent specifications, the acid sometimes irritates the skin and also rots clothing to which the acid may adhere, particularly when that clothing is heated by ironing. Thus in the old antiperspirants the astringent qualities of the acid were desirable because essential to their effectiveness in retarding perspiration; on the other hand, the skin irritating and cloth corroding qualities of the acid were obviously undesirable. This was the problem as posed by the patent application.

The patent specifications asserted and the District Court found that though standard alkalies would neutralize and thus reduce acidity and consequent skin irritation and cloth corrosion, these alkalies would by neutralizing acidity also reduce the astringency essential to check perspiration. The claimed discovery of the patent is in adding to the old acid-salts cosmetics certain types of the reactive amino chemical group, particularly urea. This addition, the patentees asserted, results in an im-

proved compound which checks perspiration but neither irritates the skin nor corrodes the clothing.

The District Court found that the addition of urea to the older preparations greatly reduced whatever likelihood there had been that application of the preparation would irritate skin¹ or corrode garments. It found that the patentees were the first persons to use urea as a corrosion inhibiting agent in an antiperspirant. But the District Court also found that prior to the patentees' alleged discovery the use of urea as an anticorrosive agent was already a matter of public knowledge, and that it had previously been used as a corrosion inhibitor in compounds other than antiperspirants. As a consequence of these findings, the District Court held the patent invalid. The District Court and the United States Court of Appeals in the case of *Wallace v. F. W. Woolworth Co.*, *supra*, had held the patent invalid for the same reason.

Long prior to this patent, it was generally recognized in the chemical field that urea would react with acids, bases, and salts to produce new substances. Urea had been in general use wherever these results were desirable for chemical stabilizations. And respondent concedes that before application was made for this patent it was commonly known, at least by chemists, that urea would react with acids in a manner which would reduce their corrosiveness. These facts are made clear by this record, by the opinions of the four courts that considered

¹ Petitioner points out that the District Court in the *Woolworth* case found the evidence before it inadequate to show that the old preparations had resulted in substantial skin irritation and urges a like inadequacy of evidence here. But the District Court here found that "the astringent materials may attack the skin of sensitive individuals" and that "a residue of acid remained which sometimes irritated the skin."

this patent, and by their discussions of the prior patents relied on by the respondent here.

Prior patents (Schüpphaus, No. 514,838, and Koch No. 2,011,292) had suggested use of urea as a stabilizer against decomposition of chemical combinations into deleterious acidic substances. It may be assumed that these patents standing alone would not have taught these patentees to experiment with urea to solve their cosmetic problem. They do, however, show the state of the prior art and point to the possibility of using urea to inhibit unwanted decomposition of substances containing acid or acid salts. Indeed, Koch dealt with the addition of urea to aluminum salts. And Missbach, in No. 2,069,711, proposed to protect clothes from the deleterious effects of dry cleaning fluids by the use of urea to prevent injury due to acidic substances brought about by acidic reactions of carbon tetrachloride. He claimed his invention provided "an effective corrosion inhibitor."

Shipp patent No. 2,174,534 pointed out that "certain uses of sulfuric acids on textiles are so advantageous that endeavors have been made to so treat textiles with sulfuric acid as to obtain the desired effects but to avoid the undesirable effects." The undesirable result Shipp wanted to eliminate was the "marked degrading or disintegrating effect on cellulose fibers" of "strong sulfuric acid." He therefore proposed use of an agent "capable of inhibiting or at least greatly retarding the normal degrading action of strong sulfuric acid upon cellulose." The "inhibiting" agent there proposed was urea or other materials such as "an amide alone or an amide and an amine" The corrosion "inhibiting" agents here are amino groups which include urea.

Respondent contends that the Shipp patent is irrelevant. He urges that the Shipp preparation merely retards corrosion on cloth whereas respondent's stops cor-

rosion completely. He also points out that Shipp dealt with sulfuric acid and not an acid salt as is involved in this patent. He argues that the teachings of the Shipp and other patents would not have led a chemist skilled in his art to undertake the experiment which eventuated in the success of these patentees. He takes this position because in the use of alkalies and even of urea with plain acids, the acids did not retain their full effectiveness as antiperspirants. The natural conclusion of a chemist, he argues, would have been that urea would result in the same failure if combined with the acid salts involved in his patent. But it did not. Urea combined with acid salts brought about the desired result. This result he therefore contends was a "paradoxical" one, unpredictable by a skilled chemist. Consequently, he says, the discovery rose to the level of patentable invention.

But we think that the state of the prior art was plainly sufficient to demonstrate to any skilled chemist searching for an anticorrosive agent that he should make the simple experiment that was made here. The patentees knew that urea was in general use as a stabilizing agent with acid and salts. Moreover, the patentees knew that standard alkalies had been successfully employed in prior patents for their anticorrosive effect. It is not surprising therefore that after experimenting with various standard alkalies in an effort to find a corrosion inhibitor that would not greatly reduce acidic astringency, the patentees promptly turned to urea. Their success was immediate.

As the United States Court of Appeals for the Second Circuit pointed out when this patent was before it: ". . . skillful experiments in a laboratory, in cases where the principles of the investigations are well known, and the achievement of the desired end requires routine work rather than imagination, do not involve invention." These established principles of law would dispose of the

case except for the position taken by the United States Court of Appeals in this case that the cosmetic problem here was remote and unrelated to the problems considered in the prior art. For this reason that court held that patentees in the field of cosmetics were not bound by prior art knowledge disclosed by the Shipp and other patents. The court therefore considered this patent almost as though patentees were writing on a clean sheet. Accordingly it held that the use of urea in the cosmetics field with the results here obtained was patentable invention.

In this the court was in error. As we have pointed out, the general store of chemical knowledge in 1938 was such that anyone working on any problem of acidic corrosion and irritation would naturally and spontaneously have tried urea. All that these patentees did was to utilize in a cosmetic preparation, publicly available knowledge that urea would inhibit acidic corrosion. The step taken by the patentees in advance of past knowledge was too short to amount to invention. They merely applied an old process of inhibition to a new cosmetic use. This is not invention. *Dow Chemical Co. v. Halliburton Oil Well Cementing Co.*, 324 U. S. 320, 327.

Reversed.

MR. JUSTICE DOUGLAS would reverse the judgment on the authority of *Funk Bros. Seed Co. v. Kalo Inoculant Co.*, 333 U. S. 127, 131, which was decided after the decision of the Court of Appeals in this case.