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Kates

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(54) **ZONE THERMOSTAT FOR ZONE HEATING AND COOLING**

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F24F 3/00 (2006.01)

G05D 23/00 (2006.01)

(52) **U.S. Cl.** **236/1 B**; 236/49.3; 236/94;
165/208

(58) **Field of Classification Search** 236/1 B,
236/49.3, 94; 165/205, 208, 217
See application file for complete search history.

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Primary Examiner—Marc E Norman

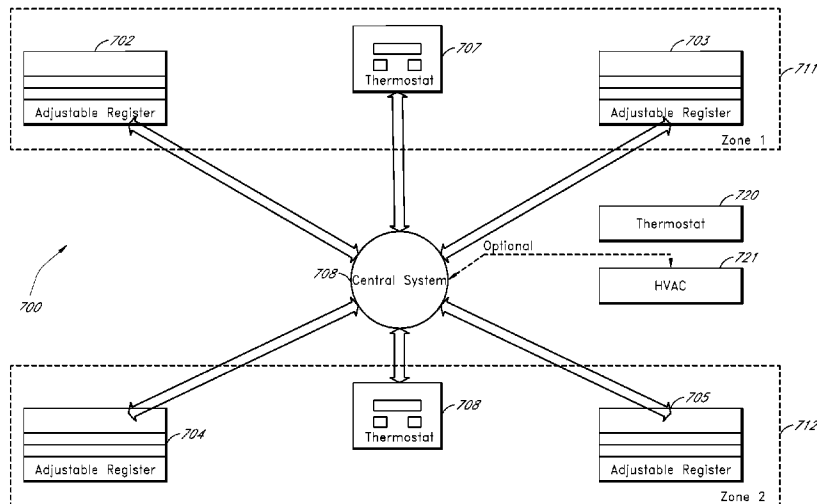
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(57)

ABSTRACT

A zone thermostat for use in connection with an Electronically-Controlled Register vent (ECRV) that can be easily installed by a homeowner or general handyman is disclosed. The ECRV can be used to convert a non-zoned HVAC system into a zoned system. The ECRV can also be used in connection with a conventional zoned HVAC system to provide additional control and additional zones not provided by the conventional zoned HVAC system. In one embodiment, the ECRV is configured have a size and form-factor that conforms to a standard manually-controlled register vent. In one embodiment, the zone thermostat is configured to provide thermostat information to the ECRV. In one embodiment, the zone thermostat communicates with a central monitoring system that coordinates operation of the heating and cooling zones.

28 Claims, 20 Drawing Sheets



Emerson Exhibit 1032

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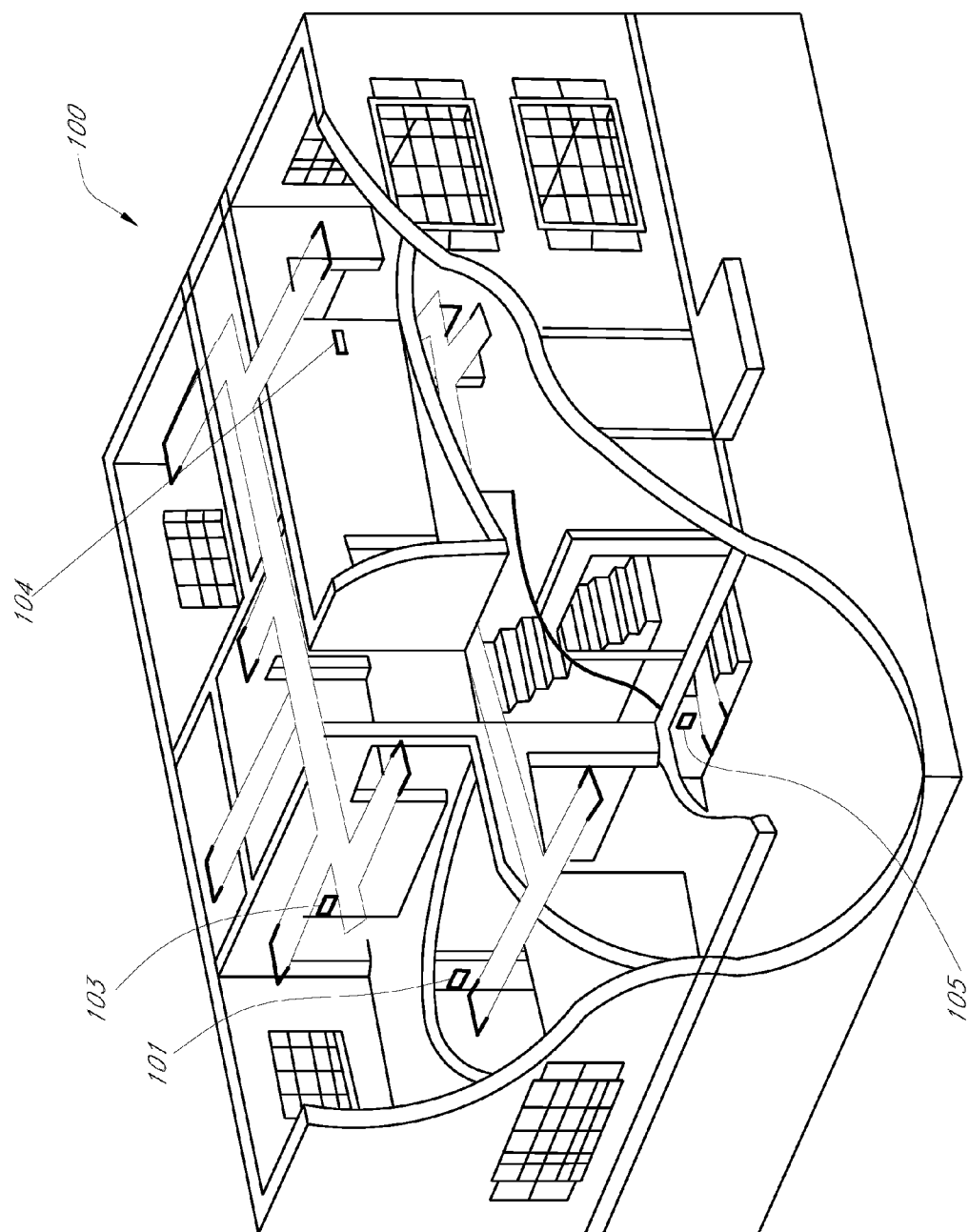
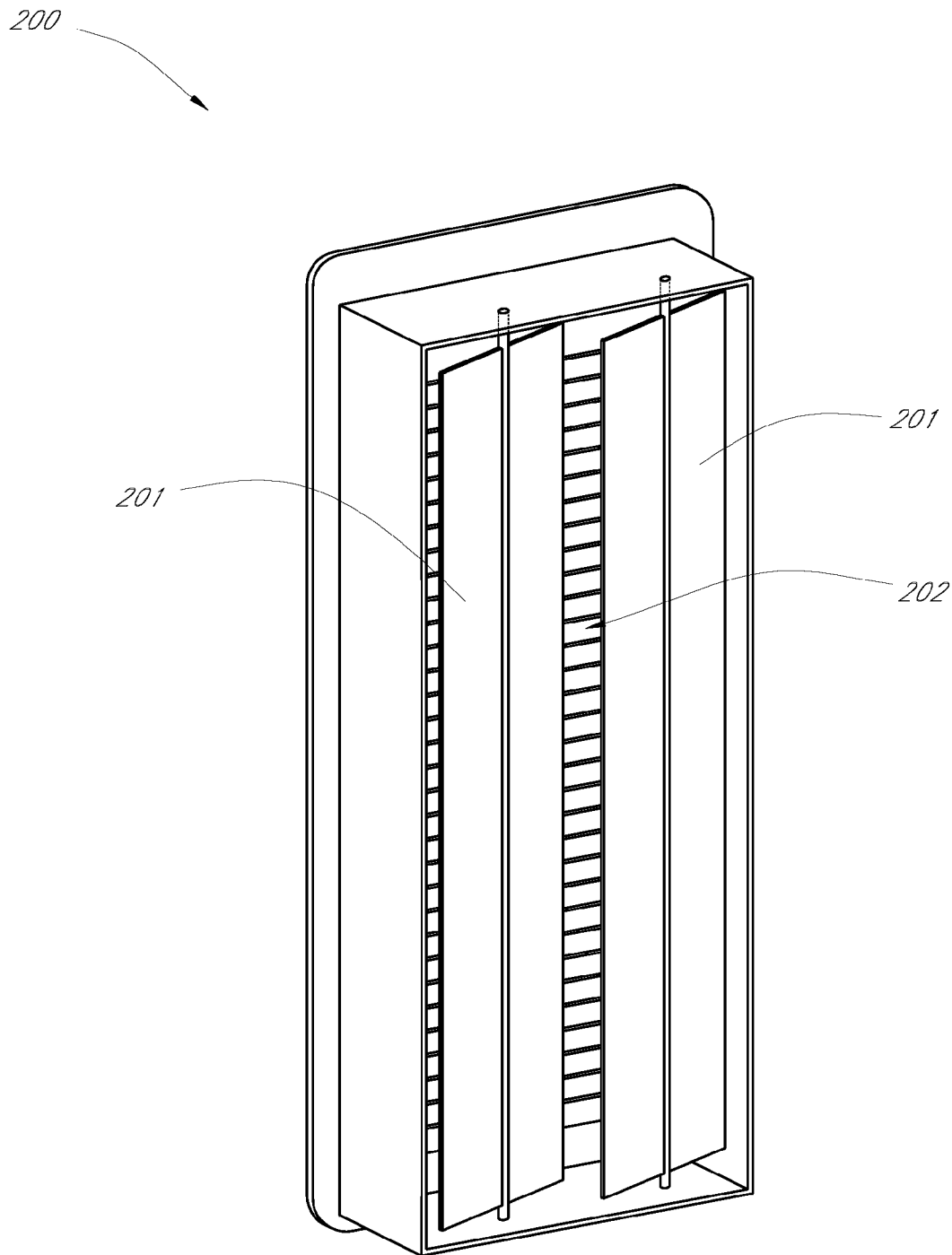


FIG. 1

**FIG. 2** (PRIOR ART)

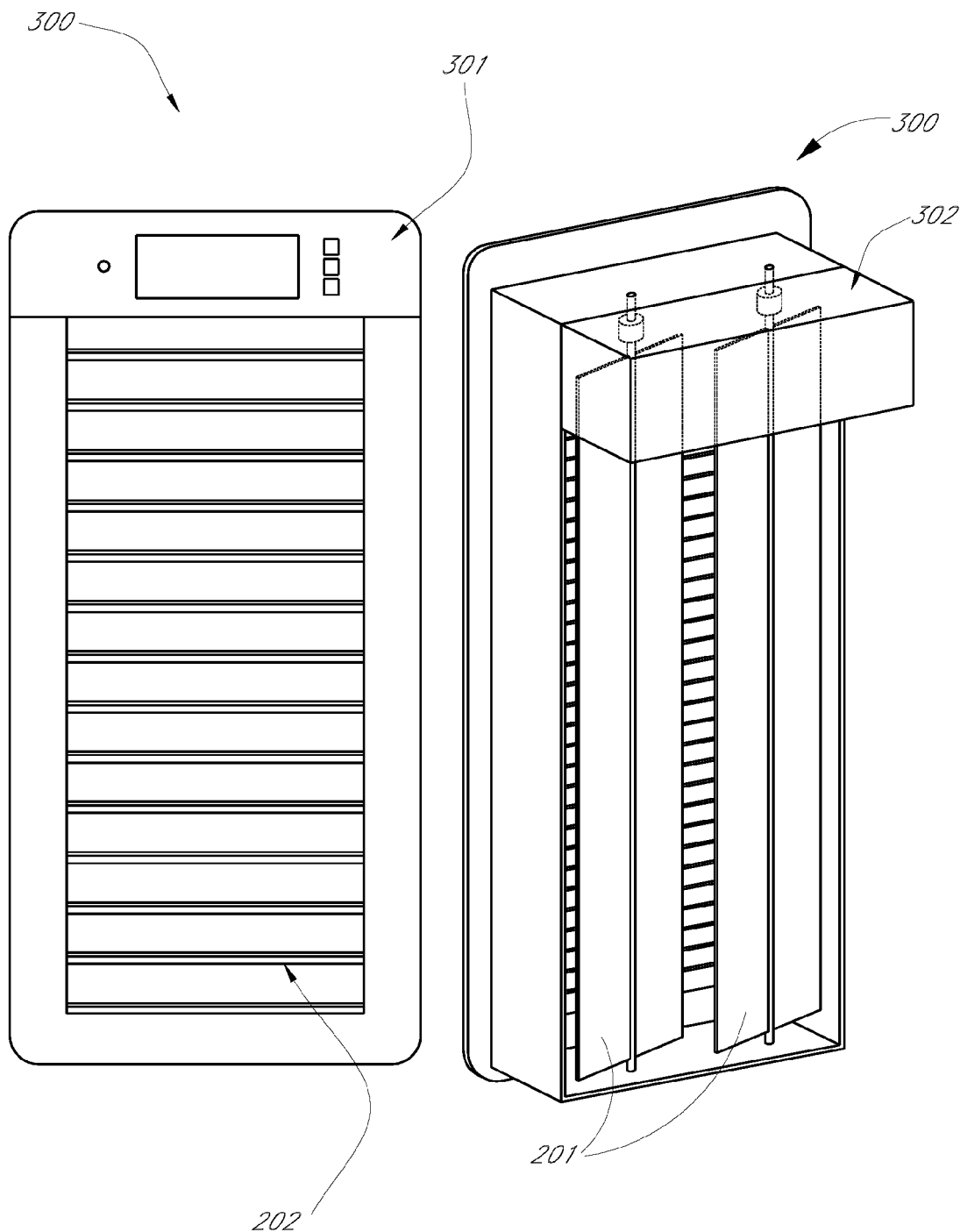


FIG. 3A

FIG. 3B

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