SPILL *v.* THE CELLULOID MANUFACTURING COMPANY.

Circuit Court, S. D. New York. May 25, 1880.

PATENT—IMPROVEMENT IN DISSOLVING XYLOIDINE FOR USE IN THE ARTS.

Horace M. Ruggles and *Edward M. Felt,* for plaintiff.

William D. Shipman, Henry Baldwin, Jr., and *E. Luther Hamilton,* for defendant.

BLATCHFORD, C. J. This suit, on the proofs, involves two patents granted to the plaintiff. One is No. 97,454, granted November 30, 1869, for an "improvement in dissolving xyloidine for use in the arts." The specification states that the "invention relates to the preparation and use of certain solvents of xyloidine, and which differ from the ordinary known solvents of xyloidine, in that these menstrua which are employed are not, necessarily, in themselves, solvents of xyloidine, but become so by the addition of the bodies, compounds or substances herein referred to." It also states that the invention consists in the employment of eight different solvents. Only the second solvent is alleged to have been used by the defendant. It is thus described in the specification: "Camphor or camphor oil, or mixture of the same, in conjunction with alcohol or spirits of wine, the same to be employed in about equal proportions." The claim is in these words: "The preparation and use of solvents of xyloidine, such as have been before described, so as to render xyloidine more easy of conversion into compounds containing xyloidine, which are suitable for applications in the arts and for industrial purposes." The defendant has infringed this claim by using camphor, in conjunction with alcohol, as a solvent of xyloidine. The defendant mixes ground and dried

xyloidine with pulverized dry camphor, and then immerses the mixture in alcohol until the xyloidine is dissolved. It is dissolved by the joint action of the camphor and the alcohol. Neither alone is a solvent of xyloidine. It is immaterial, so far as the invention and the claim of the patent are concerned, whether the camphor and the alcohol are mixed so as to dissolve 708 the camphor in the alcohol and then the xyloidine is put into the solution, or whether either the alcohol or the camphor is first mixed with the xyloidine and then the third substance is added. The bringing of the three together, causing the xyloidine to be dissolved or softened, so as to be more easy of conversion or working into compounds or articles containing xyloidine, is the invention. Making use of the solvent power of camphor and alcohol, when in the presence of each other and of the xyloidine, is the essence of the invention. The use of the camphor and the alcohol in about equal proportions is not of the essence of the invention. They are stated by the patentee to be useful in these proportions. But the evidence shows that the real invention was the discovery of the fact that camphor and alcohol, when united, would be a solvent of xyloidine.

The novelty of the invention of this solvent is attacked, but without success. The evidence is voluminous, and has been carefully considered, with the result that the defendant has failed to show want of novelty. The prior patents adduced and examined are the English patent to Cutting, No. 1,638, of 1854; and the English patents to Parks, No. 2,359, of 1855, No. 2,675, of 1864, No. 1,313, of 1865, No. 1,695, of 1867, and No. 1,614, of 1868. Park's pamphlet of 1867, and Gamielin's Hand-book of Chemistry, of 1860, have also been considered, as well as the English patent to the plaintiff, No. 2,666, of 1867. No other anticipation than the above seems to be considered by the defendant's expert, and he does not allude to

the pamphlet. Another defence relied on is that one Parks communicated to the plaintiff, in England, the knowledge that alcohol and camphor united were a solvent of xyloidine, and that the plaintiff never made the invention himself. On the whole evidence, the defendant has failed to establish this defence.

The other patent involved is No. 101,175, granted to the plaintiff March 22, 1870, for an "improvement in the manufacture of xyloidine and its compounds." There are five claims in the patent. The second alone is alleged to have been infringed. The specification says: "The second part 709 of my invention relates to the bleaching of xyloidine, and is as follows: When it is desired to bleach or whiten the xyloidine, I bleach it directly after the removal of the acids, and before removing it from the vat. This I do by any of the well-known means, preferring a solution of chlorine, or a solution of chloride of lime or soda, which I add to the xyloidine, making use of alternate stirrings and rests, for a sufficient time, until the xyloidine is whitened. The solution is again drained off, and the xyloidine is repeatedly washed with water, in order to remove any excess of bleaching agents or any residue from such agents, when it will be found to be ready to be submitted to pressure in order to free the same from water, and may then be opened out, so as to prepare it for drying, dissolving, or other purposes." The second claim is in these words: "The process of bleaching xyloidine in the manner herein specified." That portion of the specification which precedes the statement of the second part of the invention relates to the treatment of vegetable fibre or lignine with acids, to convert it into xyloidine and render it soluble in suitable solvents. The fibre is intimately mixed with the acids by appropriate means, then the acids are strained and pressed from the fibre, which is now xyloidine, and it is subjected to a washing and stirring with water until it is nearly or quite free from acids,

and the water is then drained off. The washing is done in a washing vat. The bleaching, as before stated, is done "directly after the removal of the acids," and before the xyloidine is removed from the vat. The evidence shows that the real invention of the plaintiff, in this regard, was to bleach xyloidine by ordinary bleaching agents, directly after the converting acids had been washed out of it, and before anything had been mixed with it which might interfere with the action of the bleaching agents. This is, fairly, the sense of the specification. Whether the bleaching is done in the washing vat or not, or in a solution of the ordinary bleaching agent, or by such agent not in a solution, are immaterial matters. The essential discovery was, that an ordinary and well-known bleaching agent, of the character of chlorine, or chloride of lime or chloride of soda, if applied 710 to xyloidine, when it had become such and had been freed from the converting acids, and while it remained in that state, would act upon it to bleach it. The defendant treats paper with acids to make xyloidine, then washes out the acids. then grinds it, and, while it is being ground, applies bleaching powders to it. The evidence is satisfactory that one of such bleaching powders is permanganate of potash, and that it was a well-known and ordinary bleaching agent at the time of the plaintiff's invention. Therefore infringement is established.

It is contended for the defendant that the claim in regard to bleaching does not claim a patentable invention, because it is merely the use to bleach xyloidine of what had been before used to bleach fibrous material not converted into xyloidine. The true view is well expressed by Professor Seeley, the plaintiff's expert. The defendant's expert, Mr. Edward S. Renwick, had cited four English patents, those to Martin, No. 7, of 1864, to Reeves, No. 2,797, of 1860, to Collyer, No. 550, of 1859, and to Reeves, No. 3,293, of 1866, as describing the treatment of

vegetable fibre with a solution of chloride of lime or of soda, substantially as the plaintiff's patent describes xyloidine as being treated with a solution of chloride of lime or of soda. Professor Seeley says: "The patents referred to by Mr. Renwick cover inventions relating to bleaching, by means of ordinary bleaching agencies, the ordinary fibrous substances which are used for clothing, paper stock, etc. I do not find in them anything which has more bearing upon the novelty of Spill's invention than what might be included in the matter which Spill regards and defines as old and well known. Previous to Spill's time, the ordinary bleaching materials and methods were only applied to a peculiar class of substances, namely, those substances of fibrous character which were useful only by reason of that fibrous character. Spill's invention brings the utility of bleaching upon a new kind of material, and brings it where it was very desirable, but where it was supposed to be impracticable. It is true that pyroxyline" (xyloidine) "has a fibrous structure, but this fibrous structure is not any essential or 711 useful property in it. In fact, in this art, pyroxyline does not become useful until the fibrous structure is destroyed. Pyroxyline is not useful for any of the purposes to which the materials formerly bleached were applied. Pyroxyline is very different, in chemical character and composition, from the old bleachable materials. If pyroxyline had not the fibrous structure, probably the question of invention in this case would not have arisen, for then it would have appeared plainly that the case would have been very similar to that of (suppose) bleaching charcoal by ordinary bleaching agents. In the absence of experiment, the bleaching of a substance like pyroxyline would seem impracticable, almost incredible. The theory of ordinary bleaching is, that the coloring matter of goods to be bleached is of a complicated and unstable character, and is destroyed by the powerful chemical action of the bleaching

agents, chlorine, oxygen, etc. Inasmuch as pyroxyline, in its manufacture, has been exposed to the action of some of the most powerful chemical agents which are known, it is unreasonable to suppose that any of the unstable coloring matter could be left in it. The bleaching of pyroxylin has often been proposed and attempted; it was especially desirable in this art; but it is my opinion that a chemist would exhaust all other theories before he would think of ordinary bleaching agents for the purpose. The subject had come up in my mind several times before Spill's invention, and I was unwilling to credit the efficacy of his plans until they were actually demonstrated to me. I know of very few inventions where so novel and useful results have been obtained by such simple and unlooked-for methods." There is no evidence to countervail this view.

The defendant has introduced evidence for the purpose of establishing that the invention claimed by the plaintiff in regard to bleaching xyloidine was previously known to Parkes, and was communicated by him to the plaintiff, and was not in fact invented by the plaintiff. The burden of showing this is on the defendant, and, on the whole evidence, it has not succeeded in doing so.

The defendant claims to have shown that other inventions 712 claimed in the two patents were not new, so as to affect the question of costs. But the attempt cannot be held to have been successful.

There must be the usual decree for the plaintiff, for an account and an injunction, as to the claims above held to have been infringed, with costs.