

P. SAMORSKI.

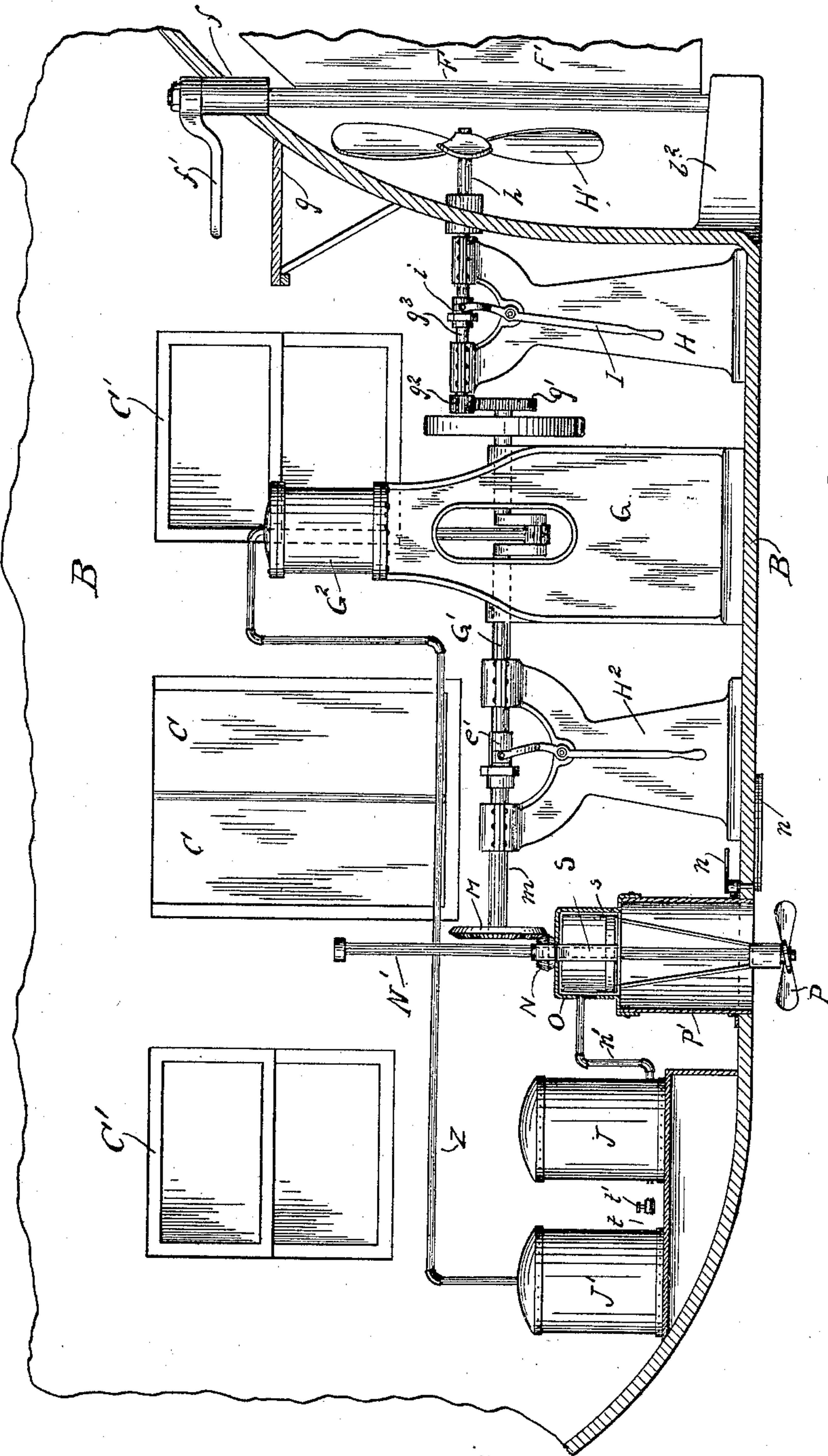
AIR SHIP.

(Application filed Dec. 9, 1901.)

(No Model.)

3 Sheets—Sheet 2.

Fig. 2.



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 Otto E. Johnson.
 A Gustafson

Peter Samorski Inventor.
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No. 701,510.

Patented June 3, 1902.

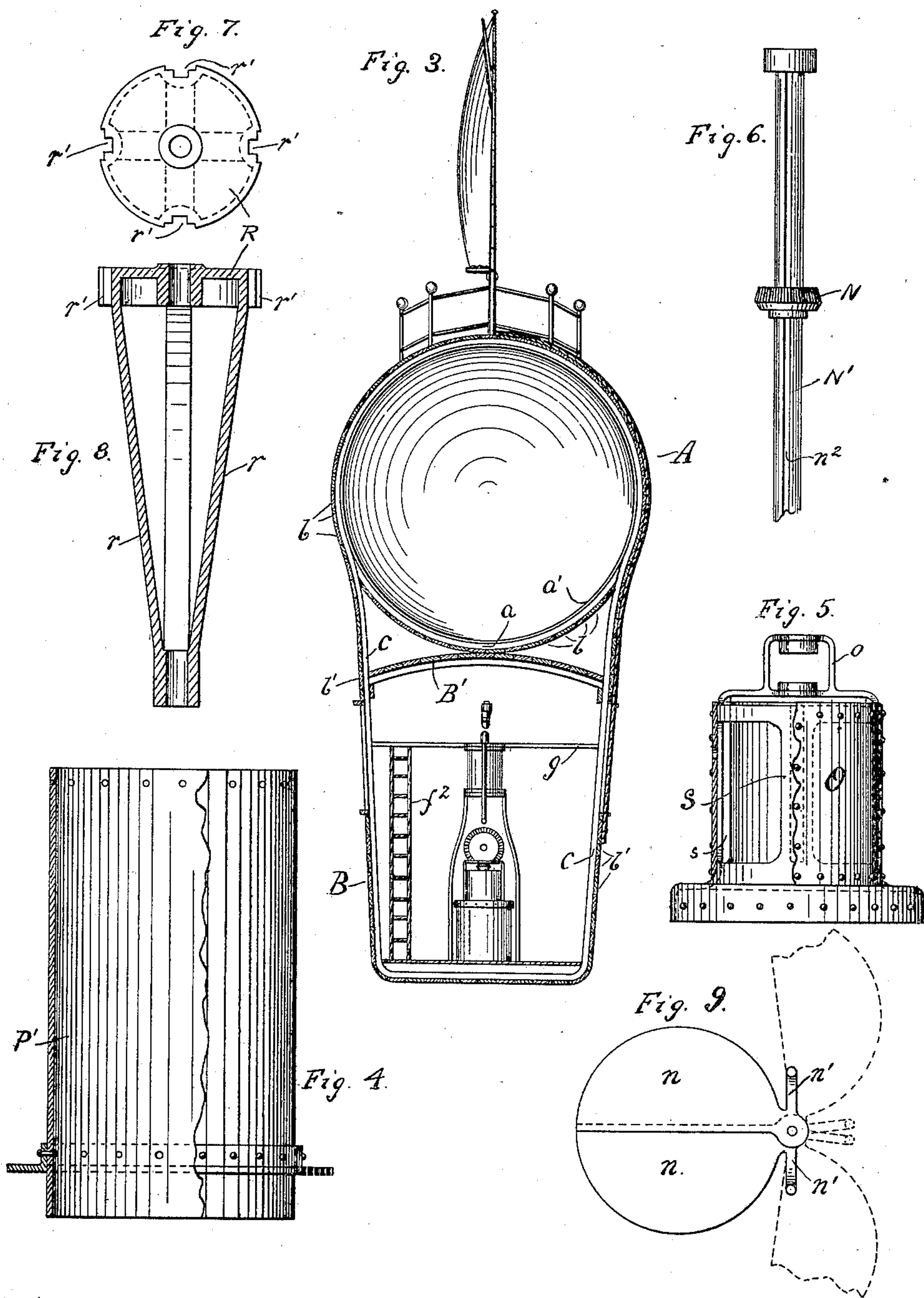
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UNITED STATES PATENT OFFICE.

PETER SAMORSKI, OF CHICAGO, ILLINOIS.

AIR-SHIP.

SPECIFICATION forming part of Letters Patent No. 701,510, dated June 3, 1902.

Application filed December 9, 1901. Serial No. 85,219. (No model.)

To all whom it may concern:

Be it known that I, PETER SAMORSKI, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Air-Ships, of which the following is a specification.

This invention relates to improvements in air-ships; and it consists in certain peculiarities of the construction, novel arrangement, and operation of the various parts thereof, as will be hereinafter more fully set forth and specifically claimed.

The objects of my invention are to provide a simple, inexpensive, and efficient apparatus or ship for navigating the air and which shall be so constructed that it may also be employed for traveling on water.

In order to enable others skilled in the art to which my invention pertains to make and use the same, I will now proceed to describe it, referring to the accompanying drawings, in which—

Figure 1 is a view in side elevation of an air-ship embodying my invention. Fig. 2 is an enlarged view, partly in section and partly in elevation, of the lower part of the cabin and the operating mechanism. Fig. 3 is a vertical sectional view taken on line 3 3 of Fig. 1 looking in the direction indicated by the arrows. Fig. 4 is a fragmental view in elevation of a portion of the drum for the auxiliary propeller. Fig. 5 is a similar view of the air-compressing cylinder, showing it detached. Fig. 6 is a view of a portion of the shaft of the auxiliary propeller. Fig. 7 is a plan view of the piston for the air-compressing cylinder. Fig. 8 is a central vertical sectional view thereof; and Fig. 9 is a detached view of the doors used to close the bottom of the drum for the auxiliary propeller, showing them by dotted lines in an opened position.

Similar letters refer to like parts throughout the different views of the drawings.

A represents the gas-reservoir or balloon portion of the apparatus, which is cigar-shaped in form, except that each of its ends are pointed, as is clearly shown in Fig. 1 of the drawings. This reservoir or balloon is constructed of a series of bands or rings *a*, abutting against each other at their edges,

and said bands or rings are lined on their interior surfaces with rubber sheeting *a'* or other suitable non-porous material to prevent the gas escaping from the reservoir between the said bands.

Located on the outer surface of the bands *a* and extending longitudinally of the reservoir are a series of thin and narrow strips of wood or other suitable material *b*, which may be secured to the bands or rings in any suitable manner.

Extending downwardly from the sides of the reservoir are a number of ribs *c*, to which are longitudinally secured strips or pieces of wood *b'*, which form the cabin B of the ship and which cabin may be provided with doors C and windows C' for ventilation and light and for the ingress and egress of the operator or passengers. The upper portion of the cabin B is provided with a ceiling B', which divides it from the gas-reservoir. Located in a vertical position on the middle portion of the reservoir A is a mast D, which may be provided with sails *d* and the necessary rigging to be employed for sailing the vessel while in the air or while resting on the water. Located around the mast D is a guard-rail or fence E, which is secured to the top of the gas-reservoir, as is clearly shown in Fig. 1 of the drawings. In order to afford means for reaching the top of the gas-reservoir, so as to operate the sails thereof, I provide on the outer surface of the reservoir and cabin a ladder E, which extends down to about one of the doors and windows of the cabin. The rear lower portion of the cabin B is provided with a rearwardly-extending bracket *b''*, in which is journaled the lower end of the rudder-shaft F, which shaft carries a rudder F' and has its upper end journaled in the upper portion of the cabin, as at *f*, and is provided with a handle *f'*, to be used for turning the rudder and steering the vessel, and which handle may be reached by means of a small ladder *f''*, extending from the floor of the cabin to a platform *g*, located just below said handle.

Located within the cabin and near the rear end thereof is a gas-engine G of the ordinary or any preferred construction, which is employed for driving the propellers of the ship. Mounted on one end of the crank-shaft G' of

the said gas-engine is a cogged gear g' , which meshes with a pinion g^2 on the inner end of a loose shaft g^3 , journaled in suitable bearings on a support H, located on the floor of the cabin. Also journaled on said support and in the rear end of the cabin is the main propeller-shaft h , which carries the main propeller H' , which is preferably located between the rear of the cabin and the rudder-shaft F, as shown in Figs. 1 and 2 of the drawings. On the adjacent ends of the shafts h and g^3 is located a clutch i of the ordinary or any preferred construction and which may be moved back and forth, so as to throw the propeller-shaft into or out of gear by means of a lever I, fulcrumed on the support H, on which said shafts have their bearings. The crank-shaft G' of the gas-engine G is journaled in a support H^2 , located on the floor of the cabin, and has mounted on its end opposite that on which the gear g' is located a clutch e' , which also is mounted on a loose shaft m , also journaled on the support H^2 , and which loose shaft carries a beveled gear M, which meshes with a beveled pinion N, slidably mounted on the shaft N' for the auxiliary propeller P, which may be of the ordinary or any preferred construction. Located on the floor of the cabin in front of the support H^2 is a drum P' , which has its bottom open and may be closed by means of doors or shutters n , pivotally secured to the bottom of the cabin. These shutters or doors are each provided with a handle n' , extending into the cabin and which may be used for turning them so as to close the bottom of the drum. Located on the top of the drum is an air-compressing cylinder O, which has its upper end closed and its lower end communicating with said drum. On the upper end of the cylinder O is a bracket o , between the upper portion of which and the top of said cylinder is located the pinion N, which, as before stated, is mounted on the shaft N' of the auxiliary propeller. This shaft is provided with a key-seat n^2 for the reception and operation of a key on the pinion N, which will allow said shaft to move up and down while in engagement with said pinion. Mounted on the lower portion of the shaft N' and above the propeller thereon is a piston R for the air-compressing cylinder O, and this piston has downwardly-extending arms or bars r to connect it to the shaft N' at its lower end. The cylinder O is provided internally with a skeleton frame S, which comprises four bars or standards s , extending vertically and then horizontally at their upper ends on the inner surface of the walls and top of said cylinder. To receive the standards or bars s , the piston R is provided with recesses r' on its periphery, as is clearly shown in Fig. 7 of the drawings. Located within the cabin and in front of the drum P' is a tank J for the compressed air and another tank or vessel J' for oil, which tanks or vessels communicate with one another through a pipe t , having a valve t' to

regulate the flow of air from the air-tank to the oil-tank. The air-tank communicates with the compressing-cylinder O through a pipe n' , and the oil-tank J' communicates with the cylinder G^2 of the gas-engine through a pipe z , as is clearly shown in Fig. 2 of the drawings.

From the foregoing and by reference to the drawings it will be clearly understood that by filling the gas-reservoir A with a suitable gas the apparatus will be made buoyant and caused to float, when by applying power generated by the engine G to the main propeller H' the vessel will be caused to travel longitudinally through the air, in which operation the auxiliary propeller P when desired will be operated through its connection with the gas-engine and in its rotation in one direction will be caused to rise in the drum P' , thus forcing the piston R upward and compressing the air within the compressing-cylinder O, from which it will pass into the air tank or reservoir J, from which it may be allowed to pass into the tank J' and force the fuel-oil therefrom through the pipe z to the engine-cylinder G^2 , as is apparent. The auxiliary propeller P may also be employed for assisting in raising or lowering the vessel by causing it to be rotated in the proper direction, which may be done by reversing the movement of the crank-shaft of the gas-engine and throwing the main propeller H' out of gear therewith through the medium of the clutch e' and its controlling-lever. By disconnecting the clutch e' from the shaft m the shaft N' will slide down, thus returning the auxiliary propeller P to its initial position, so that it can again be used for compressing the air in the air-compressor and also for forcing the vessel upwardly. As the piston R rises or falls in its cylinder it is apparent that the bars s of the frame S will guide it and at the same time strengthen the cylinder. Should the vessel descend into a lake or other body of water, the doors n may be turned to the positions shown by continuous lines in Fig. 9 of the drawings, thus closing the bottom of the drum P' , when the main propeller may be used for causing the vessel to travel through the water. In order to close the doors n , the propeller P should be raised, so as to be within the drum P' , which can be readily done by reason of the fact that the shaft N' of said propeller is adapted to slide vertically within its bearings.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

In an air-ship, the combination with a balloon or gas-reservoir, of a cabin secured thereto and located beneath the reservoir, a main propeller-shaft carrying a propeller and journaled in the rear end of the cabin, an auxiliary propeller-shaft vertically journaled in the cabin, a drum located on the floor of the cabin, an air-compressing cylinder located on the top of the drum and communicating at its

bottom therewith, a piston on the auxiliary
propeller-shaft and within the air-compress-
ing cylinder, a gas-engine geared to the main
and auxiliary propeller-shafts, an air-tank
5 communicating with the air-compressing cyl-
inder, an oil-tank communicating with said
air-tank and with the cylinder of the gas-en-

gine, and means to throw the propeller-shafts
in and out of gear with the crank-shaft of the
engine, substantially as described.

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Witnesses:

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