

Internal distribution code:

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

**Datasheet for the decision
of 4 April 2011**

Case Number: T 0767/08 - 3.2.04

Application Number: 02077614.2

Publication Number: 1279326

IPC: A01J 5/017

Language of the proceedings: EN

Title of invention:

A method of and a device for automatically milking a dairy animal

Patentee:

Lely Enterprises AG

Opponents:

WestfaliaSurge GmbH
DeLaval International AB

Headword:

Threshold/LELY

Relevant legal provisions:

EPC Art. 100(c), 100(b), 56

Relevant legal provisions (EPC 1973):

-

Keyword:

"Added subject-matter (main and first auxiliary requests)"
"Insufficiency of disclosure (no)"
"Inventive step (yes: second auxiliary request)"

Decisions cited:

-



Case Number: T 0767/08 - 3.2.04

D E C I S I O N
of the Technical Board of Appeal 3.2.04
of 4 April 2011

Appellant: DeLaval International AB
(Opponent 02) P.O. Box 39
SE-147 21 Tumba (SE)

Representative: Lerwill, John
A.A. Thornton & Co.
235 High Holborn
London WC1V 7LE (GB)

Respondent: Lely Enterprises AG
(Patent Proprietor) Bützenweg 20
CH-6300 Zug (CH)

Representative: Clarkson, Paul Magnus
Octrooibureau Van der Lely N.V.
Weverskade 110
NL-3147 PA Maassluis (NL)

Party to the proceedings: WestfaliaSurge GmbH
(Opponent 01) Siemensstrasse 25-27
D-59199 Bönen (DE)

Representative: Neumann, Ditmar
KNH Patentanwälte
Kahlhöfer Neumann Rößler Heine
Postfach 10 33 63
D-40024 Düsseldorf (DE)

Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 28 February 2008
rejecting the opposition filed against European
patent No. 1279326 pursuant to Article 101 (2)
EPC.

Composition of the Board:

Chairman: M. Ceyte
Members: P. Petti
T. Bokor

Summary of Facts and Submissions

- I. The opposition division, by its decision dispatched on 28 February 2008, rejected the oppositions filed against the European patent No. 1 279 326.
- II. Opponent 02 (hereinafter appellant) lodged an appeal against this decision on 11 April 2008 and paid the appeal fee on 15 April 2008. A statement setting out the grounds of appeal was received on 9 July 2008.
- III. Oral proceedings before the board were held on 4 April 2011.

By letter dated 28 March 2011 opponent 01, who had been duly summoned, informed the board that he would not attend the oral proceedings. In accordance with Rule 115(2) EPC, the oral proceedings were held without him.

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

The respondent (patent proprietor) requested that the decision under appeal be set aside and the patent be maintained in amended form on the basis of claims 1 to 51 of the main request or claims 1 to 48 of the first auxiliary request filed with letter dated 4 March 2011 or on the basis of claims 1 to 27 of the second auxiliary request or claims 1 to 12 of the third auxiliary request filed during the oral proceedings before the board.

V. Claim 32 of the main request, which is identical with claim 29 of the first auxiliary request, reads as follows:

"A device for automatically milking a dairy animal, in particular a cow, said device being provided with means for activating the teat cup for milking the teat of the dairy animal, with means for measuring a milking parameter during milking the teat for obtaining a milking parameter value, with means for deactivating the teat cup, with means for generating with the aid of the milking parameter value a threshold signal indicating that a deactivation threshold has been reached, the deactivation means being put into operation with the aid of the threshold signal, with a computer, said means for measuring the milking parameter is capable of being connected with the computer for transmitting milking parameter data to the computer, characterised in that the computer is suitable for storing the starting time from which the milking parameter is measured, is suitable for storing the momentary value of the milking parameter as measured by the milking parameter meter, and is suitable for continuously determining the average value of the milking parameter, the means for deactivating the teat cup being controlled with the aid of data based on the average value of the milking parameter determined by the computer, the computer is suitable for applying a mathematical function to the value of the average value of the milking parameter for obtaining a threshold milking parameter average, in that the computer comprises a comparator for comparing the momentary value of the milking parameter with the threshold milking parameter average, and in that the

computer is suitable for determining a period of time during which the momentary value of the milking parameter equals or is lower than the threshold milking parameter."

Claim 1 of the second auxiliary request reads as follows:

"1. A method of automatically milking a dairy animal, in particular a cow, said method comprising:

- a) the step of activating the teat cup for milking a teat of the dairy animal,
- b) the step of measuring a milking parameter during milking the teat during step a) for obtaining a value of the milking parameter, the milking parameter being the milkflow, and
- c) the step of deactivating the teat cup when a deactivation threshold has been reached, said deactivation threshold being determined with the aid of the value of the milking parameter, wherein a mathematical function is applied to the value of the milking parameter for obtaining a threshold milking parameter value, and the method further comprises the steps of comparing the momentary value of the milking parameter with the threshold milking parameter value, and the step of deactivating the teat cup when the momentary value of the milking parameter during a period of time equals or is lower than the threshold milking parameter value, wherein the value of the milking parameter is an average value and the method comprises the step of recording in a step a) a starting time from which the average value of the

milking parameter is determined and as a starting time from which the average value of the milking parameter is determined there is taken a point of time after the point of time when the milk flow in step a) starts."

VI. The appellant essentially submitted that

- the subject-matter of independent claim 32 of the main request extended beyond the content of the application as filed,
- the subject-matter of claim 1 of the second auxiliary request did not involve an inventive step over document SU-A-1 169 571 (E9) in combination with US-A-4 922 855 (D5), and
- the description did not contain sufficient information to enable the skilled person to carry out the invention claimed in claims 6 to 9 and 12 of the second auxiliary request without undue burden.

VII. The respondent essentially contested the appellant's arguments.

Reasons for the Decision

1. The appeal is admissible.
2. *Article 100(c) EPC (main and first auxiliary requests)*
 - 2.1 Claim 32 of the main request, which is identical with claim 29 of the first auxiliary request, differs from

claim 37 of the application as filed inter alia by the additional feature that

- the computer is suitable for determining a period of time during which the momentary value of the milking parameter equals or is lower than the threshold milking parameter and for putting the deactivation means into operation when this period of time has reached a certain time threshold value.

2.2 Neither the claims, nor the description, nor the drawings of the application as filed disclose this additional feature.

According to paragraph [0050] of the published version EP-A-1 279 326 which has the same content of the application as filed, the computer is suitable for determining a period of time from deactivation of the teat cup for disconnecting the teat cup when the period of time has reached a certain time threshold. Thus, this paragraph refers to a period of time different from the period of time in the additional feature and therefore does not provide a basis for this amendment.

2.2.1 The respondent submitted in this respect that there was a basis in the description of the application as filed (EP-A-1 279 326), namely in paragraph [0027], which relates to a device for performing the method previously described, in combination with paragraph [0051], stating that the teat cup may be deactivated when the momentary value of the milking parameter equals or is lower than the threshold milking parameter value during a period of time which is adjustable.

2.2.2 However, the paragraphs above refer to an adjustable period of time without stating that this period of time is determined by the same computer which applies a mathematical function for obtaining a threshold milking parameter average.

Furthermore, paragraph [0051] only states that the teat cup is deactivated when, during a period of time that is adjustable, the momentary value of the milking parameter equals or is lower than the threshold milking parameter value. This paragraph does not disclose that the teat cup is deactivated when this period of time has reached a certain time threshold value.

2.3 Thus, the subject-matter of amended claim 32 of the main request and claim 29 of the first auxiliary request extends beyond the content of the application as filed.

Therefore, the ground for opposition according to Article 100(c) EPC prejudices the maintenance of the patent on basis of main and first auxiliary requests.

3. *Second auxiliary request (amendments to the claims)*

3.1 The appellant made no objections under Article 100(c) or 123(2) EPC to amended claim 1 according to the second auxiliary request. Claim 1 combines the features of granted claims 1, 4 to 6 and 8 and is based upon claims 1 to 4, 6, 9 to 11 in combination with paragraph [0012] of the application as filed.

3.2 The amended claims comply with the requirements of Article 123(2) and (3) EPC.

4. *Sufficiency of disclosure (second auxiliary request)*

4.1 The appellant essentially submitted that the subject-matter of dependent claims 6 to 9 of the second auxiliary request, which correspond to granted claims 11 to 14 and concern a method in which the predetermined threshold is selected from a table stored in the memory and containing threshold milk flows corresponding to milk flow ranges, is not sufficiently described in so far as the patent specification does not provide any teaching in relation to a method involving the steps of applying a mathematical function to the value of the milk flow and of selecting a threshold value from a memory.

4.1.1 The board does not find this argument convincing for the following reasons:

- According to the patent specification (paragraphs [0050] and [0051] and Table I), the measured milk flow is compared with average milk flow ranges of a table stored in the memory in order to determine a range and the computer selects the threshold value corresponding to the determined range. The threshold value is determined by applying a mathematical function (of tabular type) in so far as its value is in relation to an average milk flow range. Therefore, the patent specification provides a clear teaching how to apply a mathematical function (of tabular type) to the value of the milk flow in order to obtain a threshold value also when the threshold is selected from a table stored in the memory.

4.2 The appellant has also submitted that the description does not provide sufficient disclosure of how to carry out the method defined in claim 12 of the second auxiliary request (which corresponds to granted claim 17), in which two or more milking parameters are employed in determining the threshold value, in so far as the patent specification only discloses the use of a combination of milk flow and electrical conductivity without referring to other combinations of milking parameters. Thus, the subject-matter of claim 12 amounts to nothing more than an invitation to experiment. In contrast, the respondent has submitted that nothing more than routine experimental work is required to carry out the invention defined in claim 12.

4.2.1 Paragraphs [0043] to [0046] of the patent specification describe in detail a method in which the threshold is determined with the aid of the values of the milk flow and the milk conductivity. In the subsequent paragraph [0047] it is stated that the milk flow can be used in combination with other parameters for deactivating the teat cup and by way of example it is referred to the milk temperature. Moreover, in paragraph [0030] it is stated that in order to use an other milking parameter than those specifically mentioned the skilled person can measure the variation of the milking parameter during milking. Therefore, the patent specification not only invites to experiment but also contains a suggestion how to do it. The skilled person could apply the teaching given in paragraphs [0043] to [0046] for the combination of milk flow and conductivity in an analogous way so as to combine milk flow with an other parameter. Thus, this experimentation does not appear

to be an undue burden. Nor does it require inventive activity.

4.3 Therefore, the invention claimed in the second auxiliary request meets the requirements of sufficiency of disclosure under Article 100(b) EPC.

5. *Inventive step (second auxiliary request)*

5.1 Document E9 (see English translation) discloses a method of automatically milking a dairy animal, in particular a cow, said method comprising the steps of

- a) activating the teat cup for milking a teat of the dairy animal,
- b) measuring a milking parameter during milking the teat during step a) for obtaining a value of the milking parameter, the milk parameter being the milk flow,
- c) deactivating the teat cup when a deactivation threshold has been reached, said deactivation threshold being determined with the aid of the value of the milking parameter,
- d) applying a mathematical function to a value of the milking parameter for obtaining a threshold milking parameter value (the mathematical function being applied by means of a correction unit 4)
- e) comparing (in a comparison unit 3) the momentary value of the milking parameter (hereinafter $F(t)$) with the threshold milking parameter value (hereinafter T).

In D9, the step of deactivating the teat cup is also carried out when the momentary value of the milking

parameter equals or is lower than the threshold milking parameter value ($F(t) \leq T$). However, the momentary value of the milking parameter is not determined "during a period of time" as defined in claim 1.

Furthermore, the value of the milking parameter (to which the mathematical function is applied for obtaining the threshold value) is the **maximal** value of the milk flow measured during step a), not an **average** value as defined in claim 1. In this citation, the threshold value is obtained by dividing the maximal value of the milk flow by 20 ($T = F_{\max}/20$). Thereafter this threshold value is stored in a storage unit 3.

The method of E9 solves the problem (stated in paragraphs [0003] and [0004] of the patent specification) of determining per dairy animal the moment when milking can be stopped, so that the dairy animal can automatically milked.

5.1.1 The appellant submitted that the feature of applying a mathematical function to the value of the average of the measured milk flow is inherent to the measurement of the milk flow in view of the pulsed nature of the milk flow.

The board does not find this argument convincing for the following reasons:

- As has been explained, document E9 discloses the step of measuring the milk flow, which implies that during the period of time in which the teat cup is activated for milking a teat of an animal a plurality of milk flow values are determined, as

well as the step of selecting among these milk flow values the maximal value for determining the threshold value, without referring to any average to which a mathematical function is applied for obtaining a threshold value.

- In any case, even if the milk flow values obtained in the method of E9 were to be considered as being average values determined over the duration of a pulsation cycle, the value selected for obtaining the threshold value would be the maximal value among these values.

- Claim 1 is directed to a method in which the threshold value is obtained on the basis of an average value determined on the basis of milk flow values measured starting from a point of time after the start of the milk flow. If the measured milk flow values according to claim 1 were to be average values determined over the duration of a pulsation cycle, claim 1 would still require that the threshold value is obtained on the basis of an average determined on the basis of the "average values" determined over the duration of a pulsation cycle and not the maximal value of these "average values".

5.2 Therefore, the subject-matter of claim 1 differs from the method of E9 in that

- i) the step of deactivating the teat cup occurs when the momentary value of the milking parameter **during a period of time** equals or is lower than" the threshold milking parameter value, i.e. when

the condition $F(t) \leq T$ permanently occurs during a period of time,

- ii) the value of the milking parameter (to which the mathematical function is applied for obtaining the threshold value) **is an average value,**
- iii) the method comprises the step **of recording in step a) a starting time from which the average value of the milking parameter is determined,**
- iv) **as a starting time** there is taken **a point of time after the point of time when the milk flow in step a) starts.**

Feature i) provides the advantage that the step of deactivating the teat cup is carried out without being sensitive to fluctuations or perturbation which may occur in the final phase of the milking (see patent specification, paragraph [0012], second sentence).

Feature ii) provides a more accurate determination of the threshold value, in so far as fluctuation or temporary perturbations occurring during step a) may be averaged (see patent specification, paragraph [0007]).

Features iii) and iv) provide the advantage of avoiding that the strongly fluctuating values occurring at the start of the milk flow influence the determination of the threshold value.

All these distinguishing features taken in combination contribute to a more accurate determination per dairy animal of the time when the teat cup has to be deactivated. Therefore, starting from E9 as closest prior art, the objective problem to be solved by the

claimed invention is to determine more precisely per dairy animal the moment when milking has to be stopped so that the dairy animal can optimally be milked.

- 5.3 Document D5, which addresses the problem of determining the time for removal of a milking unit (see column 1, line 22 to column 2, line 3 and column 6, lines 23 to 31), discloses (see particularly column 5, line 42 to column 6, line 31; Figure 8) a method of automatically milking a dairy animal, in which the teat cup is deactivated only when the momentary value $D1$ of the milk flow measured during milking equals or is lower than a threshold value $D2$ during a predetermined elapsed period of time T_m . Thus, this citation discloses or suggests distinguishing feature i).

However, this document neither discloses nor suggests features ii) to iv):

In document D5, the threshold value $D2$ is determined by multiplying the preset threshold value by a correction factor which depends on the minimal resistance value R_d of the milk measured during a period of time T_c (see particularly column 4, line 47 to column 5, line 3). Since the electrical resistance of the milk varies in inverse proportion to the milk flow rate (see particularly Figures 8(b) and 8(c); column 3, lines 48 to 50), it can be derived from D5 that the threshold value is determined by applying a mathematical function to the value of the milk flow, this value being **the maximal value of the milk flow** during the period of time T_c . In other words, document D5 - with respect to the determination of the threshold value - points towards the solution proposed in document E9.

It is also observed that US-A-5 152 246 (E3), which was referred to by the appellant in his grounds of appeal, teaches (see particularly Figure 8; column 1, lines 11 to 68) to determine threshold values ("reference flow-rates") with the aid of a maximal value (C1, C2, C3) of the milk flow.

Therefore, in view of the cited prior art, the skilled person starting from E9 would not be led to the claimed improved method in which, during the period of time the teat cup is activated for milking a teat of an animal, the average value of the measured milk flow is determined starting from a point of time after the point of time when the milk flow starts (features ii) to iv)).

5.4 Therefore, the claimed subject-matter involves an inventive step (Article 56 EPC).

Consequently the patent may be maintained on the basis of claims 1 to 27 of the second 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 maintain the patent with the following claims and a description to be adapted:

Claims: No. 1-27 of the second auxiliary request
filed during the oral proceedings before the
Board

The Registrar:

The Chairman:

G. Magouliotis

M. Ceyte