

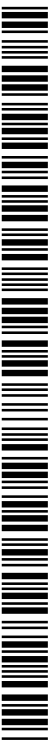


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(54) Title: APPARATUS FOR IMPROVING REFRIGERATION CAPACITY

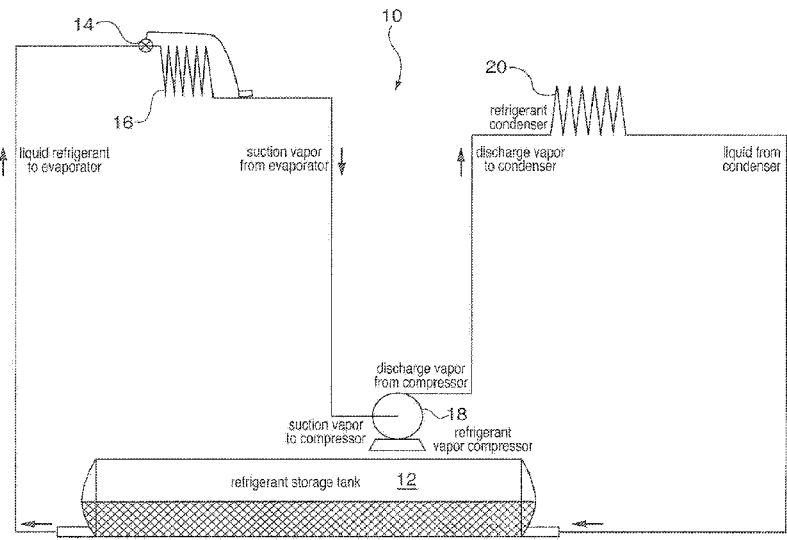


FIG. 1

(57) Abstract: A refrigeration, air conditioning or other cooling system is disclosed. The refrigeration system includes a refrigerant storage tank fluidly connected to a refrigerant expansion device which is fluidly connected to a refrigerant evaporator for absorbing ambient heat, a refrigerant vapor compressor fluidly connected to the refrigerant evaporator and a refrigerant condenser fluidly connected to the refrigerant compressor and the refrigerant storage tank. A liquid refrigerant pump and eductor are included in the system along with a refrigerant receiving tank and associated controls that, maintain the appropriate Net Positive Suction Head at the inlet to the pump along with proper flow and pressure control in the system.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 14/47562

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - F25B 49/02; B23P 15/26 (2015.01)

CPC - F25B 49/02; Y10T 29/49352; B23P 15/26

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(8) - F25B 49/02; B23P 15/26 (2015.01)

CPC - F25B 49/02; Y10T 29/49352; B23P 15/26

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
USPC - 62/129; 29/890.031 (text search - see terms below)

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

PatBase; Google Scholar; Google Patents

Search Terms: liquid, refrigerant, storage, holding, tank, vessel, expansion, expand, evaporator, compressor, condenser, receive, monitor, sense, detect, level, amount, pump, motor, eductor, raised, elevated, above, reservoir, positive, head

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4,096,706 A (Beckwith) 27 June 1978 (27.06.1978), entire document especially, fig 2, col 3, ln 18-21 and ln 31-61, col 5, ln 54-59	1-12
A	US 6,145,332 A (Hyde) 14 November 2000 (14.11.2000), entire document	1-12
A	US 6,076,367 A (Sandofsky et al.) 20 June 2000 (20.06.2000), entire document	1-12

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)

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"P" document published prior to the international filing date but later than the priority date claimed

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"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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