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**Datasheet for the decision
of 26 September 2022**

Case Number: T 1990/20 - 3.2.04

Application Number: 12722858.3

Publication Number: 2696739

IPC: A47L15/42, D06F39/08

Language of the proceedings: EN

Title of invention:

SAFETY DEVICE AGAINST FLUID LEAKS FOR HOUSEHOLD APPLIANCES

Patent Proprietor:

Eltek S.p.A.

Opponent:

BITRON S.p.A.

Headword:

Relevant legal provisions:

EPC Art. 100(a), 56
RPBA 2020 Art. 12(6)

Keyword:

Inventive step - (no)

Late-filed request - circumstances of appeal case justify
admittance (no)

Decisions cited:

Catchword:



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Case Number: T 1990/20 - 3.2.04

D E C I S I O N
of Technical Board of Appeal 3.2.04
of 26 September 2022

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Decision under appeal: **Decision of the Opposition Division of the
European Patent Office posted on 6 November 2020
revoking European patent No. 2696739 pursuant to
Article 101(2) EPC.**

Composition of the Board:

Chairman A. de Vries
Members: G. Martin Gonzalez
K. Kerber-Zubrzycka

Summary of Facts and Submissions

- I. The appeal was filed by the appellant proprietor against the decision of the opposition division to revoke the patent in suit.

The division held that granted claim 1 lacked an inventive step over the cited prior art.

- II. Oral proceedings were held before the Board by videoconference on 26 September 2022.

- III. The appellant proprietor requests that the decision under appeal be set aside and that the patent be maintained as granted, auxiliarily that the patent be maintained according to one of auxiliary requests 1-8, all filed with the statement of grounds of appeal of 4 March 2021.

The respondent opponent requests dismissal of the appeal.

- IV. Claim 1 of the main request (as granted) reads as follows:

"A safety device against fluid leaks for household appliances, designed for connection between a source of the fluid and a household appliance, comprising:

- a first connection body (20) and a second connection body (13), which define a first duct (23) and a second duct (93) for the fluid, respectively;
- a valve arrangement including a valve member (72), mounted on the first connection body (20) and

designed to assume a position of opening and a position of closing of the first duct (23), and means for accumulating mechanical energy (77), to force the valve member (72) towards the respective position of closing of the first duct (23);

- control means, for withholding the valve member (72) in the respective position of opening, countering the action of the means for accumulating mechanical energy (77), the control means being operable for assuming a respective position of release of the valve member (72);
- a flexible inner hose (17) and a flexible outer hose (16) which are impermeable to the fluid,

wherein the inner hose (17) connects in fluid communication the first duct (23) and the second duct (93) and extends longitudinally at least in part within the outer hose (16), such that between at least part of the two hoses (16, 17) a gap (18) having a proximal end and a distal end is defined, the gap (18) being substantially closed at said ends for withholding inside it possible leaking fluid,

wherein:

- the first connection body (20) comprises a control chamber (30) with a movable element (80),
- the control means comprise a control or retention member (83) associated to the movable element (80),

wherein the gap (18) is in fluid communication with the control chamber (30) to form therewith a substantially closed volume, or anyway such that an internal fluid leak towards the gap (18) or the aforesaid substantially closed volume causes a movement of the movable element (80), and thereby an actuation or displacement of the control member (83) to the

corresponding position of release of the valve member (72), in which the valve member (72) is free to assume the respective position of closing of the first duct (23),
characterized in that

- the movable element consists of an elastically deformable element (80) which delimits at least in part the control chamber (30) and which is capable of bending between an inoperative position and an operative position;
- the control member (83) is coupled to the elastically deformable element (80) such that a bending of the elastically deformable element (80) from the inoperative position into the operative position causes a displacement of the control member (83) towards the respective position of release."

V. In the present decision, reference is made to the following documents:

- (D3) EP 1 085 119 A2
- (D4) EP 0 474 569 A1

VI. The appellant's arguments can be summarised as follows:

Granted claim 1 involves an inventive step over the cited prior art. The filing of the auxiliary requests in appeal is justified. They are therefore admissible.

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

Granted claim 1 lacks an inventive step over the combination of D3 and D4. The appellant's auxiliary

requests should have been presented in first instance. They are not admissible in appeal.

Reasons for the Decision

1. The appeal is admissible.
2. Background

The invention is in the field of water feeding hoses that convey water from the water mains to a household appliance. It concerns in particular a safety device that protects against fluid leaks, see specification paragraph [0001]. To this end the water conducting hose (inner hose) is surrounded by a second outer hose, defining a gap between them. The gap is substantially closed, so that (in the wording of the claim) it "withholds", understood as meaning that it holds or contains, possible leakage of water from the inner hose, see paragraph [0005]. Additionally, the connection to the mains water supply is provided with a safety valve. The safety valve closes in case of water leakage. It operates as follows. The valve comprises a control chamber partially limited by a deformable elastic diaphragm. The diaphragm is coupled to a mechanism for triggering closure of the valve. Over-pressure within the control chamber causes activation of the closing mechanism. The control chamber and the gap between the inner and outer hose are in fluid communication. Fluid leakage into the gap generates over-pressure in it and in the control chamber, which closes the safety valve, see paragraphs [0005], [0010]-[0013].

3. Main request - Inventive step.

In the Board's opinion, and contrary to the appellant's arguments, the division was right to conclude that granted claim 1 lacks an inventive step over the combination of D3 and D4, see section 8.1.2 of the written decision.

3.1 Starting from D3, figures 6 and 7 depict an embodiment with safety valve 4' in its open position having a valve member 4H mounted on a first connection body 2', as claimed, through the control chamber casing 4A'. Over-pressure entering through a separate conduit T into the control chamber 4A' may deform diaphragm 4D with magnet 4E to close the valve and so main duct 3'. Over-pressure is created by a non depicted air generator inside the appliance which provides compressed air towards conduit T when liquid leakage is detected in a known way, see D3, paragraph [0076]. The device further includes an outer tube 10 enclosing the main water conduit, rubber tube 8, and collecting leakage water, paragraph [0025]. As is evident from figure 6 the gap between the inner and outer tubes is not in fluid communication with the control chamber. It is also not immediately apparent whether in this embodiment the lower end of the gap between inner hose 8 and outer hose 10 is open or closed, as this is not detailed. In another embodiment, see figure 8, the gap connects via a duct 54 to the machine so that leakage can drain out into the machine for detection there, paragraphs [0106] and [0113].

3.2 The claimed subject-matter differs therefore from this embodiment of D3 in that the gap between inner and outer hoses is substantially closed at its ends for holding within it possible leaking fluid, and is in

fluid communication with the control chamber to form a substantially closed volume.

Water leakage into the gap generates over-pressure within that volume because the gap is closed and due to the connection in the control chamber. This causes diaphragm deformation and closure of the safety valve. This construction provides a precise and reliable device of the "closed" type, that does not rely on sensors or pre-arrangements in the household appliance, which is thus simpler and economically advantageous to produce. The corresponding associated technical problem can thus be formulated as how to produce a simpler and less costly device, which is precise and reliable, see specification paragraph [0010].

- 3.3 The use of closed systems where leakage into the gap between inner and outer tube is used to activate the control member is known per se, see document D4. Such known systems do not rely on sensors or prearrangements inside the appliance, using leakage into the gap instead, and are thus simpler to produce.

D4 is of particular interest as it uses the pressure build-up in the gap due to leakage to directly activate the control member. D4 teaches a closed type anti-flood device. Its control chamber 27 is in fluid communication through conduit 17 with the closed gap 28 between inner and outer hoses 8, 9, figure 2, col.4, ln.17 to 21. Accumulated leaked water enters control chamber 27 through conduit 17 and moves, under water pressure, rigid piston 25 to trigger valve closure, see abstract. While D4 teaches that its rigid sliding piston arrangement is advantageous, it also teaches that the water pressure solution is known and

applicable also for a movable magnet mounted on a flexible diaphragm, see D4, column 1, lines 18-28.

Therefore with the aim of simplifying the D3 arrangement the skilled person who is familiar with the closed scheme concept of D4 would regard modifying the known diaphragm/magnet device of D3 by adopting such a closed scheme using direct pressure activation as a matter of obviousness.

- 3.4 The appellant argues that the skilled person would not consider D4's teaching because it describes magnetically activated valves as less reliable due to effect of the hot water temperature on the action of the magnet (D4, col.1, ln.29 to 42) and for this reason pursues the alternative route of purely mechanical activation. Thus, if D4 teaches them anything, it is to adopt such a mechanically activated valve.

The Board is unconvinced. Firstly, the skilled person is not looking to D4 for a particular valve but rather for a way to simplify the overall design of the safety device. Moreover, it is not apparent to the Board that the overall closed design of the D4 safety device is inextricably linked to the particular features of the valve, which is D4's main focus, see the characterizing part of its claim 1. The overall design of an outer tube capturing leakage from the inner tube to produce hydraulic pressure that activates a valve of unspecific type is indeed presented separately as known, see column 1 1st paragraph, and preamble of claim 1. For the skilled person it is thus immediately evident that in D4 the overall device design and the nature of the component valve are separate and independent aspects. They can therefore adopt those aspects separately and independently of one another, according to their needs

and circumstances. In this case they are only interested in the overall design, which they will thus adopt separately of the other features as a matter of course.

3.5 The Board is also not convinced by the argument that the resultant construction by the combination of D3 and D4 needs a vent hole and would not be a substantially closed volume in the sense of the claim. The claim formulation *substantially closed* in its usual meaning is broader than hermetic or air-tight, and thus does not necessarily require the absence of vent holes. Indeed, paragraphs [0093]- [0097] of the patent specification indicates that vented volumes also meet this limitation. The specification also appears to associate the term only with the ability to withhold water, see paragraph [0005].

3.6 Nor is the Board convinced that the skilled person would be unable to satisfactorily adapt the vent hole of D3 (see vent hole SF in figure 7 of D3) to the combined construction of D3 and D4. The appellant has also not convinced the Board that the skilled person would not apply the teachings of D4 to the system of D3 because the electrical conductors from the flow sensor 20' of D3 into the appliance would prevent them from closing the lower end of the gap. The Board considers that it is within the routine skills of the skilled person to design a proper vent placement or a proper water tight cable feedthrough, since they are customary constructional elements in the field and thus obvious as the result of standard design practice when carrying out the straightforward combination of the teachings of D3 and D4. Thus, contrary to the appellant's submission, the flow sensor 20' can continue to be used to detect flow in the inner tube and communicate to the

machine that the main valve is defective. The argument that the skilled person would not combine D3 and D4 because it would lead to a device where the flow sensor becomes useless is therefore moot.

3.7 Nor will the skilled person be prevented from adopting the simpler scheme taught by D4 because it is limited to only dealing with leakage from the supply pipe and not within the machine. That is the known disadvantage of "closed" schemes and the price to be paid for simplifying the D3 device. The skilled person will accept this known disadvantage in exchange for simplicity and cost reduction of the closed system. It is part of the routine weighing of available options.

3.8 The Board therefore concludes that the opposition division was right to find lack of inventive step of granted claim 1, Article 100(a) EPC in combination with Article 56 EPC.

4. Auxiliary requests 1-8 - Admission.

4.1 The Board decided not to admit these requests under Art 12(6) RPBA. According to Art 12(6) RPBA the Board shall not admit requests which should have been submitted in the proceedings leading to the decision under appeal, unless the circumstances of the appeal case justify their admittance.

4.2 The impugned decision is based only on the patent as granted, the appellant having refrained from replying, let alone submitting auxiliary requests in response to the notice of opposition, though given the opportunity.

Only now, in appeal, does the appellant file amendments to address the objections raised in opposition. The

appellant argues that they were taken by surprise by the rejection of their request for extension of the time limit pursuant to Rule 132 EPC to respond to the notice of opposition, see division's communication of 5 June 2020. However, the division merely applied the applicable instructions and guidelines, see the Guidelines for Examination in the EPO, 2019, E-VIII-1.6, see also Official Journal OJ EPO 5/2016, A42 (both cited in communication rejecting the request) which states that "In opposition proceedings, requests to extend time limits over and above the normal period of four months, . . . , will only be granted in exceptional, duly substantiated cases.". In this case the appellant gave no reasons and thus, with knowledge of the applicable provisions, could have expected refusal.

4.3 The appellant argues that the request was in the middle of the pandemic situation and also that they had instructed their assistant to include, as a safeguard, a request for oral proceedings in the request for extension. However, neither the oral proceedings request nor the reference to the pandemic situation were in the request for extension of 28 May 2020. Indeed this submission was only made in the oral proceedings before the Board and without supporting evidence.

4.4 Finally, as indicated in the cited guidelines E-VIII.1.6 (final paragraph) the failure to reply to a communication from the opposition division within the period set is without legal consequence. Thus the failure to observe the set period does not prevent the proprietor to file, even if late, a substantive response with amendments, that might still be considered at the discretion of the division before it

decides the case. Indeed many parties do so. Here, the decision followed some three months after the rejection and there would thus still have been enough time to file requests. The appellant chose not to do so and they must bear the consequences of that choice.

- 4.5 For the above reasons the Board considers that the circumstances put forward by the appellant do not justify the admittance of these auxiliary requests filed only now, when they could and should have been filed already in opposition, Art 12(6) RPBA.
5. All appellant proprietor requests fail. Hence the Board confirms the decision of the opposition division to revoke the patent pursuant to Art. 101(2) EPC.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:



G. Magouliotis

A. de Vries

Decision electronically authenticated