

**(12) PATENT**  
**(19) AUSTRALIAN PATENT OFFICE**

**(11) Application No. AU 199868450 B2**  
**(10) Patent No. 733253**

(54) Title  
**Cooking method and apparatus**

(51)<sup>6</sup> International Patent Classification(s)  
**A47J 037/07**

(21) Application No: **199868450**

(22) Application Date: **1998 .03 .27**

(87) WIPO No: **WO98/43519**

(30) Priority Data

(31) Number	(32) Date	(33) Country
<b>9706539</b>	<b>1997 .04 .01</b>	<b>GB</b>
<b>9711590</b>	<b>1997 .06 .05</b>	<b>GB</b>
<b>9725065</b>	<b>1997 .11 .27</b>	<b>GB</b>

(43) Publication Date : **1998 .10 .22**

(43) Publication Journal Date : **1998 .12 .10**

(44) Accepted Journal Date : **2001 .05 .10**

(71) Applicant(s)  
**Nicholas John Vaughan**

(72) Inventor(s)  
**Nicholas John Vaughan**

(74) Agent/Attorney  
**FISHER ADAMS KELLY,GPO Box 1413,BRISBANE QLD 4001**

(56) Related Art  
**US 5517902**  
**US 3495524**  
**US 3276440**

OPT. DATE 22/10/98 APPLN. ID 68450/98  
AOJP DATE 10/12/98 PCT NUMBER PCT/GB98/00936



AU9868450

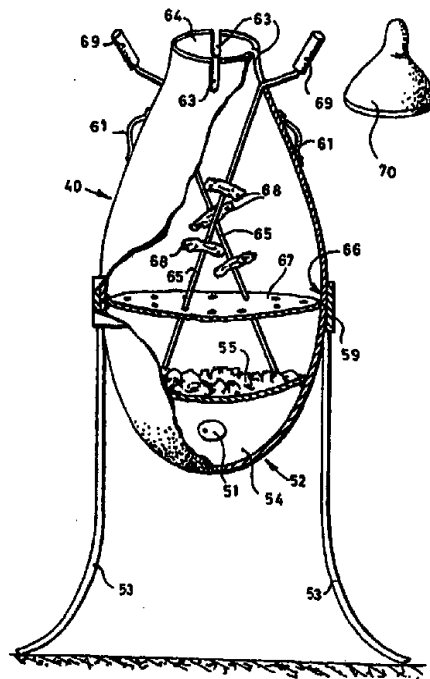
CT

<b>(51) International Patent Classification <sup>6</sup> :</b> <b>A47J 37/07</b>		<b>A1</b>	<b>(11) International Publication Number:</b> <b>WO 98/43519</b>
<b>(21) International Application Number:</b> PCT/GB98/00936		<b>(43) International Publication Date:</b> 8 October 1998 (08.10.98)	
<b>(22) International Filing Date:</b> 27 March 1998 (27.03.98)		<b>(81) Designated States:</b> AU, CA, CN, JP, NZ, US, European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).	
<b>(30) Priority Data:</b> 9706539.5 1 April 1997 (01.04.97) GB 9711590.1 5 June 1997 (05.06.97) GB 9725065.8 27 November 1997 (27.11.97) GB		<b>Published</b> <i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>	
<b>(71)(72) Applicant and Inventor:</b> VAUGHAN, Nicholas, John [GB/GB]; 85b Main Road, Gidea Park, Romford, Essex RM2 5EL (GB).			
<b>(74) Agent:</b> EDER, Ephry; E. Eder & Co., 39 Cranbrook Road, Ilford, Essex IG1 4PA (GB).			

**(54) Title:** COOKING METHOD AND APPARATUS

**(57) Abstract**

A method of cooking foodstuff items impaled on skewers that are disposed in a generally upright attitude upon or above the pyrogenous material heat source provided by a barbecue (52), the skewers being surrounded by a hollow chamber (60) of bulbous form provided with an open bottom (66) above the heat source and with an open top (64) from which handles of the skewers (65) extend. The apparatus for use in the method can be a conventional barbecue modified by an accessory providing said hollow chamber as a removable item. The skewers rest with their lower ends on the heat source and have a length commensurate with (preferably greater than) the height of the hollow chamber (60), i.e. the distance between its upper and lower ends such that the handles of the skewers project out of the open upper end of the hollow chamber.



COOKING METHOD AND APPARATUS

5

DESCRIPTIONTechnical Field

10 This invention relates to cooking apparatus and methods of cooking.

Background Art

15 It is known to cook foodstuffs by grilling them over a heat source, e.g. an open fire provided, for example, by burning charcoal, coal or other pyrogenous material in a barbecue. It is also known to effect such grilling, particularly barbecue grilling, by impaling the foodstuff on skewers that are positioned in a raised horizontal position spaced above the heat source and allowing the heat to embrace the  
20 impaled foodstuff. It is often difficult to ensure proper and even cooking of foodstuffs by these methods and it is considered desirable to overcome these and/or other difficulties arising from the apparatus and methods of the prior art.

25

Summary of the Invention

30 According to a first aspect of this invention there is provided a method of cooking foodstuff items impaled on skewers characterised in that the skewers are disposed in a generally upright attitude upon or above a heat source and in that the skewers are surrounded by a hollow chamber provided with an open bottom above the heat source and with an open top from which handles of the skewers extend.

35 Preferably the lower ends of the skewers rest on the heat source.

---

According to another aspect of this invention there is provided apparatus for use in a method according to said first aspect of the invention, said apparatus comprising a hollow chamber having an open upper end and an open lower end, the lower opening being for disposition in close proximity above (preferably upon) the heat source and having a cross-sectional area greater than that of the upper opening, and further comprising a plurality of skewers having a length commensurate with (preferably greater than) the height of the hollow chamber, i.e. the distance between its upper and lower ends.

The hollow chamber may be of metal or of clay or other suitable ceramic material.

Preferably the wall of the said chamber is of substantially uniform cross-section such that the wall is of substantially constant thickness and its exterior surface facing the ambient environment (i.e. that is to contact the outside air) conforms to its interior surface.

Advantageously the skewers are hollow along at least the majority of their length. This is to enhance heat transfer from the heat source to the foodstuff impaled on each skewer.

For example the chamber may have the following dimensions:

- height: in the range 44 to 54 cms, preferably 49 cms;
- maximum diameter: in the range 31 to 41 cms, preferably 36 cms;
- diameter of top aperture: in the range 10 to 20 cms, preferably 15 cms;
- diameter of bottom aperture: in the range 25 to 36 cms, preferably 30 cms;

and the distance from the top aperture to the chamber's transverse plane containing its maximum diameter being

approximately half, preferably slightly less than half, the chamber's height.

5 Optionally, the hollow chamber may be provided with one or more external handles whereby the chamber may be lifted onto and/or removed from off the heat source.

10 Additionally or alternatively a lid may be provided for the open upper end of the hollow chamber. The lid may be multi-apertured, the apertures permitting the extension therethrough of (the) skewers. The apertures may, for example, be of triangular shape. Alternatively, the lid may fully cover the area of the open upper end, the latter being provided with slot-like apertures through which the  
15 skewers can extend.

In one example of the invention, a vent may be provided in the wall of the hollow chamber adjacent its open lower end. Advantageously this vent may be adjustable, e.g. being  
20 selectively either open or closed (preferably having the size of its opening(s) regulatable).

According to yet another aspect of this invention there is provided apparatus for use in a method according to said  
25 first aspect of the invention, said apparatus comprising a hollow chamber having an open upper end and an open lower end, the lower opening being for disposition in close proximity above (preferably upon) a heat source, the cross-sectional area of the chamber being greater at an  
30 intermediate height location between the upper end and the lower end such as to provide the chamber with a bulbous form.

Brief Description of the Drawings

By way of example two embodiments of this invention will now be described with reference to the accompanying drawings of which:

- 5 Figure 1 is a schematic vertical cross-sectional view through cooking apparatus according to one embodiment of this invention, and  
Figure 2 is a similar view of cooking apparatus according to a second embodiment of this invention.

10

Detailed Description of Example(s) of the Invention

The illustrated apparatus 10 of Fig 1 comprises a barbecue 12 and accessory 20 therefor. The barbecue comprises a brazier dish 14 supported by three equi-angularly spaced  
15 legs 13. For use, either alone as a barbecue, or together with the accessory 20, charcoal or like pyrogenous material 15 is placed within the brazier dish 14 and ignited. The accessory 20 is a hollow structure which defines a chamber 22 of generally barrel-shaped form and is in use removably  
20 supported by the pyrogenous material 15 in the brazier dish 14.

This hollow structure 20 is of an unglazed, unfired clay or other ceramic material resistant to fire and heat,  
25 preferably reinforced with hessian or other suitable strengthening fibres. After forming from the fibre-reinforced clay or other ceramic material, the hollow structure may be left to dry slowly, e.g. in a naturally warm or hot environment. Alternatively, the hollow  
30 structure 20 may be made of metal (e.g. enamelled with a heat-resistant vitreous finish) or of a combination of (such) metal and ceramic materials. The thickness of the chamber wall is of substantially uniform cross-section such that the wall's exterior surface facing the ambient  
35 environment, i.e. the outside air, is generally conformingly parallel to its interior surface.

The hollow structure 20 is open at each end and, in this example, is approximately 40cm high. The circular upper opening 24 of chamber 22 is approximately 15 cms in diameter, and the circular lower opening 26 of chamber 22  
5 - which is larger than the upper opening 24 - is approximately 30 cms in diameter. The maximum diameter of the generally barrel-shaped chamber 22 is approximately 38 cms and is located slightly above the horizontal plane lying mid-way between the upper and lower openings 24,26.

10

For use, charcoal or pyrogenous material 15 is placed in the brazier dish 14 of the barbecue 12, with the structure 20 removed, and this material is then ignited. The hollow structure 20 is then placed on top of the burning material  
15 15. Foodstuff items 28 that are to be cooked (e.g. meat and/or fish) - which optionally may have been previously steeped in a marinade - are pushed onto metal skewers 25 having heat-insulated handles 29. These skewers 25 are then inserted through the structure's top opening 24 to rest  
20 stationary with their pointed lower ends on the charcoal or pyrogenous material 15 and to lie, in a slightly inclined but generally upright attitude, against the bounding rim of the opening 24 (with their handles 29 projecting to the outside). The heat from the burning material 15 is  
25 conducted along the metal skewers 25 to cook the foodstuff items 28 internally, whilst the radiated and convected heat from the charcoal or other pyrogenous material 15 is imparted to the exterior of the foodstuff items 28 to cook them - and additionally to flavour them when the charcoal  
30 or other pyrogenous material 15 is of an aromatic nature. The metal skewers 25 may optionally be hollow along at least the majority of their length to enhance heat transfer from the heat source to the foodstuff items 28 impaled thereon.

35

Breads can also be cooked in the above-described apparatus by adhering the flattened cakes of dough to the internal wall surface of the hollow chamber 20.

5 If the air supply to the burning material 15 needs to be improved, the barbecue 12 may be modified to incorporate a vent 30 in the bottom wall of brazier 14, and this vent may be adjustable to vary the airflow therethrough. Such a vent  
10 30 may comprise first and second superimposed elements each provided with a like regular array of openings having between them non-apertured zones dimensioned similarly to the openings whereby, in one extreme position the openings of one element are in registry with the openings of the other element, and in another extreme position the openings  
15 of one element are occluded by the non-apertured zones of the other element. With such a vent formation, the vent can be selectively fully open, or fully closed, or partially open in a regulatable manner by varying the areas of the openings that are mutually superimposed.

20 Alternatively or additionally, and for the same purpose, the hollow structure 20 may be formed with a permanent opening, e.g. as at 32, in its side wall at or adjacent to its bottom. This opening may be either contiguous with or  
25 separate from the bottom opening 26 provided on the hollow structure 20.

It will be appreciated that, apart from use in the manner described above, the hollow structure 20 may be removed to  
30 permit the barbecue to be used alone in a conventional way with foodstuff items being placed directly on burning material 15 or upon an intervening grille (not shown) - the latter being removed when use with the hollow structure 20 is desired. It will thus be appreciated that the hollow  
35 structure 20 can be made and/or sold separately for use with an existing barbecue (e.g. a fixed brick-built

barbecue), or can be made and/or sold in conjunction with a barbecue as a combination (suitable for the multiple types of use described above by way of example). In the latter case the structure 20 may be configured such that its lower end can be fittingly received within the barbecue's brazier dish.

It will be appreciated that the hollow structure 20 may be of fired clay (reinforced or not) rather than non-fired, or of metal, or can be of some other suitable heat-resistant material. Furthermore the hollow structure 20 can alternatively, or additionally, be used in conjunction with a cooking heat source other than a conventional barbecue - one example being a gas burner.

It will also be appreciated that the hollow chamber may be provided with one or more external handles whereby the chamber may be lifted onto and/or removed from off the heat source.

Additionally or alternatively a multi-apertured lid may be provided for the open upper end of the hollow chamber, the apertures permitting the extension therethrough of the skewers 25. The apertures in the lid may, for example, be of triangular shape. As an alternative to this feature, the lid may extend fully over the area of the open upper end, the latter having slot-like apertures in its boundary through which the skewers can extend.

The illustrated apparatus 40 of Fig 2 comprises a barbecue 52 which comprises a bowl-shaped brazier dish 54 supported (e.g. approximately 40cm from the ground) by three equi-angulary spaced legs 53. The barbecue 52 can be used alone in a conventional manner or, in accord with this invention, with an accessory 60 comprising a hollow tapering structure removably attached to the rim of the bowl-shaped brazier

dish 54 by a coupling 59 so as to define, with dish 54, a chamber 62 of generally barrel-shaped form. The coupling 50 allows the accessory 60 to be removably placed above the pyrogenous material 55 (in brazier dish 54) after the  
5 latter has been ignited.

This hollow structure 60 is made of metal (e.g. enamelled with a heat-resistant vitreous finish) or of a combination of (such) metal and ceramic materials. The thickness of the  
10 chamber wall is of substantially uniform cross-section such that the wall's exterior surface facing the ambient environment, i.e. facing the outside air, is generally conformingly parallel to its interior surface.

15 The hollow structure 60 is open at each end and in this example, is approximately 49cm in height. The circular upper opening 64 of chamber 62 is defined by a tubular neck approximately 5cm high and 15cms in diameter, and the  
20 circular lower opening 66 of chamber 22 - which is larger than the upper opening 64 - is approximately 30cms in diameter, this being approximately the maximum diameter of the generally bowl-shaped brazier dish 54.

A removable grille or like multi-apertured, disc-like plate  
25 67 is provided at the join between brazier dish 54 and the chimney-like structure 60 - approximately 11cm above the top of the pyrogenous material 55 in brazier 54.

For use, charcoal or pyrogenous material 55 is placed in  
30 the brazier dish 54 of the barbecue 52, with the structure 60 and plate 67 removed, and this pyrogenous material is then ignited. The plate 67 and hollow structure 60 are then placed on top of the dish 54 so as to be located - and fixed by coupling 59 - above the burning material 55.  
35 Foodstuff items 68 that are to be cooked (e.g. meat, and/or fish) - which optionally may have been previously steeped

in a marinade - are pushed onto metal skewers 65. These skewers 65, which have heat-insulated handles 69 provided as a dog-leg or cranked extension of the elongate metal shaft of the skewers, are then inserted through the structure's top opening 24 to rest with their pointed lower ends on the charcoal or pyrogenous material 55 and to lie stationary, in a generally upright and inclined attitude, against the bounding rim of the opening 24 (with their handles 69 projecting to the outside). Optionally, the neck that defines the upper opening 64 may be provided with slot-like apertures 63 to retain the skewers in position.

The heat from the burning material 55 is conducted along the metal skewers 65 to cook the foodstuff items 68 internally, whilst the radiated and convected heat from the charcoal or other pyrogenous material 55 is imparted to the exterior of the foodstuff items 68 to cook them - and additionally to flavour them when the charcoal or other pyrogenous material 55 is of an aromatic nature. The metal shafts of the skewers 65 may optionally be hollow along at least the majority of their length to enhance heat transfer from the heat source to the foodstuff items 68 impaled thereon.

If the air supply to the burning material 55 needs to be improved, the barbecue 62 may be modified to incorporate a vent 51 in the bottom wall of brazier 54, and this vent may be adjustable to vary the airflow therethrough. Such a vent 51 may comprise first and second superimposed elements each provided with a like regular array of openings having between them non-apertured zones dimensioned similarly to the openings whereby, in one extreme position the openings of one element are in registry with the openings of the other element, and in another extreme position the openings of one element are occluded by the non-apertured zones of the other element. With such a vent formation, the vent can

be selectively fully open, or fully closed, or partially open in a regulatable manner by varying the areas of the openings that are mutually superimposed.

5 It will be appreciated that, apart from use in the manner described above, the hollow structure 60 may be removed to permit the barbecue to be used alone in a conventional way with foodstuff items being placed directly on burning material 55 or upon grille 67. It will thus be appreciated  
10 that the hollow structure 60 can be made and/or sold separately as an accessory, for use with an existing pre-sold barbecue, or can be made and/or sold in conjunction with a barbecue as a combination (suitable for the multiple types of use described above by way of example). In the  
15 latter case the structure 60 may be configured such that its lower end can be fittingly mounted on the barbecue's brazier dish.

It will be appreciated that the hollow structure 60 may be  
20 used in conjunction with a cooking heat source other than a conventional barbecue - one example being a gas burner.

It will also be appreciated that the hollow chamber 60 may be provided with one or more external handles 61 whereby  
25 the chamber may be lifted onto and/or removed from off the heat source.

Additionally or alternatively a lid 70 may be provided for the open upper end 64 of hollow chamber 62. The lid 70 fits  
30 into the neck 64 and extends fully over the area of the open upper end, the latter having slot-like apertures 63 in its boundary through which the skewers can extend.

In one alternative construction, the accessory 20 or 60 may  
35 be provided integral with, and non-separable from, the heat source 12 or 52 (shown in Figs 1 and 2 as a barbecue). Such

---

an arrangement is considered particularly feasible, say, where the heat source is provided by a gas burner.

5 In yet another alternative, the pyrogenous material (gas, charcoal, wood or the like) is ignited after the accessory 20 or 60 is in position.

10 Other modifications and embodiments of the invention, which will be readily apparent to those skilled in this art, are to be deemed within the ambit and scope of the invention defined in the following Claims, and the particular embodiment(s) hereinbefore described may be varied in construction and detail, e.g. by interchanging (where appropriate or desired) different features of each, without  
15 departing from the scope of the patent monopoly expressed by these Claims. Thus, for example, the skewers 65 of Figure 2 may have in-line handles such as 29 rather than the cranked handles 69 illustrated.

20

CLAIMS

1. A method of cooking foodstuff items impaled on skewers wherein the skewers are disposed in a generally upright attitude upon or above a heat source and are surrounded by a hollow chamber provided with an open bottom above the heat source and with an open top from which handles of the skewers extend.
2. A method according to Claim 1 wherein the lower ends of the skewers rest on the heat source.
3. Apparatus for use in a method according to Claim 1 or Claim 2, said apparatus comprising a hollow chamber having an open upper end and an open lower end, the lower opening being for disposition proximal to and above the heat source and having a cross-sectional area greater than that of the upper opening, and further comprising a plurality of skewers having a length commensurate with the height of the hollow chamber between its upper and lower ends.
4. Apparatus according to Claim 3, wherein the hollow chamber is provided as an accessory removably mountable on cooking apparatus providing the heat source.
5. Apparatus according to Claim 4 wherein said cooking apparatus is a barbecue.
6. Apparatus according to any one of Claims 3 to 5, wherein said heat source is provided by pyrogenous material.



7. Apparatus according to any one of Claims 3 to 6, wherein the hollow chamber is of metal.

5 8. Apparatus according to any one of Claims 3 to 6, wherein the hollow chamber is of clay or other suitable ceramic material.

9. Apparatus according to any one of Claims 3 to 8, wherein the cross-sectional area of the chamber increases as the chamber wall extends downwardly from the upper end.

10. Apparatus according to any one of Claims 3 to 9, wherein the cross-sectional area of the chamber is greater at an intermediate height location between the upper end and the lower end to provide the chamber with a bulbous form.

11. Apparatus according to any one of Claims 3 to 9, wherein the cross-sectional area of the chamber is greater at an intermediate height location between the chamber's upper end and the level of the heat source.

12. Apparatus according to any one of Claims 3 to 11, wherein the wall of the chamber is of substantially uniform cross-section such that the wall is of substantially constant thickness and its exterior surface - facing the ambient environment for contact with the outside air - conforms to its interior surface.

13. Apparatus according to any one of Claims 3 to 12, wherein the skewers are hollow along at least the majority of their length.



14. Apparatus according to any one of Claims 3 to 13, wherein the chamber has the following dimensions:

- height: in the range 35 to 46 cms, preferably 40 cms;
- maximum diameter: in the range 33 to 43 cms, preferably 38 cms;
- diameter of top aperture: in the range 18 to 28 cms, preferably 23 cms;
- diameter of bottom aperture: in the range 25 to 36 cms, preferably 30 cms;

and wherein the distance from the top aperture to the chamber's transverse plane containing its maximum diameter is approximately half, preferably slightly less than half, the chamber's height.



15. Apparatus according to any one of Claims 3 to 14, wherein the hollow chamber is provided with one or more external handles whereby the chamber may be lifted onto and/or removed from off the heat source.



16. Apparatus according to any one of Claims 3 to 15, wherein a lid is provided for the open upper end of the hollow chamber.

17. Apparatus according to Claim 16, wherein slot-like apertures are provided in the boundary of the upper opening to permit the extension therethrough of the skewers.

18. Apparatus according to Claim 16, wherein the lid is multi-apertured, the apertures permitting the extension therethrough of the skewers.

19. Apparatus according to Claim 18, wherein the apertures are of triangular shape.

20. Apparatus according to any one of Claims 3 to 19, wherein  
5 a vent is provided in the wall of the hollow chamber adjacent its open lower end.

21. Apparatus according to Claim 20, wherein the vent is adjustable.  
10

22. Apparatus according to Claim 21, wherein the adjustable vent is selectively either open or closed.



23. Apparatus according to Claim 21 or Claim 22, wherein the adjustable vent has one or more openings and is provided with regulating means to vary the effective size of said one or more openings.  
15



24. Apparatus according to any one of Claims 3 to 23, wherein the lower opening is for disposition upon the heat source.  
20

25. Apparatus according to any one of Claims 3 to 24, wherein the skewers have a length greater than the height of the hollow chamber.  
25

26. Apparatus for use in a method according to Claim 1 or Claim 2, said apparatus comprising a hollow chamber having an open upper end and an open lower end, the lower opening being for disposition in close proximity above a heat source, the cross-sectional area of the chamber being greater at an  
30

intermediate height location between the upper end and the lower end such as to provide the chamber with a bulbous form.

27. Apparatus according to Claim 26, wherein the lower opening is  
5 for disposition upon the heat source.

28. Cooking apparatus comprising a hollow chamber having an open  
upper end and an open lower end, the lower opening being removably  
mountable proximal to a heat source, the open upper end having a  
10 boundary surface defining the opening, said boundary surface in use  
providing a lateral rest for skewers inserted through the upper end to  
adopt a generally upright attitude with the tips of the skewers upon or  
above the heat source, and the cross-sectional area of the chamber  
being greater at an intermediate height location between the upper end  
15 and the lower end such as to provide the chamber with a bulbous form.

29. Apparatus according to Claim 28, wherein the lower opening is  
for disposition upon the heat source.

30. Cooking apparatus utilisable in two distinct modes and  
comprising:

a heat source including an enclosure presenting, in a first state,  
an open upper mouth and utilisable in that state for cooking foodstuffs  
in a first mode; and

25 a hollow chamber having an open upper end and an open lower  
end, said hollow chamber being configured to permit removable  
mounting of the open lower end upon the heat source, such as to place  
the chamber's lower end proximal to and above the heat source and  
such as to convert the apparatus to a second state for utilisation in  
cooking foodstuffs in an alternative second mode, the upper end having  
a boundary surface defining the opening, said boundary surface in use



providing a lateral rest for skewers inserted through the upper end to adopt a generally upright attitude with the tips of the skewers upon or above the heat source;

5 said hollow chamber being completely demountable and removable away from the heat source, to convert the apparatus to said first state;

and wherein the apparatus in the second state defines a bulbous form within which cooking in said second state can take place.

10 31. Cooking apparatus according to Claim 30, wherein the opening of said open upper end has a substantially smaller area than the area of the opening of said open lower end.

15 32. A method according to Claim 1, and substantially as herein described with reference to FIG. 1 of the drawings.



33. A method according to Claim 1, and substantially as herein described with reference to FIG. 2 of the drawings.

20 34. Cooking apparatus substantially as herein described with reference to and/or as illustrated in FIG. 1 of the drawings.



35. Cooking apparatus substantially as herein described with reference to and/or as illustrated in FIG. 2 of the drawings.

25

DATED this seventh day of March 2001.

NICHOLAS JOHN VAUGHAN

By his Patent Attorneys

FISHER ADAMS KELLY



FIG.1

