

COMMISSIONER'S DECISION

SECTION 36 - Adequacy of Disclosure - Photocopying Chemicals

Applicant claimed certain new compounds used in photocopying machines. While he had disclosed the chemical formulae and some properties, he did not include melting points, spectral or other data. The examiner refused the claim for insufficient disclosure. It was held that in this instance sufficient description had been provided to properly identify the compounds. Rejection reversed.

Patent Application 261,646 (Cl. 260/472.15) was filed on September 21, 1976 for an invention entitled "Electron Acceptor Monomers and Polymers". The inventor is Sam R. Turner, assignor to the Xerox Corporation. The Examiner refused the application on March 5, 1980, after which the Applicant requested that the rejection be reviewed. Originally he also asked for an oral Hearing, but later decided to rely on his written submissions.

The invention involves certain chemical compounds and polymers thereof used in photocopying machines. The Examiner took a Final Action rejecting the application as a whole for failure to comply with Section 36(1) of the Patent Act. He held that the Applicant had not given an adequate description of the compounds because he had not included sufficient physical and spectral data about them. We quote two portions of his action:

The refusal of this application is maintained, since the absence of physical and spectral characterizing data of the compounds and the absence of data on testing procedures evaluating their utility in concrete terms means that the specification does not provide an adequate description of the alleged invention according to the norms of the current technical literature as required by Section 36(1) of the Patent Act and teachings handed down by the relevant jurisprudence.

The reasons for this conclusion are as follows:

It is a well established principle that neither the spectra, nor the physical properties of a compound are obvious from its structural formula. Furthermore, the structure and composition of a product arising from a chemical reaction cannot be determined simply by looking at the product. Chemical compounds do not, unfortunately, carry attached labels bearing their structural formula. Although most mechanical devices can be dismantled and their structure and the manner of the co-operation of their components determined by normal workshop procedures, this is not the case with chemical compounds.

The problem of structural identification and the assignment and explanation of spectral and physical characteristics of chemical compounds is one which sometimes defeats even the best chemists, and even the simplest chemical reactions, for no accountable reason, sometimes go wrong. It is, therefore, essential that subsequent workers be provided with data on a measurable property of the product which they have obtained from the reaction and, by comparison of the result with the reported data, determine whether or not their product is the same as that obtained by the original worker.

The overwhelming necessity of providing this data is immediately apparent upon reading any reputable chemical journal, for example Journal of the American Chemical Society, Journal of Organic Chemistry, Canadian Journal of Chemistry. The amount of detailed characterization of the compounds described in these journals shows that the authors of the papers contained therein, including Nobel Laureates, consider this information essential. Furthermore, these authors, by their publications are not endeavoring to obtain any exclusive property or privilege. Since the applicant is endeavoring to obtain an exclusive property or privilege in the subject matter of his claims, he is not entitled to provide less information on the working of his alleged invention than is considered necessary by those skilled in the art.

Support for the claims is based on the compounds applicant has actually made and tested and properly disclosed together with characterizing data and/or testing data. It is not based on his ability to talk in general terms about standard textbook reactions or on his ability to draw structural formulae or on his ability to write down hypothetical compound names or definitions of chemical substituents which can be obtained by opening any chemical textbook.

The writing down of a chemical formula or a chemical name does not even remotely resemble the accepted norm for adequacy of disclosure in the chemical literature.

and

The supply of such data is even more important when the reaction product is a mixture, which is the case in examples II and III, wherein a mixture of mono- and di-4,5,7-trinitro fluorenone-2-carboxylates and a mixture of mono-, di- and tri-esters would be obtained from the diacrylate and monoacrylate respectively.

The problems encountered when dealing with a reaction product which is a mixture are infinitely more complex than when the product is a pure compound.

Therefore, the objection to the fatally inadequate description of example I, which presumably produces a pure compound, is even more solidly-founded when applied to examples II and III which produce mixtures.

Further, not only is the information in the examples of this application an insufficient description of the substances they purport to support, but this application contains no description whatsoever of any experimental work at all directed to substances containing the various X, Y and Z groups in claim 1, other than esters of 4,5,7-trinitro fluorenone-2-carboxylic acid.

Therefore, the objection to the fatally inadequate description of the examples, which applicant purports to have made, is even more solidly-founded when applied to those claimed variations of which there is no suggestion whatsoever of any experimental work at all, and which claim groups of substances which do not exist and which never have existed.

Turning to some of the teachings handed down by the courts, applicant's attention is drawn to the fact that

"Probability is not enough. In the realm of mechanics it is possible to predicate equivalents with absolute certainty: in chemistry... this is out of the question." 45 R.P.C. 403

Applicant is referred to the decision of MacLean, J. in the case of Chipman Chemicals, Ltd. v. Fairview Chemical Co. Ltd., Ex. C.R., page 115, (1932), wherein one finds that,

"A chemical compound is patentable if it is new and useful, provided one may assume some degree of ingenuity, or the exercise of intelligent research and experiment directed to a particular purpose. Since there is no prevision in chemistry one cannot always predict the results to be obtained from chemical combinations as accurately as those resulting from the combination of mechanical devices. As Chemistry is an experimental science, predictions are liable to failure without experiment, and results are obtained only by concentrated experiment and research. Where chemical action is involved, analogy does not carry one far".

The Canadian tribunals have consistently ruled in this sense, and also advised the Patent Office as follows:

"Since the public interest is at stake, the Patent Office should scrutinize applications most carefully to see if they merit the grant of monopoly privileges and to determine the scope of the monopoly available" S.C.R., page 419, (1964).

"One may even be disposed to wonder why such blatant assertions of the usefulness of large classes of substances, most of which obviously have never been made, should appear in patent specifications, or why applications, based on such wild assertions are not rejected out of hand as palpably false", 64 C.P.R., at page 37.

And a judge also expressed strong disapproval when he estimated that: "Applicants set out to monopolize an unexplored field of organic chemistry so as to prevent others during the life of the Patent from exercising their right to search in the field for new substances which might turn out to be useful or even more useful...". Ex.C.R., page 91, (1966).

"It is not sufficient that a patentee's utterance spring from his imagination...he must claim clearly what he has invented, but not more than he has invented, that is something which is the mere subject of his speculation in his endeavor to grasp more than he is entitled to." Ex.C.R., page 97, (1929).

"Nothing that has not been described in the disclosure may be validly claimed." 20 C.P.R., page 27; 23 C.P.R., page 6.

"A patent may be hopelessly invalid for want of subject matter, although there is no disclosure of its content in any prior document". 44 R.P.C., page 402.

These are just a few of the many rulings which the courts have handed down in this matter, which rulings consistently require that the claims be distinct and explicit and must fall within the domain of the subject matter for which the disclosure has adequate support.

In order, therefore, for the applicant to support a claim to a compound, he must describe how to make it and must set forth its properties and identifying characteristics in a manner which quantifies these features. Examples of these features are physical and spectroscopic data and quantified results from testing procedures which evaluate the performance of the product according to the utility upon which the patentability is predicated. It is only with this kind of information that a person skilled in the art, and having only the patent at hand, can be sure that a) he has prepared the substance described in the patent, and b) he can use the substance to achieve the desired goal.

Furthermore, it is insufficient for applicant to just make generalized statements about the utility of the compounds. If applicant did in fact test his compounds, he has the data obtained from these tests. It is the data which is the substance of the invention, and it is the spectroscopic data and the testing data which told applicant what he had and what he could use it for.

Applicant dealt, in part, with the Examiner's position by arguing that:

It is agreed with the Examiner that many of the reputable journals he refers to require their authors to provide exhaustive experimental data. However, it is submitted that this is irrelevant to consideration of the question of a full and complete disclosure under Section 36(1) of the Canadian Patent Act. The so-called "norms of current technical literature" (a phrase of subjective meaning at best) are established by tradition, editorial requirement, and a variety of other factors, none of which are at all related to the legal requirements of Section 36(1) of the Canadian Patent Act.

In the most recent pronouncement of the Supreme Court of Canada upon Section 36 of the Patent Act, viz Consolboard V MacMillan Bloedel, March 19, 1981

(unreported) it was the unanimous view of the court that one must not take an unduly technical approach to the specification in considering whether it complied with Section 36(1) of the Act. It further indicated (at page 11) that the inventor must give the public an "adequate" description of the invention.

At page 14 it said:

We must look to the whole of the disclosure and the claims to ascertain the nature of the invention and methods of its performance, (Noranda Mines Ltd. v. Mineral Separation North American Corporation (1950) S.C.R. 36, being neither benevolent nor harsh, but rather seeking a construction which is reasonable and fair to both patentee and public. There is no occasion for being too astute or technical in the matter of objections to either title or specification ----- the patent should be approached "with a judicial anxiety to support a really useful invention."

In another recent case (Monsanto v Commissioner of Patents, S.C.C., June 28, 1979, 42 C.P.R. (2d) 6) one of the objections of the Examiner was that the Applicant had failed to provide any physical constants for many of the compounds being claimed, and that the compounds had not been fully described. Nevertheless the Court permitted the Applicant to claim a vast number of compounds for which no melting points, physical properties or spectral data had been provided. Indeed only the names of the compounds were disclosed. Mr. Justice Pigeon expressed his view as follows (at page 13 of the original text):

In my opinion the Commissioner cannot refuse a patent because the inventor has not fully tested and proved it in all its claimed applications,---

Bearing in mind this attitude of the Supreme Court, we turn to the disclosure now before us. We find that it provides structural formulae for the compounds claimed, describes how they are made, and certain properties (in particular those relation to polymerization, coating, compatabil ties, electron acceptance, photo response, chemical stability, spectral response, colour, thermal stability, solvent solubility, electrophotographic response, and the like).

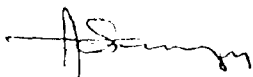
It cannot consequently be said that no physical data was provided. Doubtless more could have been obtained, and for greater preciseness it may well have been desirable that it had been. However we accept Applicant's point that the norms required by the technical literature of the day do not correspond with the legal requirements of Section 36, as recently spelled out by our courts. We think any skilled chemist, given such a description, will be able to assess with accuracy whether any specific chemical comes within the scope of applicant's claims, or are clear of it.

In the result, then, we conclude that in the present instance the Applicant has provided a sufficient description of the compounds to satisfy Section 36, and we recommend that the rejection be withdrawn.



G.A. Asher
Chairman
Patent Appeal Board, Canada

Having considered the prosecution of this application, and the recommendation of the Patent Appeal Board, which I accept, I now direct that the rejection of the Examiner be withdrawn, and that the prosecution be resumed.



J.H.A. Gariepy
Commissioner of Patents

Agent for Applicant

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Dated at Hull, Quebec

this 19th. day of May, 1981