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Datasheet for the decision
of 26 November 2009

Case Number: T 1016/08 - 3.2.04

Application Number: 02078771.9

Publication Number: 1297742

IPC: A01J 5/007

Language of the proceedings: EN

Title of invention:
A method of collecting measurement data during automatically
milking an animal

Patentee:
Lely Enterprises AG

Opponent:
DeLaval International AB

Headword:
-

Relevant legal provisions:
EPC Art. 52(1), 56

Relevant legal provisions (EPC 1973):
-

Keyword:
"Inventive step (yes)"

Decisions cited:
-

Catchword:
-

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Beschwerdekammern   Boards of Appeal   Chambres de recours

Case Number: T 1016/08 - 3.2.04

D E C I S I O N
of the Technical Board of Appeal 3.2.04
of 26 November 2009

Appellant: (Opponent)	DeLaval International AB P.O. Box 39 S-147 21 Tumba (SE)
Representative:	Bennett, Adrian Robert J. A.A. Thornton & Co. 235 High Holborn London WC1V 7LE (GB)
Respondent: (Patent Proprietor)	Lely Enterprises AG Bützenweg 20 CH-6300 Zug (CH)
Representative:	Corten, Maurice Jean F.M. Octrooibureau Van der Lely N.V. Weverskade 110 NL-3147 PA Maassluis (NL)
Decision under appeal:	Decision of the Opposition Division of the European Patent Office posted 4 April 2008 rejecting the opposition filed against European Patent No. 1297742 pursuant to Article 101(2) EPC.

Composition of the Board:

Chairman: M. Ceyte
Members: A. de Vries
                  T. Bokor

Summary of Facts and Submissions

I.   The Appellant (Opponent) lodged an appeal, received 30 May 2008, against the decision of the Opposition Division posted 4 April 2008 to reject the opposition, and simultaneously paid the appeal fee. The statement setting out the grounds was received 14 August 2008.

Opposition was filed against the patent as a whole and based among other grounds on Article 100 (a) together with Articles 52(1) and 56 EPC 1973, for lack of inventive step.

The Opposition Division held that the grounds for opposition under Article 100 EPC 1973 did not prejudice the maintenance of the patent as granted having regard in particular to the following documents:

D1: US-A-5 416 417
D3: US-A-5 704 311
D8: K. Barth et al: "Influence of different milking intervals on electrical conductivity before alveolar milk ejection in cows", Milchwissenschaft 55 (7), 2000, pp.363-365
D9: EP-A-0 764 403

II.   During the proceedings the Board considered the following further document:

D22: EP-A-0 091 892

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

The Respondent (Proprietor) requests that the appeal be dismissed and the patent maintained as granted.

IV.   Oral proceedings in appeal were duly held before this Board on 26 November 2009.

V.   The wording of claim 1 as granted is as follows:

"A method of collecting measurement data during automatically milking a dairy animal by means of a device provided with a milking box (19) with a milking robot (20), said method comprising the steps of: determining the period between two successive milking runs of the dairy animal, measuring a value of a variable in relation to the dairy animal, issuing a measurement signal indicative of the measured value, admitting a dairy animal to the milking box (19) in dependence on an admission criterion, repeatedly varying the admission criterion in such a manner that periods with different values are obtained, obtaining automatically measurement signals belonging to the various periods, and storing the measurement signals per period in a memory, characterized in that the method comprises the step of measuring during the entire course of the milking run the value of the milk variable for obtaining a measurement pattern of the milk variable, the step of storing the measurement pattern in a memory, and the step of determining the average of a measurement pattern of a milk variable belonging to the same period."

VI.   The Appellant argued as follows :

Starting from D1 two main sets of differences can be
identified. The first of these concerns automatic
milking, which is a routine development. Measuring
conductivity for different intervals for a "like-for-
like" comparison is a standard way of realizing D8's
instruction to take into account interval. The
admission criterion is then varied to produce the
required different intervals either as common knowledge,
or in obvious application of D9's teaching.

An alternative starting point is D3, showing automatic
milking with admission criterion (minimum milking
interval) and recording of intervals. The sole
differences are repeated varying of the admission
criterion and the recording of conductivity against
milking interval. This again realizes D8's instruction
in standard "like-for-like" fashion, while applying
criterion variation from common knowledge or in the
light of D9. In any case in D3 cows turn up at
different intervals, so that actively varying the
criterion results in the same database and thus adds
nothing.

VII.   The Respondent argued as follows :

With regard to D1, the sets of differences cannot
simply be treated separately, but are aspects of one
invention. While D1 and D9 are unrelated and thus
unlikely to be combined, D8 may identify the problem
addressed by the patent, but it does not offer any

particular solution, much less active variation of the
admission criterion.

Actively varying the admission criterion is also a
central difference over D3 as starting point. It
ensures a sufficient spread of intervals to produce a
reliable analysis, in particular in view of cows'
habits to present themselves at regular times for
milking. This measure thus goes beyond any obvious
implementation of D8's teaching, and is not simply
common general knowledge. It is also not suggested by
D9, which changes criteria across a herd but not for
individual cows.

Reasons for the Decision

1.   The appeal is admissible.

2.   *Background*

The invention concerns a method for collecting
measurement data during automatic milking by a milking
robot in a milking box. The main idea is to record
values of a milking variable measured during a milking
run for different milking intervals - the period
between successive milkings. To produce the different
intervals the criterion for admitting a cow into the
milking box is repeatedly varied. Measurement data -
referred to in the claim as a "measurement pattern" -
is stored per period/interval and averaging carried out.

This idea is based on the realization that various
parameters that are in some way indicative of the

quality of a cow's milk or of its health are known to
vary with the milking interval. By collecting data for
different intervals this interval dependency can be
recorded and then taken into account in deciding
whether or not a given cow's milk should be processed.
That decision will be more accurate, cf. specification
paragraph [0004].

3.   *Inventive Step*

3.1   In that D3 is also concerned with the capture of
        milking data in automatic milking, the Board considers
        it a good starting point for assessing inventive step.
        Column 6, lines 7 to 58, in conjunction with figure 1
        provide details of the automatic milking system with
        milking robot 8 in milking box 7. Cows report for
        milking and the current milking interval is recorded in
        a given cow's file when it enters the milking area,
        column 6, lines 36 to 46. As follows from column 3,
        lines 36 to 37, a minimum interval criterion is applied
        for milking. Finally, D3, in column 8, lines 17 to 38,
        and column 2, lines 38 to 50, describes sensing of milk
        conductivity and transmission of the sensed signals to
        a computer for comparison with an average over previous
        milking runs to determine whether or not the relevant
        animal has mastitis and countermeasures need to be
        taken.

3.2   Leaving aside the question of what is exactly meant by
        "measurement pattern" in granted claim 1 and whether or
        not D3 implicitly discloses such a pattern, the method
        of claim 1 in any case differs from D3 in the following
        steps :

a)   storing the measured data per period, and

b)   repeatedly varying the admission criterion to
      obtain periods of different duration.

D3 undisputedly does not disclose a differentiation of
the measured conductivity with respect to milking
interval, nor is there any suggestion that the minimum
milking interval criterion should be varied.

3.3   Difference a) per se allows the interval dependent
       variation in the conductivity of the cow's milk as
       milking variable to be recorded. It can then be
       factored into a decision on further processing of that
       milk, as mentioned above in reference to specification
       paragraph [0004].

       Difference b) ensures that measurements will be made
       for a sufficiently wide spread of interval values to
       more reliably determine the interval dependency of the
       conductivity of the cow's milk. In D3 a cow can report
       at any time after the minimum interval (up to a certain
       maximum determined by its average, column 6, lines 54
       to 58), but this does not guarantee a sufficiently
       representative or even distribution of interval values.
       For example, in D3 the use of an individual's average
       interval and the statistical spread therein in order to
       determine that animal's maximum interval, (column 6,
       lines 49 to 54), suggest that its reporting activity is
       not simply random. Vis-à-vis such a non-random
       distribution, differing feature b) thus results in a
       different, better data set.

3.4   In the light of the above, the objective technical
       problem addressed by features a) and b) can be

formulated as how to reliably take into account the
effect of the interval dependency in the measurement of
a milking variable such as conductivity in an automatic
milking system as in D3.

3.5   The effect of interval dependency on milking variables
        is per se well-known. In particular, research paper D8
        reporting on the measured influence of milking interval
        on conductivity, in its abstract concludes "that MI
        [milking interval] has to be taken into consideration
        if milking times are not as fixed as in conventional
        milking systems". It specifically mentions as
        application "specific control of udder health by EC
        measurement in fore milk of herds with automatic
        systems".

        D8 may recognize the underlying problem but itself
        offers no solution. One obvious, common knowledge way
        of doing so involves, as a first step, measuring the
        actual dependency, by measuring conductivity for a
        number of different interval values. In the case of D3
        this is relatively straightforward as it already offers
        different interval values as explained above. All the
        skilled person needs to do, is to modify the system so
        that for the various recorded intervals it also logs
        the measured conductivity values and stores them
        together, corresponding to feature a) of claim 1.

3.6   It does however not belong to the skilled person's
        common general knowledge to improve the reliability of
        his measurement by actively varying the admission
        criterion so as to ensure a better spread of interval
        values. This measure goes beyond commonly known ways of
        increasing accuracy and reliability. It rather rests on

the realization that the spread offered by an automatic
milking system such as that of D3 may not be ideal for
reliably determining the interval dependency. This may
require knowledge of milking behaviour, but more
importantly it requires the recognition of the
influence a non-ideal spread may have on the accuracy
of the measured interval dependency. In the Board's
opinion the latter in particular lies outside the
common skills and knowledge of the skilled person in
the present field, an agricultural engineer
specializing in the design of automatic milking systems.

Nor does any of the remaining prior art suggest a
repeated variation to produced a range of intervals. D9,
see its abstract, may describe calculation of different
admission criterion for different individuals
(depending on their relative yield), this however
results in a spread of intervals across the herd. For a
given animal the spread will be limited, with high
producers milking at predominantly shorter intervals,
and low producers at mainly longer intervals. In
granted claim 1 however, the repeated variation step
can only meaningfully apply to a *given* animal; it is
the interval dependency of the milking variable *for the
animal that has been milked* that is crucial in deciding
whether or not that particular milk is to be processed,
as will be appreciated by the skilled person. Adoption
of D9's teaching in an automatic milking system as in
D3, which in obvious manner records interval dependency
of conductivity as suggested by D8, might thus result
in different intervals for different animals. It will
however not result in repeated variation of the
admission criterion, and thus a spread of intervals,

for the *same* animal, as effectively required by claim 1 as granted.

3.7   The Board concludes that obvious combination of D3 with D8 and common general knowledge, or alternatively with D8 and D9, does not result in the method of granted claim 1.

3.8   It reaches the same conclusion and on the same grounds if it departs from D1 as closest prior art. It is common ground that D1 does not disclose features a) and b). Nor, it is generally agreed, does it disclose the features of automatic milking (milking robot in a milking box, admission criteria). Automatic milking with a milking robot in a milking box is standard, as evidenced inter alia by D22, while the automatic recording of measured conductivity together with interval - feature a) - is an obvious way of carrying out D8's suggestion, see section 3.5 above. It is feature b) however that lifts the method of granted claim 1 above a mere obvious realization of D8's teaching, for the reasons indicated in section 3.6 above. That measure is neither common knowledge, nor known from D9; nor does D1 itself contain any hint that might render it obvious.

4.   *Conclusion*

In the light of the above the Board holds that the opposition ground raised under Article 100(a) in combination with Articles 52(1) and 56 EPC does not prejudice maintenance of the patent in its granted form.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar   The Chairman

G. Magouliotis   M. Ceyte

C2520.D