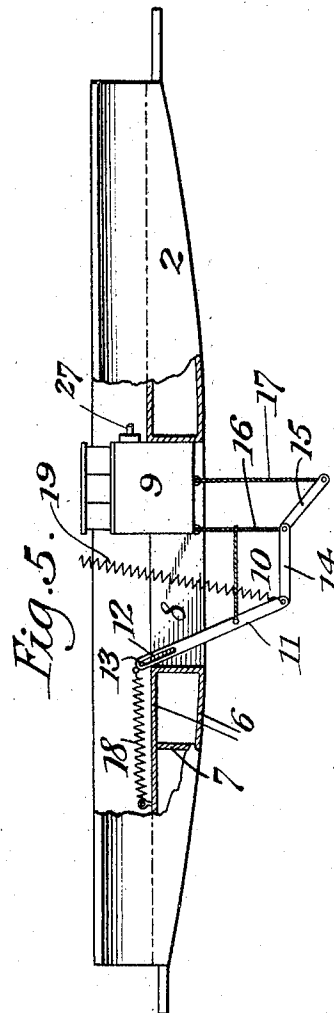
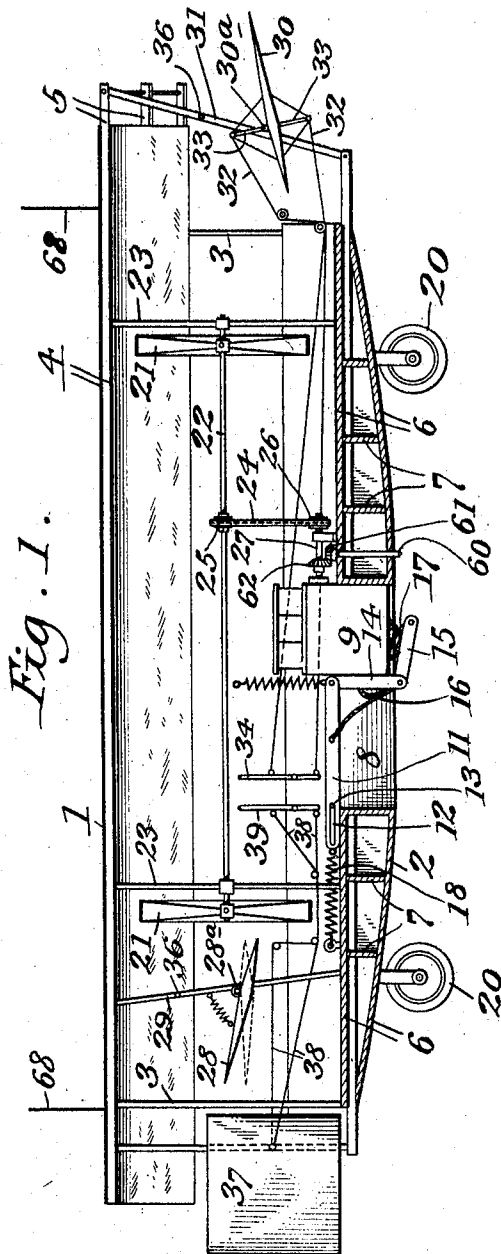


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AIRSHIP.
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4 SHEETS—SHEET 1.



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4 SHEETS—SHEET 2.

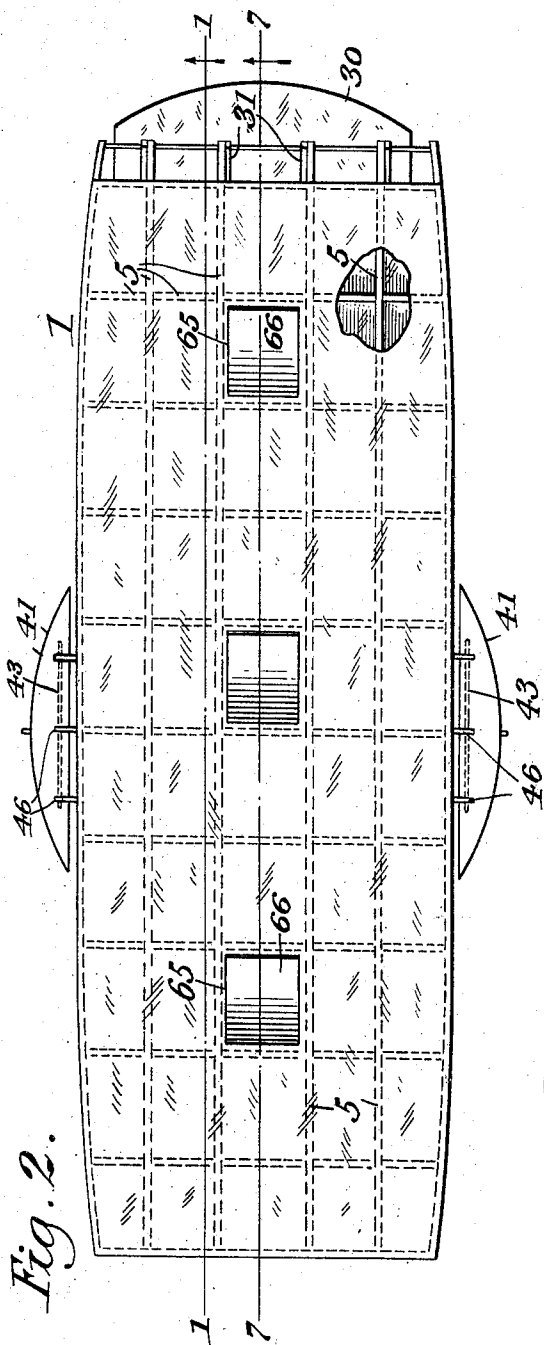


Fig. 2.

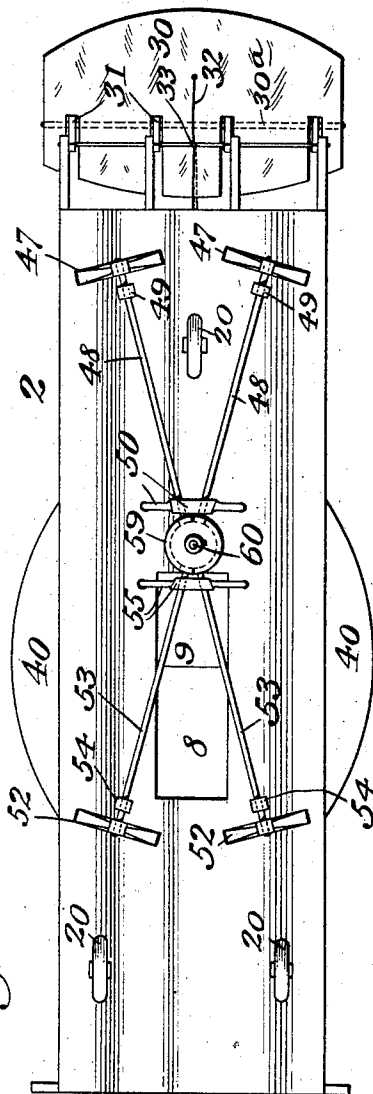


Fig. 3.

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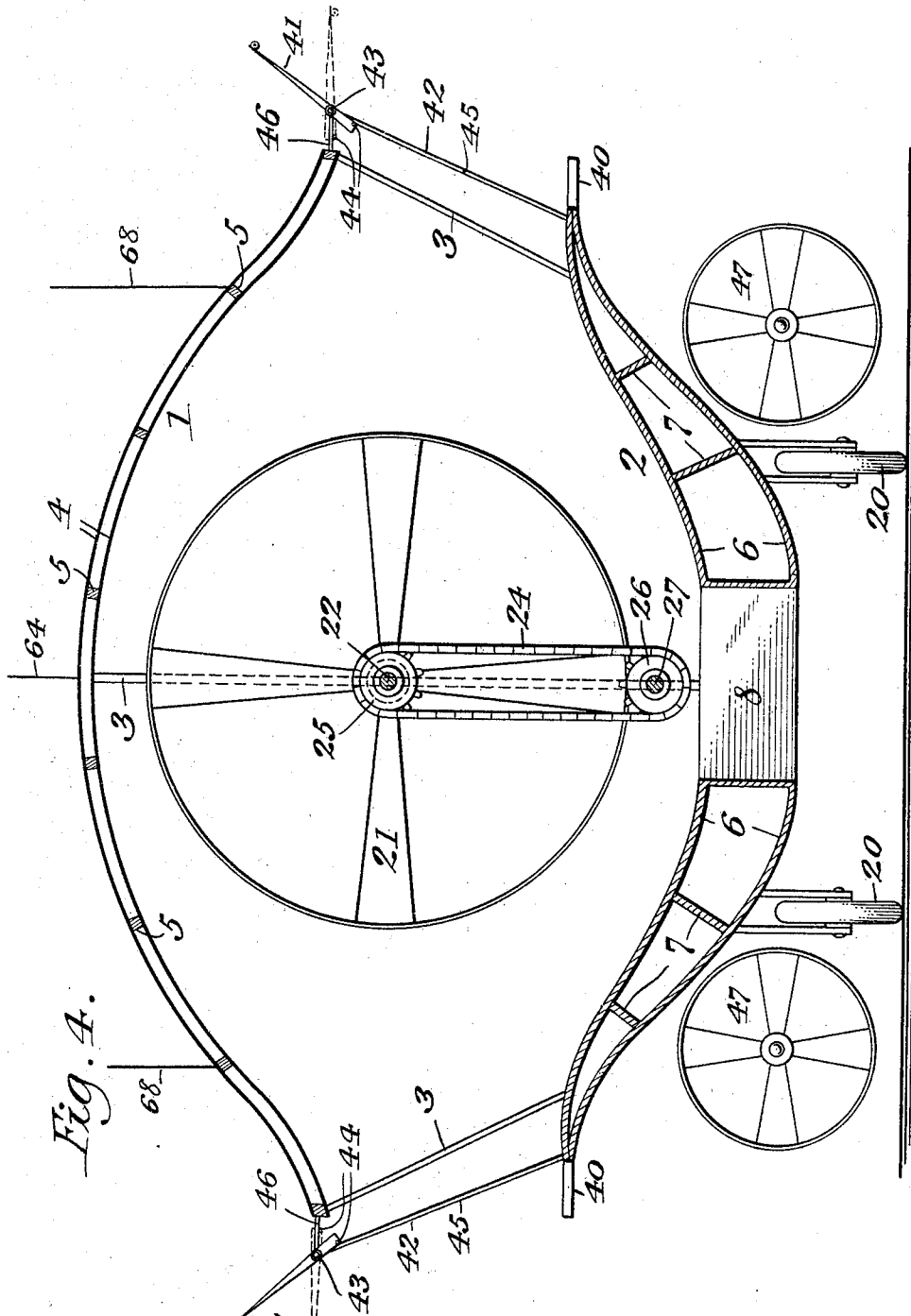
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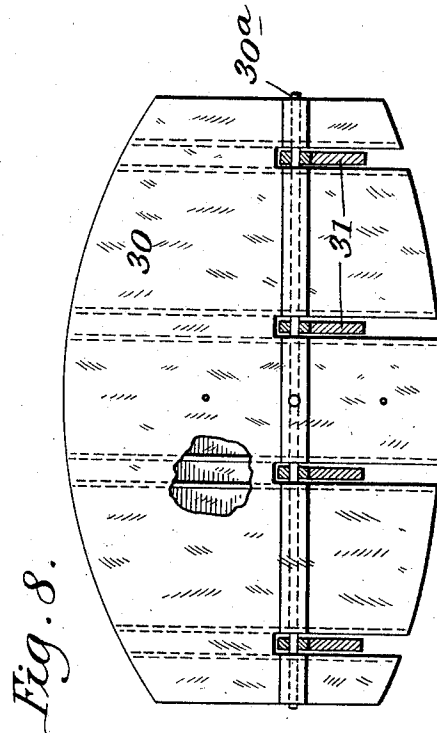
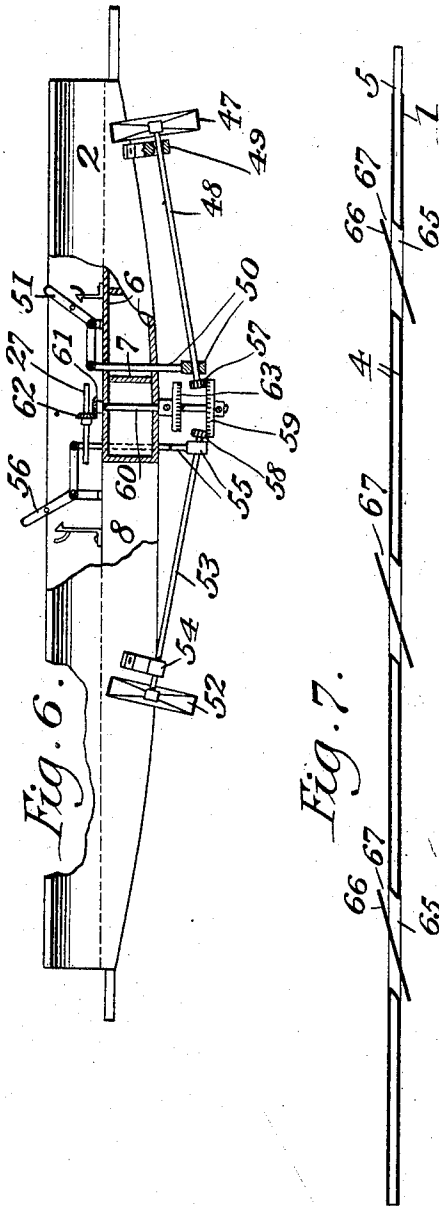
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UNITED STATES PATENT OFFICE.

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AIRSHIP.

1,005,327.

Specification of Letters Patent.

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Application filed June 17, 1910. Serial No. 567,363.

To all whom it may concern:

Be it known that I, JOHN C. SCHLEICHER, a citizen of the United States, residing at Mount Vernon, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Airships, of which the following is a specification.

My invention relates to airships.

It has for its object to provide an airship having an upper plane arched upwardly and a lower plane arched downwardly and forming an approximately oval passage between the planes so as to, in a measure, cause the air entering at the front to depart from the rear, thereby buoying the ship.

It has for a further object to construct the lower plane so that it will serve as a car and float in water.

It has for a further object to provide the upper plane with openings through which air will enter into the passage between the planes, when the ship is in motion, and depart from said passage when the ship is descending, thereby providing means for ventilating the passage between the planes.

It has for a further object to provide a recess or well in the lower plane and mount the engine therein, so that it will be as low and as little exposed as possible, thereby adapting it to steady the ship and offer as little resistance as possible to the passage of air through the passage between the planes.

It has for a further object to provide fixed side wings which extend from the lower plane and pivoted side wings which extend from the upper plane, which serve to support and balance the ship.

It has for a further object to provide forward and rear end wings adapted, if the ship plunges in either direction, to close the passage between the planes, at the end at which it plunges, so as to practically prevent the passage of air between the planes at that end, thereby offering resistance to the further downward movement and causing the ship to be righted, both wings being automatic in their operation and the forward wings in addition being manually operatable, thereby serving as means for elevating or depressing that end of the ship and for slowing the ship down.

It has for a further object to provide main propellers located between the planes.

It has for a further object to provide pro-

pellers beneath the lower plane adapted to be operated in the same direction to aid the main propellers in driving the ship and in opposite directions to stop the ship or to elevate it.

It has for a still further object to provide a foldable seat adapted when unfolded and the ship is afloat in the air, to support the occupant below the lower plane so that his weight will act with that of the engine to balance the ship and when the occupant leaves it to automatically close upward out of the way so as not to come into contact with the ground when landing.

In the drawings: Figure 1 is a partial longitudinal vertical sectional view on the line 1—1 of Fig. 2, parts being omitted. Fig. 2, a top plan view of the upper plane. Fig. 3, a bottom plan view of the lower plane. Fig. 4, a central transverse vertical sectional view, on an enlarged scale, of the airship, parts being omitted. Fig. 5, a side view of the lower plane partly broken away and parts being omitted. Fig. 6, also a side view of the lower plane partly broken away and parts being omitted. Fig. 7, a longitudinal vertical sectional view on the line 7—7 of Fig. 2. Fig. 8, a top plan view of the wing at the forward end of the ship.

Referring to the drawings illustrating my invention and in which like reference characters designate corresponding parts, 1 designates an upper upwardly curved plane and 2 a lower downwardly curved plane, said planes being secured in spaced relation to each other by standards 3 and forming between them an approximately oval air passage from the front to the rear of the ship through which practically all the air entering at the front of the ship is compelled to pass and depart at the rear and thereby aid in buoying the ship. The upper plane is formed by two walls 4, of some light, strong material, for instance, canvas, having strips 5 interposed between and bracing them and the lower plane is formed by two walls 6 and bulkheads 7, of some strong, light material, for instance, wood, the space between said walls forming an air chamber adapted to float the plane in water and the bulkheads subdividing the air chamber so that the plane will float in the water unless water enters all the subdivisions of the air chamber. A recess 8 is provided which extends through the lower plane and an engine 9 is mounted therein so that it will

be as low and as little exposed as possible, thereby adapting it to serve to steady the ship and offer the least possible resistance to the passage of air through the passage between the planes and consequently it will retard the ship as little as possible. A foldable chair 10 is also mounted in the recess 8 and is adapted to automatically fold up therein, when not occupied and thus be out of the way when the ship is landing, and to extend below the plane, when occupied, so that the occupant's weight will act with that of the engine to balance and steady the ship.

The chair consists of a back 11 the upper end of which is provided with an elongated slot 12 engaged by a bar 13, a seat 14, the inner end pivotally connected to the lower end of the back and a foot rest 15 pivotally connected to the outer end of the seat. The seat is supported by a rope 16 connecting the outer end thereof with the under part of the lower plane and a rope connecting the back of the seat with the rope 16 and the foot rest is supported by a rope 17 connecting the lower end thereof with the under part of the lower plane.

The chair is automatically folded by means of a spring 18, one end of which is connected to an eye and the other end to the back and serves to slide the back 11 up on the bar 13 and a spring 19, one end connected to an eye and the other end to the lower end of the back 11 and aids in raising the parts of the chair into the recess.

The airship is provided with wheels 20, secured to the lower plane, which provide means for the ship to move on the ground in starting and prevent the lower plane from being damaged by contact with the ground when the ship lands.

The main propellers 21 of the airship are secured on the opposite ends of a shaft 22 mounted in journals on supports 23. The shaft 22 is driven by the engine 9 and is operatively connected therewith by a sprocket chain 24 engaging a sprocket wheel 25 on said shaft and a sprocket wheel 26 on the drive shaft 27 of the engine.

A wing 28 is pivotally mounted off center at 28^a on a standard 29 at the rear end of the ship and is normally held in approximately horizontal position by a spring connecting its rear end with the standard.

A wing 30 is pivotally mounted off center at 30^a on a standard 31 at the forward end of the ship and is manually operatable by means of a rope 32 passing through the wing and being connected to arms 33 and its ends connected to a lever 34 pivoted on the lower plane.

The wings 28 and 30 are adapted to act automatically if the ship plunges backwardly or forwardly, to close the passage between the planes at the end at which it plunges so as to practically prevent the pas-

sage of air between the planes at that end, thereby offering resistance to its further downward movement and causing the ship to be righted. The wing 30 on account of being also manually operatable is adapted to cause the forward end of the ship to rise or fall and also serves to slow the ship down.

Stops 36 are provided on the standards 29 and 31 of the wings 28 and 30 respectively, to limit their upward movement so that they will come parallel with their standards when closing the passage in the ship.

A rudder 37 is provided on the rear end of the ship and is manually operatable by means of a rope 38 connected to a lever 39 pivoted on the lower plane.

Fixed wings 40 extend laterally from the lower plane and wings 41 extend laterally from the upper plane and are pivoted off center, on frames 42 at 43, said wings serving to support and balance the ship. Stops 44 are provided on the wings 41 and are adapted to contact with the inclined portions 45 of the frames, when the wings are turned upward and with the horizontal portion 46 when the wings are horizontal and thus limit the movement of the wings.

Front propellers 47 are secured upon laterally diverging shafts 48 journaled at their outer ends in fixed supports 49 and at their inner ends in vertically movable supports 50 extending through the lower plane and being pivotally connected to the lower end of a pivoted lever 51 and rear propellers 52 secured upon laterally diverging shafts 53 journaled at their outer ends in fixed supports 54 and at their inner ends in vertically movable supports 55 extending through the lower plane and being pivotally connected to the lower end of a pivoted lever 56. Gears 57 on the front propeller shafts 48 and gears 58 on the rear propeller shafts 53 are adapted to mesh with a gear 59 on the lower end of a rotatable shaft 60, the upper end of which extends through the lower plane and has a gear 61 thereon meshing with a gear 62 on the engine shaft. The shaft 60 also has a gear 63 thereon, just above the gear 59, with which the gears on the shafts 48 and 53 are adapted to mesh. From this construction and arrangement it will be apparent that when the gears 57 and 58 mesh with the gear 59, the front propellers will rotate in the opposite direction to the rear propellers and serve to draw the air from the front and rear of the ship toward the center thereof and stop the ship's forward movement and raise it, but when the gears 58 mesh with the gear 63 and the gears 57 mesh with the gear 59, all the propellers will rotate in the same direction and aid the main propellers in driving the ship.

The upper plane is provided with openings having slats 66 secured therein on a slant

so that the ends overlap the walls of the plane and leave spaces 67, thereby providing means for the air to be exhausted from the ship when it is descending and for admitting air into the ship when it is afloat and in motion.

If desired, the airship may be attached to a gas envelop by means of cables 68.

I claim:

10 1. In an airship, superposed planes spaced apart and front and rear wings fulcrumed between said planes at their ends and adapted to be turned on their fulcrums and close the passage between said planes, substantially as described.

15 2. In an airship, superposed planes spaced apart and front and rear wings, for closing the passage between the planes, fulcrumed between said planes at their ends, the greatest portion of the front wing being forward of its fulcrum and the greatest portion of the rear wing being rearward of its fulcrum, substantially as described.

20 3. In an airship, superposed oppositely arched planes having a passage between them contracted longitudinally of the planes on each side thereof and wings, for closing

ing the passage between the planes, fulcrumed between said planes at their ends, substantially as described.

30 4. In an airship, front and rear pairs of propeller shafts mounted under the airship and converging diagonally to the line of flight, air concentrating lifting propellers on the outer ends of said shafts, gears on the inner ends of said shafts and an operating shaft having gears thereon adapted to be engaged by the gears of the propeller shafts, substantially as described.

40 5. In an airship, front and rear pairs of propeller shafts mounted under the airship and converging diagonally to the line of flight, extending toward one another, air concentrating lifting propellers on said shafts and means adapting the direction of rotation of said propeller shafts to be reversed, substantially as described.

45 In testimony whereof I have signed my name in the presence of two subscribing witnesses.

JOHN C. SCHLEICHER.

Witnesses:

JOS. T. MULLIGAN,
MARGARET BLANCO.