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(54) **Method for preparing a dish in an oven**

Verfahren zur Zubereitung eines Gerichts in einem Backofen

Procédé pour la préparation d'un plat dans un four

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(56) References cited:
**EP-A- 0 723 115 EP-A- 1 635 120
US-B1- 7 060 941**

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Description

[0001] The invention relates to a method for preparing a multi-component dish or set meal in an oven, especially in a domestic oven, which has a steaming function and which has a cooking cavity with a door, a controlling unit, a storage unit, an input unit and a display unit, wherein the preparation of the dish comprises at least two cooking steps.

[0002] It is known in the art to cook dishes, especially set meals, using a steamer. In this oven hot water steam is used to cook the dish. In some cases it is desired to prepare at least a part of the set meal using another cooking process than steam cooking. Specifically, when cooking meat it is sometimes desired to roast the meat using a grilling function or hot air before the meat is steamed. Therefore, it is known to integrate those cooking functions into the oven.

[0003] Pre-known ovens have a control unit with a display unit and an input unit, by which data found in cooking books can be inputted into the control unit.

[0004] When preparing a meal the meat to be prepared is put into the cavity of the oven. Then, an e. g. hot air cooking function or grilling function is activated, until the meat has a desired state of cooking. After this, additional dish components are put into the cavity, like potatoes and vegetables. Then, the steam cooking process is started for all the components of the set meal.

[0005] The user of the oven has to monitor the cooking process and specifically the different steps of it. Consequently, it is necessary at first to carry out the preparation step for the meat and afterward to start the respective second cooking step after having put the additional components of the dish into the cavity. The actual state of the process can easily be monitored by the display unit of the oven which shows the actual cooking parameters, specifically the cooking time and the temperature in the cavity. The respective data can be inputted into the controlling unit of the oven by the user by means of the input unit of the oven.

[0006] The user has also to make sure that the right temperature is maintained in the cavity before the steaming process is started. Specifically, before the steaming function is activated the temperature in the cavity must be below 100 °C.

[0007] Consequently, the user has to handle different data and parameters which have to be inputted (e. g. from a cooking book) into the oven. Furthermore, the user has to survey the cooking process and has to put additional components of the dish into the cavity in the right moment. Finally, the user has to survey the temperature in the cavity before activating the steaming process.

[0008] In spite of the fact that different monitor functions are available there remains quite a lot of different survey work for the user.

[0009] EP 1 635 120 A1 discloses methods for processing food products.

[0010] Therefore, it is an object of the invention to fa-

cilitate the cooking process in an oven of the kind mentioned above and specifically to make it possible that a cooking process with more than one cooking steps is carried out in an easy way. The survey work of the user should become less so that it becomes easier to prepare the dishes of the kind discussed above.

[0011] The solution of this object according to the invention is characterized in that the cooking method comprises the following steps:

a) Selecting of a cooking programme for said multi-component dish or set meal stored in the storage unit by a user, which comprises at least a first cooking step and a second cooking step;

b) Putting a first dish component, such as e.g. meat, into the cooking cavity (2) and carrying out of a first cooking step after triggering of the cooking process by the user;

c) Outputting of an instruction to the user by means of the display unit after finishing of the first cooking step to put a second dish component, such as e.g. potatoes and vegetables, into the cooking cavity (2);

d) Fulfilling the instruction by the user;

e) Triggering the continuation of the cooking programme by the user;

f) Carrying out of a second cooking step,

wherein said second dish component, such as e.g. potatoes and vegetables, does not require the first cooking step (1) for cooking.

[0012] Accordingly, the invention suggests that a number of different multi-step dishes are stored in the storage unit which can be selected by the user. Preferably, the relevant cooking parameters are already stored for the different steps of the cooking process. So, the user can select the desired cooking process from the storage unit. The system gives a suitable signal after the first step of the cooking process has been carried out and thus informs the user what to do next.

[0013] Preferably, step a) involves adjustment of pre-stored data as desired by the user.

[0014] Above step a) can comprise the selection of at least one cooking parameter for at least one of the cooking steps.

[0015] Above step c) can comprise the instruction to insert additional food to be cooked into the cooking cavity of the oven.

[0016] Above step c) can also comprise the instruction to leave the door of the cooking cavity open until a defined condition is reached. This becomes important when the steaming function is necessary. Here, the temperature in the cavity must drop before the start of the steaming function below 100 °C. Consequently, the condition can

be that a certain temperature in the cavity has been reached before the door of the cavity is closed. The condition can also be that a certain waiting time expires before the door is closed. The process can be further facilitated if a signal is outputted by the controlling unit after a certain temperature is sensed in the cooking cavity. Also, the signal can be outputted by the controlling unit after a certain time has passed. The signal can be forwarded to the display unit and displayed by it. Also, the signal can be forwarded to an acoustic alarm element by which an acoustic alarm is outputted.

[0017] The first cooking step is preferably a conventional cooking process. Here, specifically a hot air or a grilling process can take place.

[0018] Preferably, at least one of the cooking steps is a steaming of the dish.

[0019] The second cooking step can then be a steaming process.

[0020] In the method according to the present invention, preferably all components of the multi-component dish or set meal are finished to the same time.

[0021] If necessary, after above step f) at least one additional cooking step can be carried out.

[0022] The invention allows to carry out a cooking process with different steps for a multi-component dish (set meal), wherein only a minimum of activity is required by the user. Specifically, the oven gives hints to the user when an action is required. The invention proposal has its biggest advantages when it is employed for a combined cooking process which uses in one cooking step a steaming process.

[0023] Beneficially, complete dishes with multiple components can be prepared in one oven using the steamer function ("combi steaming"). All components of a set meal are finished to the same time.

[0024] The work of the user to input data into the oven is reduced and the handling of the oven becomes easier.

[0025] In the drawings an embodiment of the invention is depicted.

FIG 1 shows schematically the front view of a domestic oven,

FIG 2 shows schematically the components of the oven according FIG 1,

FIG 3 shows the time-temperature-diagram for a two-step cooking process for preparing a dish,

FIG 4a shows the screen of the display unit of the oven with a first message,

FIG 4b shows the screen of the display unit with a second message and

FIG 4c shows the screen of the display unit with a third message.

[0026] FIG 1 shows a domestic oven 1 which has a cooking cavity 2 in which food can be put. The cavity 2 is closed by a door 3 in a well known manner. The oven 1 has a steamer function as well as a conventional cooking function (hot air function and/or grilling function) by which food can be prepared without using the steamer function.

[0027] The conceptual design of the oven is shown in FIG 2. The oven 1 has a controlling unit 4 which is connected with a storage unit 5 in which a number of parameters for the preparation of dishes is stored. Furthermore, the oven 1 has an input unit 6 and a display unit 7 for communicating with the user.

[0028] Also, an acoustic alarm element 8 is connected with the controlling unit 4. In the cavity 2, a sensor 9 for detecting the actual temperature in the cavity is mounted.

[0029] In the oven, a multi-step cooking process has to be carried out. The process is schematically shown in the temperature-time-diagram according to FIG 3. In a first cooking step I meat is cooked in a conventional way, i. e. by use e. g. of hot air or a grilling process. After a certain time, this first step is terminated and a second cooking step II is carried out. Before this is done the user has to add e. g. potatoes and vegetables into the cavity 2 which do not need a preparation step I for cooking.

[0030] The oven and more specifically the controlling unit supports the user during the whole cooking process.

[0031] Therefore, at first the desired set meal is recalled from the storage unit 5 by means of the input unit 6 from the user. It can be that already all cooking parameters like the cooking time and the cooking temperatures are available when recalling the stored data. Alternatively, the pre-stored data can be adjusted according to the desires of the user.

[0032] When this is done the user triggers the start of the first cooking step I by pressing an "OK"-bottom. The first cooking step I runs then automatically.

[0033] After its termination the message according to FIG 4a appears on the screen of the display unit 7, reading:

"The first cooking step is completed. Please put the rest of the food into the cavity. continue with 'OK'"

[0034] The appearance of the message can be accompanied by an acoustic signal emitted by the acoustic alarm element 8. The user can then put the rest of the components of the dish into the cavity 2. After having done this the "OK"-bottom is pressed so that the second cooking step II is started.

[0035] In the present case this is a steaming process. Therefore, it is necessary that the temperature T in the cavity drops below 100 °C. To accelerate the start of the second cooking step II it is advantageously that the door 3 remains open until a certain temperature in the cavity 2 is reached; in the embodiment of the invention a tem-

perature of 75 °C is desired before starting the steaming process.

[0036] Therefore, the control unit 4 releases the message via the display unit 7 as shown in FIG 4b:

"Please leave the door open until the temperature in the cavity has dropped below 75 °C."

[0037] This message can be accompanied by the information about the current temperature T - sensed by the sensor 9 - in the cavity:

"current temperature: 93 °C"

[0038] After the temperature T has reached the desired value, the control unit 4 can release the message according FIG 4c, saying:

"Is all food in the cavity?
Please confirm the start of the second step with 'OK'."

[0039] The respective messages can be accompanied by acoustic signals to make the user aware that the system waits for an action.

[0040] After completion of the second step II - which is the final step in the case of the described embodiment of the invention - the control unit 4 terminates cooking and emits a respective signal via the display unit 7 and/or the acoustic alarm element 8.

[0041] By the proposed method the use of a steamer with additional cooking functions (hot air, grilling elements) becomes easier and the preparation of a combined steaming process is facilitated. The user does not need to input as much information as in the case of solution according to the state of the art. Also, the survey of the process is facilitated significantly.

Reference Numerals

[0042]

- 1 Oven (domestic oven)
- 2 Cooking cavity
- 3 Door
- 4 Controlling unit
- 5 Storage unit
- 6 Input unit
- 7 Display unit
- 8 Acoustic alarm element
- 9 Sensor

- I First cooking step
- II Second cooking step

- T Temperature
- t Time

Claims

1. Method for preparing a multi-component dish or set meal in an oven (1), especially in a domestic oven, which has a steaming function and which has a cooking cavity (2) with a door (3), a controlling unit (4), a storage unit (5), an input unit (6) and a display unit (7), wherein the preparation of the dish comprises at least two cooking steps (I, II), the method comprising the steps:

- a) Selecting of a cooking programme for said multi-component dish or set meal stored in the storage unit (5) by an user, which comprises at least a first cooking step (I) and a second cooking step (II);
- b) Putting a first dish component into the cooking cavity (2) and carrying out of a first cooking step (I) after triggering of the cooking process by the user;
- c) Outputting of at least one instruction to the user from the controlling unit (4) by means of the display unit (7) after finishing of the first cooking step (I) to put a second dish component into the cooking cavity (2);
- d) Fulfilling of the at least one instruction by the user;
- e) Triggering the continuation of the cooking programme by the user;
- f) Carrying out of a second cooking step (II), **characterized in that** said second dish component does not require the first cooking step (I) for cooking.

2. Method according to claim 1, wherein step (a) involves adjustment of pre-stored data as desired by the user.

3. Method according to claim 1 or 2, **characterized in that** step a) according to claim 1 comprises the selection of at least one cooking parameter (T, t) for at least one of the cooking steps (I, II).

4. Method according to at least one of claims 1 to 3, **characterized in that** step c) according to claim 1 comprises the instruction to insert additional food to be cooked into the cooking cavity (2) of the oven (1).

5. Method according to at least one of claims 1 till 3, **characterized in that** step c) according to claim 1 comprises the instruction to leave the door (3) of the cooking cavity (2) open until a defined condition is reached.

6. Method according to claim 5, **characterized in that** the condition is a certain temperature (T) in the cavity (2) before closing of the door (4).

7. Method according to claim 5, **characterized in that** the condition is a certain waiting time before closing of the door (4).
8. Method according to claim 6, **characterized in that** a signal is outputted by the controlling unit (4) after a certain temperature (T) is sensed in the cooking cavity (2), or that a signal is outputted by the controlling unit (4) after a certain time (t) has passed.
9. Method according to claim 8, **characterized in that** the signal is forwarded to the display unit (7) and displayed by it, or that the signal is forwarded to an acoustic alarm element (8) by which an acoustic alarm is outputted.
10. Method according to at least one of claims 1 till 9, **characterized in that** the first cooking step (I) is a conventional cooking process selected from the group comprising a cooking process with hot air, or a grilling process.
11. Method according to one of the preceding claims, wherein at least one of the cooking steps (II) is a steaming of the dish,
12. Method according to at least one of claims 1 to 11, **characterized in that** the second cooking step (II) is a steaming process.
13. Method according to claim 11 or 12, wherein all components of the multi-component dish or set meal are finished to the same time.
14. Method according to at least one of claims 1 to 13, **characterized in that** after step f) according to claim 1 at least one additional cooking step is carried out.

Patentansprüche

1. Verfahren zur Zubereitung eines Gerichts aus mehreren Bestandteilen oder eines Menüs in einem Ofen (1), insbesondere in einem Backofen, der eine Dampfgarfunktion aufweist und der einen Garraum (2) mit einer Tür (3), eine Steuereinheit (4), eine Speichereinheit (5), eine Eingabeeinheit (6) und eine Anzeigeeinheit (7) aufweist, wobei die Zubereitung des Gerichts mindestens zwei Kochschritte (I, II) umfasst, wobei das Verfahren die Schritte umfasst:
 - a) Auswählen eines in der Speichereinheit (5) gespeicherten Kochprogramms für das Gericht aus mehreren Bestandteilen oder Menüs von einem Benutzer, das mindestens einen ersten Kochschritt (I) und einen zweiten Kochschritt (II) umfasst;
 - b) Geben eines ersten Gerichtbestandteils in

den Garraum (2) und Ausführen eines ersten Kochschritts (I) nach Auslösen des Kochvorganges durch den Benutzer;
 c) Ausgeben von der Steuereinheit (4) von mindestens einer Anweisung über die Anzeigeeinheit (7) an den Benutzer nach Beendigung des ersten Kochschritts (I) zum Geben eines zweiten Gerichtbestandteils in den Garraum (2);
 d) Erfüllen der mindestens einen Anweisung durch den Benutzer;
 e) Auslösen der Fortsetzung des Kochprogramms durch den Benutzer;
 f) Ausführen eines zweiten Kochschritts (II),

dadurch gekennzeichnet, dass

der zweite Gerichtsbestandteil keinen ersten Kochschritt (I) zum Kochen erfordert.

2. Verfahren nach Anspruch 1, wobei Schritt (a) das Einstellen von vorgespeicherten Daten beinhaltet, wie vom Benutzer gewünscht.
3. Verfahren nach Anspruch 1 oder 2, **dadurch gekennzeichnet, dass** Schritt a) nach Anspruch 1 das Auswählen von mindestens einem Kochparameter (T, t) für mindestens einen der Kochschritte (I, II) umfasst.
4. Verfahren nach mindestens einem der Ansprüche 1 bis 3, **dadurch gekennzeichnet, dass** Schritt c) nach Anspruch 1 die Anweisung umfasst, zusätzliche zu kochende Lebensmittel in den Garraum (2) des Ofens (1) zu geben.
5. Verfahren nach mindestens einem der Ansprüche 1 bis 3, **dadurch gekennzeichnet, dass** Schritt c) nach Anspruch 1 die Anweisung umfasst, die Tür (3) des Garraums (2) geöffnet zu lassen, bis ein definierter Zustand erreicht ist.
6. Verfahren nach Anspruch 5, **dadurch gekennzeichnet, dass** die Bedingung eine bestimmte Temperatur (T) im Garraum (2) vor dem Schließen der Tür (4) ist.
7. Verfahren nach Anspruch 5, **dadurch gekennzeichnet, dass** die Bedingung eine bestimmte Wartezeit vor dem Schließen der Tür (4) ist.
8. Verfahren nach Anspruch 6, **dadurch gekennzeichnet, dass** ein Signal von der Steuereinheit (4) ausgegeben wird, nachdem eine bestimmte Temperatur (T) in dem Garraum (2) erfasst wird, oder dadurch, dass ein Signal von der Steuereinheit (4) nach Ablauf einer gewissen Zeit (t) ausgegeben wird.
9. Verfahren nach Anspruch 8, **dadurch gekennzeichnet, dass** das Signal an eine Anzeigeeinheit

(7) ausgegeben wird und von dieser angezeigt wird, oder dadurch, dass das Signal zu einem akustisches Alarment (8) weitergeleitet wird, von dem ein akustischer Alarm ausgegeben wird.

10. Verfahren nach mindestens einem der Ansprüche 1 bis 9, **dadurch gekennzeichnet, dass** der erste Kochschritt (I) ein herkömmlicher Garvorgang ist, der ausgewählt ist aus der Gruppe, umfassend einen Kochvorgang mit Heißluft oder einen Grillvorgang.
11. Verfahren nach einem der vorhergehenden Ansprüche, wobei mindestens einer der Kochschritte (II) ein Dampfgaren des Gerichts ist.
12. Verfahren nach mindestens einem der Ansprüche 1 bis 11, **dadurch gekennzeichnet, dass** der zweite Kochschritt (II) ein Dampfgarvorgang ist.
13. Verfahren nach einem der Ansprüche 11 oder 12, wobei alle Bestandteile des Gerichts aus mehreren Bestandteilen oder Menüs gleichzeitig fertig sind.
14. Verfahren nach mindestens einem der Ansprüche 1 bis 13, **dadurch gekennzeichnet, dass** nach Schritt f) nach Anspruch 1 mindestens ein zusätzlicher Kochschritt ausgeführt wird.

Revendications

1. Procédé pour préparer un plat à ingrédients multiples ou repas complet dans un four (1), en particulier dans un four domestique, qui possède une fonction de cuisson à la vapeur et qui présente une cavité de cuisson (2) comportant une porte (3), une unité de commande (4), une unité de stockage (5), une unité d'entrée (6) et une unité d'affichage (7), dans lequel la préparation du plat comprend au moins deux étapes de cuisson (I, II),
le procédé comprenant les étapes suivantes:
 - a) sélectionner un programme de cuisson pour ledit plat à ingrédients multiples ou ledit repas complet stocké dans l'unité de stockage (5) par un utilisateur, qui comprend au moins une première étape de cuisson (I) et une seconde étape de cuisson (II);
 - b) placer un premier ingrédient de plat dans la cavité de cuisson (2) et exécuter une première étape de cuisson (I) après le déclenchement du procédé de cuisson par l'utilisateur;
 - c) communiquer au moins une instruction à l'utilisateur à partir de l'unité de commande (4) au moyen de l'unité d'affichage (7) après la fin de la première étape de cuisson (I) afin de placer un second ingrédient de plat dans la cavité de cuisson (2);

- d) exécuter ladite au moins une instruction par l'utilisateur;
- e) déclencher la continuation du programme de cuisson par l'utilisateur;
- f) exécuter une seconde étape de cuisson (II),

caractérisé en ce que ledit second ingrédient de plat ne nécessite pas la première étape de cuisson (I) pour la cuisson.

2. Procédé selon la revendication 1, dans lequel l'étape (a) implique le réglage de données pré-stockées souhaitées par l'utilisateur.
3. Procédé selon la revendication 1 ou 2, **caractérisé en ce que** l'étape a) selon la revendication 1 comprend la sélection d'au moins une paramètre de cuisson (T, t) pour au moins une des étapes de cuisson (I, II).
4. Procédé selon au moins une des revendications 1 à 3, **caractérisé en ce que** l'étape c) selon la revendication 1 comprend l'instruction de placer un aliment supplémentaire à cuire dans la cavité de cuisson (2) du four (1).
5. Procédé selon au moins une des revendications 1 à 3, **caractérisé en ce que** l'étape c) selon la revendication 1 comprend l'instruction de laisser la porte (3) de la cavité de cuisson (2) ouverte jusqu'à ce qu'une condition définie soit atteinte.
6. Procédé selon la revendication 5, **caractérisé en ce que** la condition est une certaine température (T) dans la cavité (2) avant la fermeture de la porte (4).
7. Procédé selon la revendication 5, **caractérisé en ce que** la condition est un certain temps d'attente avant la fermeture de la porte (4).
8. Procédé selon la revendication 6, **caractérisé en ce qu'un** signal est délivré par l'unité de commande (4) après qu'une certaine température (T) ait été détectée dans la cavité de cuisson (2), ou **en ce qu'un** signal est délivré par l'unité de commande (4) après qu'un certain temps (t) se soit écoulé.
9. Procédé selon la revendication 8, **caractérisé en ce que** le signal est transmis à l'unité d'affichage (7) et est affiché par celle-ci, ou **en ce que** le signal est transmis à un élément d'alarme acoustique (8) par lequel une alarme acoustique est déclenchée.
10. Procédé selon au moins une des revendications 1 à 9, **caractérisé en ce que** la première étape de cuisson (I) est un procédé de cuisson conventionnel sélectionné dans le groupe comprenant un procédé de cuisson à l'air chaud, ou un procédé de grillade

11. Procédé selon une des revendications précédentes, dans lequel au moins une des étapes de cuisson (II) est une cuisson du plat à la vapeur.
12. Procédé selon au moins une des revendications 1 à 11, **caractérisé en ce que** la seconde étape de cuisson (II) est un procédé de cuisson à la vapeur. 5
13. Procédé selon la revendication 11 ou 12, dans lequel tous les ingrédients du plat à ingrédients multiples ou du repas complet sont prêts en même temps. 10
14. Procédé selon au moins une des revendications 1 à 13, **caractérisé en ce qu'**après l'étape f) selon la revendication 1, au moins une étape de cuisson supplémentaire est exécutée. 15

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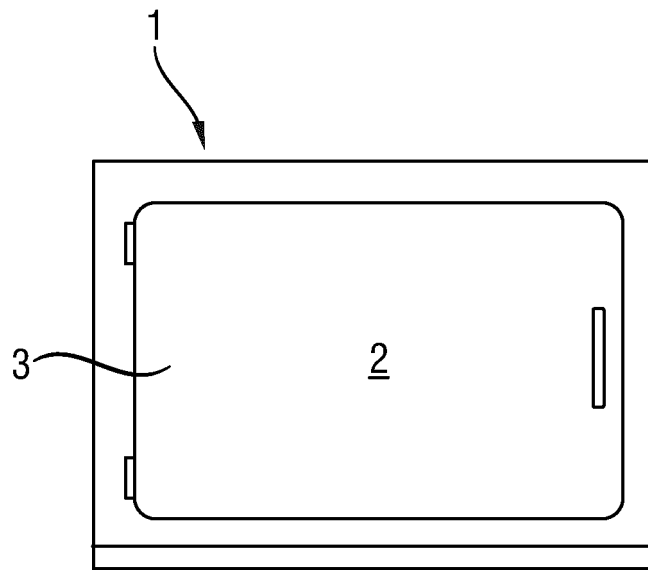


Fig. 1

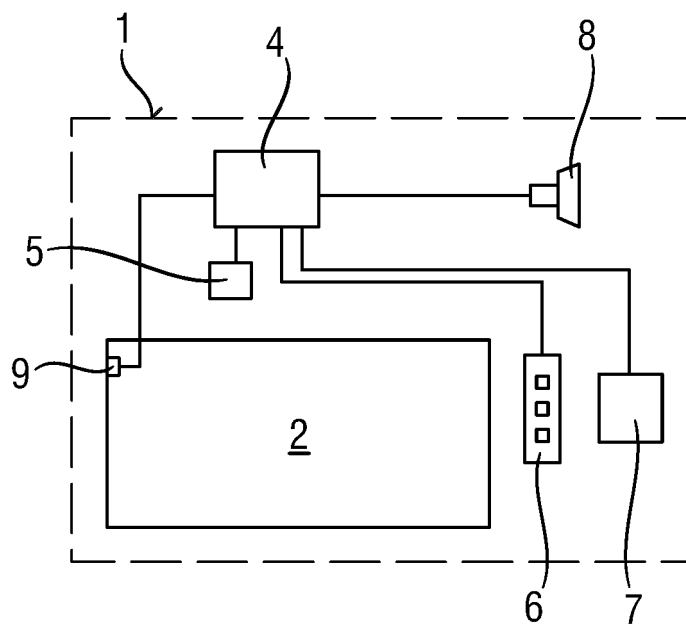
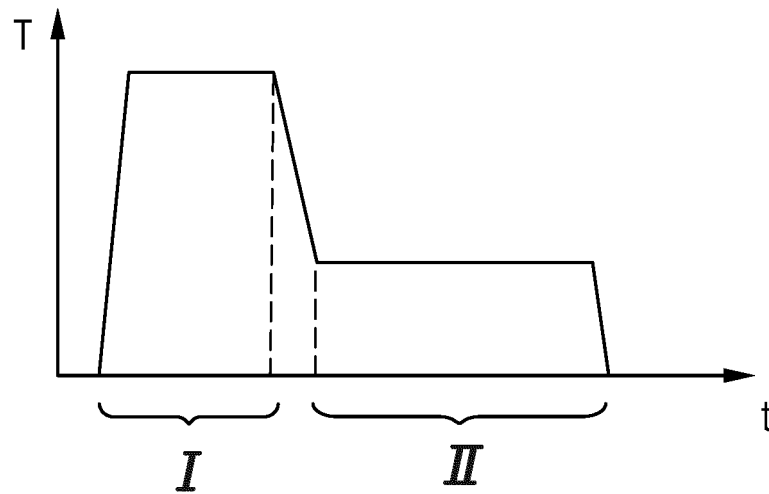


Fig. 2

***Fig. 3***

The first cooking step is completed. Please put the rest of the food into the cavity

continue with

Fig. 4.a

Please leave the door open until the temperature in the cavity has dropped below 75°C
current temperature: 93°C

continue with

Fig. 4.b

Is all food in the cavity ?
Please confirm the start of the second step with:

Fig. 4.c

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- EP 1635120 A1 [0009]