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Aktenzeichen / Case Number / N° du recours : T 81/82

Anmeldenummer / Filing No / N° de la demande : 80300750.9

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Bezeichnung der Erfindung: Temperature responsive actuating device

Title of invention:

Titre de l'invention :

ENTSCHEIDUNG / DECISION

vom / of / du 27 January 1984

Anmelder/Patentinhaber:
Applicant/Proprietor of the patent: Thermoforce Limited

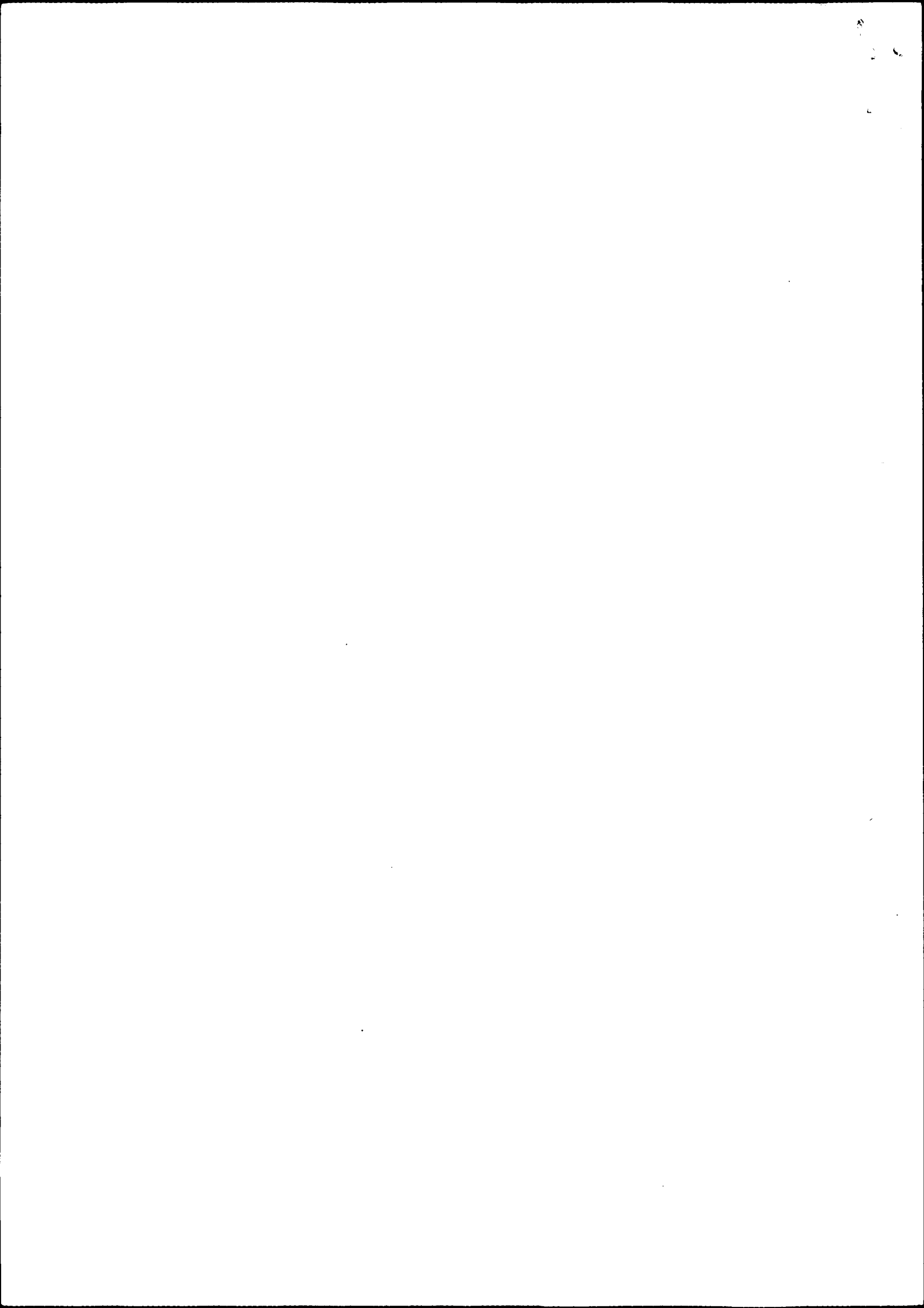
Demandeur/Titulaire du brevet :

Stichwort / Headword / Référence : Art.52(1),56

EPÜ / EPC / CBE

"Inventive step"

Leitsatz / Headnote / Sommaire



Europäisches
Patentamt

Beschwerdekammern

European Patent
Office

Boards of Appeal

Office européen
des brevets

Chambres de recours



Case Number: T 81 / 82

DECISION
of the Technical Board of Appeal 3.2.1
of 27 January 1984

Appellant: Thermoforce Limited
Wakefield Road
Cockermouth Cumbria
CA13 0HS

Representative: Livsey, Gilbert Charlesworth Norris
Hyde, Heide & O'Donnell
146 Buckingham Palace Road
London SW1W 9TR

Decision under appeal: Decision of Examining Division 099 of the European Patent
Office dated 29 March 1982 refusing European patent
application No 80300750.9 pursuant to Article 97(1)
EPC

Composition of the Board:

Chairman: G. Andersson
Member: C. Maus
Member: P. Ford

Summary of Facts and Submissions

- I. European patent application No. 80 300 750.9, filed on 11 March 1980, published under publication number 0 017 357 and claiming the priority of a previous application of 30 March 1979, was refused by the decision of the Examining Division 099 dated 29 March 1982.

The decision was based on Claim 1 in the wording proposed by the letter dated 25 November 1981, and on the original Claims 2 to 7.

- II. In its decision, the Examining Division held that the device according to Claim 1 did not involve an inventive step having regard to British patent specifications No. 886 241, 962 224, and 1 507 727.

- III. On 17 April 1982, the appellants lodged an appeal against this decision. The fee for appeal was paid on 16 April 1982 and the statement setting out the grounds of appeal was received on 3 May 1982.

The appellants submitted a new Claim 1. They were of the opinion that the device according to this claim did not follow from the cited state of the art in an obvious manner.

- IV. As a result of the objections raised during the procedure before the Board of Appeal the appellants submitted new Claims 2 to 7 and new pages 1, 3, 4 and 7 to 9 of the description on 22 November 1983, and new Claim 1 and amended pages 2, 5 and 6 of the description on 15 December 1983.

The present Claim 1 reads as follows:

"1. A temperature responsive control device which utilizes a wax based substance (2) which has liquid properties and a high coefficient of expansion which substance is located within a cylinder (1) between two end closures which admit expansion and contraction of the substance, a piston(10) passing through a shaft seal (6) of one of the end closures and having one end immersed in said substance and its other end operatively connected by way of a high leverage operating linkage with a first load element, the cylinder being connected to a second load element, the device effecting movement between said load elements with changes of temperature, characterised in that firstly both end closures for the wax based substance (2) within the cylinder (1) are constituted by movable end plugs (3 and 4) which are each equipped with peripheral sliding seals (5,6) engaging with the wall of the cylinder (1) so that both end plugs (3,4) are adjustable axially of the cylinder (1), and secondly in order to prevent reduction of the sealing efficiency of the peripheral seal (6) and of the shaft seal (12) of that end plug (4) through which the piston (10) passes, the piston (10) bears with its outboard end upon the inboard end of a push rod (25 which is guided with regard to the cylinder and which can be moved separately and independently from the piston and which can transmit forces to the piston (10) and to the end plug (4) only axially."

The appellants requested to continue the examination on the basis of the amended claims and description and that the appeal fee should be reimbursed.

- V. For the original claims and description, reference is made to publication No. 0 017 357.

Reasons for the Decision

1. The appeal complies with Articles 106 to 108 EPC. It is considered to comply also with Rule 64 EPC. It follows from the statement in the notice of appeal and from the request to continue the examination on the basis of amended documents that the appellants request the decision to be set aside in its entirety and the grant of the patent with these documents. The appeal is, therefore, admissible.

2. The present Claim 1 comprises some features (wax based substance, movable end plugs with sliding seals) which were not specified in the original claims. These features are disclosed on page 1, lines 3 to 8 and on page 8, lines 26 to 29 of the original description. The subject-matter of Claim 1 does not, therefore, extend beyond the content of the application as filed (Article 123(2) EPC).

In the preamble of the claim the appellants have stated all those features of the device which are, in combination, disclosed in US patent specification No. 4 140 017. There are no objections to derive the preamble from this device because none of the devices described in those publications cited in the search report, which were published before the priority date, comes closer to the subject matter of Claim 1.

The claim thus meets in this respect the formal requirements of the Convention (Rule 29(1) EPC).

3. It follows from the foregoing that the device according to Claim 1 differs from the temperature responsive device disclosed in US patent specification No. 4 140 017 by the features specified in the characterising

portion. This statement is valid also for the device described in British patent specification No. 886 241. The other documents published before the priority date do not even concern temperature responsive control devices for the operation of linkages which utilise the volumetric expansion of a wax based substance.

The device according to Claim 1 is, therefore, new having regard to the prior art.

4. On the question of whether or not this prior art could suggest the subject-matter of Claim 1 the following should be observed:
 - 4.1 According to the present description, the problem underlying the invention is to provide a device of the kind disclosed in US patent specification No. 4 140 017, which is adjustable in its position of use with such adjustment, when effected, having no adverse effect upon the functioning of the device by altering the frictional forces which might tend to oppose piston movements, and in which the likelihood of seal damage due to the piston being moved rapidly to-and-fro during installation of the device is reduced. This problem follows immediately from practical experience with the device described in US patent specification No. 4 140 017. However the cited documents, which were published before the priority date, do not point towards the solution specified in Claim 1.
 - 4.2 As it is mentioned above among the documents published before the priority date apart from US patent specification No. 4 140 017, only British patent specification No. 886 241 concerns a temperature responsive control

device utilising the volumetric expansion of a wax based substance. From this publication, the skilled person learns to fix the two end closures rigidly to the cylinder and to connect the piston having one end immersed in the substance immediately to the linkage. The Examining Division stated in the decision under appeal that the piston coacts with a push rod 11 in this device. This interpretation however, is inconsistent with the statements in the patent specification according to which the part 11 is a piston rod having one end immersed in the working substance (cf. in particular page 2, lines 32 and 57 to 59 of the specification).

The teaching of this document leads, therefore, the skilled person in a direction different from that adopted by the appellants represented by the solution of the problem, as proposed in Claim 1.

- 4.3 British patent specification No. 962 224 concerns a thermostat comprising a closed cylinder filled with a thermally expanding and contracting substance. It is true that this thermostat shows two movable end closures for the closing of the cylinder. However, the problem of preventing seal damage due to the movement of the piston does not exist in relation to this device because the problem of sealing is solved by using a substance for filling the cylinder which cannot leak out through the space between the end closure and the cylinder, e.g. very soft rubber. The thermostat described in this patent specification is clearly unsuitable as a model for designing both end closures as movable end plugs which are each equipped with peripheral sliding seals engaging with the wall of the cylinder.

Nor could the features proposed for solving the other part of the problem underlying the invention be obvious to the skilled person from British patent specification No. 962 224. This is particularly true in respect of the push rod upon which the piston bears with its out-board end according to Claim 1. In the thermostat disclosed in this patent specification the rod 24 constitutes an element of the valve to be controlled. It is designed to guide the valve head at a right angle to the sealing and in the direction of the longitudinal axis of the piston. There would be no transverse forces which load the piston. It is, therefore, of no account that the piston rests upon the rod in this device.

- 4.4 Similar comments can be made in respect of the thermostat in the temperature responsive actuator according to Figure 1 of British patent specification 1 507 727. Further, the piston is rigidly connected with an additional rod which is arranged to be in contact with the rod controlling the pressure-reduction valve.
- 4.5 The other citations published before the priority date (i.e. French publications No. 2 124 200 and 2 239 605, British patent specification No. 649 423, US patent specifications No. 2 323 519, 2 826 467 and 3 148 595) are much further removed from the subject-matter of Claim 1 than the documents discussed above. They could not, therefore, suggest either alone or in combination with the teachings according to the other publications the features specified in Claim 1 for the solution of the problem underlying the invention.

- 4.6 Hence, the device according to Claim 1 involves an inventive step within the meaning of Article 56 EPC.
5. This claim is, therefore, allowable (Article 52 EPC).
6. Dependent Claims 2 to 7 concern particular embodiments of the invention according to Claim 1 and thus are likewise allowable.
7. The amendments in the description serve for the clear presentation of the problem which the invention shall solve and of the invention. Consequently, they are not open to objection.
8. The reasons given by the appellants for the requested reimbursement of appeal fee were that the application was refused at the stage of first re-examination and that the decision raises new grounds of refusal, upon which the appellants have had no opportunity to comment.

Concerning the first reason the appellants refer to Guidelines Part C, Chapter IV (correctly: VI), 2.5 and 4.3. However, the Guidelines represent no bar against the refusal of the application by the Examining Division after the first re-examination without any advance notice if it is found that the counter arguments of the appellants were insufficient. This was indeed so. The appellants presented valid arguments and thus made a real effort to deal with the examiner's objections for the first time during the appeal procedure. It can also fairly be said that if the appellants were of the opinion that amendments in the claims were necessary having regard to the arguments of the Examining Division, they omitted to submit them. A step-by-step approach is not provided in the EPC or in the Guidelines.

Furthermore, the objection that the decision was based on new grounds is not valid. The reason given by the appellants for this was the tenor of the final paragraph of the decision. However, this paragraph contains only a statement of opinion concerning the disclosure of some other patentable features in the application documents which cannot be regarded as a ground of the decision within the meaning of Article 113(1) EPC (cf. also decision T 84/82, Official Journal EPO 11/83, page 451).

No substantial procedural violation exists, therefore, which would have justified the reimbursement of appeal fee.

The request thus cannot succeed.

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Order

On these grounds,

it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the first instance with the order to grant a European patent on the basis of the following documents:

Claim 1, received on 15 December 1983,
Claims 2 to 7, received on 22 November 1983,
pages 1, 3, 4 and 7 to 9 of the description, received
22 November 1983,
pages 2, 5 and 6, received on 15 December 1983,
original drawings.

3. The request for the reimbursement of appeal fee is dismissed.