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- (54) Title: CLOSED-LOOP GEOTHERMAL AND HEAT PUMP SYSTEMS

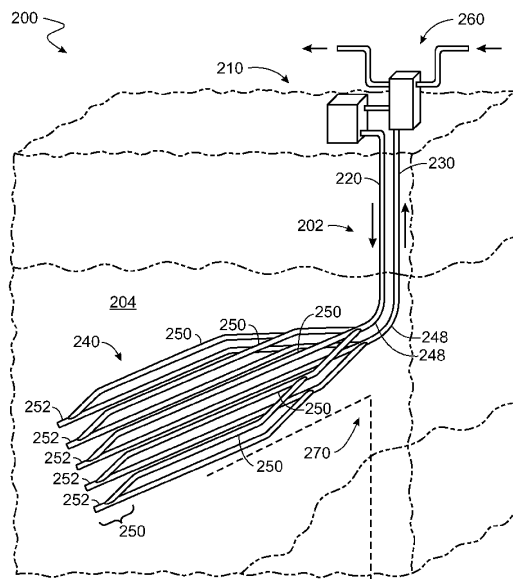


FIG. 2A

- (57) Abstract: A method includes determining a specified demand as a function of time of thermal energy from a heat exchanger of a heat pump. The heat pump is configured to transfer thermal energy to the heat exchanger from a geothermal working fluid circulating in a closed-loop geothermal well. The closed-loop geothermal well includes a first surface wellbore extending from a terranean surface to a geothermal subterranean zone, a second surface wellbore extending from the terranean surface to the geothermal subterranean zone, and plurality of connecting wellbores connecting the first surface wellbore to the second surface wellbore. The heat output from the heat exchanger is controlled to meet a specified demand by adjusting at least one of a flow rate or inlet temperature of the geothermal working fluid in the closed-loop geothermal well.

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