United States Patent [19]

Delorme

[54] **ELECTRONIC GLOBAL MAP GENERATING SYSTEM**

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[51] Int. Cl.^{5} G09B 29/00
[52] U.S. Cl. 364/419; 434/150; 340/990
[58] Field of Search 364/419, 449; 434/150, 434/130; 340/990

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Assistant Examiner—Kim T. Bui
Attorney, Agent, or Firm—Sughrue, Mion, Zinn, Macpeak & Seas

[57] **ABSTRACT**

A global mapping system which organizes mapping data into a hierarchy of successive magnitudes or levels for presentation of the mapping data with variable resolution, starting from a first or highest magnitude with lowest resolution and progressing to a last or lowest magnitude with highest resolution. The idea of this hierarchical structure can be likened to a pyramid with fewer stones or "tiles" at the top, and where each successive descending horizontal level or magnitude contains four times as many "tiles" as the level or magnitude directly above it. The top or first level of the pyramid contains 4 tiles, the second levle contains 16 tiles, the third contains 64 tiles and so on, such that the base of a 16 magnitude or level pyramid would contain 4 to the 16th power or 4,294,967,296 tiles. This total includes "hyperspace" which is later clipped or ignored. Digital data corresponding to each of the separate data base tiles is stored in the database under a unique filename.
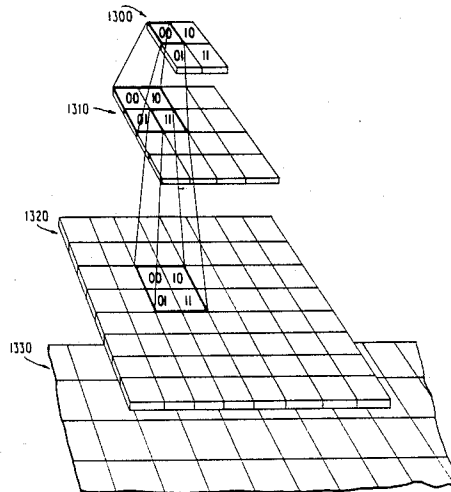
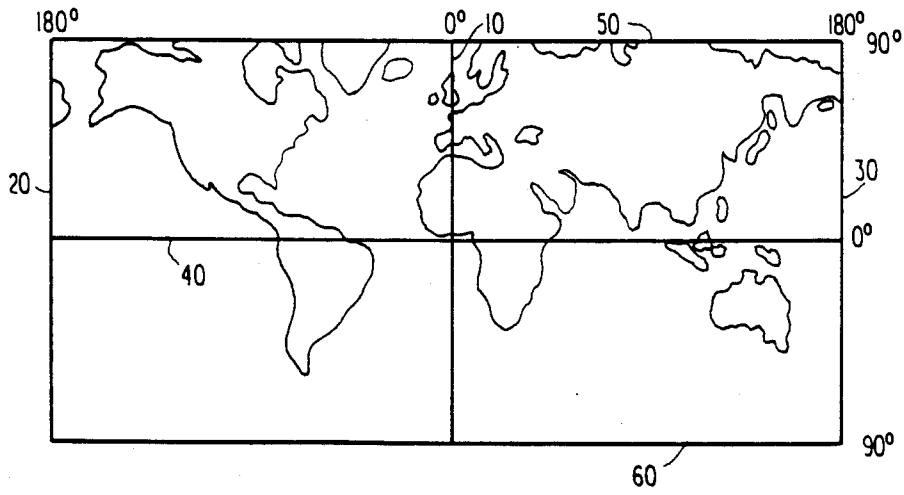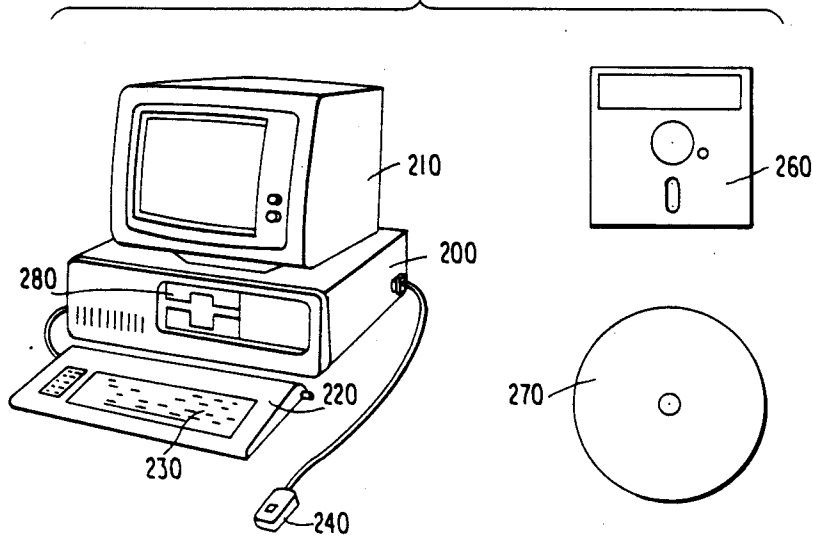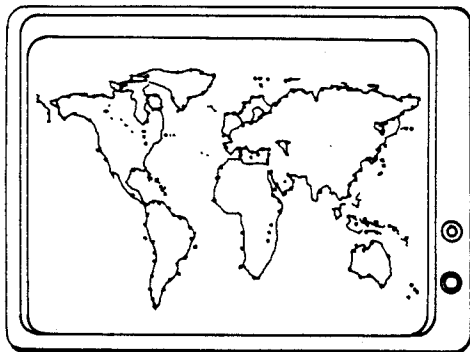**33 Claims, 9 Drawing Sheets**

FIG.1

FIG.2

FIG.3A

FIG.3B
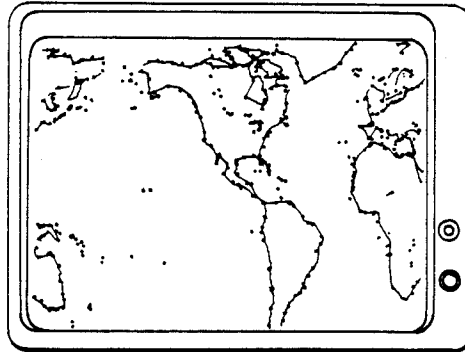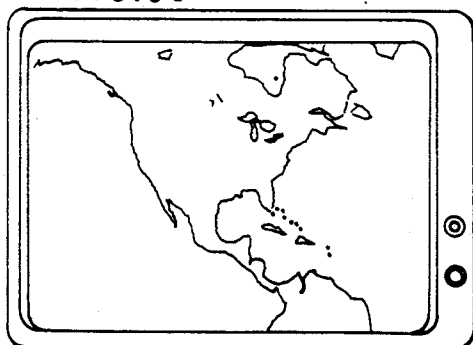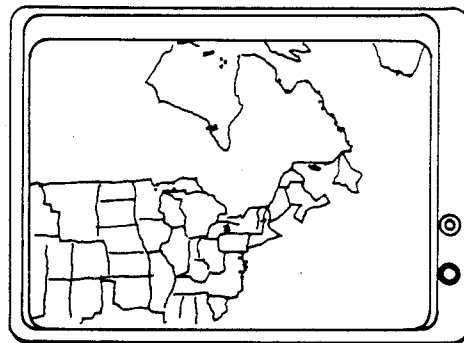
FIG.3C

FIG.3D

FIG.3E
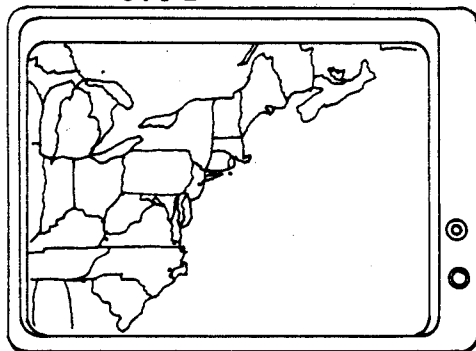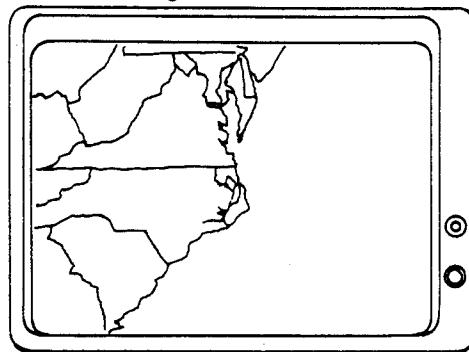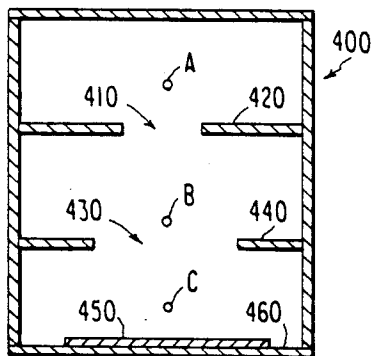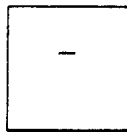
FIG.3F

FIG.4

FIG.5A   FIG.5B
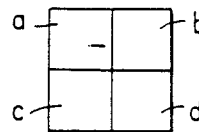
FIG.6
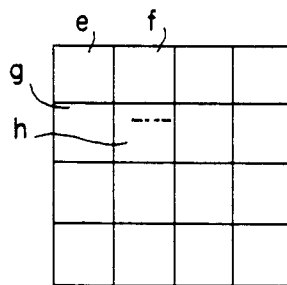
FIG.7
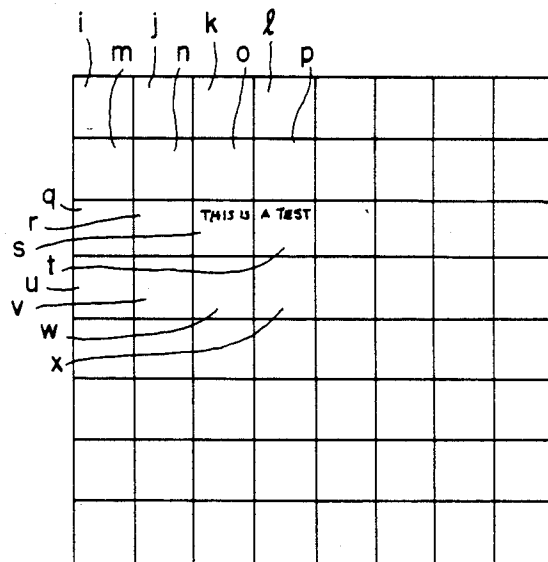
FIG.8
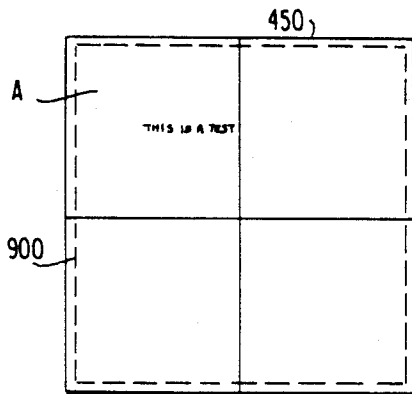
FIG.9A

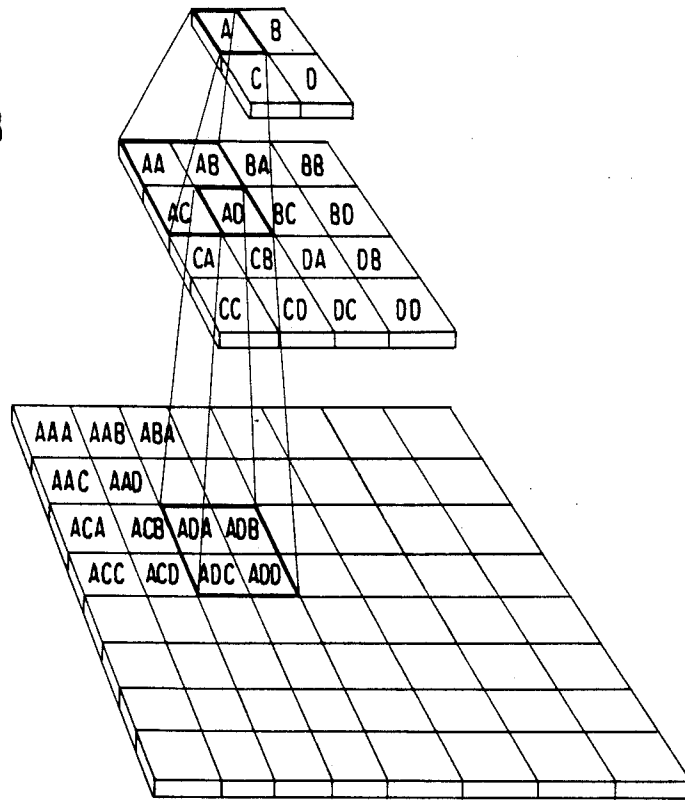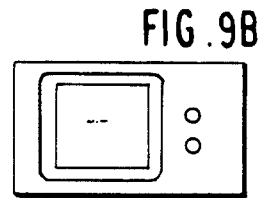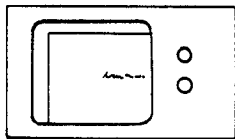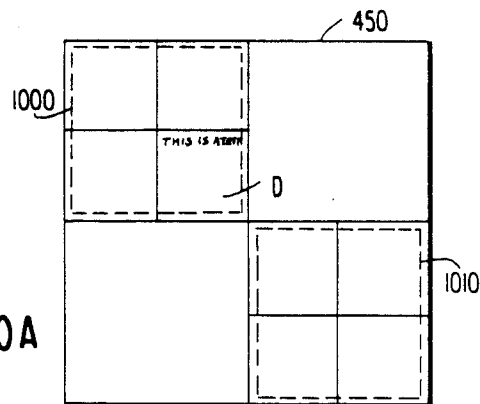FIG.9B

FIG.10B

FIG.10A

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