

Internal distribution code:

- (A) [] Publication in OJ
(B) [] To Chairmen and Members
(C) [X] To Chairmen

D E C I S I O N
of 24 November 2000

Case Number: T 0433/99 - 3.2.2

Application Number: 92905377.5

Publication Number: 0567590

IPC: A61B 17/52

Language of the proceedings: EN

Title of invention:

Means For Protecting From Electromagnetic Fields

Applicant:

THE CATHOLIC UNIVERSITY OF AMERICA

Opponent:

-

Headword:

-

Relevant legal provisions:

EPC Art. 84

Keyword:

"Lack of clarity (no)"
"Lack of conciseness (no)"
"Definition by result (no)"

Decisions cited:

-

Catchword:

-



Case Number: T 0433/99 - 3.2.2

D E C I S I O N
of the Technical Board of Appeal 3.2.2
of 24 November 2000

Appellant: THE CATHOLIC UNIVERSITY OF AMERICA
620 Michigan Avenue, N.E.
Washington
DC 20064 (US)

Representative: Laight, Martin Harvey
W.H. Beck, Greener & Co.
7 Stone Buildings
Lincoln's Inn
London WC2A 3SZ (GB)

Decision under appeal: Decision of the Examining Division of the
European Patent Office posted 7 December 1998
refusing European patent application
No. 92 905 377.5 pursuant to Article 97(1) EPC.

Composition of the Board:

Chairman: W. D. Weiß
Members: S. S. Chowdhury
R. T. Menapace

Summary of Facts and Submissions

I. This appeal is against the decision of the examining division dated 7 December 1998 to refuse European patent application No. 92 905 377.5 on the grounds that the claims of the main and auxiliary requests did not meet the requirements of Article 84 EPC.

The grounds of refusal were that the claims of the main request lacked clarity and conciseness. In particular, the expression "adverse effect" used in claim 1 was a relative term, and vague and indefinite, and it also did not have a generally accepted meaning and was ambiguous. Moreover, there were three independent claims which were essentially identical in scope and therefore lacked conciseness. Furthermore, these claims defined subject-matter for which protection was sought in terms of the result to be achieved, which was not permissible in the circumstances. The first to fourth auxiliary requests were also open to the same objections, and the first and third auxiliary requests were additionally objectionable for lack of support by the description.

II. On 26 January 1999 the appellant (applicant) lodged an appeal against the decision and paid the prescribed fee. On 7 April 1999 a statement of grounds of appeal was filed.

III. The appellant requests that the decision under appeal be set aside and that a patent be granted on the basis of claims 1 to 77 submitted by telefax on 7 November 2000 (Schedule 1A(4)). Previous requests had been filed, but the appellant stated that were the claims of Schedule 1A(4) to be found allowable by the Appeal

Board, this request would be made the main request, and all other requests would be deleted.

IV. The independent claims 1, 25, and 54 of Schedule 1A(4) read as follows:

Claim 1

A method of inhibiting the adverse effect on a living system of an ambient time varying field having as characteristic parameters one or more of amplitude, frequency, phase, wave form, modulation and direction;

in which the ambient time varying field has an electric component of 5 Kv/M or less, or has a magnetic component of 500 μ T or less, or has an electric component of 5Kv/M or less and a magnetic component of 500 μ T or less; and

the method comprises the steps of changing at least one of the characteristic parameters of said field to which the living system is exposed within time intervals of approximately ten seconds or less.

Claim 25

Apparatus for inhibiting the adverse effect on a living system of an ambient time varying field having as characteristic parameters one or more of amplitude, frequency, phase, wave form, modulation and direction;

in which the ambient time varying field has an electric component of 5 Kv/M or less, or has a magnetic component of 500 μ T or less, or has an electric component of 5 Kv/M or less and a magnetic component of

500 μ T or less; and

the apparatus comprises means (10, 14, 22, 24, 26, 28, 30) for changing at least one of the characteristic parameters of said field to which the living system is exposed within time intervals of approximately ten seconds or less.

Claim 54

The use of changes in at least one characteristic parameter of an ambient time varying field for inhibiting its adverse effect on a living system, the ambient time varying field having as characteristic parameters one or more of amplitude, frequency, phase, wave form, modulation and direction;

in which the ambient time varying field has an electric component of 5 Kv/M or less, or has a magnetic component of 500 μ T or less, or has an electric component of 5 Kv/M or less and a magnetic component of 500 μ T or less; and

the use comprises the steps of changing at least one of the characteristic parameters of said field to which the living system is exposed within time intervals of approximately ten seconds or less.

V. The appellant argued as follows:

The expression "inhibiting the adverse effect on a living system" was clear in the context since each word had a precise meaning, and the description gave several examples of adverse effects. It was clear to a person skilled in the art what was adverse and what was not

adverse in a given situation, and the claims required that the adverse effect be inhibited, i.e. at least reduced, but not necessarily completely eliminated. The examining division had given no example of what might be considered adverse by one interpretation but not adverse by another interpretation, or when this expression might be ambiguous.

Moreover, this term in the introductory part of the claims was merely an indication of the aim of the method or apparatus, and not the solitary novelty invoking feature.

The claims did not define the invention by result, instead there were specific features defined at the end of each of the main claims, that brought about the desired result.

The application now contained one independent claim in each category. The presence of a method claim and a use claim was allowable in the present case since a use claim was a special case of a method claim, and the Guidelines for Examination at the EPO envisaged the simultaneous presence of such claims.

Reasons for the Decision

1. The appeal is admissible since it complies with the provisions mentioned in Rule 65(1) EPC.
2. *Amendments*
 - 2.1. Claim 1 includes the following features not contained in claim 1 of the application as originally filed

[emphasis in bold added]:

- (i) The ambient time varying field has as characteristic parameters one or more of amplitude, frequency, phase, waveform, modulation and direction
- (ii) The ambient time varying field has an electric component of 5 Kv/M or less, **or** has a magnetic component of 500 μ T or less
- (iii) The at least one of the characteristic parameters of said field to which the living system is exposed is changed within time intervals of **approximately ten seconds or less.**

2.2. The new features of claim 1 are allowable under Article 123(2) EPC since they are supported by the application as originally filed as follows:

- (i) That the characteristic parameters may include amplitude, frequency, phase, waveform, and direction is disclosed on page 5, lines 3 to 7 and claims 2 to 6.

Pages 10 to 12 discuss the case where microwaves are modulated alternately by signals at 55 Hz and 65 Hz, the frequency being changed at different time intervals. This provides support for the feature that one of the characteristic parameters that may be changed is modulation.

In practice microwaves will always be modulated by **lower** frequency signals, so there is no need to specify this in the claim, and it also seems

reasonable to assume similar results will obtain at modulation by signals of frequencies other than 55 Hz and 65 Hz, the effective frequency range being determined by the cell size, for example, see point 3.2 below. Therefore, there is no need to restrict the claims to these frequencies.

- (ii) This feature is supported by page 6, lines 28 to 31 and original claims 55 and 56, which state that only one of these fields may be the ambient field.
- (iii) Original claim 28 defined apparatus for inhibiting the adverse effects of ambient time varying fields, whereby the characteristic parameter is changed within time intervals of approximately ten seconds or less.

- 2.3 The independent apparatus claim 25 and use claim 54 are correspondingly worded and are equally supported by the application as originally filed.

Therefore, there is no objection to the independent claims under Article 123(2) EPC.

3. *Clarity*

3.1. "Adverse effect"

The term "adverse effect" is clear in the context since each word of this term has a clear dictionary meaning and their combination is also clear. In general an adverse effect is one that is injurious or unfavourable, but specific examples of adverse effects of electromagnetic radiation on living systems, e.g. cancers, embryo abnormalities, enzyme activity, etc. are also given in the

application.

The application discloses different types of adverse effects produced by the types of radiation fields defined in the claims. Thus, pages 2 to 4 review past work in which various types of cancers are said to be caused, biological cell function is altered, chick embryos have induced abnormalities, and birth defects and bone osteoblasts are stimulated.

Moreover, the applicant has filed substantial and impressive evidence to demonstrate that many different effects are caused by such radiation on single cells, tissues, animals, and humans. The evidence is from reputable research establishments, universities, and governmental agencies and is published in serious refereed journals, and must, therefore, be accepted. The application need not list all the possible effects since these are very extensive and cover a wide variety of living beings, and it is fair that the claims cover all undesirable effects that may occur when living beings are exposed over long periods to electromagnetic radiation of the type defined in the claims, by using the general term "adverse effect".

It is in the nature of medical afflictions that the effect of a given stimulus may vary from person to person, or some persons may not be affected at all, but that does not make the term describing the affliction unclear. For example, a noise may induce a headache in one person but not affect another, but there is no lack of clarity owing to the fact that the effect of the noise is variable or the headache may be manifest as different types of pain, or not at all.

3.2. "Living systems"

The expression "living systems" includes single cells, tissues, animals and humans, see page 4, lines 29 and 30. That the technical effect disclosed functions at the level of the individual cell is disclosed on page 6, for example, where the description states that a cell becomes confused by the changing field and does not respond to an insult, see also point 3.2 below. Observations on enzyme activity are also reported on page 10 onwards, as are studies on chick embryos (pages 12 and 13), but the main thrust of the application is the protection of humans and animals, to which the embodiments described with reference to Figures 3 to 8 are devoted. The expression "living systems" is, therefore, clear and its use is justified since changing the characteristic parameters of an ambient field to which the living system is exposed within time intervals of approximately ten seconds or less affects a wide range of living beings on the evolutionary scale.

3.3. "Inhibiting the adverse effect"

This expression is also clear, it simply means that any adverse effects of electromagnetic radiation on a cell, tissue, human or animal are to be checked, i.e decreased or stopped, and not necessarily totally eliminated.

To summarise, the expression "inhibiting the adverse effect on a living system" is clear in the context and supported by the description.

3.4. Definition by reference to the desired result

Method claims normally contain an introductory phrase indicating what the method achieves, and go on to define one or more process steps that achieve the result, but this does not constitute defining the method by the result to be

achieved. The present claims have a similar construction, wherein they indicate what is to be achieved, which is the inhibition of an adverse effect of an ambient time varying electromagnetic field on a living system, and a process step for achieving this, which is the step of changing a characteristic parameter of the field within time intervals of approximately 10 seconds or less.

The paragraph linking pages 5 and 6 says explicitly that the adverse health effects upon living systems may be inhibited by changing one or more of the characteristic parameters of the ambient time varying field to which the living system is exposed in time periods less than approximately ten seconds. Not only is this the solution, but the subsequent paragraphs propose an explanation of the mechanism leading to the success of the solution, as follows: An insult (e.g. drug, chemical, virus, electromagnetic field, etc.) will cause a signal to be sent from receptors (often at the cell membrane) into the biochemical pathways of the cell, and this mechanism can be stopped by confusing the cell with fields that vary in time in the ways specified. Thus the cells become confused and do not respond to the insulting field.

Therefore, the instruction given in the claims is quite specific, and no undue experimentation is required. Thus, the main claims clearly define the process step required to achieve the desired effect, and are clear, accordingly.

The claims would be objectionable in this respect were they worded with a clause such as "said changes being selected such that the adverse effects of the field are inhibited". Instead, the present invention is defined by concrete features necessary to achieve the desired result, namely a characteristic parameter of the field is changed within

time intervals of approximately 10 seconds or less. Therefore, the claims are clear in this respect.

4. *Conciseness*

The main request comprises the following independent claims: Claim 1 to a method, claim 25 to an apparatus, and claim 54 to a use. There is no doubt that an independent apparatus claim and an independent method claim may co-exist in a single application.

However, the presence of overlapping method and use claims requires justification, which is as follows: In the method claim the emphasis is on the method for protecting a living system from the adverse effect of a radiation field, whereas in the use claim the emphasis is on the use of changes in a field to inhibit their potential adverse effects, which is independent of whether or not a living system is present. Therefore, these claims have slightly different scope and the appellant's desire to cover these slightly different intentions gives rise to the two types of claims.

Moreover, such a method of claiming allows for differences in claim interpretation in the different contracting states of the EPO, particularly during infringement and revocation proceedings in national courts, when opportunities for amendment are limited. It is conceivable that there may well be differences in interpretation of method and use claims in the national courts of the different contracting states, and the applicant should be entitled to cover his invention in all possible ways so as to obtain full protection therefor in all the designated countries.

This view is supported by the Guidelines for Examination at

the EPO, C-III, 3.2, which discourages an over-academic or rigid approach to the presence of claims that are differently worded but apparently of similar effect.

5. *Support by the description*

The examining division had also objected that the claims of auxiliary requests 1 and 3 were too broad. This point is now of no consequence since the claims now under consideration no longer use the wording objected to by the examining division.

6. For the above reasons the claims of Schedule 1A(4) meet the requirements of Article 84 EPC. The appellant's statement in point III above is understood by the Board to mean that were the claims of this request to be considered to meet the requirements of Article 84 EPC, then this would be promoted to the status of the main request. In view of the above, Schedule 1A(4) is considered to be the main request and the other requests need not be considered further.

7. *Other matters*

The Board observes that the examining division had raised an objection under Article 83 EPC and subsequently dropped this objection. The Board endorses the view of the examining division that this objection is not justified in view of the evidence filed by the appellant, that radiation fields of the type defined in the claims may, indeed, be adversely affecting living beings, and that the present invention does appear to ameliorate these adverse effects.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the first instance for further prosecution on the basis of the following documents:

Claims 1 to 77 submitted on 7 November 2000.

Description pages 4B and 4C submitted on 7 November 2000.

The Registrar:

The Chairman:

V. Commare

W. D. Weiß