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Datasheet for the decision of 9 August 2019

Case Number: T 0381/17 - 3.3.09

Application Number: 10075151.0

Publication Number: 2210500

IPC: A23G1/18, A23G1/00

Language of the proceedings: EN

Title of invention:
Method and apparatus for continuous tempering of chocolate mass

Patent Proprietor:
Aasted ApS

Opponents:
Sollich KG
Bühler AG

Headword:

Relevant legal provisions:
EPC Art. 54, 56, 83, 123(2)

Keyword:

Added matter: auxiliary request 1 - no
Sufficiency of disclosure: auxiliary request 1 - yes
Novelty: auxiliary request 1 - yes
Inventive step: auxiliary request 1 - yes

Decisions cited:

Catchword:

Europäisches Patentamt
European Patent Office
Office européen des brevets

Beschwerdekammern

Boards of Appeal

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Case Number: T 0381/17 - 3.3.09

D E C I S I O N
of Technical Board of Appeal 3.3.09
of 9 August 2019

Appellant: (Patent Proprietor)	Aasted ApS Bygmarken 7-17 3520 Farum (DK)
Representative:	Heiden, Finn Heiden ApS Sønderengen 12 2870 Dyssegård (DK)
Respondent: (Opponent 1)	Sollich KG Siemensstrasse 17 - 23 32105 Bad Salzuflen (DE)
Representative:	Rehberg, Bernhard Frank REHBERG HÜPPE + PARTNER Patentanwälte PartG mbB Robert-Gernhardt-Platz 1 37073 Göttingen (DE)
Respondent: (Opponent 2)	Bühler AG Gupfenstrasse 5 9240 Uzwil (CH)
Representative:	Wilming, Martin Hepp Wenger Ryffel AG Friedtalweg 5 9500 Wil (CH)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 20 December 2016 revoking European patent No. 2210500 pursuant to Article 101(3)(b) EPC.**

Composition of the Board:

Chairman	W. Sieber
Members:	A. Veronese
	F. Blumer

Summary of Facts and Submissions

I. The appeal was filed by the proprietor against the decision of the opposition division to revoke European patent No. 2 210 500.

II. With their notices of opposition, the two opponents had requested revocation of the patent in its entirety on the grounds under Article 100(a) (lack of novelty and inventive step) and 100(b) EPC.

III. The documents submitted during the opposition proceedings included:

S1: DE 1 073 287
S2: GB 826,502 (also referred to as D16)
D14: DE 1 432 071
D15: DE 1 273 312
D17: DE 848 147

IV. In its decision the opposition division decided not to admit the main request but to admit auxiliary request 1, both requests filed during the oral proceedings held before the opposition division. The opposition division considered the subject-matter of auxiliary request 1 to comply with Articles 83 and 123(2) EPC and to be novel over D14, D15 and D16. It, however, considered it to lack novelty over S1.

V. Claim 1 of auxiliary request 1 reads:

"*Method for continuous tempering of a fat-containing, crystallisable chocolate mass, which has been heated, so that it is liquid, pump able [sic] and free from crystals, and by which no additional substance such as*

seed materials as cocoa butter is added, and neither is already crystallised mass re-circulated, that the mass is divided into a first stream of mass and a second stream of mass, which mass is cooled, so that crystals are created in the first stream of mass, and so that the second stream of mass is still being free from crystals, where after the first stream of mass and the second stream of mass is being mixed together into one final crystallised stream of mass, characterised in, that the complete mass is cooled before it is divided, however still being free from crystals."

Claim 4 reads:

"*Method according to claim 1, characterised in, that the second stream of mass is cooled, however still being essentially free from crystals*".

VI. This decision was appealed by the proprietor (appellant). In the statement of grounds of appeal, filed with a letter dated 19 April 2017, the proprietor requested that the decision under appeal be set aside and that the oppositions be rejected (main request) or, alternatively, that the patent be maintained on the basis of one of auxiliary requests 1 to 6, which were annexed to the letter. Auxiliary request 1 corresponds to auxiliary request 1 before the opposition division.

VII. In their reply to the statement of grounds of appeal the opponents (respondents 1 and 2) requested that the appeal be dismissed and that the main request, corresponding to the granted claims, and auxiliary requests 2 to 6 not be admitted into the appeal proceedings.

VIII. In a communication issued in preparation for the oral proceedings, the board drew the parties' attention to the points to be discussed.

IX. On 9 August 2019, oral proceedings took place before the board. During the oral proceedings, the appellant withdrew its main request and requested that the patent be maintained on the basis of one of auxiliary requests 1 to 6 filed by letter dated 19 April 2017. After the board's conclusion was announced that the patent could be maintained on the basis of the claims of auxiliary request 1, the appellant filed amended pages of the description, adapted to those claims. The respondents confirmed their request that the appeal be dismissed and that auxiliary requests 2 to 6 not be admitted into the appeal proceedings. At the end of the oral proceedings, the chairman announced the decision.

X. The appellant's arguments, where relevant for the decision, may be summarised as follows.

Claim 1 of auxiliary request 1 related to a method where the complete chocolate mass was cooled before being divided but still being crystal-free. This mass was then divided into two streams. The first stream was cooled so that crystals were created. The second stream was maintained crystal-free and could be, but was not necessarily, subjected to further cooling.

Basis for the feature in claim 1 of auxiliary request 1 *"...characterised in, that the complete mass is cooled before it is divided, however still being free from crystals*" was found in claim 4 as filed and on page 9, line 18, and page 10, line 21, as filed. The deletion of the word "essentially" from the expression "free from crystals" did not add new subject-matter extending

beyond the content of the application as filed. This feature could also be combined with the features characterising the dependent claims without creating new subject-matter.

The alleged inconsistency between claims 1 and 4 of auxiliary request 1 would not have prevented the skilled person from carrying out the invention, which was sufficiently disclosed.

The subject-matter of auxiliary request 1 was novel over S1 and S2. These documents did not disclose a method for tempering chocolate in a continuous manner as set out in claim 1. The apparatus described in S1 and S2 was typically used for tempering small batches of chocolate. There were good reasons to assume that this apparatus was loaded with a commercially available raw mass of chocolate supplied in the solid state after having been subjected to conching and cooling. Thus, the tempering method described in S1 and S2 was not continuous. It also did not include a step where the entire mass was cooled before being divided. This step was an integral part of the claimed method. The presence of crystals in the starting mass and in the second stream could also not be ruled out because part of the already crystallised mass was recirculated.

S1 (or the related document S2) was the closest prior art. The tempering method described in S1 did not include the step characterising claim 1 of auxiliary request 1 where the complete mass of chocolate was continuously cooled before being divided into two separate streams. As indicated in paragraph [0041] of the opposed patent, performing this cooling step led to a reduction of energy consumption. The respondents' allegations that this effect could not be achieved, or

at least not over the entire scope of claim 1, was unsubstantiated. Starting from S1, the underlying problem was the provision of a more efficient method for continuously tempering chocolate. There was nothing in the prior art to suggest that performing this cooling step might reduce energy consumption.

XI. The respondents' arguments, where relevant for the decision, may be summarised as follows.

The feature in claim 1 of auxiliary request 1 "*characterised in, that the complete mass is cooled before it is divided, however still being free from crystals*" had a basis neither in claims 4 or 5 as filed, nor in the parts of the application as filed mentioned by the appellant. According to the application as filed, the mass was "essentially" free from crystals but not crystal-free. Thus, this feature, as well as its combination with the features of the dependent claims, extended beyond the content of the application as filed.

According to claim 1 of auxiliary request 1, the entire chocolate mass, i.e. the mass of both the first and second streams had to be cooled. However, this was at odds with claims 4, which required, again, that the second mass be cooled. Due to this inconsistency the skilled person would not have been able to carry out the invention.

Claim 1 of auxiliary request 1 was not novel over S1 and S2. Since S1 and S2 concerned the same invention, the teaching of each of these documents could be read into that of the other. The apparatus described in S1 and S2 was meant for continuous processing. This was confirmed by S1 (column 3 line 28) and S2 (page 1

lines 30 and 65 and claim 2). From the passages on page 1, lines 55-56, of S2 and in column 4, lines 10-20, of S1, it could be inferred that before being divided into two streams, the entire mass was free from crystals. Furthermore, in accordance with S1 and S2, before being divided, the entire chocolate mass was to be kept in a vessel at a temperature between the conching and the crystallisation temperatures (S1 column 4, lines 10-20). Since reference was made to the conching temperature, the chocolate contained in the vessel had necessarily been subjected to a conching step and then continuously cooled to a lower temperature, close to the crystallisation temperature. This meant that the entire mass had been continuously cooled before being divided as required by claim 1. Irrespective of this, the step in which the complete mass was cooled was not part of and did not characterise the tempering method defined in claim 1, and it could be disregarded.

During the oral proceedings, all parties agreed that S1 was the closest prior art. Respondent 2 referred also to D17 as a possible alternative starting point. According to the respondents, there was no evidence that cooling the complete mass before subdivision into two streams resulted in a reduction of energy consumption. This effect, mentioned in paragraph [0041] of the patent, was not substantiated by any technical evidence. There was also no evidence that this effect could be achieved over the entire scope claimed. Thus, it had to be disregarded when assessing inventive step.

Starting from S1, the underlying objective technical problem was the mere provision of an alternative method for tempering chocolate. Confronted with this problem, the skilled person would have considered combining the

process of tempering chocolate described in S1 and S2 with a conching step. It would also have been obvious to cool down the chocolate mass after conching before dividing it into two streams. The skilled person would therefore have arrived at the subject-matter of claim 1 without exercising any inventive activity.

Reasons for the Decision

Auxiliary request 1

1. Auxiliary request 1, the highest ranking request in the appeal proceedings, corresponds to auxiliary request 1 filed during the oral proceedings before the opposition division. Its admission into the appeal proceedings was not contested.

2. Added subject-matter

2.1 The following expression was introduced into claim 1 of auxiliary request 1 during the opposition proceedings:

"...characterised in, that the complete mass is cooled before it is divided, however still being free from crystals."

This wording corresponds to that used in dependent claim 4 of the application as filed, with the exception that that claim required the mass to be "*essentially*" free of crystals. According to the respondents, the omission of the word "essentially" added new subject-matter not disclosed in the application as filed. The presence of this word in claim 4 as filed implied that the chocolate mass comprised, at least to some extent, a certain amount of crystals. Conversely, its omission in amended claim 1 created the notion that the mass was

totally free from crystals, which was not disclosed in the application as filed.

2.2 The board disagrees. It is not disputed that claim 4, as well as other parts of the application as filed (page 1, line 3, page 2, line 3, page 4, line 10, page 6, line 8) refer to a composition which is "essentially free from crystals". However, the skilled person would have understood that in the context of the invention this wording means that the presence of crystals in the chocolate mass must be minimised and that the embodiment where the composition is rendered crystal-free represents the preferred one of the disclosure.

2.3 The passages on page 9, line 18, and page 10, line 21, of the description as filed describe specific examples of processes in which the chocolate mass is rendered "crystal-free". These passages confirm that it is technically possible and also desirable to completely eliminate the crystals from the mass. Thus, the notion of a crystal-free composition is disclosed in the application as filed and is also fit for generalisation.

2.4 For these reasons, the omission of the term "essentially" in the wording of claim 1 of auxiliary request 1 does not introduce new subject-matter extending beyond the application as filed. Furthermore, since the amendment to claim 1 reflects a general teaching of the application, the subject-matter of this claim can also be combined with that of the dependent claims, without creating new subject-matter.

2.5 Accordingly, the claims of auxiliary request 1 do not contain added subject-matter extending beyond the

content of the application as filed (Article 123(2) EPC)).

3. *Sufficiency of disclosure*

3.1 The respondents contended that claim 1 and claim 4 of auxiliary request 1 were inconsistent and that, as a consequence, the claimed invention was insufficiently disclosed.

3.2 The respondents noted that dependent claim 4 defined a particular embodiment of the invention defined in claim 1, where the second stream of the chocolate mass was cooled. However, claim 1 already required that the second stream be cooled because according to claim 1 the entire chocolate mass, i.e. that of both the first and second streams, was cooled. Claims 1 and 4 were therefore inconsistent and did not make sense. This would have prevented the skilled person from carrying out the claimed invention.

3.3 The board cannot accept this argument because it is based on an incorrect interpretation of the claimed invention. The board concurs with the appellant that claim 1 defines a continuous method for tempering a chocolate mass which has been heated and is free from crystals that comprises the steps of:

- cooling the complete chocolate mass but so that this mass remains free from crystals
- dividing the mass into two streams
- cooling the first stream so that crystals are created
- mixing the two streams together.

3.4 The step of cooling the complete chocolate mass implies that the second stream is also in a cooled state. The second stream may be further cooled (but not necessarily) and in any case remains free from crystals.

3.5 This means that according to claim 1, the second mass of chocolate is not necessarily subjected to a further cooling step and that dependent claim 4, which foresees this step, is not inconsistent with claim 1. Thus, the sufficiency argument based on this alleged discrepancy must fail.

3.6 In this context, claim 1 requires that the second mass is free of crystals, whereas dependent claim 4 requires it to be "essentially" free of crystals. In this respect, the claims are in contradiction. However, no reasons were presented, and the board does not see any, for considering the invention insufficiently disclosed on this ground. Since this contradiction was already present in the granted claims, it is not open to an objection for lack of clarity.

3.7 For these reasons, the invention is disclosed in a manner sufficiently clear and complete for it to be carried out by the person skilled in the art (Article 83 EPC).

4. Novelty

4.1 According to the respondents, claim 1 of auxiliary request 1 lacked novelty over S1 and S2. In their attack, the respondents argued that S1 and S2 concerned the same invention and that, for this reason, any feature not explicitly disclosed in one of these

documents was nevertheless inherently present in that document if it was disclosed in the other one.

4.2 Claim 1 of auxiliary request 1 defines a method for continuously tempering chocolate. The purpose of tempering is to form stable crystals in the chocolate mass. However, this does not mean, as submitted by the respondents, that only the steps in which crystals are formed characterise the claimed method. Although the ultimate goal of a tempering method is the formation of stable crystals, all the steps specified in claim 1, including the preparatory step where the complete hot and crystal-free mass is cooled before being divided, define and characterise the claimed method. This step cannot be disregarded when assessing novelty. Furthermore, since the claimed method is carried out continuously, each of its steps, including cooling the complete mass, has to be carried out in a continuous manner. This has also to be taken into account when assessing novelty.

4.3 S1 and S2 define a method for tempering chocolate in which a mass of chocolate in fluid form is divided into two different streams which are cooled down to two different temperatures so that crystals are formed in the first stream but not in the second. These streams are then recombined to form a final crystallised stream as set out in claim 1.

4.4 The respondents argued that it was clear from S1 and S2 that the method was carried out continuously and that the complete mass was free from crystals before being divided. The respondents also drew attention to the passage in column 4, lines 10-20, of S1 that, before being divided, the mass is kept in a thermostated vessel at a temperature between that used for conching

the chocolate and that at which crystals are formed. In their opinion, the reference to the conching temperature implied that the method included a conching step and that, after conching, the hot fluid chocolate mass was continuously cooled from the higher conching temperature to a lower temperature which was closer to the crystallisation temperature. Consequently, S1 and S2 implicitly disclosed a step where the entire chocolate mass was subjected to a continuous cooling before being divided into two separate streams. Hence, the subject-matter of claim 1 was not novel.

4.5 The board cannot endorse this argument. The mere reference to a "conching temperature" in this passage does not allow drawing any conclusion as to the inclusion of a conching step within the method described in S1 and S2. This can only be speculated.

4.6 The appellant stated, and this was not disputed, that conched chocolate in the form of a solid raw mass was available from commercial suppliers. This chocolate could be purchased and converted into a finished product carrying out further manufacturing steps, such as tempering, using the apparatus described in S1 and S2. Doing so would be perfectly in line with the disclosure of S1 and S2. In this case the step of cooling the chocolate after conching would not belong to the tempering method. It would also not be possible to establish whether the chocolate mass was cooled continuously after conching.

4.7 Consequently, even assuming that the teaching of S1 and S2 could be read in combination, as submitted by the respondents, these documents do not directly and unambiguously disclose a method for the continuous tempering of a chocolate mass which includes a

continuous cooling step in which the "*complete mass is cooled before it is divided*".

4.8 Thus, the subject-matter of claim 1, as well as of the dependent claims, which are more limited in scope, is novel over S1 and S2 (Article 54 EPC).

5. Inventive step

5.1 The claimed invention relates to a method for tempering chocolate. Tempering aims at providing an optimal texture, a uniform sheen and a crisp bite to a finished chocolate product. During tempering the chocolate is initially heated so that all crystals of cocoa butter present in the mass are dissolved. The mass is then cooled in conditions favouring the formation of stable type V crystals rather than other unstable crystal forms. The presence of these other crystals causes the chocolate surface to appear mottled and matt and the chocolate to crumble.

5.2 The invention foresees that the entire chocolate mass, which has been heated and rendered free from crystals, is cooled down and then divided into two streams. The growth of crystals is induced in the first stream by further cooling but not in the second. The two streams are then mixed so that the crystals formed in the first stream promote crystallisation of the remaining part of the mass (paragraph [0019] of the opposed patent). Compared to a method in which crystallisation is induced in the entire mass, the claimed method reduces the formation of unstable crystals and energy consumption (paragraphs [0025] and [0029]).

5.3 Like the opposed patent S1 discloses a method for tempering chocolate in which a chocolate mass warmed up

to a temperature above the crystallisation temperature is divided into two streams. Crystal formation is promoted in the first stream through cooling but not in the second one. The streams are then recombined to promote crystallisation of the entire mass. The idea of inducing crystal formation in a fraction of the chocolate mass and to use this fraction to trigger further crystallisation in the remaining mass is the same as in the claimed invention. S1 describes in great detail the apparatus and the conditions for inducing crystal formation in the different steps. It also teaches that the method affords a pure and stable product. For these reasons, the board agrees with the parties that S1 is the closest prior art. Since S2 describes essentially the same invention as S1, there is no need to consider this document separately.

5.4 Respondent 2 referred to D17 as a possible alternative starting point for assessing inventive step. D17 discloses a method for tempering chocolate in which a portion of a warmed chocolate mass is cooled to its solidification temperature and then mixed with the remaining portion of the mass. Compared to S1, D17 contains far less technical details as to the apparatus, the conditions and the physical principles underlying the method. For example, D17 mentions the temperature at which the chocolate solidifies "Erstarrungstemperatur" and the presence of solidified nuclei "Erstarrungskerne", but the formation of crystals is not even mentioned. Since the level of understanding of the tempering process is much lower, D17 does not represent the closest prior art.

5.5 The claimed method differs from the method disclosed in S1 at least in that it includes a step in which the

complete chocolate mass is cooled before being divided into two separate streams.

5.6 Paragraph [0041] of the patent states that the energy savings achieved by carrying out a method where the entire mass is cooled before being divided, using the apparatus shown in figure 2, are a "few percent better" than those of a "previously described embodiment". This previously described embodiment, which is disclosed in paragraphs [0034-0037] and in figure 1, relates to a method which does not include the step of cooling the complete mass before it is split into two streams.

5.7 The respondents disputed that the energy consumption of a tempering method could be decreased by this step. In their opinion, the total energy required to cool a chocolate mass had to be the same, irrespective of whether cooling occurred in one or more steps.
The board concurs that this is likely to be the case if a single chocolate mass is cooled and the cooling takes place in the same heat exchanger. However, this is not necessarily true if the method is more complex and involves, as the claimed one does, steps like cooling the entire mass, dividing it into different streams with at least one being further cooled down in a separate exchanger and recombining the streams.

5.8 The respondents have not provided any evidence that no energy gains can be afforded by performing such a more complex method. They have also not proven that no energy gains can be achieved by carrying out embodiments of the invention falling within the scope of the claims. In the absence of evidence to the contrary, the effect stated in paragraph [0041] is considered credible and cannot be disregarded.

5.9 As mentioned above (point 5.6), paragraph [0041] compares the energy consumption of a method according to the claimed invention with that of a "previously described embodiment". The method according to this embodiment does not include, as that disclosed in S1 does, a step where the complete mass is cooled before being divided into two streams. Thus, the comparison in paragraph [0041] represents a fair comparison with the closest prior art S1.

5.10 Starting from S1 and taking into account the effect reported in paragraph [0041], the underlying objective technical problem is the provision of an energetically more efficient method for the continuous tempering of a chocolate mass. In view of the conclusions already drawn above (point 5.8), the board is satisfied that this problem has been solved by the claimed method. The board also agrees with the appellant that the prior art would not have prompted the skilled person confronted with the underlying problem to modify the method described in S1 by cooling the complete mass before it was divided into two streams.

5.11 For these reasons, the subject-matter of claim 1, as well as the dependent claims, which are more limited in scope, involves an inventive step (Article 56 EPC).

6. Adaptation of the description

6.1 During the oral proceedings, the appellant filed amended pages of the description which are adapted to the claims of the first auxiliary request.

6.2 The respondents did not raise any objection against the amended pages, and the board does not see reason to raise any on its own motion.

Auxiliary requests 2 to 6

7. In view of the findings in relation to auxiliary request 1, there is no reason to examine the admissibility of auxiliary requests 2 to 6.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the opposition division with the order to maintain the patent as amended in the following version:

   - Claims 1 to 4 filed as auxiliary request 1 with the statement setting out the grounds of appeal of 19 April 2017.

   - Description pages 2 to 6 as filed during oral proceedings before the board on 9 August 2019.

   - Drawing sheets 8 to 11 (Figures 1 to 6) of the patent specification.

The Registrar: The Chairman:

M. Cañueto Carbajo W. Sieber

Decision electronically authenticated