

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference P226086	FOR FURTHER ACTION		See Form PCT/IPEA/416
International application No. PCT/IB2022/061288	International filing date (day/month/year) 22.11.2022	Priority date (day/month/year) 22.11.2021	
International Patent Classification (IPC) or national classification and IPC INV. A47J37/12			
Applicant Heat And Control, Inc.			
1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36. 2. This REPORT consists of a total of <u>9</u> sheets, including this cover sheet. 3. This report is also accompanied by ANNEXES, comprising: a. ☒ a total of <u>9</u> sheets, as follows: ☒ sheets of the description, claims and/or drawings which have been amended and/or sheets containing rectifications authorized by this Authority, unless those sheets were superseded or cancelled, and any accompanying letters (see Rules 46.5, 66.8, 70.16, 91.2, and Section 607 of the Administrative Instructions). ☐ sheets containing rectifications, where the decision was made by this Authority not to take them into account because they were not authorized by or notified to this Authority at the time when this Authority began to draw up this report, and any accompanying letters (Rules 66.4bis, 70.2(e), 70.16 and 91.2). ☐ superseded sheets and any accompanying letters, where this Authority either considers that the superseding sheets contain an amendment that goes beyond the disclosure in the international application as filed, or the superseding sheets were not accompanied by a letter indicating the basis for the amendments in the application as filed, as indicated in item 4 of Box No. I and the Supplemental Box (see Rule 70.16(b)). b. ☐ a separate electronic file containing a sequence listing (<i>sent to the International Bureau only</i>)			
4. This report contains indications relating to the following items: ☒ Box No. I Basis of the report ☐ Box No. II Priority ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability ☐ Box No. IV Lack of unity of invention ☒ Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement ☐ Box No. VI Certain documents cited ☒ Box No. VII Certain defects in the international application ☒ Box No. VIII Certain observations on the international application			
Date of submission of the demand 22.09.2023		Date of completion of this report 05.02.2024	
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Fax: +49 89 2399 - 4465		Authorized officer Ulubay, Can Telephone No. +49 89 2399-7215	



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Box No. I Basis of the report

1. With regard to the **language**, this report is based on
- ☒ the international application in the language in which it was filed
 - ☐ a translation of the international application into , which is the language of a translation furnished for the purposes of:
 - ☐ international search (under Rules 12.3(a) and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4(a))
 - ☐ international preliminary examination (under Rules 55.2(a) and/or 55.3(a) and (b))
2. With regard to the **elements*** of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

Description, Pages

1-18 as originally filed

Claims, Numbers

1-17 as originally filed

Drawings, Sheets

1/6-6/6 as originally filed

- ☐ a sequence listing - see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
4. ☒ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since either they are considered to go beyond the disclosure as filed, or they were not accompanied by a letter indicating the basis for the amendments in the application as filed, as indicated in the Supplemental Box (Rules 70.2(c) and (c-bis)):
- ☐ the description, pages
 - ☒ the claims, Nos. 1-16
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
5. ☐ This report has been established:
- ☐ taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rules 66.1(d-bis) and 70.2(e)).
 - ☐ without taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91(Rules 66.4bis and 70.2(e)).

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6. ☒ With regard to top-up searches (Rules 66.1 *ter* and 70.2(f)):
- ☒ A top-up search was carried out by this Authority on 18.10.2023 (all discovered documents are listed in the Supplemental Box Relating to Top-up Search).
 - ☐ Additional relevant documents have been discovered during the top-up search.
 - ☐ No top-up search was carried out by this Authority because it would serve no useful purpose.
7. ☐ Supplementary international search report(s) from Authority(ies) has/have been received and taken into account in establishing this report (Rule 45bis.8(b) and (c)).

* If item 4 applies, some or all of those sheets may be marked "superseded".

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	<u>4-7, 9, 10, 13-17</u>
	No: Claims	<u>1-3, 8, 11, 12</u>
Inventive step (IS)	Yes: Claims	<u>4-7, 13-17</u>
	No: Claims	<u>1-3, 8-12</u>
Industrial applicability (IA)	Yes: Claims	<u>1-17</u>
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Re Item I

Basis of the report

1 Amendments

- 1.1 The amendments filed with the letter dated 22-09-2023 introduce subject-matter which extends beyond the content of the application as filed, contrary to Article 34(2)(b) PCT. The amendments concerned are the following:
- 1.2 **Claim 1:** The applicant failed to provide a basis for the amendments made to the claims as originally filed. In particular, no basis could be found for directly and unambiguously disclosing feature "[...] so that the periphery of the food item is inclined away from the conveyor [...]". Consequently, the subject-matter of claim 1 is considered as introducing subject-matter extending beyond the content of the application as filed.
- It shall be noted claim 1 including the proposed amendments would still lack novelty in view of D1, the argumentation provided under Item V, 3.1.2, applies mutatis mutandis.
- 1.3 **Claims 2-4, 11, 12:** The argumentation stated above applies as well to claims claims 2-4, 11 and 12 which also comprise said feature.
- 1.4 In consequence, the claim set as originally filed has been considered for assessing novelty and inventiveness (see Item V).

2 Clarity of amended claims

- 2.1 The application does not meet the requirements of Article 6 PCT, because amended claims 1-4, 11 and 12 and are still not sufficiently clear.
- 2.2 **Claim 1:** Claim 1 does not meet the requirements of Article 6 PCT in that the matter for which protection is sought is not clearly defined. The term "[...] each of the plurality of receptacles has a side surface for supporting the respective food item so that the periphery of the food item is inclined away from the conveyor at an angle relative to the direction of travel [...]" requires a second entity "food item", which does not form part of the claimed subject-matter, to define its scope. However, no information with regards to the food item is mentioned in the claims while the description states a wide range of food items and shapes (see [0025], [0026]). For a wide range of food items - e.g. the noodles of D1 or other soft items, round meat balls/falafel or irregularly shaped

food items - it is not clear to the skilled person how the claimed functional feature can be achieved. Consequently, the presence of any suitable side surface of the frying receptacles, like the side walls of the frying chambers of D1 as depicted in fig. 3, is considered as being sufficient for fulfilling said feature.

- 2.3 **Claims 2-4, 11, 12:** The argumentation stated above applies as well to claims 2-4, 11 and 12 which also comprise said feature.

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

- 1 Due to the unallowable amendments depicted under Item I, 1, the following assessment is based on the claims as originally filed.

2 Prior Art

Reference is made to the following documents:

- | | |
|----|--|
| D1 | JP H11 290219 A (FUJI MFG CO LTD) 26 October 1999 (1999-10-26) |
| D2 | JP H04 190755 A (MISUZU TOUFU KK) 9 July 1992 (1992-07-09) |
| D3 | JP H09 206223 A (YANAGYA KK) 12 August 1997 (1997-08-12) |

3 Novelty and Inventive Step

3.1 Novelty

- 3.1.1 The present application does not meet the criteria of Article 33(2) PCT, because the subject-matter of claims 1-3, 8, 11 and 12 is not new.
- 3.1.2 **Claim 1:** D1 discloses "an apparatus for removing excess oil from a plurality of food items" (fig. 1-3 (2), (11)-(13); claim 1) "each having a side periphery" (device suitable for use with food items having a side periphery), "comprising:
a plurality of sequential air permeable receptacles" (fig. 2, 3 (2); claim 1; § [0011]) "of a conveyor" (fig. 2 (4); § [0011]) "for respectively receiving the

plurality of food items, the conveyor being advanceable in a direction of travel" (fig. 2, 3 (arrows); § [0011]) "and each of the plurality of receptacles being configured to receive the respective food item so that the periphery of the food item is inclined upwardly at an angle relative to the direction of travel" (see Item VIII, 1.2: fig. 3 clearly shows the conveyor receptacles having partition walls, which are considered as side surfaces in the sense of this application. Although in the disclosure of D1 said receptacles are filled with noodles, said side surfaces would be suitable to hold elongated and firm food items inclined); "and a blower" (fig. 1, 2 (11); § [0015]) "having a nozzle for providing a stream of hot air" (fig. 1-3 (13)); "the nozzle being positioned above the conveyor for directing the stream of hot air downwardly towards the side periphery of the plurality of food items traveling under the nozzle to remove excess oil from the plurality of food items" (fig. 2, 3; § [0015]).

- 3.1.3 **Claims 2, 3:** D1 also discloses the containers having side surfaces which are suitable for supporting the respective food item on its periphery: depending on the dimensions and size of the food item, this may be in a right angle.
- 3.1.4 **Claim 8:** Furthermore, D1 discloses that "the conveyor has a width and the nozzle has a width approximating the width of the conveyor" (see fig. 3).
- 3.1.5 **Claim 11:** D1 discloses as well that "each of the plurality of receptacles has a space for receiving a food item, the space having a width, length and depth, the width and length of the space each being substantially larger than the depth of the space for receiving a food item that is relatively flat" (fig. 3, also see item VIII, 1.5).
- 3.1.6 **Claim 12:** The arguments provided for the apparatus under 3.1.2 apply, mutatis mutandis, also for the method of using said device according to claim 12.

3.2 Inventive Step

- 3.2.1 The arguments provided by the applicant with regards to relevance of D2 for assessing inventive step in combination with any of D1 or D3 can be followed. Indeed, the air injection needle (31) of the device of D2 has a different purpose than the blowers of D1 and D3 and thus the purpose of the device appears to be so different that the skilled person would not consider applying the teaching of D2 to a device according to D1 or D3.
- 3.2.2 Still, the present application does not meet the criteria of Article 33(3) PCT, because the subject-matter of claims 9 and 10 does not involve an inventive step.

- 3.2.3 **Claim 9:** In claim 9 a slight constructional change in the device of claim 1 is defined which comes within the scope of the customary practice followed by persons skilled in the art, especially as the advantages thus achieved can readily be foreseen. The receptacle (2) of D1 may be modified to accommodate larger food items, e.g. by removing the partition walls, then the nozzle would have the same lateral dimension as the receptacles. Consequently, the subject-matter of claim 9 lacks an inventive step.
- 3.2.4 **Claim 10:** Notwithstanding the lack of clarity depicted under Item VIII, 1.4, the subject-matter of claim 10 appears to be not inventive in view of D1 are expected to not to impose compressive forces onto the food items such that the food items are damaged.
- 3.3 **Claims 4-7, 13-17:** The combination of the features of dependent claims 4-7 and 13-17 is neither known from, nor rendered obvious by, the available prior art. The reasons are as follows:
- 3.3.1 Claims 4, 5: None of the cited documents suggests the combination of The apparatus of food receptacles being inclined upwardly at an angle relative to the direction of travel in combination with a fryer including the functionality of removing excess oil by fans of an air blower.
- 3.3.2 Claims 6, 7: Even though D3 discloses "an inlet duct disposed below the conveyor for receiving oil rich air from the plurality of food items" (fig. 1 (60)) "and an oil removal means in communication with the inlet duct for removing oil from the oil rich air and providing cleaned air" (fig. 1:oil pan and indirect suction path serve for removal of oil from the air), the arrangement of D3 would not combine with the device of D1 in an obvious way, as D2 has solid receptacle walls and therefore a blower system being completely arranged above the conveyor and as such structurally more simple. The skilled person would have no incentive to install a more complex system according to D3 in said device.
- 3.3.3 Claims 13-17: No combination of the cited documents and/or common general knowledge would lead the skilled person to the methods as claimed in dependent method claims 13-17.

Re Item VII

Certain defects in the international application

4 Formal Objections

- 4.1 The features of claims 1-17 are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).
- 4.2 Independent claims 1 and 12 are not in the two-part form in accordance with Rule 6.3(b) PCT, which in the present case would be appropriate, with those features known in combination from the prior art D1 / D3 being placed in the preamble (Rule 6.3(b)(i) PCT) and the remaining features being included in the characterising part (Rule 6.3(b)(ii) PCT).

Re Item VIII

Certain observations on the international application

1 Clarity Objections

- 1.1 The application does not meet the requirements of Article 6 PCT, because claims 1-3, 10-12 and 16 are not clear.
- 1.2 **Claims 1, 12:** Claim 1 does not meet the requirements of Article 6 PCT in that the matter for which protection is sought is not clearly defined. The functional statement "receptacles being configured to receive the respective food item so that the periphery of the food item is inclined upwardly at an angle relative to the direction of travel" does not enable the skilled person to determine which technical features are necessary to perform the stated function as it significantly depends on the size and shape of the food item. Consequently, the presence of any suitable side surface of the frying receptacles, like the side walls of the frying chambers of D1 as depicted in fig. 3, is considered as being sufficient for fulfilling said feature.
Lastly, the term "hot air" is vague and unclear and leaves the reader in doubt as to the meaning of the technical feature to which it refers.
The same argumentation applies to method claim 12.
- 1.3 **Claims 2, 3:** The argumentation provided under 1.2 also applies to claims 2 and 3 as no additional structural features are stated for achieving the functional feature of claim 1 for various kind of food items.

- 1.4 **Claim 10:** Claim 10 does not meet the requirements of Article 6 PCT because the matter for which protection is sought is not clearly defined. The claim attempts to define the subject-matter in terms of the result to be achieved, which merely amounts to a statement of the underlying problem, without providing the technical features necessary for achieving this result. The term "each of the plurality of receptacles is configured to respectively receive the plurality of food items free of compressive forces so as to not damage the plurality of food items" does not allow the skilled person to derive the required structural features. In particular, it appears impossible to locate a food item in a receptacle fully free of compressive forces. At least gravity will lead to a certain amount of compressive forces at the contact areas between receptacle and food item.
- 1.5 **Claims 11, 16:** The term "substantially larger" used in claim 11 and the term "relatively flat" used in claims 11 and 16 are vague and unclear and leave the reader in doubt as to the meaning of the technical feature to which they refer, thereby rendering the definition of the subject-matter of said claims unclear, Article 6 PCT.
- 1.6 The technical features of the independent claims may not be presented as optional in the description as this may lead to ambiguities regarding the scope of protection. Where they precede a feature of an independent claim, terms such as "for example", "may", "can", "exemplary", "optionally", "preferably" and the like should therefore not be used. The description of the present application, however, presents several features of the independent claims as purely optional (see e.g. § [0026]: "The food item can [...] optionally have a periphery, which can optionally be referred to as a side periphery"; § [0027]: "A blower of any suitable type can be provided for blowing air towards the food items").