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File Number: T 58/91 - 3.2.1

Application No.: 84 301 244.4

Publication No.: 0 117 747

Title of invention: Sealing strip

Classification: B60R13/06

DECISION
of 22 January 1992

Proprietor of the patent: GENCORP INC.

Opponent: Gebr. Happich GmbH

Headword: Sealing strip/GENCORP

EPC Articles 56, 83

Keyword: "Introduction into claim of a feature disclosed solely in drawings"
"feature recognised as forming part of the invention defined in the patent application as filed"
"sufficiency of disclosure (yes)"

Headnote



Case Number : T 58/91 - 3.2.1

D E C I S I O N
of the Technical Board of Appeal 3.2.1
of 22 January 1992

Appellant :
(Opponent)

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Respondent :
(Proprietor of the patent)

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Decision under appeal :

Interlocutory decision posted on 26 November 1990
concerning maintenance of European patent
No. 0 117 747 in amended form.

Composition of the Board :

Chairman : F. Gumbel
Members : M. Ceyte
J.-C De Preter

Summary of Facts and Submissions

- I. The Respondent is the Proprietor of the European patent No. 117 747 which was granted on 19 October 1988.
- II. The patent was opposed by the Appellant on the ground that its subject-matter is not patentable. In support of his request, he submitted inter-alia the following prior art documents:
- D3: FR-A-2 330 845
D6: JP-U-55 652 09
D8: DE-A-2 558 818
D12: DE-A-2 649 423 (which corresponds to Document D3)
- III. By its interlocutory decision posted on 26 November 1990, the Opposition Division maintained the patent in amended form on the basis of the documents specified therein.
- IV. The Appellant filed an appeal against this decision on 17 January 1991 and paid the appeal fee in due time. The Statement of Grounds of Appeal was filed on 1 February 1991.
- V. In a communication issued together with the summons to oral proceedings the Board took the preliminary view that the subject-matter of Claim 1 as amended in the opposition proceedings did not appear to involve an inventive step. At the oral proceedings held on 22 January 1992, the parties defended their cases, whereby documents D6, D8 and D12 were dealt with in detail.

The Respondent requested that the appeal be dismissed and that the patent be maintained on the basis of the following documents:

Main request: The patent in amended form as specified in the decision under appeal

Auxiliary request: The claim and the description as filed during oral proceedings held on 22 January 1992. Figures 1 and 2 as granted.

The Appellant requested revocation of the patent in its entirety.

VI. The Appellant's arguments set forth in his written and oral statements can be summarised as follows:

(a) According to column 2, lines 21 to 31 of the patent in suit, the problem addressed by the invention is to provide a polymeric strip to be mounted on a flange adjacent a vehicle door opening which not only has improved moisture-inhibiting sealing engagement with the flange, so that a separately applied mastic bead will not be required, but will also grip the strip securely to the flange.

From the embodiment according to Figure 3 of Document D6, a skilled person would easily have appreciated that the construction shown solved such a problem. Since all the features of the Claim 1 according to the main request which were originally disclosed as essential are known from this Figure 3 embodiment, the subject-matter of Claim 1 lacks novelty.

(b) It is true that the feature newly added to Claim 1 (main request), that each of the sealing member parts are solid against the channel legs is not shown by the

Figure 3 of Document D6. However, such a feature is disclosed only in the original drawings of the patent application and was not, therefore, originally disclosed as forming part of the invention.

This would constitute an infringement of Article 83 EPC which requires a sufficiently clear and complete disclosure of the invention in the patent application, that is to say of the features which could be recognised by a skilled person as forming part of the invention. The above feature only shown in the drawings cannot be clearly recognised as forming part of the invention defined in the original patent application and thus cannot be introduced into Claim 1.

- (c) Having regard to the issue of inventive step, the problem underlying the patent in suit has already been solved by the Figure 3 embodiment of Document D6. Since the Respondent had not demonstrated any superior effect of the claimed sealing strip, the problem to be solved by the patent in suit can only be seen in proposing a further solution to this problem.

Any skilled person would be aware that sealing member parts in sealing strips can be made either solid or hollow. Hence, the subject-matter of Claim 1 of the patent in suit merely involves a modification of the embodiment shown in Figure 6 of Document D6 which achieves no technical advantage over the known sealing strip and which would therefore lie within the capability of a skilled person.

Furthermore, the sealing strip according to Document D8 is equipped with two sealing parts at the base of the channel, which are made solid. It would

have been obvious for the skilled person to provide the separate parts of the sealing member known from the Figure 3 embodiment of Document D6 with a solid cross-section as taught by Document D8 and thus to arrive at the subject-matter claimed in Claim 1.

The additional feature claimed in Claim 1 of the auxiliary request is that the gripping ribs are partly of a relatively hard polymeric material and partly of a relatively soft polymeric material. Such a feature is not apt to impart inventiveness to the claimed subject-matter, since it is clearly known from the figures of Document D3 (or D12).

VII. In support of his request that the appeal be dismissed the Respondent put forward the following arguments:

- (a) The description of Document D6 contains no suggestion that the sealing member portions 40a,b of Figure 3 be made solid against the side legs of the channel. That feature is clearly present in Claim 1 of the contested patent. Therefore the subject-matter of the claim is novel.
- (b) The distinguishing feature that the sealing portions are made solid, is not mentioned in the description or existing claims of the granted patent. However, it is clearly shown in all the Figures of the drawings and its inclusion in the claim is allowable in view of the criteria set out in the Decision T 169/83 OJ 1985, 193.
- (c) Claim 1 (main request) is inventive over Figure 3 of Document D6, because the only feature of Figure 3 said to be of significance is the voids provided behind the sealing member parts 40a,b. Therefore, it would not

have been obvious to modify the Figure 3 embodiment by replacing this technically significant feature by a solid configuration.

It would further not have been obvious to combine the slot shown in Figure 3 of Document D6 with any of the other disclosures, because the text of Document D6 gives no technical significance to this slot. Furthermore, it is clear from Document D6 (and from the other documents) that the skilled person at this time had not appreciated the technical advantage of such a slot. That advantage was firstly appreciated by the present inventors.

In addition, the construction of claim 1 provides a technical advantage over the construction of Figure 3 in Document D6. The use of solid sealing parts at the channel base, rather than hollow ones, gives a stronger lateral engagement and therefore better sealing against the end part of the flange. The greater lateral compression (cf. column 4 lines 18-23 of the patent in suit) resists any tendency for the strip to be pushed off.

- (d) Document D3 (or D12) discloses a sealing strip with an asymmetrical structure. One leg is equipped with only one large gripping rib coated with a soft rubber and the other leg is provided with three legs entirely made of the soft rubber. The whole arrangement is said to improve the gripping effect. Thus, Document D3 teaches the combination of several gripping ribs made of soft rubber with an opposite large gripping rib made of hard rubber coated with a soft rubber, when it is desired to improve the gripping effect of the sealing strip. Therefore, there is no suggestion in

this document of the further characterising feature of the claim according to the auxiliary request.

VIII. Claim 1 of the main request reads as follows:

"1. A sealing strip suitable for mounting on, for example, a body flange around a vehicle door opening, comprising

a channel-shaped metal carrier (12);

a covering of relatively hard polymeric material on the carrier (12), the covering also being channel-shaped and defining two legs (8) connected by a base portion (10);

one or more gripping ribs (14) projecting inwardly from the inward-facing walls of each of the legs (8), and two separate sealing member parts (21, 22) of relatively soft polymeric material, extending along the strip and projecting from the inward-facing wall of the base portion (10), each part having an inwardly-facing convex wall (25, 26) and the outwardly-facing boundary thereof being solid against the inward-facing wall of the respective harder polymeric leg (8),

the parts (21, 22) being separated by a slot (24) which extends lengthwise along the middle of the base portion (10), extends down between the parts (21, 22) to the harder polymeric material of the base portion and is adapted to receive the edge of the body flange when the strip is mounted on it, the flange engaging the convex walls and compressing the softer polymer of the sealing member parts (21, 22) laterally against the legs (8)."

IX. The claim of the auxiliary request reads as follows:

"A sealing strip suitable for mounting on, for example, a body flange around a vehicle door opening, comprising:

a channel-shaped metal carrier (12);
a covering of relatively hard polymeric material on the carrier (12), the covering also being channel-shaped and defining two legs (8) connected by a base portion (10); one or more gripping ribs (14) projecting inwardly from both of the inward-facing walls of each of the legs (8), and
two separate sealing member parts (21, 22) of relatively soft polymeric material, extending along the strip and projecting from the inward-facing wall of the base portion (10), each part having an inwardly-facing convex wall (25, 26);

the parts (21, 22) being separated by a slot (24) which extends lengthwise along the middle of the base portion (10), extends down between the parts (21, 22) to the harder polymeric material of the base portion and is adapted to receive the edge of the body flange when the strip is mounted on it;

characterised in that each of the sealing member parts (21, 22) has a continuous solid cross-section between its inwardly-facing convex wall (25, 26) and an outer boundary of the part (21, 22) which is solid against the inward-facing wall of the respective leg (8), whereby insertion of the flange compresses the softer polymer of the sealing member parts (21, 22) laterally against the legs (8);

and in that said gripping ribs (14) are of a relatively hard polymeric material on the sides of said ribs facing toward said base portion and a relatively soft polymeric material on the sides of said ribs facing away from said base portion."

Reasons for the Decision

1. The Appeal complies with Articles 106 to 108 and Rules 1(1) and 64 EPC; it is admissible.

2. Main request

2.1 Article 123

There are no formal objections under Article 123(2) to the present claims since they are adequately supported by the original disclosure:

The feature "the outwardly-facing boundary of the separate sealing member parts being solid against the inward-facing wall of the respective harder polymeric leg" is clearly shown in Figures 2 and 3 as originally filed.

It is undisputable that the feature in question is not described literally in the description and in the claims of the patent application as originally filed. However, according to the established jurisprudence of the Boards, there is no doubt that drawings are to be regarded as an integral part of an European patent application and may not be treated differently from either the claims or the description as regards allowability of amendments under Article 123(2) EPC (see e.g. T 169/83 OJ 1985, 193).

Claim 2 corresponds to Claim 2 as originally filed.

Claim 1 contains all the features of the granted Claim 1, so that the requirements of Article 123(3) EPC are also met.

2.2 Sufficiency of disclosure (Article 83 EPC)

2.2.1 As background to the question of sufficiency of disclosure, it is noted that features can also be

disclosed in drawings. This follows directly from Article 83 EPC since as stated therein the invention is to be disclosed "in the European patent application" and in accordance with Article 78 EPC the drawings form part of the European patent application.

Therefore the drawings are in principle not to be treated differently from either the claims or the description as regards sufficiency of disclosure (cf. e.g. point 3.3.3 of the Decision T 169/83 referred to above under section 2.1).

Furthermore, Article 83 EPC requires a sufficient and clear disclosure of the "invention" in "the European patent application" that is to say of the features which form part of the invention or to which the invention defined in the European patent application relates.

This requirement of disclosure of the invention should be met by the "patent application" i.e. by the claims, the description or the drawings, if any. The provisions relating to the content of the description are set out in Rule 27. In this rule there is no requirement that features forming part of the invention be expressly disclosed as such.

The "disclosure of invention in the European patent application" should further be assessed by "a person skilled in the art". It does not thus matter whether these features had been expressly disclosed as forming part of the invention; it suffices that these features would be clearly recognised by a skilled person as forming part of the invention defined in the patent application as filed.

Therefore, in the Board's view features in the drawings can be introduced into a claim without contravening Article 83 EPC, provided that these features including their functions would clearly be recognised by a skilled person as forming part of the invention defined in the patent application as filed.

- 2.2.2 The Appellant's argument that it was not possible for the skilled person to derive from the original patent application documents that the feature in question formed part of the invention defined in the patent application, cannot be accepted for the following reasons:

As acknowledged on page 2, lines 9 to 21 of the application as originally filed, attempts to improve over the use of viscous mastic had in particular involved providing an elastomeric sealing member at the base of the channel, instead of a viscous one. The difficulty associated with this kind of solution was that the elastomeric sealing member tended gradually to push the sealing strip off the flange (page 2, lines 25 to 28).

Thus the technical problem addressed by the invention was to avoid this difficulty and to provide a polymeric strip of a design that not only has improved moisture-inhibiting sealing engagement with a vehicle body flange but would also grip the strip securely to the flange, as stated in page 3, lines 1 to 4 of the description as originally filed.

According to the invention it was proposed to solve this problem by forming the softer polymer sealing member in two separate parts separated by a slot and having inwardly convex walls, these parts being also of solid cross-section. Because the parts are solid and not hollow, a

stronger lateral compression is achieved, which tend to hinder the pushing off of the strip.

It follows from the above that it would be immediately apparent to the skilled person that the feature in question (see point 2.1 above) solely disclosed in the drawings contributes to the obtention of the desired effect i.e. to the solution of the problem underlying the original application documents, since it clearly assists in enhancing the lateral compression force by avoiding any yielding movement of the sealing member parts located at the bottom of the sealing strip. Thus this feature is to be regarded as forming part of the invention originally disclosed.

Therefore, in the Board's judgment, the inclusion of this feature into Claim 1 is admissible under Article 83 EPC.

2.3 Novelty

In order to remove the objection of lack of novelty in respect of the Figure 3 embodiment of Document D6 raised by the Appellant in the opposition proceedings, the Respondent has inserted into Claim 1 the afore-mentioned feature that the seal portions are made solid. In the embodiment of Figure 3 the two seal portions, which are separated by the flange receiving slot are not solid but hollow because of respective voids 40a,b.

Consequently, the Figure 3 embodiment of Document D6 does not disclose all the features specified in Claim 1 and the subject-matter of Claim 1 is novel having regard to this prior art document.

The subject-matter of claim 1 is likewise novel regarding each of the other available prior art documents, since

none of them discloses all the features of Claim 1. This point was not contested by the Respondent, so that no further discussion is necessary.

Hence, the subject-matter of Claim 1 is novel.

2.4 Problem and solution

Both parties agree that the Figure 3 embodiment of Document D6 represents the nearest prior art. As already stated, Figure 3 of Document D6 shows all the features of amended Claim 1 except the newly introduced feature that the sealing member parts are solid. The two seal portions disclosed in this prior art are hollow (see voids 40a, 40b), and are separated by a flange receiving slot. As a result of these voids the soft elastomeric layers of the seal portions are as thin as the outer sealing lips. This is said to facilitate insertion of the flange, as would be expected since the resilience of the seal portions is significantly enhanced.

According to the Respondent's submissions the use of solid sealing parts at the channel base, rather than hollow ones gives a stronger lateral engagement and therefore better sealing against the end part of the flange. The greater lateral compression (cf. column 4, lines 18 to 23 of the patent in suit) resists any tendency for the strip to be pushed off.

An objective assessment of what is actually achieved by the subject-matter of Claim 1 over the nearest prior art i.e. the Figure 3 embodiment of Document D6 allows the problem to be formulated as the provision of a sealing strip of a design which reduces the tendency for the flange to be dislodged and thus has improved sealing and gripping properties.

As outlined above, this problem is solved without needing more detailed explanation by the provision of solid sealing member parts as defined in Claim 1.

2.5 Inventive step

It is considered that the claimed solution has already been suggested as an alternative to the skilled person prior to the filing date in document D6 itself, which describes in the embodiments of Figures 1, 2 and 4 sealing member parts which are of solid cross-section and entirely contiguous with the inner surface of the respective harder polymeric legs.

It is only in the embodiment of Figure 3 that the sealing member parts are hollow. On page 5, second paragraph (of the English translation) it is stated that by constituting the sealing member parts in such a manner, insertion of the metal flange into the slot between the sealing member parts becomes easier.

For any skilled person it is readily apparent that the easier insertion results from a lower lateral compression and that such lateral compression can be increased by making the sealing member parts solid against the hard polymeric legs.

In this respect it does not matter whether the technical effect of a feature has been expressly disclosed in a prior art document, as long as the technical significance of such a feature becomes immediately apparent to the skilled person when reading the document (cf. for example Decision T 6/80 OJ 1981, 434).

Furthermore, if the technical effect of a feature solely disclosed in the drawings is considered self-evident for the skilled person when assessing sufficiency of disclosure, the technical significance of the same or similar feature solely disclosed in the drawings of a prior art document must also be considered self-evident for the skilled person when assessing inventive step.

Therefore, in the Board's judgment, the subject-matter of Claim 1 according to the main request does not involve an inventive step. The main request must therefore fail.

3. Auxiliary request

3.1 The single claim of this request differs from Claim 1 of the main request by the additional feature claimed in Claim 2 as originally filed and as granted. The claim of the auxiliary request therefore also meets the requirements of Article 123(2)(3).

3.2 In the prior art part of the claim are stated all those features of the claimed subject-matter which are known from the Figure 3 embodiment of Document D6. None of the further citations comes closer to the claimed subject-matter than this prior art.

Thus no objections arise under of Rule 29(1)(a) EPC.

3.3 Novelty:

Since the subject-matter of Claim 1 according to the main request is novel, see point 2.3 of the reasons, the subject matter of the claim according to the auxiliary request including additional features clearly is also novel.

3.4 Inventive step:

3.4.1 The subject-matter of the claim differs from the nearest prior art represented by the Figure 3 embodiment of Document D6 mainly by the following features stated in the characterising portion:

(a) each of the sealing member parts has a continuous solid cross-section;

(b) the gripping ribs are of a relatively hard polymeric material on the sides of said ribs facing toward the base portion and a relatively soft polymeric material on the sides of said ribs facing away from said base portion;

The sides of the ribs made of a soft polymeric material are said "to seal out moisture that tends to run around the end of the flange". However, this kind of material may be too soft to provide the desired grip on the flange by itself. Thus, the soft sides of the ribs are backed by a hard polymeric material (see column 4, lines 1 to 12 of the patent in suit).

3.4.2 Thus starting from this nearest prior art, the technical problem addressed and solved by the subject-matter of the claim may still be seen in providing "a polymeric strip of a design that not only has improved, moisture-inhibiting sealing engagement with a vehicle body flange but will also grip the strip securely to the flange," as stated in column 2, lines 27 to 31 of the European patent in suit.

3.4.3 The lack of inventive step objection raised by the Appellant was in essence based on the combined teaching of Documents D6 and D3 (or D12). The polymeric strip disclosed in this latter document comprises a channel shaped member having two legs and a base portion. For the

purpose of gripping a vehicle door flange, the legs are provided with gripping ribs which extend inwardly and are slanting toward the base portion. One leg is equipped with one large gripping rib while the other leg is provided with several relatively small gripping ribs which are of relatively soft material.

The side of the large gripping rib facing away from the base portion is made of a soft rubber while the rear side is of the same relatively hard rubber as the channel shaped member. This asymmetrical arrangement is said to improve the sealing and gripping properties of the sealing strip.

- 3.4.4 Thus, there is no disclosure or suggestion in this citation of a symmetrical arrangement in which each gripping grip is of a hard rubber on its rear side and of a soft rubber on its front side. Therefore, even if the skilled person had thought to apply the teaching given in Document D3 to a sealing strip of the type disclosed in the Figure 3 embodiment of Document D6, he would not have arrived at the claimed solution.
- 3.4.5 Moreover, in the Board's opinion, it is somewhat unlikely that the skilled person confronted with the problem underlying the patent in suit would have considered the teaching of Document D3, since this document concerns a very different type of sealing strip, in which there is no sealing member protruding from the inside facing wall of the base portion which prevents moisture from seeping around the end of the flange. In contrast thereto in the patent in suit, the problem to be solved is to improve a sealing strip of the type comprising a sealing member protruding from the base portion of the channel shaped member, and in which the end of the flange is embedded.

3.4.6 In the remaining available prior art documents, there is no disclosure or suggestion of the characterising feature (b) of the claim. In the absence of any disclosure or suggestion in this respect, these prior documents would be of no assistance to the skilled person seeking to solve the problem at hand.

3.4.7 Therefore, in the Board's judgment, the subject-matter of the single claim of the auxiliary request involves an inventive step (Article 56 EPC).

The claim is thus allowable in accordance with Article 52(1) EPC.

4. The description and the drawings take account of the requirements of the EPC and are suitable for maintenance of the patent in amended form.

Order

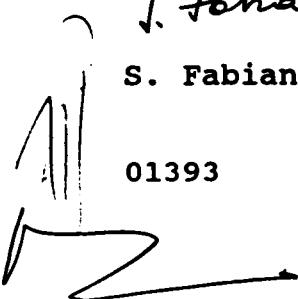
For these reasons, it is decided that:

1. The decision under appeal is set aside.
2. The main request is rejected.
3. The case is remitted to the first instance with the order to maintain the patent with the documents according to the auxiliary request (see point V above).

The Registrar:


S. Fabiani

01393



The Chairman:


F. Gumbel