ships such that they can make a voyage using their own power. Since drill ships have to frequently move in order for development of small marginal fields, they are constructed to make a voyage using their own power, without assistance of tugboats.

Meanwhile, a moonpool is formed at the center of a rig ship, a fixed type platform or a drill ship, such that a riser or a drill pipe is vertically movable through the moonpool. In addition, a derrick in which a variety of drilling equipments are integrated is installed on a deck.

SUMMARY OF THE INVENTION

~~An aspect~~Embodiments of the present invention ~~is~~are directed to an enclosed derrick structure of an arctic ship, in which an upper portion of an enclosed derrick is gradually widened upwardly, thereby facilitating equipment installation and maintenance of a crown block platform.

Meanwhile, in order for drilling of natural resources in extremely cold regions such as arctic regions, arctic rig ships, fixed type arctic platforms, and arctic ships such as arctic drill ships have been built. Such arctic ships may be constructed to have an enclosed area in almost all zones in order to prevent freezing in extremely low temperature environments and ensure the smooth operation of equipments and crews' safety.

In particular, a derrick and a moonpool of an arctic ship are enclosed in order to protect internal equipments and workers. A ventilating system may be installed in the enclosed derrick and the enclosed moonpool in order for protection and ventilation of the inner spaces thereof. In particular, in order to meet a rule and regulation in an extremely low temperature region, it is preferable that the ventilating system supplies heated air to the derrick and the moonpool, and exhausts cooled air to the exterior through an upper portion of the derrick. In this case, a crown block section is formed at the upper portion of the derrick, and a crown block is installed inside the crown block section. The crown block section may be formed in a conical shape which becomes

narrower upwardly. A plurality of exhaust fans may be installed inside the crown block section.

However, due to the structural shape of the conical crown block section that becomes narrower upwardly, such an enclosed derrick is weak to accessiblity. Thus, it is difficult to install and maintain the exhaust fan, and the inner spaces of the enclosed derrick and the enclosed moonpool may not be effectively protected. Moreover, smooth ventilation may not be maintained.

According to ~~an embodiment~~an aspect of the present invention, ~~an enclosed derrick~~a drill ~~structure of an arctic~~ ship includes: an enclosed derrick; a clown block section disposed at an upper portion of the enclosed derrick such that a crown block is installed and an installation workspace is formed thereinside; ~~and~~ an exhaust unit installed in the installation workspace to communicate with the exterior~~.~~; a drill floor on which the enclosed derrick is disposed; an enclosed moonpool coupled to communicate with a lower portion of the enclosed derrick; and a supply unit disposed at the outside of the drill floor to supply outside air to the enclosed moonpool.

The width of the crown block section may be gradually widened upwardly, and the width of the installation workspace may be gradually widened upwardly.

A pair of inclined planes may be symmetrically formed on both sides of the crown block, such that a lower circumference of the crown block is formed to be narrower than an upper circumference thereof.

A pair of inclined planes may be symmetrically formed on both sides of the crown block section, such that a lower circumference of the crown block section is formed to be wider than an upper circumference thereof.

A crown block platform for installation of the crown block may be formed on the bottom of the crown block section.

The exhaust unit may include: an exhaust port provided in a side of the crown block to communicate with the exterior; an exhaust fan coupled to an inner side of the exhaust port; and a first open/close valve installed at a downstream side of the exhaust fan to selectively allow the exhaust of inside air.

~~The enclosed derrick structure may further include: a drill floor on which the enclosed derrick is disposed; an enclosed moonpool coupled to communicate with a~~

~~lower portion of the enclosed derrick; and a supply unit disposed at the outside of the drill floor to supply outside air to the enclosed moonpool.~~

The supply unit may include: an inlet port into which the outside air flows; a heater installed adjacent to the inlet port; a supply fan coupled to the inlet port to supply the outside air; and a second open/close valve installed at a downstream side of the supply fan to selectively allow the inflow of the outside air.

The enclosed derrick structure may further include a supply pipe coupled from the second open/close valve to the enclosed moonpool, such that the outside air from the supply fan is supplied to the enclosed moonpool.

According to another embodiment of the present invention, an enclosed derrick structure of an arctic ship is characterized in that an exhaust unit is installed at an upper inner side of an enclosed derrick.

An installation workspace whose width is gradually widened upwardly may be formed at an upper portion of the enclosed derrick, and a crown block may be installed in the installation workspace. A crown block platform for installation and maintenance of the exhaust unit may be disposed at an upper portion of the enclosed derrick.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view illustrating an enclosed derrick structure of an arctic ship according to an embodiment of the present invention.

FIG. 2 is a cross-sectional view illustrating the enclosed derrick structure of the arctic ship and a ventilating system installed therein according to the embodiment of the present invention.

<Reference Numerals>

10: enclosed derrick	15: enclosed moonpool
20: crown block section	21: inclined plane
25: crown block platform	30: exhaust unit
31: exhaust port	32: exhaust fan