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[Continued on next page]

(54) Title: COOKING APPARATUS

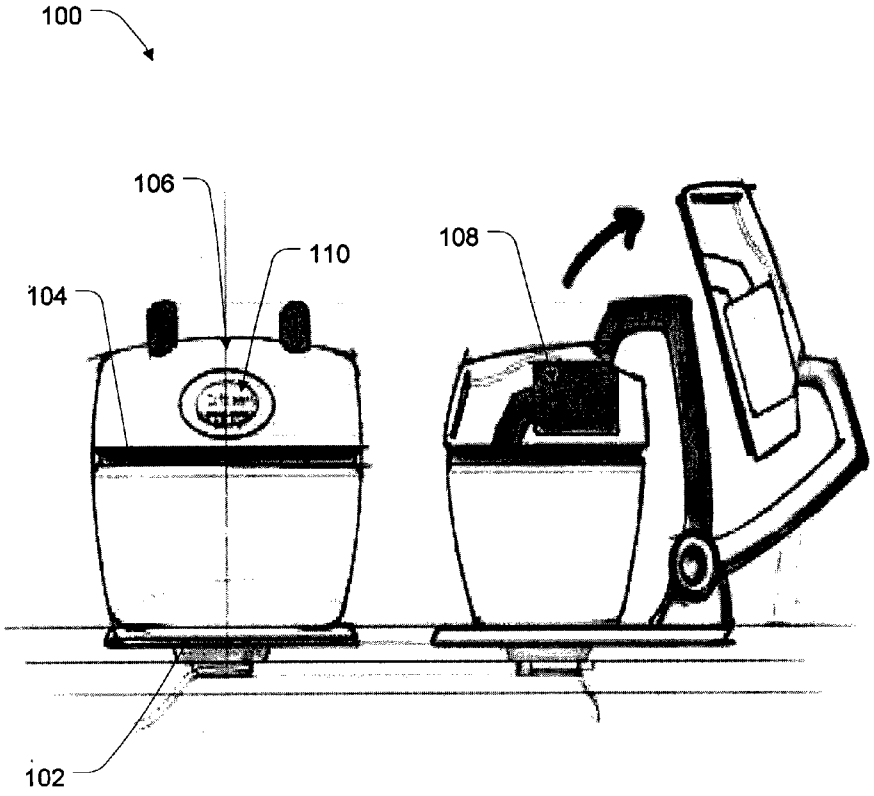

Fig. 1

[Continued on next page]

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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, ML, MR, NE, SN, TD, TG).

Published:

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

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

(57) Abstract: A cooking apparatus that combines traditional open flame cooking and modern microwave cooking is provided. The cooking apparatus includes a base portion (102) for open flame cooking and a top portion (106) for microwave cooking. The cooking apparatus not only allows traditional cooking steps that take place in open flame but also gives a user an option to switch over to the modern microwave cooking to complete the cooking.

COOKING APPARATUS

FIELD OF INVENTION

[0001] The present invention relates to an apparatus and method that for efficient cooking. More specifically, it relates to a cooking apparatus that uses dual source of energy and can efficiently switch over between the two modes based on the discretion of the user.

BACKGROUND OF THE INVENTION

[0002] Traditional cooking in Asian countries, and particularly India, has almost unarguably involved open flame cooking. Almost all cuisines and culinary practices developed in these countries have relied on the open flame method of cooking. This method of cooking has been in practice since time immemorial and with changing times and tastes, people have generally developed new cooking methods but centered on the same open flame cooking technique. For instance, preliminary heating, pre-frying, and roasting spices before cooking in open flame and oil is practiced. Similarly, to provide dry, crisp external surface for the ingredients in the dish, main ingredients are cooked in open flame before boiling or heating it with higher water content for complete cooking.

[0003] Even with the advent of modern cooking techniques, and specially the microwave technique, a substantial number of the cooking house-hold still prefer the open flame cooking as their sole cooking technique. Such modern cooking techniques has definitely made the modern day cooking fast, easy, cost & time efficient, but, in public minds, still is not able to match up with the goodness of a traditional open flame cooking.

[0004] These modern cooking techniques depend mostly on an electrical supply as the power source. With a fluctuating electrical supply in most parts of any developing nation, including India, the primary concern in a user's mind is a loss of time and other resources, if and when, the electrical supply gets off in the course of cooking. Indian households also find it difficult to do an

investment in money and space that separate cooking instruments dedicated to different styles of cooking might entail on them.

[0005] There is, therefore, a need in the art to provide for a cooking apparatus that combines the benefits of both open flame and other modern cooking techniques cooking into a single apparatus, giving user a much desired advantage of savoring his taste buds by dishes made from different styles of cooking as well as saving cost and space.

BRIEF DESCRIPTION OF THE DRAWINGS

[0006] The detailed description is set forth with reference to the accompanying figures. In the figures, the left-most digit(s) of a reference number identifies the figure in which the reference number first appears. The use of the same reference numbers in different figures indicates similar or identical items.

[0007] Fig. 1 illustrates an exemplary cooking apparatus according an embodiment of the present invention.

[0008] Fig. 2 illustrates another exemplary cooking apparatus according an embodiment of the present invention.

SUMMARY OF THE INVENTION

[0009] The present invention discloses an apparatus and method that combines traditional open flame cooking and modern cooking techniques (including, but not limited to, convection cooking, conduction cooking, microwave cooking etc). It not only allows traditional cooking steps that take place in open flame but also gives the user an option to switch over to other cooking technique to complete the cooking.

DETAILED DESCRIPTION OF THE INVENTION

[00010] In an embodiment of the invention, a cooking apparatus with a dual source of energy is provided. One of them is based on a traditional open flame and includes flame from gas, naphtha, kerosene like inflammable liquids,

wood, coal, electric heating coil, hot gases, steam, superheated steam and vaporized liquid or gases. The other source of energy is based on a modern cooking technique. In a preferred embodiment, the modern cooking technique is a microwave based cooking technique.

[00011] As shown in Fig. 1, a cooking apparatus 100 according an embodiment of the present invention provides for a dual mode of operation with distinct features for an open flame cooking and microwave cooking. In an embodiment, the cooking apparatus 100 includes a base portion 102, a temperature resistant gasket 104, and a top portion 106. The base portion 102 includes a cavity, made preferably from steel, which forms part of the cooking area for a traditional flame-based cooking. The base portion 102 can receive flame from a conventional flame source having any orientation ensuring flexibility as to the side from which the heat source is given. The cooking apparatus 100 of the present invention is compatible with working on all known sources of open flame energy sources, including but not limited to, convection, radiation, hot gas, steam, and induction. The top portion 106 of the cooking apparatus 100 can be configured to provide a requisite microwave radiation to carry out an alternate cooking method. In an embodiment, the top portion 106 can further comprise of a magnetron based unit 108 configured to generate microwave radiation essential for the functioning of the top portion 106 of the cooking apparatus 100. In a preferred embodiment, the top portion 106 can be covered by a lid that surrounds the top portion 106 and moves on a hinged joint to open or close the lid over the top portion 106. In yet another embodiment, the top portion 106 can be made from ceramic material.

[00012] The top portion 106 and the base portion 102 of the cooking apparatus 100 can be separated by a temperature resistant gasket 104, which not only acts as a physical separator between the two portions but also helps manage an effective temperature range in the respective portions of the cooking apparatus 100.

[00013] In an embodiment, the exterior of the top portion 106 of the cooking apparatus 100 can have a UI display 110 to indicate temperature or

time related to either of the top portion 106 or of the base portion 102 of the cooking apparatus 100.

[00014] In its working, the cooking apparatus 100 operates both on the traditional mode of flame-based cooking and the modern technique of cooking, preferably microwave. Typical operation may start with an open position of the top portion 106 of the cooking apparatus 100, and the entire cooking taking place on open flame. The open position of the top portion 106 can allow cooking, mixing, adding, and browning of the ingredients. After this first phase, the microwave lid can be closed down and the operator can switch on the microwave to quickly complete cooking.

[00015] In an embodiment, cooking can start with the top portion 106 of the cooking apparatus 100, intervened by open flame cooking at the base portion 102. In yet another embodiment, the cooking apparatus 100 can either be user controlled or can be automated for convenient and faster processing.

[00016] Fig. 2 illustrates another exemplary cooking apparatus according an embodiment of the present invention.

[00017] Fig. 2 shows a cooking apparatus 200 comprising a base portion 102 and a top portion 106 separated by a temperature resistant gasket 104. In an embodiment, the base portion 102 can be a hot plate or an insulation plate, which controls both the hot plate as well as the top portion 106, which functions as a microwave.

[00018] In another embodiment, the cooking apparatus 200 further comprises of a base container 204 for cooking the food. In an embodiment, the base container 204 has a food grade enamel coating from inside, which is safe and compatible with microwave and induction hot plate.

[00019] In another embodiment, the temperature resistant gasket 104 comprises a handle and gas insulation plate to grip and ensure that there is no inadvertent use. In yet another embodiment the temperature resistant gasket 104 is a transparent glass plate to ensure that the ingredients inside the base container are visible.

[00020] In an embodiment, the top portion 106 has a ceramic and/or metal body with insulation base plate to ensure that the base heat does not affect the container on top. The top portion 106 can also have a display 110 to show the power being consumed by microwave. The display can also be configured to display and configure the program mode.

[00021] In yet another embodiment, the cooking apparatus 200 comprises of vertical gas springs 202 to take the load of the lid. The cooking apparatus 200 further comprises stoppers 206 to ensure that the top portion 106 stops and can then turn around the hinge to open further. The stoppers can further allow the top to rotate around the vertical axis.

[00022] In another embodiment, the base portion 102 can further comprise of a display to show the power being consumed along with other desired parameters. In yet another embodiment of the invention, the top portion 106 and base portion 102 are detachable from each other and can be configured to work with each other when desired by the user.

[00023] In another embodiment, the base container can be multiple shapes and sizes and configurable with the top portion 106 as well as with the base portion 102. In yet another embodiment, the top portion 102 can simply be lifted from the base container by the user without the use of a hinge or vertical gas spring mechanism. The top portion 102 can, as stated above, also be configured to move up and down to allow conventional cooking and then brought down for use as a microwave.

CLAIMS

1. A cooking apparatus allowing multiple cooking modes comprising:

a base portion for one or more of convection cooking, radiation cooking, hot gas cooking, steam cooking, open flame cooking, and induction cooking; and

a top portion for one or more of convection cooking, conduction cooking, and microwave cooking.

2. The cooking apparatus as claimed in claim 1, wherein said cooking apparatus is configured to allow simultaneous and/or iterative use of said open flame cooking and said one or more of convection cooking, conduction cooking, and microwave cooking.
3. The cooking apparatus as claimed in claim 1, wherein said base portion comprises of a cavity, wherein said cavity forms part of cooking area for said open flame cooking.
4. The cooking apparatus as claimed in claim 1, wherein said top portion comprises of a magnetron based unit for generating microwave radiation for allowing said one or more of convection cooking, conduction cooking, and microwave cooking.
5. The cooking apparatus as claimed in claim 1, wherein said top portion and said base portion is separated by a temperature resistant gasket, wherein said temperature resistant gasket manages an effective temperature range in said of the top portion and said base portion.
6. The cooking apparatus as claimed in claim 1, wherein said cooking apparatus comprises of a base container on said base portion for holding and cooking food.
7. The cooking apparatus as claimed in claim 1, wherein said top portion comprises of a display to indicate temperature and/or time related to either of said top portion or of said base portion.
8. The cooking apparatus as claimed in claim 1, wherein said top portion can be covered by a lid that surrounds said top portion and moves on a

hinged joint to open and/or close said lid over said top portion.

9. The cooking apparatus as claimed in claim 1, wherein in an open position of said top portion, cooking takes place through said open flame cooking allowing cooking, mixing, adding, and browning of the ingredients and in a closed position, cooking takes place through said one or more of convection cooking, conduction cooking, and microwave cooking.
10. The cooking apparatus as claimed in claim 1, wherein said cooking apparatus can either be user controlled or can be automated for convenient and faster processing.

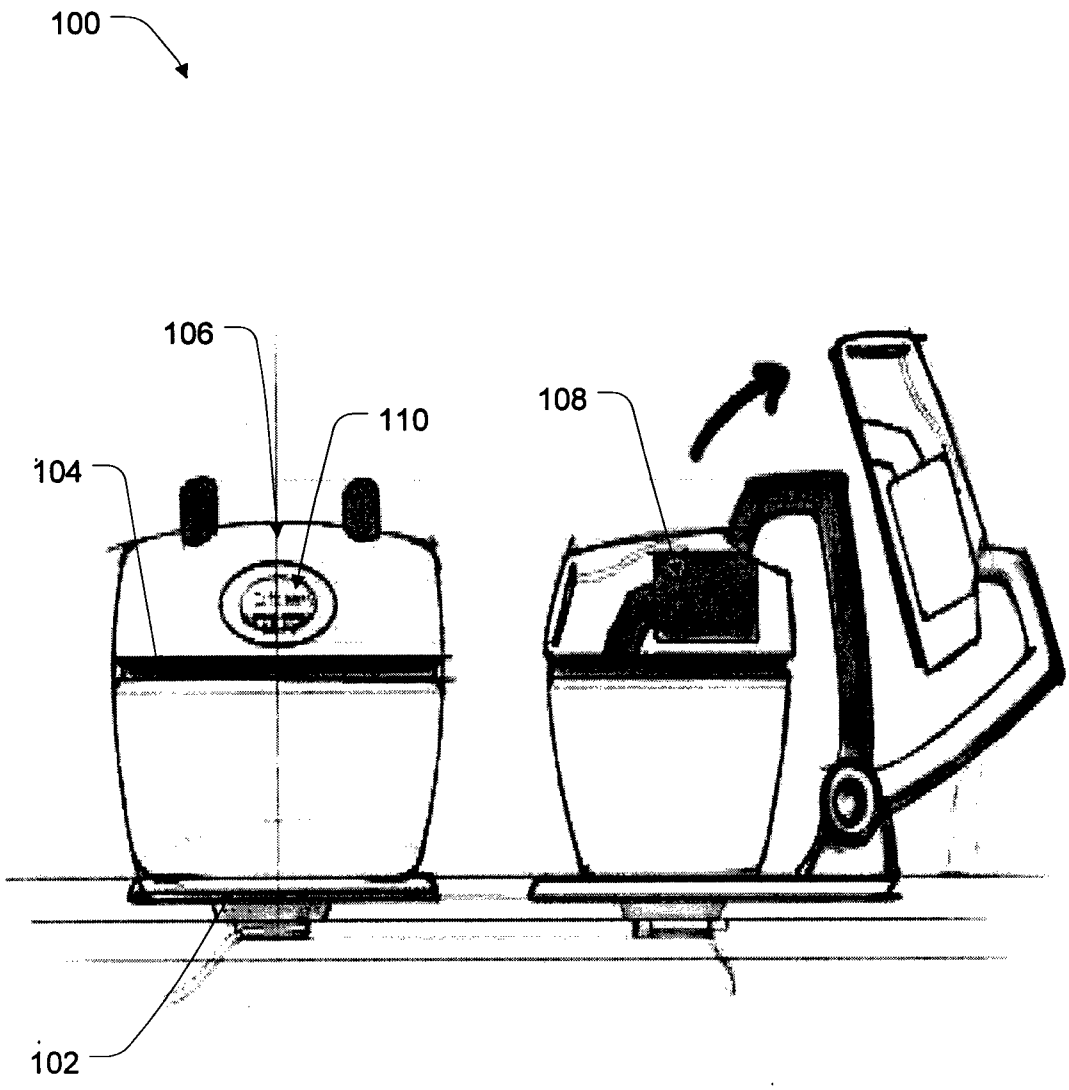

Fig. 1

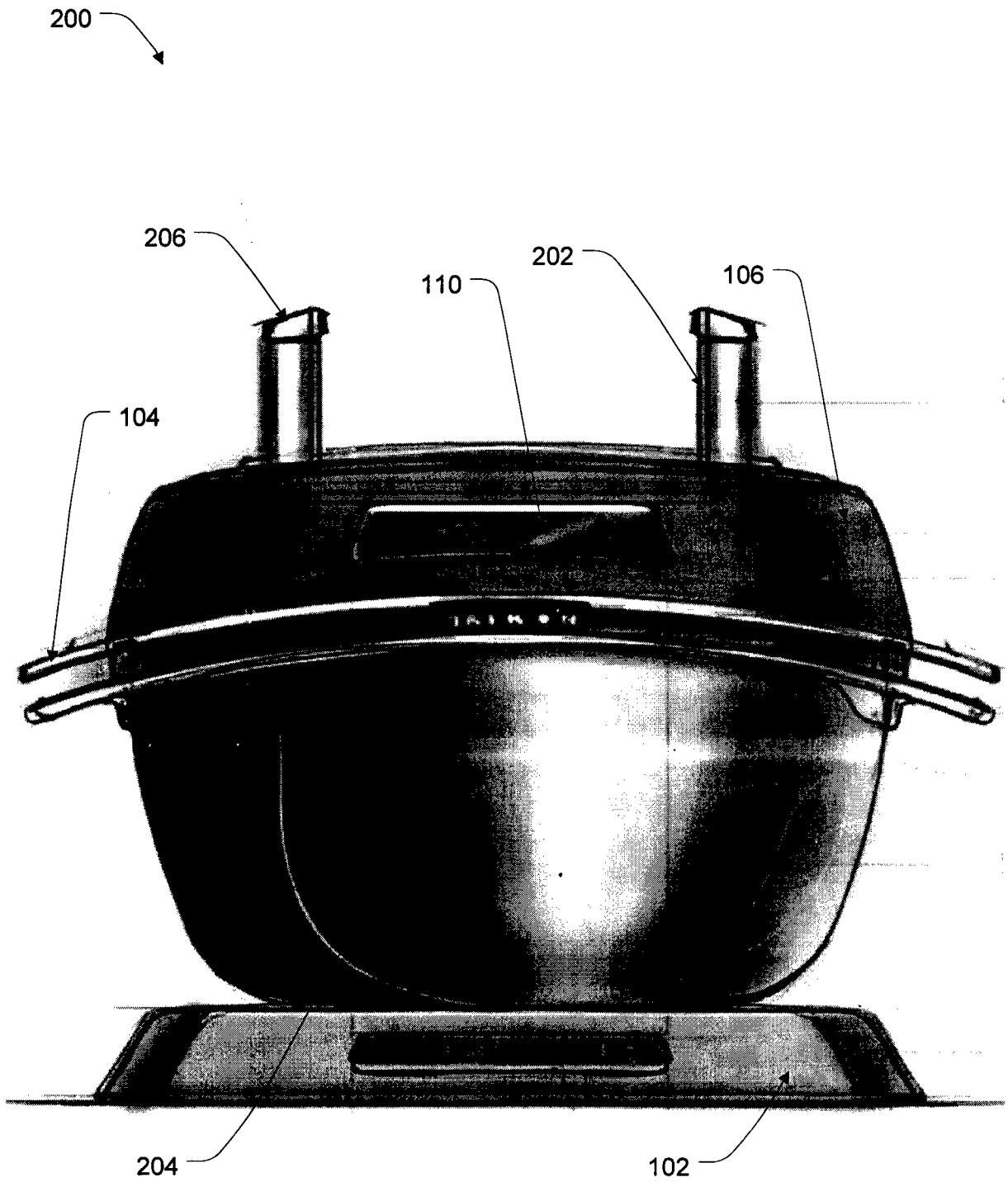

Fig. 2

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IN2011/000882

A. CLASSIFICATION OF SUBJECT MATTER

A47J27/00 (2006.01) i

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)

IPC: A47J27/-; F24C7/-; H05B6/-

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)

WPI, EPODOC, CNPAT, CNKI: cooking, apparatus or instrument? or utensil, mode? or style?, flame, microwave, convection, radiation, hot w gas, steam, induction

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US5558798A(TSAI, Daniel T.) 24 Sep.1996(24.09.1996) column 3 line 31 – column 5 line 14 , figure 9	1-4,6-8,10
A	CN2496359Y (ZIBO CITY TECHNICAL SCHOOL SHANDONG PROVINCE) 26 June 2002 (26.06.2002) the whole document	1-10
A	JP2002-223937A(MATSUSHITA ELECTRIC IND. CO., LTD.) 13 Aug.2002(13.08.2002) the whole document	1-10
A	JP6-217880A(SHARP K.K.) 09 Aug.1994(09.08.1994) the whole document	1-10
A	DE29708333U1(ATAG KITCHEN GROUP B.V.) 05 Feb.1998(05.02.1998) the whole document	1-10

☐ 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	Date of mailing of the international search report
10 Apr.2012(10.04.2012)	**31 May 2012 (31.05.2012)**
Name and mailing address of the ISA/CN The State Intellectual Property Office, the P.R.China 6 Xitucheng Rd., Jimen Bridge, Haidian District, Beijing, China 100088 Facsimile No. 86-10-62019451	Authorized officer JIN,Shanke Telephone No. (86-10)62412879

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
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Patent Documents referred in the Report	Publication Date	Patent Family	Publication Date
US5558798A	24.09.1996	NONE	
CN2496359Y	26.06.2002	NONE	
JP2002-223937A	13.08.2002	NONE	
JP6-217880A	09.08.1994	NONE	
DE29708333U1	05.02.1998	NONE	