

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 8 September 1998

Case Number: T 0963/96 - 3.2.1

Application Number: 88906877.1

Publication Number: 0328675

IPC: F16J 15/12, F02F 11/00, C09K 3/10

Language of the proceedings: EN

Title of invention:
Gasket for internal combustion engine

Patentee:
Nippon Carbon Co., Ltd.

Opponent:
Goetze Vermögensverwaltungs-GmbH

Headword:
-

Relevant legal provisions:
EPC Art. 56, 123(2)

Keyword:
"Added subject-matter (yes, main request)
"Inventive step (no, auxiliary request)"

Decisions cited:
T 0004/89, T 0433/86, T 170/87, T 0054790, T 0191/90, T 0762/90

Catchword:
-



Case Number: T 0963/96 - 3.2.1

D E C I S I O N
of the Technical Board of Appeal 3.2.1
of 8 September 1998

Appellant:
(Proprietor of the patent) Nippon Carbon Co., Ltd.
6-1, Hacchobori 2-chome
Chuo-Ku
Tokyo 104 (JP)

Representative:
Kraus, Walter, Dr.
Patentanwälte Kraus, Weisert & Partner
Thomas-Wimmer-Ring 15
80539 München (DE)

Respondent:
(Opponent) Goetze Vermögensverwaltungs-GmbH
Bürgermeister-Schmidt-Strasse 17
51399 Burscheid (DE)

Representative:
Drury, Peter Lawrence
T&N plc
Bowden House
Ashburton Road West
Trafford Park
Manchester M17 1RA (GB)

Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 20 September 1996
revoking European patent No. 0 328 675 pursuant
to Article 102(1) EPC.

Composition of the Board:

Chairman: F. Gumbel
Members: S. Crane
J.-C. Saisset

Summary of Facts and Submissions

- I. European patent No. 0 328 675 was granted on 18 March 1992 on the basis of European patent application No. 88 906 877.1.
- II. The granted patent was opposed by the present respondents on the grounds that its subject-matter lacked novelty and/or inventive step (Article 100(a) EPC).
- Amongst the prior art documents relied upon by the respondents was:
- (D4) US-A-4 234 638.
- III. With its decision posted on 20 September 1996 the Opposition Division revoked the patent in its entirety. The reasons given for the decision were that the subject-matter of claim 1 according to the main and second auxiliary requests then on file lacked inventive step with respect to document D4 and that claim 1 of the first auxiliary request contained added subject-matter and thus offended against Article 123(2) EPC.
- IV. An appeal against this decision was filed on 28 October 1996 and the fee for appeal paid at the same time.

The statement of grounds of appeal was filed on 30 December 1996. With this statement the appellants submitted sets of claims 1 to 6 according to new main and auxiliary requests for maintenance of the patent in amended form.

Claim 1 of the main request (which corresponds to claim 1 of the first auxiliary request considered by the Opposition Division) reads as follows:

"A process for the production of a gasket for use in internal combustion engines, which comprises expanded graphite, a sheet-like core and a binder, characterized in that a coating material comprising from 20 to 60% by weight of expanded graphite having a specific volume of from 10 to 300 cc/g and from 40 to 80% by weight of a binder is applied in a thickness of 10 to 300 μm on one or both surfaces of said core by coating, printing, dipping or spraying, followed by curing the applied coating material without applying pressure."

Claim 1 of the auxiliary request reads as follows:

"A process for the production of a gasket for use in internal combustion engines, which comprises expanded graphite, a sheet-like core and a binder, characterized in that a coating material comprising from 20 to 60% by weight of expanded graphite having a specific volume of from 10 to 300 cc/g and from 40 to 80% by weight of a binder is applied in a thickness of 10 to 300 μm on one or both surfaces of said core by printing, dipping or spraying, followed by curing the applied coating material."

Dependent claims 2 to 6, which are the same in both requests, relate to preferred embodiments of the process according to the respective claim 1.

The arguments put forward by the appellants (proprietors of the patent) in support of these requests can be summarised as follows:

The Opposition Division had objected under Article 123(2) EPC against the requirement added to claim 1 of the main request that the coating material was cured "without applying pressure". This objection was unfounded since it was in fact implicit in the original application that the curing of the coating

material was performed in this way. In the alternative the added requirement should be seen as a disclaimer of the other of the two possibilities originally implicitly disclosed, i.e. curing with pressure. The admissibility of disclaimers of this type had been endorsed by the case law of the Boards of Appeal, in particular T 4/80 (OJ EPO 1982, 149) and T 433/86 (not published in OJ EPO).

The subject-matter of claim 1 of the main request was inventively distinguished from document D4 since the latter was directed to the production of a gasket by compression moulding of a thick layer of expanded graphite onto a core. The thickness of this layer far exceeded the 10 to 300 μm specified in the claim so that it was inappropriate to consider this layer as a "coating" at all in the normal sense. Furthermore, the coating material of the invention contained 20 to 60% by weight expanded graphite and 40 to 80% by weight of a binder whereas the material of document D4 comprised 50 to 99.9% by weight of expanded graphite and 0.1 to 50% of binder. This meant that the strength of expanded graphite/binder layer of the invention was enhanced in comparison with that used in document D4, where to compensate for its weakness the layer had to be reinforced by metal cores having particular configurations. There was nothing in the state of the art which could have led the skilled person to believe that he could manufacture a gasket with improved properties simply by applying an appropriate expanded graphite containing composition onto a sheet-like core by coating, printing, dipping or spraying it and then curing without applying pressure.

Although claim 1 according to the auxiliary request no longer contained the explicit requirement that curing was performed without the application of pressure it was nevertheless implicit from a reading of the whole

patent specification that this was the case, so the arguments put forward with respect to the inventive step of claim 1 of the main request still applied. Furthermore, the reference to the general term "coating" as a method of applying expanded graphite/binder composition to the core had been deleted, leaving only the more specific terms "printing, dipping or spraying". None of these possibilities was envisaged in document D4. In particular, the reference in the latter to "insertion" of the core into the expanded graphite/binder composition could not be equated to "dipping" as argued by the Opposition Division, since "dipping" required the expanded graphite to be in solution which would be incompatible with the compression moulding taught by document D4.

V. In a counterstatement filed on 24 April 1997 the respondent argued substantially as follows:

The finding in the contested decision with respect to added subject-matter in claim 1 of the present main request was wholly correct. The original application contained neither explicit, nor implicit disclosure of the added requirement that curing of the coating material was performed without applying pressure. Contrary to the opinion of the appellants there were no parallels between this amendment and the type of disclaiming amendment allowed in other cases.

It was apparent that the appellants were trying to draw an inventive distinction over the disclosure of document D4 by saying that they cured without applying pressure. In the first place it was not even clear that the curing of the coating material in document D4 took place under pressure since the compression moulding referred to there was not a curing step. Furthermore it was not clear what technical advantage not using

pressure was supposed to bring. The appellants had also tried to rely on there being a significant difference in thickness of the layer of coating material between the claimed invention and what was disclosed in document D4. But this was not the case. In fact even the maximum layer thickness envisaged in document D4 fell within the range claimed.

It was in no way clear what inventively significant advantage the appellants saw in the three specific coating methods "printing, dipping or spraying", retained in claim 1 of the auxiliary request, in comparison with any other coating method. In any case, as established by the Opposition Division, the "insertion" step mentioned in document D4 had to be understood as meaning "dipping" in the circumstances.

They therefore requested that the appeal be dismissed.

- VI. In accordance with an auxiliary request of the appellant the Board issued on 12 January 1998 a summons to oral proceedings to be held on 14 July 1998.

In a communication accompanying the summons pursuant to Article 11(2) RPBA the Board indicated its preliminary opinion that claim 1 of the main request contained added subject-matter. It further pointed out that the thickness of the coatings in several of the embodiments disclosed in document D4 lay within the range claimed in the auxiliary request.

- VII. With a letter dated 1 July 1998 the appellants informed the Board that they would not be attending the oral proceedings and requested a written decision upon the file. On 7 July 1998 the Board informed the parties that it had cancelled the oral proceedings.

Reasons for the Decision

1. The appeal complies with the formal requirements of Articles 106 to 108 and Rules 1(1) and 64 EPC. It is therefore admissible.
2. *Main request*

Claim 1 of the main request is now directed to a "process for the production of a gasket" whereas granted claim was directed to a "gasket" *per se*. Taking into account the case law of the Boards of Appeal on this type of change of claim category (see, for example, T 54/90, T 191/90 and T 762/90, not published in OJ EPO) together with the fact that feature of granted dependent claim 7, which has been incorporated in claim 1 of the main request, is in any case a process feature, the Board sees no objection in principle to this amendment. The respondents have also made no objection in this respect.

However, claim 1 of the main request has also had added to it the requirement that the coating material is cured "without applying pressure". Although the appellants concede that there is no explicit basis of this amendment in the original application, they argue that it is implicit that no pressure is applied on curing. It is however unclear to the Board from where the appellants wish to derive that implicit disclosure. The only references to curing the coating material are in paragraph 3, page 7; paragraph 3, page 8 and claim 7 of the original application. In none of these instances is any clue given as to the conditions under which curing is performed. It follows from this that the

original application did not disclose as a matter of substance that the coating material was cured "without applying pressure" so that the addition of this requirement to claim 1 of the main request offends against Article 123(2) EPC.

The attempts of the appellants to show that the amendment in question can be equated to an allowable "disclaimer" are misplaced. What a genuine disclaimer does is remove part of what was originally disclosed from the ambit of a claim; in the present case, however, the purpose of the amendment is to generate a new distinction over the prior art with the intention of basing an argument in support of inventive step on this distinction. This is foreign to the allowed purpose of a disclaimer (see T 170/87, OJ EPO 1989, 441).

Having regard to the above the main request must be rejected.

3. *Auxiliary request*

3.1 In claim 1 according to the auxiliary request the requirement that curing of the coating material be without applying pressure" has been dropped. In addition only three of the possibilities of applying the coating material, namely by "printing, dipping or spraying" have been retained. Having regard in particular to what is said above about the allowability in principle of the change of category of claim in the present case, claim 1 of the auxiliary request meets the requirements of Articles 123(2) and (3) EPC.

3.2 Document D4, which is mentioned in the introductory description of the patent specification relates to a composite sheet material for use in particular in the

making of gaskets. The material comprises expanded graphite bonded to a core in the form of a metallic sheet. The metallic sheet may be a wire net (Figures 1 to 3), a flat sheet (Figure 4) or a corrugated sheet (Figure 5). More preferably however, the sheet is formed with "hooks" and perforations prepared by cutting through the sheet and bending the cut portions upwards or downwards (Figures 6 to 13). With respect to the wire nets it is stated at lines 65 and 66, column 4 that the preferred wire diameter size is 0.01 to 10.5 mm. (In the context the second figure is presumably a clerical or printer's error.) In column 6, lines 30 to 43 the wire diameters used according to the examples range from 0.11 to 0.30 mm. According to Table 1 the total thickness of the composite sheets comprising wire mesh cores of various wire diameter ranges from 0.30 to 0.65 mm (i.e. 300 to 650 μ m). With respect to the hooked metal sheets it is stated in column 5, lines 3 to 15, that they are preferably 0.01 to 1 mm, more preferably 0.05 to 0.5 mm thick and that the hooks are preferably 0.1 to 2 mm high.

The expanded graphite is prepared by a process described at column 1, line 54 to column 2, line 5 and which is substantially identical to that described in the present patent specification at page 3, lines 1 to 12. The process variables are chosen to give an expansion of 10 to 300 times which as stated in the patent specification leads to an expanded graphite with a specific volume of 10 to 300 cc/g. The expanded graphite is mixed with an inorganic or synthetic resin binder such as oxidized graphite (3 to 40 wt% used) or a fluorine resin (1 to 50% used), see column 2, lines 23 to 27.

The composite sheet material may be formed by inserting the sheet-like metallic core into the mixture of expanded graphite and binder and compression moulding

the whole at ambient or elevated temperatures, or alternatively by preforming sheets of the expanded graphite and binder and then compression moulding these sheets with the metallic core sandwiched inbetween, see column 5, lines 15 to 40. The curing conditions for the binder depend on its nature and the amount used, see for example column 3, lines 45 to 59. The metallic core and the expanded graphite/binder should be contained in a ratio of from 1:99 to 50:50 in the composite sheet, see column 6, lines 8 to 12.

It is apparent from the above that even if, which was the position adopted by the Opposition Division, it was not possible to identify in document D4 an individually particularised embodiment of gasket which exhibited all of the structural features set out in claim 1, then nevertheless the teachings of the document clearly embrace the production of such gaskets. In particular, there is no support for the contentions of the appellants that the layers of expanded graphite/binder material taught by document D4 are significantly thicker than the maximum of 300 µm allowed by the claim, cf. for example the total thicknesses (core with two expanded graphite layers) given in Table 1, and that these layers are not applied to the core by coating in the general sense of that term. However, it is true that the coating methods mentioned in document D4 are not clearly equatable to any one of the three methods "printing, dipping or spraying" specified in claim 1 so that at least to this extent the subject-matter of the claim is novel. On the other hand these three methods are all well-known coating methods freely available to the person skilled in the art and the appellants have not sought to demonstrate that the use of them solves any particular technical problem or results in an advantageous product. The choice of one of these methods does not therefore involve an inventive step (Article 56 EPC).

Order

For these reasons it is decided that:

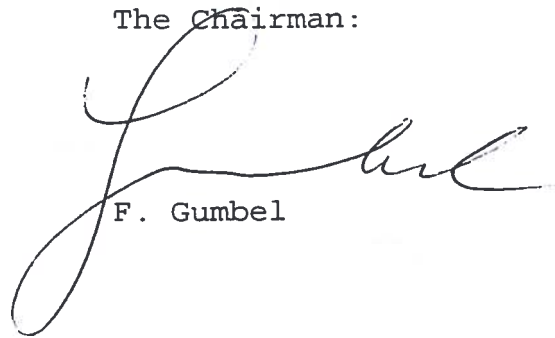
The appeal is dismissed.

The Registrar.



S. Fabiani

The Chairman:



F. Gumbel