

ABSTRACT

A polluted water purification apparatus which pumps up water in a polluted water region, allows gas such as oxygen to dissolve in the water under pressure and discharges the water into the polluted water region again. The apparatus comprises a pump (2) which pumps up the polluted water in the polluted water region, a pressure tank (T) in which the polluted water pumped up by the pump (2) is stored, a gas supplying means (9, 10) which supplies gas such as oxygen to the pressure tank (T), a water level control means (5, 6) which controls the water level in the pressure tank (T), a polluted water ejecting means (4) which ejects polluted water pumped up onto the water level of the pressure tank (T) and a discharging means (13) which discharges the water in the pressure tank (T) to the polluted water region. The water is improved in the DO value in the purification apparatus and made to flow through a rapid filter or an active carbon filter to form aerobic organisms layers in a filtering sand layer or an active carbon layer. Since many aerobic and facultative anaerobic denitrifying bacteria are contained in the aerobic organism layer, BOD removal and nitrification and denitrification of nitride components can be efficiently progressed while the water is made to flow through the filtering sand and the active carbon filter.