

United States Patent [19]
Hosokawa et al.

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[45] **Date of Patent:** **Jul. 11, 2000**

[54] **CLUSTER CONTROLLING SYSTEM
OPERATING ON A PLURALITY OF
COMPUTERS IN A CLUSTER SYSTEM**

5,129,080 7/1992 Smith .
5,598,529 1/1997 Garay et al. .
5,781,736 7/1998 Schmidt 395/200.54
5,787,249 7/1998 Badovinatz et al. 395/200.31

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[30] **Foreign Application Priority Data**

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Mar. 27, 1997 [JP] Japan 9-075254

[51] **Int. Cl.⁷** **G06F 13/00**

[52] **U.S. Cl.** **709/223; 709/225**

[58] **Field of Search** 395/674, 676,
395/800.28, 200.31, 200.35, 200.43, 200.53,
200.73; 709/223, 201, 205, 213, 243, 225

[56] **References Cited**

U.S. PATENT DOCUMENTS

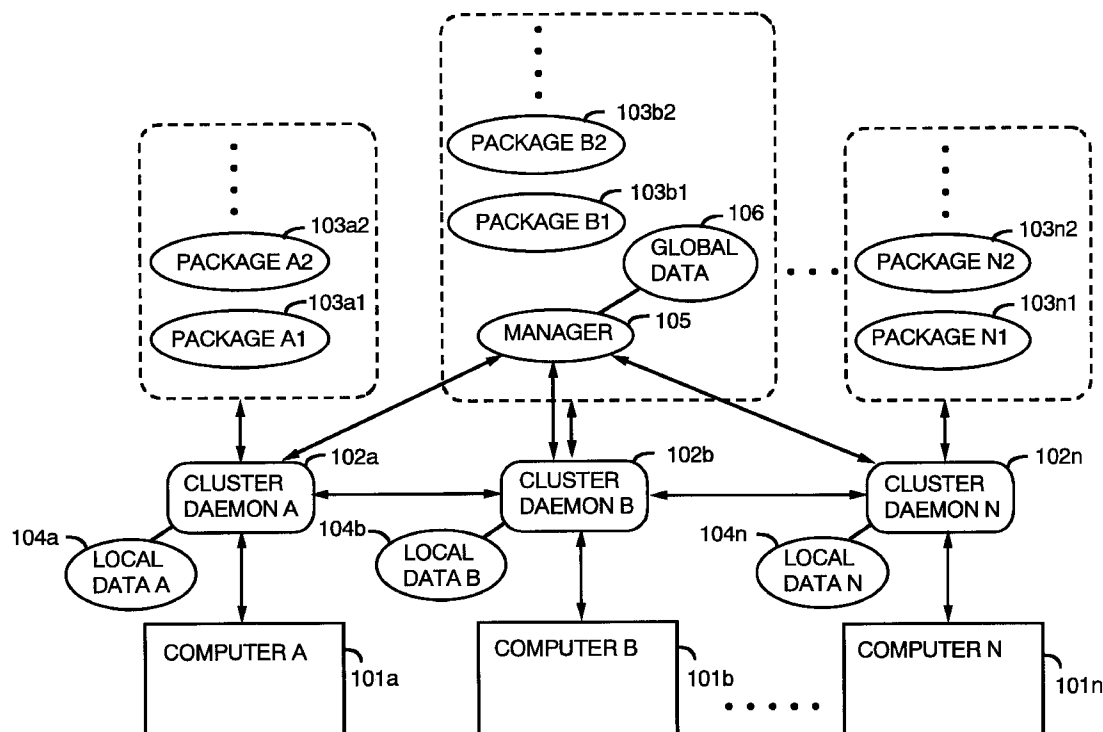
4,356,546 10/1982 Whiteside et al. .

Primary Examiner—Zarni Maung

[57] **ABSTRACT**

A cluster controlling system transfers packages which have been operating on one computer to another computer when a fault or failure has occurred by monitoring and controlling the packages in the entire system. When the respective packages are started-up, cluster daemons on the respective computers monitor and control resources on the operating computers. The monitored and controlled data are stored in the respective computers as local data. A manager communicates with cluster daemons on the respective computers, and stores data in a global data memory to monitor and control the entire system. The manager is actually one of the packages operating in the cluster system. If a fault or failure occurs in the manager or in the computer running the manager, the manager is re-started on another computer by a cluster daemon.

20 Claims, 47 Drawing Sheets



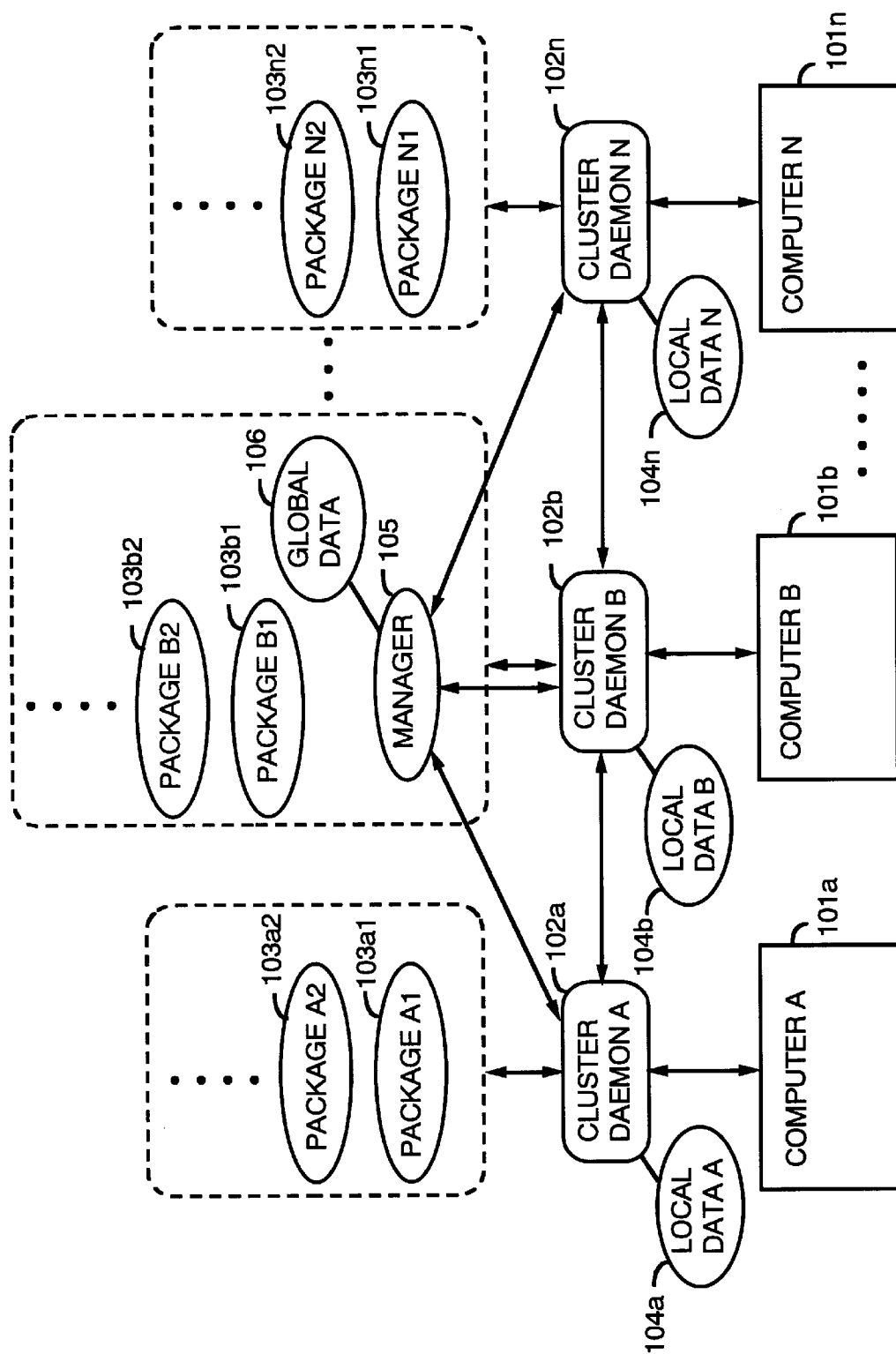


FIG. 1

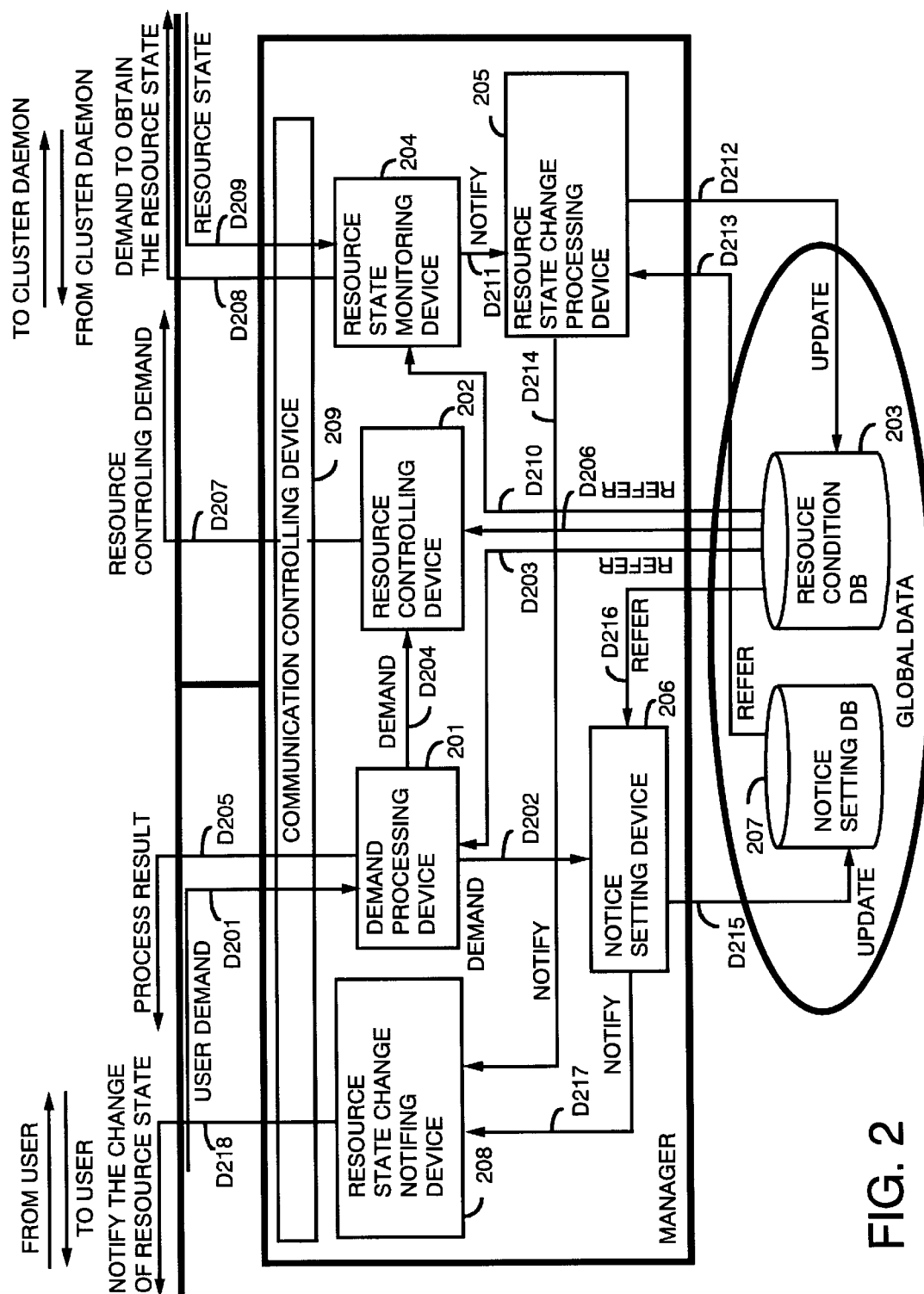


FIG. 2

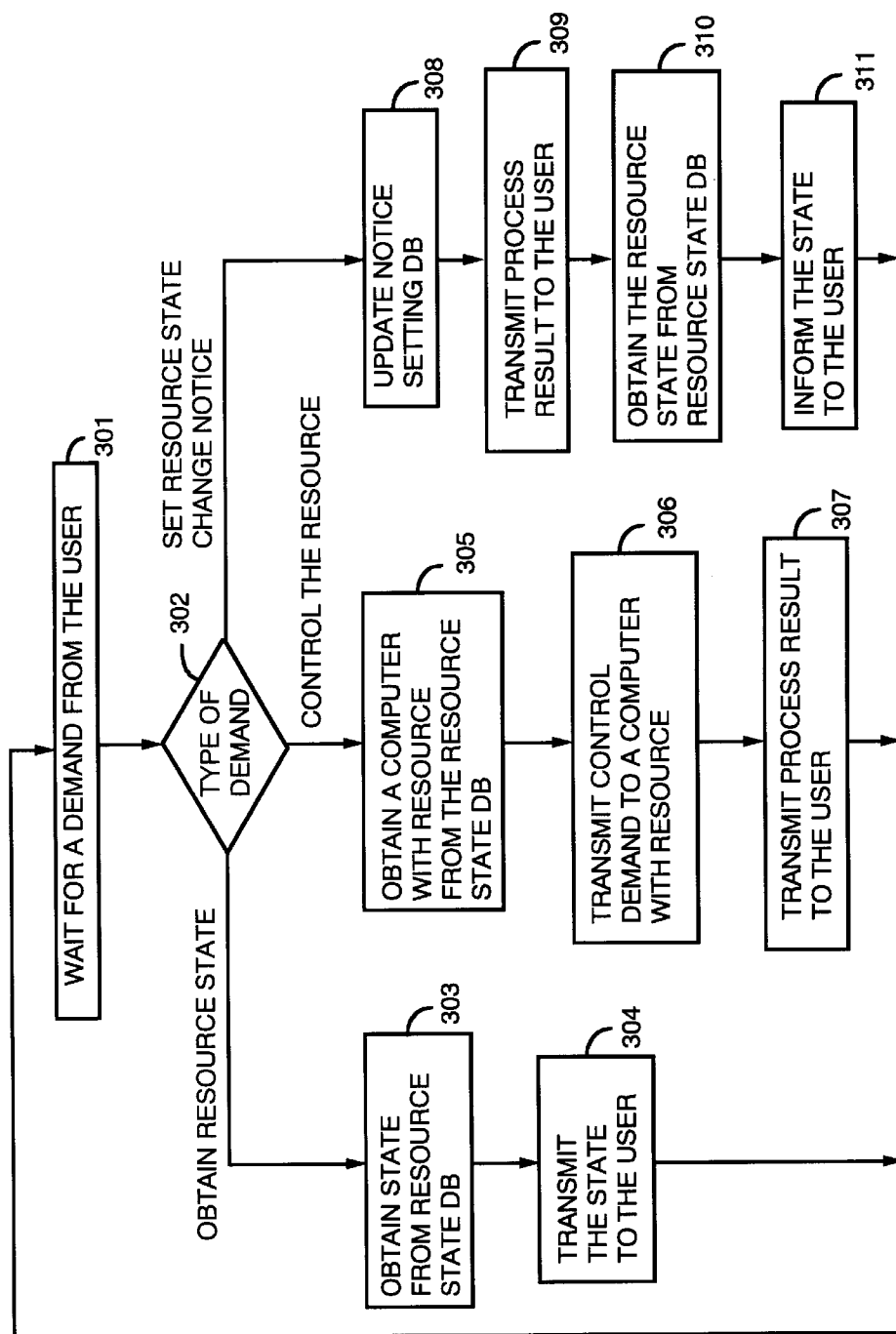


FIG. 3

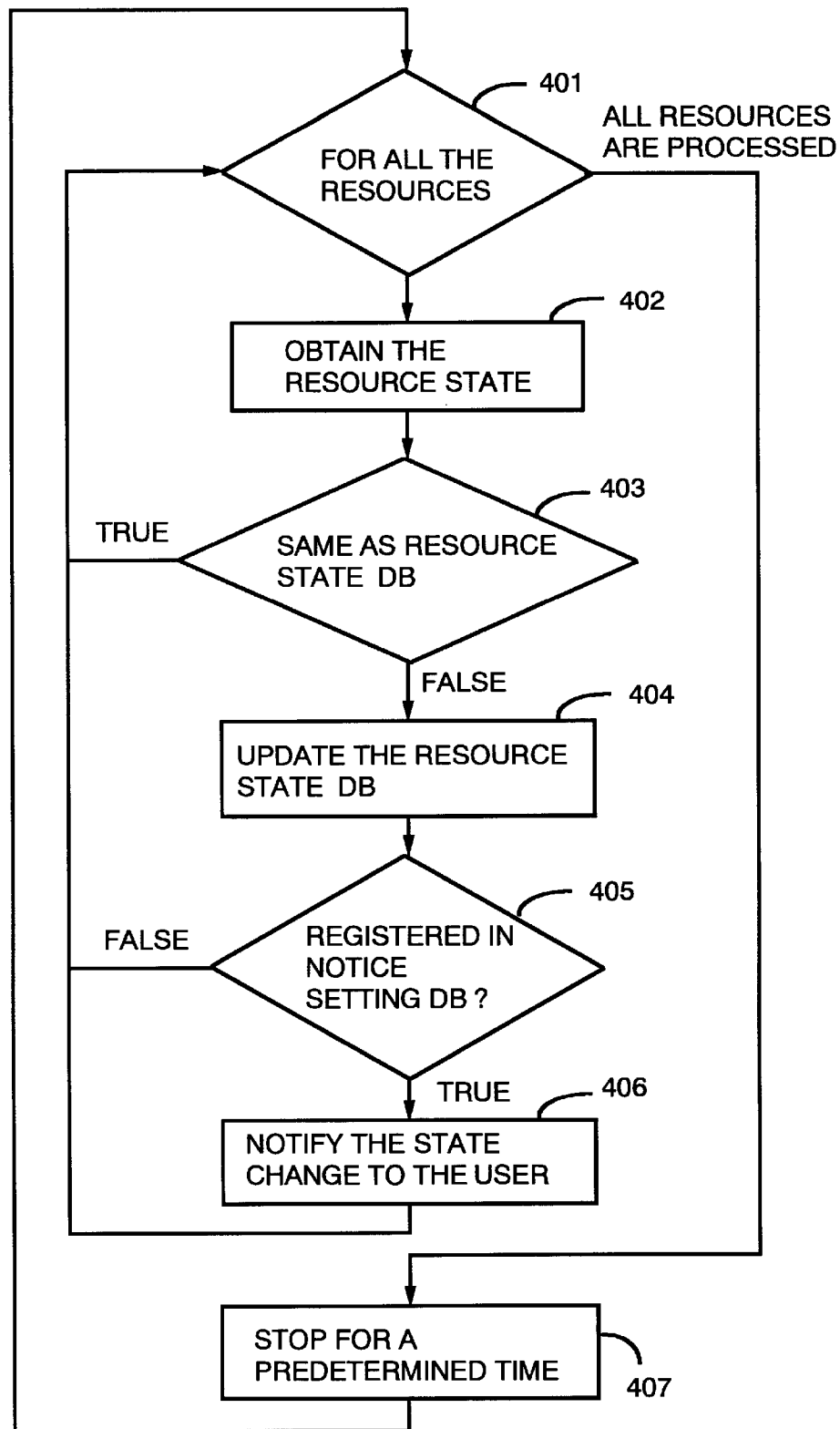


FIG. 4

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