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Description

[0001] The present invention relates to an oven that offers the user a safer option of utilization.

[0002] In ovens, the water vapor that is emanated during cooking of foodstuff fills in the cooking chamber. If the user then opens the door, a large amount of vapor is suddenly released from the open door and flows into the outer environment having a lower pressure and temperature value. The vapor that has quite a high rate of calories can harm the user or even cause skin burns.

[0003] In the state of the art, various solutions have been developed for solving this problem. In the French patent application no. FR2776478, when the user wants to open the door, first the air-vapor mixture in the cooking chamber is aspirated by means of a fan, then the door is allowed to be opened. The aspirated mixture from the cooking chamber passes through a chimney and is discharged out of the oven.

[0004] In the German patent application no. DE3015048, the baking oven has a drawer which is situated above the baking space. By means of this drawer, when the door is partially open, the escaping hot vapor is aspirated into the drawer by means of a fan which is then discharged out through a vapor removal channel.

[0005] In the United States of America patent no. US3032028, the fan aspirating the vapor is energized by a switch that detects the opening of the door. Further the state of the art document EP1120607 discloses an embodiment according to the preamble of claim 1.

[0006] The object of the present invention is to design an oven wherein saving of energy is provided and the user is prevented from being harmed by the vapor accumulated in the cooking chamber when the door is opened.

[0007] The oven designed to fulfill the objective of the present invention is explicated in the attached claims. In the oven of the present invention, while the door is being opened the vapor-air mixture aspirated from the cooking chamber is stored in a cubicle and is redelivered into the cooking chamber after the door is closed. The cubicle comprises at least one hole that opens into the cooking chamber, without any other holes that open to the exterior. A suck-force mechanism provides the vapor to be aspirated into the cubicle and to be delivered into the cooking chamber later on. Consequently, when the door is opened, primarily the user is prevented from being harmed by the vapor released from inside the cooking chamber. In addition, the nutritional value of the cooked foodstuff is not lowered much by means of redelivering the vapor into the cooking chamber. Furthermore, since the heated air is recycled, the temperature of the cooking chamber is not lowered significantly thus saving of energy is provided.

[0008] In an embodiment of the present invention, either a bi-directional fan or two counter rotating fans are used for the suck-force mechanism. The fan is situated inside the cubicle. While the door is opened, the fan rotates in one direction providing the vapor to be collected

in the cubicle. After the door is closed, the fan, now rotating in the reverse direction, delivers the vapor stored in the cubicle to the cooking chamber again.

[0009] In another embodiment of the present invention, the aspiration process is provided by a bellows-shaped cubicle having a variable volume. In this embodiment, the volume of the cubicle is adjusted by preferably a suck-force mechanism like a cable; arm etc., with one end attached to the door and the other to the cubicle. Since this embodiment does not necessitate the operation of an electrical device like a fan for aspirating the vapor, it furthermore provides energy saving.

[0010] The oven designed to fulfil the objective of the present invention is illustrated in the attached claims, where:

Figure 1- is the schematic view of an oven.

Figure 2 - is another schematic view of the oven.

Figure 3 - is the schematic view of the oven in another embodiment.

Figure 4 - is the schematic view of the oven in yet another embodiment.

[0011] The elements illustrated in the figures are numbered as follows:

1. Oven
2. Body
3. Cooking chamber
4. Door
5. Cubicle
6. Hole
7. Suck-force mechanism

[0012] The oven (1) comprises a body (2), a cooking chamber (3) disposed within the body (2) and a door (4) that provides access into the cooking chamber (3) from outside.

[0013] The oven (1) of the present invention further comprises,

- a cubicle (5) having at least one hole (6) that opens into the cooking chamber (3), and
- a suck-force mechanism (7) that is energized as the door (4) is opened, providing the vapor in the cooking chamber (3) to be aspirated into the cubicle (5) through the hole (6), and the vapor to be pumped into the cooking chamber (3) after the door (4) is closed (Figure 1, Figure 3).

[0014] The hole (6) of the cubicle (5) is preferably situated on the ceiling of the cooking chamber (3) in the vicinity of the door (4) opening. Accordingly, the vapor that generally accumulates under the ceiling of the cooking chamber (3) can be swiftly collected in the cubicle (5) as the door (4) is opened.

[0015] A bi-directional fan (Figure 1) is used as the suck-force mechanism (7). The fan is preferably dis-

posed in the cubicle (5) at a place near the hole (6). As a switch closes by detecting the opening of the door, the fan starts operating, rotating in one direction, providing the pressure in the cubicle (5) to decrease and the vapor to be collected in the cubicle (5) (Figure 1). After the door (4) is closed, the switch opens and this time the fan is rotated in the reverse direction, providing the vapor stored in the cubicle (5) to be redelivered into the cooking chamber (3) (Figure 2). Alternatively, two counter rotating fans can be utilized, one rotating clockwise, and the other counter clockwise, one aspirating, the other forcing out.

[0016] In this embodiment of the present invention, if the user opens the door (4) while the cooking process is going on, the suck-force mechanism (7) provides the vapor accumulated in the cooking chamber (3) to be sucked into the cubicle (5). Consequently, the user will not be harmed since a great amount of vapor will not be released from the door (4) towards the face or hands of the user. When the user closes the door (4), the vapor kept in the cubicle (5) is redelivered into the cooking chamber (3). Thus the temperature of the cooking chamber (3) is not lowered considerably.

[0017] In another embodiment of the present invention, the cubicle (5) is a bellows, the volume thereof being adjustable by pressing or opening the walls. In this embodiment, an arm is utilized as the suck-force mechanism (7) that changes the volume - hence the pressure - of the cubicle (5), with one end attached to the door (4) and the other to the cubicle (5). While the door (4) is opened, the arm (Figure 3) that can increase the volume by pulling the bellows-shaped cubicle (5) upwards decreases the volume by pushing the cubicle (5) downwards while the door (4) is closed (Figure 4).

[0018] By means of the oven (1) of the present invention, when the door (4) is opened, the vapor in the cooking chamber (3) is prevented from being released and harming the user. In addition, by redelivering the vapor into the cooking chamber (3), the nutritional value of the cooked foodstuff is not reduced. Furthermore, since the heated air is recycled, there is a lesser decrease in the temperature of the cooking chamber (3) which provides saving of energy.

Claims

1. An oven (1) comprising a body (2), a cooking chamber (3) disposed within the body (2) and a door (4) that provides access into the cooking chamber (3) from outside an a cubicle (5) having at least one hole (6) that opens into the cooking chamber (3), and a suck-force mechanism (7) that is energized as the door (4) is opened, providing the vapor in the cooking chamber (3) to be aspirated into the cubicle (5) through the hole (6), **characterized in that** the vapor to be pumped back into the cooking chamber (3) after the door (4) is closed.

2. An oven (1) as in Claim 1, **characterized in that** the hole (6) is disposed on the ceiling of the cooking chamber (3) near the vicinity of the door (4) opening.

3. An oven (1) as in Claim 1 or 2, **characterized by** a suck-force mechanism (7) that is a bi-directional fan which is rotated in one direction while the door is opened, providing the pressure in the cubicle (5) to decrease and the vapor to be collected in the cubicle (5), rotated in the reverse direction after the door (4) is closed providing the vapor kept in the cubicle (5) to be redelivered into the cooking chamber (3).

4. An oven (1) as in Claim 1 or 2, **characterized by** a suck-force mechanism (7) being two counter rotating fans, one rotating clockwise, and the other in the counter clockwise direction.

5. An oven (1) as in Claim 1 or 2, **characterized by** a bellows-shaped cubicle (5), the volume thereof adjustable by changing the size of the walls and a suck-force mechanism (7) that is an arm, with one end attached to the door (4) and the other to the cubicle (5).

Patentansprüche

1. Ofen (1), umfassend einen Gehäusekörper (2), eine Zubereitungskammer (3), die in dem Gehäusekörper (2) angeordnet ist, und eine Tür (4), die Zugriff auf die Zubereitungskammer (3) von außen bietet, und ein Fach (5) mit wenigstens einem Loch (6), das sich in die Zubereitungskammer (3) öffnet, und einen Saugkraftmechanismus (7), der betätigt wird, wenn die Tür (4) geöffnet wird, und dafür sorgt, dass Dampf in der Zubereitungskammer (3) durch das Loch (6) in das Fach (5) angesaugt wird, **dadurch gekennzeichnet, dass** der Dampf zurück in die Zubereitungskammer (3) gepumpt wird, wenn die Tür (4) geschlossen wird.
2. Ofen (1) nach Anspruch 1, **dadurch gekennzeichnet, dass** das Loch (6) an der Decke der Zubereitungskammer (3) in der Nähe der Öffnung der Tür (4) angeordnet ist.
3. Ofen (1) nach Anspruch 1 oder 2, **dadurch gekennzeichnet, dass** der Saugkraftmechanismus (7) ein bidirektionales Gebläse ist, das sich in einer Richtung dreht, während die Tür geöffnet ist, und dafür sorgt, dass der Druck im Fach (5) abnimmt und der Dampf sich im Fach (5) sammelt, und sich in umgekehrter Richtung dreht, wenn die Tür (4) geschlossen ist, damit der Dampf in dem Fach (5) zurück an die Zubereitungskammer (3) geleitet wird.
4. Ofen (1) nach Anspruch 1 oder 2, **dadurch gekennzeichnet,**

zeichnet, dass der Saugkraftmechanismus (7) zwei gegendrehende Gebläse sind, von denen sich eines im Uhrzeigersinn und das andere gegen den Uhrzeigersinn dreht.

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5. Ofen (1) nach Anspruch 1 oder 2, **gekennzeichnet durch** ein balgförmiges Fach (5), dessen Volumen **durch** Ändern der Größe der Wände einstellbar ist **und dadurch, dass** der Saugkraftmechanismus (7) ein Arm ist, dessen eines Ende an der Tür (4) und dessen anderes Ende am Fach (5) angebracht ist.

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Revendications

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1. Un four (1) comprenant un corps (2), une chambre de cuisson (3) qui est disposée dans le corps (2) et une porte (4) qui permet d'accéder dans la chambre de cuisson (3) à partir de l'extérieur et un réceptacle (5) qui présente au moins un trou (6) qui s'ouvre dans la chambre de cuisson (3) **et** un mécanisme à force d'aspiration (7) qui est mis sous tension lorsque la porte (4) est ouverte, permettant à la vapeur contenue dans la chambre de cuisson (3) d'être aspirée dans le réceptacle (5) à travers le trou (6), **caractérisé en ce que** la vapeur est pompée dans la chambre de cuisson (3) après que la porte (4) est fermée.
2. Un four (1) selon la Revendication 1, **caractérisé en ce que** le trou (6) est disposé sur le plafond de la chambre de cuisson (3) à proximité de l'ouverture de la porte (4).
3. Un four (1) selon la Revendication 1 ou 2, **caractérisé par** un mécanisme à force d'aspiration (7) qui est un ventilateur bidirectionnel qui est tourné dans une direction lorsque la porte est ouverte, permettant la diminution de la pression dans le réceptacle (5) et le recueillement de la vapeur dans le réceptacle (5) et qui est tourné dans la direction inverse après que la porte (4) est fermée, permettant à la valeur maintenue dans le réceptacle (5) d'être redistribuée dans la chambre de cuisson (3).
4. Un four (1) selon la Revendication 1 ou 2, **caractérisé par** un mécanisme à force d'aspiration (7) qui est deux ventilateurs à rotation inversée, l'un tournant dans le sens horaire et l'autre tournant dans le sens antihoraire.
5. Un four (1) selon la Revendication 1 ou 2, **caractérisé par** un réceptacle (5) en forme d'un soufflet, dont le volume est réglable en changeant la taille des parois **et** un mécanisme à force d'aspiration (7) qui est un bras, dont l'une extrémité est fixée à la porte (4) et l'autre extrémité au réceptacle (5).

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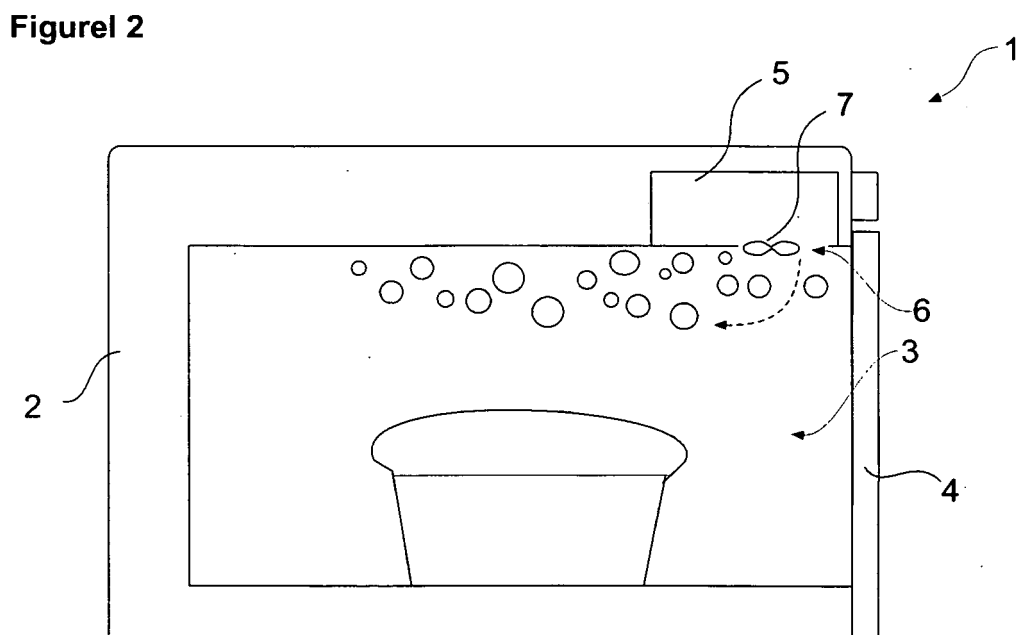
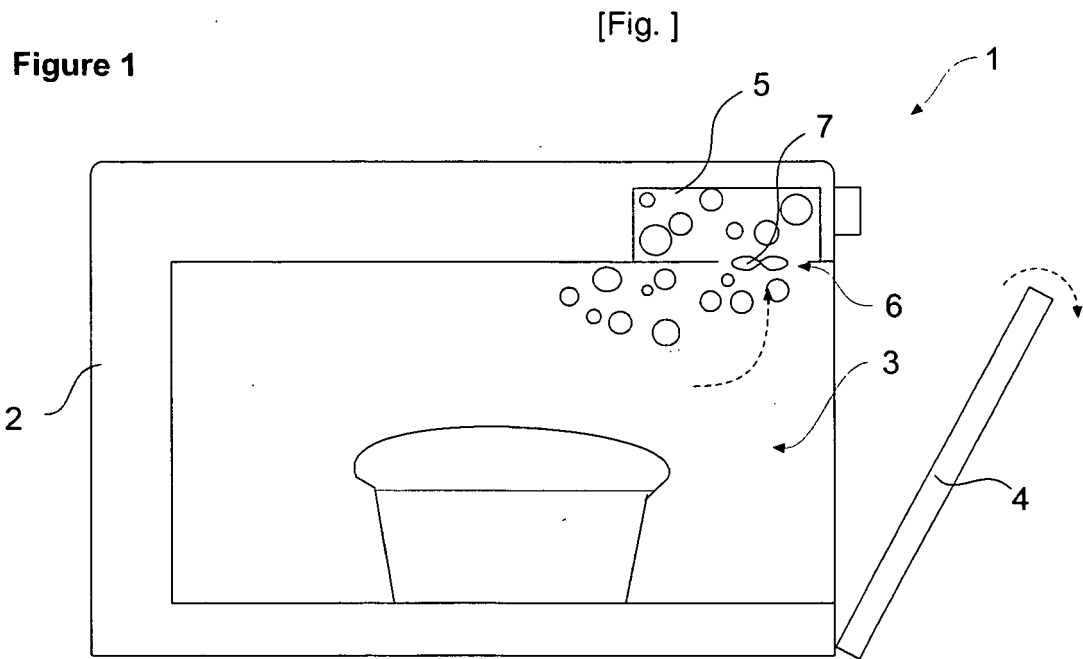
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[Fig.]

Figure 3

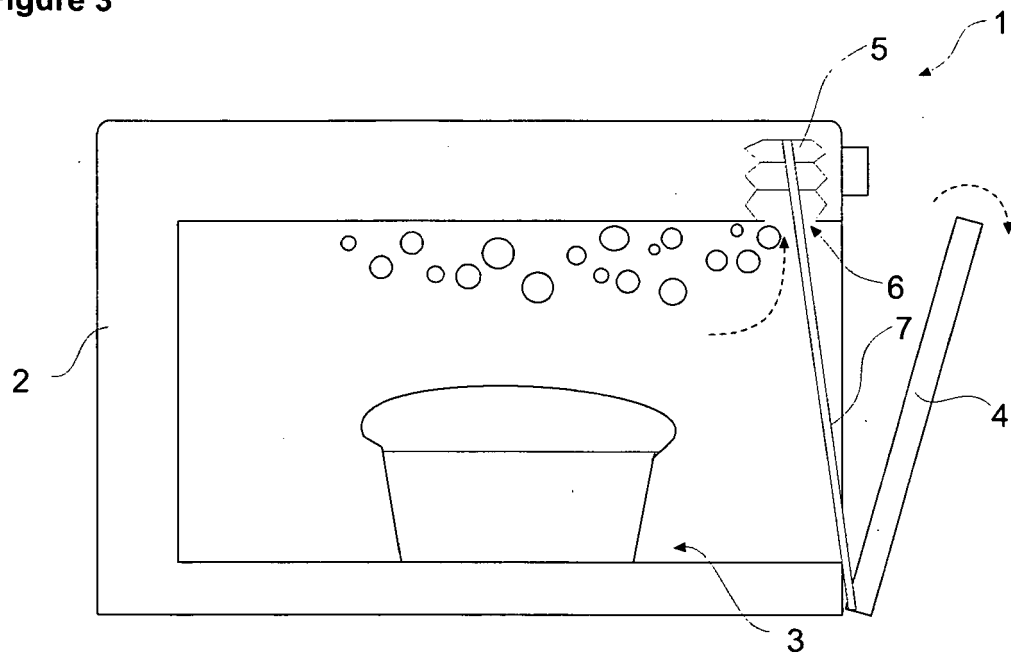
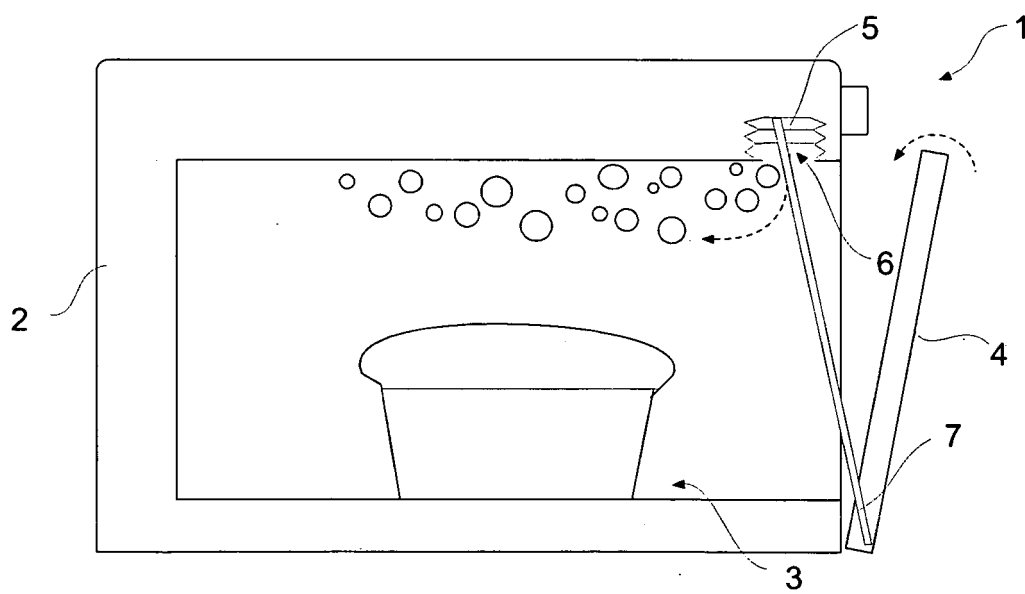


Figure 4



REFERENCES CITED IN THE DESCRIPTION

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