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Datasheet for the decision of 16 December 2010

Case Number: T 1011/08 - 3.2.05

Application Number: 01909388.9

Publication Number: 1372929

IPC: B29C 45/27

Language of the proceedings: EN

Title of invention:
Detachable nozzle body and process

Patentee:
Husky Injection Molding Systems Ltd.

Opponent:
GÜNTHER Heisskanaltechnik GmbH

Headword:
-

Relevant legal provisions:
EPC Art. 54, 56

Relevant legal provisions (EPC 1973):
-

Keyword:
"Novelty - yes"
"Inventive step - no"

Decisions cited:
-

Catchword:
-

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Case Number: T 1011/08 - 3.2.05

D E C I S I O N
of the Technical Board of Appeal 3.2.05
of 16 December 2010

Appellant: (Opponent)
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Decision under appeal:
Decision of the Opposition Division of the European Patent Office posted 31 March 2008 rejecting the opposition filed against European patent No. 1372929 pursuant to Article 101(2), second sentence, EPC.

Composition of the Board:

Chairman: W. Zellhuber
Members: H. Schram
M. J. Vogel

Summary of Facts and Submissions

I. The appellant (opponent) lodged an appeal against the decision of the Opposition Division posted on 31 March 2008 rejecting its opposition against European patent No. 1 372 929.

The Opposition Division held that the grounds of opposition under Article 100(a) EPC (lack of novelty, Article 54 EPC, lack of inventive step, Article 56 EPC) did not prejudice the maintenance of the patent as granted.

II. Oral proceedings were held before the Board of Appeal on 16 December 2010.

III. The appellant requested that the decision under appeal be set aside and that the patent in suit be revoked.

The respondent (patent proprietor) requested that the appeal be dismissed, or, as an auxiliary measure, that the patent be maintained on the basis of the auxiliary request filed during the oral proceedings.

IV. Claim 1 of the main request, ie claim 1 of the patent as granted, reads as follows:

"1. Apparatus for injection molding plastic, the apparatus comprising:

a nozzle assembly (10) through which plastic materials flows, said nozzle assembly including a removable nozzle body (12) with a forward end portion (14), a rearward end portion (16) and a nozzle channel (40) through which, in use, plastic material flows;

a heater (24) affixed to the nozzle body (12);

a mold cavity plate (36) adjacent the forward end portion (14) of the nozzle body (12) and separable from said forward end portion (14), wherein separation of mold cavity plate (36) from the forward end portion (14) of the nozzle body (12) exposes the forward end portion (14) and the heater (24) to permit removal of the nozzle body (12) and the heater (24) from the nozzle assembly (10);

a manifold (44) with a manifold channel (42) communicating with said nozzle channel (40);

a nozzle header (22, 50) adjacent the rearward end portion (16) of the nozzle body (12);

and the apparatus characterized in that:

in operation and under thermal expansion, said manifold (44) slides with respect to the nozzle channel (40) and the nozzle header (22, 50), and said nozzle header (22, 50) locates the nozzle body (12) to maintain a centered position of said nozzle body (12) in said cavity plate (36) while the manifold (44) slides relative to the nozzle body (12)."

Claim 1 of the auxiliary request differs from claim 1 of the main request in that the expression "and in that said nozzle body (12) seals against said manifold (44)" has been inserted at the end of the claim.

V. The documents referred to in the appeal proceedings included the following:

E1 EP-A 0 590 678

E3 WO 00/18559

VI. In a communication dated 22 September 2010 annexed to the summons to oral proceedings, the Board expressed *inter alia* its provisional opinion that the preamble of claim 1 of the patent in suit seemed to be based on document E3 and that the characterizing part of claim 1 of the patent in suit seemed to be substantially known from document E1 (see point 6.2 of said communication).

VII. The arguments of the appellant, in writing and during the oral proceedings, can be summarized as follows:

Objection of lack of novelty, Article 54 EPC

Document E3 had only been assessed in view of inventive step during the opposition proceedings, in which it was considered as the closest prior art document. However, this document disclosed not only the preamble of claim 1 of the main request, but also its characterizing portion. The screws 52 did not rigidly fix the mounting base to the manifold shown in Figure 1, their purpose was to secure the position of the mounting base during assembly of the injection molding apparatus. It was clear to the person skilled in the art from page 1, lines 6 to 20, of document E3, that the screws allowed the manifold to slide with respect to the mounting base during operation. The subject-matter of claim 1 of the main request thus lacked novelty.

Objection of lack of inventive step, Article 56 EPC

Document E1 represented the closest prior art. The subject-matter of claim 1 of the main request only differed from the apparatus for injection molding known

from this document in that removal of the nozzle body and the heater from the nozzle assembly was possible (cf the object of the present invention as expressed in paragraph [0011] of the patent in suit). Document E3 solved the same problem in the same way (see page 2, lines 3 to 8, and page 5, line 29, to page 6, line 6). A combination of documents E1 and E3 thus led the person skilled in the art to the claimed invention.

Admissibility of the auxiliary request

The auxiliary request filed during the oral proceedings before the Board was filed late and should not be admitted into the appeal proceedings. Moreover, the additional feature was obvious, since the nozzle assembly, or part thereof, had to seal against the manifold, otherwise leakage would result.

VIII. The respondent's arguments, in writing and during the oral proceedings, can be summarized as follows:

Objection of lack of novelty, Article 54 EPC

In document E3 it was stated that the heated nozzles were very accurately secured in place by screws, see page 5, lines 1 and 2. This excluded any sliding movement between the nozzle assembly and the manifold. In the passage on page 1 cited by the appellant it was stated that it was usually necessary to allow the melt distribution manifold to move slightly laterally with respect to the nozzles, meaning that the manifold might slide with respect to the nozzle, but did not necessarily have to. Document E3 taught that heat expansion could be avoided by preheating the manifold

and the nozzles to the operating temperature, see page 6, lines 8 to 12. The subject-matter of claim 1 of the main request was therefore new with respect to document E3.

Objection of lack of inventive step, Article 56 EPC

The whole thrust of document E1 was the inclusion of a hot runner manifold bushing for reducing the possibility of leaking in an injection molding apparatus having spring sealing nozzles (see eg claim 1). Document E1 did not disclose a removable nozzle body, nor that the heaters were affixed to the nozzle body. This document also failed to disclose that the cavity plate could be removed. Document E3 was concerned with a type of injection molding apparatus different from the apparatus known from document E1. The arguments of the appellant starting from document E1 and adding the convenient removal of the nozzle body and heater without disassembly of the mold but by removing the cavity plate as taught by document E3 were based on hindsight, ie with knowledge of the invention. A combination of documents E1 and E3 would not lead to the invention, since the nozzle bodies known from document E3 needed a seat in the cavity plate for proper centering, see page 4, lines 29 to 33. The subject-matter of claim 1 as granted was therefore not obvious to the person skilled in the art.

Admissibility of the auxiliary request

The auxiliary request was a combination of claims 1 and 2 as granted and did not pose any technical difficulty to the appellant or to the Board. Dependent claim 2 was

already part of the appeal proceedings, since the appellant had addressed the dependent claims in its statement of grounds of appeal. The auxiliary request should therefore be admitted into the appeal proceedings.

Reasons for the Decision

MAIN REQUEST

1. *Objection of lack of novelty, Article 54 EPC*

Document E3, which is cited in paragraph [0010] of the patent in suit, discloses (see the "Detailed description of the invention", page 3, line 9, to page , line 2, and Figure 1) an apparatus for injection molding plastic having all the features of the preamble of claim 1 of the main request. Since that has not been disputed, there is no need for further substantiation.

The mounting base 50, which corresponds to the nozzle header 22, 50 of the present invention, of said apparatus "*is secured by screws 52 extending through holes 58 through the melt distribution manifold 16 with its rear end 54 abutting against the front face 56 of the melt distribution manifold 16*" (see page 4, lines 17 to 20), or "may be secured in place adjacent the melt distribution manifold 16 by means other than screws 52" (see page 6, line 33, to page 7, line 2). There is no statement in the section "Detailed description of the invention" that the screws 52, or the means other than screws 52, for securing the mounting base to the manifold, allow the manifold to

slide with respect to the mounting base under thermal expansion. Nor does document E3 teach that the mounting base must be fixedly bolted onto the manifold in such a way as to prevent lateral travel of the nozzle assembly due to the lateral expansion of the manifold.

In the section "Background of the invention" of document E3, it is stated (see page 1, lines 12 to 17) that "*[However,] it is usually necessary to locate both the front and rear ends of the heated nozzle in the mold to allow the melt distribution manifold to move slightly laterally relative to the rear end of the nozzles to allow for heat expansion and contraction of the melt distribution manifold. This is usually done by securing a rear collar portion of the nozzle to the melt distribution manifold with screws which allow sufficient lateral movement to provide for thermal expansion and contraction.*" (emphasis added by the Board). However, there is no statement in the section "Background of the invention" that the underlined statement in the passage cited above applies to the embodiment described in the section "Detailed description of the invention".

Document E3 therefore does not clearly and directly disclose that the screws 52, or the means other than screws 52 for securing the mounting base to the manifold, of the apparatus for injection molding plastic disclosed in the detailed description "allow sufficient lateral movement to provide for thermal expansion and contraction".

In the judgment of the Board, the features of the characterizing part of claim 1 of the main request are

therefore not clearly and directly derivable from document E3.

The subject-matter of claim 1 of the main request is therefore new with respect to document E3.

2. *Objection of lack of inventive step, Article 56 EPC*

One of the criteria for selecting the most promising starting point for assessing inventive step is the similarity of the technical problem, see paragraphs [0003] and [0011] of the patent in suit. The technical problem addressed in document E3 (see page 2, lines 3 to 8) is very similar to the problem that the invention seeks to solve. The preamble of claim 1 of the main request is based on this document, see point 1 above, and the technical problem of the present invention is in fact solved by the features of the preamble of claim 1 of the main request.

The characterizing part of claim 1 of the main request focuses on another aspect of the invention, as explained in paragraph [0021], in particular column 4, lines 37 to 43, and paragraph [0024], in particular column 5, lines 31 to 37, of the patent in suit, namely that during operation the nozzle header 22 (or insulating collar 50) acts as a "nozzle body centering component", ie it locates the nozzle body in its desired position in the manifold plate 30 and maintains its centered position while the manifold slides across the nozzle body, also with respect to the cavity plate 36, which is fixed to the manifold plate 30, see paragraph [0023] of the patent in suit.

The advantage of avoiding lateral travel of the nozzle assembly due to the lateral expansion of the manifold is well known in the art, see eg document E1, column 6, lines 28 to 41, in particular lines 34 to 41, which read: "*In the system of the present invention, this lateral expansion will be transmitted to the manifold bushing 130 but not to the nozzle body 112. Instead, the nozzle body and the nozzle assembly will remain substantially or entirely stationary as the manifold 138 and the bushing 130 slide relative to and across the upper surface 150 of the nozzle body*."

In the section "Background of the invention" of document E3, the desired effect "*to allow the melt distribution manifold to move slightly laterally relative to the rear end of the nozzles to allow for heat expansion and contraction of the melt distribution manifold*" and its solution are clearly addressed, see page 1, lines 12 to 17 (reproduced in full in point 1 above).

In the judgment of the Board, the disclosure of document E3, read as a whole, suggests to the person skilled in the art the use of screws for securing the mounting base to the melt distribution manifold that allow the melt distribution manifold to slide with respect to the mounting base in operation and under thermal expansion (cf the first characterizing feature of claim 1 of the main request).

The respondent has argued that in document E3, even if the mounting base were secured to the melt distribution manifold in a way that allowed the melt distribution manifold to slide with respect to the mounting base in

operation, the mounting base would not keep the nozzle body in a centered position with respect to the cavity plate (cf the second characterizing feature of claim 1 of the main request), because the front end of the nozzle body had screwed into it a nozzle seal 70, which extended into a seat 72 in the cavity plate.

However, claim 1 of the main request does not rule out that the nozzle body is kept additionally in a centered position by the cavity plate, as is apparently also the case for the embodiments of the invention shown in Figures 1 and 2 of the patent in suit.

The subject-matter of claim 1 of the main request is therefore obvious to the person skilled in the art with respect to the embodiment described in the "Detailed description of the invention" and shown in Figure 1 of document E3 and the common technical knowledge in the art (see document E3, page 1, lines 12 to 17, and document E1, column 6, lines 28 to 41) and hence does not involve an inventive step, Article 56 EPC.

AUXILIARY REQUEST

3. *Admissibility of the auxiliary request*

The auxiliary request was filed by the respondent during the oral proceedings after the Chairman had announced that claim 1 as granted did not involve an inventive step (up to that time the sole request of the respondent was that the appeal be dismissed).

Claim 1 of the auxiliary request differs from claim 1 of the main request in that the expression "and in that

said nozzle body (12) seals against said manifold (44)", which is taken from claim 2 of the granted patent, has been inserted at the end of the claim.

At the end of the communication attached to the summons to oral proceedings the Board stated the following:

"The attention of the parties is drawn to Articles 12(2) and 13 of the *Rules of Procedure of the Boards of Appeal* (RPBA), OJ EPO 2007, 536 ff. According to the latter, any amendment to a party's case after it has filed its grounds of appeal or reply may be admitted and considered at the Board's discretion.

The criteria for the exercise of this discretion include whether or not there are good reasons for the late filing and whether or not the amendments and submissions are relevant to a resolution of the issues to be discussed at the oral proceedings. In any case, they should be filed at least one month before the date set for oral proceedings in order to give the Board and the other party sufficient time to prepare for the oral proceedings. The Board may disregard facts or evidence which are not submitted in due time (cf Article 114(2) EPC and Article 13(3) RPBA)."

The auxiliary request was filed outside the time limit set by the Board for filing written submissions and/or requests. No good reasons were given by the respondent as to why the auxiliary request could not have been filed earlier.

Furthermore, in the judgment of the Board, the amendment "that said nozzle body seals against said

manifold" shifts the focus to facts not discussed in the appeal proceedings. The additional feature is prima facie not relevant to a resolution of the issue of inventive step, since preventing leakage of plastic between the nozzle body and the manifold in an apparatus for injection molding plastic is an obvious design requirement for a person skilled in the art.

The auxiliary request is therefore not admitted into the appeal proceedings.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The patent is revoked.

The Registrar: The Chairman:

D. Meyfarth W. Zellhuber