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Aktenzeichen / Case Number / N° du recours : T 67/87 - 3.2.2
Anmeldenummer / Filing No / N° de la demande : 82 901 997.5
Veröffentlichungs-Nr. / Publication No / N° de la publication : WO 83/00187

Bezeichnung der Erfindung: Non-compression internal combustion engine.
Title of invention:
Titre de l'invention :

Klassifikation / Classification / Classement : F 02 B 41/00

ENTSCHEIDUNG / DECISION
vom / of / du 3 February 1989

Anmelder / Applicant / Demandeur : WIDÉN, Karl-Olof, Magnus

Patentinhaber / Proprietor of the patent /
Titulaire du brevet :

Einsprechender / Opponent / Opposant :

Stichwort / Headword / Référence : Three-stroke engine

EPÜ / EPC / CBE Art. 54 EPC.

Schlagwort / Keyword / Mot clé : "Novelty (denied)"

Leitsatz / Headnote / Sommaire

Europäisches
Patentamt

European Patent
Office

Office européen
des brevets

Beschwerdekammern

Boards of Appeal

Chambres de recours

Case Number : T 67/87 - 3.2.2



D E C I S I O N
of the Technical Board of Appeal 3.2.2
of 3 February 1989

Appellant : WIDÉN, karl-Olof, Magnus
Mailbox 2211, Stilleryds Sandvik
S-292 00 Karlshamn (SE)

Representative :

Decision under appeal : Decision of Examining Division 2-3.0.101 of the
European Patent Office dated 25 November 1986
refusing European patent application
No. 82 901 997.5 pursuant to Article 97(1) EPC

Composition of the Board :

Chairman : G. Szabo

Members : R. Gryc

P. Ford

Summary of Facts and Submissions

I. European patent application No. 82 901 997.5 filed on 30 June 1982 as an international application PCT/SE 82/00231 claiming priority from a national Swedish application of 1 July 1981 and published under the international publication number WO 83/00187 was refused by a decision of the Examining Division 101 dated 25 November 1986.

The decision was based on the single claim of the application as originally filed and published.

II. This single claim reads as follows:

Method of operating a three-stroke internal combustion engine having a cylinder (1), and a piston (2) reciprocable in said cylinder, said piston having a crank rod (3) pivoted to the piston, the opposite end of the crank rod being rotatably mounted to a crank shaft (4) to be rotated under the influence of the reciprocating movement of the piston, the operating cycle of the engine comprising a suction stroke, an expansion stroke and an exhaust stroke, characterized in that the suction stroke extends over a fraction only of the total stroke of the piston, an instant ignition of the fuel mixture sucked into the cylinder then being effected and the following expansion being effective during the remaining portion of the movement of the piston towards the lower end position thereof in the cylinder.

III. The reason for the refusal was a lack of novelty of the subject-matter of the claim in comparison with the "Lenoir" engine known since 1860 and described in the

following publications sent to the Appellant together with the first communication of the Examining Division:

- (1) BUSSIEN, Automobiltechnisches Handbuch, Technischer Verlag Herbert Cram, Berlin 1965, page 2.
- (2) Fachkunde Kraftfahrtechnik, Holland & Josenhans Verlag Stuttgart, 1978, page 9.

IV. The Appellant appealed against the decision of the Examining Division on 3 January 1987 and paid the appropriate fee on 13 January 1987.

The Statement of the Grounds of Appeal was submitted on 3 January 1987 and the single claim on which the decision is based was maintained unamended.

In his statement, the Appellant contested the arguments of the Examining Division concerning the novelty of the subject-matter of the claim and he made the following points:

- (i) The method according to the invention concerns an engine having three different long strokes and the Appellant's engine is not to be considered as a conventional two-stroke engine.
- (ii) By a "fraction of the stroke", should be understood "considerably less than a third and considerably less than the half of the stroke" and that distinguishes from the "Lenoir" engine in which the fuel mixture is sucked during the half of the stroke of the piston.

(iii) The principle of the method according to the invention lies in the exclusion of the compressive stroke.

- V. For these reasons, the Appellant requested that the impugned decision be set aside and a patent be granted on the basis of the content of the application as published.

In addition, a reduction of the fees for filing, examination and appeal was also requested in the Statement of Grounds of Appeal. The Appellant was notified by a communication of the Formalities Officer of Directorate General 2 dated 15 January 1987 that a reduction of the appeal fee would be allowed. The refund was duly made.

Reasons for the Decision

1. The appeal complies with Art. 106 to 108 of the EPC but the question whether it also complies with Rule 64(b) needs to be answered because the Notice of Appeal filed on 3 January 1987 did not explicitly identify the extent to which amendment or cancellation of the impugned decision is requested.

In fact, the content of the decision is purely the refusal of the sole version of the European patent application. The formulation:

"The undersigned may appeal to EPO's decision"

by the Appellant is therefore to be interpreted as meaning that the setting aside of the decision of its entirety and the grant of the patent with the documents at present on file are being sought (cf. Decision T 07/81 - OJ EPO

3/1983, 98). Hence the appeal fulfills also the requirements of Rule 64 EPC.

The appeal is therefore admissible.

2. According to common general knowledge, an engine the operating cycle of which comprises only two strokes of the pistons (in one direction and reverse) or is completed at the end of each revolution of the driving-shaft is designated as a "two-stroke engine".

Consequently, since the operating cycle of the internal combustion engine described in the refused application is completed at the end of each revolution of the crank shaft (4) (see page 1, line 35 to page 2, line 24), said engine must be considered to be a "two-stroke engine" and not a "three-stroke engine", as it is erroneously designated in the specification. Were the Board not satisfied that the Appellant's invention is not novel (see below point 5) it would be necessary to take the objection that the expression "three stroke internal combustion engine" in the claim is not clear and not supported by the disclosure as required by Art. 84 EPC.

3. As far as the interpretation to be given to the phrase:

"a fraction only of the total stroke"

is concerned, there is not the slightest hint in the application as filed that this expression may mean

"considerably less than the half of the stroke"

as is contended in the Statement of the Grounds of Appeal.

It does not even appear to be supported by Fig. 1 of the specification which is said to illustrate the suction "stroke" of the engine. The only indication which could possibly be deduced from the represented position of the crankshaft (4) is that the suction phase can be somewhat less than the half stroke, but there is no justification to conclude that it is necessarily less than that, let alone that it is "considerably" less than the same, as contended by the Appellant.

Since moreover, in the specification, a particular definition or a more precise indication relative to the suction part of the piston stroke is missing, only a general definition such as:

"An aliquot part or a definite portion of a unit" (see The Oxford English Dictionary)

can be given to the word "fraction".

4. Therefore, the subject-matter of the single claim of the application at present on file is to be interpreted as:

A method of operating a two-stroke internal combustion engine, the operating cycle of which is divided into only three periods or phases, a suction one, an expansion one and an exhaust one, without any compression phase, and the suction phase extending over only a definite portion of the going stroke of the piston while the expansion phase, resulting from the combustion of the fuel mixture extends over the remaining portion of said stroke.

5. Such a method of operating a combustion engine is already known since the invention of the ancestor of the internal combustion engines i.e. the "Lenoir engine" as described in ref (1) and (2) mentioned in paragraph III above. Such

engines have a suction phase which extends a fraction of the total stroke, i.e. half of the same (cf. (1) and (2)).

Consequently, the subject-matter of the claim of the application is not novel in the sense of Art. 54(1) and does not meet the requirements of Art. 52(1) of the EPC.

In view of Art. 97(1) of the EPC, the European patent application is therefore to be refused.

6. As far as the request for a reduction of the appeal fee is concerned, the Appellant has already been allowed a reduction according to Rule 6(3): cf. para. V above.

Application for reduction of other fees not having been made and refused before the appeal was filed, the Board of Appeal will not consider the remaining requests, which appear to be matters for consideration by the first instance.

Order

For these reasons, it is decided that:

The appeal is dismissed.

The Registrar:



S. Fabiani

00685

PF.

H. G. 21.02.89

The Chairman:



G. Szabo