ABSTRACT
AIR SEPARATION

A stream of precooled and purified air is introduced through an inlet 2 into a double rectification column comprising a higher pressure rectification column 4 and a lower pressure rectification column 6 and is separated therein into an oxygen-rich fraction and a nitrogen-rich fraction. A stream of argon-enriched oxygen vapour flows from an outlet 70 of the lower pressure rectification column 6 into a side column 52 in which argon is separated therefrom. An oxygen-enriched liquid air stream is taken from an outlet 16 at the bottom of the higher pressure rectification column 4. A vaporous oxygen-enriched air stream is introduced into the lower pressure rectification column 6 through an inlet 46 above the outlet 70. At least part of the oxygen-enriched liquid is partially reboiled in a reboiler 22 and separated in a further rectification column 28, thereby forming a vapour depleted of oxygen and a liquid air stream further enriched in oxygen. At least one stream of the further-enriched liquid is vaporised to form the oxygen-enriched vapour that is introduced through the inlet 46 into the lower pressure rectification column 6. A part of the oxygen-depleted vapour is condensed and is taken as product or reintroduced into the lower pressure rectification column 6. The partial reboiling in the reboiler 22 is effected by indirect heat exchange with a stream of argon-enriched oxygen vapour withdrawn from the outlet 70, or in an alternative process with a stream withdrawn from an intermediate region of the side column 52.

Fig. 1