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Datasheet for the decision of 12 April 2013

Case Number: T 2510/10 - 3.2.04

Application Number: 03077092.9

Publication Number: 1388280

IPC: A01J 7/02

Language of the proceedings: EN

Title of invention:
A device for a method of monitoring the cleaning of a milk line

Patent Proprietor:
Lely Enterprises AG

Opponent:
DeLaval International AB

Headword:
-

Relevant legal provisions:
EPC Art. 100(c), 100(a), 54, 56

Keyword:
"Added subject-matter (no)"
"Novelty and inventive step - yes"

Decisions cited:
-

Catchword:
-

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Case Number: T 2510/10 - 3.2.04

D E C I S I O N
of the Technical Board of Appeal 3.2.04
of 12 April 2013

Appellant: (Opponent)	DeLaval International AB P O Box 39 SE-147 21 Tumba (SE)
Representative:	Lerwill, John 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. Octroojbureau 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 19 October 2010 rejecting the opposition filed against European patent No. 1388280 pursuant to Article 101(2) EPC.**

Composition of the Board:

Chairman: A. de Vries
Members: E. Frank
T. Bokor

Summary of Facts and Submissions

I. The appeal lies from the decision of the Opposition Division dated 22 September 2010 and posted on 19 October 2010 to reject the opposition against the European patent No. 1 388 280 pursuant to Article 101(2) EPC. Grant of the patent had been opposed in particular on the grounds of Articles 100(a) (novelty and inventive step) and 100(c) EPC.

II. The appellant (opponent) filed a notice of Appeal on 20 December 2010, paying the appeal fee on the same day. The statement of grounds of appeal was submitted on 10 February 2011.

III. A communication pursuant to Article 15(1) RPBA was issued after a summons to attend oral proceedings, which were duly held on 12 April 2013.

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

The respondent (proprietor) requests that the appeal be dismissed.

V. The wording of granted claims 1 and 8 reads as follows:

"1. A device adapted to monitor the cleaning of a milk line (3) during a cleaning cycle, said device being provided with a monitoring-unit (10) comprising a computer (11) and a memory (12) adapted to store data at least temporarily, with a thermometer (13) adapted to measure the temperature of a fluid that is present or has been present in the milk line (3) and adapted to supply to the monitoring-unit (10) a temperature signal that is indicative of the measured temperature, and

with a comparing device adapted to determine whether the measured temperature is higher than a predetermined threshold temperature, characterized in that the comparing device is adapted to determine the first point of time when the measured temperature has come above the threshold temperature for the first time during a cleaning cycle, and adapted to determine the last point of time when the measured temperature has come above the threshold temperature for the last time during the same cleaning cycle, and in that the comparing device is adapted to determine whether the measured temperature between the first and the last point of time at least equals a second threshold temperature during a minimum, predetermined uninterrupted period of time."

"8. A method of monitoring the cleaning of a milk line (3) during a cleaning cycle, the method comprises the steps of:

measuring the temperature of a fluid that is present or has been present in the milk line, determining whether the measured temperature is higher than a predetermined threshold temperature, characterized in that the method further comprises the steps of:

determining the first point of time when the measured temperature has come above the threshold temperature for the first time during a cleaning cycle,
determining the last point of time when the measured temperature has come above the threshold temperature for the last time during the same cleaning cycle, and
determining whether the measured temperature between the first and the last point of time at least equals a second threshold temperature during a minimum, predetermined uninterrupted period of time."

VI. The following evidence has been considered for the purposes of the present decision:

D1: US 5 651 329
D2: EP 0 761 091
D3: WO 99/01024
D4: US 6 089 242
D5: US 5 996 529

VII. The appellant argued as follows:

In particular referring to the comparing device of claim 1, which did not need to be a computer, the replacement of "suitable for" in original claim 1 by "adapted to" went beyond the content of the application as filed, since "adapted to" was more specific. Moreover, the second temperature threshold of claim 1 could be understood as being the same or even lower than the first threshold addressed. There was also no indication that the final step of claim 1 was carried out after the last point in time of a cleaning period had been determined. Thus, since claim 1 also encompassed a single temperature threshold, and regulatory demands for the wash liquid temperature had necessarily to be met, the comparing device of D4's wash system of D4 deprived claim 1 of novelty. If the determination in claim 1 had to be understood as a two stage procedure, this was already disclosed by D1, D2 and D3, since two temperature thresholds were compared in a pre-rinsing and rinsing phase, respectively. Thus, claim 1 was also anticipated by each of documents D1 to D3.

As to inventive step, starting from D4, and taking into consideration the commonly known regulations, the

problem underlying the determination of the first and last point in time of a washing period with respect to a first temperature threshold, and the comparison of the measured temperature with a second temperature threshold during this period, was not to prevent incorrect alarms and to provide better cleaning, cf. patent, par. [0003]. Rather, since the features of claim 1 were silent about any such technical effects, the problem to be solved could merely be seen in tracking temperature during the washing process so as to make comparisons to temperature thresholds. It was evident to the skilled person, faced with this problem, to implement a program which took a record of what had happened during the cleaning phase, thus to inevitably arrive at the subject-matter of claim 1. Moreover, also the metering system of D5, or the fully automated computer systems of D1, D2 and D3 had the capability of storing and collecting data, to properly control whether cleaning had been performed correctly. Therefore, claim 1 was also obvious in the light of D4 and each of D1,D2,D3 and D5.

VIII. The respondent argued as follows:

Based on the application as filed, the skilled person would realise that claim 1 addresses computer means, which are programmed to carry out the required functions. That is, "adapted to" was a synonym to "suitable for". As to the reading of claim 1, it was clear that the comparing device could only compare the measured temperature between the first and the last point in time of the cleaning cycle with a second threshold temperature, if the last point in time had been established beforehand. If both thresholds of

claim 1 were equal, or the second threshold even lower that the first one, no technically sensible cleaning improvement could be achieved; this was also supported by the description. Claim 1 in any case defined two different implemented threshold parameters. Furthermore, none of documents D1 to D5 disclosed that firstly a first time point and a last time point of a cleaning period is established, and then, secondly, within this period, a second threshold had to be reached during a time subinterval. Commonly known regulations did not go beyond the teaching that, over a certain time, a certain temperature was obtained. Also, these documents did not mention problems due to temperature dips or fluctuations, e.g., because of pulsating cleaning fluids. In the light of D4, the problem to be solved based on the characterising features of claim 1 was to avoid incorrect alarms and to determine whether cleaning had been done properly. Starting from D4, none of the remaining documents could suggest, or hint at, the claimed solution. Therefore claim 1 also involved an inventive step.

The parties agreed that their arguments likewise applied to method claim 8.

Reasons for the Decision

1. The appeal is admissible.

2. *Amendments*
(Article 100(c) EPC)

The device of claim 1 as granted is based on as filed claims 1 and 4. The terms "for" and "suitable for" of the claims as filed have however been replaced by the wording "adapted to". As argued by the respondent, the originally claimed monitoring device is provided with a monitoring-unit which comprises a computer and a memory to store data and, moreover, temperature signals are supplied thereto. That is, the skilled reader would readily recognize that the subsequently described comparing device of claim 1, suitable for determining whether the measured temperature (ie data signal) complies with predetermined (ie stored) thresholds during a cleaning circle of the milk line at particular points in time, must necessarily be programmed (or wired) in an electronic manner, so as to perform the functions required by claims 1 and 4 as filed. Contrary to the appellant's view, the Board also holds that this is irrespective of whether the comparing device is integrated or not in the computer "11" of claim 1 (cf. application, paragraph [0026] (as published)).

Consequently, the Board shares the view of the respondent (and the opposition division) that the originally claimed monitoring device of claims 1 and 4, and in particular its comparing device, constitute a programmed computer means, ie, a means which has to be adapted to invariably carry out specific functions, as

opposed to blank, ie unprogrammed, computer hardware without any such implementation. To substitute "suitable for" or "for" by "adapted to" does not, therefore, go beyond the content of the application as filed, since "suitable for" in respect of the implemented function of a computer is considered to be tantamount to "adapted to", and this indeed is how the skilled person reads and understands claim 1.

Hence, claim 1 fulfils the requirements of Article 100(c) EPC.

3. *Novelty and Inventive Step*
(Article 100(a) EPC, see Articles 54 and 56 EPC)

3.1 As to the interpretation of claim 1, the Board notes that "determining the first point and the last point of time" when the measured temperature has come above a predetermined threshold temperature during the same cleaning circle, does not only require that these data are stored by the system, but also that the device previously established that it is the first point and the last point of time of the cleaning cycle, e.g., of the main-cleaning phase. According to the description, the last moment for example may be located by means of a time filter, viz. whether within a measuring-time duration the temperature has not again risen above the temperature threshold (cf. patent, par. [0022]).

Moreover, as argued by the respondent, the only meaningful understanding of "a second threshold temperature" at the end of claim 1 is as a second temperature parameter distinct from the first, namely "the threshold temperature" at the beginning of the

characterising portion of claim 1, which determines the first and last point in time of the cleaning circle beforehand. Furthermore, the Board finds that a second temperature threshold that is equal or even lower than the first temperature threshold of claim 1, is not technically meaningful for the person skilled in the art, if he is to perform cleaning of a milk line long enough and at an acceptably high temperature range. Nor does the description provide any support for such equal or lower temperature. See patent, par. [0021] and [0022], and figure 2.

3.2 Document D4 (cf. abstract; figures 1 and 3) relates to a dairy pipeline wash system for monitoring and controlling the wash cycle including a user interactive data processor. Thus, the temperature of the water can be monitored with thermo-couples and compared to the wash temperature parameters (cf. column 6, line 66 to column 7, line 4). In so doing, it is assured that a high enough wash temperature is attained that meets regulatory demands such as *FDA* and *USDA* regulations (cf. column 9, lines 1 to 4, and 42 to 43). After adequate cleaning time has elapsed, the drain valve opens (cf. column 8, lines 40 to 44, and figure 4).

The data processor is further programmed to generate a warning signal, if the temperature (at any thermo-couple location) is out of the acceptable temperature range, column 4, lines 10 to 15.

However, the Board agrees with the respondent's (and also the opposition division's) view that D4 only relates to a device which determines when a measured temperature is outside a predetermined range

(cf. column 4, lines 21 to 25) within *adequate* (cf. column 8, line 41) cleaning time. The Board is therefore unconvinced that the skilled person would clearly and unambiguously derive the characterising part of claim 1 from D4 as advanced by the appellant. It may be, that, as asserted, common regulations that cleaning should be "hot enough" and last "long enough" imply that D4's controller monitors the cleaning cycle at two consecutive points to establish whether temperature has been above a set threshold over a certain amount of time. Nevertheless, this is not the same as determining the first time temperature rises above and the last time it drops below the threshold temperature. These steps are therefore not disclosed in D4. Moreover, D4's controller does not process a second temperature threshold parameter, let alone determine whether the measured temperature between the previously established first and last point in time at least equals the second threshold temperature for a minimum, predetermined uninterrupted period of time as is also required by claim 1 of the patent.

3.3 Furthermore, reference is also made to the documents D1 (cf. column 8, line 67 to column 9, line 10), D2 (cf. page 7, lines 1 to 10), D3 (column 5, lines 7 to 15) and D5 (cf. column 2, lines 23 and 24, and 62 to 67; and column 5, lines 19 to 21). These documents describe automated computer systems with a temperature sensor or thermostat to monitor the cleaning of a milk line, whereby a check or comparison is made as to whether the desired (or minimum) temperature of the (pre-) rinsing liquid has been reached, thus to properly sanitize the system. However, it is stressed that the beginning and the end of pre-rinsing and (or) rinsing steps with

respect to a first temperature threshold are not established and, moreover, it is nowhere derivable from these documents that it would then be determined whether the cleaning step met specific requirements in respect of a second temperature threshold.

3.4 Therefore, documents D1 to D5 cannot deprive claim 1 of novelty. The Board adds that none of the available prior art documents is concerned with, let alone mentions the problem of too many incorrect alarms, due to wash water temperature being out of a predetermined temperature range and resulting in possibly improper cleaning results.

3.5 As to inventive step, according to the appellant, the wash system of D4 forms the closest prior art. The subject-matter of claim 1, see above, differs from D4's disclosure in that the comparing device is adapted as defined by the features of the characterising portion of claim 1.

The problem underlying these distinguishing features can be seen as avoiding incorrect alarms, and providing an accurate indication of the degree of cleaning, see patent, par. [0003].

Starting form D4, and regardless of whether or not he takes into account commonly known regulations, the skilled person, faced with the above stated problem, does not receive any suggestion from the disclosure of prior art D1, D2, D3, or D5 as previously discussed above under sections 3.2 to 3.4 of this decision, to modify D4's teaching such that he would arrive at a

comparing device as required by the features of the characterising part of claim 1.

As stated known regulations at best might involve determining that temperature continuously exceeds a threshold between points in time. Even if the prior art systems of D1, D2, D3 and D5 might theoretically possess the capability of recording and storing such temperature data, such a "hot enough, long enough" determination does not require or in any way imply determining when the first time temperature rises above and the last time it drops below some threshold and which provides a practical measure of the cleaning phase, within which such a determination should take place.

3.6 According to the patent is has been found that pulsation of the cleaning fluid gives rise to temperature peaks or fluctuations above the threshold. This does not only lead to incorrect alarms, but moreover makes it difficult to correctly decide whether or not the cleaning of the milk line has been properly performed: see patent, par. [0021], lines 43 to 54, and figure 2 (interrupted vertical lines). The invention of claim 1, by determining the cleaning phase from the first moment when the temperature rises above a threshold and the last moment when the temperature drops below the threshold, eliminates false alarms due to temperature fluctuations of shorter duration. Proper cleaning is then determined, if during the period between these two points of time defining the cleaning phase the temperature has reached at least a second minimum (and implicitly higher) temperature value

during an uninterrupted time period: see patent, par. [0022].

Thus, contrary to the appellant's view, the above formulated problem, deduced in the light of the technical effects associated with pulsation of cleaning fluid, is indeed solved by the (reasonably interpreted) characterising features of claim 1.

3.7 The Board concludes therefore, that the subject-matter of claim 1 fulfils the requirements of novelty and inventive step.

3.8 As for the subject-matter of method claim 8, which corresponds to the technical concept of claim 1, the aforesaid argumentations apply *mutatis mutandis*.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar The Chairman

G. Magouliotis A. de Vries