

# (12) United States Patent

## Ehlers et al.

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## (54) SYSTEM AND METHOD OF CONTROLLING AN HVAC SYSTEM

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- (51) Int. Cl. G05D 23/00 (2006.01)G06F 17/00 (2006.01)G06F 19/00 (2006.01)G06F 15/00 (2006.01)
- **U.S. Cl.** ...... **700/276**; 700/299; 700/300; 705/412; 702/60; 702/130; 702/188
- Field of Classification Search ...... 700/9, 700/276, 277, 278, 286, 291, 295, 296, 299, 700/300; 705/412; 702/60, 61, 62, 130, 702/132, 180, 187, 188

See application file for complete search history.

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#### (57)**ABSTRACT**

A system and method manage delivery of energy from a distribution network to one or more sites. Each site has at least one device coupled to the distribution network. The at least one device controllably consumes energy. The system includes a node and a control system. The node is coupled to the at least one device for sensing and controlling energy delivered to the device. A control system is coupled to the node and distribution network for delivery to the node at least one characteristic of the distribution network. The node controls the supply of energy to the device as a function of the at least one characteristic.

## 29 Claims, 18 Drawing Sheets

## ECONOMIC AND COMFORT MANAGEMENT & CONTROL EXAMPLE MAXIMUM SAVINGS BALANCED SAVINGS / COMFORT 7 MAXIMUM COMFORT ALLOWED OFFSET CRITICAL HIGH 28 12 16 20 24 32



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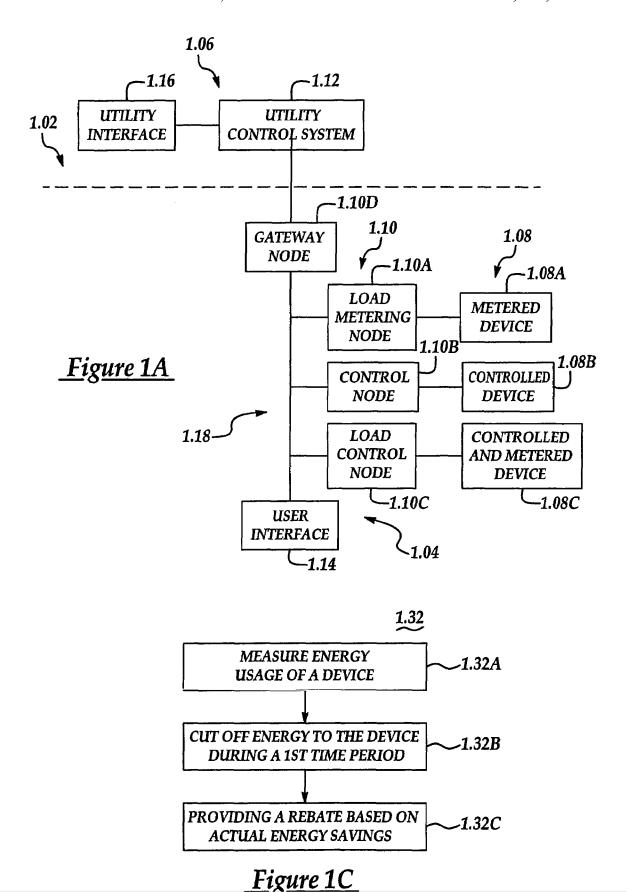
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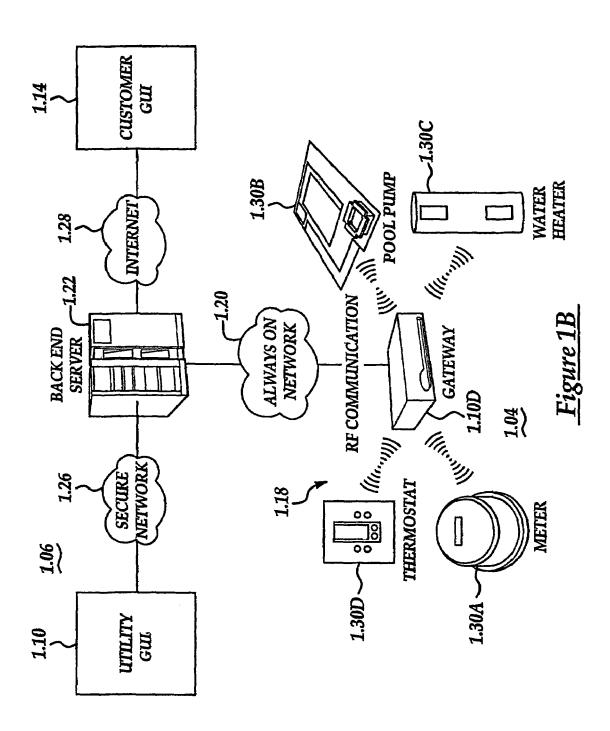
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