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D E C I S I O N
of 12 March 2004

Case Number: T 0590/01 - 3.3.2

Application Number: 94610052.6

Publication Number: 0654222

IPC: A23G 1/18

Language of the proceedings: EN

Title of invention:

A method and an apparatus for tempering chocolate-like masses

Patentee:

AASTED-MIKROVERK APS

Opponent:

Sollich KG

Headword:

Method and apparatus for tempering chocolate/AASTED-MIKROVERK

Relevant legal provisions:

EPC Art. 54, 56

Keyword:

"Main and first auxiliary requests: novelty (no) - a continuous regulation does not necessarily imply a continuous flow"

"Second auxiliary request: inventive step (no) - the apparatus represents an obvious alternative"

"Third auxiliary request: inventive step (no) - aggregation of features"

Decisions cited:

-

Catchword:

-



Case Number: T 0590/01 - 3.3.2

D E C I S I O N
of the Technical Board of Appeal 3.3.2
of 12 March 2004

Appellant: AASTED-MIKROVERK APS
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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 12 March 2001
revoking European patent No. 0654222 pursuant
to Article 102(1) EPC.

Composition of the Board:

Chairman: U. Oswald
Members: M. Ortega Plaza
J. P. B. Seitz

Summary of Facts and Submissions

- I. European patent No. 0 654 222 based on the application 94 610 052.6 was granted on the basis of 14 claims.

Claim 1 as granted read as follows:

"1. A method of continuously tempering a flowing cocoa butter or other fat containing, chocolate-like mass which passes through a cooling zone (A) having a plurality of cooling surfaces (8) and a subsequent reheating zone (G) having a plurality of heating surfaces (9) for the chocolate mass, seen in the flow direction (M) of said mass, said cooling surfaces (8) being overflowed by at least two separately circulating cooling media, one of which exclusively overflows a final crystal formation area (K) for the chocolate mass in the cooling zone (A), said heating faces (9) being overflowed by at least one separately circulating heating medium, **characterized in that** the flow of the separately circulating cooling medium, which overflows the final crystal formation area (K), is controlled in response to measured values of the temperature (t_2) of the chocolate mass at the crystal formation area (K)."

Independent claim 5 as granted read as follows:

"5. An apparatus for continuous tempering of a flowing cocoa butter or other fat containing, chocolate-like mass, comprising a cooling zone (A) having a plurality of cooling surfaces (8) and a subsequent reheating zone (G) having a plurality of heating surfaces (9) for the chocolate mass, seen in the flow direction (M) of said mass, said cooling surfaces being overflowed by cooling

medium which flows in its respective one of at least two separately circulating cooling circuits (K1, K2), said cooling medium in one cooling circuit (K2), which comprises separate pumping means (P2), exclusively overflowing cooling surfaces (8) in a final crystal formation area (K) for the chocolate mass in the cooling zone (A), said heating surfaces (9) being overflowed by heating medium which flows in at least one separately circulating heating circuit (K3), each of said separately circulating cooling and heating circuits (K1, K2 and K3) comprising a heating member (V1, V2 and V3) and a valve (L1, L2 and L3) for controlling external cold medium supply to the circuit for controlled regulation of the cooling or heating medium temperature of the circuit concerned, said apparatus (1) moreover comprising at least one temperature sensor (T2) which is arranged in the chocolate mass at the crystal formation area (K) and is connected to an electronic control unit (R₂B), **characterized in that** the electronic control unit (R₂B) is connected to the pumping means (P2) in the cooling circuit (K2) whose cooling medium overflows the crystal formation area (K), and that the control unit (R₂B) is adapted to control the flow in response to the received, measured values of the chocolate mass temperature (t₂) at the crystal formation area (K)."

- II. Opposition was filed and revocation of the patent in its entirety was requested pursuant to Article 100(a) EPC for lack of novelty and inventive step.

III. The following documents *inter alia* were cited in the proceedings:

- (3) "Fully Automatic Chocolate Tempering Machine Type TA III" 1987
- (4) "Tempering Machine Piping Diagram; Type TA IIIB", 15 September 1976
- (5) "Manual" for Fully Automatic MIKROVAERK Tempering Machine, Type TA III
- (6) "list of delivery" for MIKROVAERK Temperers Type TA III A and B, between 1972 and 1986
- (7) Declaration by Mr F. Borrit
- (8) EP-A-0 472 886
- (9) GB-A-644 312

IV. The appeal lies from a decision of the opposition division revoking the patent under Article 102(1) EPC.

The opposition division considered that amended claim 1 filed with the letter received on 21 February 2000 and amended claim 5 filed with the letter received on 15 January 2001 met the requirements of novelty but did not meet the requirements of inventive step (Article 100(a) EPC).

In particular, the patentee had not disputed the public availability of the machine shown in documents (3) to (7) prior to the priority date of the patent in suit.

The opposition division considered that the subject-matter of claim 1 was not anticipated by the prior use (3). The novelty bringing feature was, in the opposition division's view, the continuous regulation of the flow of the cooling medium, whereas in document (3) there was a discontinuous regulation. The opposition division considered that the water flow was controlled in document (3) by continuously measured values of the temperature but that the contact thermometers started or broke the water circuits.

The opposition division was of the opinion that this analysis applied *mutatis mutandis* to the subject-matter of claim 5.

With respect to inventive step the opposition division considered that the problem solved in the patent in suit related to optimising the heat energy transport in accordance with the instantaneous requirements. The solution was the continuous regulation of the flow of cooling fluid. The solution was obvious to the skilled person since there were only two ways to regulate a flow continuously or discontinuously e.g. on a start/break basis. Moreover, document (3) already taught how to avoid an uneven cooling (page 1, halfway middle column). Therefore claims 1 and 5 lacked an inventive step.

- V. By letter received on 14 May 2001 the appellant (patentee) lodged an appeal against that decision. The statement setting out the grounds of appeal was filed on 19 July 2001.

Claim 1 of the main request reads:

"1. A method of continuously tempering a flowing cocoa butter or other fat containing, chocolate-like mass which passes through a cooling zone (A) having a plurality of cooling surfaces (8) and a subsequent reheating zone (G) having a plurality of heating surfaces (9) for the chocolate mass, seen in the flow direction (M) of said mass, said cooling surfaces (8) being overflowed by at least two separately circulating cooling media, one of which exclusively overflows a final crystal formation area (K) for the chocolate mass in the cooling zone (A), said heating faces (9) being overflowed by at least one separately circulating heating medium, characterized in that the flow of the separately circulating cooling medium, which overflows the final crystal formation area (K), is controlled by continuous regulation in response to continuously measured values of the temperature (t_2) of the chocolate mass at the crystal formation area (K)."

VI. The appellant filed with its letter of 14 September 2001 an auxiliary set of claims (first auxiliary request).

Claim 1 of the first auxiliary request differs from claim 1 of the main request in the following wording added to the end of the characterising part:

", and that the temperature of the separately circulating cooling medium, which overflows the final crystal formation area (K), is controlled to a constant level in accordance with predetermined temperature values."

VII. The appellant filed with its letter of 10 February 2004 two further auxiliary sets of claims.

Claim 1 of the second auxiliary request reads:

"1. An apparatus for continuous tempering of a flowing cocoa butter or other fat-containing, chocolate-like mass, comprising a plurality of separate treatment sections (2) which are arranged on top of each other and are interconnected, and through which the chocolate mass substantially flows in a horizontal direction under the action of stirring blades (3) which rotate about a central axis (0) through the apparatus (1), said treatment sections (2) being separated by intermediate heat transport sections (6) through which a liquid flows with a view to adding or removing heat from the chocolate mass through partitions (7) between heat transport sections and adjacent treatment sections (2), said cooling and heating surfaces being comprised by said partitions (7), comprising a cooling zone (A) having a plurality of cooling surfaces (8) and a subsequent reheating zone (G) having a plurality of heating surfaces (9) for the chocolate mass, seen in the flow direction (M) of said mass, said cooling surfaces being overflowed by cooling medium which flows in its respective one of at least two separately circulating cooling circuits (K1, K2), said cooling medium in one cooling circuit (K2), which comprises separate pumping means (P2), exclusively overflowing cooling surfaces (8) in a final crystal formation area (K) comprising the cooling surfaces (8) in at least one treatment section (2) for the chocolate mass in the cooling zone (A), said heating surfaces (9) being overflowed by heating medium which flows in at least one

separately circulating heating circuit (K3), each of said separately circulating cooling and heating circuits (K1, K2 and K3) comprising a heating member (V1, V2 and V3) and a valve (L1, L2 and L3) for controlling external cold medium supply to the circuit for controlled regulation of the cooling or heating medium temperature of the circuit concerned, said apparatus (1) moreover comprising at least one temperature sensor (T2) which is arranged in the chocolate mass at the crystal formation area (K) and is connected to an electronic control unit (R₂B), characterized in that the electronic control unit (R₂B) is connected to the pumping means (P2) in the cooling circuit (K2) whose cooling medium overflows the crystal formation area (K), and that the control unit (R₂B) is adapted to control by continuous regulation the flow in response to the received, continuously measured values of the chocolate mass temperature (t₂) at the crystal formation area (K)."

Claim 1 of the third auxiliary request differs from claim 1 of the second auxiliary request in that it includes the following wording after "intermediate heat transport sections (6)":

"comprising curved partitioning walls concentrically arranged around the axis (0) providing therebetween a continuous duct".

VIII. In response to this the respondent filed document (9) with a letter of 19 February 2004.

IX. Oral proceedings were held before the Board on 12 March 2004.

X. As regards the novelty of the main request, the appellant stated that document (3) disclosed that the contact thermometers start or break the water circuits by a discontinuous regulation in response to measured mass temperatures, whereas according to the main request the flow was controlled by continuous regulation in order to be adapted to the instantaneous requirements. It argued that claim 1 did not encompass the discontinuous regulation since it is not possible to regulate something which is not flowing. The appellant cited column 4, lines 19 to 24 and column 6, lines 15 to 18, lines 38 to 39 and lines 49 to 55, of the patent in suit.

As regards claim 1 of the first auxiliary request, the appellant's argument for novelty over document (3) was based upon the continuous regulation of the water flow in response to instantaneous requirements.

With respect to the second auxiliary request, the appellant stated that the characterising part of claim 1 contained the distinguishing features of the subject-matter claimed vis-à-vis document (8). Novelty vis-à-vis document (3) was mainly due to the fact that the apparatus claimed was a tempering machine of the vertical type instead of a tempering machine of the horizontal type.

In relation to inventive step, the appellant considered document (8) to represent the closest prior art since it had the greatest number of features in common with the apparatus claimed. Document (8), however, disclosed that the water flow was kept constant in the

crystallisation zone (column 10, lines 11 to 15 and lines 43 to 49, as well as figure 1).

In contrast to this, claim 1 required a continuous regulation of the flow at the crystal formation area. Moreover, the arrangement of regulating means was different in document (8), since claim 1 of the second auxiliary request required that the electronic control unit was connected to the pumping means in the cooling circuit overflowing the crystal formation area.

The appellant further stated that the technical effect achieved was disclosed in the patent in suit and had to do with the optimisation of the heat energy transport so that a constant amount of crystals were created independently of variations in mass temperature or mass throughput. It cited column 4, lines 12 to 24, and column 6, lines 49 to 58, of the patent in suit.

The appellant put forward the argument that the problem was to create in a vertical apparatus a constant amount of crystals independently from the variations in mass temperature and mass throughput (column 3, lines 29 to 37).

Document (8) taught, in the appellant's view, that for solving that problem the temperature and the flow should be kept constant in the crystallisation area (column 4, lines 14 to 17 and lines 35 to 38, column 10, lines 15 and 47 to 54, and column 11, lines 47 to 48).

The appellant further stated that document (8) taught that the water flow of the premature cooling zone where no crystals were formed was regulated in response to

the temperature measured in the transition section of the crystal area to the heating zone. This was a totally different combination of features which could not have been varied without affecting the machine's performance. The skilled person would not have arrived at the solution even if contemplating the variation of heat exchange in the crystallisation zone, since document (3) only taught that uneven cooling should be avoided and disclosed a discontinuous regulation.

Moreover, the skilled person facing the above problem would make use of his or her general knowledge and contemplate several other solutions such as applying a regulation by which only a part of the chocolate is cooled (by by-passing the chocolate around the cooled surface), adapting the surface area over which the mass passes to the instantaneous requirements (e.g. by using a movable restriction plate so that the mass only passes over a part of the cooling area if lesser cooling is required) or changing the water temperature up or down to the instantaneous requirement.

There were no hints or pointers in the prior art to arrive at the proposed solution.

With respect to the third auxiliary request, the appellant stated that document (8) was the closest prior art and then defined a different technical problem from that stated in the other requests, consisting of an improvement in the quality of the final crystal formation area.

Made aware by the Board of the possible consequences of such a shifting of the invention on the admissibility

of this late filed request, the appellant again stated that the problem was within the disclosure of the original patent because the cooling should be adapted to the instantaneous requirements. The problem to be solved had a clear relationship with the problem of optimising the heat energy transport so that a constant amount of crystals were created independently of variations in mass temperature or mass throughput. The further optimisation was to adapt the cooling to the instantaneous requirements in the crystallisation zone.

The appellant stated that in documents (3) and (8) there were no curved partitioning walls and that in document (8) the cooling flowed under turbulent conditions (column 12, lines 12 to 13).

Claim 1 of the third auxiliary request related to a continuous channel in which, when the length of the duct increased, the cold spot increased too. When the flow of water changed, the extension of the cooling zone changed too. The heat energy transport was improved by this mode.

Questioned by the Board, the appellant stated that the apparatus would also function without the curved partitioning walls forming the duct.

The appellant argued that document (9) disclosed a heat exchange device without crystallisation and that this document related to spiral walls in two floors and not to concentric walls.

XI. The respondent did not object under Articles 123 and 84 EPC to the amended claim 1 of the main, first, second and third auxiliary requests.

The respondent's arguments with respect to the main and first auxiliary requests may be summarised as follows:

The description of the patent in suit did not disclose a continuous flow. The fact that the continuous regulation of the temperature was performed was the usual operation when sensors are used, since there was no such thing as discontinuous sensors. That the regulation was continuous did not necessarily mean that the flow was continuous. The break and start meant that there was a flow function which depended on the time. The continuous regulation encompassed the break and start.

Additionally, it argued that document (8), especially when taken in the light of general knowledge (it cited document (1)), was also novelty destroying for the subject-matter of claim 1 of the main and first auxiliary requests.

With respect to the second auxiliary request, the respondent did not contest the novelty of the subject-matter claimed.

In relation to the inventiveness of the second auxiliary request, the respondent stated that document (8) was the closest prior art. It also considered that document (8) addressed the same problem (column 3, lines 32 to 37). Document (8) exemplified the solution of continuously regulating the temperature

of the cooling medium, but also disclosed an alternative solution to that exemplified (column 4, lines 49 to 52). When the temperature of the cooling medium was kept constant, then necessarily the flow had to be regulated.

The respondent further stated that the skilled person would have combined documents (8) and (3) since the fact that the apparatus was vertical or horizontal could not in any manner affect the teaching relating to the continuous regulation. Document (3) shows how to keep the temperature constant and vary the flow. The regulation takes place directly in relation to the pump. Document (3) discloses an ideal crystallisation (column 2, page 2).

With respect to the third auxiliary request, the respondent stated that the added features had no technological relationship with the problem of the regulation and that they were purely aggregation features without any technical effect resulting from their addition. The effect of the cooling could also be achieved without the separating curved walls. Moreover, document (9) disclosed spiral walls which were not very different in essence from the concentric walls. Additionally, claim 1 did not exclude having a two-floor construction.

XII. The appellant requested that the decision under appeal be set aside and the patent be maintained (1) on the basis of the set of claims on which the first instance decided, (2) or alternatively on the basis of either his first auxiliary request filed with the letter dated of 14 September 2001, or on the basis of auxiliary

requests 2 or 3 filed with letter dated 10 February 2004.

The respondent requested that the appeal be dismissed.

Reasons for the Decision

1. The appeal is admissible.
2. The respondent did not raise any objection under Articles 123 and 84 EPC to the amended claim 1 of the main, first, second and third auxiliary requests, and the Board sees no reason to differ.
3. Nor was it disputed by the appellant that the prior use represented by documents (3) to (7) was prior art within the meaning of Article 54(2) EPC.
4. *Main request*
 - 4.1 The appellant argued that the only distinguishing feature with respect to the Fully Automatic Chocolate Tempering Machine Type TA III (document (3)) was a different regulation as established in particular by the expressions "by continuous regulation" and "continuously measured" appearing in the characterising part of claim 1.

The characterising part of claim 1 reads:

"characterized in that **the flow** of the separately circulating cooling medium, which overflows the final crystal formation area (K), **is controlled by continuous regulation** in response to **continuously measured values**

of the temperature (t_2) of the chocolate mass at the crystal formation area (K)" (*emphasis added by the Board*).

4.2 In the Board's judgment, this wording of claim 1 encompasses an intermittent flow, since a continuous regulation does not necessarily mean that the flow it purports to regulate is continuous.

4.3 Document (3) discloses that "Three contact thermometers control the water circulation in the three tempering sections, governed by the chocolate temperature at the termination of each section" (page 2, section 2).

It also discloses that in the shown section 2 the actual crystallisation takes place (page 3, left column).

Furthermore, in document (3) discloses that "three thermostats control the water temperature in the three water circuits" and that the "adjustment of the machine is needed only once for the day's running, and the machine continues without attendance in fully automatic operation" (page 2, right column).

Additionally, it is also disclosed in document (3) that "The chocolate temperature is adjusted and controlled at the termination area of each section by means of contact thermometers registering directly the temperature. These contact thermometers start or break, as required, the 3 water circuits of the 3 sections".

Therefore the method of claim 1 encompasses the use of the tempering machine disclosed in document (3).

- 4.4 The appellant argued that what is meant by a continuous flow is set out in the description of the patent in suit, in particular the passage in column 4, lines 15 to 18: "The pump can hereby operate with a constant flow, while the controlled flow of cooling medium at the crystal formation area is regulated by the control of the three-way valve." However, this passage only refers to a preferred mode of the patent in suit and it is, according to Article 84 EPC, the wording of the claim which has to be assessed in order to define the matter for which protection is sought.

The other passages cited by the appellant relate to a "controlled regulation" which as such includes an intermittent flow as well. Furthermore, the temperature is measured continuously in document (3) since this is a requirement for the automatic functioning of the machine. The fact that according to document (3) the flow is broken intermittently depending on the instantaneous requirements does not mean that there is a discontinuous regulation of the apparatus.

- 4.5 Consequently, the Board concludes that the subject-matter of claim 1 lacks novelty vis-à-vis document (3).

5. *First auxiliary request*

- 5.1 The first auxiliary request merely differs from the main request in the following:

", and that the temperature of the separately circulating cooling medium, which overflows the final crystal formation area (K), is controlled to a constant

level in accordance with predetermined temperature values."

It has to be assessed whether these additional features overcome the lack of novelty of the main request vis-à-vis the contents of document (3).

In document (3) it is disclosed that "in the mixing chambers, where the water temperature is kept constant by means of thermostat controlling the supply in the way that a **constant temperature** is kept in the circuits" (*emphasis added by the Board*) (page 2, middle column).

Furthermore, as mentioned for the main request above, there are three contact thermometers controlling the water circulation in the three sections (page 2, section 2).

The contact thermometer fulfils the function of controlling to a constant level in accordance with predetermined temperature values. This has to do with the normal functioning of contact thermometers. In document (3) the regulation takes place by "start or break" the water circuits. However, as already mentioned for the main request, an intermittent flow is not excluded in the claim's wording.

Additionally, the continuous regulation of document (3) results in the flow becoming intermittent in order to adapt to the instantaneous requirements.

Therefore, the Board also concludes that the first auxiliary request lacks novelty vis-à-vis document (3).

6. *Second auxiliary request*

6.1 The Board is satisfied that the subject-matter claimed in this request is novel. In particular the machine of document (3) is horizontal, whereas the apparatus claimed in claim 1 is vertical.

The appellant stated further that the difference with the apparatus disclosed in document (8) relies upon the characterising part of the claim. The Board shares this opinion.

Furthermore, the respondent did not contest the novelty of the subject-matter claimed in the second auxiliary request.

6.2 It remains now for the Board to assess the inventive step of the second auxiliary request.

The Board shares the parties' position that document (8) represents the closest prior art.

Claim 1 relates to an apparatus for continuous tempering of a flowing cocoa butter or other fat-containing, chocolate-like mass. The Board notes, as already mentioned above, that there was no dispute between the parties that document (8) comprises all the features of the introductory part of claim 1. The difference lies in the regulation features of the characterising part.

Document (8) relates to the problem of providing a method and an apparatus to continuously temper the chocolate mass which enable the formation of a high content of crystals, especially beta crystals, in as constant a manner as possible, and independently of a fluctuating mass throughput and/or a changing mass income temperature (column 3, lines 38 to 46).

The method described specifically in document (8) as the means of regulation for adapting to the instantaneous requirements is to keep the temperature and flow in the crystallisation area constant and to regulate the premature cooling zone in response to continuously measured temperature values at the end of the crystallisation zone (column 4, lines 14 to 17 and lines 35 to 38, column 10, lines 15 and 47 to 54 and column 11, lines 47 to 48).

However, document (8) also discloses in generic terms two alternatives. The first alternative for adapting the cooling to the instantaneous requirements is to continuously circulate the cooling medium in the cooling chambers of the cooling stories and thereby to regulate the temperature of the cooling medium in the cooling stories at the incoming side in dependence of the temperature of the mass at the end of the end sided cooling story (column 4, lines 35 to 41).

The second alternative disclosed is to keep constant the temperature of the cooling medium of the last cooling story (crystallisation area) facing the heating story at the entrance into the cooling chambers (column 4, lines 49 to 52).

This passage in column 4, lines 49 to 52, of document (8) implies a second mode of operation which corresponds to the regulation of the flow. This is a consequence, when adapting to instantaneous requirements such as a changing mass throughput, of the general principles for heat transfer technology and volume stream.

The appellant alleged an optimisation of the heat energy transport in accordance with instantaneous requirements but a related effect of the heat energy transport has not yet been proven by the appellant. Therefore the optimisation of the heat energy transport cannot serve to define the problem and the corresponding assessment of inventiveness.

However, the problem solved by document (8) corresponds to that stated in the patent in suit. Accordingly, the problem underlying the patent in suit can only be seen in the provision of an alternative apparatus.

The solution relates to the mode of regulation defined in the characterising part of claim 1.

This problem has been plausibly solved in the light of the description and figures. This was not disputed by the respondent.

It remains to be investigated whether the solution proposed by the claim is obvious in the light of the prior art.

The skilled person working in the field of chocolate production is also aware of the existence of the machine of documents (3) to (7).

Document (3) deals with an ideal crystallisation and avoids uneven cooling effects (page 2, middle column).

The passages of document (3) quoted for the method claims of the main and first auxiliary requests are relevant for the regulation means of the characterising part of claim 1 of the second auxiliary request.

The contact thermometers measure continuously the temperature of the chocolate mass (middle column, page 3). Furthermore they are adapted to control the flow by continuous regulation since they start or break the three water circuits of the three sections (middle column, page 3) in response to measured temperature values.

Moreover, the machine of document (3) corresponds to the figure of document (4) which shows that the contact thermometer (KII) of the crystal zone II is connected to the pumping means (PII) in the cooling circuit which overflows the crystal formation area.

Accordingly, the skilled person starting from document (8) and looking for an alternative for the apparatus would take from document (3) the regulation method and would obviously arrive at the solution as claimed in claim 1.

With respect to the appellant's arguments concerning the constant temperature at the cooling surfaces of the

crystallisation zone, the following has to be said. It is true that document (8) specifically exemplifies that the temperature in the cooling surfaces is kept constant and that the mass is only minimally cooled in the crystal zone, since the cooling work is made basically in the premature cooling zone (column 11, lines 14 to 16), but the description of document (8) has to be taken in its entirety and the passage in column 4 lines 49 to 52, is a clear hint when looking for an alternative to the exemplified modes of operation for the apparatus.

The appellant also contended that there were other solutions possible apart from the regulation of the flow in the crystal zone. However, as already said, document (8) points to the alternative of regulating the flow by keeping the temperature constant.

With respect to the appellant's argument that the skilled person would not contemplate combining the teaching of document (3) with that of document (8), the Board considers that the fact that the machine of document (8) is of a vertical type and the machine of document (3) is of a horizontal type would not discourage the skilled person faced with a regulation problem which is *prima facie* not dependent on the machine type.

Moreover, the intermittent flow as a working condition has no direct influence on the arrangement of the apparatus features as such.

In view of the above, the Board concludes that the second auxiliary request does not meet the requirements of Article 56 EPC.

7. *Third auxiliary request*

With respect to the third auxiliary request, it has to be borne in mind that the Board considered it admissible only in view of the fact that the appellant agreed that the alleged invention was still based upon the regulation system and that no shift in the invention was made by reformulating the problem.

It has not been proven yet whether an optimisation of heat transport energy takes place over document (8). Moreover, the appellant acknowledged that the machine was also able to function without the curved partitioning walls and the duct.

Therefore the same arguments displayed for the second auxiliary request apply *mutatis mutandis* to the third auxiliary request.

Indeed the new feature of claim 1 merely relates to an aggregation feature which is known in principle to the skilled person.

The respondent correctly put forward the fact that the arrangement of spiral walls of document (9) instead of concentric walls is not relevant for the heat energy transport. The appellant did not provide any counterargument.

Consequently, the Board concludes that the third auxiliary request does not meet the requirements of Article 56 EPC.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

A. Townend

U. Oswald