

[Document Name] ABSTRACT

[Title of the Invention] Method and apparatus for
producing product nitrogen gas and product argon

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[Summary]

[Problem] The problem addressed by the present
invention lies in providing a method for producing
high-purity nitrogen and argon with high energy
10 efficiency by utilizing the cold of an oxygen-
containing gas, and also an apparatus employed in said
method.

[Solution] An apparatus 100 for producing product
15 nitrogen gas and product argon, comprising: a first
rectification column 2 into which raw air is
introduced; a second rectification column 5 from which
product nitrogen gas is drawn; a third rectification
column 6 from which product argon gas is drawn; and a
20 first condenser 3 configured to perform heat exchange
between a gas accumulated in a column top portion of
the first rectification column 2, and a liquid
accumulated in a column bottom portion of the second
rectification column 5, wherein an intermediate portion
25 gas containing nitrogen is drawn from an intermediate
portion of the second rectification column 5 and merged
with a condenser gas drawn from the first condenser 3.
The merged gases are expanded and cooled by means of an
expansion turbine 8 whereby the cold thereof is
30 utilized.

[Selected Drawing] Fig. 1