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Declarations under Rule 4.17:

- as to the identity of the inventor (Rule 4.17(i))
- 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))

[Continued on next page]

(54) Title: COOLING APPARATUS AND METHOD

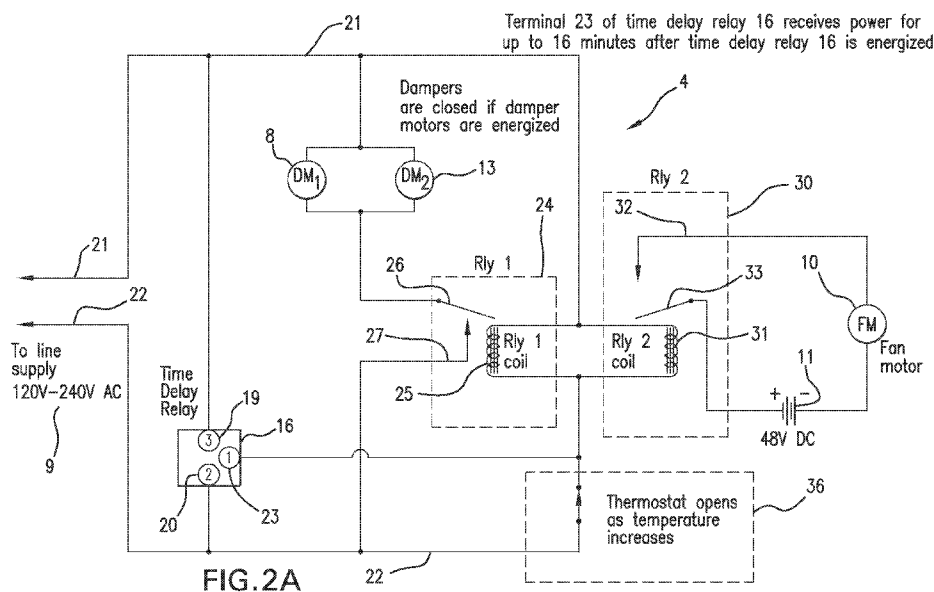


FIG. 2A

(57) Abstract: A cooling apparatus and method for temperature sensitive components or equipment housed in an enclosure are provided. The cooling apparatus and method removes hot air from the enclosure upon power or air conditioner failure or rise in temperature. The cooling apparatus and method helps to regulate the temperature of air in the enclosure. The cooling apparatus and method may be combined with existing enclosures either as a primary or auxiliary or 'back-up' cooling system.

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A. CLASSIFICATION OF SUBJECT MATTER***F24F 5/00(2006.01)i, F24F 3/147(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)

IPC : F24F 3/16, 3/147, 5/00, 11/00, F28F 7/00

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 since 1975

Japanese Utility Models and applications for Utility Models since 1975

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

eKIPASS(KIPO internal)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6,102,793 A (MICHAEL HANSEN) 15 August 2000 see the p.1 and fig. 3	1-22
A	US 6,582,296 B2 (KIYOSHI KOMIYAMA) 24 June 2003 see the p. 1 and figs. 1, 2	1-22
A	US 5,467,607A (WILLIAM J. HARVEY) 21 November 1995 see the p. 1 and figs. 1, 2	1-22
A	KR 10-2000-0021495 A (LG ELECTRONICS CO., LTD.) 25 April 2000 see the pp. 1-3 and figs. 1-3	1-22



Further documents are listed in the continuation of Box C.



See patent family annex.

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 6102793 A	15.08.2000	None	
US 6582296 B2	24.06.2003	JP 2001-176762 JP 2001-176762 A KR 10-2001-0067398 TW 493218 B TW 493218 A US 2001-0044161 A1 US 2001-044161 A1 US 6582296 B2	29.06.2001 29.06.2001 12.07.2001 01.07.2002 01.07.2002 22.11.2001 22.11.2001 24.06.2003
US 5467607 A	21.11.1995	CA 2139956 A1 CA 2139956 C US 5467607 A	23.08.1995 12.01.1999 21.11.1995
KR 2000021495 A	25.04.2000	None	