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Datasheet for the decision of 20 April 2015

Case Number: T 1267/10 - 3.2.04

Application Number: 02724863.2

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IPC: A01J5/04, A01J5/007

Language of the proceedings: EN

Title of invention:
VACUUM SYSTEM COMMUNICATION

Patent Proprietor:
DeLaval Holding AB

Opponent:
Octrooibureau Van der Lely N.V.

Headword:

Relevant legal provisions:
EPC Art. 56
RPBA Art. 12(1)(b), 12(2), 12(4)

Keyword:
Inventive step - (no)
Late-filed request - abuse of procedure (no)
Late-filed request -
request could have been filed in first instance proceedings (yes)

Decisions cited:
G 0009/92

Catchword:
Reasons 3.1, 5

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Case Number: T 1267/10 - 3.2.04

D E C I S I O N
of Technical Board of Appeal 3.2.04
of 20 April 2015

Appellant: (Patent Proprietor)	DeLaval Holding AB P.O. Box 39 147 21 Tumba (SE)
Representative:	Gray, Helen Mary ZACCO GmbH Bayerstrasse 83 80335 München (DE)
Appellant: (Opponent)	Octrooibureau Van der Lely N.V. Weverskade 110 3147 PA MAASSLUIS (NL)
Representative:	Jennen, Peter Leonardus Hendricus 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 16 April 2010 concerning maintenance of the European Patent No. 1455569 in amended form.**

Composition of the Board:

Chairman	T. Bokor
Members:	A. de Vries
	S. Oechsner de Coninck

Summary of Facts and Submissions

I. Both the Opponent and the Proprietor lodged appeals against the interlocutory decision of the Opposition Division posted 16 April 2010 on the amended form in which European Patent No. 1 455 569 can be maintained.

The Proprietor filed their appeal on 8 June 2010 together with payment of the appeal fee. The statement setting out the grounds was received 25 August 2010.

The Opponent filed their appeal 25 June 2010 together with payment of the appeal fee. The statement setting out the grounds followed on 25 August 2010.

II. Opposition had been filed against the patent as a whole and was based on Article 100(a) together with Articles 52(1) and 54 EPC for lack of novelty, and together with Articles 52(1) and 56 EPC for lack of inventive step.

The Opposition Division held that the subject-matter of granted claims 1 and 13 was not novel, but that the patent as amended according to an auxiliary request met all the requirements of the EPC. In its decision the division considered the following document *inter alia*:
D1: US-A-5 960 736

III. Oral proceedings were duly held before the Board on 20 April 2015.

IV. The Appellant-Proprietor requests that the decision under appeal be set aside and that the patent be maintained in amended form according to claims of a main request as filed with the statement of grounds; in the alternative and according to a 1st auxiliary request, that the patent be maintained in the form

held allowable in the decision under appeal; alternatively that the decision under appeal be set aside and the patent maintained in amended form according to claims of a 2nd auxiliary request submitted with letter of 14 March 2011.

The Appellant-Opponent requests that the decision under appeal be set aside and the patent be revoked in its entirety.

V. The wording of claim 1 of the requests is as follows:

Main Request

"An automatic milking system comprising a vacuum pump arrangement (101), wherein said automatic milking system comprises a milking system controller (105; 210; 502) arranged to control milking system parameters and said vacuum pump arrangement comprises a vacuum system controller (103; 503) for controlling vacuum system parameters, characterised in that
- communication means (106, 504) is coupled to said vacuum system controller and to said milking system controller for establishing communication between said vacuum system controller and said milking system controller,
- said milking system controller comprises signal transmitting means (108; 514) for transmitting a message to said vacuum system controller, and
- said vacuum system controller comprises signal receiving means (107; 513) for receiving said message from said milking system controller,
wherein said milking system controller is arranged to send a message to said vacuum system controller in dependence of a first milking system-parameter, wherein

said message is an order to increase or decrease the speed of a vacuum pump motor, and
- said vacuum system controller is arranged to change at least one of said vacuum system parameters depending on said received message."

1st Auxiliary Request

Claim 1 is as in the main request but adds the following text at the end of its penultimate feature:
", and said message is sent a predetermined time before a respective increase or decrease of air in-flow to the milking system is expected".

2nd Auxiliary Request

"An automatic milking system comprising a vacuum pump arrangement (101) for supplying vacuum to said automatic milking system, wherein said automatic milking system comprises a milking system controller (105; 210; 502) arranged to control milking system parameters and said vacuum pump arrangement comprises a vacuum system controller (103; 503) for controlling vacuum system parameters relating to said vacuum pump arrangement, characterised in that
- communication means (106, 504) is coupled to said vacuum system controller and to said milking system controller for establishing communication between said vacuum system controller and said milking system controller,
- said milking system controller comprises signal transmitting means (108; 514) for transmitting a message to said vacuum system controller,
- said vacuum system controller comprises signal receiving means (107; 513) for receiving said message from said milking system controller, and

- said vacuum system controller is arranged to change at least one of said vacuum system parameters depending on said received message,
-said vacuum system controller comprises signal transmitting means (107; 513) for sending a message relating to at least one of said vacuum system parameters to said milking system controller, and
-said milking system controller comprises signal receiving means (108; 514) for receiving said message."

VI. The Appellant-Proprietor argued as follows :

The milk/wash controller 86 in D1 is only a manual switch while selection is made according to simple status not a proper milking parameter. Moreover in D1 there is no switching between milking and washing states, only from or to either state, and thus no increase or decrease of speed which implies more than a mere switching on or off. These differences go beyond obvious automation. Obvious automation would not adopt a 2 tier hierarchy with separate controllers but use a single overall controller.

As regards claim 1 of the 1st auxiliary request the added feature addresses the latency of the system between a speed increase or decrease as ordered and the system actually achieving the corresponding increased or decreased vacuum level. This delayed pump response is known per se, but is usually solved differently. D1 itself describes the use of a regulator to deal with fluctuations caused by the delay. There is no hint or suggestion to solve it otherwise.

Though it is acknowledged that the 2nd auxiliary request is late, nevertheless its admission would be equitable in view of the fact that D1 was only invoked

later in the appeal proceedings by the Appellant-Opponent. They would have sufficient opportunity to address this material if the case were then remitted as requested for the 2nd auxiliary request.

VII. The Appellant-Opponent argued as follows :

The main request should not be admitted as it could have been presented in first instance, Article 12(4) RPBA. Claim 1 of the main request does not exclude manual input of system parameters so that the milk/wash control 86 of D4 is a milking controller in the sense of claim 1. Moreover, the patent itself indicates that parameters can reflect status. Consequently, claim 1 can be read onto D1.

Otherwise a control in dependence of input control parameters effectively replaces an operator who is already operating the system in response to various visual inputs by an automatic scheme. This is simple, straightforward automation which is known to the skilled person from common general knowledge.

Regarding the first auxiliary request, all the final feature of claim 1 requires is that the signal to increase or decrease speed is sent a given time before the required new vacuum level is applied. It is well-known that a vacuum pump does not immediately achieve a desired level, see also D1 itself, in relation to start-up and ASAE limitations on vacuum fluctuations. It is then only natural to take such a delayed response into account when setting and controlling vacuum. The subject-matter of claim 1 of the first auxiliary request thus also lacks inventive step over D1.

The 2nd auxiliary request should not be admitted as its subject-matter diverges from that of the other two requests. It pursues material submitted but then withdrawn in first instance. Finally, it incorporates material from the description rather than being based on sub-claims.

Reasons for the Decision

1. Both appeals are admissible.

2. Background

The patent is concerned with an automatic milking system with a milking system controller and a vacuum system controller as part of the vacuum pump arrangement in the overall system. In the system of granted claim 1 the vacuum system controller is arranged to change one of its control parameters in response to a message transmitted from the milking system controller by corresponding signal transmitting means and received by the vacuum system controller by corresponding signal receiving means. Changing vacuum control parameters in response to milking control parameters is meant to reduce energy consumption of the pump, cf. specification paragraphs [0009] and [0010]. Consumption can be high if the pump is always run at high capacity, meaning that it often exceeds requirements, specification paragraphs [0003] and [0004].

3. Main Request

3.1 Admissibility

Claim 1 as upheld combined the features of granted claim 1 with those of granted claims 6, 8 that clarify the nature of the control and those of claim 9 specifying advance sending of the control message. Vis-a-vis that version claim 1 of the present main request omits the features of granted claim 9, though retaining those of granted claims 1, 6 and 8. The present main request thus pursues a position that is intermediate that of granted claim 1, which the appellant proprietor had defended in first instance, and that of claim 1 upheld, both positions it is undoubtedly entitled to pursue upon appeal. Furthermore, the exclusive focus on the features of granted claims 6 and 8 which define the nature of the control and in particular the relationship between the two controllers can be seen to address the decision's reasoning in this regard against novelty of granted claim 1, cf. page 5, 3rd paragraph. Thus, if the main request could in theory have been filed in first instance, its filing now with the grounds of appeal does not represent a significant departure from the issues considered in the decision under appeal, but is rather seen to be related thereto. It is also not evident that its filing arises from abuse or negligence on the part of the Appellant-Proprietor, or that its admission would otherwise be detrimental to general procedural principles or the rights of the Appellant-Opponent. For these reasons the Board decides to admit the main request into the proceedings, Article 12(4) RPBA.

3.2 Inventive Step

3.2.1 The features of granted claims 6 and 8 added to claim 1 of the main request vis-a-vis the version granted specify that the milking system controller is arranged to send a message to the vacuum system controller in

dependence of a first milking system parameter ordering it to increase or decrease vacuum pump motor speed. In the Board's understanding this defines what is effectively a two tier control scheme in which the milking system controller commands the vacuum system controller to increase or decrease pump speed in response to the milking parameter. Applying the generally recognized principles of claim interpretation, by trying to make technical sense of its contents and taking into account the patent's whole disclosure, cf. Case Law of the Boards of Appeal, 7th edition 2013 (CLBA), II.A.6.1, the Board further interprets the requirement of the message being an order to increase or decrease pump speed as implying more than just a simple turning on and off of the vacuum pump. It agrees with the Appellant-Proprietor that this feature means that pump speed is controllable, in the sense that it is varied or adjusted in response to a control signal to that effect. Nor is anything else suggested in the detailed description, where, see specification paragraphs [0035], [0041], [0043] and also [0047], vacuum is adjusted to different levels for cleaning, teat cup application and milking, washing and standby levels.

As regards "first milking system parameter" this is to be read broadly as meaning any parameter that relates to the operation of the milking system, cf. specification paragraphs [0018] and [0019]. For example, as follows from the flow diagram of figure 3 and paragraphs [0034],[0034] and [0043], this parameter can be the result of detection and identification of an animal (step 301); of a query as to whether an animal is allowed for milking (step 302); or whether the teat cleaning sequence has ended (step 306).

3.2.2 Turning to D1 and with this reading of claim 1 in mind, D1, see its sole figure, is seen to disclose a similar two tier control scheme with a milk/wash controller 86 as milk system controller communicating (via an integrator 62) with a vacuum system controller in the form of vacuum control 8 controlling a variable frequency drive 54 to set the pump motor speed at wash or milking values (column 5, line 51, to column 6, line 7) when the respective phase is selected (column 5, lines 40 to 45). The use of different vacuum levels in D1 for milking and washing addresses the same problem of pump overcapacity as that of the patent identified above, cf. D1, column 1, lines 47 to 54.

Selection of the milking or washing phase by an operator by means of the milk/wash controller 86 results in command signals issued (via an integrator 62) on lines 90 respectively 92 to a PLC controller within the vacuum control 8. In response control 8 issues speed control signals on line 98 that set the pump motor's variable frequency drive to the corresponding milking or wash value, cf. column 5, lines 46 to 55, and column 5, lines 63 to column 6, line 7. The PLC controller either controls the pump to run at fixed speeds or acts in conjunction with a PI controller to regulate speed to maintain a set milking or washing vacuum level, column 6, lines 9 to 17. In either case the commands or messages on lines 90, 92 are orders to increase or decrease vacuum pump motor speed, whether to change it from one fixed value to another, cf. column 7, lines 4, or whether it is to adjust speed to maintain a selected vacuum level, cf. column 6, lines 37 to 63.

3.2.3 The only feature of claim 1 that the Board finds not to be disclosed in D1 is that of the milking system

controller issuing the message to the vacuum system controller in dependence of a first milking system control parameter. As noted above, the control parameter may be nothing more than the outcome of the determination as to whether an animal is to be milked, i.e. whether milking is to be started, or whether to start cleaning after milking has finished. In D1 milking or washing phases are initiated by an operator at the milk/wash control, column 6, lines 17 to 18, and column 7, lines 1 to 10, i.e. manually. There, it is the operator who decides that and when an animal is to be milked, or, after milking, cleaned; in the claimed system the milking system controller carries out this function. This sole difference renders the subject-matter of claim 1 of the main request novel over D1.

3.2.4 The above difference effectively automates the task of selecting washing or milking phases that were hitherto performed by the operator. This results in a further automation of the D1 system which is already automated to some extent, cf. column 2, lines 50 to 54. Consequently, the associated objective technical problem can be reformulated as how to further automate a milking system as in D1. As noted D1 already solves the original problem addressed by the patent of reducing energy consumption due to pump overcapacity.

3.2.5 For the skilled person intent on further automating a milking system as in D1, it will be immediately obvious from the general principle of automation that he must replace the human operator by a machine equivalent. To that end he will as a matter of course adapt the controller 86 to carry out the operator’s task. As will be clear to him this means that where the operator selected milking and cleaning phases on the basis of say visual or other input, that selection must now be

performed by the controller itself in response to corresponding machine input to the same effect. In this straightforward scheme the machine input replaces the visual or other input, for example the observation that a cow is present in the milking stall or that milking has finished; it will be a machine equivalent that represents a milking parameter, in the above example, the sensed presence of a cow in the stall or the sensed completion of milking. The result of this obvious automation is a system in which, as in D1, the milk/wash control issues control messages to the vacuum control to increase or decrease pump motor speed but does so in response to a milking parameter. This corresponds to the system as defined in claim 1 of the main request.

3.2.6 In this regard the Board notes that claim 1 does not define anything other than the general concept of automating the milking system control; specific detail of how this automation might be realized is missing from the claim. The broad concept per se is a simple and straightforward application of the automation principle to the milk/wash controller.

3.2.7 The Board is further unconvinced that the skilled person would be more likely to also replace the two tier control hierarchy of D1 by a centralized scheme if he were tasked to automate a system as in D1. This argument assumes that the skilled person will forego a small modification of limited benefit for the promise of greater benefits of a further modification; he will only go the full mile, so to speak. This assumption that credits smaller steps with greater ingenuity then bigger ones is inherently flawed and at odds with the daily reality of technological progress. Only a prejudice or an incompatibility might in certain

instances deter the skilled person from taking a smaller step. Neither is apparent in the present case: a two tier control hierarchy and automation fit together perfectly well.

3.2.8 In the light of the above the Board concludes that the subject-matter of claim 1 of the main request lacks an inventive step, contrary to Articles 52(1) and 56 EPC.

4. Auxiliary Request 1

4.1 This request is directed at the amended claims as upheld in the decision under appeal. It adds to claim 1 of the main request the further feature of granted claim 9 according to which the message is sent "a predetermined time before a respective increase or decrease of air flow to the milking system is expected". Specification paragraphs [0036], [0039], [0043] and [0045] clarify that the motor speed control message is sent and speed increased "somewhat before" the relevant action (teat cleaning, application of teat cups & milking, washing) is carried out under the requisite vacuum level. This allows the system to adjust to the new vacuum level and achieve equilibrium before it is applied. This feature thus requires the system to wait a certain time before applying a requisite vacuum. D1 is silent as to when pump speed control messages are issued in relation to the milking or washing phases, and sending the message beforehand represents a further difference of the claimed subject-matter over this prior art.

4.2 As explained by the Appellant-Proprietor this feature addresses effects associated with system latency or response delay. According to column 7, lines 12 to 15, of the patent specification the system needs a short

time to build up a vacuum once speed is increased. If the vacuum level were to be applied immediately fluctuations would result.

D1 is also concerned with latency (which is a known characteristic of vacuum pump systems as all agree) and associated fluctuations, cf. column 1, lines 18 to 33. For this reason it proposes the use of the fast response PI feedback control to stabilize vacuum, see column 7, lines 17 to 23 and 38 to 42, rather than the conventional slow response, adjustable speed drive mentioned in column 1, lines 55 to 65. This reduces latency and its effects.

Vis-a-vis D1 the sending of the control message beforehand can therefore be seen to further suppress the effects of latency, and the objective technical problem can be formulated accordingly. It goes without saying that the problem of further suppressing the effects of latency is unrelated to that of further automation, as are their respective solutions. Therefore these measures can be assessed for inventive step independently of one another.

4.3 As may also be inferred from column 1, lines 23 to 28, of D1, which refers to the strict vacuum standards set by the ASAE (American Society of Agricultural Engineers) for milking systems, the various operations such as milking and cleaning are normally carried out under well-defined vacuum levels. This is confirmed by D1's efforts to provide stable pre-set vacuum levels. To ensure operation at these set levels in spite of system response delay or latency it will be immediately obvious to the skilled person (a mechanical engineer involved in the development of milking systems with a good knowledge of relevant vacuum system technology)

from straightforward considerations that the system must wait until the system completes its response and a requisite vacuum level is established before it can apply that level. Indeed, the Board holds this to be the standard approach when dealing with latency; it is conceivable that this approach of waiting underlies D1's interest in a fast response PI feedback control rather than earlier slow response adjustable speed drives.

In practical terms waiting through the response delay until the vacuum level is established involves either waiting a sufficiently long time for the delay to pass, or monitoring the vacuum level and applying it when it reaches the desired value. Both are equally obvious options to the skilled person. Applying the former, simpler option as a matter of obviousness to a milking system such as that of D1 with semi-automated control results in a system in which the speed control message will be issued a given time in advance of the relevant vacuum level application, before the resultant air flow change is expected, in the words of claim 1 of the auxiliary request 1.

4.4 The application of the feature of sending the speed control message to a milking system as in D1 is thus obvious. As this feature and its underlying problem are not related to that of control automation discussed in section 3 above, their combined application is a mere juxtaposition of individually obvious measures that adds nothing over and above the sum of their individual effects. The subject-matter of claim 1 of the auxiliary request 1 thus lacks inventive step, Articles 52(1), 56 EPC.

5. Auxiliary Request 2

5.1 The Appellant-Proprietor has filed auxiliary request 2 with their submission of 14 March 2011 in response to the statement of grounds of appeal by the Appellant-Opponent. In claim 1 of this request the features of granted dependent claims 6, 8 and additionally 9 that were included in claim 1 of the main and auxiliary request 1 respectively (and directed at the nature of the control) are replaced by the features of granted claim 2 concerning communication of a vacuum system parameter from the vacuum system controller to milking system controller. Auxiliary Request 2 thus pursues a different concept from that developed in the main and 1st auxiliary request.

5.2 The Board holds that even though the Appellant-Proprietor was procedurally entitled to react to the appeal of the other party under Article 12(1)(b) and (2) RPBA, and possibly to submit further auxiliary requests, in the present case the submitted response is neither appropriate nor legitimate. Insofar as this request was meant as a response under Article 12(1)b RPBA to the Appellant-Opponent's appeal and the Proprietor is thus considered to act in the procedural position as respondent, the Board holds that the 2nd auxiliary request is inadmissible in its substance, by analogous application of the principle of prohibition of *reformatio in peius* (G 9/92, Headnote II, OJ EPO 1994, 875). It is apparent that the omission (by replacement) of features of claim 1 as upheld by the decision under appeal puts the Appellant-Opponent in a worse situation. On the other hand, if this request were considered to be filed by the Proprietor in the procedural position of appellant, than it should have been filed with the grounds of appeal pursuant to Article 12(2) RPBA at the latest, or even more

preferably already before the first instance, Article 12(4) RPBA. While there is no general principle similar to the prohibition of the *reformatio in peius* that an appellant cannot improve its substantive position relative to its requests filed with the grounds of appeal, the Board deems it inequitable that the Appellant-Proprietor should be able to do so merely due to the fact that Opponent also appealed and therefore Article 12(1)(b) RPBA formally opened the possibility to make further submissions. It is clear that by filing this request at this stage in the proceedings effectively prevents the Opponent as respondent from submitting any substantive reaction to this request in good time, certainly making it impossible for the Opponent to comply with Article 12(1)(b) or 12(2) RPBA. Thus the submission of the 2nd auxiliary request would be admissible only exceptionally under Article 13 RPBA, which it is not, for the reasons below.

5.3 The Appellant-Proprietor has further argued that auxiliary request 2 should be admitted for the sake of equitability in view of the Appellant-Opponent's subsequent reliance in the appeal on D1 against the main and auxiliary request 1. This argument is however not supported by the facts of the case. D1 was already cited in opposition against novelty and inventive step of claim 1 as upheld and indeed discussed in the decision under appeal (page 6, 2nd paragraph; reasons IV.1, 3rd paragraph). It is again cited against novelty for that claim in the Appellant-Opponent's statement of grounds, page 1, 2nd paragraph, and again for claim 1 of the new main request in the Appellant-Opponent's response dated 16 March 2011 to the Proprietor's statement of grounds. Its citation cannot have come as a surprise. Even if it had, it would still not justify the omission of features that had been added in

opposition to differentiate the claimed invention from such prior art and which up to this point had played a central role in the proceedings, to replace them by other new ones that had not yet been considered. Such a change of tack is for all intents and purposes inequitable and could, if admitted, only fairly be addressed by a remittal to the first instance, as indeed requested by the Appellant-Proprietor at the oral proceedings before the Board. However, a remittal at this late stage is clearly not in the interest of overall procedural economy; cf. Article 13(1) RPBA. In this regard the request also fails to meet the convergence criterion developed under that Article, see CLBA, IV.E.4.4.4.

5.4 For these reasons the Board decided not to admit auxiliary request 2 into the proceedings.

6. The Board concludes that, whereas auxiliary request 2 is not admissible, the patent as amended according to the main request and the auxiliary request 1 fails to meet the requirements of the EPC. Pursuant to Article 101(3)(b) EPC it must therefore revoke the patent.

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:

G. Magouliotis T. Bokor

Decision electronically authenticated