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United States Patent [19]

Gibbs

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[54] **OBJECT BASED RAILROAD TRANSPORTATION NETWORK MANAGEMENT SYSTEM AND METHOD**

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[51] Int. Cl.^{6} **B61L 23/22**
[52] U.S. Cl. .... **246/122 R**; 246/167 R; 364/424.01; 364/424.04
[58] **Field of Search** .... 246/3, 122 R, 246/123, 124, 132, 167 R, 169 R, 176; 364/424.01, 424.02, 424.04, 436

[56] **References Cited**

U.S. PATENT DOCUMENTS

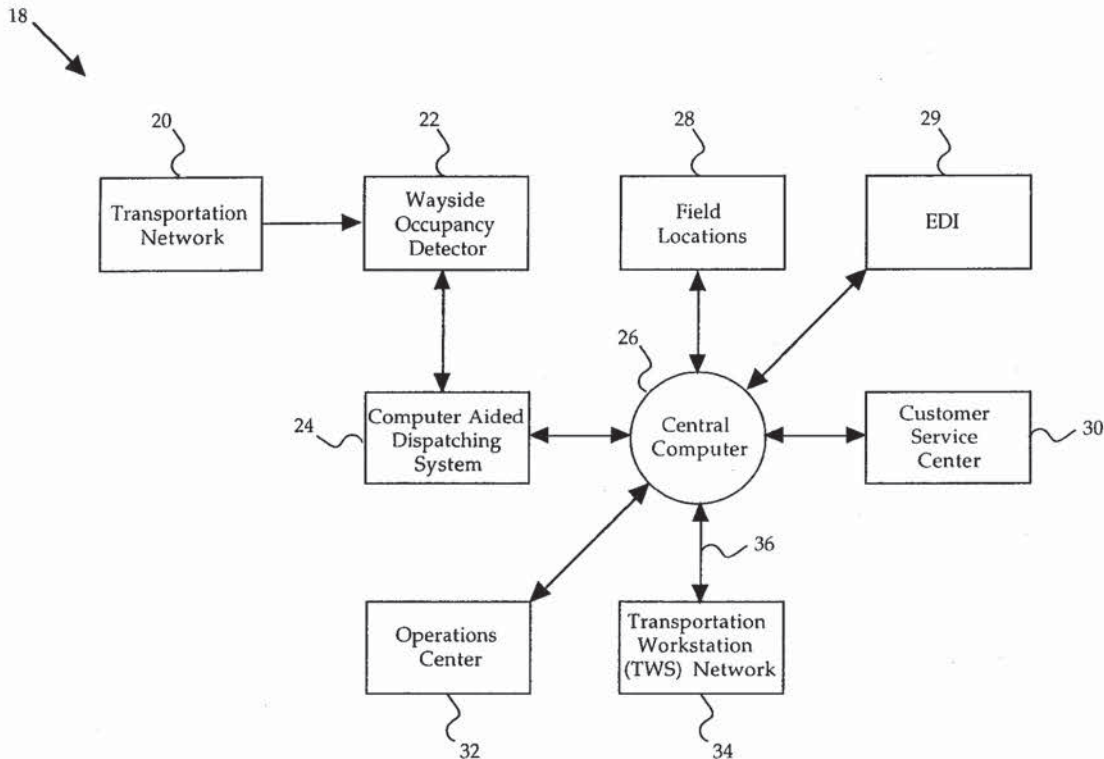|			
5,390,880	2/1995	Fukawa et al.	246/167 R
5,429,329	7/1995	Wallace et al.	246/166
5,445,347	8/1995	Ng	246/169 R

OTHER PUBLICATIONS

Onsrud, Harlan J. and Reis, Robert I., "Law and Information Policy For Spatial Databases: A Research Agenda," Jurimetrics Journal, vol. 35, pp. 377–382 (Summer 1995).
Business Management Data, Inc., "Locomotive Management Systems III: Detail Design Document," pp. 1–14, 124–131, 521–560 (Aug. 9, 1994).

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Attorney, Agent, or Firm—Carr & Ferrell LLP

[57] **ABSTRACT**

The system of the present invention preferably comprises a set of wayside occupancy detectors, an output device, a memory and a processing unit. Each wayside occupancy detector preferably generates a set of transport detection signals in response to detecting a set of mobile transports. The output device is used for displaying information. The memory, has a transport object comprising program instructions for automatically retrieving the set of transport detection signals and for automatically collecting a set of information related to operation of the transportation network. The memory also has a service object comprising program instructions for generating graphical representations of transport locations, transport status statistics, and transport performance statistics upon the output device corresponding to both the set of mobile transports and a set of fixed transports. The processing unit executes the program instructions stored in the memory and is coupled to the set of wayside occupancy detectors, the output device and the memory. The method of the present invention preferably comprises the steps of monitoring a set of real time identification, position, interconnection and display characteristics for the set of transports within the transportation network and generating an output display characterizing relationships between the set of transports based on the information collected in the monitoring step.

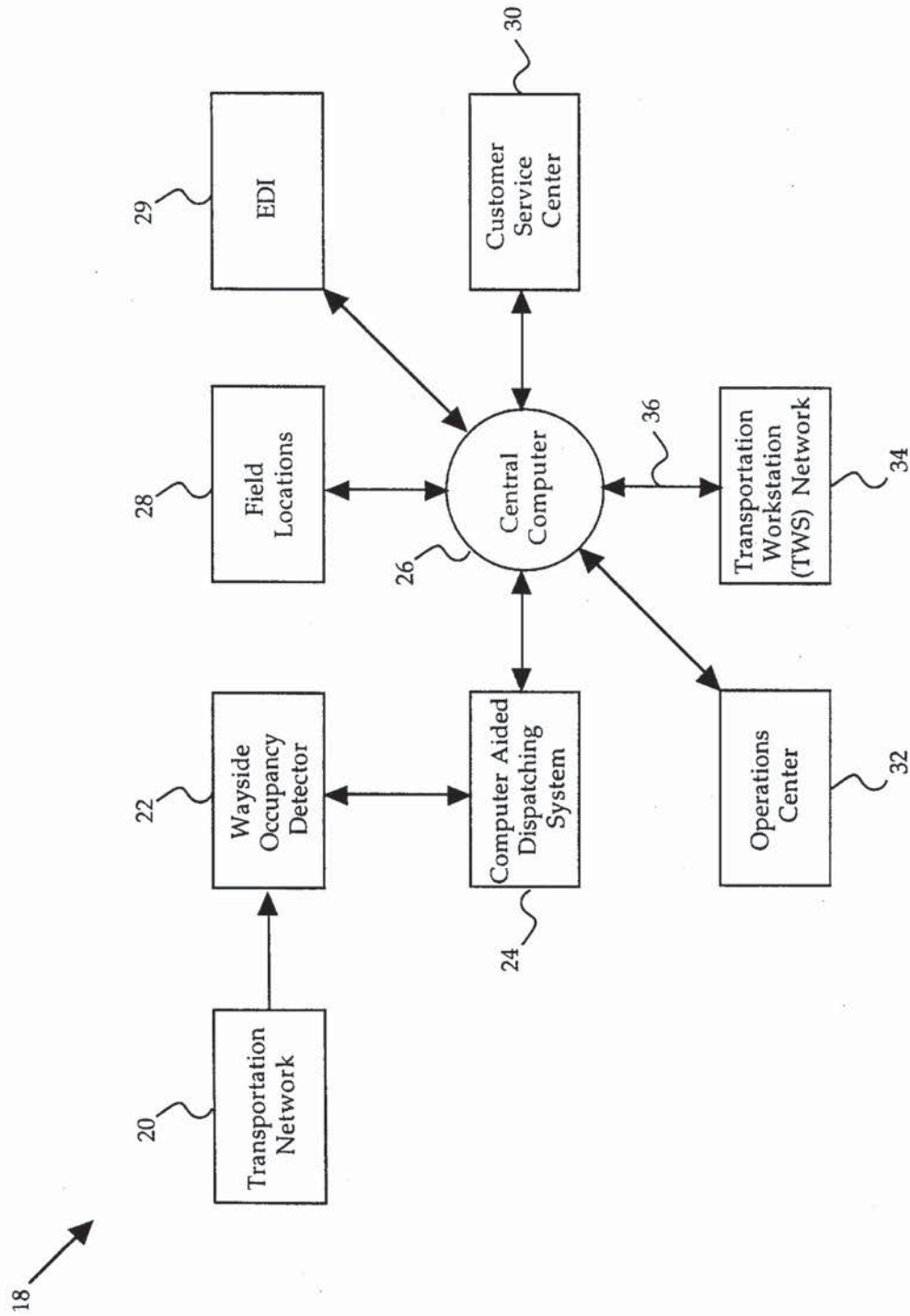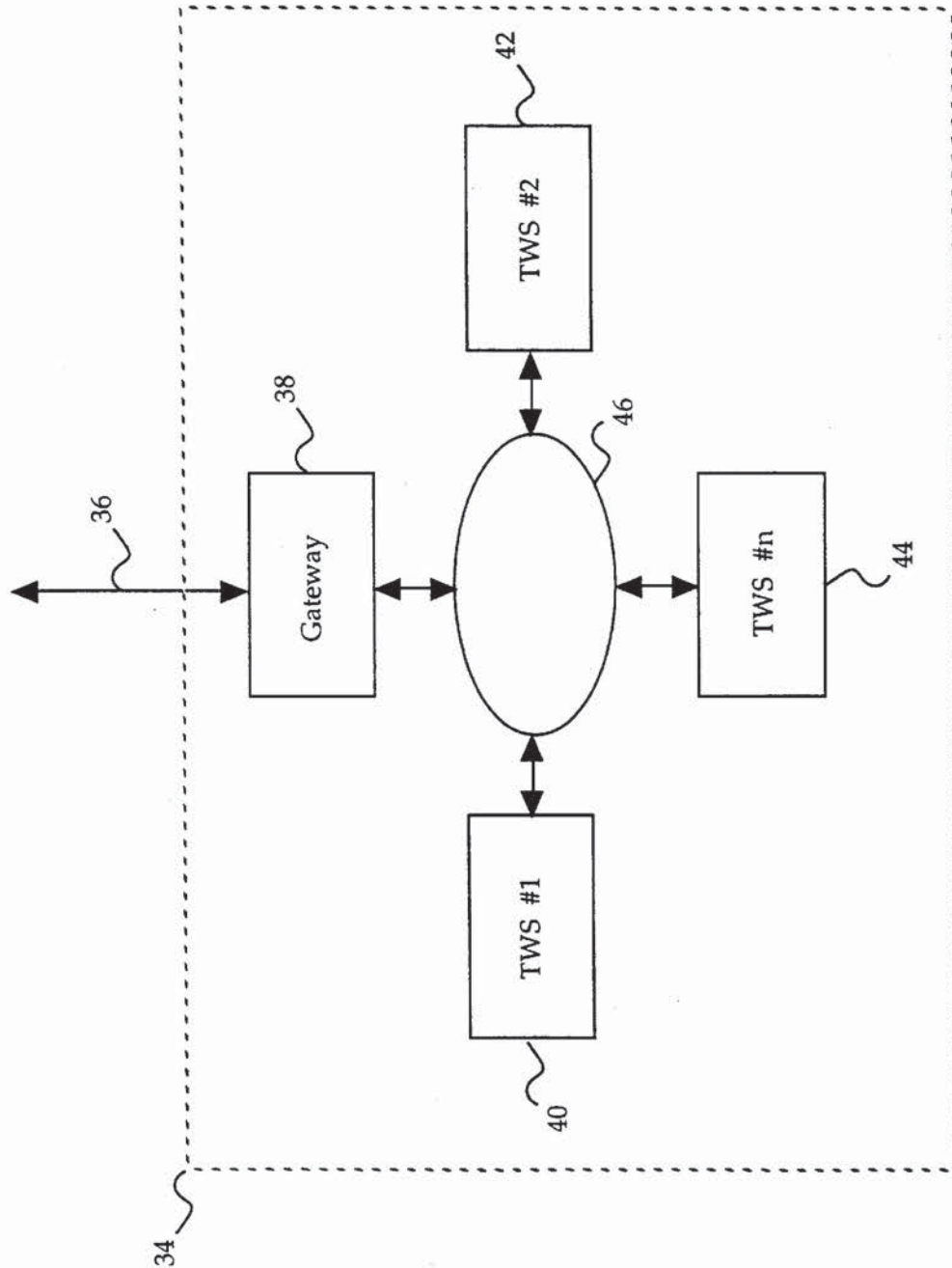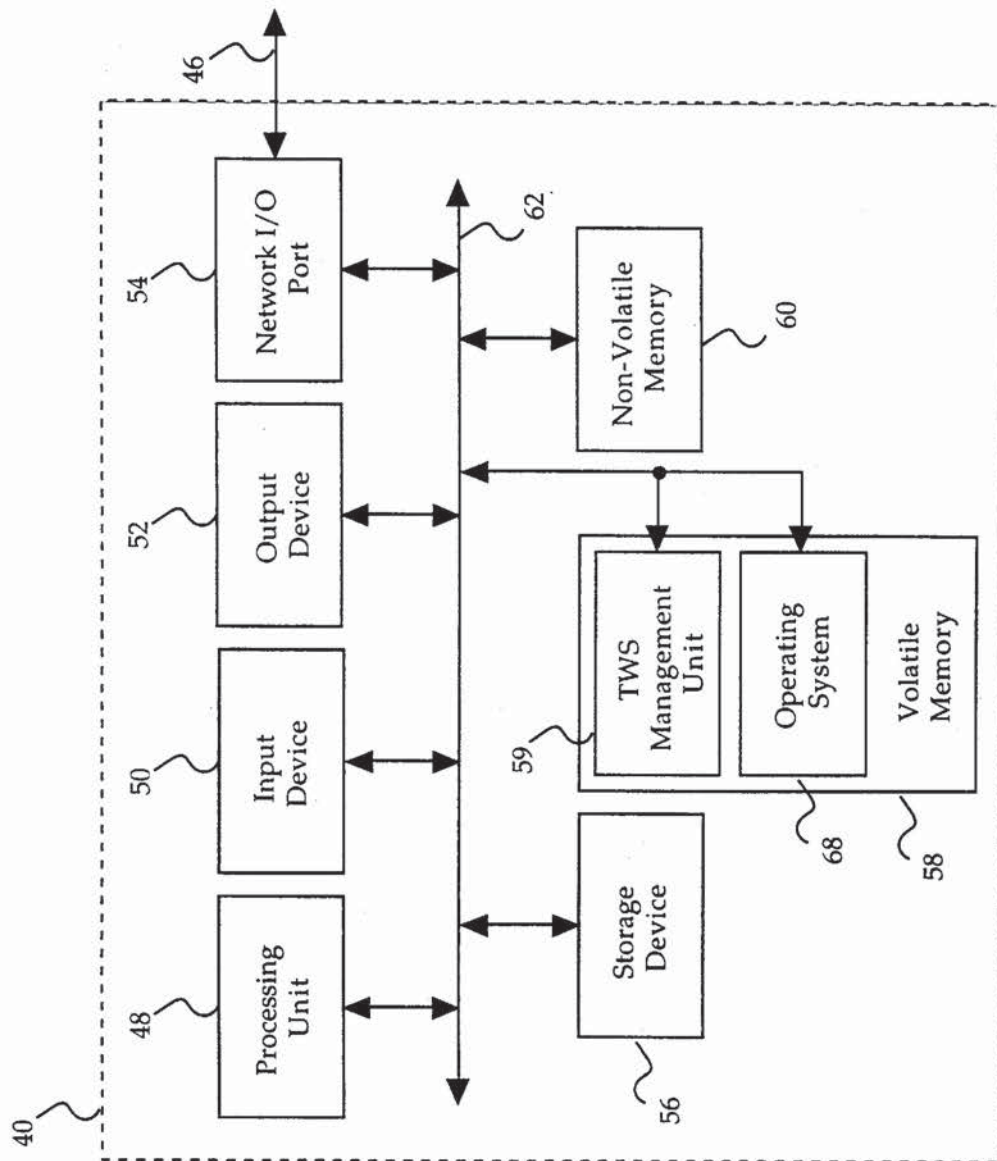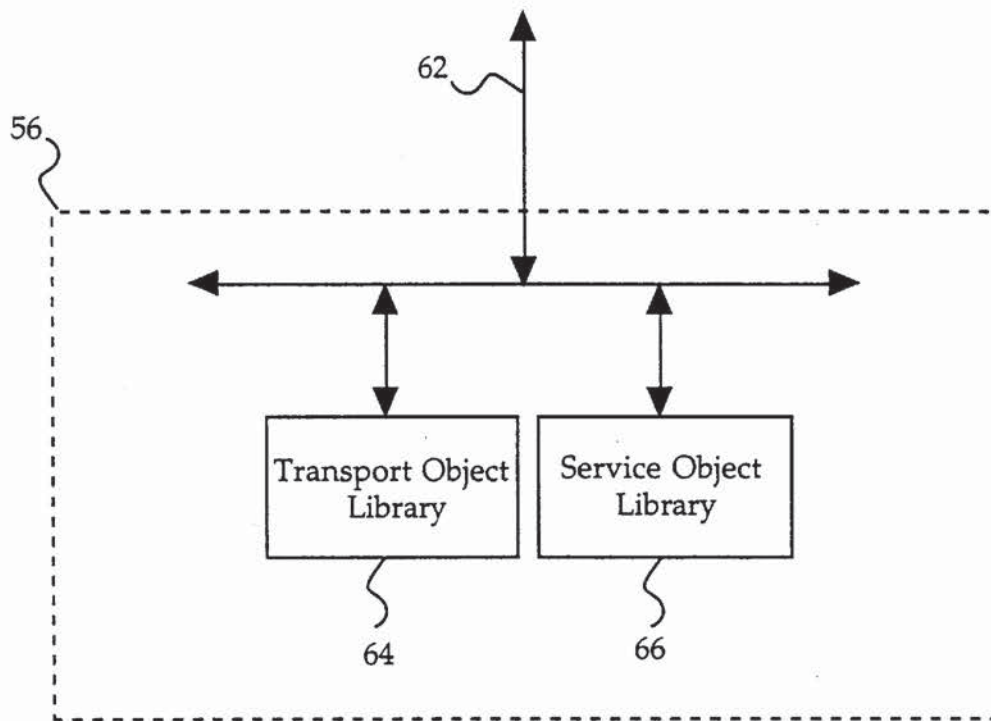**19 Claims, 15 Drawing Sheets**

Fig. 1

Fig. 2

Fig. 3

Fig. 4

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