序号	标题	摘要	申请人	申请号	申请日
1	Regasification System of Gas and Ship having the Same	According to an embodiment of the present invention, a gas regasification system includes: a regasification supply line re-gasifying liquefied gas to supply the gas to a consumer; first and second heat exchangers placed on the regasification supply line; a heat source circulation line supplying a thermal medium for the regasification of the liquefied gas to the first and second heat exchangers; a first seawater heat exchanger exchanging heat between the thermal medium and seawater to supply the thermal medium to the second heat exchanger; a second seawater heat exchanger exchanging heat between the thermal medium discharged from the second heat exchanger and seawater to supply the thermal medium to the first heat exchanger; and a control valve placed between the first and second seawater heat exchangers on the heat source circulation line, and converting the thermal medium from a liquefied state to at least a partially gasified state. Therefore, the present invention is capable of reducing costs and the size of a facility by reducing the diameter of pipes in a thermal medium circulation line.COPYRIGHT KIPO 2020	KOREA SHIPBUILDING OFFSHORE ENGINEERING CO LTD; HYUNDAI HEAVY INDUSTRIES CO LTD	KR10201800969 44	2018/8/20
2	Regasification System of Gas and Ship having the Same	According to one embodiment of the present invention, a gas regasification system includes: a regasification supply line regasifying liquefied gas and supplying the same to a demand source; a heat exchanger provided on the regasification supply line; a first seawater heat exchanger and a second seawater heat exchanger supplying a heat medium to the heat exchanger; and a heat source circulating line having the first seawater heat exchanger and the second seawater heat exchanger, wherein the heat source circulating line branches from a downstream portion of the first seawater heat exchanger to be connected to the second seawater heat exchanger and the heat exchanger.COPYRIGHT KIPO 2020	KOREA SHIPBUILDING OFFSHORE ENGINEERING CO LTD; HYUNDAI HEAVY INDUSTRIES CO LTD	KR10201800969 46	2018/8/20

3	Boil-off gas cooling system and ship having the same	The present invention relates to a boil off gas cooling system and a ship. The boil off gas cooling system includes: a cooling device heat- exchanging boil off gas generated in a liquefied gas storage tank with a first refrigerant; a compressor compressing the boil off gas heat- exchanged in the cooling device; a liquefier heat-exchanging the boil off gas compressed in the compressor and the first refrigerant with a second refrigerant; and a refrigerant heat exchanger cooling the first refrigerant or the second refrigerant by using liquefied gas supplied to a demand source from the liquefied gas storage tank.COPYRIGHT KIPO 2020	KOREA SHIPBUILDING OFFSHORE ENGINEERING CO LTD; HYUNDAI HEAVY INDUSTRIES CO LTD	KR10201801240 59	2018/10/17
4	liquefied gas tank, fuel gas supply system, and ship having the same	The present invention relates to a liquefied gas storage tank, a gas fuel supply system, and a ship which can guarantee transport stability of liquefied gas. The gas fuel supply system is arranged on a ship other than a liquefied gas carrier, which loads liquefied gas therein as fuel for propulsion. The gas fuel supply system comprises: a pressurizing liquefied gas storage tank storing liquefied gas at a high pressure therein and allowing evaporation gas created by evaporating the liquefied gas to coexist; a stratification suppressing unit allowing the liquefied gas or the evaporation gas stored in the liquefied gas storage tank to flow to drop the temperature of the liquefied gas at a liquid surface which is the boundary surface between the liquefied gas and the evaporation gas in a direction of becoming closer to the temperature of the liquefied gas at the bottom in the liquefied gas storage tank; and a gas fuel processing unit to supply the gas of the liquefied gas storage tank to a user entity. The gas fuel processing unit supplies the liquefied gas as main fuel of the user entity or does not supply the evaporation gas to the user entity while sailing as the stratification suppressing unit suppresses a stratification phenomenon to delay a pressure increase of the liquefied gas storage tank.(AA) No stratification suppressing unit(BB) Operate in accordance with a stratification suppressing unit pressure increase(CC) Continuously operate the stratification suppressing unitCOPYRIGHT KIPO 2020	KOREA SHIPBUILDING OFFSHORE ENGINEERING CO LTD; HYUNDAI HEAVY INDUSTRIES CO LTD	KR10201801277 74	2018/10/24

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5	Regasification System of liquefied Gas and Ship Having the Same	The present invention relates to a regasification system of liquefied gas and a ship having the same. The regasification system of liquefied gas includes: a vaporizer vaporizing the liquefied gas into a heat medium to supply the same to a demand source; and a heat medium heater heating the heat medium through a heat source, wherein the heat medium has a physical property which is phase-changed from a gas phase to a liquid phase by the liquefied gas in the vaporizer and is phase-changed from the liquid phase to the gas phase by the heat source in the heat medium heater, and the heat medium heater includes: a housing storing the liquid type heat medium and introducing the heat-exchanged heat medium with the liquefied gas; and a heat source supply unit allowing the heat source to flow in the liquid type heat medium stored in the housing.COPYRIGHT KIPO 2019	HYUNDAI HEAVY INDUSTRIES CO LTD	KR10201701189 54	2017/9/15
6	Regasification System of liquefied Gas and Ship Having the Same	The present invention relates to a liquefied gas regasification system capable of increasing gasification efficiency of liquefied gas and a ship including the same. According to the present invention, the liquefied gas regasification system comprises a gasifier to gasify liquefied gas with a thermal medium to supply the same to a customer and a thermal medium supply unit to supply the thermal medium to the gasifier. The thermal medium supply unit comprises: a thermal medium pump to pressurize the thermal medium; a thermal medium heater heating the pressurized thermal medium by a heat source to supply the thermal medium to the gasifier; an expansion drum to store the thermal medium exchanging heat with the liquefied gas in the gasifier; a thermal medium circulation line sequentially connecting the thermal medium pump, the thermal medium heater, the gasifier, and the expansion drum to form a closed-loop shape; a thermal medium storage tank to store the thermal medium discharge line connected from the expansion drum; and a thermal medium discharge line connected from the thermal medium circulation line.COPYRIGHT KIPO 2019	HYUNDAI HEAVY INDUSTRIES CO LTD	KR10201701189 62	2017/9/15

7	Regasification System of liquefied Gas and Ship Having the Same	The present invention relates to a liquefied gas regasification system and a ship having the same. The liquefied gas regasification system includes: a vaporizer vaporizing liquefied gas into a heat medium to supply the same to a demand source; and a heat medium supply unit supplying the heat medium to the vaporizer, wherein the heat medium supply unit includes: a heat medium pump pressurizing the heat medium; a heat medium heater heating the pressurized heat medium through a heat source to supply the same to the vaporizer; an expansion drum storing the heat-exchanged heat medium with the liquefied gas in the vaporizer; a heat medium circulating line sequentially connecting the heat medium pump, the heat medium heater, the vaporizer and the expansion drum and having a closed loop shape; and a heat medium collection line collecting the heat medium from an upstream portion and a downstream portion of the heat medium heater to control pressure of the expansion drum.COPYRIGHT KIPO 2019	HYUNDAI HEAVY INDUSTRIES CO LTD	KR10201701189 61	2017/9/15
8	Power generation system	According to the present invention, a power generation system is applied to a ship having a consumption device to consume evaporated gas to generate electricity, and comprises: a power generation unit generating power by driving a turbine with a circulating working fluid; and an evaporation unit evaporating liquefied gas through heat exchange by being supplied with a portion of the circulating working fluid to supply evaporated gas to the consumption device.COPYRIGHT KIPO 2019	KOREA ELECTRIC POWER CORPORATION; HYUNDAI HEAVY INDUSTRIES CO LTD	KR10201700878 90	2017/7/11
9	A Regasification System Of Gas and Vessel having same	According to the present invention, provided is a gas regasification system, which comprises: an evaporation unit which can re-gasify liquefied gas stored in a liquefied gas storage tank to supply the liquefied gas to a demand; a supply apparatus supplying heat sources circulating while being accompanied by a phase change to the evaporation unit; and a power generating apparatus absorbing energy generated during the phase change of the heat sources to generate power.COPYRIGHT KIPO 2018	HYUNDAI HEAVY INDUSTRIES CO LTD	KR10201601265 53	2016/9/30

10	A Regasification System Of Gas and Vessel having same	while a phase thereof is changed. The heat source supply device has a foreign substance removing device to increase purity of the heat source.COPYRIGHT KIPO 2018	HYUNDAI HEAVY INDUSTRIES CO LTD	KR10201601155 03	2016/9/8
11	Regasification System of liquefied Gas and Ship Having the Same	The present invention relates to a liquefied gas regasifying system and a ship including the same, comprising: a liquefied gas storage tank; a gasifier for gasifying liquefied gas of the liquefied gas storage tank into a heating medium; and a heat exchanger for heating the heating medium as a heat source, wherein the heat exchanger includes a primary heat exchanger and a secondary heat exchanger. The primary heat exchanger and the secondary heat exchanger are provided in a serial manner with respect to a flow of the heating medium and in a parallel manner with respect to a flow of the heat source. COPYRIGHT KIPO 2018	HYUNDAI HEAVY INDUSTRIES CO LTD	KR10201600956 68	2016/7/27

		The present invention relates to a fuel cell system and a ship having the same. The fuel cell system comprises: a hydrogen generation unit including a raw material processing unit including an LNG evaporator for evaporating LNG by using steam (H20) in order to preprocess the LNG supplied from a raw material supply unit, a raw water processing unit for preprocessing raw water supplied from a raw water supply unit, a reformer for reforming preprocessed fuel supplied from the raw material processing unit and the steam (H20) supplied from the raw water			
12	FUEL CELL SYSTEM AND SHIP HAVING THE SAME	processing unit and the steam (H20) supplied from the raw water processing unit, and a combustor for heating the reformer; a fuel cell including an anode in which fuel containing hydrogen is flowed from the hydrogen generation unit and which discharges exhaust gas, a cathode to which air is supplied as an oxidant required for a fuel cell reaction, and an	INDUSTRIES CO LTD	KR10201501209 51	2015/8/27

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13	Supercritical Carbon Dioxide Power Generation System and Ship having the same	The present invention relates to a supercritical carbon dioxide power generation system and a ship having the same. The supercritical carbon dioxide power generation system comprises: a heat exchange unit for heat-exchanging waste heat of an engine and carbon dioxide; a turbine unit generating power to operate a generator by using the carbon dioxide discharged from the heat exchange unit for the generator to produce electricity; a first steam heat exchange unit for heat-exchanging supercritical carbon dioxide and a phase change medium for the phase change medium to be heated to generate steam; and a second steam heat exchange unit for heat-exchanging a cooling medium to cool the engine and the phase change medium supplied to the first steam heat exchange unit.	HYUNDAI HEAVY INDUSTRIES CO LTD	KR10201400993 30	2014/8/1
14	Cold energy system	According to an embodiment of the present invention, the cold energy system of the present invention comprises: a PCM stored cold energy tank which exchanges heat with the fuel supplied from a liquefied gas storage tank to the consumer and where a phase change material, which changes phase to store the cold energy of fuel, is stored; and a cold energy supply line connected from the PCM stored cold energy tank to a cold energy accommodating unit to supply cold energy. The phase change material comprises: a first material having a first phase change point; and a second material which has a second phase change point which is higher than the first phase change point and which is stored separately from the first material. According to the present invention, the cold energy system of the present invention, when liquefied gas at an extremely low temperature is heated to be used as fuel, stores the cold energy discharged from the liquefied gas in the phase change material, and uses it as the cold energy of an air conditioner or for cooling a heatgenerating device immediately or after some time. Thus, the present invention can reduce energy by not letting cold energy be discarded but used, and can reduce the production volume of cold energy needed for an air conditioner and a heat-generating device to minimize the energy needed for operation of a ship or a marine plant.COPYRIGHT KIPO 2016	HYUNDAI HEAVY INDUSTRIES CO LTD	KR10201401261 66	2014/9/22

		According to an embodiment of the present invention, a cold heat utilizing method using a cold heat system which exchanges heat with fuel supplied to a source of demand from a liquefied gas storage tank, and includes a PCM cold heat storage tank for storing a phase change material whose phase is changed to store cold heat of the fuel, and a cold heat supply line connected to a cold heat receiving device from the PCM cold heat storage tank so as to supply cold heat, comprises: a step of measuring an amount of cold heat stored in the PCM cold heat storage			
1	Method of cold energy utilization	with the present invention, when cryogenic liquefied gas is heated to be used as fuel, cold heat discharged from the liquefied gas is stored in a phase change material and used for cold thermal energy of an air conditioning unit or cooling a heating element, immediately or at intervals. Accordingly, energy can be saved because the cold heat is utilized rather than discarded. In addition, output of cold heat required from the air conditioning unit and the heating device can be reduced, thereby minimizing energy required for driving a vessel or an offshore plant.(AA) Start(BB) End(S110) Measuring an amount of cold heat stored in a PCM cold heat storage tank(S120) Measuring a supply amount and a temperature of liquefied gas(S130) Measuring cold heat discharged from the PCM cold heat storage tank(S140) Calculating a target temperature of the liquefied gas(S150) Monitoring cold heat transferred from the liquefied gas to the PCM cold heat storage tank(S160) Discharging the cold heat stored in the PCM cold heat storage tank(COPYRIGHT KIPO 2016)	HYUNDAI HEAVY INDUSTRIES CO LTD	KR10201401261 69	2014/9/22

16	method of cold energy utilization	from the liquefied gas is stored in a phase change material and used for cold thermal energy of an air conditioning unit or cooling a heating element, immediately or at intervals. Accordingly, energy can be saved because the cold heat is utilized rather than discarded. In addition, output	HYUNDAI HEAVY INDUSTRIES CO LTD	KR10201401261 77	2014/9/22
16		be transferred from the PCM cold heat storage tank to each of the apparatuses; and a step of transferring the cold heat in the PCM cold heat storage tank to each of the apparatuses. According to the cold heat utilizing method in accordance with the present invention, when cryogenic liquefied gas is heated to be used as fuel, cold heat discharged from the liquefied gas is stored in a phase change material and used for cold thermal energy of an air conditioning unit or cooling a heating element, immediately or at intervals. Accordingly, energy can be saved	HYUNDAI HEAVY INDUSTRIES CO LTD		2014/9/22
		of cold heat required from the air conditioning unit and the heating device can be reduced, thereby minimizing energy required for driving a vessel or an offshore plant.(AA) Start(BB) End(S10) Measuring an amount of cold heat stored in a PCM cold heat storage tank(S20) Measuring a required amount of the cold heat per apparatus(S30) Measuring a reserved amount and a temperature of seawater(S40) Calculating an amount of the cold heat which should be transferred from the PCM cold heat storage tank to each of the apparatuses(S50) Transferring the cold heat in the PCM cold heat storage tank to each of the apparatuses(S60)			

17	Supercritical Carbon Dioxide Power Generation System and Ship having the same	The present invention relates to a supercritical carbon dioxide power generation system and a ship having the same. The supercritical carbon dioxide power generation system comprises: a heat exchange unit for heat-exchanging waste heat of an engine and carbon dioxide; a turbine unit generating power to operate a generator by using carbon dioxide discharged from the heat exchange unit for the generator to produce electricity; and a preheating heat exchange unit heat exchanging supercritical carbon dioxide and a phase change medium so as to heat the phase change medium to produce steam.(100) Engine(200) Supercharger(300) GeneratorCOPYRIGHT KIPO 2016	HYUNDAI HEAVY INDUSTRIES CO LTD	KR10201400993 47	2014/8/1
18	CARGO TANK USING STRAIGHT CORRUGATION MEMBRANE CONNECTION MEMBER FOR EXTREMELY LOW TEMPERATURE SUBSTANCE CARRIER	The present invention relates to a cargo tank of extremely low temperature substance carrier comprising; a hull shell forming the exterior of a cargo tank; a membrane primary barrier which is in contact with an extremely low temperature substance in the inside of the cargo tank; a primary insulating wall installed in an outside of the primary barrier; a membrane second barrier installed in an outside of the primary insulating wall; and a second insulating wall disposed in an outside of the second barrier and fixed to the hull shell, wherein at least one barrier out of the primary barrier or the second barrier includes a wrinkle type corner wrinkle panel on which a number of wrinkle sections are formed continuously in parallel and a flat type main panel formed in a direction different from a direction of wrinkle of the corner wrinkle panel. A cargo tank of extremely low temperature substance carrier according to an embodiment of the present invention bonds a linear curve type wrinkle barrier and a plate type main barrier thereby a breakage from shrinkage of plate type main barrier may be prevented since a linear curve type wrinkle barrier can absorb such shrinkage deformation from the temperature of an extremely low temperature substance.COPYRIGHT KIPO	HYUNDAI HEAVY INDUSTRIES CO LTD	KR10201500338 89	2015/3/11

19	CARGO TANK FOR EXTREMELY LOW TEMPERATURE SUBSTANCE CARRIER	The present invention relates to a cargo tank for an extremely low temperature material carrier, which comprises: a hull shell which forms the exterior of a cargo tank; a membrane first protective wall which is in contact with an extremely low temperature material inside the cargo tank; a first insulating wall which is installed in the external side of the first protective wall; a membrane second protective wall which is installed in the external side of the first insulating wall; and a second insulating wall which is placed in the external side of the second protective wall in order to be fixated to the hull shell. At least part of the second protective wall is formed of a metal material. The first insulating wall, the second protective wall, and the second insulating wall are combined by a combining unit which penetrates at least part of the first protective wall, the second protective wall, and at least part of the second insulating wall in order. According to the present invention, a cargo hold structure is further combined by a spring and a bolt fastening device in order to improve the coherence of the cargo hold structure to the hull shell and to effectively absorb the loads which asymmetrically applies to a horizontal wall corner unit and an edge, thereby realizing a cargo hold with a stable structure.	HYUNDAI HEAVY INDUSTRIES CO LTD	KR10201301659 72	2013/12/27
20	mast of naval vessels souped up efficiency of radar	The present invention relates to a vessel mast having improved a radar function. The vessel mast comprises a mast ship body having various radars and antennas installed therein; yard arms formed to be perpendicularly extended from both sides of the upper end of the mast and having a radar and a sensor. The mast ship body is formed to be a trapezoidal prism getting smaller in size toward the upper end from the lower end and to be a pyramid shape in a plane having the front side smaller in width than the rear side. Each yard arm is configured to be a trapezoidal prism getting smaller in size toward the outer side. The mast ship body of the mast and the yard arms are formed to be a trapezoidal prism. Therefore, weight reduction and a design for low center of gravity can be possible. Also, a knuckle point does not exist. Therefore, the mast having a stable structure can be provided. Moreover, the RCS signal of radar can be reduced and the interference of a transmission signal does not exist.COPYRIGHT KIPO 2015	HYUNDAI HEAVY INDUSTRIES CO LTD	KR10201300584 42	2013/5/23

21	Engine driving system for ship	The present invention relates to an engine driving system for a ship. The engine driving system comprises an engine (10) for driving the ship; a generator (20) generating electricity by receiving energy from the engine (10); a PMS (30) receiving the electricity generated by the generator (20); a fuel pump (40) and a lubricating pump (50) operated by receiving the electricity from the PMS (30) to run the engine; a turbo charger (60) arranged on an exhaust pipe (11) through which exhaust gas of the engine is discharged; and a thermoelectric generator (70) supplying electricity to the fuel pump (40) and the lubricating pump (50) in case of the blackout of the PMS (30). Accordingly, the engine driving system has an effect of improving the safety and reliability for the operation of the ship by preventing general problems caused by the stopped engine, since the thermoelectric generator obtains energy by exchanging heat with the exhaust gas discharged through the turbocharger and supplies electricity to the fuel and lubricating pumps in case of the blackout of the PMS.COPYRIGHT KIPO 2015	HYUNDAI HEAVY INDUSTRIES CO LTD	KR10201300390 31	2013/4/10
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22	CARGO TANK USING STRAIGHT CORRUGATION MEMBRANE CONNECTION MEMBER FOR EXTREMELY LOW TEMPERATURE SUBSTANCE CARRIER	first corner corrugation panel in a corrugation shape where multiple corrugation sections are continuously formed in parallel; and a first main panel in a flat shape which is connected with the first corner corrugation panel. The second protective wall comprises: a second corner		KR10201301659 64	2013/12/27
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	CARGO TANK USING STRAIGHT CORRUGATION MEMBRANE	The present invention relates to a cargo hold of an extremely low temperature material cargo ship, which comprises: a hull shell which forms the exterior of a cargo hold; a membrane first protective wall which is in contact with an extremely low temperature material inside the cargo hold; a first insulating wall which is installed in the external side of the first protective wall; a membrane second protective wall which is installed in the external side of the first insulating wall; and a second insulating wall which is placed in the external side of the second protective wall in order to be fixated to the hull shell. At least one between the first insulating wall and the second insulating wall comprises: a plastic			
2	CONNECTION	stiffener which is formed of multiple plastic thin plates; and an insulating	HYUNDAI HEAVY INDUSTRIES CO	KR10201301659	2013/12/27
	MEMBER FOR	board which is formed of an insulator filled in the inside of a grid of the	LTD	80	
	EXTREMELY LOW	plastic still energy to all embodiment of the present invention,			
	TEMPERATURE	the cargo hold of an extremely low temperature material cargo ship is			
	SUBSTANCE	formed in a special structure where a polyurethane form insulator is			
	CARRIER	reinforced with the plastic stiffener for the insulating wall in order to use			
		polyurethane form with relatively low density compared to a case where			
		the insulator is not reinforced with the plastic stiffener. Therefore, the			
		cargo hold prepared by the present invention can reduce raw material			
		costs for polyurethane form consumed, secure excellent insulation			
		capacity and compressive strength, and reduce the thickness of			
		polyurethane form.COPYRIGHT KIPO 2014			

25	Installation method of the secondary insulation panel for LNG carrier	The present invention refers to liquid natural gas carrier method relates to for installing the same and of the insulation system in, the 2 difference insulation plate 2 are disposed at the connecting hole, the support is combined center insulation difference that an equal length and plate fastening bolting and second pressure, the length and the of easily controlling a flatness in the direction of the width 2 and increasing the degree fastening plate insulation difference, connecting hole, the support is combined through the reduction of information on the connection component and the can and quilting functions capable of working continuously and of the insulation system in liquid natural gas carrier by a rope. provides method for installing the same. The present invention refers to 2 the central insulation difference secured to a hole are disposed at the a part of the hull plate insulation difference 2, support plate and a horizontal support plate plate insulation difference 2 2 1 a disposed on top of an insulating boards difference insulating boards difference to arranged as staggered edge adhesive provided.	HYUNDAI HEAVY INDUSTRIES CO LTD	KR10200701128 26	2007/11/6
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