Internal distribution code:

(A) [-] Publication in OJ
(B) [-] To Chairmen and Members
(C) [-] To Chairmen
(D) [X] No distribution

Datasheet for the decision of 10 November 2015

Case Number: T 1977/14 - 3.2.07

Application Number: 08789069.5

Publication Number: 2164756

IPC: B65B25/00, B65B55/02, A23L3/015, A23L3/02, B65B25/22, B65B29/08, B65B55/18, B65B55/10

Language of the proceedings: EN

Title of invention:
PACKAGED FOOD PRODUCTS

Applicant:
Mars Incorporated

Headword:

Relevant legal provisions:
EPC Art. 56

Keyword:
Inventive step - after amendment

Decisions cited:

Catchword:

Europäisches Patentamt
European Patent Office
Office européen des brevets

Beschwerdekammern
Boards of Appeal
Chambres de recours

European Patent Office
D-80298 MUNICH
GERMANY
Tel. +49 (0) 89 2399-0
Fax +49 (0) 89 2399-4465

Case Number: T 1977/14 - 3.2.07

D E C I S I O N
of Technical Board of Appeal 3.2.07
of 10 November 2015

Appellant: (Applicant)	Mars Incorporated 6885 Elm Street McLean, Virginia 22101 (US)
Representative:	Cockerton, Bruce Roger Carpmaels & Ransford LLP One Southampton Row London WC1B 5HA (GB)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 11 February 2014 refusing European patent application No. 08789069.5 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman	I. Beckedorf
Members:	V. Bevilacqua
	H. Hahn

Summary of Facts and Submissions

I. The appeal lies against the decision of the examining division refusing European patent application 08 789 069.5 for lack of inventive step (Article 56 EPC) of the subject-matter of claims 1 of the main request and auxiliary request 1 dated 20 December 2013 and of claims 1 of the auxiliary requests 2 and 3, both as filed on 23 January 2014 during the oral proceedings in view of the teaching of the document US 5 860 356 A (D3) in combination with the common general knowledge of the skilled person.

II. The other documents from the examination proceedings referred to in the present decision are:

D1: EP 0 570 122 A
D2: EP 0 691 082 A
D3: US 5 860 356 A
D4: EP 0 899 195 A.

III. With the statement of grounds of appeal the appellant submitted seven sets of claims (main request and first to sixth auxiliary requests). It requested to set aside the decision of the examining division and to grant a patent on the basis of one of these requests. As a further auxiliary measure the appellant requested oral proceedings.

IV. The appellant was summoned to oral proceedings to be held on 20 November 2015. In an annex to the summons the Board gave its provisional opinion with respect to the seven requests then on file. Therein it noted some issues of added subject-matter (Article 123(2) EPC) and considered that the subject matter of independent claim 9 of all requests lacked novelty in the light of D1.

V. The appellant responded by submitting with a letter dated 22 October 2015 a new main request, together with eleven auxiliary requests replacing all previous requests.

VI. The Board contacted the appellant by telephone to discuss the compliance of the subject-matter of claim 1 of this main request with the requirements of Article 123(2) EPC.

VII. As a response to the telephone conversation the appellant filed, with a letter dated 3 November 2015 the description of an amended main request, and with a letter dated 10 November 2015, the claims thereof. It requested to grant a patent on the basis of this main request, or, as an auxiliary request, on the basis of one of the eleven auxiliary requests submitted on 22 October 2015.

VIII. The text of **claim 1** of this main request (amendments compared to claim 1 as originally filed are highlighted by the Board) reads as follows:

"1. A method for the production of a stabilized, **full moisture, ready-to-heat** packaged food product **(30)** comprising the steps of:
filling a tray **(5)** with a predetermined quantity of a **dry starchy** food starting material **comprising whole food grains selected from rice and wheat grains, wherein the food grains are fully milled or have part or all of the bran layer still attached, the food starting material having a moisture content of less than 30 wt.%,**
~~introducing the tray into a pressure vessel and conveying the tray through the pressure vessel while~~

~~performing the following steps in sequence inside the pressure vessel~~ **characterised in that the filling step is followed by performing the following steps in sequence while maintaining the tray (5) in a sterile environment and conveying the tray through a pressure vessel (3):**

(a~~i~~) treating the food starting material with high-temperature pressurized steam **at a temperature of from 125°C to 150°C in the pressure vessel (3)** to sterilize the material ~~and~~ ;

(b~~ii~~) dosing the sterile food material inside said tray **(5)** with a predetermined amount of sterile water ~~and~~;

(c~~iii~~) applying a lid to the tray **(5)** to seal the food product inside the tray **(5);** ~~while maintaining the tray (5) in a sterile environment~~

followed by removing the tray (5) from the sterile environment, wherein the duration of the process from the start of step (a) to the completion of step (c) is less than 10 minutes and wherein the packaged food product is not subjected to a cooking step following step (b), wherein "cooking step" is defined as heat treatment of the product by exposure of the product to an environmental temperature above 80°C for a period greater than :10 minutes; and wherein directly after the sealing step, the product is cooled to a temperature less than 100°C, transferred to atmospheric pressure and stored in an environment at 25°C-80°C and tempered at this temperature for a period of from 20 minutes to 4 hours."

The text of **claim 7** of the main request (amendments compared to claim 11 as originally filed are again highlighted by the Board) is as follows:

"~~11~~7. An apparatus for the production of a stabilized, **full-moisture, ready-to-heat** packaged food product **(30) by a method according to any of claims 1 to 6** comprising:

a filling device **(21, 22), containing a dry starchy food starting material comprising one or more starchy food pieces comprising whole food grains selected from rice and wheat grains having a moisture content of less than 30wt.%,** for filling individual trays **(5)** with a predetermined amount of the food starting material; a pressure vessel **(3)** having an inlet pressure lock **(2)** and an outlet pressure lock **(4)** for transferring said trays **(5)** into and out of the pressure vessel **(3);** a supply of pressurized steam **(11)** for sterilizing the food starting material in said trays **(5)** in a first zone **(7)** of the pressure vessel **(3), wherein the high-temperature pressurized steam is at a temperature of from 125°C to 150°C;**

a supply of sterile water **(13)** and a dosing pump **(14)** for dosing a predetermined amount of sterile water into each of said trays **(5)** in a second zone **(8)** of the pressure vessel **(3)** to achieve a desired full moisture food product in the trays **(5);** and a sealing device **(17)** located in said pressure vessel **(3)** for sealing the trays **(5)** following said step of dosing,

wherein the apparatus is configured so that the duration from the start of the sterilization of the food starting material in said trays to the completion of the sealing of the trays is less than 10 minutes,

and the apparatus is further configured so that the packaged food product is not subjected to a cooking step following step (b) and is configured to cool the product to a temperature less than 100°C, transfer to atmospheric pressure and store the product in an environment at 25°C-80°C and temper the product at this temperature for a period of from 20 minutes to 4 hours."

IX. The appellant argued, insofar as relevant for the present decision, as follows.

The amended main request renders moot the lack of inventive step objection raised by the Examining division in the decision under appeal.

D3 is acknowledged as as a suitable starting point for a discussion of inventive step, since it is directed to the same purpose of providing sterile-packed rice (whole food grains).

The differences to D3 are that

(i) less than 10 minutes passes between the start of steam sterilisation and the sealing of the tray;
(ii) there is no cooking step following the dosing step; and

(iii) directly after sealing, the product is cooled to a temperature less than 100°C, transferred to atmospheric pressure and stored in an environment at 25°C-80°C and tempered at this temperature for a period of from 20 minutes to 4 hours.

The technical effect is that the product is cooked to substantially the same degree as the product of D3 but

without the need for extended high temperature treatment.

The product of that process is a stable, full-moisture, ready-to-heat product as noted on page 3, lines 22-24 of the application as filed.

The objective technical problem is therefore to improve the efficiency of the process of D3.

Inventive step should be acknowledged, because the skilled person finds no guidance in the state of the art on how to solve this problem. More in detail, there is no indication to forego the 30 minute cooking step of D3 (column 5, lines 17 to 20), sterilise and seal the rice in less than 10 minutes and then cool the product straightaway to finish the process of preparing the product at the relatively low claimed temperatures for a period of from 20 minutes to 4 hours.

Claim 7, directed to an apparatus configured to carry out the novel and inventive process of claim 1 is also novel and inventive for analogous reasons to those given in relation to method claim 1.

Reasons for the Decision

1. Allowability of the amendments(Article 123(2) EPC)

Basis for a full-moisture, ready-to-heat packaged food product is at page 3, lines 23-24 of the description of the application as originally filed, which in the following is quoted.

Basis for the feature that the dry starchy food starting material comprises whole food grains selected from rice and wheat grains, wherein the food grains are fully milled or have part or all of the bran layer still attached, the food starting material having a moisture content of less than 30 wt.%, can be found at page 5, lines 18-21.

Basis for claiming that the duration of the process from the start of step (a) to the completion of step (c) is less than 10 minutes is found at page 12, lines 10-17.

Basis for the negative feature that the packaged food product is not subjected to a cooking step following step (b), wherein "cooking step" is defined as heat treatment of the product by exposure of the product to an environmental temperature above 80°C for a period greater than :10 minutes is at page 13, lines 5-13.

Basis for the feature that directly after the sealing step, the product is cooled to a temperature less than 100°C, transferred to atmospheric pressure and stored in an environment at 25°C-80°C and tempered at this temperature for a period of from 20 minutes to 4 hours is at page 9, lines 11-15.

2. Inventive step (Article 56 EPC) - Claim 1 of the main request

The subject matter of claim 1 of the main request is regarded as involving inventive step over the available prior art for the following reasons.

2.1 Content of the disclosure of D3

D3 discloses a method for the production of a stabilized packaged food product which product is shelf stable, and therefore "stabilized" within the meaning of the present application, because it is sterile (see column 6, lines 29-35).

As explained at column 1, lines 9-16, of D3, this document refers to processed rice products, for which domestic cooking (with water added to the package contents) is not necessary.

The Board therefore considers that D3 discloses a method for the production of a packaged, full moisture, ready-to-heat food product.

This method according to D3 comprises the steps of:

filling a tray 32 (see also column 2, line 66) with a predetermined quantity of a dry starchy food starting material (rice) comprising whole food grains selected from rice and wheat grains, wherein the food grains are fully milled or have part or all of the bran layer still attached (the rice is in the form of cleaned and polished grains, see column 2, line 60), the food starting material having a moisture content of 10% (see column 2, line 65), and therefore less than 30wt.%,

wherein the filling step is carried out by performing the following steps in sequence while maintaining the tray 32 in a sterile environment (see column 5, lines 47-55), and conveying the tray with a conveyor 40 through a pressure vessel 41:

(a) treating the food starting material with high-temperature pressurized steam (see column 3 lines 5-15) at a temperature of preferably 130°C-140°C (see column 3, line 9), which temperature is therefore comprised between 125°C and 150°C and is applied in a closed chamber (see column 3, line 5) which therefore forms a pressure vessel to sterilize the material;

(b) dosing the sterile food material inside said tray 32 with a predetermined amount of sterile water (see column 4, lines 28-31);

(c) applying a lid to the tray 32 to seal the food product inside the tray (see column 5, lines 41-45);

followed by removing the tray 32 from the sterile environment (see column 5, lines 47-60),

2.2 Differences

2.2.1 D3 does not disclose that the duration of the process from the start of step (a) to the completion of step (c) is less than 10 minutes.

2.2.2 D3 also does not disclose that the packaged food product is not subjected to a cooking step following step (b), wherein "cooking step" is defined as heat treatment of the product by exposure of the product to an environmental temperature above 80°C for a period greater than 10 minutes.

2.2.3 D3 also fails to disclose that directly after the sealing step, the product is cooled to a temperature less than 100°C, transferred to atmospheric pressure and stored in an environment at 40°C-80°C and tempered

at this temperature for a period of from 20 minutes to 240 minutes.

This is because, according to D3, the packages are first steamed (and therefore treated at a temperature above 100°C) directly after the sealing step (see column 6, lines 3-17), and only then cooled (with cold water, see column 6, line 11) to ambient temperature.

2.3 Technical effects of the distinguishing features

Dosing the precise amount of water required onto the hot food product, followed by directly sealing under sterile conditions in the sealed trays reduces the exposure of the food to high temperatures.

The subsequent storage at moderately high temperature allows for a safe moisture absorption and equilibration within the food product, such that uniformity within the food product is achieved without the risk of micro-organisms growth and therefore without the need of steaming (as in D3), because the trays have been previously sterilized and sealed.

All these differences are therefore clearly inter-related, as they all together have the common effect that a food product is achieved that is edible and shelf stable in spite of a relatively short exposure to high temperatures (see page 9, lines 6-10).

2.4 Problem to be solved

Based on these distinguishing features the problem to be solved is formulated as "how to increase the efficiency of the known process by reducing the high temperature processing steps" (see page 3 lines 4-7 of

the description of the present application as originally filed).

2.5 Discussion of inventive step

The Board finds no mention at all, in the prior art at hand, of a method for the production of a food product in which the grains of starchy food starting material, instead of being cooked at high temperature, simply absorb water at low temperature under sterile conditions.

This is because no indication can be found that the moisture distribution in the rice grains becomes uniform after tempering as claimed, thereby giving a satisfactory product.

The knowledge of a skilled person is also not sufficient, in the opinion of the Board, for modifying the method disclosed in D3 and arriving at the subject-matter of claim 1 of the main request.

2.5.1 Combination with the knowledge of a skilled person

The present application was refused for lack of inventive step (Article 56 EPC) in view of the person skilled in the art applying his common general knowledge onto the method disclosed in document D3.

The Board concurs with the examining division on the point that the skilled person knows that the processing and cooking time highly depend on the type, size and shape of the starchy food product to be processed and on the desired degree of sterilisation and of cooking, according to the tastes of the consumer.

It is therefore correct that in the process of D3, depending on the type, size and shape of the starchy food product to be processed and on the desired degree of cooking and taste of the consumer, the cooking time not only can be reduced, but sometimes has to be reduced in order not to overcook the starchy food product.

However, following this approach based on his common general knowledge the skilled person would only shorten, but never completely omit, the cooking step disclosed in this document.

Starting from the teaching of D3 it is not possible, by simply reducing the heat processing time, to reach the subject-matter of claim 1, because an essential piece of information is not available, namely that after the short sterilization a storage under particular conditions is necessary to come to an edible product.

According to the decision under appeal the skilled person would regard the cooking step of D3 as superfluous and therefore omit it.

This argument is not accepted by the Board because a ready-to-heat food product is manufactured by the now claimed method, and such a product is not intended to be cooked in a traditional way, but simply to be reheated in a short time, for example in a microwave oven. In fact, these products are sometimes referred to as "one-minute" products.

The further line of argumentation contained in the decision under appeal, according to which inventive step was denied because, the person skilled in the art knows that in order not to overcook non-soaked rice by

pressure cooking the rice should cook no longer than 7 minutes in the pressure cooking vessel, is also not followed by the Board.

This is due to the fact that cooking in a traditional pressure cooking vessel requires relatively high amounts of water (the double, in volume, of the rice to be cooked). Therefore, this method can hardly be compared with the claimed one, because according to claim 1 of the main request the rice is in a relatively dry state when it is exposed to high temperature.

2.5.2 Disclosure of D1

D1 would be taken into consideration by a skilled person aiming at optimizing the process of D3 as it mentions the cooking of rice and noodles (see column 3, lines 23-25).

Document D1, however, does not provide a teaching which would solve the above formulated problem in the same way as defined in claim 1 of the main request, as it discloses that a solid food product is first cooked (see column 3, line 45 to column 4, line 11) and then steam sterilized in a container (see column 4, lines 22-28).

2.5.3 Disclosure of D2

D2 mentions noodles and teaches that:
"to obtain optimum products both from an organoleptic point of view and from that of the product-life, it is necessary to use different processing temperatures and times as well as different pressures, volumes of liquid and the like, not only for products of a different nature (such as, for example, pasta, vegetables and

meat) but also for similar products, such as pasta products which differ in thickness, dimensions, weight, consistency and shape."

Document D2, however, also does not provide a teaching to solve the above formulated problem in the same way as defined by the subject-matter of claim 1 of the main request, as it discloses that a solid food product is first steam sterilized, thereafter water is added and the food product is then cooked in this water (see claim 1). Finally a straining step takes place, removing the water.

2.5.4 Disclosure of D4

The skilled person would not consider the content of the disclosure of D4 as particularly relevant, since it does not concern the processing of rice or similar food products but meat based products like curry, stew or gratin (see paragraph [0027]).

3. Inventive step (Article 56 EPC) - Claim 7 of the main request

The apparatus of claim 7 of the main request differs from the apparatus disclosed in D3 in that:

-the apparatus is configured so that the duration from the start of the sterilization of the food starting material in said trays to the completion of the sealing of the trays is less than 10 minutes, and
-the apparatus is further configured so that the packaged food product is not subjected to a cooking step following step (b) and

-the apparatus is configured to cool the product to a temperature less than 100°C, transfer to atmospheric pressure and store the product in an environment at 25°C-80°C and temper the product at this temperature for a period of from 20 minutes to 4 hours.

As these differences substantially correspond to the differences already discussed in relation to the inventive step assessment of method claim 1 of the main request, the Board is of the opinion that the subject matter of claim 7 of the main request also involves inventive step since the other available prior art documents, as explained in paragraphs 2.5.2 to 2.5.4 above, cannot render it obvious.

4. Amended description

The Board is satisfied that the description has been brought into strict conformity with the subject-matter of claims 1 and 7 of the main request.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the examining division with the order to grant a patent on the basis of the following documents:

   Claims:
   1 to 8 of the main request filed on 10 November 2015;

   Description:
   pages 1, 2, 7, 8, 10, 11, 16-20 as originally filed;
   pages 3, 12, 13 filed on 10 February 2012;
   pages 3a, 4-6, 9, 14, 15 filed on 3 November 2015.

   Drawings:
   figures 1 to 3, as originally filed.

The Registrar: The Chairman:

G. Nachtigall I. Beckedorf

Decision electronically authenticated