

SEAWATER DESALTING APPARATUS AND METHOD USING SOLAR ENERGY FOR CONTINUOUSLY SUPPLYING HEAT

ABSTRACT

Provided is a seawater desalting apparatus using solar energy for continuously supplying heat, comprising a seawater purifying system and a seawater desalting system, wherein the seawater purifying system consists of an extraction seawater well (6a), a seawater sterilizing clarification pool (6), a multi-stage ultra-filter pool (7) and a purified seawater pool (8); and the seawater desalting system consists of a solar energy concentration and heat collection apparatus (1), a solar energy heat storage tank (2), a purified seawater heater (3) and a multi-stage seawater flash evaporator. The solar energy concentration and heat collection apparatus (1) collects sunlight heat energy via a heat-conducting working medium during daytime, stores the sunlight heat energy in the solar energy heat storage tank (2), and then heats the purified seawater via the heat-conducting working medium to a certain temperature; the hot seawater is conveyed to the multi-stage flash evaporator, and sprayed and evaporated stage by stage, and fresh water and brine are separated out. Also disclosed is a seawater desalting method using solar energy for continuously supplying heat. The seawater desalting apparatus using solar energy for continuously supplying heat can effectively collect relatively scattered solar energy to heat and evaporate seawater, the quality of the resulting fresh water reaches the drinking water standards, and solar energy is stored to allow continuous operation to produce fresh water.

Fig. 1