

A method and device for separating a substance from a liquid mixture by fractional crystallisation

Abstract

For the purpose of separating a substance from a liquid mixture by crystallisation, the inner walls of pipes in a crystalliser (S-1, S-2, S-3) are cooled by evaporating a liquid medium, the pressure of the gaseous phase of the medium being controlled in accordance with the temperature required for crystallisation. In these conditions a layer of crystals forms on the outer walls of the pipes and can later be melted. The previously-formed crystal layer is melted in one crystalliser simultaneously with crystallisation in another crystalliser. This is done by introducing gaseous medium which is produced in a crystalliser during the said evaporation. In addition, heat energy can be supplied to the crystalliser where melting occurs, in order to evaporate liquid medium there so that melting is accelerated. The two simultaneously operating crystallisers operate respectively as an evaporator and as a condenser in a refrigerating unit (11), thus saving considerable energy compared with known crystallisation methods.

(Fig. 1)