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Datasheet for the decision
of 11 September 2012

Case Number: T 0410/10 - 3.2.04
Application Number: 00980180.4
Publication Number: 1231832
IPC: A01J 5/007
Language of the proceedings: EN

Title of invention:
A method and a device for milking an animal

Patentee:
Delaval Holding AB

Opponents:
Octrooibureau Van der Lely N.V.
WestfaliaSurge GmbH

Headword:
Milking interval/DELAVAL

Relevant legal provisions:
EPC Art. 123, 83, 56

Keyword:
"Inventive step (yes)"

Decisions cited:
-

Catchword:
-
Case Number: T 0410/10 - 3.2.04

DECISION
of the Technical Board of Appeal 3.2.04
of 11 September 2012

Appellant I: Octrooibureau Van der Lely N.V.
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Decision under appeal: Interlocutory decision of the Opposition
Division of the European Patent Office posted
30 December 2009 concerning maintenance of
European patent No. 1231832 in amended form.

Composition of the Board:
Chairman: A. de Vries
Members: P. Petti
T. Bokor
Summary of Facts and Submissions

I. The opposition division in its interlocutory decision dated 30 December 2009 found that the European patent No. 1 231 832, against which two oppositions - based upon Articles 100(a) and (b) EPC - had been filed, met the requirements of the EPC in an amended version submitted by the patent proprietor.

In its decision the opposition division found inter alia that the invention was sufficiently disclosed and the claimed subject-matter involved an inventive step having regard inter alia to the prior art disclosed in documents

P1: DE-A-19 521 569,
P4: M.C. van der Haven et al.: "Handboek Melkwinning" 1996, pages 33 to 37, 121 to 123, Praktijkonderzoek Rundvee, Schapen en Paarden (PR), Lelystad( P4) and its English translation,

II. On 26 February 2010 opponent 2 (hereinafter appellant II) lodged an appeal against this decision and simultaneously paid the appeal fee. A statement setting out the grounds of appeal was received on 27 April 2010.

On 3 March 2010 opponent 1 (hereinafter appellant I) lodged a further appeal against this decision and simultaneously paid the appeal fee. A statement setting out the grounds of appeal was received on 5 May 2010.
III. With the grounds of appeal Appellant I filed a new document, S. Brandsma, "Onderzoek naar de invloed van ongelijke tussenmelktijden op de productie en de uiergezondheid van melkvee", Institut voor Veeteelktunding Onderzoek "Schoonoord" and its English translation (P21).


IV. Oral proceedings before the board were held on 11 September 2012.

V. Both appellants request that the decision under appeal be set aside and the patent be revoked.

The respondent requests that that the decision under appeal be set aside and the patent be maintained in an amended form on the basis of the main request, filed with letter dated 4 July 2012, or alternatively on the basis of an auxiliary request filed with the same letter. These requests replace requests previously on file.

VI. Appellant I had requested in writing that the new main and auxiliary requests of the respondent be not admitted into the appeal proceedings as late filed. The respondent had requested that document P23 not be admitted into the proceedings.

During oral proceeding the board expressed its preliminary opinion that the new respondent's requests
and the new documents (among them P21 and P23) filed by appellant I could be admitted into the appeal proceedings, whereafter the parties agreed with the admission of the above mentioned new requests and documents.

VII. The wording of claims 1 and 2 of the main request reads as follows:

Claim 1

"1. A method for milking an animal by means of a milking machine according to a milking process being determined by a number of adjustable parameters defining the intensity of the milking process, wherein the method comprises the steps of:

determining for the animal the value of the length of the time period from at least one first milking operation to a following second milking operation; wherein the determining of said value is performed in an automatic manner, and the second milking operation is the next subsequent milking operation of the first milking operation;
milking the animal during the second milking operation by means of the milking machine; and adjusting in connection with the second milking operation of the animal at least one of said parameters in response to set determined value; wherein the adjustment is performed in an automatic manner, said adjustable parameters include the pulsation frequency, and the adjustment of the pulsation frequency is such that the pulsation frequency during the second milking operation is relatively low when the time period is relatively
short and relatively high when the time period is relatively long, such that the second milking operation is performed in a less intensive manner when the time period is relatively short and in a more intensive manner when the time period is relatively long."

Claim 2

"1. A method for milking an animal by means of a milking machine according to a milking process being determined by a number of adjustable parameters defining the intensity of the milking process, wherein the method comprising the steps of:

determining for the animal the value of the length of the time period from at least one first milking operation to a following second milking operation; wherein the determining of said value is performed in an automatic manner, and the second milking operation is the next subsequent milking operation of the first milking operation;
milking the animal during the second milking operation by means of the milking machine; and adjusting in connection with the second milking operation of the animal at least one of said parameters in response to set determined value; wherein the adjustment is performed in an automatic manner, said adjustable parameters include the pulsation ratio, and the adjustment of the pulsation ratio is such that the pulsation ratio during the second milking operation is relatively low when the time period is relatively short and relatively high when the time period is relatively long, such that the second milking operation is performed in a less intensive manner when the time
period is relatively short and in a more intensive manner when the time period is relatively long."

VIII. Appellant I submitted that claims 1 and 2 are not clear (Article 84 EPC) and that the skilled person would not be able to carry out the invention over the full range of the scope of the claims (Article 100b) EPC). Furthermore, the claimed subject-matter did not involve an inventive step (Article 56 EPC) either over P4 in combination with common general knowledge as reflected by document P23 or over P1 in combination with P4 or P23. Finally, EP-A-727 137 (P9) represents a relevant prior art document over which the claimed subject-matter would not involve an inventive step.

Appellant II submitted that claims 1 and 2 are not clear (Article 84 EPC) and that the claimed subject-matter contravenes the requirements of Article 123(2) EPC. With respect to inventive step, he essentially submitted that the subject-matter of claim 1 according to the main request did not involve an inventive step over P4 in combination with P19. In this context document P21 illustrated common general knowledge.

The respondent contested the appellants' submissions essentially by submitting that the cited prior art neither discloses nor suggests the step of adjusting the pulsation frequency (claim 1) or the pulsation ratio (claim 2) in response to the milking interval, i.e. to the determined value of the length of the time period from at least one first milking operation and the next subsequent milking operation.
Reasons for the Decision

1. The appeals are admissible.

2. Late filed submissions

2.1 The main and auxiliary requests were filed after the respondent's reply the grounds of appeal as well as after oral proceedings had been arranged but at least two months before oral proceedings.

The claims of the main request are based upon combinations of granted claims with an additional feature from the description defining in a more specific way a feature included in granted claim 1. This more specific feature was already included in claim 1 of the auxiliary request filed by the respondent with his reply to the grounds of appeal. The claims of the auxiliary request are entirely based upon combinations of granted claims.

Thus, the new respondent's requests do not introduce complexity, do not negatively affect the economy of the procedure and do not raise issues which the appellants and the board cannot be reasonably be expected to deal with.

Therefore, the board in the exercise of its discretion under Rule 13 of RPBA admitted the new requests into the appeal proceedings.

2.2 Documents P21 and P23 illustrate common general knowledge. P21, which was filed with the grounds of appeal, can be seen as a response of appellant I to the
reasoning in the decision under appeal. P23, which was
filed by letter of 9 August 2012, can be seen as a
reaction to the new requests filed by the respondent
with his letter of 4 July 2012. These documents do not
raise issues which the board and the respondent cannot
reasonably be expected to deal with during the oral
proceedings.

Therefore, the board in the exercise of its discretion
under Rule 13 of RPBA admitted these documents into the
appeal proceedings.

2.3 Document P9, which was cited in the search report of
the original application, is cited in the notice of
opposition of appellant II without any argumentation as
to its relevance. Nor have this document or its
contents played any role in the first instance
proceedings.

This document is thus effectively cited for the first
time during oral proceedings before the board. Its
introduction as relevant prior art document for the
assessment of inventive step thus represents an
amendment to appellant II's case both after he has
filed his grounds of appeal and after oral proceedings
had been arranged.

According to Rule 13 of the Rules of Procedure of the
Boards of Appeal (RPBA), the admission of such an
amendment is subjected to the board's discretion. This
discretion is to be exercised considering the
complexity of the amendment and its effect on
procedural economy if introduced. In particular, if
submitted after oral proceedings have been arranged,
amendments should not be admitted if they would necessitate adjournment of the oral proceedings. In the present case the board considers that admission of P9 and the arguments based thereon at this very late stage would raise issues which the board and the respondent cannot reasonably be expected to deal with without an adjournment of the oral proceedings.

Moreover, the submissions based upon P9 could clearly have been submitted by appellant II at a much earlier stage, having cited the document in the notice of opposition. Nor is the board convinced that these submissions are a reaction to the late filed respondent's new requests. The proprietor filed the new requests with letter of 4 July 2012 to which appellant II responded with letter of 9 August 2012 without however referring to document P9.

Finally, the main request is directed essentially to a combination of granted claims of which appellant II will have been aware when he filed the opposition and against which he should have then stated his case.

Therefore, the board did not admit these submissions by appellant II.

3. Clarity and sufficiency of disclosure (main request)

3.1 The objections raised under Article 84 EPC by the appellants relate to the terms "short", "long", "low", "high" and "relatively" in the features of claim 1 (or 2) which correspond to the features of granted claims 2 and 5 (or 9). Thus, these objections address the granted patent and not the amendments to it. Since
Article 84 EPC is not a ground for opposition, the board is unable to consider these objections.

3.2 With respect to sufficiency of disclosure, appellant I submitted the following argument:

Due to the presence of the expression "time period from at least one first milking operation to a following second milking operation", claims 1 and 2 each also encompass a method requiring no more than two milking operations and thus only one time period (milking interval) between the two milking operations. In that particular case it would not be possible to establish a relation between short and long such time periods. This means it would not be possible to carry out the invention over the whole scope of the claims.

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

The claims require the determination of the value of the time period from at least one first milking operation until the next subsequent milking operation, i.e. the determination of the milking interval for the subsequent adjustment of pulsation frequency (claim 1) or pulsation ratio (claim 2). Thus, the pulsation frequency or the pulsation ratio during a second milking operation is adjusted to be relatively low when the determined milking interval is relatively short and relatively high when the interval is relatively long. The terms "relatively short" and "relatively long" do not mean that intervals are compared with each other. Rather they imply a comparison with a reference value, and they would be understood in this sense by the
skilled person. He would therefore have no problem in carrying out the invention also in the limit case of only a single determined milking interval.

Thus, the objections under Article 100(b) EPC raised by appellant I do not prejudice the maintenance of the patent.

4. Article 123 EPC (main request)

Claim 1 combines the features of granted claims 1, 2, 3, 4 and 11, which correspond to like numbered originally filed claims, while incorporating the alternative of pulsation frequency as adjustable parameter from granted claim 5 and the features of claim 7 dependent thereon, these claims again corresponding to the like numbered claims as originally filed.

Similarly, new independent claim 2 combines granted claims 1, 2, 3, 4 and 11 but incorporates the alternative of pulsation ratio as adjustable parameter from granted claim 5 together with the features of granted claim 9 dependent thereon.

These amendments have a clear basis in the originally filed application and neither add subject-matter, nor extend the scope of protection.

Both claims 1 and 2 also now specify the "variable related to the time period" appearing in granted/as filed claim 1 as being the length of the time period. The description of the patent specification (identical to that of the application as filed but for a citation
of the prior art) only ever mentions the length of the
time period between milkings or the milking interval as
specific example of the variable related to the time
period, cf. specification paragraphs [0008], [0009],
[0018] or [0028], and it is perfectly clear to the
skilled person from the totality of the disclosure that
this is what is meant concretely by a "variable related
to the time period", so that it is directly and
unambiguously derivable for the skilled person. This
amendment also does not add subject-matter, nor does it
broaden the scope of protection.

The amendments to the description concern its
adaptation to the amended claims.

The amendments do not contravene the requirements of
Article 123(2) and (3) EPC.

5. **Inventive step (main request)**

5.1 The board considers document P4 as the closest prior
art.

In particular, P4 (see its English translation,
paragraphs 4.14 to 4.14.2) indisputably discloses
automatic milking of cows by means of a milking robot
which can be voluntarily visited by the cows several
times daily. The milking process allows for adjustment
of various parameters defining the intensity of the
milking process, including the pulsation frequency or
the pulsation ratio, see paragraph 6.3.1.
P4 also indisputably discloses measurement of the milking interval, see final lines of paragraph 4.14.1, as well as milking in consecutive milking operations.

In paragraph 6.3.3, P4 moreover discloses adjusting the pulsation ratio ("squeeze/release ratio") in response to the milking rate of the cow, i.e. the milk flow rate, during milking. Furthermore, this passage states that "[m]aybe it will be possible in the future to set ... also the number of pulsation per minute [i.e. the pulsation frequency] per cow".

5.1.1 According to appellant II claim 1 can be read as meaning that adjusting the pulsation frequency takes place during the preliminary stimulation phase of the udder. P4 refers to "pulsators with stimulation equipment" allowing a stimulation (pre-treatment) in which "after the connection of the milking cluster the pulsator starts with a high number of pulsation per minute ...", see paragraph 6.3.2. Furthermore, see paragraph 2.2.2, there is a relation between the quantity of milk which can be extracted from the udder and the milking interval and the latent period, i.e. the time between starting teat stimulation and milk let-down is long after a short milking interval and short "with cows having a hard udder", see paragraph 2.3.3, and that "an easily milking cow needs little 'stimulation'", see paragraph 6.3.3. To the skilled person these passages would suggest adjusting the pulsation frequency in connection with the second milking operation in response to the milking interval, in such a manner that after a relatively short milking interval the pulsation frequency (during the stimulation phase) is to be increased so that the
milking operation is performed in a more intensive manner.

The board does not find these arguments convincing for the following reasons:

Claim 1 specifies the step of adjusting in connection with a second milking operation a parameter defining the milking intensity in response to the milking interval. The only reasonable reading is that after a relatively long milking interval the pulsation frequency during the second milking operation is adjusted at a relatively high value such that the second milking operation is performed in a more intensive manner. This interpretation is consistent with the patent as granted and the application as filed (see claim 5) which refer to the pulsation frequency and the duration of the preceding teat stimulation as different parameters. The board considers another reading of claim 1 with adjustment in a phase associated with the milking operation but not during the milking operation as neither reasonable nor supported by the patent's disclosure.

5.1.2 The subject-matter of either claim 1 or claim 2 differs from the method known from P4 by the step of

- adjusting in connection with the second milking operation of the animal at least one of said parameters which includes the pulsation frequency (claim 1) or the pulsation ratio (claim 2), in response to said determined value (i.e. in response to the milking interval), such that the pulsation frequency (claim 1) or the pulsation
ratio (claim 2) during the second milking operation is relatively low when the time period is relatively short and relatively high when the time period is relatively long, such that the second milking operation is performed in a less intensive manner when the time period is relatively short and in a more intensive manner when the time period is relatively long.

5.1.3 The problem to be solved by these distinguishing features is seen in providing a method of milking an animal which represents a compromise between the opposite needs of reducing the duration of the milking operation so as to increase milking efficiency and of reducing the risk for injuries on the teats due to intensive milking so as to maintain the health of the udder of the animal to be milked, cf. specification paragraph [0002]. This compromise is achieved by adjusting the pulsation frequency (claim 1) or the pulsation ration (claim 2) in response to the milking interval in the manner claimed such that milking intensity is less after short intervals but higher after long intervals. Thus intensity is reduced for more frequent milkings and increased if the cow is milked less frequently.

5.1.4 Neither the cited prior art nor common general knowledge suggest the express use of the length of the interval as an input variable, so that pulsation frequency or pulsation ratio may be adjusted as a function of this input variable.

P4 does recognize the problem of finding "a good compromise between, on the one hand, efficient and fast
milking, and, on the other hand, conservation of a good udder health", see section "Vacuum level", paragraph 6.3.1 "Installation adjustment", which mentions as a "good compromise" the application of a "vacuum of 36 to 40 kPa". However, there is no link to the milking interval, nor is there any suggestion in P4 of such a functional relationship between the milking interval and a parameter defining the intensity of the milking.

Indeed P4 points away from the claimed solutions in so far as it suggests the use of the vacuum level as a parameter defining the intensity of the milking. P4 may refer to a pulsator starting with a high pulsation frequency (100 to 300 pulsations/min) in order to produce a vibrating action of the teat cup liner giving the cow extra stimulation to let down milk, see paragraph 6.3.2. Even if the skilled person were then to derive from P4 the information that the pulsation frequency is adjusted in response to the milking interval, this passage would lead him to adjust the pulsation frequency such that it is relatively high when the milking interval is relatively short, i.e. the opposite of the teaching of claim 1.

5.1.5 Appellant I submitted that it is well known, i.e. common general knowledge that the duration of the milking (milking time) depends on the milk flow rate: the higher the flow rate, the shorter the duration. Milk flow rate in turns depends on the milk yield, i.e. on the quantity of milk secreted by the animal during the milking interval: the higher the milk yield, the higher the milk flow rate. It is equally well known to the skilled person that after a short milking interval a milk yield will be small, while after a long milking
interval a high milk yield can be expected. Starting from the method of P4 the skilled person would be confronted with the problem of reducing the milking time so as to increase the efficiency of the milking. Since in P4 it suggested to attune the pulsation parameters to the individual animal by adjusting them in response to the milk flow rate, the skilled person, who knows as stated from common general knowledge that the milk flow rate depends on the milk yield which depends on the milking interval, would immediately arrive at the idea of adjusting the milking parameters, such as pulsation frequency or pulsation ratio, in response to the milking interval. Thus, the step of adjusting in connection with the second milking operation of the animal either the pulsation frequency or the pulsation ratio, in response to the milking interval would not involve an inventive step.

Furthermore, it is also well known, e.g. from document P23, see Table 4.2 - "The effects of varying pulsation rates and ratio on peak flow rate", that the milk peak flow rate during milking depends on the pulsation frequency and on the pulsation ratio: the higher the pulsation frequency or ratio, the higher the milk flow rate. The skilled person again confronted with the problem of reducing the milking time in P4 and knowing that the milking time depends on the milk flow rate (the higher the milk flow rate, the shorter the milking time), would adjust the pulsation parameters so that the pulsation frequency or the pulsation ratio is relatively high when the time period is relatively long so as to perform the second milking operation in a more intensive manner. The skilled person would be interested in reducing the milking time when the
milking operation is relatively long, i.e. when the milking interval is relatively long, and not when it is relatively short. Thus, he would also arrive without exercising any inventive skill at a method representing a good compromise between efficient and fast milking and conservation of a good udder health, i.e. to a method in which the adjustment of the pulsation parameter is such that the pulsation frequency or the pulsation ratio is relatively low when the time period is relatively short so as to perform the second milking operation in a less intensive manner.

The board does not find these arguments convincing for the following reasons:

The problem identified by appellant I, which relates to the reduction of the milking time, corresponds only partially to the problem underlying the claimed invention, which relates to the reduction of the milking time and the risk for injuries on the teats due to an intensive milking and the solution of which implies a reduction of the milking time if the milking interval is relatively long but an increase if the milking interval is relatively short. The skilled person concerned primarily with reducing the milking time would refrain from considering any modification that might lead to an increase in the milking time.

In any case, even if the skilled person starting from P4 were to be confronted with the problem of reducing the milking time so as to increase the efficiency of the milking, he would need to perform a plurality of steps in order to arrive at the central idea of the claimed invention, i.e. in order to establish a
functional relationship between the "pulsation frequency" or the "pulsation ratio" and the input variable "milking interval":

(i) Knowing that the "milking time" inter alia depends on the "milk yield" of an individual animal and that the "milk yield" inter alia depends on the "milking interval" of the animal, he has to deduce - on the basis of common general knowledge, see for example P21, page 5 of the English translation - the information that the "milking time" inter alia depends on the "milking interval", i.e. that a longer milking interval results in a longer milking time and a shorter milking interval results in a shorter milking time.

(ii) On the basis of this deduction and with the knowledge that the "milking time" inter alia depends on the "milk flow rate" of the animal, he then needs to make the association between the "milk flow rate" of the animal and the "milking interval" in order to establish a functional relationship between them, e.g. in order to realize that after a relatively long milking interval a higher milk flow rate would compensate for the longer milking time.

(iii) Finally, with the knowledge that the "milk peak flow rate" depends on the "pulsation frequency" or on the "pulsation ratio" (e.g. from P23) and that the "milk flow rate" is related to the "milk peak flow rate", the skilled person must associate the "pulsation frequency" (or the
"pulsation ratio") with the "milking interval" in order to establish a functional relationship between them as defined in claim 1 (or 2).

These steps are not independent from each other but constitute a chain of successive deductive and/or associative steps that lead from one to the other. In the board's estimation such a chain goes well beyond the abilities of the skilled person. Thus, the measure of adjusting a pulsation parameter (frequency or ratio) in response to the milking interval is not a straightforward measure which the skilled person wishing to reduce the milking time would choose without inventive skill.

In particular, even if it is well known to adapt a pulsation parameter, such as the pulsation ratio, in response to the milk flow rate in order to shorten the milking time (see e.g. P4, paragraph "6.3.3 Milking attuned to the individual animal"), considerable hindsight would be involved in arriving at the idea of adjusting the pulsation ratio or the pulsation frequency in response to the milking interval.

5.1.6 Appellant II submitted that the claimed subject-matter lacks inventive step over P4 in view of P19 in so far as this document at page 30, paragraph "Milk management" suggests the idea of establishing a relationship between the pulsation ratio and the milking interval.

The board does not find this argument convincing because P19 does not refer to the milking interval but to the milking frequency, i.e. to the number of
milkings over a predetermined period of time, e.g. over a day.

5.1.7 Therefore, the skilled person starting from the method of P4 and confronted with the problem mentioned in section 5.1.3 above, would not arrive in an obvious way at the subject-matter of claim 1 or 2.

5.2 Appellant I also submitted that the claimed subject-matter lacks an inventive step over P1 in view of common general knowledge as illustrated in P4 or P23. This document discloses a method of milking an animal in which a pulsation parameter, such as the pulsation frequency or the pulsation ratio, is attuned to the individual animal or to a group of animals and suggests the possibility of adapting the pulsation parameter during the lactation period of the animals (see claims 1 and 2; column 2, lines 44 to 48). As acknowledged by appellant I, the subject-matter of claim 1 or of claim 2 differs from the method known from P1 not only by the same step which distinguishes the claimed subject-matter from the method of P4 (see section 5.1.2 above) but also by the further step of determining for the animal the value of the length of the time period from at least one first operation to a following second milking operation, wherein the determining of said value is performed in an automatic manner and the second milking operation is the next subsequent milking operation of the first milking operation.

Thus, P1 is less relevant than P4. Even if this further distinguishing step were to be considered as being obvious, the claimed subject-matter would involve an
inventive step for the same reasons given in section 5.1 to 5.1.7 above.

5.3 Therefore, the claimed subject-matter involves an inventive step (Article 56 EPC) over the cited prior art.
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 in the following amended version:

   Description: column 1-6 of the main request as filed with letter dated 4 July 2012

   Claims: 1 and 2 of the main request filed with letter dated 4 July 2012

   Drawings: Figure 1 of the patent specification.

The Registrar: The Chairman:

G. Magouliotis A. de Vries