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Datasheet for the decision of 21 July 2020

Case Number: T 0171/18 - 3.2.04

Application Number: 05754093.2

Publication Number: 1768484

IPC: A01J5/007, A01J5/04, F04B37/14, F04B41/06, F04B49/02, G05D16/20

Language of the proceedings: EN

Title of invention:
CONTROLLABLE VACUUM SOURCE

Patent Proprietor:
DeLaval Holding AB

Opponents:
Octrooibureau Van der Lely N.V.
GEA Farm Technologies GmbH

Headword:

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

Keyword:
Novelty - (yes)
Inventive step - (yes)

Decisions cited:

Catchword:

Europäisches Patentamt
European Patent Office
Office européen des brevets

Beschwerdekammern

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Case Number: T 0171/18 - 3.2.04

D E C I S I O N
of Technical Board of Appeal 3.2.04
of 21 July 2020

Appellant: (Opponent 2)	GEA Farm Technologies GmbH Postfach 1348 59195 Bönen (DE)
Representative:	Keenway Patentanwälte Neumann Heine Taruttis PartG mbB Postfach 10 33 63 40024 Düsseldorf (DE)
Respondent: (Patent Proprietor)	DeLaval Holding AB Box 39 147 21 Tumba (SE)
Representative:	Zacco GmbH Bayerstrasse 83 80335 München (DE)
Party as of right: (Opponent 1)	Octrooibureau Van der Lely N.V. Cornelis van der Lelylaan 1 3147 PB Maassluis (NL)
Decision under appeal:	**Interlocutory decision of the Opposition Division of the European Patent Office posted on 15 November 2017 concerning maintenance of the European Patent No. 1768484 in amended form.**

Composition of the Board:

Chairman	C. Heath
Members:	G. Martin Gonzalez
	C. Kujat
	C. Heath

Summary of Facts and Submissions

I. Opponent 2 (GEA Farm Technologies GmbH) lodged an appeal, received on 15 January 2018, against the opposition division's interlocutory decision posted on 15 November 2017 concerning maintenance of the European patent No. 1768484 in amended form, and simultaneously paid the appeal fee. The statement setting out the grounds of appeal was received on 15 March 2018.

II. Opposition was filed under Article 100(a) EPC for lack of novelty and lack of inventive step.

The opposition division held that the patent as amended met the requirements of the Convention, having regard inter alia to the following prior art:

(P9) DE 199 00 096 A1

III. The appellant-opponent requests cancellation of the decision under appeal and revocation of the European patent No 1768484.

The respondent-proprietor requests rejection of the appeal and maintenance of the patent as amended during opposition (i.e. on the basis of auxiliary request 5 filed during oral proceedings before the opposition division, main request in appeal) or in an amended form on the basis of auxiliary requests 1-5 filed with its reply to the statement setting out the grounds of appeal.

Opponent 1, Octrooibureau Van der Lely N.V. (party as of right), has not made any substantive submissions.

IV. In preparation for oral proceedings, the board issued a communication setting out its provisional opinion on the relevant issues.

By letter of 19 March 2019, opponent 1 informed the board that it would not be attending the oral proceedings.

Oral proceedings were held on 21 July 2020.

V. The independent claims according to the main request - as maintained by the opposition division - read as follows:

"**1.** A vacuum source for supplying vacuum to at least a first vacuum drain, comprising multiple milking machines, the vacuum being supplied through conduits using a vacuum source, comprising at least a first and second vacuum pump
characterised in
- a control system adapted to measure airflow consumed by the milking machines,
- said control system is further adapted to control the operation of each of said first and second vacuum pumps based on said measured consumed airflow."

"**12.** A method for providing vacuum to at least a first vacuum drain, comprising multiple milking machines, the vacuum being provided through conduits using a vacuum source, comprising at least a first and a second vacuum pump, comprising the steps of:
- measuring airflow consumed by the milking machines, and
- controlling the operation of each of said first and second vacuum pump based on said measured consumed airflow."

VI. The appellant-opponent argued as follows:

Claims 1 and 12 of the main request are not novel over document P9. Their subject-matter also lacks inventive step having regard to P9 and common general knowledge.

VII. The respondent-proprietor argued as follows:

The subject-matter of claims 1 and 12 is novel and involves an inventive step over the cited prior art.

Reasons for the Decision

1. The appeal is admissible.

2. Background

The invention concerns a vacuum source for a milking system with multiple milking machines, comprising at least two vacuum pumps, and a corresponding method; see patent specification, paragraph [0001]. The system measures the airflow consumed by the milking machines. A control system controls the operation of the pumps on the basis of that measured consumed airflow. Therefore, the operation of the pumps is precisely controlled according to the airflow requirements currently prevailing. Accordingly, less costly vacuum pumps can be used and energy can be saved; see paragraphs [0011] and [0018] of the patent specification.

3. Main request - Novelty

The appellant-opponent contests the opposition division's finding that claims 1 and 12 of the main request in hand are novel over P9.

3.1 The appellant-opponent submits that claim 1 only claims the vacuum source with the control system, so the conduits and milking machines are not part of the claim. Since the characterising features of claim 1 are substantially functional features related to the use of the claimed vacuum system with the non-claimed milking machines, these features only required suitability for the claimed use.

3.2 One such feature is that the control system is "adapted to measure airflow consumed by the milking machines". In the board's view the formulation "adapted to" in normal usage implies that no further adaptation is required. Therefore this feature implies more than mere suitability. On the contrary, it requires specific adaptations of the claimed control system, namely an appropriately configured and calibrated airflow sensor and system that are able to obtain the actual airflow value, i.e. to measure the specifically claimed airflow.

Claim 1 further requires the control system to be adapted to control the operation of the pumps on the basis of said measurement. In the board's view the term "operation" in its normal usage implies that the control system is capable, without further adaptation, of operating the known vacuum source to meet the demands of the connected milking machines when, for example, only one milking machine can be in use or several can be used simultaneously, or when one or more of them demand a higher vacuum for teat cleaning.

3.3 Turning to P9, this document discloses a vacuum source with at least two vacuum pumps for supplying vacuum to milking machines. A pressure regulating valve (*Regelventil* or *Vakuumregelventil*) keeps the vacuum at the desired level by allowing a limited amount of atmospheric air to bleed into the system (*Reserveluft*); see P9, column 1, lines 31-38 (for the definition of *Reserveluft*), and column 1, lines 47-55. The system in P9 measures the flow of atmospheric incoming air through the bleeding or pressure regulating valve and controls operation of the pumps according to that measurement in order to keep the amount of bleeding air to a limited value; see column 1, lines 52-59.

3.4 According to the appellant-opponent, P9 anticipates the claimed system since the vacuum system in P9 (vacuum pumps and control system) would be suitable for the claimed use. The known system would be rendered suitable to measure the airflow consumed by the milking machines, and also to control the pumps depending on said consumed airflow, by merely moving the sensor in D9 from the pressure regulating valve to the conduit towards the milking machines.

In the board's view, however, without further information it is not directly and unambiguously derivable from P9 whether, in order to obtain a signal corresponding to and correlated with the actual airflow value at the new different measurement point, the known sensor needs to be constructionally adapted to the different conduit or whether the sensor and system need re-calibrating to the new conditions (e.g. new conduit diameter) or to a different flow-rate measuring range at the new measuring conduit. The board therefore considers that a disclosure of a control system adapted

to measure airflow consumed by the milking machines is not directly and unambiguously derivable from P9.

3.5 Furthermore, the system in P9 regulates the vacuum power to limit the airflow through the pressure regulating valve (see column 1, lines 50-55) in order to avoid unnecessary pump power consumption. Only a minimum airflow is maintained to absorb any sudden changes in the system. Thus even if the sensor in P9 were to correctly measure that airflow value by simply being placed at the connection to the milking machines (which in the board's view is not unambiguously disclosed by P9), the control system (configured as is) would interpret that measurement as the airflow through the regulating valve and act accordingly, i.e. it would limit the vacuum power to allow only a limited airflow (see above). The resulting system would not be able to meet the demands of higher (medium and high) airflow need modes of the milking machines. The system would thus not be capable of delivering any operating result in most of the required operation range. Therefore, it cannot reasonably be said that a control system of this kind is adapted to control the operation of the pumps, as required by the claim.

3.6 As an alternative argument, the appellant-opponent submits that the measurement in P9 (at the pressure regulating valve) represents an indirect measurement of the claimed airflow and as such anticipates the claimed feature. The board notes, however, that this airflow is not correlated with the airflow from the milking machines. While the airflows from the milking machines and the vacuum pumps vary to a relatively high extent, the bleeding atmospheric air flow is constantly kept to a low level in P9. Therefore, the flow measured in P9 does not in itself represent either a direct or

indirect measurement of the airflow consumed by the milking machines.

3.7 Method claim 12 explicitly requires "measuring airflow consumed by the milking machine" and "controlling the operation" of the pumps as method features, which are not disclosed in P9.

3.8 The board thus concludes that the subject-matter of claims 1 and 12 is novel over P9.

4. Main request - Inventive step

4.1 The appellant-opponent contests the opposition division's finding that the claims involve an inventive step. It submits that claims 1 and 12 are obvious in the light of P9 combined with common general knowledge – the sole inventive-step attack maintained and advanced during the oral proceedings.

4.2 Both parties consider P9 to be a suitable starting point for the assessment of inventive step. P9 teaches keeping the vacuum at the desired level inside the system using a pressure regulating valve, and regulating the vacuum pump according to the measured incoming atmospheric airflow through the valve.

4.3 As discussed above, it does not disclose measuring the airflow consumed by the milking machines. By using this controlling parameter, the operation of the pumps can be precisely controlled depending on the airflow requirements currently prevailing, and the pumps thus only use the vacuum power currently needed; see paragraphs [0011] and [0018] of the contested patent specification. By directly measuring the milking machines' current vacuum requirements, it furthermore

provides a faster response to the machines' demands than the system in P9. The corresponding objective technical problem can thus be formulated as how to improve the known regulation of the vacuum pumps.

4.4 In this regard, P9 neither teaches nor suggests measuring the airflow consumed by the milking machines. It only teaches regulation based on the measurement of a different airflow, namely of the bleeding incoming atmospheric air for maintaining system pressure.

The skilled person may otherwise draw on their common general knowledge when seeking to improve the pump regulation in P9. In this respect, the board notes that the main parameter to be controlled in a milking system is the vacuum level. It is therefore not apparent that the skilled person drawing on common general knowledge would consider airflow consumed by the milking machines as a possible vacuum pump control parameter as a matter of routine.

4.5 The appellant-opponent also submits that the general teaching of P9 (claim 1) is to regulate the power of the vacuum pump according to the bleeding airflow rate through the pressure regulating valve. Since P9 teaches using a sensor to measure that airflow merely as one alternative (claim 2), the skilled person would be motivated to seek other alternatives to carry out the general teaching of claim 1. In the appellant-opponent's opinion, using the airflow consumed by the milking machines is an obvious alternative.

In the board's view, if the skilled person is seeking an alternative control method based on the flow rate through the regulating valve (claim 1, which represents the core teaching of P9 as identified by the appellant-

opponent), it is not apparent that measuring the flow rate elsewhere can be regarded as an obvious choice or solution. This applies even more so to the system in P9, in which the airflow consumed by the milking machines does not directly correlate with the flow rate to be kept under control (airflow through the regulating valve), as explained above in relation to novelty.

4.6 The board is therefore not convinced by the appellant-opponent's arguments in respect of inventive step.

5. As the appellant's arguments against the findings in the opposition division's decision fail to convince, the board upholds the opposition division's decision.

Order

For these reasons it is decided that:

1. The appeal is dismissed.

The Registrar: The Chairman:

G. Magouliotis C. Heath

Decision electronically authenticated