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(71)(72) Applicant and Inventor: RITÄKT-EWENSSON, Anneli [SE/SE]; Lissvägen 12, S-791 74 Falun (SE).

(74) Agent: DR. LUDWIG BRANN PATENTBYRÅ AB; Postbox 7524, S-103 92 Stockholm (SE).

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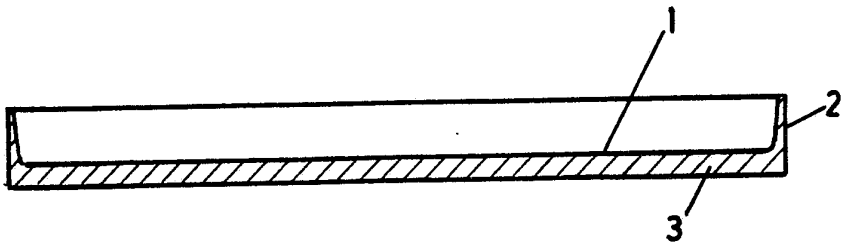

(57) Abstract

The enlarged frying-pan does due to its large food preparation surface permit the preparation of relatively large quantities of articles of food which is desirable especially in a household of several persons, and thereby also offers a considerable time saving in connection with the preparation. Moreover an undesired cooling of the articles of food is eliminated. The cooking vessel may also be used as a baking tin and thereby provides uniform baking results. These desires are met by the fact that the enlarge frying-pan is capable of assimilating the heat from for instance two electrical hot-plates at the same time, and hereby a food preparation surface is provided which is considerably larger than in conventional frying-pans.

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COOKING VESSEL ESPECIALLY AN ENLARGED FRYING-PAN

The present invention relates to vessels for the preparation of food and especially to an enlarged frying-pan and the like. Considerable effort has lately been devoted to the development and improvement of such cooking vessels. Among the factors that have been observed in that connection is the demand for the best possible heat distribution throughout for instance the whole food preparation surface of a frying-pan and the desire to make this surface as suitable as possible with regard to the frying. Mechanical strength and resistance to chemical attack have also been pronounced desires.

Thus, the cooking vessel should be manufactured from a material having high thermal conductivity. Examples of such materials are aluminium or aluminium alloys which also have the advantage of low weight, whereby the cooking vessel becomes easy to handle.

Aluminium and its alloys also offer good possibilities of manufacturing through die casting.

However, these advantageous characteristics of aluminium are counteracted by the fact that the surface of an aluminium vessel is usually very compact due to the structure of the material, and thus it does not have the ability to absorb the fats and oils that are desirable in connection with frying. Due to this fact the surface of an article of food easily burns at the aluminium surface. In order to overcome this disadvantage the aluminium surface is coated with a layer of porous cast iron. In order to coat the aluminium surface with such a layer flash spraying, arc spraying or plasma spraying may be used after the surface has been cleaned by sand blasting. This technique is now well-known and is suitable for the

purpose in question. If desired, it is also possible to apply a teflon® coating thereafter.

The food preparation surface of a cast iron pan has a somewhat porous structure which in accordance with all experience provides an advantageous condition for frying and absorbs the oils that are desirable in connection with frying. Cast iron moreover has good resistance to the chemical attack that may occur in connection with food preparation.

One disadvantage that on the contrary remains and that often causes problems (irritation) in connection with the preparation of articles of food, is the fact that frying-pans of the embodiments known today only offer a relatively small food preparation surface. The problem arising in that connection is the necessity to keep the prepared articles warm during the time when the remaining articles are prepared. During such a preparation many articles of food lose some of their taste and consistency and this is most unsatisfactory. As regards nourishment it is also known that the nutritional value of articles of food is deteriorated when the articles are kept warm.

The object of the invention is to provide a cooking vessel, for instance an enlarged frying-pan, which by absorbing heat from one or several heat spots offers a comparatively large food preparation surface. By combining the good heat conducting and heat distributing characteristics of aluminium with the especially good frying characteristics of a frying-pan having a frying surface of porous cast iron and which by having a sufficient bottom thickness distributes the heat, a satisfactory frying temperature is obtained throughout the entire effective food preparation surface. In cases where further heat distribution is required, the enlarged

frying-pan may also be provided with inserts of material having relatively low heat distribution characteristics inserted in the bottom of the pan, of may be provided with air spaces in the bottom thereof.

In one embodiment the cooking vessel - for instance an enlarged or double frying-pan - may be of a rectangular shape and may be intended for use over two electrical hot-plates therby permitting withdrawal of unpleasant smell of cooking by means of a kitchen ventilating fan and moreover offering a relatively large food preparation surface which in turn saves considerable time in connection with the preparation of articles of food. The cooking vessel is also well suited for serving the prepared articles of food from since the vessel has a comparatively large thickness of material which leads to the fact that the vessel has a heat-storing effect which in turn eliminates the undesirable cooling of the prepared articles of food.

The range of application for a cooking vessel of this kind is not restricted to the use thereof over the heat source. Having a rectangular shape the vessel may also favourably be used in an oven, thereby providing uniform baking results, which is important since it has been established that the heat distribution in most ovens is unsufficient. Moreover an attractive and easily accessible repository is provided for the cooking vessel. In this embodiment tha handles are manufactured from a heat-resistent material.

Fig. 1 illustrates an enlarged frying-pan according to the section A-A,

Fig. 2 illustrates a top view of an enlarged frying-pan,

Fig. 3 illustrates a section A-A of an enlarged frying-pan having hollow spaces, and

Fig. 4 illustrates a section A-A of an enlarged frying-pan having hollow spaces for accomodating inserts.

In Fig. 1 the reference numeral 1 indicates a surface layer applied on the inner side of the enlarged frying-pan.

In Fig. 1 the reference numeral 2 indicates the side walls of the enlarged frying-pan.

In Fig. 1 the reference numeral 3 indicates the bottom of the enlarged frying-pan.

In Fig. 3 the reference numeral 4 indicates the hollow spaces in the bottom of the enlarged frying-pan.

In Fig. 4 the reference numeral 5 indicates hollow spaces with inserts of a material other than that of the bottom of the enlarged frying-pan.

CLAIMS

1. Cooking vessel, especially an enlarged frying-pan or the like, having a contact heat conducting surface for heat transmission to an article in contact with the surface, said cooking vessel comprising a supporting portion of heat conducting material, for instance aluminium or aluminium alloys, which fully or partly encloses the article and which at its exterior absorbs heat from one or several heat spots, for instance two electrical hot-plates, characterized in that the cooking vessel is manufactured with the supporting portion thereof having such a thickness of material that the heat supplied from one or several hot-plates is uniformly distributed throughout the entire food preparation surface, in that when using for instance the enlarged frying-pan a considerable time saving is achieved since the food preparation time is considerably shorter, and an undesired cooling of the prepared articles of food is eliminated.

2. Cooking vessel according to Claim 1, characterized by the cooking vessel having for instance a rectangular shape extremely well suited for use in an oven, thereby bringing about more uniform baking results.

3. Cooking vessel according to Claims 1 and 2, characterized in that in the bottom of the supporting portion hollow spaces (4) are provided for carrying off the heat from the heat source and distributing it uniformly throughout the food preparation surface.

4. Cooking vessel according to Claims 1 to 3, characterized by an insert (5) accomodated in the bottom of the supporting portion and of a material having relatively low thermal conductivity and intended to carry off the

heat from one or several heat spots and distributing it uniformly throughout the food preparation surface.

5. Cooking vessel according to Claims 1 to 4, characterized in that the bottom of the supporting portion is grooved or patterned.

6. Cooking vessel according to Claims 1 to 5, characterized in that the food preparation surface is grooved or patterned.

CLAIMS

1. Cooking vessel, especially an enlarged frying-pan having a contact heat conducting surface for heat transmission to an article in contact with the surface, said cooking vessel comprising a supporting portion of heat conducting material, for instance aluminium, which fully or partly encloses the article and which at its exterior absorbs and distributes the heat from at least two separate heat spots, for instance electrical hot-plates, and having an internal coating of for instance cast iron (1), characterized by a material (5) having relatively low thermal conductivity inserted in the bottom of the supporting portion, said inserts being positioned with the central point thereof centred in relation to the central point of the heat sources.

2. Cooking vessel according to Claim 1, characterized in that the bottom of the cooking vessel is uniform with a cross-section area calculated in relation to the distance between the heat sources such that the heat from two separate heat sources is distributed so uniformly that the cooking vessel does not buckle in use, and such that good heat distribution is obtained also for the surfaces where the cooking vessel is not in immediate contact with the heat sources.

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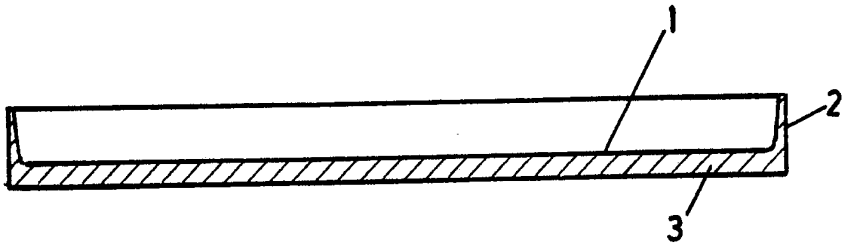

FIG.1

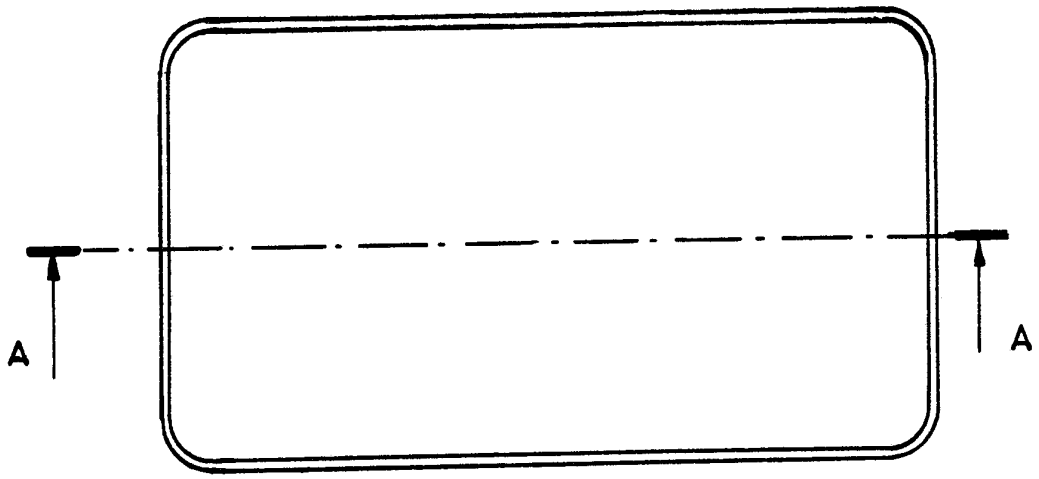

FIG.2

INTERNATIONAL SEARCH REPORT

International Application No PCT/SE84/00326

I CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all) [3]

According to International Patent Classification (IPC) or to both National Classification and IPC 3

A 47 J 36/02

II. FIELDS SEARCHED

Minimum Documentation Searched [4]

Classification System	Classification Symbols
IPC 3	A 47 J 36/02
Nat Cl	34e 1/02
US Cl	99:372

Documentation Searched other than Minimum Documentation to the Extent that such Documents are included in the Fields Searched [5]

SE, NO, DK, FI classes as above

III. DOCUMENTS CONSIDERED TO BE RELEVANT [14]

Category *	Citation of Document, [16] with indication, where appropriate, of the relevant passages [17]	Relevant to Claim No. [18]
X	SE, B, 407 737 (M A HOLMQVIST) 23 April 1979	1-2
X	SE, B, 344 274 (PFIZER INC) 10 April 1972	1-2
X	DE, A1, 2 900 671 (AMC INT ALFA METALCRAFT CORP AG) 2 August 1979 & BE, 873718 GB, 2014037 FR, 2415444 JP, 54154673 CA, 1108882 US, 4350259 CH, 634215 AT, 372268 CH, 641341	1-5
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IV. CERTIFICATION

Date of the Actual Completion of the International Search [2]	Date of Mailing of this International Search Report [2]
1984-11-27	1984 -12- 03
International Searching Authority [1]	**Signature of Authorized Officer [20]**
Swedish Patent Office	Agneta Ånggård

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III. DOCUMENTS CONSIDERED TO BE RELEVANT (CONTINUED FROM THE SECOND SHEET)

Category *	Citation of Document, [16] with indication, where appropriate, of the relevant passages [17]	Relevant to Claim No [18]
X	US, A, 4 386 557 (PAUL P MERAJ) 7 June 1983	6