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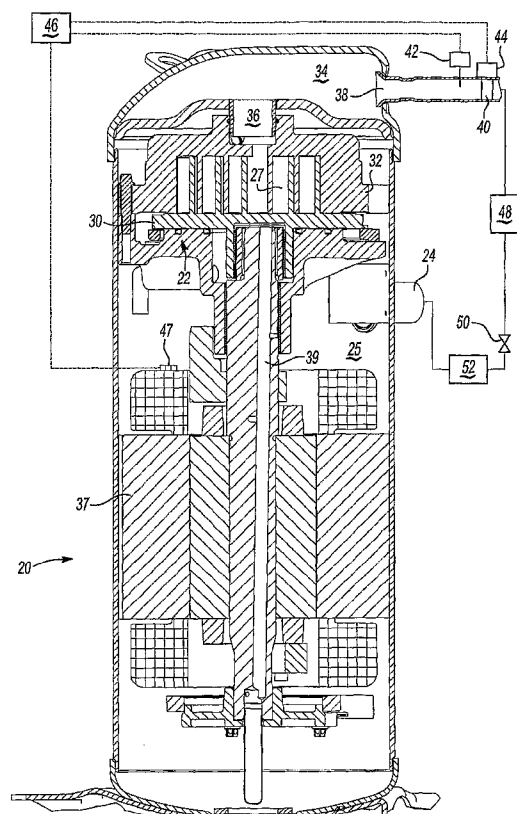
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[Continued on next page]

(54) Title: VALVE PREVENTING UNPOWERED REVERSE RUN AT SHUTDOWN



(57) Abstract: An inventive method of preventing unpowered reverse rotation in a compressor includes the steps of placing a solenoid valve at a location near compressor discharge. The valve is preferably actuated soon after the power to the motor is cut off, blocking the flow of refrigerant from expanding back toward the compression chambers of the compressor. The compressor is disclosed as a scroll compressor, but may also be a screw compressor. These two types of compressors are susceptible to undesirable unpowered reverse rotation when compressed refrigerant re-expands through the compression elements from the compressor discharge into the compressor suction. By blocking the flow of refrigerant, this unpowered reverse rotation is prevented. A high pressure switch can be positioned directly upstream of the solenoid valve to immediately stop the compressor if the valve malfunctions and blocks the flow of refrigerant during normal compressor operation.



RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA,
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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US05/30803

A. CLASSIFICATION OF SUBJECT MATTER

IPC: **F25B 1/00**(2006.01);**49/00**(2006.01);**F04B 49/00**(2006.01)

USPC: 62/228.1,228.3,217;417/279,291,310

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)

U.S. : 62/228.1, 228.3, 217; 417/279, 291, 310

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)

EAST search terms: compressor, reverse rotation, discharge chamber, scroll, solenoid valve, pressure

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 4,820,130 A (EBER et al) 11 April 1980 (11.04.1989), all.	1-6, 10, 12, 16-21, 25, 27, 31, and 34 ----- 32 and 33

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

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document member of the same patent family

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