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Datasheet for the decision of 29 June 2007

Case Number: T 0167/05 - 3.5.03

Application Number: 98500272.4

Publication Number: 0924586

IPC: G05D 16/20

Language of the proceedings: EN

Title of invention:
Regulation of fluid conditioning stations

Applicant:
Renedo Puig, Jordi, et al

Opponent:
-

Headword:
Fluid conditioning stations/RENEDO PUIG ET AL

Relevant legal provisions:
EPC Art. 54, 56, 84, 123(2)

Keyword:
"Inventive step - (yes) after amendment"

Decisions cited:
-

Catchword:
-

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Case Number: T 0167/05 - 3.5.03

D E C I S I O N
of the Technical Board of Appeal 3.5.03
of 29 June 2007

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Decision under appeal: **Decision of the Examining Division of the European Patent Office posted 14 July 2004 refusing European application No. 98500272.4 pursuant to Article 97(1) EPC.**

Composition of the Board:

Chairman: A. S. Clelland
Members: A. Ritzka
R. Moufang

Summary of Facts and Submissions

I. This appeal is against the decision of the Examining Division dated 14 July 2004, refusing European patent application number 98500272.4 for the reasons that the subject-matter of claim 1 did not involve an inventive step having regard to disclosure of

D1: FR 2 105 583 A

D2: EP 0 614 010 A

and that claim 1 did not meet the requirements of Article 84 EPC for making use of the expression and/or several times residing in designing a large number of logical feature combinations and which makes the scope of protection unclear.

II. Notice of appeal was filed on 13 September 2004 and the appeal fee paid. The statement of grounds of appeal was signed on 11 November 2004. The appellant requested that the appealed decision be set aside and that the application be allowed on the basis of claim 1 filed on the grounds of appeal and dependent claims 2 to 15 on which the decision was based. The reimbursement of the appeal fee was requested for a substantial procedural violation according to Rule 67 EPC during the examination procedure. An auxiliary request for oral proceedings was made.

III. In a communication accompanying the summons to oral proceedings the board made observations regarding novelty and inventive step having regard to the disclosure of D2 and D3

D3: WO 88/05939 A

and the alleged procedural violation.

IV. With a letter of 1 June 2007, in response to the communication, the appellant filed revised claims 1 of a main request and an auxiliary request to replace the claim 1 on file. The appellant presented arguments regarding inventive step.

V. With letter of 28 June 2007 a new representative filed a new main request consisting in replacing claim 1 by a combination of claims 1 and 5 of the main request on file. The auxiliary request was kept unchanged.

VI. At the oral proceeding held on 29 June 2007 the appellant presented a new claim 1 of the main request and a new claim 1 of the auxiliary request and withdrew the request for reimbursement of the appeal fee.

At the end of the hearing the chairman announced the decision of the board.

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

"Method for the regulation of a fluid conditioning station, which comprises a plurality of pumping devices, at least one fluid accumulator container, at least one pressure transducer and regulating means, the conditioning station providing a fluid at a certain pressure and flow for consumption, the pumping devices starting and stopping so that the pressure at a measuring point is maintained between two pressure-

limit values, a start pressure (Va), which is determined in function of a limiting value to be maintained, and a stop pressure (Vp), so that when the pressure at the measuring point reaches the start pressure (Va) the flow provided by the conditioning station increases by one step a step being the difference between the flows of two sets of pumping devices of the conditioning station, and when the pressure at the measuring point reaches a respective stop pressure value (A',B',C'), the flow provided by the conditioning station reduces by one step;
wherein the respective stop pressure values (A',B',C') are not constant for all the pumping devices, there being as many respective stop pressure value (A',B',C') as there are steps for the conditioning station, a pressure difference between a respective stock pressure value (A',B',C') and said stop pressure (Vp) which increases as the flow increases;
whereby an energy saving is achieved on the basis of the said pressure difference."

In view of the board's decision no details of the auxiliary request needs to be given.

Reasons for the Decision

1. *Main request*

1.1 The main request filed during oral proceedings considers features discussed during oral proceedings in view of inventive step. Thus, although late filed, the main request is admitted in the procedure.

1.2 Clarity

In claim 1 of the main request the term and/or was cancelled so that claim 1 is restricted to only one alternative. Moreover, claim 1 covers the embodiment disclosed with reference to figures 3 and 4. Thus, claim 1 is supported by the description and fulfils the requirements of Article 84 EPC.

1.3 Article 123(2) EPC

Claim 1 of the main request is based on claims 1 and 5 as published and the description column 10, lines 17 to 24 and column 10, line 56 to column 11, line 2 and figures 3 and 4 of the application as published. Thus, claim 1 fulfils the requirements of Article 123(2) EPC.

1.4 Novelty and inventive step

D1 discloses a preconditioning system comprising a multitude of parallel pumping units which is operated such that the pressure in the fluid is kept between a minimum pressure and a maximum pressure, see page 1, line 34 to page 2, line 12. To keep the pressure in the desired range the system comprises switches controlled by pressure sensors for which the pumping units can be switched on and off according to the pumping capacity needed for maintaining the pressure. D1 discloses that in the prior art each pumping unit is controlled individually by a sensor control switch with a starting pressure and a stop pressure, the range in between the start pressure and the stop pressure being calculated depending on the desired switching frequency of the pumping unit. To avoid simultaneous start of all the

pumping units it is necessary to use different start pressures and stop pressures for each of the pumping unit, see page 1, lines 23 to 30.

D2 discloses the system of preconditioning stations comprising a plurality of pumping devices, a conditioning station providing a fluid at a certain pressure and flow for consumption. For maintaining the pressure between two limit values of pressure, a start pressure and a stop pressure, pumping device is started when the pressure which is a start pressure. As long as the pressure exceeds the start pressure additional pumping devices are started one at a time. If the pressure reaches the stop the value one pumping unit is stopped at a time, until the pressure in between the limiting values is achieved. See page 5, line 49 to page 6, line 31.

D3 discloses the method of controlling the plurality of machines such as air compressors, i.e. pumping units, each of which contributes when operative to a total capacity of the system. The system is operated so that the value of a variable parameter, e.g. the pressure, of the system is kept in between the first threshold value and the second threshold value for at least a major portion of a time period, see page 2, 5th paragraph.

Are according to one embodiment the system comprises the plurality of air compressors which are all of different nominal rated output capacities and a control means which determines whether it is necessary to increase the capacity of the system in order to keep the pressure within selected pressure range between an

upper threshold pressure and a lower threshold pressure, see page 11, 3rd and 2nd to last paragraph. If the pressure is to fall below the lower threshold pressure, the control means may respond by rendering another of the air compressors operative, additionally all instead of an air compressor already operative or it may render a combination of air compressors operative while air compressors previously operative are rendered inoperative, see page 12, 1st paragraph.

The subject-matter of claim 1 differs from the methods disclosed by D1, D2 and D3 in that the respective stop pressure values at which the flow provided by the conditioning station reduces by one step are not constant for all the pumping devices there being as many respective stop pressure values as there are steps for the conditioning station whereby pressure difference between a respective stop pressure value and the stop pressure increases as the flow increases. Thereby an energy saving is achieved on the basis of said pressure difference. Thus, subject-matter of claim 1 is novel having regard to the disclosure of each of D1, D2 and D3.

The problem underlying claim 1 is to provide for a method for regulation of a fluid conditioning station with reduced energy consumption this problem is solved by introducing respective stop pressure values which are not constant for all of the pumping devices so that the pressure difference between a respective stop pressure value and the stop pressure increases as the flow increases this results in switching off pumping units with a higher flow earlier than pumping units with lower flow, so that pumping units with higher

capacity and thus higher energy consumption are run as short as possible.

None of the prior art documents D1, D2 and D3 deals with this problem. In the method of each of D2 and D3 the stop pressure is constant for all of the pumping devices. Although in the method of D1 different stop pressures are foreseen for the individual pumping unit, the aim of these individual values is fulfilling given requirement of switching frequency for each of the pumping units and avoiding simultaneous switch off of all of the pumping units. Moreover, D3 does not mention increasing the difference between the individual stop values and the general stop value with increasing flow. Thus, neither the problem underlying the claim 1 nor its solution can be found explicitly or implicitly in D3.

The subject-matter of claim 1 therefore involves an inventive step having regard to the disclosure of the D1, D2 and D3.

1.5 *Remittal*

The case is remitted to the department of first instance for further prosecution on the basis of claim 1. As claim 1 was amended introducing limiting features from the description a further search might be considered. Moreover, the description has not been adapted to the new claims so far.

2. *Auxiliary request*

In view of the board's decision it is not necessary for the board to consider the auxiliary request.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the department of first instance with the order to continue prosecution on the basis of claim 1 of the main request as filed during oral proceedings.

The Registrar: The Chairman:

D. Magliano A. S Clelland