

impervious to gas, the vessels overlaid with a substantial netting 17th. Vessels for aerial navigation terminating fore and aft in long cylindrical cones made sharp at the extreme ends, constructed on one general frame of metal thoroughly secured at its several intersections, and trussed, braced and stayed throughout with one envelope of metal or other suitable material, made air and gas tight, and fire and waterproof and internally divided into gas field and hull by partition wall made impervious to gas and fire proof, a gas field divided into sections or gas cells by fire proof bulkheads, and so arranged that the same may be exhausted or inflated separately. 18th. A cylindrically formed vessel for aerial navigation terminating fore and aft in cylindrical cones made sharp at the extreme ends, the whole constructed within one envelope of metal or other suitable material made gas and air tight, and fire and waterproof, on one general frame of metal thoroughly secured at its several intersections, braced, trussed and stayed throughout and divided into a hull and gas field, the gas field divided into sections or gas cells separated by gas-tight bulkheads, and the hull divided into engine, machinery, freight and store rooms and a cabin, the latter extending part of its depth below the keelson of the vessel and provided with doors, windows and means of ventilation and lighting, and the vessel provided with internally arranged actuating machinery for handling and propelling reversible side and fore and aft screws carried in revolving shafts protruding beyond the vessel from the inside for raising, lowering, steering and propelling such vessel. 19th. Vessels for aerial navigation in cylindrical form constructed on one general frame of metal, provided with internally arranged actuating machinery for steering, raising, lowering and propelling the vessel through propelling screws on the sides and stern. 20th. Vessels for aerial navigation constructed in cylindrical form terminating fore and aft in long cylindrical cones made sharp at the extreme ends, one general frame of metal braced, stayed and tied. 21st. Vessels for aerial navigation constructed in cylindrical form terminating fore and aft in long cylindrical cones made sharp at the extreme ends, one general frame of metal thoroughly braced, stayed and tied, the whole secured at the several intersections and strengthened amidships above and below by double braced trussing α β γ δ and ϵ . 22nd. Vessels for aerial navigation constructed in cylindrical form terminating fore and aft in long cylindrical cones made sharp at the extreme ends and enclosed in one envelope or cover of metal, or other suitable material made air and gas tight, and fire and waterproof, one general frame of metal thoroughly braced, stayed and tied, the whole secured at the several intersections and strengthened amidships above and below by double braced trussing α β γ δ and ϵ . 23rd. Vessels for aerial navigation constructed in cylindrical form, terminating fore and aft in long cylindrical cones made sharp at the extreme ends within one envelope or cover of metal, or other suitable material made air and gas tight, and fire and waterproof, one general frame of metal, the whole thoroughly braced, stayed and tied and all secured at their several intersections and strengthened amidships above and below by double braced trussings, and provided with a projecting, thoroughly braced frame for the lower portion of a cabin, the same being strengthened by a lighter double braced trussing. 24th. Vessels for aerial navigation constructed in cylindrical form, terminating in cylindrical cones made sharp fore and aft, within one envelope or cover of metal, or other suitable material rendered air and gas tight and fire and waterproof by paint or other compound, one general frame secured at its intersections and thoroughly braced, stayed and tied and strengthened by double braced trussing amidships, divided into hull and gas field, the hull divided by fire proof and gas tight bulkheads into store, freight, business and engine rooms, and a cabin extending from within the hull partly below the keelson d and the gas field transversely intersected by fire, gas and air proof bulkheads. 25th. Vessels for aerial navigation, constructed on one general frame of metal secured at the several intersections thereof, and strengthened amidships by double braced trussing in cylindrical form, terminating fore and aft in long conic ends sharp at the extreme ends, enclosed within one envelope of metal, or other suitable material made air and gas tight, and fire and waterproof, and divided into gas field and hull. The gas field subdivided into cells or sections by fire and gas proof bulkheads provided with manholes and traps, and educt and induct pipes for inflating or exhausting the vessel, and the hull divided into store, freight, engine and other business rooms as well as a cabin by fire proof and gas tight bulkheads, the cabin being partly within and partly protruding below the hull of the vessel and provided with doors, windows, ventilators, bow windows and a passenger elevator, for receiving and landing passengers when in mid-air, and internally arranged into saloons and state rooms. 26th. Vessels for aerial navigation in cylindrical form terminating fore and aft in long cylindrical cones, constructed on one general frame of metal, the gas field divided into gas tight cells or sections by bulkheads, and the hull divided into engine, freight, machinery and store rooms by fire proof decks and partitions having doors, windows and other means of exit, lighting and ventilating, and a cabin m partly within and extending partly below the general hull of the vessel secured by cords d , stanchions e and braces and also provided with internally arranged actuating machinery for steering, raising, lowering and propelling the vessel through propeller screws on the side, and a propeller screw aft. 27th. Vessels for aerial navigation constructed on one general metal frame, thoroughly braced and secured at its several intersections and under one envelope of thin metal, or other suitable material made impervious to gas, air and water, cabin m , arranged partly within and extending partly below the keelson cord of the vessel secured by cords, posts and braces to the underside of the hull, the said cabin being made sharp fore and aft to overcome head resistance and to present no position or rear surface to the wind. 28th. Vessels for aerial navigation constructed on one general metal frame thoroughly braced and secured at its several intersections and all within one envelope of thin metal, or other suitable material, provided with internally arranged propulsive machinery for steering, raising, lowering and propelling the same through side raising, lowering and propelling side screws adjusted on revolving cylinders, and an after steering and propelling screw also adjusted on a revolving cylinder n_3 , also with a cabin m secured within and protruding part of its depth below the hull of the vessel, stayed and supported by cord d , bracing cord d_4 , stanchions or posts e and other braces and supports, and divided into state and other living rooms provided with windows and doors as well as other means of ventilation, together with lookout protrusions $t t t$. 29th. Vessels

for aerial navigation constructed on one general metal frame thoroughly braced and stayed within one envelope or cover of metal or other suitable material, having a gas field divided into gas tight cells or sections by bulkheads, and a hull divided into engine rooms, store and freight compartments, machinery rooms and a cabin, the latter extending from within the vessel part of its depth below the keelson to be propelled, raised and lowered and steered by internally arranged machinery, by side and after or stern propelling screws, the hull of the vessel provided with dead eyes for the anchor cables, and a well closed by trap doors for the passage of an elevator, handled by internally arranged cables and winches. 30th. Vessels for aerial navigation in the form of elongated cylindrical cones abutting against each other, that is to say, a cylindrical body terminating in sharp cone like ends, propelled, steered and handled by internally arranged machinery through side raising, lowering and propelling screws, and an after steering and propelling screw and a forward steering screw, and carrying a cabin built sharp fore and aft provided with windows, doors, ventilators and lookouts, and a well for an elevator, the cabin protruding from within the vessel hull part of its depth below the keelson cord d . 31st. In vessels for aerial navigation, a chimney passing from the interior through the body and out at the top, and internally divided into a gas field and hull, the gas field divided into sections by gas and fire proof bulkheads having exhaust and supply pipes, and man holes and traps. 32nd. Vessels for aerial navigation constructed in cylindrical form within one envelope and on one general frame of metal comprising dome ridge c , keelson d , cords d_2 d_3 d_4 , guides e , post e and braces f_5 , tension braces i , forged braces g , binding rods f , trussings α β γ δ ϵ and lower cords d_4 , the whole secured at their several intersections, the whole divided internally into gas field and hull, internally arranged actuating machinery for handling and propelling externally arranged reversible side and forward and after screws journaled in revolving shafts, which pass from within the vessel, out beyond the vessel for raising, lowering, propelling and steering such vessels. 33rd. In combination, cord d_4 , trussing k , keelson d , trussing d_1 , stanchions e and the general bracing shown, the frame and supports of cabin m , which extends from within the hull to partly below the keelson of the vessel and is made sharp fore and aft, and incased in a suitable envelope provided with windows, doors, ventilators and bow windows for observation, as well as the supporting bases of the engine, store, freight and business rooms within the vessel. 34th. Vessels for aerial navigation constructed on one general frame of metal comprising longitudinal cords c d d_2 f f_2 f_4 d_4 , etc., stanchions e , girders α , etc., the whole thoroughly braced, stayed, tied and bound, and the several parts secured at their intersections and strengthened amidships by double braced trussing α β γ δ , etc., and divided into hull and gas field, the gas field divided into cells or chambers by gas and fire proof bulkheads having manholes and traps therein, and the hull divided into store, freight, engine, machinery and other business rooms and a cabin by fire proof walls and decks. 35th. Vessels for aerial navigation in the form of a cylinder terminating fore and aft in long cylindrical cones made sharp at the ends within one cover or envelope of metal, or other suitable material made gas tight and fire proof, constructed on one general frame of metal thoroughly braced, stayed, tied and secured at the several intersections and strengthened amidships and at other necessary points, by double braced trussing provided with a chimney out through the top, externally adjusted side screws for raising, lowering and propelling purposes, and after steering and propelling screw adjusted in revolving cylinders m n n_3 and connected with internally arranged propulsive machinery, the body of the vessel divided into gas field and hull, the gas field divided into cells or sections by fire and gas proof, bulkheads provided with manholes and traps, and the hull divided by fire proof walls and decks into engine, store, machinery and freight rooms, and a cabin, the cabin extending from within parts of its depth below the vessel hull and provided with windows, doors and ventilators and bow windows. 36th. In combination, cabin m extending from within part of its depth below the hull of the vessel, the cord d , keelson d , trussing d_1 k , and store, engine and other rooms within the hull of vessels for aerial navigation constructed within one envelope and on one general frame of metal thoroughly braced, stayed and tied as well as strengthened amidships and at other points by double braced trusses.

No. 16,643. Improvement on Mattresses.

(Perfectionnement des matelas.)

Laban Heath, Boston, Mass., U.S., 11th April, 1883: for 15 years.

Claim.—1st. The air chamber or body A provided with holes or openings through the same, for receiving cords or twine, whereby it is adapted to be upholstered without injury, and the upholstery kept in proper position. 2nd. The air chamber or body A provided with the tubes m . 3rd. The improved mattress, the same consisting of the air chamber or body A, provided with openings for the tufting cords or twines X and upholstered. 4th. The air chamber or body A provided with the holes or openings e e , the top and bottom C D being hermetically sealed or united around the holes. 5th. The body A provided with the straps a , rings i and line H. 6th. In a mattress, the body A, upholstery B and a line line. 7th. The cross lines J which encircle the mattress, these lines being also secured in the rings i .

No. 16,644. Improvements in Sub-marine Telegraph Cables. (Perfectionnements aux cables télégraphiques sous-marins.)

Samuel Trott and Frederic A. Hamilton, Halifax, N.S., 11th April, 1883: for 5 years.

Claim.—1st. A submarine electric cable consisting of an insulated conductor and a series of spiral servings of non-metallic cords or yarns, wound spirally about said core in alternate right and left hand spirals, the cords or yarns of each serving being twisted in a direction, the reverse of that in which the servings are wound about the conductor. 2nd. The cable composed of core a , insulating envelope b and servings c d e f of non-metallic yarns or cords, the yarns or cords of servings c being twisted in a right hand direction and laid in left hand spirals, and those of servings d f being twisted in a left hand direction and laid in right hand spirals, or vice versa.