

enclosed within one envelope of silk, linen, canvas, steel or other suitable thin metal, the hull divided into cabin, engine, store and freight rooms, the gas-field divided either longitudinally into sections and then into chambers by gas-tight partitions, or into chambers by gas-tight transverse partitions, and provided with a shifting, propelling, raising, lowering and steering screw aft, and a shifting, steering, propelling, raising and raising screw forward attached respectively to revolving cylinders $n^* n^*$, each coupled by universal joint r_1 , revolving shaft q_2 , and main propelling shaft p , connected with internally arranged propulsive machinery. 9th. A vessel for aerial navigation, comprising a hull and gas-field constructed on one general frame of metal in the form of the grayling or salmon fishes, a shuttle or a cylinder carried by an easy incline to a central point forward, and by an abrupt curvature, to a central point astern, the whole enclosed within one envelope of silk, linen, canvas, steel or other suitable thin metal, the hull divided into cabin, engine, store, freight and other compartments, the gas-field divided either longitudinally into sections and the sections divided transversely into chambers by gas-tight partitions, or into chambers only, by transverse gas-tight partitions, provided with raising, lowering and propelling screws on the sides, journaled in revolving cylinders $n n$, connecting with internally arranged actuating machinery, through endless belts p or revolving shafts o , also with a shifting, propelling, raising, lowering, and steering screw aft, and a shifting, steering, propelling, raising and raising screw forward, attached respectively to revolving cylinders $n^* n^*$ and each coupled by universal joints r_1 , revolving shaft q_2 and main propelling shaft p , also connected with internally arranged propulsive machinery. 10th. A vessel for aerial navigation constructed and arranged in the manner and form shown, provided with one, two, or more, raising, lowering and propelling screws on the sides, journaled in revolving cylinders $n n$ connecting with internally arranged actuating machinery, through endless belts p or revolving shafts o , also with a shifting, steering, raising, lowering and propelling screw aft, attached to a revolving cylinder n^* and by a universal joint r connected with main propelling shaft p , also actuated by internally arranged propulsive machinery. 11th. A vessel for aerial navigation built on one general frame and under one cover provided with a shifting, lowering, raising, steering and propelling screw aft, a shifting, steering, lowering and raising screw forward, connected by universal joints r_1 to, and propelled by revolving shafts, from the inside of the vessel, which pass out fore and aft, through revolving cylinders, and take bearings in shifting beds, or revolving carriages, located between circular jaws or imbedded in a circular seat in loop, formed on the ends of the cylinders, fore and aft of the vessel. 12th. A vessel for aerial navigation having a gas-field involving the greater part of area of the vessel, divided into compartments by transverse gas-tight metal bulk-heads. 13th. A vessel for aerial navigation, constructed on one general frame of metal, under one cover, made air and gas-tight, and fire and water-proof, provided with rubber packed gas and air tight hinges ranged along gunwales and dome-ridges, and forming a part of the vessel's cover. 14th. In combination, rubber packed gas and air-tight hinges, and metal cover or envelope, for vessels for aerial navigation. 15th. A vessel for aerial navigation constructed on one general frame of metal, and under one cover, or within one envelope of silk, linen, canvas, steel or other suitable thin metal, made air and gas-tight, and fire and water proof, having rubber packed gas-tight hinges therein, and provided with raising, lowering and propelling side screws, journaled in revolving cylinders, and propelled by belting, or by bevel gear machinery, and a propelling, raising, lowering and steering screw aft, secured in journal bearings in revolving carriage, adjusted and secured between circular jaws, or adjusted in a recess in a loop terminating the after-revolving cylinder n^* , and actuated through a universal joint by a main propelling shaft p passing from within the vessel. 16th. A vessel for aerial navigation, comprising a hull and gas-field constructed on one general frame, preferably of steel tubing enclosed with sheets of thin steel riveted and brazed together, the whole in the form of a cylinder, with a long entering cone forward and a short abrupt cone aft, the gas-field divided into compartments by transverse metal bulk-heads, the hull divided into decks near the centre of the ship. 17th. A vessel for aerial navigation, provided with a fire and wa-er-proof, and gas and air-tight well or chimney passing up and out through the gas-field for the passage of the smoke stack and steam pipes from the furnace and engine below. 18th. A vessel for aerial navigation, constructed as shown, and divided into gas-field and hull, the hull divided into engine, store, freight, and other rooms, and a cabin, and the cabin provided with look-out galleries protruding therefrom. 19th. In combination with the several gas chambers or compartments in vessels for aerial navigation, longitudinal galleries $n n$, induct and e-duct gas pipes provided with automatic as well as manual valves and stop cocks, leading from the gas compartments to the gas receiver, gas condensers and gas generators, as well as to a general exhaust pipe leading without the ship, the whole arranged for infusing or exhausting. 20th. A vessel for aerial navigation, provided with dead-eyes for the passage of the anchor cables, doors for freight and passengers, windows for air, light and ventilation, arranged at suitable positions in the hull thereof. 21st. A vessel for aerial navigation, constructed on one frame and within one cover or envelope in the form shown, having a gas-field involving the greater part of the area of the vessel, in combination with store, freight and engine rooms, and cabin having look-out galleries and longitudinal galleries passing fore and aft under the gas-field, also with engines, boilers and other internally arranged propelling machinery. 22nd. A vessel for aerial navigation, constructed on one frame and within one cover or envelope, having a gas-field involving the greater part of the area of the vessel, in combination with a cabin having look-out galleries, and longitudinally arranged internal galleries, with engine, boiler, freight and other store rooms, also with engine, boiler and other internally arranged propulsion machinery for actuating side screws for raising, lowering and propelling, and an after-screw for raising, lowering and propelling the vessel, or propelling only, also with side and aft as well as with forward revolving screws. 23rd. A vessel for aerial navigation, constructed on one frame within one envelope, and divided into hull and gas-field, both divided as shown, and provided with machinery internally arranged for actuating the raising, lowering, propelling and steering screws, in combination with gas generators, also with gas condensers, also with gas reservoirs, supplying the gas-field with gas, for receiving and condensing the gas, when there is too great a supply, and for storing the surplus of gas. 24th. A vessel for aerial navigation, con-

structed on one frame, within one envelope, divided into hull and gas-field, the hull divided into cabin having look-out galleries, as well as longitudinal galleries ranging under the gas-field, engine, store, freight and other rooms, the gas-field divided into sections or chambers by gas-tight positions, the whole arranged as shown, in combination with winches internally arranged for reeling in or passing out the anchor cables. 25th. In vessels for aerial navigation, a pendulum lever governed by a pendent ball attached to, and arranged for automatically revolving side revolving cylinders. 26th. A pendulum lever governed by a pendent ball and carrying lateral arms attached to lever arms, on revolving side cylinders, for automatically revolving said cylinders on their axes, and keeping the vessel on a level keel. 27th. A pendulum lever secured on a rocker shaft, near the side of the vessel for aerial navigation, governed by a pendent ball and carrying lateral arms attached by the ends to lever arms protruding from a keyed-collar, on side revolving cylinders $n n$, for automatically keeping aerial vessel on a level keel. 28th. In vessels for aerial navigation, revolving cylinder shafts $n n$ provided with journal bearings for carrying the journal of a revolving screw in the outer end, a bevelled gear band on the inner end, a keyed-collar or muff n^* having a projecting arm n^* and idlers within. 29th. The revolving cylinder shafts $n n$ provided with journal bearings in the outer end, a keyed-muff n^* having a projecting lever arm n^* and a bevel gear band on the inner end, and with idlers within, in combination with bearings in, and a vessel for aerial navigation. 30th. The revolving cylinder shafts $n n$ provided with journal bearings in the outer end, a bevel gear band on the inner end, idlers within, and a keyed collar or muff having a projecting lever arm, in combination with raising, lowering and propelling screws, having a journal axle at right angles to the diameter of the screw, the axle thereof mounted with a vault m_2 for carrying an endless belt. 31st. The revolving cylinder $n n$ provided with idlers within, a bevel gear band on the inner end, a muff with a projecting lever arm, intermediate and journal bearings in the outer end, in which are secured the journal axle, of the raising, lowering and propelling side screw, carrying a vault m_2 , in combination with raising, lowering and propelling side screws, the endless belt p , pulleys p^1 on, and carried by revolving main shaft p for raising, lowering and propelling aerial vessels. 32nd. In vessels for aerial navigation, revolving cylinder shafts n provided with a head n^1 containing journal bearings for securing and carrying the journal of the side screws of the outer end, a muff or collar having a projecting lever arm keyed thereon, intermediately, and a bevel gear band secured on the inner end, and provided on the inside with journal bearings for a revolving shaft. 33rd. The revolving cylinder shaft n having a cross head n^1 , provided with journal bearings at the outer end, a keyed muff or collar n^* intermediate its length within the vessel, the bevel gear band on the inner end and journal bearings on the inside. 34th. The revolving cylinder shafts n having journal bearings on the inside, a bevel gear band n^2 on the inner end, a muff or collar with a projecting lever arm n^3 intermediately, and a cross-head n^1 provided with journal bearings for the side screw axle, on the outer end, in combination with revolving, raising, lowering and propelling side screws m , axle journals m^1 carrying a gear wheel m^3 and with a gear wheel o^1 , shaft o , gear wheel o^3 , gear wheels $p^1 p^2$ on the main propelling shaft p , for raising, lowering and propelling vessels for aerial navigation. 35th. The revolving cylinder shaft n having journal bearings on the inner side thereof, a bevel gear band on the inner end, a muff or collar having a projecting lever arm, intermediately, and cross-head n^1 provided with journal bearings for the revolving screw axle, at the outer end, carrying therein the axle journal m^2 , of the propelling screws m provided with bevel gear wheel m^3 , in combination with bevel gear o^1 , revolving shaft o , bevel gear wheel o^3 , bevel gear wheels $p^1 p^2$ on main propelling shaft p , for raising, lowering and propelling aerial vessels. 36th. In vessels for aerial navigation, revolving cylinder shafts $n^* n^*$ terminating at the outer end in circular jaws, which carry a revolving bed, or a looped yoke recessed for, and carrying a circular revolving carriage, to which an after raising, lowering, propelling and steering screw q , is journaled. 37th. The revolving cylinder shaft n^* terminating at the outer end in circular jaws, between which are secured a circular bed, for changing the direction of the after screw, and a bevelled gear band secured on the inner end, and the forward screw, when used, provided with journal bearings and carrying, on the inside, two revolving shafts, one shaft p for driving the propeller, steering, lowering and raising screws, the other shaft p^1 provided with a pinion at the outer end for gearing with the revolving carriage, and a cogged wheel at the inner end, which latter passes out through a slot in the side of the cylinder, and meshes with a rotating band s cogged on the inner edge and spurred on the periphery. 38th. In combination, revolving cylinder n^* passing from within, out through the stem of the vessel, terminating in circular jaws $q^* q^*$ and having a bevel gear band secured on the inner end, a rotating band s spurred on the periphery and cogged on the inner edge, a pinion p^1 , revolving shaft p^1 , pinion p^2 , revolving carriage q^3 adjusted between circular jaws $q^* q^*$ at the outer end, main propelling shaft p , universal joint r_1 , journal bearings within the cylinder, journal bearings in the carriage q^3 , axle r and the after raising, lowering, steering and propelling screws. 39th. The revolving cylinder shaft n^* terminating at the outer end in circular jaws, carrying a circular revolving bed provided with a journal bearing for the after-screw, and a corrugated rack on one edge, provided with an internally adjusted revolving shaft p^1 carrying a pinion at each end, in combination with a rotating sliding band s , near the inner end of the cylinder, cogged on the inner edge and spurred on the periphery, and with an endless belt s^3 and a corrugated pulley s^4 , for shifting the after, raising, lowering, steering and propelling screws. 40th. The revolving cylinder shaft n^* terminating in circular jaws $q^* q^*$ at one end, and having a slot n^5 in the side, near the other, and provided with a rotating band s^1 cogged on the inner edge and spurred on the periphery, in combination with an endless chain belt s^3 , a corrugated pulley wheel s^4 for the purpose of revolving shaft p^1 in its bearings, shaft p^1 carrying a pinion on the inner end, for gearing with band s^1 , and a cogged wheel on the outer end for gearing with the raked band q^4 on the upper edge of the shifting bed or carriage q^3 , for revolving the same on its axis, and thus changing the position of the after-screw. 41st. The revolving cylinder shaft n^1 terminating in circular jaws, at the outer end, for receiving and holding a circular revolving bed, in which the forward steering screw is journaled and secured, provided with a bevelled gear band on the inner end for re-