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Aktenzeichen / Case Number / N<sup>o</sup> du recours : T 92/84

Anmeldenummer / Filing No / N<sup>o</sup> de la demande : 79 900 835.4

Veröffentlichungs-Nr. / Publication No / N<sup>o</sup> de la publication : WO 80/00282

Bezeichnung der Erfindung: Zero-Bias gridded gun  
Title of invention:  
Titre de l'invention :

Klassifikation / Classification / Classement : H01J29/46

**ENTSCHEIDUNG / DECISION**  
vom / of / du 5 March 1987

Anmelder / Applicant / Demandeur : Varian Associates, Inc.

Patentinhaber / Proprietor of the patent /  
Titulaire du brevet :

Einsprechender / Opponent / Opposant :

Stichwort / Headword / Référence :

EPÜ / EPC / CBE Article 84

Kennwort / Keyword / Mot clé : "Clarity of the claims (yes)" - "Support from the description and drawings (yes)"

Leitsatz / Headnote / Sommaire

Europäisches  
Patentamt  
Beschwerdekammern

European Patent  
Office  
Boards of Appeal

Office européen  
des brevets  
Chambres de recours



Case Number : T 92/84

**D E C I S I O N**  
of the Technical Board of Appeal 3.4.1.  
of 5 March 1987

**Appellant :** Varian Associates, Inc.  
611 Hansen Way  
Palo Alto, CA 94303 (US)

**Representative :** Cline, Roger Ledlie  
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**Decision under appeal :** Decision of Examining Division 047  
of the European Patent Office  
dated 28.10.1983 refusing European  
patent application No. 79 900 835.4  
pursuant to Article 97(1) EPC

**Composition of the Board :**

**Chairman :** E. Turrini  
**Member :** J. van Voorthuizen  
**Member :** P. Ford

## Summary of Facts and Submissions

- I. International patent application PCT/US79/00456 filed on 27 June 1979 (International publication number W080/00282) was refused by decision of the Examining Division 047 of the European Patent Office dated 28 October 1983. The invention relates to electron guns used in linear-beam microwave tubes.
- II. The decision under appeal was based both on Claims 1 to 6 as filed on 2 June 1981, and on an alternative form of Claim 1 in which the word "average", page 7, line 12 was deleted, as outlined in the appellant's letters dated 27 November 1981 and 15 June 1982.
- III. The reason given for the refusal was that Claim 1 was not clear, whether with or without the word "average", and therefore it did not meet the requirements of Article 84 of the EPC.
- IV. On 19 December 1983, an appeal was lodged against the decision. The Statements of Grounds and the appeal fee were received in due time.
- V. The appellant requested that the impugned decision be cancelled and the application be restored to enable further consideration with the object of securing the grant of a patent on the basis of the claims on which the refusal was based.

The appellant argued that the term "spacing" as used in the claims was not obscure, insofar as the skilled man knows the physics of the grid action and he is therefore in the position to determine the spacing of the grid elements,

even when the aperture is not a square. In the appellant's opinion the spacing would correspond to the diameter of the largest circle that could be inscribed within the grid aperture.

VI. Following a communication on behalf of the Board dated 30 October 1986, a letter from the appellant filed on 15 December 1986 and a telephone conversation held on 23 February 1986, the appellant has filed on 13 February 1987 a new set of claims.

VII. Current Claim 1 reads as follows:

"A gun for producing a linear beam of electrons, comprising:

a thermionic cathode (30) having a concave electron-emissive surface (31);

an electron-permeable control grid (40) of conductive elements forming web apertures of transverse dimension or dimensions  $a$ , said conductive elements being spaced a predetermined distance  $d$  from and covering said concave emissive surface (31) for modulating the current of said electron beam, and

insulating support means for said cathode and said grid, characterised by any transverse dimension  $a$  being at least five times the predetermined distance  $d$ , whereby useful electron current can be drawn from said emissive surface (31) when said grid (40) is at the potential of said cathode (30)".

Claims 2 to 5 are dependent on Claim 1.

### Reasons for the decision

1. The appeal complies with Articles 106 to 108 and Rule 64 EPC and is, therefore, admissible.
2. Clarity of Claim 1 (Article 84 EPC).
  - 2.1 The expression of Claim 1 "any transverse dimension a" is technically meaningful and unambiguous even for the general case of a grid aperture the geometrical configuration of which is not previously given. In the context of the claim the expression makes sense, insofar as the condition that any dimension a must be "at least five times the predetermined distance d" means that also the smallest transverse dimension is at least five times the distance d and is, therefore, a technically unequivocally defined condition.
  - 2.2 The dimension a is defined on page 5, lines 12 to 14 of the original description. The expression "transverse dimensions" (plural) clearly means that "any transverse dimension" is considered. The fact that also the term "apertures" is in the plural does not contradict the above-mentioned interpretation of the dimension a.
  - 2.3 Moreover, in Fig. 4 the transverse dimension a is shown at an undefined position extending radially of the grid aperture, as was stressed by the Examining Division in its decision. This supports the definition of the dimension a at page 5 of the description and therefore the definition of "a" as "any transverse dimension". It is true that a schematic figure (see page 4, line 28 of the description) cannot be considered as an exact representation of the object shown, so that dimensions obtained by means of measurements carried out on the figure cannot be regarded as part of the disclosure (Decision in case T 204/83, OJ EPO 1985, page 310, point 7).

However, in the opinion of the Board, even a schematic figure can be relied on to show that a dimension is to be interpreted as having a certain direction (in the specific case, circumferential) without being in a specific plane as in Figure 4 of the present application, unless the text of the description contradicts this. There is no such contradiction here.

2.4 The appellant proposed in the grounds of appeal to define the dimension a as "the diameter of the largest circle that can be inscribed within the aperture", supporting this definition with technical arguments. However, such a definition is not supported by the original description and a corresponding amendment of the application would contravene Article 123(2) EPC. Moreover, the Board considers that the definition of the dimension a at page 5 of the original description, which is considered technically meaningful and unambiguous, remains so even if the appellant proposed subsequently an alternative definition of the dimension a which is not compatible with the first, unless the alternative definition and its supporting technical arguments show the non-feasibility of the invention when applying the first definition. In the present case, they do not do so.

2.5 Thus Claim 1 in its present form appears to be clear and supported by the description and it does therefore not contravene Article 84 EPC. The same applies to Claims 2 to 5, as claims dependent from Claim 1.

**Order**

**For these reasons it is decided that**

1. The decision under appeal is set aside.
2. The case is remitted to the Examining Division for further prosecution on the basis of the following documents:
  1. Description: pages 1, 2 and 5 as originally filed;  
pages 3, 4 and 6 received on  
13 February 1987;  
page 4a received on 2 June 1981 with the  
following amendments:  
the sub-headings at lines 20 and 33 are  
deleted.
  2. Claims: 1 to 5 received on 13 February 1987.
  3. Drawings: Figures 1 to 5 as originally filed.

**The Registrar:**

**The Chairman:**

F.Klein

E.Turrini