Title: FRONT SUCTION/DISCHARGE TYPE OUTDOOR UNIT FOR AIRCONDITIONER

Abstract: The present invention relates to a front suction/discharge type outdoor unit (10) for an air conditioner which can increase heat exchange efficiency by passing outdoor air sucked through a front surface unit through an air-cooled condenser (30), exchanging heat between outdoor air and refrigerants, and discharging heat-exchanged air to the outdoors. The front suction/discharge type outdoor unit for the air conditioner includes: an outdoor unit casing having a front surface unit (7a, 7b) opened to be linked to the outside of a building, both side units (12a, 12b) formed at both ends of the front surface unit, a rear surface unit (12c) unit formed to face the front surface unit, a bottom surface unit (14) formed at the lower ends of the front surface unit, the both side units and the rear surface unit, and a top surface unit formed at the upper ends of the front surface unit, the both side units and the rear surface unit; a compressor (20) for compressing a refrigerant gas supplied from an indoor unit to the outdoor unit casing; an air-cooled condenser (30) installed in the outdoor unit casing, and disposed to face at least two surfaces of the front surface unit, the both side units and the rear surface unit at a predetermined distance, for condensing the refrigerant gas supplied from the compressor; a cooling fan (40) for sucking outdoor air from the outside of the building through the front surface unit and the air-cooled condenser, and discharging heat-exchanged air in the air-cooled condenser to the outside of the building through the front surface unit; and a top cover (32a, 32b, 32c) installed at the upper side of a space unit formed between the air-cooled condenser and the surfaces of the outdoor unit casing facing the air-cooled condenser, for inducing outdoor air sucked from the outside of the building through the front surface unit to the space unit.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— with international search report
— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report: 10 February 2005

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.
**INTERNATIONAL SEARCH REPORT**

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC\(^a\): F24F 1/00, 13/20  
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\(^b\): F24F

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, PAJ, EpoDoc

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
</tr>
</thead>
</table>
| X        | EP 1 248 049 A2; (O.Y.L.); 9 October 2002 (09.10.2002)  
**the whole document.** | 1, 6-9, 14, 15        |
| A        |                                                                                 | 2-5, 10-13, 16       |

☐ 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  
  *“I” 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  
19 November 2004 (19.11.2004)

Date of mailing of the international search report  
3 December 2004 (03.12.2004)

Name and mailing address of the ISA/AT  
**Austrian Patent Office**  
Dresdner Straße 87, A-1200 Vienna

Facsimile No. +43 / 1 / 534 24 / 535

Authorized officer  
LOSENICKY G.

Telephone No. +43 / 1 / 534 24 / 372