序号	标题	摘要	申请人	申请号	申请日
1	Ocean thermal energy conversion and for the cold water pipe assembly	A cold water pipe assembly, and mechanisms for generating a cold water pipe assembly, are provided. A plurality of mooring lines are secured to a pipe end member. A pipe segment of a plurality of pipe segments is slidably coupled with respect to the mooring lines at a plurality of locations on a pipe wall of the pipe segment. The plurality of pipe segments is iteratively extended to form a pipe assembly of a desired length by joining a next pipe segment to a previous pipe segment to extend the pipe assembly, and lowering the pipe end member and the pipe assembly by extending the mooring lines. At least some of the next pipe segments are slidably coupled with respect to the mooring lines at a plurality of locations on a respective pipe wall of the at least some of the next pipe segments.	LOCKHEED MARTIN CORPORATION	JP2017532864	2015/12/18
2	The fluid distribution subassembly having an evaporator	An evaporator comprises a plurality of thermal elements disposed in a shell interior of an evaporator shell. A primary supply line configured to carry a working fluid is disposed in the shell interior. A plurality of tube sets is fluidically coupled to the primary supply line, and each tube set is spaced apart from an adjacent tube set along the first primary supply line. Each tube set comprises a plurality of individual tubes, with each tube proximate a different subset of thermal elements within the shell interior. Each tube comprises a plurality of first fluid distribution points configured to distribute the working fluid proximate the external surface of at least one of the plurality of thermal elements, thereby increasing the amount of surface area of the thermal elements in contact with the working fluid, and increasing the overall efficiency of the evaporator.	LOCKHEED MARTIN CORPORATION	JP2017564041	2016/6/10

3	Evaporator having a fluid distribution sub-assembly	An evaporator comprises a plurality of thermal elements disposed in a shell interior of an evaporator shell. A primary supply line configured to carry a working fluid is disposed in the shell interior. A plurality of tube sets is fluidically coupled to the primary supply line, and each tube set is spaced apart from an adjacent tube set along the first primary supply line. Each tube set comprises a plurality of individual tubes, with each tube proximate a different subset of thermal elements within the shell interior. Each tube comprises a plurality of first fluid distribution points configured to distribute the working fluid proximate the external surface of at least one of the plurality of thermal elements, thereby increasing the amount of surface area of the thermal elements in contact with the working fluid, and increasing the overall efficiency of the evaporator.	LOCKHEED MARTIN CORPORATION	US15178220	2016/6/9
4	Ocean thermal energy conversion system for continuous reinforced cold water pipe	A continuous reinforced cold water pipe (CWP) for an Ocean Thermal Energy Conversion (OTEC) system is formed from a sequential series of molded pipe sections, which are formed from a series of rigid frame sections and a curable material to form the continuous reinforced CWP. Each molded pipe section is formed by moving a rigid frame section into a mold, enclosing at least a portion of the rigid frame section in the curable material, and curing the curable material. As each molded pipe section is moved out of the mold, the next sequential rigid frame section, which is connected to the previous rigid frame section, is moved into the mold. The cycle is repeated as many times as required to form the continuous reinforced CWP having a desired length.	LOCKHEED MARTIN CORPORATION	JP2019555739	2017/12/27
5	CONTINUOUS REINFORCED COLD WATER PIPE FOR AN OCEAN THERMAL ENERGY CONVERSION SYSTEM	A continuous reinforced cold water pipe (CWP) for an Ocean Thermal Energy Conversion (OTEC) system is formed from a sequential series of molded pipe sections, which are formed from a series of rigid frame sections and a curable material to form the continuous reinforced CWP. Each molded pipe section is formed by moving a rigid frame section into a mold, enclosing at least a portion of the rigid frame section in the curable material, and curing the curable material. As each molded pipe section is moved out of the mold, the next sequential rigid frame section, which is connected to the previous rigid frame section, is moved into the mold. The cycle is repeated as many times as required to form the continuous reinforced CWP having a desired length.	Lockheed Martin Corporation	US16569737	2019/9/13

6	LARGE DIAMETER PIPE FLEXIBLE CONNECTION	A flexible connection is described for use between a vertical, large diameter cold water conveying pipe and a floating platform that supports the cold water conveying pipe or another pipe to permit the pipe and the platform to rotate in roll and pitch directions relative to one another without imposing excessive bending moments or strain on the cold water pipe. The flexible connection also contains internal and external pressure across the connection. The flexible connection includes an articulation mechanism that interconnects the vertical cold water conveying pipe and the platform or a pipe on the platform, and a flexible, fluid impermeable bellows.	LOCKHEED MARTIN CORPORATION	WOUS14018683	2014/2/26
7	SYSTEM AND PROCESS OF COOLING AN OTEC WORKING FLUID PUMP MOTOR	A cooling system and process in an OTEC system are described where the sub cooled working liquid from the working fluid pump outlet is used to cool the working fluid pump motor either directly or indirectly via heat exchange with a secondary fluid. The hea t from the motor that is being rejected into the working fluid just prior to the working fluid flowing to the evaporator helps to alleviate heat duty in the evaporator meaning more potential for the evaporator to create energy. Also because two phase evaporators such as those in an OTEC system are less efficient than single phase heat exchangers at single phase heating this pre heating of the working fluid will help the evaporator performance substantially.	LOCKHEED MARTIN CORPORATION	IN5999CHENP2015	2015/10/5
8	System and process of cooling an OTEC working fluid pump motor	A cooling system and process in an OTEC system are described where the sub-cooled working liquid from the working fluid pump outlet is used to cool the working fluid pump motor, either directly or indirectly via heat exchange with a secondary fluid. The heat from the motor that is being rejected into the working fluid just prior to the working fluid flowing to the evaporator helps to alleviate heat duty in the evaporator meaning more potential for the evaporator to create energy. Also, because two-phase evaporators, such as those in an OTEC system, are less efficient than single-phase heat exchangers at single-phase heating, this pre-heating of the working fluid will help the evaporator performance substantially.	LOCKHEED MARTIN CORPORATION	US14199549	2014/3/6

9	Method for improving operation efficiency of evaporation device and ocean thermal energy conversion system using the method	The present invention relates to a cooling system and method in an ocean thermal energy conversion system (OTEC), wherein a working medium subcooled from the outlet of an active fluid pump is used to directly or indirectly dissipate the active fluid pump motor through heat exchange with a secondary fluid. The heat of the engine is discharged into the activator immediately before the activator flows into the evaporator, which helps to reduce the heat load in the evaporator, which means that the evaporator has sufficient opportunities to generate energy. Similarly, since two-phase evaporators, such as those in OTEC systems, are less efficient in single-phase heating than single-phase heat exchange elements, preheating this active fluidizing agent will make the operating efficiency of the evaporator sustainable.	LOCKHEED MARTIN CORPORATION	VN1201503515	2015/9/24
10	SYSTEM AND PROCESS OF COOLING AN OTEC WORKING FLUID PUMP MOTOR	A cooling system and process in an OTEC system are described where the sub-cooled working liquid from the working fluid pump outlet is used to cool the working fluid pump motor, either directly or indirectly via heat exchange with a secondary fluid. The heat from the motor that is being rejected into the working fluid just prior to the working fluid flowing to the evaporator helps to alleviate heat duty in the evaporator meaning more potential for the evaporator to create energy. Also, because two-phase evaporators, such as those in an OTEC system, are less efficient than single-phase heat exchangers at single-phase heating, this pre-heating of the working fluid will help the evaporator performance substantially.	LOCKHEED MARTIN CORPORATION	WOUS14021860	2014/3/7
11	FRICTION SURFACE STIR PROCESS	A process is described that employs what can be termed a friction surface stirring (FSS) process on the surface of a metal object. The FSS process occurs on some or the entire surface of the metal object, at a location(s) separate from a friction stir welded joint. The FSS process on the surface produces a corrosion resistant mechanical conversion "coating" on the object. The "coating" is formed by the thickness of the material of the object that has been FSS processed. In one exemplary application, the process can be applied to a metal strip that is later formed into a tube whereby the "coated" surface resides on the inside of the tube making it highly resistant to corrosive flow such as seawater.	LOCKHEED MARTIN CORPORATION	WOUS14021869	2014/3/7

12	FRICTION SURFACE STIR PROCESS	A process is described that employs what can be termed a friction surface stirring (FSS) process on the surface of a metal object. The FSS process occurs on some or the entire surface of the metal object, at a location(s) separate from a friction stir welded joint. The FSS process on the surface produces a corrosion resistant mechanical conversion "coating" on the object. The "coating" is formed by the thickness of the material of the object that has been FSS processed. In one exemplary application, the process can be applied to a metal strip that is later formed into a tube whereby the "coated" surface resides on the inside of the tube making it highly resistant to corrosive flow such as seawater.	Lockheed Martin Corporation	US14199513	2014/3/6
13	PROCESS AND APPARATUS FOR MOLDING CONTINUOUS-FIBER COMPOSITE	A process and apparatus for multi-shot, liquid-resin-molding of continuous-fiber composite articles is disclosed. The process involves the step-wise fabrication of an article wherein continuity of the fibers is maintained between the multiple workpieces of the finished composite article.	Lockheed Martin Corporation	EP09763797	2009/6/15
14	COMPOSITE HEAT EXCHANGER SHELL AND BUOYANCY SYSTEM AND METHOD	A heat exchanger includes a shell made of a composite material, and a heat exchanger housed substantially within the shell. The shell is made of a composite material further comprises planks positioned in the outer periphery of the shell. The planks, in one embodiment, are substantially hollow or include substantially hollow portions. In some embodiments, the planks are formed of pultruded plastic. The shell of the heat exchanger further includes layers of fiberglass. The pultruded plastic planks are sandwiched between at least a first layer of fiberglass and a second layer of fiberglass. The layers of fiberglass are infused with resin. A floating portion of an Ocean Thermal Energy System includes shells made of composite material. The cold seawater intake can also be an elongated tube of composite material.	Lockheed Martin Corporation	US13715514	2012/12/14

15	COMPOSITE HEAT EXCHANGER SHELL AND BUOYANCY SYSTEM AND METHOD	A heat exchanger includes a shell made of a composite material, and a heat exchanger housed substantially within the shell. The shell is made of a composite material further comprises planks positioned in the outer periphery of the shell. The planks, in one embodiment, are substantially hollow or include substantially hollow portions. In some embodiments, the planks are formed of pultruded plastic. The shell of the heat exchanger further includes layers of fiberglass. The pultruded plastic planks are sandwiched between at least a first layer of fiberglass and a second layer of fiberglass. The layers of fiberglass are infused with resin. A floating portion of an Ocean Thermal Energy System includes shells made of composite material. The cold seawater intake can also be an elongated tube of composite material.	LOCKHEED MARTIN CORPORATION; NAGURNY Nicholas J; MILLER Alan; LEVINGS Natalie	WOUS12069869	2012/12/14
16	DEHUMIDIFIER SYSTEM AND METHOD	A condenser or heat exchanger includes a circulation system for moving a cooling fluid, and a graphite foam in thermal communication with the circulation system. The condenser or heat exchanger can be used to remove water, or more particularly freshwater from humid air in tropical, subtropical, and arid climates.	Lockheed Martin Corporation	US13683534	2012/11/21
17	DEHUMIDIFIER SYSTEM AND METHOD	A condenser or heat exchanger includes a circulation system for moving a cooling fluid, and a graphite foam in thermal communication with the circulation system. The condenser or heat exchanger can be used to remove water, or more particularly freshwater from humid air in tropical, subtropical, and arid climates.	LOCKHEED MARTIN CORPORATION; MAURER Scott; ELLER Michael R;	WOUS12066294	2012/11/21
18	DIRECT BONDING OF HEAT CONDUCTING FOAM AND SUBSTRATES	A technique for joining porous foam material, such as graphite, metal or ceramic foam, to a substrate is described. The substrate can be metal, a thermoset plastic or a composite material. The substrate has a melting point below that of the foam material. The two are joined together by using the foam to apply heat locally at the surface of the substrate. Some or all of the foam is heated to the appropriate temperature at or above the melting point of the substrate material. The foam and the substrate are then brought together, with the heat from the foam melting or softening the substrate material so that the substrate material infuses into the pores of the foam. As the foam cools below the melting point temperature, the substrate material solidifies to create a mechanical bond between the foam and the substrate.	LOCKHEED MARTIN CORPORATION; JANSEN Eugene; MAURER Scott M	WOUS12030853	2012/3/28