F. GRÉGOIRE.

COMBINATION AUTOBOAT AND AEROPLANE.

APPLICATION FILED NOV. 6, 1911.

1,041,779.

Patented Oct. 22, 1912.

3 SHEETS—SHEET 1.

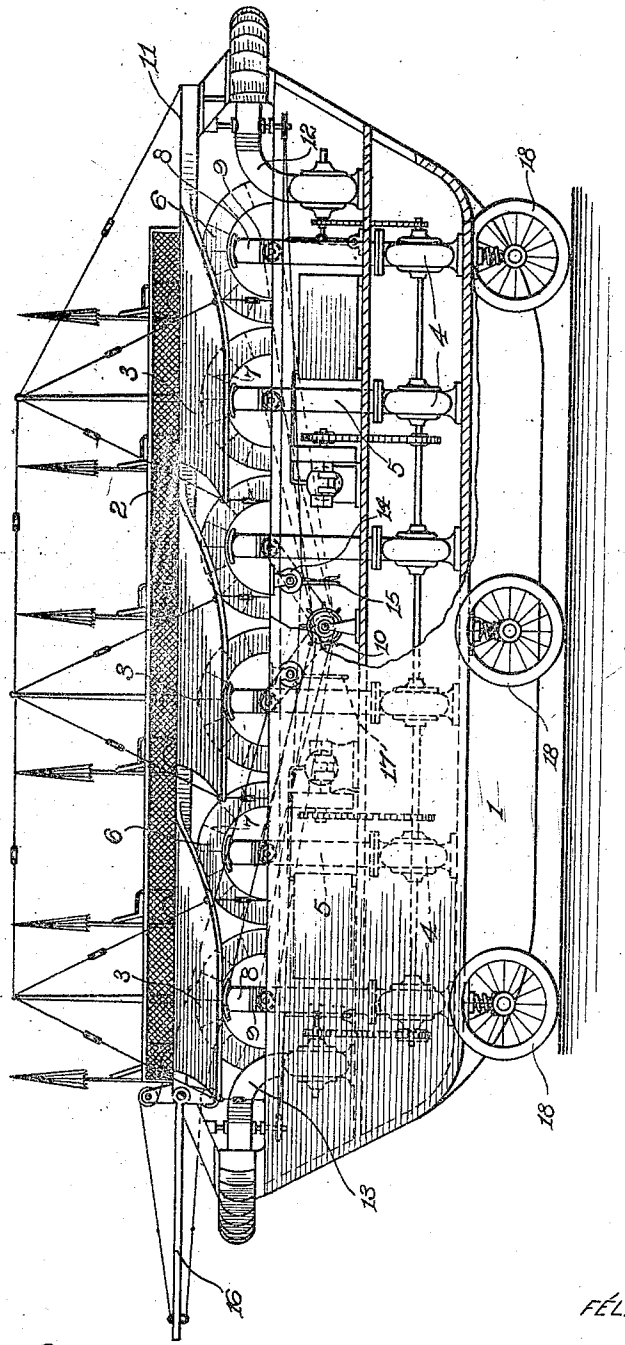

Fig. 1

Witnesses:

J. A. Gauvin

J. Gauvin

FÉLIX GRÉGOIRE

Inventor

By Marion & Marion

Attorneys

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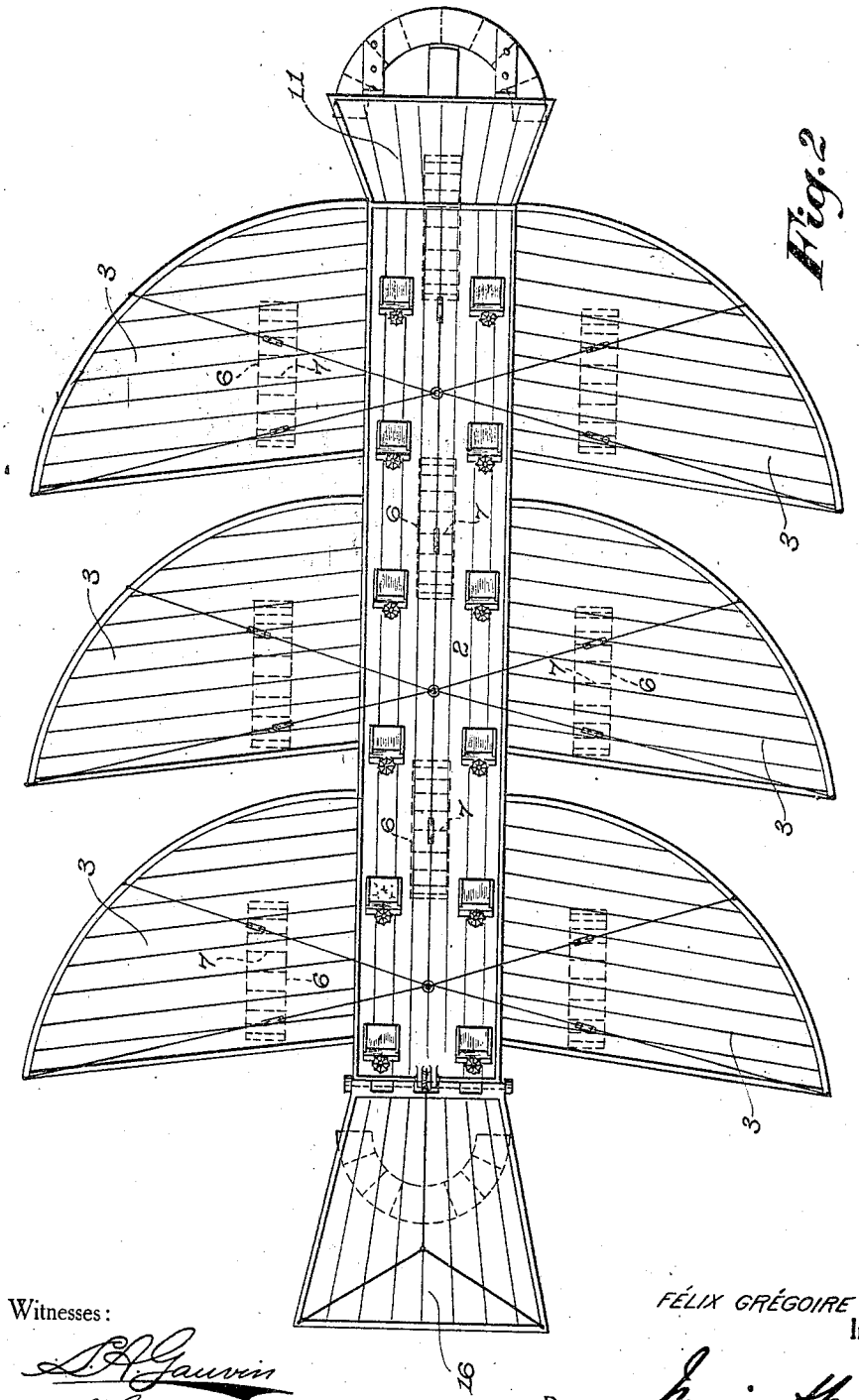

Fig. 2

Witnesses:

L. A. Gauvin

L. P. Gauvin

FÉLIX GRÉGOIRE

Inventor

By Marion & Marion

Attorneys

F. GREGOIRE.

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3 SHEETS—SHEET 3.

Fig. 3

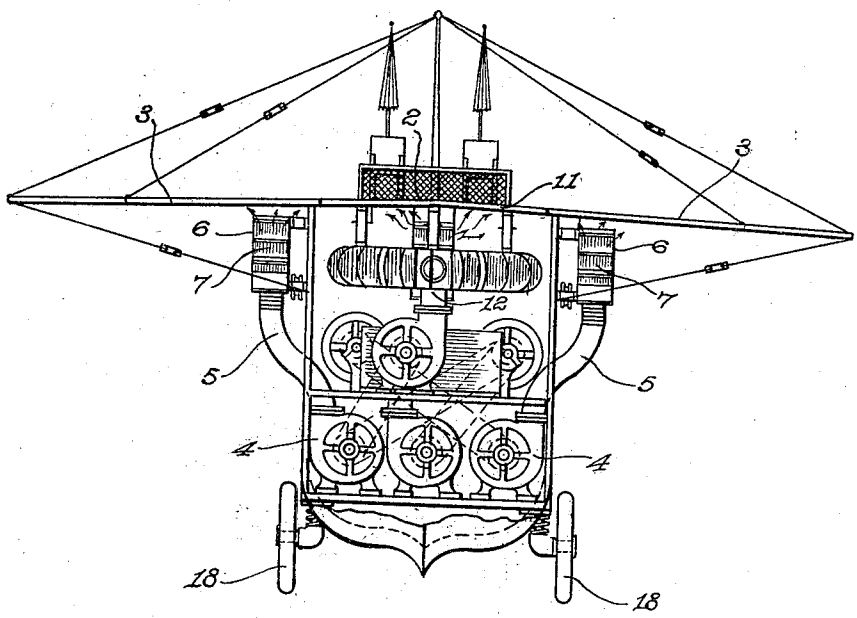
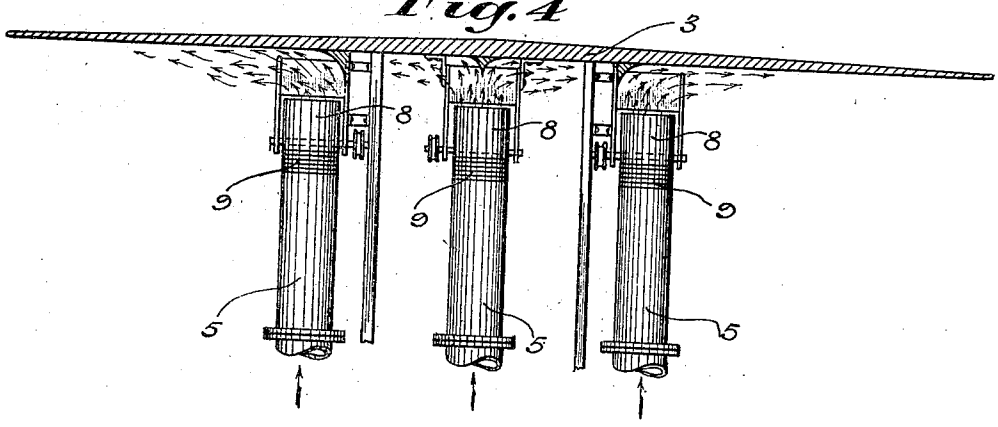


Fig. 4



Witnesses:

L. A. Gauvin

E. J. Gauvin

FÉLIX GRÉGOIRE

Inventor

By Marion & Marion

Attorneys

UNITED STATES PATENT OFFICE.

FÉLIX GRÉGOIRE, OF ST. JEAN BAPTISTE, MANITOBA, CANADA.

COMBINATION AUTOBOAT AND AEROPLANE.

1,041,779. Specification of Letters Patent. Patented Oct. 22, 1912.

Application filed November 6, 1911. Serial No. 658,847.

To all whom it may concern:

Be it known that I, FÉLIX GRÉGOIRE, a subject of the King of Great Britain, residing at St. Jean Baptiste, in the Province of Manitoba, Canada, have invented certain new and useful Improvements in Combination Autoboats and Aeroplanes; and I do hereby declare that the following is a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention to be hereinafter described relates to a combined auto-boat and aeroplane.

In order to more clearly disclose the construction, operation, and use of the invention, reference should be had to the accompanying drawings forming part of the present application.

Throughout the several figures of the drawings like reference characters designate the same parts.

In the drawings: Figure 1 is a side elevation, partly broken away; Fig. 2 is a top plan view; Fig. 3 is a front end view; and Fig. 4 is a fragmentary, vertical, cross section, showing the air delivery vanes, enlarged.

Referring to the drawings in detail, 1 indicates a boat shaped body from which is solidly supported a deck 2 for passenger seats. From the sides of this deck are extended pairs of wings or sustaining planes 3, strongly braced by suitable guy wires, cables or the like. These wings are adapted to receive the impulse or thrust of upwardly directed air currents from large force fans 4 or the like, housed within the body 1 and suitably driven by any well known form of motor or engine. From each fan leads a tube 5 which is bent outwardly, led through the side of the body 1, and terminates directly below the inner part of each wing. Between the under surface of each wing and the upper end of each tube 5 are arranged two parallel arc plates 6 connected by radially arranged deflecting vanes 7. The upper end or delivery section 8 of each tube 5 is connected to the upper part of a flexible joint or coupling 9 permitting the delivery end to be swung in an arc corresponding to the arc of plates 6. Each of the flexible joints is provided with a small wheel, lever, or the like device, for turning the upper end of the tube, and all of these operating devices are connected by cords, cables or the like to a single hand wheel 10 arranged at about the center of the body 1. Thus, movement of the hand wheel will effect simultaneous movement of all of the flexible pipe sections, simultaneously, and to the same extent. The vanes 7 act to concentrate and direct the currents issuing from the ends 8 of the tubes 5 so that they strike the wings 6 at the desired angle. The single hand wheel 10, of course, makes it certain that this angle will be the same for all of them. Thus, the currents may be directed vertically upward to effect ascension of the aeroplane. After ascending to the desired height, the sections 8 may all be tilted rearward to a greater or less degree to effect forward travel of the plane, or in the reverse direction for rearward travel. Beneath the center of the deck is arranged a similar set of fans, tubes and guide vanes, the flexible joints of these tubes being also operated from the one hand wheel 10. In order to prevent too great a concentration of the lifting current or draft at the center of the deck, a division plate 11 is used extending downwardly from the deck and between each two arc plates 6. This divides the current into two portions each slightly deflected laterally so as to strike the under surface of the deck a little at either side of the center line.

It is necessary, of course, to provide means for steering or turning the machine in any desired direction besides the straight forward or straight rearward direction. For this purpose tubes 12 and 13 with suitable fans are provided, one at each end of the machine. The upper section of the tube 12 is directed forwardly and connected by a flexible joint to the main portion of the tube. The upper section of the tube 13 is directed rearwardly and connected by a flexible joint to the body of the tube. Arc plates and guide vanes, similar to those already described for the tubes beneath the wings 3, receive the currents from the ends of the tubes. These plates deflect the current in any desired direction. The reaction of the air current will force the machine to turn in the opposite direction. The tube wheels, levers, or the like for swinging the movable ends of the tubes 12 and 13 are connected by cable, cord or the like to a pulley, drum, or

the like 14 operated by a suitable hand lever 15. The connections are so arranged, of course, that the movable ends of the tubes will be swung in opposite directions, at the same time, and to the same extent. The machine may be caused to ascend or descend from the plane in which it is traveling, by means of an elevating plane 16 hinged to the rear part of the deck and controlled by cords, cables, or the like connections secured to its rear edge, passed inwardly over guide pulleys, and secured to a drum or pulley operated by a suitable hand lever 17.

Suitable supporting wheels 18 are used for travel on land and for landing or starting purposes.

The fans and all of their operating mechanisms are arranged within the body of the machine and this body is constructed to float as a boat. The propulsion by air currents will be the same, of course, whether in the air, in the water, or on land.

It is thought that the operation and use of the invention will be clear from the preceding detailed description.

Changes may be made in the construction, arrangement, and disposition of the several parts of the invention without in any way departing from the field and scope of the same and it is meant to include all such within this application wherein only a preferred form has been disclosed.

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

1. In a machine of the character described, a body, a deck supported above said body, wings extending from said deck, a plurality of upwardly extending tubes within said body beneath said deck and said wings and each provided with an upper flexibly connected section, means for creating currents of air through said tubes, and means for simultaneously swinging the upper sections of said tubes.

2. In a machine of the character described, a body, a deck supported above said body, wings extending from said deck, a plurality of upwardly extending tubes within said body beneath said deck and said wings and each provided with an upper flexibly connected section, means for creating currents of air through said tubes, means for simultaneously swinging the upper sections of said tubes, and deflecting means for directing currents of air issuing from said tubes.

3. In a machine of the character described, a body, a deck supported above said body, wings extending from said deck, a plurality of upwardly extending tubes within said body beneath said deck and said wings and each provided with an upper flexibly connected section, means for creating currents of air through said tubes, means for simultaneously swinging the upper sections of said tubes, an elevating plane, and means for operating the same.

4. In a machine of the character described, a body, a deck supported above said body, wings extending from said deck, a plurality of upwardly extending tubes within said body beneath said deck and said wings and each provided with an upper flexibly connected section, means for creating currents of air through said tubes, means for simultaneously swinging the upper sections of said tubes, a tube mounted in each end of said body and each provided with an upper flexibly connected section arranged at an angle to the vertical, means for creating an air current through each of said end tubes, and means for simultaneously swinging the flexibly connected sections thereof in opposite directions.

5. In a machine of the character described, a body, a deck supported above said body, wings extending from said deck, a plurality of upwardly extending tubes within said body beneath said deck and said wings and each provided with an upper flexibly connected section, means for creating currents of air through said tubes, means for simultaneously swinging the upper sections of said tubes, a tube mounted in each end of said body and each provided with an upper flexibly connected section at an angle to the vertical, means for creating an air current through each of said end tubes, means for simultaneously swinging the flexibly connected sections thereof in opposite directions, and deflecting means for directing the currents of air from said sections.

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

FÉLIX GRÉGOIRE.

Witnesses:
L. P. Roy,
Alfred U. Le Bel.