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Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))
- of inventorship (Rule 4.17(iv))

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[Continued on next page]

(54) Title: DUAL-MODE AUTOMOBILE AIR-CONDITIONING SYSTEM AND METHODS OF USE

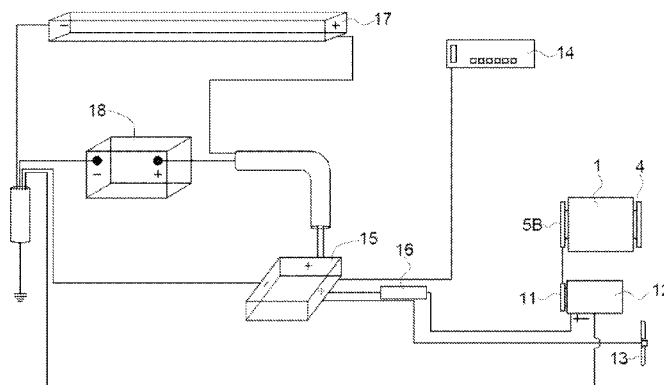


FIG. 5

(57) Abstract: The present inventive disclosure is directed generally to an improved automobile air-conditioning system that can be operated while the automobile's engine is not running. In variations, a typical vapor-compression-cycle air-conditioning system is modified to allow the refrigerant compressor to be driven from either of two power sources: (1) from a traditional engine-mounted pulley system, or (2) from a DC-motor powered by an electrical source independent from the engine. In another variation, the air-conditioning system is driven by one or more thermal-electric-cooling (TEC) modules, wherein the TEC-based system is powered by an auxiliary DC-power source that in some variations is powered by, or at least supplemented by, a solar-energy grid. Additionally, a variation of the modified automobile air-conditioning system includes both the modified-compressor-based system and the TEC-based system, wherein the compressor-based system is used to initially cool-down an automobile passenger compartment, then is shutdown in favor of the TEC-based system.





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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2012/022179**A. CLASSIFICATION OF SUBJECT MATTER*****B60H 1/00(2006.01)i, B60H 1/32(2006.01)i, F04B 17/00(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)

B60H 1/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & Keywords:air conditioning system, automobile, motor, clutch, solar, remote control

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	US 6796367 B2 (BLACQUIERE; SHANE et al.) 28 September 2004 See column 2 line 58-column 4 line 39 and figures 1,4,5,7	1-2,4-5,6,8 3,7,9-92
X A	JP 2007-320393 A (EM TECHNO:KK) 13 December 2007 See paragraphs 0014-0016 and figures 1-3	33 1-32,34-92
A	JP 08-142642 A (MITSUBISHI HEAVY IND LTD) 04 June 1996 See paragraphs 0002-0015 and figures 1,2	1-92
A	JP 2007-069657 A (CALSONIC KANSEI CORP) 22 March 2007 See abstract and figure 1	1-92



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:

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"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

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"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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INTERNATIONAL SEARCH REPORT

Information on patent family members

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