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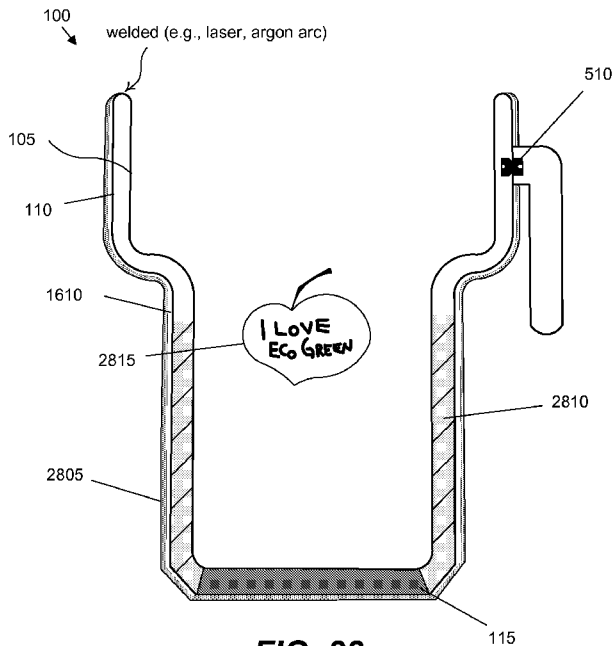


FIG. 28

(57) Abstract: Some embodiments provide a microwaveable vessel that can quickly and evenly heat or cook different types of food. In some embodiments, the vessel includes a metallic body adapted to hold food or drinks. The outer portion of the body is coated with a layer of heat-generating glaze. In some embodiments, the vessel also includes a heat-resistant outer cover that covers the heat-generation layer. The vessel of some embodiments has a multi-layered structure with inner and outer shells that are joined together to form a cavity between the shells.



INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 15/20285

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - H05B 6/64 (2015.01)

CPC - H05B 6/6494

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)
CPC - H05B 6/6494; IPC(8) - H05B 6/64 (2015.01); USPC - 219/730Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
CPC - H05B 6/6408, B65D 2581/3482, B65D 81/3453, B65D 2581/3481; USPC - 219/439, 219/538, 220/592.28 (keyword limited; terms below)Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
PatBase; Google (Web, Patents, Scholar) Search Terms Used: Microwavable container mug pot pan baking tray Inner outer shell double shell wall Cavity air space Exothermic plate heat retention medium gel pad particles silicone oil air aluminum oxide rubber ferrite Thermal insulator syndiotactic polystyrene polyphenylene sulfide Thermo-chromic enam

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X -- Y	US 2014/0138375 A1 (Park), 22 May 2014 (22.05.2014), entire document, especially Fig. 1-3; para [0007], [0014], [0034]-[0040], [0047]-[0061]	1-2, 11 and 15 ----- 3-10 and 12-14
Y	US 5,520,103 A (Zielinski et al.), 28 May 1996 (28.05.1996), entire document, especially Fig. 2; col 3, ln 66 to col 4, ln 17	3
Y	US 2005/0067403 A1 (Yagnik et al.), 31 March 2005 (31.03.2005), entire document, especially para [0026]-[0027]	4
Y	US 2004/0118838 A1 (Park), 24 June 2004 (24.06.2004), entire document, especially Fig. 1-2; para [0030]-[0032]	5 and 14
Y	US 5,357,014 A (Uchida et al.), 18 October 1994 (18.10.1994), entire document, especially col 2, ln 18-25; col 3, ln 36-59; col 5, ln 9-18; col 7, ln 64 to col 8, ln 5	6-8
Y	US 2012/0024845 A1 (Lee et al.), 02 February 2012 (02.02.2012), entire document, especially Fig. 6A-6E and 9; para [0016]-[0018], [0054]-[0059]	9
Y	US 4,156,365 A (Heinmets et al.), 29 May 1979 (29.05.1979), entire document, especially Fig. 1; col 2, ln 15 to col 3, ln 9	10
Y	US 2007/0029316 A1 (Fernandez), 08 February 2007 (08.02.2007), entire document, especially Fig. 22; para [0068]-[0069]	12-13
A	US 2014/0174428 A1 (Farone et al.), 26 June 2014 (26.06.2014), entire document	1-15

 Further documents are listed in the continuation of Box C.

* 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

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05 January 2016

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INTERNATIONAL SEARCH REPORT

International application No.

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2014/0238250 A1 (Gephart et al.), 28 August 2014 (28.08.2014), entire document	1-15
A, P, &	US 2015/0259124 A1 (Park), 17 September 2015 (17.09.2015), entire document	1-15

INTERNATIONAL SEARCH REPORT

International application No.
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Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:
This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I: Claims 1-15, directed to a microwaveable vessel having an exothermic plate between inner and outer shells and a thermal insulator on the outer surface of the outer shell.

Group II: Claim 16-20, directed to a microwaveable vessel having an exothermic glaze on the outer surface of the outer shell.

The inventions listed as Groups I-II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

-*-Continued in Supplemental Box-*-

1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.
3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
1-15

Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.

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-*- Box III - Observations where Unity of Invention is Lacking -*-

SPECIAL TECHNICAL FEATURES

The invention of Group I includes the special technical feature of an exothermic plate disposed between the inner and outer shells, and exposed along the bottom side of the outer shell to absorb microwaves and convert the microwaves to heat; wherein at least a portion of the outer surface of the outer shell is covered with a thermal insulator to insulate the vessel when heated, not required by the claims of Group II.

The invention of Group II includes the special technical feature of wherein a portion of the outer surface of the outer shell is covered by an exothermic glaze to absorb microwaves and convert the microwaves to heat, not required by the claims of Group I.

COMMON TECHNICAL FEATURES

Groups I-II share the common technical features of a container having inner and outer shells that are joined to form a cavity between the inner and outer shells; and a heat retention medium in the cavity between the inner and outer shells to absorb and retain the heat for a period of time. However, this shared technical feature does not represent a contribution over prior art as being anticipated by US 2014/0138375 A1 (Park), which discloses a travel mug for a microwave oven (Fig. 1) having inner and outer shells (double layered structure with inner shell and outer shell, para [0014]) that are joined to form a cavity between the inner and outer shells (cavity provided therebetween, para [0014]); and a heat retention medium in the cavity between the inner and outer shells to absorb and retain the heat for a period of time (heat transfer medium such as silicon oil filling the cavity, para [0014] and [0019]).

As the common technical features were known in the art at the time of the invention, these cannot be considered special technical feature that would otherwise unify the groups.

Therefore, Groups I-II lack unity under PCT Rule 13 because they do not share a same or corresponding special technical feature.