

Circuit Court of Appeals, Seventh Circuit

SANITARY DIST. OF CHICAGO

v.

ACTIVATED SLUDGE, Inc., et al.

No. 5941.

90 F.2d 727

June 16, 1937.

Appeal from the District Court of the United States for the Northern District of Illinois, Eastern Division; Walter C. Lindley, Judge.

Patent infringement suit by Activated Sludge, Inc., and others against the Sanitary District of Chicago. From a decree for plaintiffs, defendant appeals.

Affirmed.

***727** Arthur C. Denison, of Cleveland, Ohio, and James Hamilton Lewis, Wallace R. ***728** Lane, Ernst Buehler, and Ralph M. Snyder, all of Chicago, Ill., for appellant. Lynn A. Williams, Clifford C. Bradbury, and Warren C. Horton, all of Chicago, Ill., for appellee.

Before EVANS, SPARKS, and MAJOR, Circuit Judges.

SPARKS, Circuit Judge.

This appeal involves the validity and infringement of five United States patents relating to the purification of sewage. They were all issued to Walter Jones, and, together with the numbers of the claims here in issue, are as follows:

Number	Date of Application	Date of Issue	Claims Involved
1,247,540	October 9, 1914	November 20,	2, 3, 7, 11, 13

1,282,587	November 7, 1916	October 22, 1918	2, 8
(divisional)			
1,247,542	October 18, 1915	November 20, 1917	5, 8, 9
1,247,543	October 18, 1915	November 20, 1917	
(as reissued July 5, 1921, No. 15,140, under Reissue			
Applicaton of August 11, 1919)			3, 7, 8, 9, 10
1,286,017	October 18, 1915	November 26, 1918	3

This suit was originally instituted by Activated Sludge, Limited, of London, England, and its licensee, Edgar C. Guthard. Subsequently Activated Sludge, Inc., a Delaware corporation, acquired the title to all of the patents involved in the original bill, and thereupon, by leave of court, filed its original bill in the nature of a supplemental bill alleging its title to the patents in suit, and the appellant's infringement of them, and also alleging its right to recover for past infringement.

The District Court held each patent valid, and infringed by one or more of the forms of apparatus and process used by the appellant in different units of its sewage disposal operations. For convenience, each patent is hereinafter referred to by the last three digits of its number.

These patents except 017, were involved in two former suits in this court, City of Milwaukee v. Activated Sludge, Inc., 69 F.(2d) 577, and Sewerage Commission of City of Milwaukee v. Activated Sludge, Inc., 81 F.(2d) 22. Some of the patents, including 017, were involved in a later suit in this court, Fehr et al. v. Activated Sludge, Inc., 84 F.(2d) 948. This latter suit was originally brought against Fehr and others as contributory infringers, because, as contractors and material men, they were engaged in constructing an extension to the Milwaukee Sewerage plant. Subsequently the Milwaukee Sewerage Commission was permitted to intervene and defend the action. In each of the first two cases, claims 2, 3, 7, 11 and 13 of patent No. 540; claims 5, 8 and

9 of patent No. 542; claims 3, 7, 8, 9 and 10 of reissue patent No. 140; and claims 2 and 8 of patent No. 587 were held valid and infringed. In the last case claim 2 of patent No. 587 and claim 3 of patent No. 017 were held valid and infringed. These claims are set out in the respective opinions referred to and they will not be repeated here.

By this action we are again confronted with the question of validity of those claims. All the evidence in the Milwaukee Cases pertaining to validity was before the court in this case. The answers in the cases were substantially the same. Two additional prior art patents, however, were given in evidence in the Chicago suit, and there were some differences in the manner in which the ultimate facts were established in the Milwaukee Cases and the instant case. We are convinced, however, that the substance of all the evidence bearing upon the important questions of validity was precisely the same in this suit as in the Milwaukee litigation. The differences in the manner in which the facts were established, or sought to be established, may be briefly noticed.

In the Milwaukee litigation, the testimony of the witness Clark was by deposition, which was also in the Chicago record. In the Chicago case he appeared and testified. We find no contradictions therein, nor is his former evidence materially added to or strengthened.

The Mather and Platt water softening equipment, as disclosed in the Archbutt and Deeley British patents, Nos. 19,829, and 19,830, was fully disclosed as to construction and operation in the Milwaukee *729 litigation. In this Chicago case that evidence was supplemented by the evidence of two witnesses with respect to the construction of the Mather and Platt water softening plant of the Michigan Carbon Company, at Detroit. Neither the blue print of that plant, nor testimony of the two witnesses discloses any material facts which were not disclosed by the Mather and Platt brochure introduced in the Milwaukee litigation.

In the Milwaukee litigation, the installation at various places, of water softening plants manufactured by the Pittsburgh Filter Company, was fully disclosed by the testimony of witness Leopold. In the instant case the same equipment at other places, differing only in capacity, was disclosed by a different witness. The drawings presented by each witness were substantially identical. Furthermore, counsel for appellant notified appellees on May 4, 1936, that appellant in its pending appeal would not rely on the work of the Pittsburgh Filter Company.

In the Chicago case witness Kendall testified as to prior knowledge in the United States of the disclosures of the patents in suit. The testimony of this witness is neither assuring nor persuasive. Similar evidence was in the Milwaukee Cases and was not

considered sufficient to overcome much stronger evidence on this question.

In the Milwaukee suit Moore's applications for United States patents 1,271,925 and 1,271,926 were offered in evidence, without prior notice in the answer, to show the state of the art and to form a basis for the argument that no invention was involved. In the instant suit these same patents and applications were offered in evidence under the requisite notice in the amended answer, thereby rendering them available for the argument of invalidity of the patent in issue on the ground of anticipation or prior invention. In the first Milwaukee suit it was argued that Jones' patents 542 and 140 involved no invention over Moore's disclosures. Patent 017 was not involved in the first Milwaukee suit. However, it was involved in the later suit against the Sewerage Commission and contractors, and the same evidence was in the record by stipulation. In the later suit appellants in that case had the opportunity of adducing additional evidence relative to the Moore disclosures and did not do so. It is obvious that if Moore's disclosures invalidate patents 542 and 140, they also invalidate patent 017. Having held that all of these patents, 542, 140 and 017 are valid as against the state of the art as established by Moore, we are further of the opinion that they are valid as against the contention of noninvention over Moore's disclosures.

So far as we are able to observe, the prior art and publication here presented, are identical with those in the Milwaukee Cases, with the exception of British patents to Beddoes, No. 8,722, and Shone and Ault, No. 20,125, neither of which is mentioned in appellant's brief. The latter discloses nothing not disclosed by the former, and the British patent to Beddoes is a duplicate of United States to Beddoes No. 895,229 which was cited in the Milwaukee Case.

In addition to the depositions of world renowned experts in the Milwaukee Case, and in opposition to their conclusions, appellant produced Yeomans, an expert on liquids, their storage and transportation, and on compressed air and its application. He said Jones' patents were mechanically and hydraulically inoperative, hence invalid. The complete answer to this is that Jones' patents have always operated successfully and still are doing so.

Appellant contends that the file wrappers of Jones' British patents No. 22,952 of 1913; and Nos. 729; 19,916; 22,736; and 22,737, all of 1914, are before the court for the first time in this case. It admits, however, that the court admitted them in the Milwaukee record subject to appellees' later motion to strike them, and that that motion was subsequently made but was never passed upon. That being true, they remained in the Milwaukee record. As a matter of fact we so treated them and considered their contents in our conclusions.

The instant record contains a narrative form, which is an abridgment of the contemporaneous correspondence between Jones and his collaborators. There is nothing new in this, however, for the full text was incorporated in the Milwaukee record.

Certain models claimed to portray the prior art, publications, inventions, or used upon which they were based, were introduced in this case. It is denied by appellees that some of them are accurate, but, be that as it may, we think they add nothing new or materially helpful to an understanding of the state of the art which was before us in the Milwaukee Case.

***730** [1] Appellant with considerable emphasis challenges the correctness of our opinion in the first Milwaukee Case. This contention is based on the ruling in *Altoona Theatres v. American Tri-Ergon Corporation*, 294 U.S. 477, 55 S.Ct. 455, 79 L.Ed. 1005, wherein the well-known rule is reiterated that each claim of a patent constitutes a separate grant of monopoly, and each must be considered by itself both with respect to validity and infringement. This, appellant says, we did not do, but that on the contrary we treated all the claims of all the patents, both process and apparatus, as constituting one method patent. We had no intention of doing so, and we think we did not, nor did we assign reasons for not considering the claims separately in the sense which appellant contends.

[2] A study of this record and the arguments of counsel convinces us that our conclusions as set forth in our opinions in the Milwaukee Cases, both with respect to validity and infringement, are sound. For the reasons therein stated we hold that the District Court in this case properly held that each of the claims here in issue is valid.

We shall now consider the question of infringement. Appellant owns and operates three separate and distinct sewage plants: The North Side Sewage Treatment Works, The Desplaines Sewage Treatment Works, and the Calumet Sewage Treatment Works. The District Court held that the structures and operation of these plants infringe the five patents here in issue, that is to say the Desplaines and Calumet plants infringe claim 8 of patent 587, and all the plants infringe all the other claims in issue.

It is conceded by appellant that there is no substantial difference between its North Side plant and the Milwaukee extension which was considered by this court in *Fehr et al. v. Activated Sludge, Inc.*, supra. Both of those constructions and operations, and also tank No. 4 of the Desplaines plant involve what are termed helical or spiral flow tanks as distinguished from the 'ridge and furrow' tanks. The original installation at Milwaukee contains the 'ridge and furrow tanks' and they are not materially unlike those

of the Calumet and Desplaines plants except tank 4 of the latter. Tank 4 of the Desplaines plant, prior to the summer of 1924, was constructed and operated precisely as was that portion of the Calumet plant in which re-aeration of sludge took place. At that time, however, it was converted into a helical flow form substantially like those of the North Side plant and of the Milwaukee extension.

Not only are the questions raised in this case substantially the same, with one exception, as those in the Milwaukee Cases, but the evidence adduced is not substantially or materially different. By far the most of it is identical, and that which is new is cumulative and not persuasive. We therefore adhere to our ruling in the Milwaukee Cases as applicable to each claim here challenged.

The exception above referred to lies in the fact that claims 2, 3, 7, 11 and 13 of patent 540^{FN1} were not in issue in the second Milwaukee suit, which involved the helical flow tanks. The new question presented, therefore, is whether these claims are infringed by the structures and operations *731 of appellant's North Side plant and tank 4 of the Desplaines plant.

FN1. '2. The process of treating sewage and the like, consisting in causing a local upflow in the liquid, supplying air into the liquid in its upflow, and causing this liquid and the sludge or solid matters contained in it to flow to a point of the part of the flow which is being supplied with air.

'3. The process of treating sewage and the like, consisting in causing a local upflow in the liquid, and supplying air locally into the liquid in its flow, causing the sludge or solid matters to pass to a point of the part of the flow which is being supplied with air, and removing the clarified liquid from the body.'

'7. The process of treating sewage and the like, consisting in causing an up and down flow, and a lateral flow in the liquid, and returning the sludge to the upflow.'

'11. The process of treating sewage and the like, which consists in introducing air locally into the mass of liquid at a plurality of points, and thereby setting up upcurrents in the sewage over the air supply localities, and permitting the sewage to flow outward from the upper part of one of the upcurrents, and descend and flow into the path of another upcurrent.'

'13. The process of treating sewage and the like, consisting in delivering locally to the lower portion of a mass of sewage a plurality of successive increments of infusions of minute bubbles of air; causing the sewage at the points of delivery of increments of air to rise by the infusion of air therewith; and causing the sewage freed of the air to fall and come under the influence of succeeding increments of air.'

With respect to this question the trial court in its memorandum opinion said, 'We find there (in appellant's structure and operation) a chamber for the removal of foreign material, settling chambers for the preliminary settling of such solids as will by the force of gravity fall to the bottom in a comparatively brief period of retention, three batteries of aeration tanks, the same of settling tanks and channels for the return of sludge and for removal of clarified effluent.

'The sewage to be treated, passing from the elementary settlement through a mixing channel, is there augmented by the introduction of activated sludge and then proceeds eventually to the aeration chamber, being retained in the mixing channel for perhaps two minutes. The mixture is retained and treated in the aeration chamber for about six hours. Each of these chambers in cross-section is substantially the same as that of chamber No. 4 at Desplaines, after the modification there in 1924, containing, however, two rows of diffuser plates instead of one. At the end of the tank, the mixture, after treatment as aforesaid, passes over weirs into a settling tank, which is provided with a partially hopped bottom to cause the sludge as it settles to drift toward the center of the bottom of the tank. Thence, by gravity, the sludge moves to aerated channels adjoining the operating galleries, where it remains and is aerated for about two minutes and is thereby greatly revived. Thence, it is carried by gravity back to the main building and there elevated by pumps to a point from which it flows by gravity back to the place where it again intermingles with raw sewage. This, in brief, is the cycle.

'This process, I believe, infringes claims 2, 3, 7, 11 and 13 of patent 1,247,540. The double row of diffusers brings the activity within claims 11 and 13, for there is a progression of mixed sewage and sludge from the effect of one diffuser to that of another. This progression occurs both in a lengthwise direction of the channel and in a cross circulation, whereby the movement is from the central point of the channel toward the side and back again toward the center. As a result of the arrangement of diffusers in the tank, there is eventually a circulation current upwardly along the channel, downwardly along the opposite side of the channel, laterally across the bottom and upwardly over the group of diffusers in the next compartment down stream in the channel. This results from the arrangement of the diffusers in sets of nine included in each of the series of concrete compartments. The elements of each of the mentioned claims appear in that process, and the specific operation reads upon claim 11. Defendant contends that though the words of the claims read technically upon defendant's construction, there is no resemblance,- but it seems to me that there is a very substantial likeness.' We are in accord with the District Court's rulings with respect to these claims.

The District Court's memorandum opinion in this case is an unpublished one. Because

of its clearness of expression we here incorporate those parts of it which deal with the other claims in issue.

'The bottoms of the channels at the north side plant are not substantially different from these of channel No. 4 of the Desplaines plant as modified. Apparently, from the Court of Appeals' conclusions as to the validity of that patent and infringement, therefore, this construction infringes Claim 2 of patent #1,282,587. As said by defendant's counsel, the essence of the invention in this patent, held valid by the Court of Appeals, is the sloping construction of the floor. It is insisted, therefore, that inasmuch as defendant's floors at the north side plant have substantial portions of flat character, they do not read upon the claim. They are partially inclined, partially of hopper character. The difference, I believe, is one only of degree, and not of such degree as to avoid infringement.

'As we have seen, the sewage and activated sludge are first intermingled in channels leading from a central position to the complete aeration chambers and are there retained about two minutes and during that time subjected to preliminary aeration produced through diffusers located down the middle of the channel. This, though not final aeration, is a part of the treatment by air mentioned in claims 1, 2 and 3 of patent #1,286,017 and infringes same.

'Claim 3 of reissue patent \$15140 has to do with a process wherein the crude sewage is supplied 'gradually' to bacterial sludge, being aerated while being supplied. After aeration and settling, the purified liquid is gradually drawn off. Claims 7, 8, 9 and 10 relate to the reaeration of activated sludge after it has been standing *732 without air in the settlement chambers for some time and before it is mixed with raw sewage. The 'gradual introduction' of Claim 3 takes place at the points of entrance of the mixture into the aeration chamber.

'Though it is claimed that the aeration in the channel where the sewage and sludge first come together is for the purpose of preventing settlement in this channel, provocative of septic conditions, it is significant that in other channels carrying sludge back to the main building such prevention is achieved by the use of gravity. No good reason is offered why the same means could not be utilized here with less expense. Rather it is believed this partial preliminary aeration is of some practical advantage. At any rate, it is a fact that the sludge is to some extent thus reaerated. Accordingly, I believe claim 3 is infringed by gradual introduction of sewage, and Claims 7, 8, 9 and 10 by reaeration in the channels just ahead of the main reaeration chambers. The only difference between the practice of defendant in this respect and the claims of the patent are again one of degree only.'

We are in accord with the District Court's rulings with respect to these claims and his reasons therefor.

Decree affirmed.