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(54) **REDUCED-PRESSURE DISTILLATION SYSTEM**

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(57) **ABSTRACT**

There is provided a reduced-pressure distillation system, which is relatively simple in construction, easy in operation without depending only on driving of a vacuum pump, and therefore can be manufactured and operated at low costs. The system includes an impure water tank, a separating tank, a drainage tank, and a collecting tank. The impure water tank, the drainage tank, and the collecting tank each has an outside pressure communicating chamber, which makes contact with outside pressure, and a cell, which communicates with the outside pressure communicating chamber corresponding thereto and is sealed with respect to the outside pressure during operation of the system. The separating tank is sealed with respect to outside pressure and has an evaporator provided therein. Impure water is fed from the cell of the impure water tank to the evaporator, by using an effective head between levels of the impure water in the impure water tank and priming supplied to the drainage tank. Remaining water in the evaporator is discharged to the cell of the drainage tank. Purified water in a bottom portion of the separating tank, which is obtained by evaporating the impure water by activation of the evaporator, is collected into the cell of the collecting tank. The cells of the respective tanks communicate with each other via the separating tank. Evacuation within the separating tank is carried out to keep each cell in a pressure-reduced state.

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(30) **Foreign Application Priority Data**

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(51) **Int. Cl.⁷** **B01D 3/10; C02F 1/04**

(52) **U.S. Cl.** **202/205; 159/22; 159/DIG. 16; 203/1; 203/2; 203/91; 202/160**

(58) **Field of Search** **203/10, 11, 1, 203/2, DIG. 17, 91, 100; 159/DIG. 42, 22, DIG. 16, 44; 202/205, 269, 160**

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4 Claims, 5 Drawing Sheets

