

H. WELLS.

AIR SHIP.

APPLICATION FILED AUG. 16, 1907.

917,695.

Patented Apr. 6, 1909.

2 SHEETS—SHEET 1.

Fig. 1.

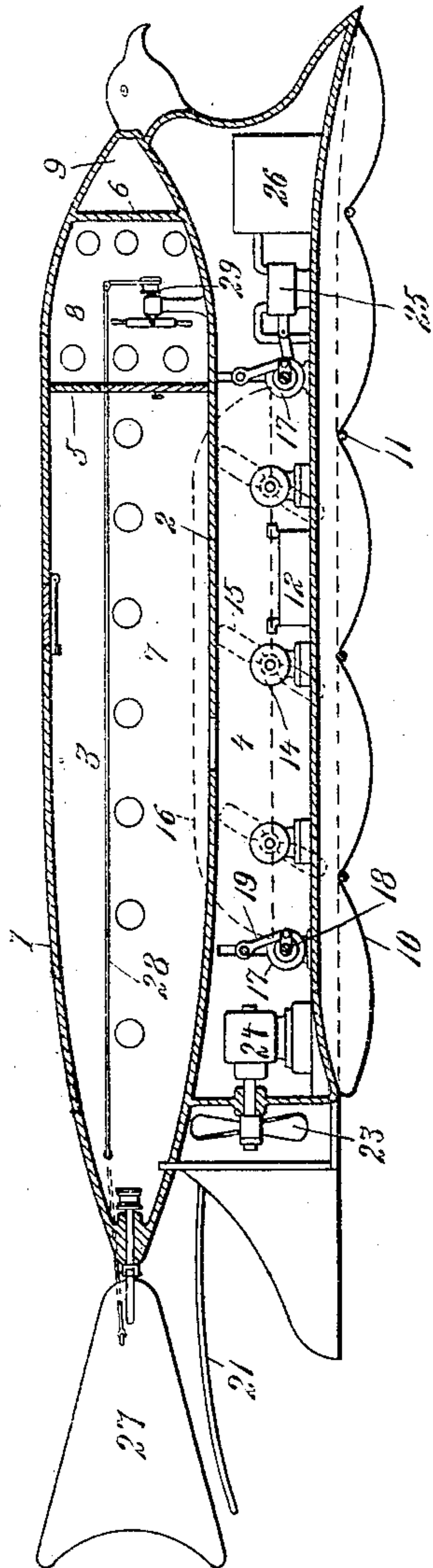
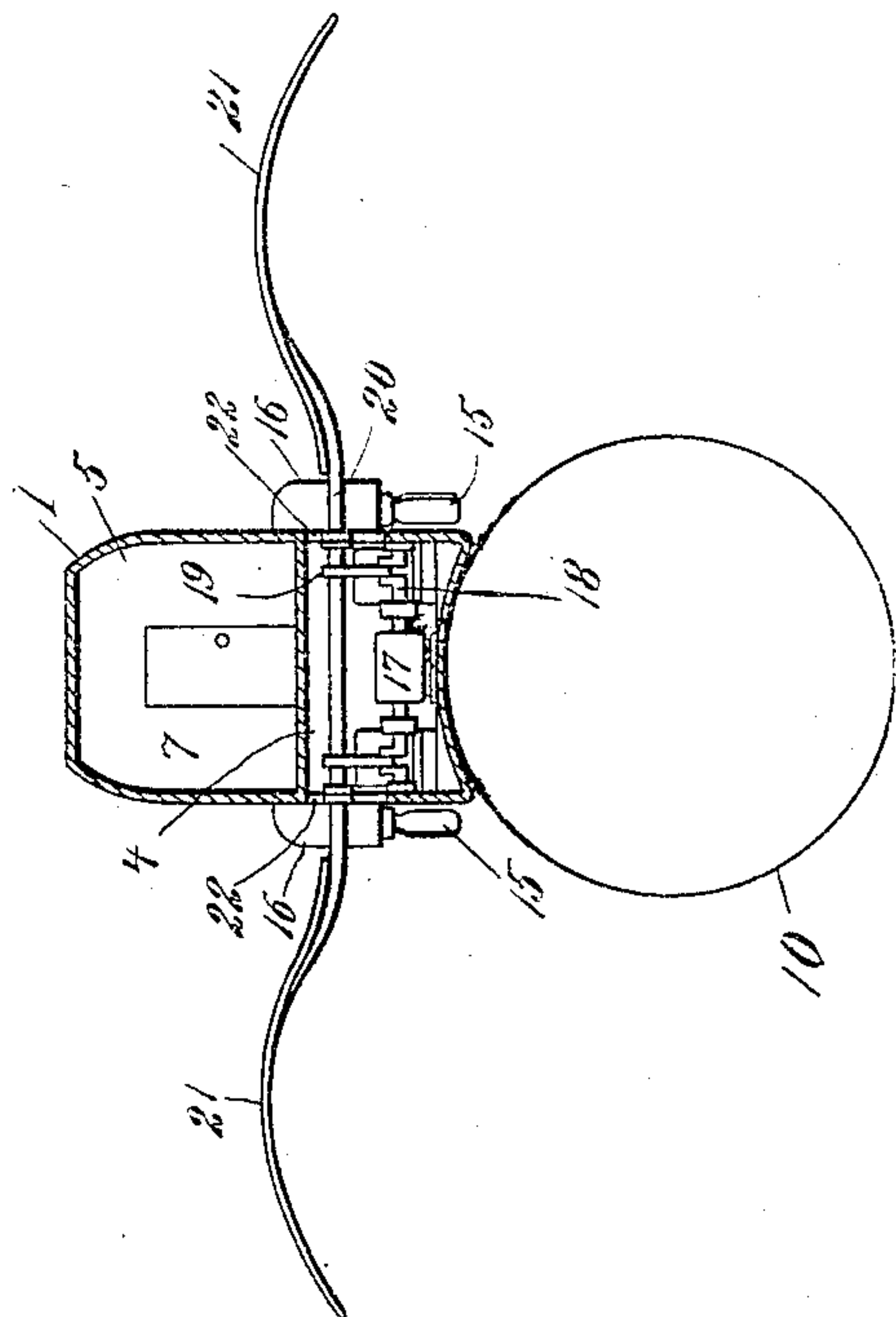


Fig. 2.



WITNESSES:

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M. Eastman.

INVENTOR

Harry Wells.

BY

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ATTORNEY

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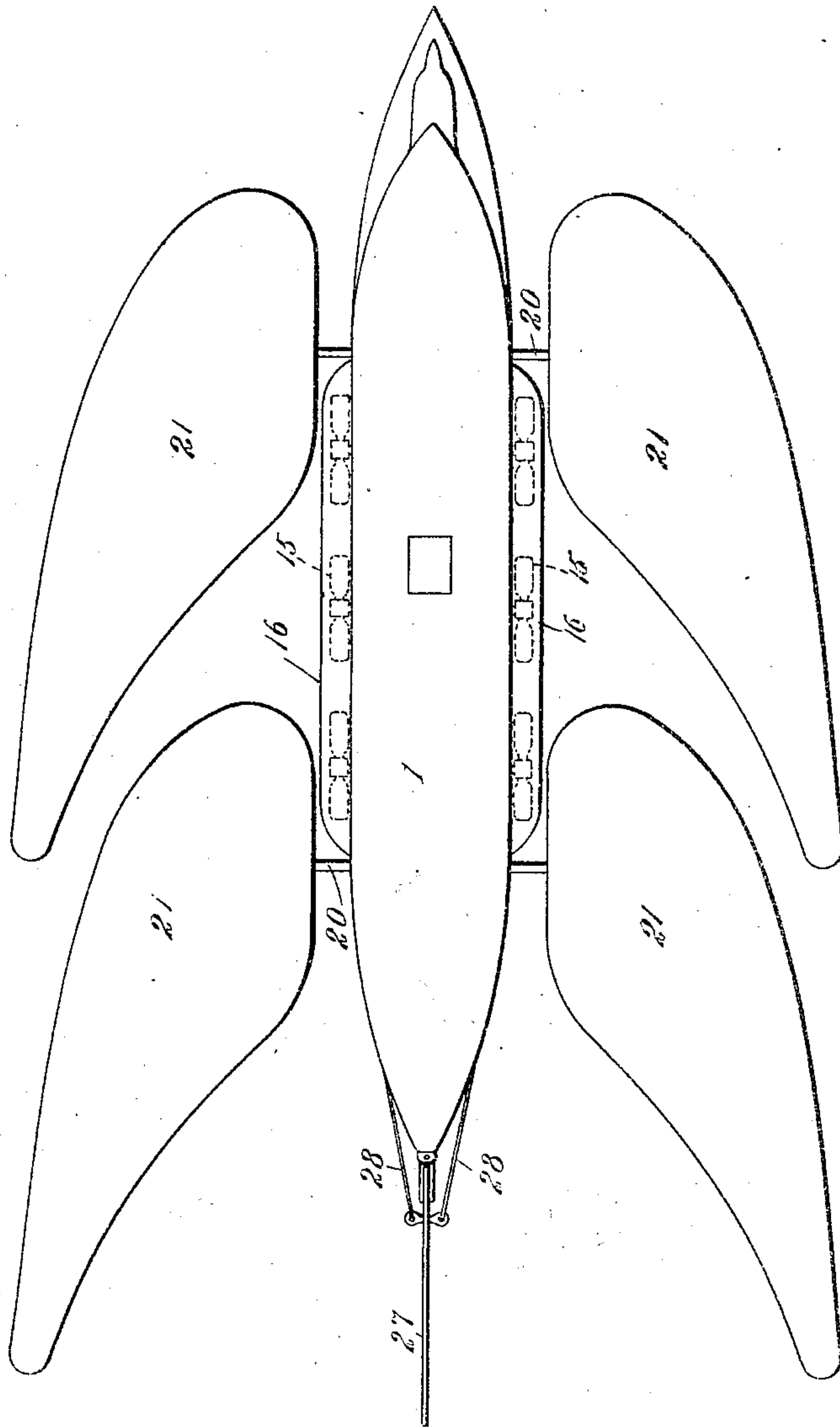
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Fig. 3.



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# UNITED STATES PATENT OFFICE.

HARRY WELLS, OF OAKLAND, CALIFORNIA.

## AIR-SHIP.

No. 917,695.

Specification of Letters Patent.

Patented April 6, 1909.

Application filed August 16, 1907. Serial No. 388,784.

*To all whom it may concern:*

Be it known that I, HARRY WELLS, a citizen of the United States, residing at Oakland, in the county of Alameda and State of California, have invented new and useful Improvements in Air-Ships, of which the following is a specification.

The object of the present invention is to provide an air ship, the propelling apparatus of which shall imitate as nearly as possible the motion of a bird when flying.

A further object is to provide one in which the parts will be well arranged for the accommodation of passengers, and for the machinery for propelling the ship, and also to provide mechanism for filling the gas bag with gas, or withdrawing it therefrom, as desired.

In the accompanying drawing Figure 1 is a longitudinal vertical section of my improved air ship; the gas bag being shown as collapsed; Fig. 2 is a cross section thereof showing the gas bag expanded; Fig. 3 is a top plan view of same the gas bag being collapsed.

Referring to the drawings, 1 indicates the hull of the ship, which is divided by a horizontal partition 2 into upper and lower compartments 3, 4. The lower compartment 3 is used to contain the machinery for propelling the air ship, and the upper compartment 4 provides the cabins for the passengers and crew, for which purpose there are provided partitions or bulk heads 5, 6, forming a main cabin 7 for the passengers, a pilot house and cabin 8 for the crew, and a storage chamber 9.

In the bottom of the ship is arranged the gas bag 10, formed of flexible impervious material, and strengthened by transverse cords 11 surrounding the bag. In Figs. 1 and 3 the air ship is shown with the bag collapsed; Fig. 2 the bag is shown as expanded.

The force for propelling the ship is derived from storage batteries contained in a chamber 12, from which currents of electricity are applied to the several electric motors. Of these there are the electric motors 14 which operate the side propellers 15. These propellers rotate partly within a housing 16, extending at the lower part of their path below said housing. Consequently the propeller blades in the lower part of their path force the air backward, and thus propel the ship forward, while in the upper part they revolve within the housing, and exert

no action upon the motion of the ship. Also there are the electric motors 17 having shafts 18, the cranks of which are connected by links 19 with the stems 20 of wings 21, said stems sliding vertically in slots 22 formed at the ship's sides. Thereby a vertical reciprocation is imparted to said wings, and on account of the concave form of the wings, and the fact that they taper to the rear, this imparts an upward and also a forward movement to the air ship. This latter movement is also derived from the movement of a screw propeller 23 actuated by an electric motor 24. The forward one of the two motors 17 also actuates a pump 25, which is adapted to draw gas from a storage tank 26 and force it into the gas bag 10, or, when desired, to return it from said gas bag into said storage tank. The rudder 27 for directing the air ship is adapted to be actuated by means of cords 28 leading to the pilot house, wherein suitable means 29 are provided for moving the rudder in either direction, to the right or to the left.

By providing the gas bag at the bottom of the ship, below the machinery chamber and cabin for the passengers, the air ship may be used with perfect safety over oceans or large bodies of water, as in case of descent to the level of the water, the air ship will float upon the water, the passengers being then upheld at a considerable height above the surface of the water. And notwithstanding this arrangement, of the gas bag being below the chambers for the machinery and passengers, the air ship will not turn upside down, this being prevented by the proper operation of the wings.

I claim:—

An air ship of greater length than breadth having a correspondingly formed passenger chamber and a machinery chamber below the passenger chamber, a collapsible gas bag the main portion of which is below the machinery chamber, reciprocatory wings at the long sides of the ship, and means in said machinery chamber for operating said wings, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

HARRY WELLS.

Witnesses:

FRANCIS M. WRIGHT,  
D. B. RICHARDS.