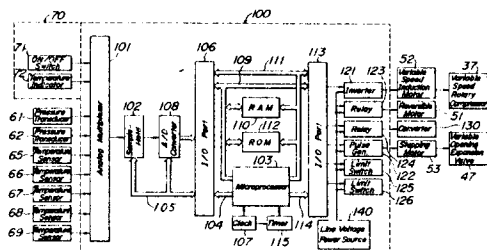


4481788

WATER HEATING SYSTEM

Hozo Yoshino, Tokyo, Japan assigned to System Homes Company Ltd; Mitsubishi Denki Kabushiki Kaisha



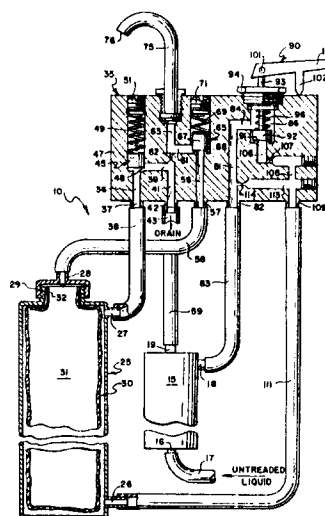
A water heating system comprising an outdoor heat exchanger including a heat collection chamber, solar collector panels, collector fins, an evaporator for passing refrigerant therethrough to perform the heat exchange between the refrigerant and the heat transferred from the panels and fins to evaporate the refrigerant. The panels, fins and evaporator are incorporated integrally in the heat collection chamber. A variable rotational speed compressor is connected to the outdoor heat exchanger for compressing the vaporized refrigerant from the evaporator. A heat exchanger disposed on the bottom side in the water storage tank passes the refrigerant vapor from the compressor to perform the heat exchange between the water in the tank and the refrigerant vapor to condense the refrigerant vapor. A variable opening expansion valve adiabatically expands the refrigerant liquefied by the heat exchanger in the tank, thereby decreasing the pressure and temperature of the refrigerant and supplies the refrigerant thus adiabatically expanded to the outdoor heat exchanger. A control unit controls the rotational speed of the compressor and the opening of the expansion valve to maximize the coefficients of performance of the refrigeration cycle in response to the pressures and temperatures measured at various portions in the refrigeration cycle.

4482456

REVERSE OSMOSIS LIQUID TREATING APPARATUS

John Grayson assigned to RainSoft Water Conditioning Company

A multiple purpose tank has an inlet-outlet port, an inlet port and an outlet port connected to a drain. A flexible liquid-proof liner in the tank is

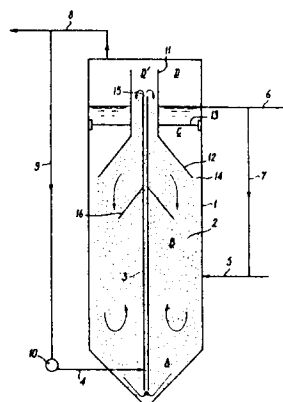


connected to the inlet-outlet port to form a variable volume container. Automatic valve means controls the flow of effluent-untreated liquid to the drain and the pressure of effluent-untreated liquid in the tank on the liner and the variable volume container formed thereby. A reverse osmosis module has an inlet port for connection to a pressurized source of untreated liquid and an outlet port connected to the inlet port of the tank. The module has an outlet port connected to the inlet-outlet port of the tank to discharge treated liquid to the interior of the tank. A manually actuated control valve controls the flow of effluent-untreated liquid to the tank.

4482458

PROCESS AND APPARATUS FOR THE ANAEROBIC TREATMENT OF WASTE WATER IN A FILTER INCLUDING GRANULAR MATERIAL

Jean-Marie Rovel, Claude Prevot, Roger Nicol,
Rueil Malmaison, France assigned to
Degremont



Waste water to be treated is introduced into a filter including granular material for supporting the biomass resulting from an anaerobic treatment operation. During such treatment operation biogas is formed, and the waste water

being treated and the granular material supporting the biomass are continuously circulated by injecting a portion of the biogas into a tube extending vertically upwardly through the filter.

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