

F. G. VOHS.

AIRSHIP.

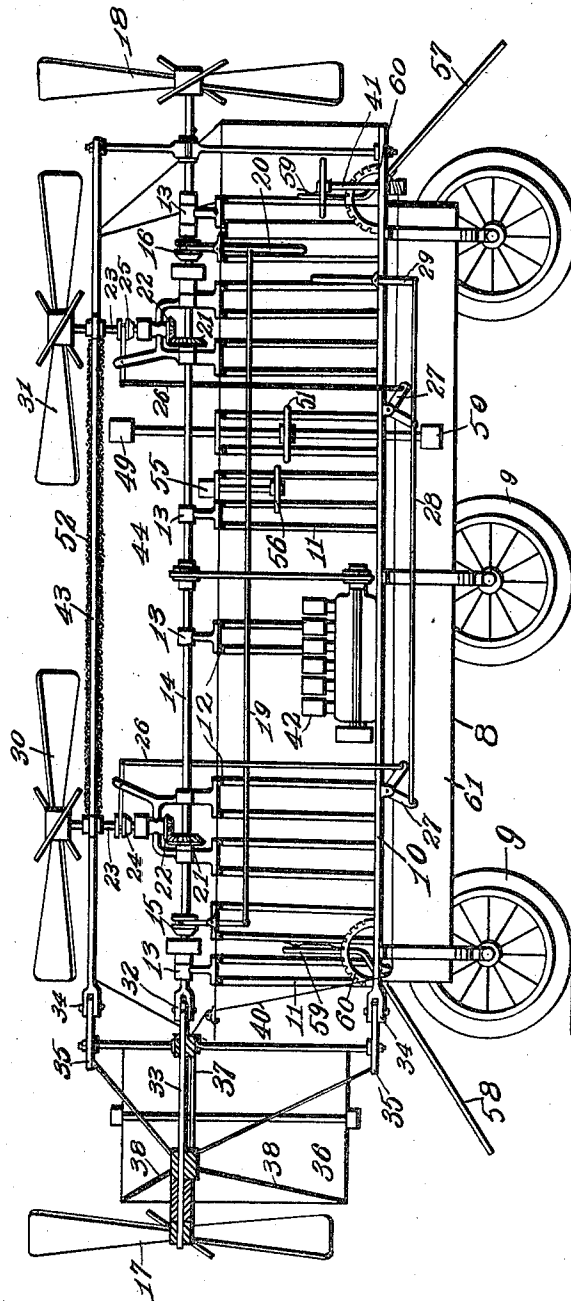
APPLICATION FILED JAN. 3, 1911.

1,013,523.

Patented Jan. 2, 1912.

3 SHEETS—SHEET 1.

FIG. 1



Witnesses

W. C. Stein

M. G. Lindsay.

Inventor.

Frank G. Vohs

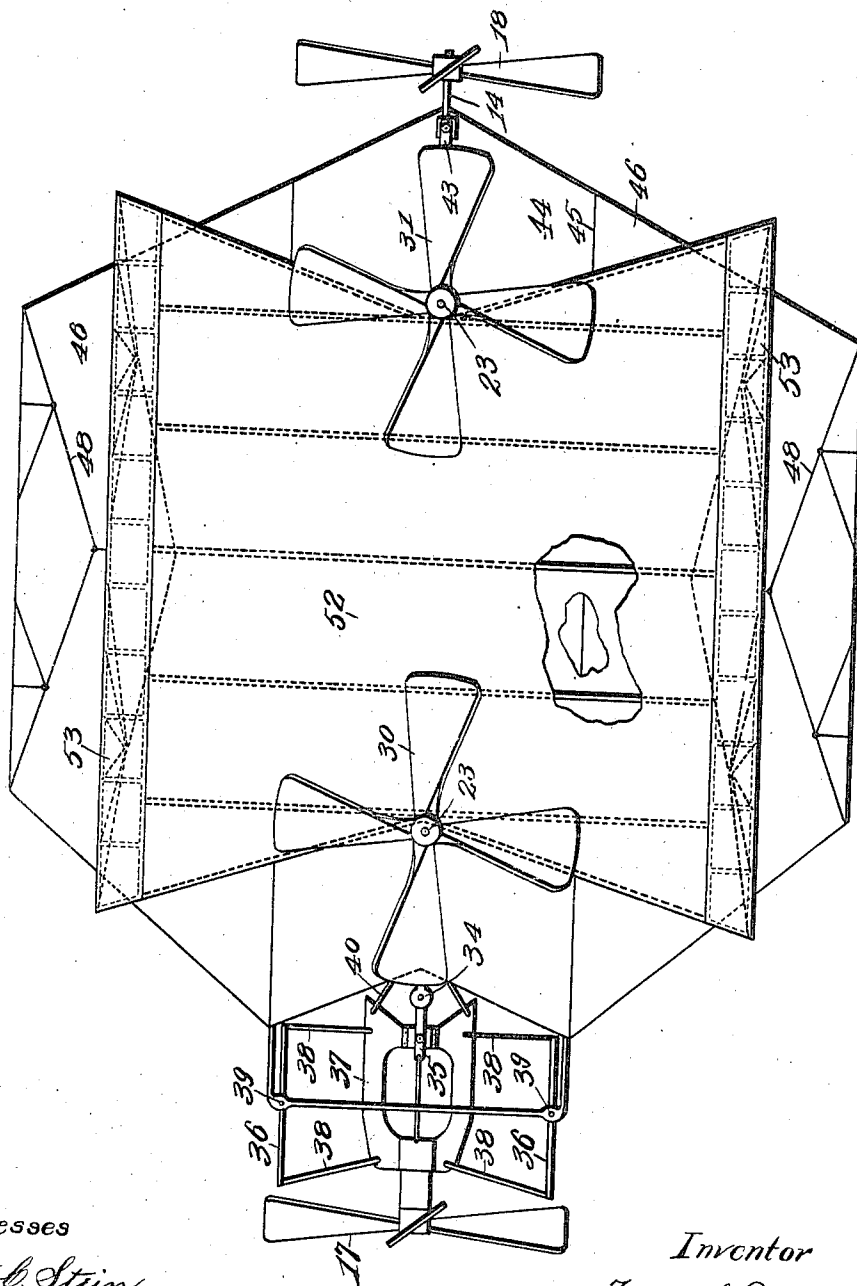
by Alfred A. Eicks Atty.

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3 SHEETS—SHEET 2.

FIG. 2



Witnesses

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3 SHEETS—SHEET 3.

FIG. 3

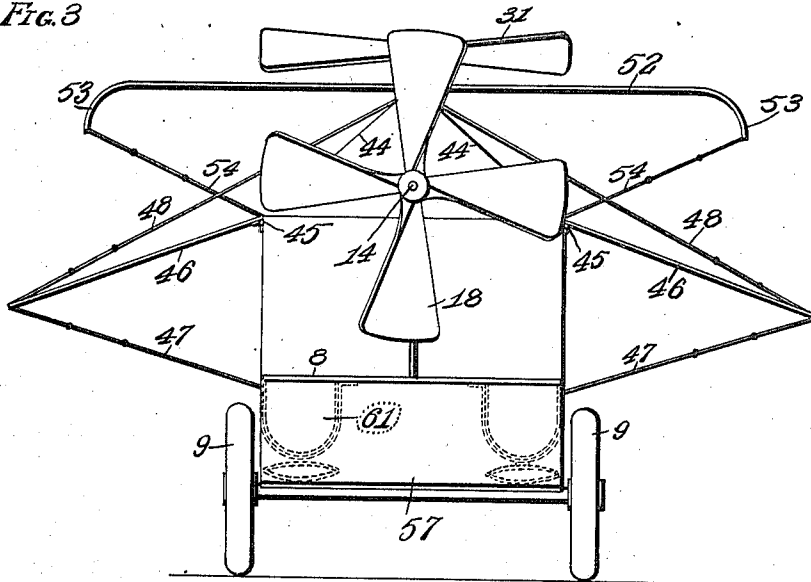


FIG. 4

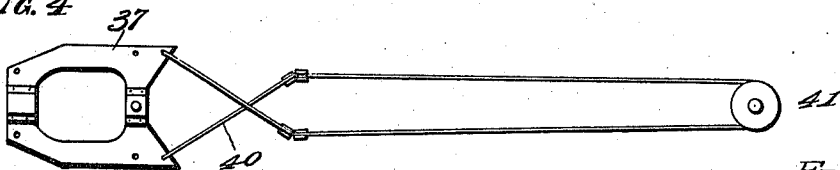


FIG. 5

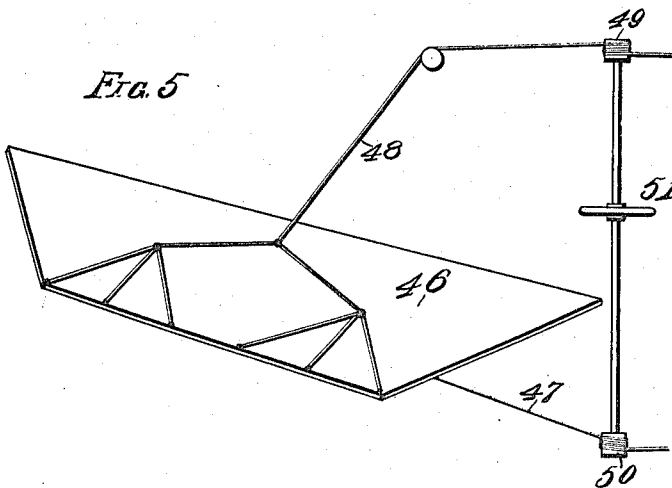


FIG. 6

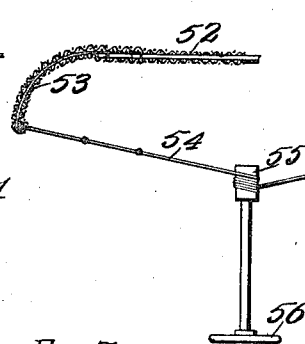
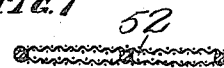


FIG. 7



Witnesses

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UNITED STATES PATENT OFFICE.

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AIRSHIP.

1,013,523.

Specification of Letters Patent.

Patented Jan. 2, 1912.

Application filed January 3, 1911. Serial No. 600,586.

To all whom it may concern:

Be it known that I, FRANK G. VOHS, a citizen of the United States, and resident of St. Louis, Missouri, have invented certain new and useful Improvements in Airships, of which the following is a specification.

This invention relates to improvements in air-ships and has for its object a pair of planes, one located above the other, a plurality of propellers by which the device is raised and driven forwardly and rudders by which the device is guided, and an operating mechanism whereby the propellers can be independently or simultaneously operated.

A further object of my invention is to construct an air-ship mounted upon wheels, a rudder mounted in the front and at the rear of the wheels and arranged to be tilted so as to guide the machine upwardly or downwardly, and a plurality of propellers for raising the device and for propelling the same forwardly, and means by which all of the operative parts are controlled by the operator.

Figure 1 is a central sectional view of my improved air-ship. Fig. 2 is a top plan view of the same. Fig. 3 is a front view. Fig. 4 is a detail plan view of the mechanism by which the rear rudder is operated. Fig. 5 is a detail perspective view of one of the tilting planes and its operating mechanism. Fig. 6 is a detail sectional view of the end of the top plane showing the manner in which the same can be curved for retaining the air. Fig. 7 is a detail sectional view of one of the planes showing its construction.

In the construction of my invention I provide a suitable body 8 mounted upon light wheels 9. On the body is provided a suitable frame work 10 provided with uprights 11. At the top of the uprights and extending from side to side are crossbars 12 on which are supported journal bearings 13, in which is supported a driving shaft 14. On the driving shaft 14 are located clutches 15 and 16, which are arranged to place the propellers 17 and 18 in and out of operation by the manipulation of the rod 19 operated by the hand-lever 20. The driving shaft is also provided with bevel-gears 21 which mesh with bevel-pinions 22 mounted on vertical shafts 23, which are also provided with clutches 24 and 25. These clutches are manipulated by the rods 26 connected to bell

crank levers 27, and to the bell crank levers is attached a rod 28 operated by the hand-lever 29, and by the manipulation of this mechanism, the clutches 24 and 25 are thrown in and out of gear, thereby placing in and out of operation the horizontal propellers 30 and 31.

The rear end of the shaft 14 is provided with a knuckle joint 32 to which is attached one end of a short shaft 33, on which the propeller 17 is mounted. The upper and lower bars forming a portion of the frame are also provided with knuckle joints 34 to which is connected the rudder frame 35, and which carries a pair of vertical rudders 36. On the shaft 33 is mounted a yoke 37 to which rods 38 are attached, said rods connected to the vertical rudders in order to retain the same in vertical position and to suitably strengthen the rudders and by means of the knuckle joint connections and the pivots 39 the rudders and propeller 17 can be operated horizontally to any desired angle by means of the cable connection 40 operated by the hand-wheel 41, the cable being so arranged as to operate the rudder together with the propeller in the same direction as the operation of the wheel. This steering mechanism is so arranged as to cause the propeller 17 to swing simultaneously with the rudder thus causing the agitated air caused by the propeller to guide the ship in its desired direction. The shaft 14 is driven by the motor 42.

From the upper edges of the side frames to the apex of the body, which is formed by the central supporting rod 43, and in which the shafts 23 have bearing, are attached planes 44, which act as a housing for the body, and from the edge of the frame, or at that point indicated by the numeral 45 are hingedly secured planes 46, which are so arranged as to be placed either in a horizontal or a tilted position, the said planes extending the length of the body (see Fig. 2) and are operated either in a raised or lowered position by the cables 47 and 48 passing over the drums 49 and 50 and controlled by the hand-wheel 51. Above the apex is rigidly-secured, is a horizontal plane 52, the ends provided with a curved portion 53, the said curved portions being of spring material so as to permit the same to be converted from an entirely horizontal position to that of a curve as indicated in Figs. 3 and 6, and the same are held in a curved po-

sition by the cable 54 operating over the drum 55 and operated by the hand-wheel 56. The plane at this end being ribbed with spring material will cause the same to assume a horizontal position when the cable 54 is released.

On the front and rear of the body 8 are located rudders, or elevating planes 57 and 58, the same being held in either a vertical, horizontal or tilted position by means of the levers 59 operated in the segments 60. The purpose of these planes or rudders is to direct the movement of the ship in an ascending or descending direction and after the ship has reached its desired height, the planes 57 and 58 can be lowered so as to assume a vertical position keeping the air beneath the body, at the same time the curved ends 53 of the plane 52 and the tilted planes 46 having a tendency to retain the air and permit the machine to float. When the desired height is reached the horizontal propellers 30 and 31 are stopped from operation and the propellers 17 and 18 permitted to operate. The planes are constructed of a light frame work and the top and bottom of the ribs are covered with a sheeting of strong material, construction being clearly shown in Figs. 6 and 7. The body 8 is canvas covered, or of other suitable light and durable material, and is provided with two compartments 61 in which supplies are kept.

Having thus fully described my invention, what I claim as new and desire to have secured to me by the grant of Letters Patent, is:

1. An air-ship comprising a body, compartments located in the same, wheels supporting the body, a frame work mounted on the body, a shaft supported in the frame work and operated by a motor, a propeller located on the front end of the shaft and in advance of the frame work, a rudder located at the rear of the frame work, a propeller located at the rear of the rudder and connected to the shaft by a knuckle joint, a pair of horizontal propellers located above the frame work, means for placing the propellers in and out of operation, a horizontal plane located on the frame work beneath the horizontal propellers, a pair of tilting planes supported to the frame work and means for operating the same, a pair of elevating planes located in advance and at the rear of the body and means for operating the same, substantially as specified.

2. An air ship comprising a plurality of

wheels, a body composed of compartments mounted on the axles thereof, a frame work mounted on the body, a pair of hinged mounted planes located on each side of the frame work, a horizontal plane mounted above the frame work, a shaft journaled in the frame work, a motor on the body for operating said shaft, a propeller mounted on the shaft and in advance of the frame work, a rudder located in the rear of said frame work, a propeller located in the rear of the rudder, means whereby the rudder and the propeller can be swung in a horizontal plane, a pair of lifting propellers mounted above the horizontal plane, means whereby either one of the propellers may be put out of action independently, elevating planes located at the front and rear of the body and means for operating the elevating planes and the hinged mounted planes, substantially as specified.

3. An air ship comprising a plurality of wheels, a body composed of two compartments mounted on the axles thereof, a platform mounted on the compartments, a frame work mounted on said platform, hinged mounted planes located on each side of the frame work, a horizontal plane mounted above the frame work, balancing tips located on the side edges of the horizontal plane, a shaft journaled in the frame work, a motor mounted on the platform for operating said shaft, the vertical propeller mounted on the shaft and in advance of the frame work, a rudder hingedly connected to the rear of the frame work, a propeller located on the shaft in the rear of the frame work, the universal joint located on said shaft and in alinement with the pivots of the hinged connection, means whereby the rudder and the propeller can be swung in a horizontal plane, a pair of horizontal lifting propellers mounted above the horizontal plane, elevating planes attached to the front and rear of the platform, means for placing the propellers in and out of action independent of each other, and means for operating the elevating planes, the hinged mounted planes, and the balancing tips, substantially as specified.

In testimony whereof, I have signed my name to this specification, in presence of two subscribing witnesses.

FRANK G. VOHS.

Witnesses:

ALFRED A. EICKS,
WALTER C. STEIN.