Internal distribution code:
(A) [ ] Publication in OJ
(B) [ ] To Chairmen and Members
(C) [ ] To Chairmen
(D) [X] No distribution

Datasheet for the decision of 27 September 2013

Case Number: T 1620/12 - 3.2.03

Application Number: 08806791.3

Publication Number: 2245390

IPC: F25B 21/00

Language of the proceedings: EN

Title of invention:
Cooling device

Applicant:
Powell, Jude

Headword:
-

Relevant legal provisions:
EPC Art. 83

Keyword:
"Insufficiency of disclosure (yes)"
"Substantial procedural error (no)"

Decisions cited:
T 1785/06, T 1237/07

Catchword:
-

Europäisches Patentamt | European Patent Office | Office européen des brevets

Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 1620/12 - 3.2.03

D E C I S I O N
of the Technical Board of Appeal 3.2.03
of 27 September 2013

Appellant: (Applicant)	Powell, Jude 491 High Road Harrow Weald Middlesex HA3 6HL (GB)
Representative:	Williams, Ceili Stevens Hewlett & Perkins 1, Pemberton Row London EC4A 3BG (GB)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted 21 February 2012 refusing European patent application No. 08806791.3 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman: U. Krause
Members: C. Donnelly
K. Garnett

Summary of Facts and Submissions

I. The appeal lies from the decision of the examining division, posted on 21 February 2012, refusing European patent application No. 08 806 791.3.

II. Claim 1 as on file reads:

"A cooling device comprising a high voltage source connected to a spark gap (2-13) and controlled by a timing means (2-11), wherein the spark gap (2-13) comprises a pair of electrodes (3-1a,3-1b) in a gaseous environment and the source and timing means (2-11) are arranged to generate unidirectional high voltage pulses that are applied between the electrodes (3-1a,3-1b), thereby causing sparking between the electrodes as the pulses are discharged in short and regular impulses across the spark gap (2-13) and the device also includes an emitter (2-12) located in the vicinity of one of the electrodes (3-1a) of the spark gap and electrically isolated therefrom."

III. In its decision the examining division held that the application did not meet the requirements of Article 83 EPC since not only is the functioning of the emitter component insufficiently disclosed, but also the claimed apparatus and method violate the first law of thermodynamics.

IV. The applicant (hereinafter "the appellant") filed a notice of appeal against this decision on 19 April 2012 and paid the fee the same day. The grounds of appeal were filed on 2 July 2012.

V. In a communication dated 7 June 2013, pursuant to Article 15(1) RPBA annexed to the summons to oral proceedings, the Board informed the appellant of its provisional opinion. In particular, the Board indicated that it essentially agreed with the decision of the examining division.

VI. By letter of 25 September 2013, the appellant advised the Board that it would not be represented at the oral proceedings scheduled for 27 September 2013.

VII. The oral proceedings were duly held on 27 September 2013 in the absence of the appellant. In its grounds of appeal the appellant had in effect requested:

(a) That the decision under appeal be set aside;

(b) That a patent be granted on the basis of the single set of claims on file (being the same as those of the request before the Examining Division as filed with letter dated 23 August 2011);

(c) Alternatively, that if this request were not granted, remittal of the case to the Examining Division to complete the examination or on the ground of a substantial procedural violation;

(d) Reimbursement of the appeal fee.

VIII. The appellant's arguments can be summarised as follows:

The requirements of Article 83 EPC are met since the constructional details of the emitter are given in the application so that the skilled person is able to manufacture the device. Contrary to the opinion of the Examining Division, the skilled person would also be

able to operate the emitter as described in the description. Just because the Examining Division did not understand how the emitter works does not mean that Article 83 EPC is violated.

Further, the first law of thermodynamics does not apply since the cooling process is not thermodynamic, but electro-thermal. In the present system electrical energy is input to the system and a cooling of the environment results in a similar energy conversion process to that of a fan.

Cooling by means of an impulsed electrical discharge is described in the article ""Nano-Lightning" Could Be Harnessed to Cool Future Computers", Purdue University, March 31, 2004 published in Science Daily (A1). Evidence that the device works is shown by the report made by Professor Saffa Riffat, University of Nottingham (A2).

Reasons for the Decision

1. *Sufficiency of Disclosure, Article 83 EPC*

1.1 The Board accepts that the skilled person may be able to construct some kind of a device as detailed in the application. However, the question is whether a "cooling" device with an "emitter" as claimed may be constructed since these expressions imply certain functional capabilities.

1.2 In this regard, the Board does not accept the appellant's assertion that the "the first law of

thermodynamics does not apply since the cooling process is not thermodynamic". A cooling process is necessarily thermodynamic and involves the transfer of heat during which the laws of thermodynamics must be respected.

1.3 The appellant's suggestion that electrical energy is input to the system and a cooling of the environment results in a similar energy conversion process to that of a fan is technically incorrect. The local cooling effect perceived by the user of a fan is the result of energy transfer, in accordance with the laws thermodynamics (in particular the second law), from the user's warm skin surface to the cooler room air being blown across it. There is no other "energy conversion" by the fan and if a closed system of a room and fan were considered, a slight increase in room temperature would be apparent due to the heat from the motor being dissipated into the room and rotor blade inefficiencies.

1.4 The application states that "a cooling effect is stimulated from the Zero Point Energy Field (ZPEF)" (see page 3, line 15 of the published application). Whilst the possibility of the existence of zero-point energy as a scientific concept is not disputed, the ability to harness it is. Although the Board accepts that scientific discoveries or advances might replace existing theories and lead to new inventions, it is of the opinion that the more that an alleged invention is in contradiction with accepted technical knowledge, the greater the demands of disclosure of technical information that are placed on the patent application in order to allow the average skilled person, who by definition only possesses conventional knowledge, to carry out the invention (see T1785/06). In the present

case it is not firmly established that a spark generator can create even local cooling. The "Nano-Lightning" article cited by the appellant is not relevant since it describes an air cooling effect at a micro scale using ionised air molecules which cause currents like those created by the "corona wind" phenomenon (see also US-A-3938345 (D1)) to provide a localised cooling effect. Thus, the application does not pass this test.

1.5 Further, there is no credible explanation in the application as to how an "emitter" comprising inner and outer thin-walled tubes could realistically transfer the alleged cooling effect to lower the temperature of a room or similar. A statement to the effect that "as a result of the fluctuating electro-static charge, the tubes produce a cooling effect that withdraws natural heat from the surrounding environment" (see page 10, lines 16 to 18 of the published application) is insufficient since there is no mention of how the necessary heat transfer by convection, conduction or radiation is provided. Thus, the implication is that some other unknown process is at work for which no explanation is given.

1.6 The report from Nottingham University (document A2) does little to dispel this view. The data it presents are slightly unusual in that, rather than providing a clear picture of the device's capability to cool a chamber below ambient temperature, a comparison is made of the cooling rates of a chamber initially above ambient temperature down to ambient temperature aided by one or two cooling devices apparently of the claimed type to the rate of cooling without the aid of any

devices. The data shown in figure 3/Appendix 1 indicate that after about the first ten minutes the rate of cooling is the same in all three cases and that there is no meaningful difference between having one or two coolers. Figure 4 shows a similar result, after about 660 minutes (11 hours) the temperature of the chamber has reached ambient with one or two coolers, whereas without coolers it apparently takes about an hour longer.

1.7 In conclusion, the application discloses a device whose alleged cooling function does not respect the accepted laws of thermodynamics. Thus, the requirements of Article 83 EPC are not met.

2. *Alleged substantial procedural error*

2.1 Further, it is the Board's opinion that the examining division did not commit any substantial procedural violation since all the reasons eventually given for the refusal were stated in the summons to the oral proceedings, to which the appellant replied in letter of 7 November 2011. Thus, even if the summons came as a surprise, the appellant had the opportunity to, and did, answer the new objections in writing. The appellant also had the further opportunity to be heard on the objections at oral proceedings but did not take it (see T1237/07). The request for remittal is therefore refused.

2.2 Since the appeal is to be dismissed the request for reimbursement of the appeal fee must in any event be refused.

Order

For these reasons it is decided that:

1. The request to remit the case to the Examining Division is refused.

2. The appeal is dismissed.

3. The request for Reimbursement of the appeal fee is refused.

The Registrar: The Chairman:

C. Spira U. Krause