



- (51) International Patent Classification:
A47J 36/02 (2006.01)
- (21) International Application Number:
PCT/EP2015/062484
- (22) International Filing Date:
4 June 2015 (04.06.2015)
- (25) Filing Language: English
- (26) Publication Language: English
- (71) Applicant: ARCELIK ANONIM SIRKETI [TR/TR]; E5
Ankara Asfalti Uzeri, Tuzla, 34950 Istanbul (TR).
- (72) Inventors: YESILCUBUK, Alper; E5 Ankara Asfalti
Uzeri, Tuzla, 34950 Istanbul (TR). YIKILMAZCINAR,
Sezgi; E5 Ankara Asfalti Uzeri, Tuzla, 34950 Istanbul
(TR). OZKAN, Hakan; E5 Ankara Asfalti Uzeri, Tuzla,
34950 Istanbul (TR). ELMAS, Serdal; E5 Ankara Asfalti
Uzeri, Tuzla, 34950 Istanbul (TR). TURKER, Nurdan;
E5 Ankara Asfalti Uzeri, Tuzla, 34950 Istanbul (TR).
YAVUZ, Pinar; E5 Ankara Asfalti Uzeri, Tuzla, 34950
Istanbul (TR).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY,
BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM,
DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,
HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR,
KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG,
MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM,
PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC,
SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN,
TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

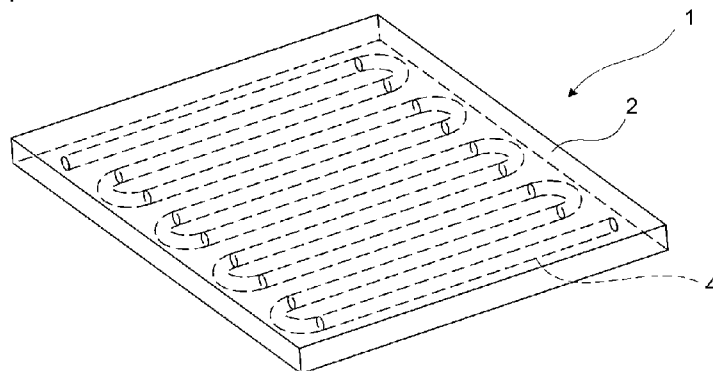
(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ,
TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU,
TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE,
DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU,
LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK,
SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, KM, ML, MR, NE, SN, TD, TG).

Published:

— with international search report (Art. 21(3))

(54) Title: A BAKING TRAY FOR MICROWAVE OVENS

Figure 1



(57) Abstract: A baking tray (1) for microwave ovens comprising a body (2) made of a refractory material, having a support surface (S) for a food product and partially filled with a composite microwave heatable material comprising a matrix of a refractory material and particles of a susceptor material dispersed within the matrix.

Description**A BAKING TRAY FOR MICROWAVE OVENS**

- [0001] The present invention relates to a backing tray for microwave ovens in particular for cooking pizza and, more in general, for cooking pastry and bread products.
- [0002] Baking trays suitable for cooking pizza and dough products in particular in microwave ovens are available on the market. Generally the known baking trays are made of refractory materials, such as ceramic or stone material, which, due to their thermal inertia, have a good ability of storing heat and releasing it slowly over the time, allowing to directly heat the base of the dough product which is in contact with the tray.
- [0003] The major drawback of the known trays made of refractory materials, however, resides on the long time and therefore on the high amount of energy which are required for pre-heating them, before placing the food to be cooked on them. The pre-heating time generally required for the conventional trays made of refractory material is, in fact, at least of thirty minutes.
- [0004] Therefore, with the aim of lowering the pre-heating time, in the last years new trays have been developed.
- [0005] It is known for instance from the patent application US 2014/0238250 a microwavable heating tray comprising a base provided with a central cavity, a heating element placed on the central cavity of the base and a frame placed on the heating element for holding it in place. The heating element is made of a composite material having a matrix made of a material exhibiting a relatively low susceptance and particles of a susceptor material suspended within the matrix. The susceptor material exhibits a high capacity of absorbing microwave radiation and of converting it into thermal energy, so that the tray can be easily and relatively quickly pre-heated in a microwave oven and subsequently used for releasing the stored heat and for keeping warm the food placed on it.
- [0006] The tray of US 2014/0238250 is in particular designed to maintain the food placed on it warm and not to actively contribute to cook it.
- [0007] The main drawback of the heating tray disclosed in document US

2014/0238250 resides on the fact that, due to the uneven distribution of the microwave radiations in the cooking chamber of a microwave oven, the heating element is not homogeneously heatable and, consequently, the tray cannot be successfully used to cook a food product, since the base of the food product in contact with the tray would be as well not homogeneously heated and hence cooked.

- [0008] The object of the present invention is to provide a baking tray for microwave ovens capable of being substantially evenly heated in a microwave oven thus allowing to uniformly heat and cook the food that is placed on it.
- [0009] A further object of the present invention is to provide a baking tray for microwave ovens capable of being pre-heated in a short time, thus requiring a low amount of energy.
- [0010] These objectives have been achieved by the baking tray for microwave ovens as defined in claim 1. Further achievements have been attained by the subject-matters respectively defined in the dependent claims.
- [0011] The baking tray for microwave ovens of the present invention is partially filled with a composite microwave heatable material containing particles of a susceptor material, i.e. particles of a material having the capacity to absorb microwave radiation energy and to convert it into thermal energy. The composite material is arranged within the body in a plurality of distinct blocks of composite material spread beneath the support surface of the tray aimed to receive the food product to be cooked, parallel to it. The blocks of composite material are designed to have a variable capacity of absorbing the microwave energy, so as to compensate the uneven distribution of microwave energy inside the cooking chamber of the microwave ovens. To this aim, the blocks of composite material comprise a variable amount of susceptor material.
- [0012] According to an embodiment, the variable amount of susceptor material in the blocks is obtained by realizing blocks with variable amounts of composite material, i.e. with variable volume.
- [0013] According to another embodiment, the variable amount of susceptor material in the blocks is obtained by using composite materials comprising

variable concentration of susceptor material.

- [0014] In a first embodiment, the body comprises an internal continuous cavity housing the distinct blocks of composite material. In particular the continuous cavity is an oblong cavity that extends parallel to the support surface and that houses a plurality of blocks. The body can comprise more than one continuous cavity, each of which houses a plurality of blocks.
- [0015] According to a further embodiment, the continuous cavity has a serpentine form.
- [0016] In a second embodiment, the body comprises a plurality of internal recesses spaced apart from each other beneath the support surface, each of which houses a block of composite material.
- [0017] According to a further embodiment each of the recesses has a cylindrical shape.
- [0018] According to a different embodiment, each of the recesses has a concave shape and in particular a hemispherical shape.
- [0019] In an embodiment, the recesses have identical shape and dimensions.
- [0020] According to an embodiment, the body comprises two distinct portions which are fixed to each other along a surface substantially parallel to the support surface. In particular the body comprises a first portion having the support surface and a first coupling surface substantially parallel to the support surface and a second portion having a second coupling surface substantially parallel to the first coupling surface. The first coupling surface and the second coupling surface are fixed to each other.
- [0021] In an embodiment, the internal continuous cavity is obtained on the first portion, dug on the first coupling surface.
- [0022] In a different embodiment, the plurality of internal recesses is obtained on the first portion, dug on the first coupling surface.
- [0023] In another embodiment, the first coupling surface and the second coupling surface are fixed to each other by means of a refractory binder.
- [0024] According to an embodiment, the tray comprises a first group of blocks of composite material disposed centrally beneath the support surface of the body and a second group of blocks disposed peripherally beneath the support surface, surrounding the first group of blocks. The composite

material of the second group of blocks comprises a higher amount of susceptor material than the composite material of the first group of blocks.

[0025] In a further embodiment, the composite material of the second group of blocks comprises 70% by weight of susceptor material while the composite material of the first group of blocks comprises 50% by weight of susceptor material.

[0026] Additional advantages of the baking tray for microwave ovens of the present invention will become apparent with the detailed description of the embodiments with reference to the accompanying drawings in which:

[0027] Figure 1 is a perspective view of a first embodiment of a baking tray for microwave ovens according to the present invention.

[0028] Figure 2 is a perspective view of a second embodiment of the baking tray according to the present invention;

[0029] Figure 3 is a further perspective view of the baking tray of Figure 2, with a second portion of the body of the tray partially removed in order to show constructional details of a first portion.

[0030] Figure 4 is a plan view only of the first portion of the baking tray of the invention according to a different embodiment.

[0031] Figure 5 is a partial cross-sectional view of the baking tray of Figure 2.

[0032] Figure 6 is a perspective view of a further different embodiment of the first portion of the baking tray.

[0033] The reference numerals of the components shown in the drawings:

1. Baking tray
 - a. Body
 - b. Blocks
 - c. Continuous cavity
 - d. Recesses
 - e. First portion
 - f. First coupling surface
 - g. Second portion
 - h. Second coupling surface
 - i. Coupling frame

[0034] B. Base surface

- [0035] S. Support surface
- [0036] The baking tray 1 for microwave ovens according to the present invention is designed for cooking in particular pastry and dough products, such as specifically pizza.
- [0037] The baking tray 1 comprises a body 2 made of a refractory material and having a support surface S for a food product. More in detail the refractory material of the body 2 has a low susceptance, being substantially transparent to microwave radiations and it is selected in order to have high specific heat capacity and low thermal conductivity. According to an embodiment of the baking tray, the refractory material of the body 2 is porcelain or, more generally, a ceramic or a stone material. In particular cordierite is a suitable refractory material for the body 2, having a high thermal shock resistance, so that it allows the tray 1 to undergo rapid temperature variations without getting damaged.
- [0038] The baking tray 1 for microwave ovens is partially filled with a composite microwave heatable material, which composite material comprises a matrix of a refractory material and particles of a susceptor material dispersed within the matrix. In particular the refractory material of the matrix has a low susceptance and it is substantially transparent to microwaves. Suitable materials for the matrix of the composite material are for instance kaolin, cordierite or cement, although other materials having the above mentioned properties might be used without departing from the scope of protection of the present invention.
- [0039] The susceptor material dispersed in particles within the matrix is for instance a metal, a metal oxide or a metal based material. According to an embodiment of the invention, the susceptor material is iron or an iron compound, such as magnetite (Fe_3O_4) or hematite (Fe_2O_3).
- [0040] According to the present invention, the composite material is arranged within the body in a plurality of distinct blocks 3 spread beneath the surface S, parallel to it, and the amount of susceptor material in the blocks 3 is variable. The blocks 3 comprising a different amount of susceptor material, in fact, have a different capability of absorbing microwave radiations and of converting it into thermal energy. More in detail the

capability of the blocks 3 of converting the heat received from the microwave radiations in thermal energy, thus determining a temperature increase, is proportional to the amount of susceptor contained in each of the blocks 3 according to the relation:

[0041] $Q=mc\Delta T$

[0042] where:

[0043] Q is the heat flow associated with the microwave radiations;

[0044] m is the mass of susceptor material;

[0045] c is the specific heat of the susceptor material; and

[0046] ΔT is the temperature variation of the material.

[0047] Therefore, since the heat flow due to the microwave radiations is variable in the cooking chamber of the oven, in order to obtain a similar increase in the temperature of the whole support surface of the tray, the amount of susceptor beneath the support surface is varied.

[0048] In particular, the blocks comprising a lower amount of susceptor, i.e. a lower mass, determine a higher increase in the temperature with respect to the same heat flow.

[0049] The matrix of blocks 3 comprising variable amounts of susceptor material housed in the body 2 allows the baking tray 1 according to the invention to compensate the uneven distribution of the microwave radiations within the cooking chamber of the microwave oven. In particular, the matrix of blocks 3 is designed so as to comprise blocks 3 having a lower amount of susceptor material in those zones of the tray 1 susceptible of being positioned in zones of the cooking chamber of the oven wherein the microwave radiations have a lower energy. This allows an optimal and homogeneous heating of the tray 1 and consequently an optimal and homogeneous heating and cooking of the food product placed on the tray 1.

[0050] According to an embodiment of the tray 1, the size of the particles of susceptor material in the composite material of the blocks 3 is in the range from 5 to 150 micron. It has in fact been verified that particles having smaller size has a tendency to agglomerate thus decreasing the efficiency of the susceptor material. The susceptor material exhibits in fact better

absorption properties when in the powder form, compared with the same amount of susceptor material in bulk form. For the same reason above, particles of susceptor material bigger than 150 micron do not ensure the same efficiency of the susceptor material.

- [0051] According to an embodiment of the baking tray 1, the blocks 3 comprise variable amounts of composite material. More clearly, the amount of susceptor in the blocks 3 is varied by varying the total amount of composite material present in each of the blocks 3, that is the volume of the blocks 3. This allows to obtain different blocks 3 having different amounts of susceptor material starting from the same composition of the composite material.
- [0052] According to a different embodiment, the composite material of the blocks 3 comprises variable concentration of susceptor material. More clearly, the blocks 3 have substantially the same volume and are made of different composite materials containing a variable amount of susceptor material. This allows for instance to provide the tray 1 with blocks 3 having the same size and shape, thus reducing the manufacturing costs, still varying the amount of susceptor contained in them.
- [0053] According to a first embodiment of the baking tray 1 for microwave ovens of the present invention illustrated in Figure 1, the body 2 comprises an internal continuous cavity 4 housing the distinct blocks 3 of composite material. The blocks 3 are housed in succession along the cavity 4, preferably one contiguous to the other with no gaps between consecutive blocks 3.
- [0054] In a further embodiment, the continuous cavity 4 has a serpentine form which extends substantially parallel to the whole support surface S, allowing to place blocks 3 of composite material susceptible of transferring thermal energy to the body 2 substantially along the whole extension of the support surface S aimed to receive the food product to be cooked.
- [0055] In an alternative second embodiment of the baking tray illustrated in Figures 2 and 3, the body 2 comprises a plurality of internal recesses 5 spaced apart from each other beneath the surface S, each of which houses a block 3 of composite material. This allows to place the blocks 3

in more precise positions beneath the support surface S with respect to the first embodiment, since each of the blocks 3 is housed in a specific correspondent recess 5.

- [0056] In an embodiment, each of the recesses 5 has a cylindrical shape, as illustrated in Figure 5. In particular, the axis of each of the cylindrical recesses 5 is perpendicular to the support surface S. It has in fact been verified that the cylindrical shape of the recesses 5, and hence of the composite material blocks 3, allows to increase the transmitted microwave power, which is susceptible of reaching the food for heating and cooking it, to the detriment of the undesired reflected microwave power. This allows to reduce the pre-heating time of the tray 1 and the energy consumption required to pre-heat it. Moreover the cylindrical shape of the recesses 5 favours an isotropic interaction of the microwave radiations with the composite material in directions parallel to the support surface S, hence favouring a substantially homogeneous heating of the support surface S of the tray 1.
- [0057] Furthermore the body 2 of the tray 1 comprising recesses 5 having a cylindrical shape is easy and economical to be produced.
- [0058] In a different embodiment, each of the recesses 5 has a concave shape, in particular semispherical, as illustrated in Figure 6. This shape of the recesses 5, and hence of the blocks 3, allows to maximize the transmitted microwave power, thus further reducing the pre-heating time and energy consumption.
- [0059] According to an embodiment of the present baking tray 1, the recesses 5 have all identical shape and dimensions. This allows to simplify the production process of the tray 1 and hence to reduce the manufacturing costs. In particular according to this last embodiment the blocks 3 to be positioned in the recesses 5 may have all the same shape and dimensions, in case the concentration of the susceptor in the composite material of the different blocks 3 is modified. Differently, in case the different amount of susceptor in the blocks 3 is reached by modifying the total amount of composite material, the blocks 3 may have different dimensions and might be obtained by partially filling the recesses 5.

- [0060] In an embodiment, the maximum diameter of the cylindrical or concave recesses 5 is comprised within the range from 50 mm to 75 mm. In a further embodiment the depth of the recesses is comprised within the range from 5 mm to 10 mm.
- [0061] According to a different embodiment, the body 2 of the tray 1 comprises recesses 5 having different shape and/or dimensions, as for instance illustrated in Figure 4. This embodiment is preferred in case the different amount of susceptor material in the blocks 3 is reached by modifying the volume of the blocks 3, i.e. the amount of composite material. In particular the different recesses 5 might have different maximum diameter, as in Figure 4, or might have different depth.
- [0062] In an embodiment illustrated in Figure 2-6, the body 2 comprises a first portion 6 having the support surface S and a first coupling surface 7, substantially parallel to the support surface S, and a second portion 8 having a second coupling surface 9 substantially parallel to the first coupling surface 7 of the first portion 6. The first coupling surface 7 and the second coupling surface 9 are fixed to each other. In particular, according to an embodiment, the first coupling surface 7 and the second coupling surface 9 are fixed to each other by means of a refractory binder and, preferably, by means of a cementitious binder. This ensures a structural continuity and a substantially homogeneous thermal behaviour of the body 2 of the tray 1.
- [0063] According to an embodiment illustrated in Figure 4, in order to ensure an optimal coupling of the first portion 6 and of the second portion 8, the first coupling surface 7 and the second coupling surface 9 comprise respective coupling frames 10, one of which embossed and the other debossed, designed to match to each other.
- [0064] The second portion 8 further comprises a base surface B substantially parallel to the second coupling surface 9 and opposite to the support surface S when the first portion 6 and the second portion 8 are coupled.
- [0065] The fact that the body 2 comprises two portions 6 and 8 allows to simplify the manufacturing process, since the internal cavity 4 or the internal distinct recesses 5 can be easily obtained on one of the coupling surfaces

8 or 10 before fixing the first portion 6 and the second portion 8 to each other.

- [0066] In particular, in further embodiments of the baking tray 1, the internal continuous cavity 4, according to the first embodiment of Figure 1, or the internal distinct recesses 5, according to the second embodiment of Figures 2-6, are obtained on the first coupling surface 7 of the first portion 6. This allows to reduce the thickness of the refractory material of the body 2 between the cavity 4 or the recesses 5 and the support surface S, thus allowing to place the blocks 3 in the body 2 closer to the support surface S. In this manner the transfer of thermal energy to the support surface S and, hence, to the food product disposed on it when the baking tray 1 is in use is enhanced.
- [0067] In an embodiment of the baking tray 1 according to the present invention in particular intended to be used in microwave ovens of large capacity, such as the microwave ovens having a cooking chamber which capacity is of 45 litres, the tray 1 comprises a first group of blocks 3 of composite material disposed centrally beneath the support surface S and a second group of blocks 3 disposed peripherally beneath the support surface S, surrounding the first group of blocks 3. For instance the second group of blocks 3 can comprise the first rows of blocks 3 disposed in correspondence of the periphery of the body 2, while the first group of blocks 3 can comprise the remaining blocks 3 disposed centrally on the body 2 and surrounded by the blocks 3 of the second group. Differently the second group of blocks 3 can comprise two or more of the extremity rows of blocks 3 disposed along only two parallel sides of the body 2, while the first group of blocks 3 can comprise the remaining blocks 3 disposed between the above mentioned rows.
- [0068] The composite material of the second group of blocks 3 comprises a higher amount of susceptor material than the composite material of the first group of blocks 3.
- [0069] The distribution of the microwave energy in the cooking chamber of the large capacity microwave ovens, in fact, presents lower energy in correspondence of the centre of the chamber and higher energy in

correspondence of the peripheral zones of the latter. Therefore the above mentioned distribution of the blocks 3 on the tray 1 allows to compensate the uneven distribution of the microwave energy inside the cooking chamber.

[0070] In a further embodiment, the composite material of the second group of blocks 3 comprises 70% by weight of susceptor material while the composite material of the first group of blocks 3 comprises 50% by weight of susceptor material.

[0071] According to an embodiment, the composite material comprises only the refractory matrix and the susceptor particles, without hence comprising further components. In this case, in this last embodiment the composite material of the second group of blocks 3 comprises 30% by weight of refractory material constituting the matrix, while the composite material of the first group of blocks 3 comprises 50% by weight of refractory material constituting the matrix.

[0072] Comparative results:

[0073] As an example here below are reported the results that have been obtained by pre-heating in identical conditions, i.e. in the same microwave oven having cooking chamber capacity of 45 litres, by placing the tray in the same position inside the cooking chamber and by setting the same microwave power, a first tray, according to the present invention, and a second comparison tray.

[0074] More in detail in Table A below are reported the results obtained for the first tray according to the invention, having a body provided with 15 recesses, disposed in three rows each comprising five recesses housing blocks having different amounts of composite material, i.e. blocks having variable mass as reported in the second column. More in detail, the blocks have been made with composite material having the same composition, i.e. the same concentration of susceptor material, and variable volume.

[0075] **TABLE A:**

[0076]

Table 1

Recess/Block	Mass	Initial T	Final T
--------------	------	-----------	---------

12/15

Number			
1	45	21	300
2	38	21	285
3	41	21	290
4	35	21	265
5	32	21	270
6	30	21	255
7	47	21	300+
8	23	21	270
9	39	21	285
10	32	21	265
11	45	21	300+
12	41	21	300+
13	45	21	300+
14	32	21	300+
15	28	21	260

[0077] In Table B below are reported the results obtained for the second comparison tray having a body provided with 15 recesses, disposed in three rows each comprising five recesses, housing blocks having substantially the same amount of composite material, i.e. the same mass as reported in the second column, with the same composition, i.e. the same concentration of susceptor material.

[0078] **TABLE B:**

[0079]

Table 2

Recess/Block Number	Mass	Initial T	Final T
1	41	21	300+
2	41	21	280
3	43	21	280
4	39	21	225
5	40	21	190

6	40	21	180
7	41	21	300+
8	40	21	180
9	41	21	260
10	40	21	150
11	41	21	300+
12	41	21	300+
13	40	21	300+
14	41	21	220
15	40	21	170

- [0080] By comparing the temperature measured in correspondence of each of the blocks for the first tray and for the second tray, it is possible to see that the first tray according to the present invention allows to reach substantially homogeneous temperature values along the whole support surface, while the same results are not obtained with the second tray having blocks of composite material of the same composition and mass.
- [0081] The baking tray 1 for microwave ovens according to the present invention, thanks to the presence of blocks 3 of microwave heatable composite material susceptible of differently absorbing the microwave energy, is uniformly heatable in conventional microwave ovens exhibiting an uneven distribution of the energy of the microwave radiations inside the cooking chamber. Therefore, the baking tray 1 according to the present invention allows to uniformly heat and cook the food that is placed on it.
- [0082] Moreover, the baking tray 1 for microwave ovens according to the invention requires a shorter pre-heating and cooking time and a lower amount of energy for being pre-heated and for cooking the food.
- [0083] Compared with the conventional baking trays entirely made of refractory material, in fact, the baking tray 1 according to the present invention allows to shorten the required cooking time of 1/15 till to 1/5 of the time.
- [0084] The amount of susceptor in each of the blocks 3 can be optimized in order to allow the homogeneous heating of the baking tray 1 in a specific microwave oven, having a known or predictable distribution of the microwave energy inside the cooking chamber.

Claims

1. A baking tray (1) for microwave ovens comprising a body (2):
 - made of a refractory material;
 - having a support surface (S) for a food product; and
 - partially filled with a composite microwave heatable material comprising a matrix of a refractory material and particles of a susceptor material dispersed within the matrix;characterized in that the composite material is arranged in the body (2) in a plurality of distinct blocks (3) spread beneath the support surface (S) parallel to it, the amount of susceptor material in the blocks (3) being variable.
2. A baking tray (1) as claimed in Claim 1, characterized in that the blocks (3) comprise variable amounts of composite material.
3. A baking tray (1) as claimed in Claim 1, characterized in that the composite material of the blocks (3) comprises variable concentration of susceptor material.
4. A baking tray (1) as claimed in any of the previous Claims, characterized in that the body (2) comprises an internal continuous cavity (4) housing the distinct blocks (3) of composite material.
5. A baking tray (1) as claimed in Claim 4, characterized in that the cavity (4) has a serpentine form.
6. A baking tray (1) as claimed in any of Claims 1 to 3, characterized in that the body (2) comprises a plurality of internal recesses (5) spaced apart from each other beneath the support surface (S), each of which houses a block (3) of composite material.
7. A baking tray (1) as claimed in Claim 6, characterized in that each of the recesses (5) has a cylindrical shape.
8. A baking tray (1) as claimed in Claim 6, characterized in that each of the recesses (5) has a concave shape.
9. A baking tray (1) as claimed in any of Claims 6 to 8, characterized in that the recesses (5) have identical shape and dimensions.
10. A baking tray (1) as claimed in any of the previous Claims, characterized in that the body (2) comprises a first portion (6) having the support surface (S) and a first coupling surface (7) substantially parallel to the support surface (S)

and a second portion (8) having a second coupling surface (9) substantially parallel to the first coupling surface (7) of the first portion (6), the first coupling surface (7) and the second coupling surface (9) being fixed to each other.

11. A baking tray (1) as claimed in Claim 4 and 10, characterized in that the internal continuous cavity (4) is obtained on the first coupling surface (7) of the first portion (6).
12. A baking tray (1) as claimed in Claim 6 and 10, characterized in that the plurality of internal recesses (5) are obtained on the first coupling surface (7) of the first portion (6).
13. A baking tray (1) as claimed in any of Claims 10 to 12, characterized in that the first coupling surface (7) and the second coupling surface (9) are fixed to each other by means of a refractory binder.
14. A baking tray (1) as claimed in any of the previous Claims, characterized in it comprises a first group of blocks (3) of composite material disposed centrally beneath the support surface (S) and a second group of blocks (3) disposed peripherally beneath the support surface (S), surrounding the first group of blocks (3), the composite material of the second group of blocks (3) comprising a higher amount of susceptor material than the composite material of the first group of blocks (3).
15. A baking tray (1) as claimed in Claim 14, characterized in that the composite material of the second group of blocks (3) comprises 70% by weight of susceptor material while the composite material of the first group of blocks (3) comprises 50% by weight of susceptor material.

1/2

Figure 1

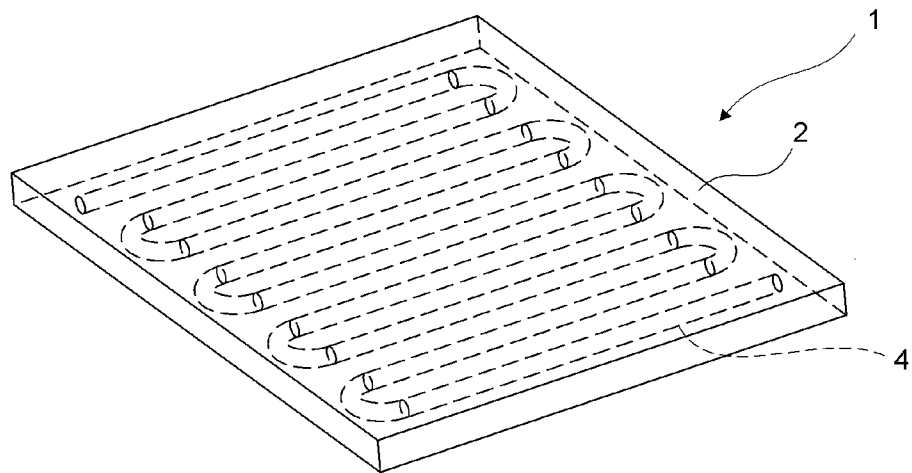


Figure 2

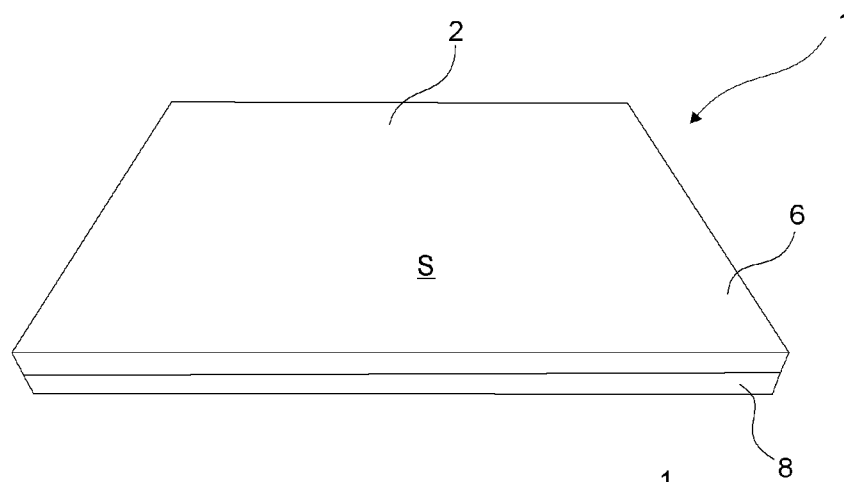
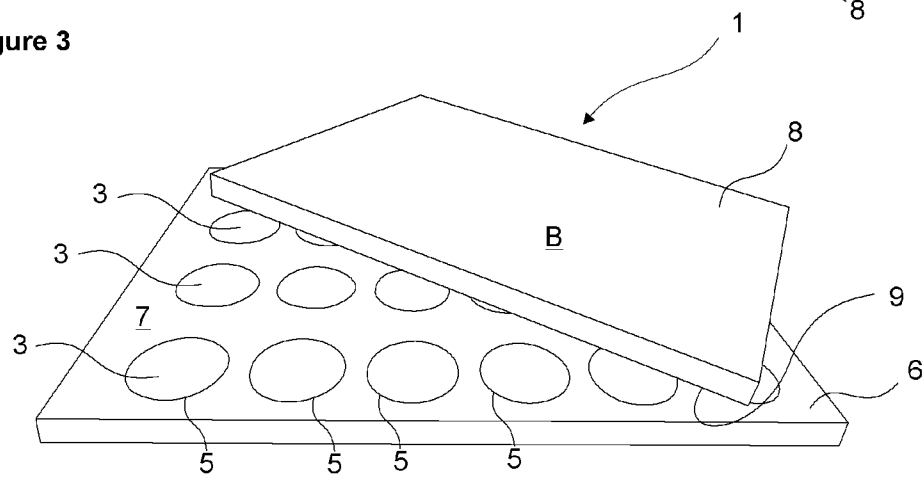


Figure 3



2/2

Figure 4

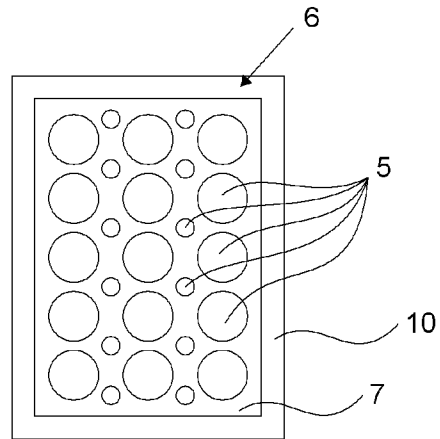


Figure 5

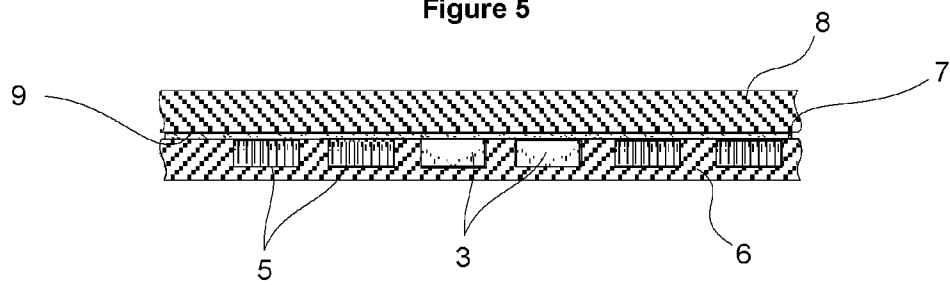
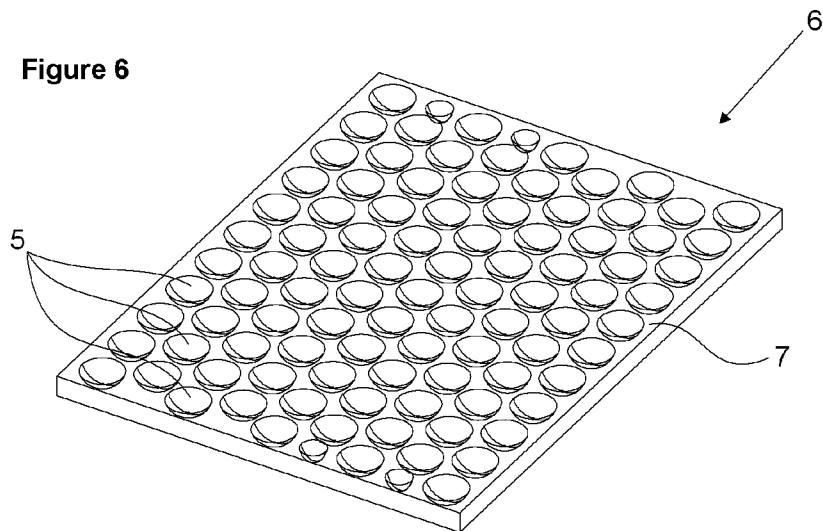


Figure 6



INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2015/062484

A. CLASSIFICATION OF SUBJECT MATTER
INV. A47J36/02
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
A47J H05B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 2 186 478 A (COMMERCIAL DECAL INC) 19 August 1987 (1987-08-19) figure 8	1,2,6, 10,13
A	----- US 4 369 346 A (HART BILL J ET AL) 18 January 1983 (1983-01-18) figure 3	1
A	----- US 2014/238250 A1 (GEPHART JOHN ET AL) 28 August 2014 (2014-08-28) cited in the application figures 2A,2B -----	1



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier application or patent but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

19 August 2015

Date of mailing of the international search report

27/08/2015

Name and mailing address of the ISA/

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040,
Fax: (+31-70) 340-3016

Authorized officer

Reichhardt, Otto

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/EP2015/062484

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
GB 2186478	A	19-08-1987	DE 3703163 A1 06-08-1987
			FR 2594319 A1 21-08-1987
			GB 2186478 A 19-08-1987
			IT 1202469 B 09-02-1989
			JP S62253016 A 04-11-1987
			US 5057659 A 15-10-1991

US 4369346	A	18-01-1983	NONE

US 2014238250	A1	28-08-2014	US 2014238250 A1 28-08-2014
			WO 2014133845 A1 04-09-2014
