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File Number: T 118/91 - 3.2.1

Application No.: 84 902 615.8

Publication No.: 0 145 781

Title of invention: Means for sealing the gap between two axially displaceable sealing surfaces and method for manufacturing the same

Classification: F16L 21/02

DECISION
of 28 July 1992

Proprietor of the patent: Forsheda AB

Opponent: WOCO Franz-Josef Wolf & Co.

Headword:

EPC Articles 56 and 123(2)

Keyword: "Addition of subject-matter (no) - Subject-matter of divisional application to be deemed as abandoned in parent application (no) - Inventive step (yes)"



Case Number : T 118/91 - 3.2.1

D E C I S I O N
of the Technical Board of Appeal 3.2.1
of 28 July 1992

Appellant : Forsheda AB
(Proprietor of the patent) S-330 12 Forsheda (SE)

Representative : Linde, Leif
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Respondent : WOCO Franz-Josef Wolf & Co.
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Representative : Jaeger, Klaus, Dipl.-Chem. Dr.
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Decision under appeal : Decision of Opposition Division of the European
Patent Office dated 24 October 1990, posted on
3 December 1990, revoking European patent
No. 0 145 781 pursuant to Article 102(1) EPC.

Composition of the Board :

Chairman : F. Gumbel
Members : S. Crane
W.M. Schar

Summary of Facts and Submissions

- I. European patent No. 0 145 781 was granted on 23 September 1987 on the basis of European patent application No. 84 902 615.8.
- II. The patent was opposed by the Respondents on the grounds that its subject-matter lacked novelty and/or inventive step with respect to the state of the art (Article 100(a) EPC) and that it contained subject-matter extending beyond the content of the application as filed (Article 100(c) EPC).

The following documents belonging to the state of the art were referred to in the course of the opposition proceedings:

- (D1) DE-C-1 055 460
- (D2) FR-A-2 347 601
- (D3) US-A-4 299 399
- (D5) DE-B-1 675 378
- (D6) DE-A-1 609 088
- (D7) JP-A-493 884.

- III. By its decision taken at oral proceedings on 24 October 1990 and issued in written form on 3 December 1990 the Opposition Division revoked the patent.

The reason given in the decision was that the subject-matter of granted Claim 1 lacked inventive step with respect to document D1 and the common general knowledge of the man skilled in the art.

- IV. The Appellants (Proprietors of the patent) filed an appeal against this decision on 1 February 1991 and paid the

appeal fee on the same day. The Statement of Grounds of Appeal was received on 3 April 1991.

V. In a communication of the Board dated 27 March 1992 pursuant to Article 11(2) RPBA it was indicated inter alia that the documents D5 to D7, which had been submitted but not otherwise relied upon at the oral proceedings before the Opposition Division, were less relevant than the other state of the art in the proceedings and would accordingly be disregarded by the Board under the discretion given it by Article 114(2) EPC.

VI. Oral proceedings were held on 28 July 1992.

At the oral proceedings the Appellants submitted a new set of Claims 1 to 5 and an amended description on the basis of which together with the drawings as granted the maintenance of the patent in amended form was requested.

Claim 1 reads as follows:

"A gasket for sealing the gap between two approximately parallel sealing surfaces, which during assembly are displaced axially relative to each other, such that the gasket follows one sealing surface and is compressed between the said one sealing surface and the other sealing surface, the gasket having a body made of a soft elastic material and comprising an annular sliding part (2) and an annular attachment part (1), the said parts (1, 2) being connected together by a connection part (3), the attachment part (1) extending substantially axially, and the sliding part (2) having a point of attack (A) at the front end of the gasket and being so inclined relative to the attachment part (1) that the edge of the sliding part (2) with the point of attack (A) is nearer to the

attachment part (1) than is the remainder of the sliding part (2), characterized in that in cross-section, the gasket body has a Z-type general configuration with the connection part (3) extending obliquely from the point of attack (A) of the sliding part (2) to a supporting surface (7) on an axially opposite edge of the attachment part (1) at an angle of 45° or less in relation to the axially extending attachment part."

Dependent Claims 2 to 5 relate to preferred features of the gasket according to Claim 1.

The Respondents requested that the appeal be dismissed.

VII. The arguments presented by the Appellants in support of their request can be summarised as follows:

The deletion during examination proceedings of the feature contained in original Claim 1 that the connection part was "narrower" than the attachment and sliding parts did not offend against Article 123(2) EPC since there was a clear basis in the original disclosure for the amendment.

The basis for the restriction added to present Claim 1 that the connection part extends at an angle of "45° or less" in relation to the axially extending attachment part was to be found at column 3, lines 1 to 6 of the patent specification, particularly when read in conjunction with the Figure to which it refers.

The objection under Article 100(c) EPC based on the filing of a divisional application was not fully understood. It was perfectly normal that the manufacture of a specific embodiment disclosed in the original application could potentially infringe the claims of both the parent and

divisional patents. This did not constitute "double patenting" in its normal sense, which was that claims in both the parent and divisional had substantially identical scope. This was clearly not the case here.

The only suggestion in document D1 that the connection part might extend somewhat obliquely was in the drawings. No mention was made of this in the description and certainly no indication that an obliquely extending connection part could be in some way advantageous. Accordingly the skilled man would have no incentive to move from the essentially I-form of gasket disclosed towards the Z-form claimed. Instead, if he wished to improve the capability of the gasket to cope with varying widths of gap to be sealed, he would, according to the teachings of document D1, be led to reducing the axial extent of the connection part further. This would however detract from the ability of the gasket to avoid displacement during assembly of the surfaces to be sealed. With the Z-form of gasket claimed however both resistance to tilting and adaptability to different gaps were achieved at the same time. If, as the Respondents contended, the Z-form could be derived in an obvious manner from document D1 it was surprising that in the more than 20 years lying between its publication date and the application date of the contested patent no-one had come up with it, especially as the field concerned was very active.

VIII. The arguments of the Respondents in reply were essentially as follows:

It was clear from the originally filed application, in particular page 3, paragraph 4, that the feature of the connection part being narrower than the attachment and sliding parts was essential to the operation of the

gasket. The deletion of this feature from the independent claim therefore constituted an addition of subject-matter since the original application contained no suggestion of a gasket otherwise constructed.

The passage referred to by the Appellants as providing support for the feature added to Claim 1 of the connection part extending at an angle of 45° or less with respect to the attachment part said nothing of the sort. Instead, the angle referred to there was that between the connection part and the sliding part.

Through the filing of a divisional application (published as EP-A-0 212 763) directed to the provision of a closed sliding jacket on the sliding part this subject-matter had been abandoned in the parent application and accordingly could no longer be considered as belonging to the original disclosure of that application. Present dependent Claim 4, which related to the provision of such a closed sliding jacket therefore constituted an addition of subject-matter to the original disclosure. This interpretation of the effects of filing a divisional application had to be correct since if it were not then double patenting of the relevant subject-matter would have been achieved, which was very detrimental to the legitimate interests of competitors. In deciding what had been abandoned from the parent application it was the content of the divisional application as filed that was decisive and not the claims as granted. If the Board could not agree with the Respondents on this important matter then it should be referred to the Enlarged Board of Appeal.

Notwithstanding the above present Claim 4 had in any case no proper basis in the original disclosure since the statement that the closed sliding jacket "is attached to the sliding part adjacent the point of attack" was an

unallowable intermediate generalisation of the original specific disclosure which was that one end of the jacket was attached to the front side of the gasket body and the other end of the jacket was attached to the point of attack of the gasket body.

It was clear from the drawings of document D1 that the connection part of the gasket extended obliquely between the attachment and sliding parts so that the argument of the Appellants that this known gasket had an I-form was incorrect. The Appellants contended that arranging the connection part at an angle of 45° or less to the axis of the gasket solved the problem of reducing the tendency of the gasket to displace on attachment while at the same time increasing the capacity of the gasket to adapt to different widths of gaps to be sealed. There was however no support for this in the original disclosure and furthermore it was not clear that there was in fact any improvement achieved over the gasket shown in document D1. This was because firstly a line drawn from the point of attack to the rear edge of the attachment part in the known gasket stayed within the boundaries of the connection part so that the forces applied during assembly would not displace the gasket and, secondly, because the connection part of the gasket claimed would also be under compression on reduction of the gap width in the same way as the connection part of the gasket of the prior art. The arrangement of the connection part at an angle of 45° or less therefore had no technical effect and had to be seen as a simple alternative lying within the normal design freedom of the skilled man.

The argument of the Appellants that no document showing a gasket with a Z-form had been produced was irrelevant since the question was one of inventive step and not novelty. It was impossible to imagine a disclosure that

came closer to the claimed invention than document D1 without being a full novelty-destroying citation.

Reasons for the Decision

1. The appeal complies with the requirements of Articles 106 to 108 and Rules 1(1) and 64 EPC. It is, therefore, admissible.
2. Allowability of the amended documents
 - 2.1 It is apparent from a consideration of the originally filed drawings that in the embodiments of gasket shown the attachment, sliding and connection parts are of varying thickness and that a portion of the connection part has greater thickness than portions of the other parts. The deletion of the feature from the original Claim 1 that the connection part is "narrower" than the other parts is therefore to be seen as a clarifying amendment to remove this inconsistency and is not objectionable, cf. Decision T 66/85, OJ EPO 1989, 167. The statement in paragraph 4, page 3 of the original description referred to by the Respondents is somewhat unclear and cannot be understood as meaning that the feature deleted from the original Claim 1 was essential for the functioning of the gasket.
 - 2.2 Present Claim 1 contains all the features of granted Claim 1 with the restriction that the connection part extends at an angle of 45° or less to the axially extending attachment part.

The basis for this amendment is to be found in paragraph 2, page 3 of the original description which states that the connection part is attached to the sliding part at the front edge of the gasket, in the proximity of

the point of attack A, and extends therefrom obliquely downwards towards the inner surface of the attachment part under an angle of 45° or less. The interpretation given to this passage by the Respondents that the angle referred to is that between the connection part and the sliding part would be wholly inconsistent with the drawings of the original application, from which it is apparent that the latter angle is of the order of 90° or more, and is therefore excluded.

There are therefore no objections to present Claim 1 under Articles 123(2) and (3) EPC.

- 2.3 Present dependent Claims 2 and 3 correspond in essence to original Claims 2 and 4. Present dependent Claim 5 relates to the embodiment of Figures 1 to 4 in which the attachment part lies radially within the sliding part.
- 2.4 The Respondents have raised two objections to present dependent Claim 4.
 - 2.4.1 The first of these is based on the fact that during examination proceedings a divisional application was filed which included a main claim directed to a gasket having a Z-form essentially as defined in present Claim 1 equipped with a closed sliding jacket. This claim therefore had similar but not identical scope to present Claim 4 which therefore, according to the Respondents, had no place in the contested patent.

The substantive provisions relating to the filing of a divisional application are contained in Article 76 EPC. Neither this Article nor any other Article of the EPC give any support to the contention of the Respondents that the subject-matter of the divisional application should be considered as having been abandoned from the original

application. The "content of the application as filed" referred to in Articles 100(c) and 123(2) EPC is the totality of information given to the skilled person by the original application and cannot, as a matter of logic, be reduced by the subsequent filing of a divisional application, whatever the content thereof might be. The argument of the Respondents that present Claim 4 effectively constitutes an addition of subject-matter to the original disclosure once that had been notionally restricted in this way, must accordingly fail.

Equally, the Board can find no support for the contention that features forming part of the subject-matter of the divisional application cannot be the subject of a dependent claim in the parent application. This question is dealt with in Guidelines at C-VI,9.6 where it is indicated that one application may generally claim its own subject-matter in combination with that of the other application. The Board can find no fault with that approach and cannot see that it imposes an unfair burden on competitors or leads to "double patenting" as this is normally understood, see the above passage of the Guidelines. In the present case the Board has satisfied itself that any danger of "double patenting" in its true sense has been eliminated by extensive restriction of the claims of the divisional application.

The Board therefore sees no objection in principle to the retention of present Claim 4, either under Article 100(c) EPC, as contended by the Respondents, or any other Article of the EPC.

A referral of this matter to the Enlarged Board of Appeal, as suggested by the Respondents, would be unjustified since the above considerations can be derived unambiguously from the EPC.

- 2.4.2 The second objection to present Claim 4, that it represents an inadmissible intermediate generalisation with respect to the original disclosure, is also without proper foundation since the terms of present Claim 4 relating to the attachment of the sliding jacket are in essence equivalent to those to be found in original Claim 7 when dependent on original Claim 6.
- 2.5 The amendments made to the description are restricted to those necessary to bring this into line with the new claims and to take account of the most relevant state of the art, as disclosed in document D1.
- 2.6 In summary there are accordingly no formal objections to the amended documents according to the request of the Appellants.

3. State of the art

The Board and both parties share the opinion that document D1, on which the preamble of Claim 1 is based, is the most relevant state of the art.

The annular gasket described in this document comprises a body portion with two tapered legs extending rearwardly therefrom, the outer leg substantially axially and the inner leg at an angle of about 35° thereto. The outer and inner legs correspond respectively to the attachment and sliding parts in the terms of present Claim 1.

In the front face of the body there is provided an annular groove so that there remains a connection part of reduced axial extent at this point in order to facilitate radial compression of the gasket between the surfaces to be sealed and to allow for compensation of differences in the

width of the gap between these surfaces. Due to provision of the annular groove the gasket has a substantially I-shaped cross-section. As shown in the drawings the connection part extends somewhat obliquely in a forwards direction with respect to the outer leg or attachment part.

Documents D2 and D3 are less relevant than document D1 and have not been referred to in the appeal proceedings.

4. Novelty

The gasket according to present Claim 1 is distinguished from the prior art gasket shown in document D1 by the features defined in the characterising clause of the claim.

As the novelty of the claimed gasket was no longer in dispute in the appeal proceedings further elucidations on this point are unnecessary.

5. Inventive step

According to the characterising clause of present Claim 1 the gasket has a generally Z-shaped configuration in cross-section with the connection part extending obliquely from the point of attack of the sliding part to a supporting surface on an axially opposite edge of the attachment part at an angle of 45° or less in relation to the attachment part.

The Board is satisfied that this arrangement of the connection part leads to a reduction in the tendency of the gasket to become displaced as the surfaces between which the gasket is to be disposed are moved parallel to each other on assembly. This results from the fact that

the force acting on the sliding part at the point of attack is transferred directly through the connection part to the support surface at the rear end of the attachment part, which support surface in use bears against a shoulder or the like on one of the surfaces to be sealed.

Furthermore, it is evident that the Z-form of the gasket claimed will allow ready adaptation of its radial height concertina fashion, without an unacceptable increase in the sealing pressure, if the gap between the surfaces to be sealed is narrower than expected.

Contrary to the assertions of the Respondents both of the above aspects are clearly referred to in the original disclosure, cf. page 2, paragraph 1; page 3, paragraphs 2, 4 and 5; and page 4, paragraph 1.

In document D1 the problem of adaptation of the gasket height to compensate for tolerance differences is also addressed. The solution proposed there is to reduce the axial extent of the connection part between the attachment and sliding parts so that it may be more readily radially compressed. As shown in the Figures of document D1 the connection part extends somewhat obliquely with respect to the attachment part. There is however no mention of this in the description nor any suggestion that this might in some way contribute to the solution of the technical problem addressed. Furthermore, there is no indication in document D1 that an oblique arrangement of the connection part in some way improves the resistance of the gasket to displacement on assembly of the joint. Instead, in the embodiments of Figures 4 to 6, measures are proposed to deal with this problem which consist of providing an outwardly extending radial flange on the attachment part of the gasket for engaging the end face of the socket in which the gasket is disposed. In these circumstances the

Board cannot recognise that the skilled man would have any incentive to reduce the angle between the connection and attachment parts to 45° or less and move from the substantially I-form of the prior art gasket to the Z-form defined in present Claim 1.

The Board cannot accept that the above approach to evaluation of inventive step is, as contended by the Respondents, tantamount to reducing this to an examination for novelty. For a finding of obviousness it would be necessary to show not that the skilled man could have adopted the Z-form claimed but that he would have been led to do so in the expectation of some improvement or advantage, cf. Decision T 2/83, OJ EPO 1984, 265. For the reasons given above this is however not the case.

Accordingly, the Board comes to the conclusion that the subject-matter of present Claim 1 cannot be derived in an obvious manner from the state of the art and therefore involves an inventive step as required by Articles 52(1) and 56 EPC.

This claim, together with its dependent Claims 2 to 5 relating to preferred embodiments of the gasket according to Claim 1 and the amended description can therefore form the basis for maintenance of the patent in amended form.

Order

For these reasons, it is decided that:

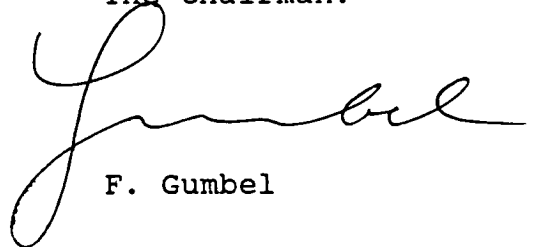
1. The contested decision is set aside.
2. The case is remitted to the first instance with the order to maintain the patent on the basis of the claims and description as submitted at the oral proceedings and the drawings as granted.

The Registrar:



S. Fabiani

The Chairman:



F. Gumbel