

Internal distribution code:

- (A) [-] Publication in OJ
- (B) [-] To Chairmen and Members
- (C) [-] To Chairmen
- (D) [X] No distribution

**Datasheet for the decision
of 8 February 2021**

Case Number: T 1324/16 - 3.2.05

Application Number: 08754042.3

Publication Number: 2140185

IPC: B29C45/14, B29C45/33, F16K5/06,
F16K27/06

Language of the proceedings: EN

Title of invention:

PLASTIC BASED RADIATOR VALVE AND THE PRODUCTION METHOD THEREOF

Patent Proprietor:

Kalde Klima Orta Basinc Fittings
Ve Valf Sanayi Anonim Sirketi

Opponent:

Firat Plastik Kaucuk Sanayi ve Ticaret A.S.

Relevant legal provisions:

EPC Art. 56

Keyword:

Inventive step (yes)



Beschwerdekammern

Boards of Appeal

Chambres de recours

Boards of Appeal of the
European Patent Office
Richard-Reitzner-Allee 8
85540 Haar
GERMANY
Tel. +49 (0)89 2399-0
Fax +49 (0)89 2399-4465

Case Number: T 1324/16 - 3.2.05

D E C I S I O N
of Technical Board of Appeal 3.2.05
of 8 February 2021

Appellant: Firat Plastik Kaucuk Sanayi ve Ticaret A.S.
(Opponent) Turkoba Mah. Firat Plastik Caddesi
No: 23 Buyukcekmece
Istanbul (TR)

Representative: Cayli, Hülya
Paragon Consultancy Incorporated
Koza Sokak No: 63/2
GOP 06540 Ankara (TR)

Respondent: Kalde Klima Orta Basinc Fittings
(Patent Proprietor) Ve Valf Sanayi Anonim Sirketi
Beymersan Mermereciler San. Sitesi
10.Cad. No:12 Beylikduzu
Buyukcekmece
34520 Istanbul (TR)

Representative: Yamankaradeniz, Kemal
Destek Patent, Inc.
Eclipse Business D
Blok No. 5 Maslak
34398 Istanbul (TR)

Decision under appeal: **Decision of the Opposition Division of the
European Patent Office posted on 8 April 2016
rejecting the opposition filed against European
patent No. 2140185 pursuant to Article 101(2)
EPC.**

Composition of the Board:

Chairman P. Lanz
Members: B. Spitzer
 T. Karamanli

Summary of Facts and Submissions

- I. The appeal by the opponent is against the decision of the opposition division rejecting the opposition to European patent EP-B-2 140 185.
- II. On 7 October 2019, the board issued a summons to oral proceedings.
- III. In its communication pursuant to Article 15(1) of the revised Rules of Procedure of the Boards of Appeal (RPBA 2020, OJ EPO 2019, A63) issued on 26 June 2020, the board expressed its preliminary opinion on the case and provisionally concluded that the appeal was likely to be dismissed.
- IV. In its letter dated 18 August 2020, the respondent provided further arguments.
- V. In its letter dated 25 August 2020, the appellant provided further arguments in support of its case and informed the board that it would not be attending the oral proceedings.
- VI. By a Registrar's communication issued on 11 September 2020, the parties were informed that the oral proceedings appointed for 1 October 2020 had been cancelled.
- VII. On 1 October 2020, a communication pursuant to Rule 100(2) EPC was issued, inviting the parties to file their observations within a period of two months. The parties were also informed that the appeal was likely to be dismissed. The appellant was asked to inform the

board whether it withdrew its request for oral proceedings since the fact that it would not be attending the oral proceedings did not imply that its request for oral proceedings had been withdrawn.

VIII. In its letter 1 December 2020, the appellant provided further arguments in support of its case and withdrew its request for oral proceedings.

IX. *Requests*

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

The respondent requested that the appeal be dismissed (i.e. that the patent be maintained as granted).

X. The documents cited during the appeal proceedings include the following:

D1: US 3,807,692 A;
D4: US 4,172,583 A;
D6: JP 2000 009270 A;
D7: US 4,093,280 A;
D8: US 5,366,257 A;
D9: US 6,186,558 B1.

XI. Claim 1 as granted has the following wording (using the parties' feature designations in square brackets):

[F1] Method for manufacturing, inside at least one mold (4), a plastic based radiator valve (1) used in the heating sector, said valve comprising at least one spherical valve interior set (2), at least one spout (1.2) providing the connection with the radiator and at least one insert (1.1) connected with said spout (1.2)

characterized [*sic*] in that it comprises the steps of

[F2] - positioning said insert (1.1) on a stationary mold core (4.2) located inside said mold (4),

[F3] - positioning said spherical valve interior set (2) adjacent to said insert (1.1) on the stationary mold core (4.2),

[F4] - moving a movable mold core (4.1) located on said mold (4) in a synchronous manner with the closing of the mold (4) in a first direction (B),

[F5] - pushing of the spherical valve interior set (2) by said movable mold core (4.1) in a second direction (A) perpendicular to the first direction (B), in order to secure the same,

[F6] - pushing plastic material into said mold (4) by an injection machine, thus shaping the valve body (1.5) surrounding said insert (1.1) and the spherical valve interior set (2), and forming the plastic adapter (3) positioned in monobloc as the continuation of said valve body (1.5),

[F7] - moving of said movable mold core (4.1) in an opposite direction (C) to said first direction (B) synchronously with the opening of the mold (4), thus removing the monobloc valve body (1.5) and the plastic adapter (3) from said mold (4); wherein the at [*sic*]

[F8] - least one spout (1.2) is mounted on said valve body (1.5); and

[F9] - a spout nut (1.3) is mounted on said spout (1.2).

XII. The appellant argued essentially as follows:

The subject-matter of claim 1 was not inventive starting from document D1 in combination with the teaching of document D6.

Claim 1 differed from document D1 by the following underlined features:

part of [F1]: at least one spout (1.2) providing the connection with the radiator and at least one insert (1.1) connected with said spout (1.2)

[F2]: positioning said insert (1.1) on a stationary mold core (4.2) located inside said mold (4),

part of [F3]: positioning said spherical valve interior set (2) adjacent to said insert (1.1),

[F4]: moving a movable mold core (4.1) located on said mold (4) in a synchronous manner with the closing of the mold (4),

[F5]: pushing of the spherical valve interior set (2) by said movable mold core (4.1) in a second direction (A) perpendicular to the first direction (B), in order to secure the same,

[F7]: moving of said movable mold core (4.1) in an opposite direction (C) to said first direction (B) synchronously with the opening of the mold (4)

[F8]: at least one spout (1.2) is mounted on said valve body (1.5)

[F9]: a spout nut (1.3) is mounted on said spout (1.2)

Features F1 and F2 solved the objective technical problem of connecting a plastic based body to another connector. A solution to this problem was disclosed in paragraph [0015] of the English translation of document D6, which was a document from a similar technical field.

No objective technical problem was associated with the part of feature F3 defining the location of the spherical valve interior set with respect to the insert; hence it was just a design choice.

The same applied to features F4 and F7, as a synchronous movement was no different from a consequential movement.

The objective technical problem of feature F5 was the creation of an L-shaped plastic based body. Such an L-shaped body was disclosed in document D6 (see paragraph [0018] of the English translation of document D6). Furthermore, it was not clear how the movable mold core pushes the spherical valve interior set in a second direction perpendicular to its movement direction. Moreover, reference was made to document D1, column 5, lines 26 to 33 and 34 to 43, where the securing of the spherical valve interior set by the inserts was disclosed. By applying pressure to the cores, pre-load was applied to the seals, and therefore to the ball valve. Since, in order to obtain an L-shaped valve, core molds inevitably had to be perpendicular to each other. As one mold core should push the other mold core to secure the spherical valve interior set, consequently the force applied to the spherical valve interior set had to be perpendicular to

the movement direction of the first mold core. In addition, document D4 (US 4,172,583) showed that the insert was secured by the inserts, and Figure 5 of document D4 showed an angled valve structure.

The remaining features F8 and F9 solved the objective technical problem of connecting a valve to the radiator. However, using a spout and a spout nut was common practice and obvious to a person skilled in the art using their common general knowledge.

XIII. The respondent's arguments can be summarised as follows:

A combination of document D1 and document D6 with any of documents D7 to D9 did not rule out inventive step. Documents D7 to D9 taught embedding metal parts in pipe connections, but were not concerned with the manufacturing of plastic based radiator valves, nor with L-shaped connections.

Documents D1 to D5 mentioned manufacturing of radiator valves, but in none of these documents were those methods applied to L-shaped radiator valves.

It was pointed out that sufficient pre-loading of the spherical valve interior set - especially reflected in features F4 and F5 - was the gist of the invention. By moving the movable mold core (4.1) together with the mold, said movable mold core exerted pressure on a side of the spherical interior set after closure of the mold. None of the cited documents disclosed a synchronous movement of the movable mold core with the mold in a first direction and the securing of the valve interior set by a movement of the movable core in a second direction perpendicular to the first direction.

Reasons for the Decision

1. Main request - ground for opposition under Articles 100(a) and 56 EPC - lack of inventive step
 - 1.1 In appeal proceedings, the appellant only raised the opposition ground of lack of inventive step.
 - 1.2 Document D1 is considered as the closest prior art. The distinguishing features (see point XII. above) are not disputed. There is agreement that features F1, F2, F3, F8 and F9, relating to the spout (1.2), the spout nut (1.3) and the insert (1.1), solve the partial objective technical problem of simplifying the connection of a plastic based valve body to another connector. It is acknowledged that the solution to this problem is generally known in the art. The core issue of the invention is hence reflected by features F4, F5 and F7.
 - 1.3 Effect of distinguishing features F4, F5, F7

These features relate to the configuration of the mold core. Both parties agreed that these features contribute to the possibility of creating an L-shaped design. The claimed configuration of the mold core allows for securing the spherical valve interior set in the injection mold - as was brought forward by the respondent. This is reflected by the wording of features F4 ("moving a movable mold core (4.1) located on said mold (4) in a synchronous manner with the closing of the mold (4)") and F5 ("pushing of the spherical valve interior set (2) by said movable mold core (4.1) in a second direction (A) perpendicular to the first direction (B), in order to secure the same").

The appellant argued that it was not clear from the claim, the description or the drawings how the movable mold core pushes the spherical valve interior set in a second direction perpendicular to its movement direction. The board cannot endorse this line of argument. Due to the wording "a movable mold core (4.1) located on said mold" (see feature F4), it is clear that the movable mold core moves together with the mold, thereby exerting a pressure on a side of the spherical interior set after closure of the mold.

1.4 Partial objective technical problem

The partial objective technical problem solved by features F4, F5 and F7 relating to the configuration of the mold core is to securely position the spherical valve interior set in the injection mold during the manufacturing of an L-shaped radiator valve.

1.5 Obviousness

The solution is not rendered obvious by a combination of documents D1 and D6. Document D6 discloses an L-shaped pipe configuration but no valve. In particular, it does not anticipate the claim feature of the movable mold core moving in a first direction and pushing a spherical valve interior set in a second direction perpendicular to the first direction in order to secure the same in the mold.

1.5.1 The appellant argued that in document D6 the L-shaped body was formed using perpendicularly placed inserts. Based on this teaching, the skilled person would solve the problem of creating an L-shaped valve design.

This, however, did not convince the board, since document D6 does not disclose that the movable mold core moves in a first direction and pushes an insert in a second direction perpendicular to the first direction in order to secure the insert in the mold (see features F4 and F5). In the patent in suit, by moving the movable mold core (4.1) together with the mold (4), the movable mold core exerts pressure on a side of the spherical valve interior set (2) after closure of the mold. Such a pre-load is not required in document D6 since there is no spherical valve interior set - as was conclusively argued by the respondent.

- 1.5.2 As to the appellant's submission that a sequential and a synchronous movement were merely two alternative options and that it was not inventive to choose one of them, the board remarks that features F4, F5 and F7 involve more than just a synchronous movement, which is only one of the aspects aiming at achieving the pre-load of the valve interior set.
- 1.5.3 Another argument by the appellant was that document D5 already disclosed the securing of the spherical valve interior set. The board shares this view, but with the difference that in document D5 there is no L-shaped configuration of the valve in accordance with feature F5. The skilled person would not arrive at the claimed invention by merely rotating one mold core through 90°. Rather, the movements of the mold and the mold core as specified in features F4, F5 and F7 all form part of the solution defined in claim 1.
- 1.5.4 Finally, for the sake of completeness the board refers to the generic remark in the appellant's letter dated 1 December 2020 that "figure 4 of document D4 also shows that insert is secured by the inserts and figure

5 of document D4 shows that valve structure is angled" (see page 3, second paragraph of appellant's letter dated 1 December 2020).

It is neither argued nor apparent to the board that document D4 discloses an L-shaped configuration of the ball valve in accordance with feature F5 and a movement of the mold and the mold cores as defined in features F4 and F7. Therefore document D4 does not go beyond the disclosure of document D6, and the above conclusions regarding documents D1 and D6 also apply in view of a possible combination of documents D1 and D4.

- 1.6 Therefore a combination of document D1 with document D6 (or D4) does not render the claimed solution obvious. The subject-matter of claim 1 involves an inventive step (Article 56 EPC). Claim 2 depends on claim 1 and, hence, also involves an inventive step (Article 56 EPC).

2. In view of the above, the only ground for opposition raised in appeal proceedings (lack of inventive step under Articles 100(a) and 56 EPC) does not prejudice the maintenance of the patent. Thus, the appellant's request cannot be allowed. The appeal must therefore be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:



N. Schneider

P. Lanz

Decision electronically authenticated