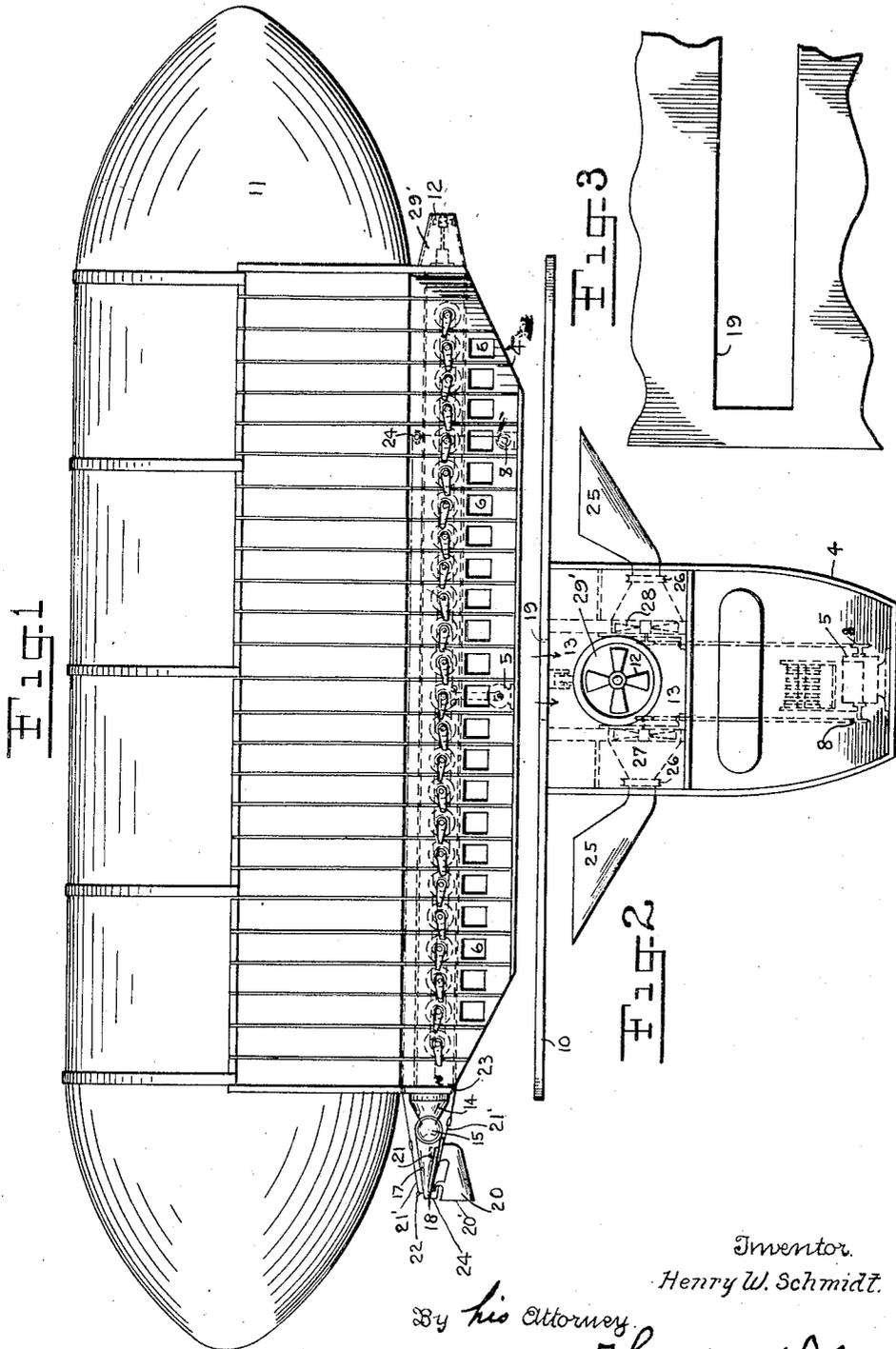


H. W. SCHMIDT,
AERONAUTICAL APPARATUS.
APPLICATION FILED JAN. 6, 1919.

1,351,069.

Patented Aug. 31, 1920.



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UNITED STATES PATENT OFFICE.

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AERONAUTICAL APPARATUS.

1,351,069.

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To all whom it may concern:

Be it known that I, HENRY W. SCHMIDT, a citizen of the United States, residing at New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Aeronautical Apparatus, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to improvements in aeronautical apparatus and in particular has reference to means in combination with either heavier-than-air or lighter-than-air, preferably the former form of craft, for producing motive impulse thereupon in practically any desired direction as hereinafter more fully set forth.

In the accompanying drawings I have illustrated in Figure 1 in side elevation a combination lighter-than-air and heavier-than-air aero craft embodying an application of my invention. Fig. 2 is an end view on an enlarged scale looking from right to left with the bag omitted, and Fig. 3 is a view partly broken away illustrating in plan view the front portion of the aeroplane surface of the craft.

4 is a suitable boat structure provided with a motor such as 5 and windows or port holes 6 as well as suitable pilot wheels indicated by the reference character 8 and other equipment. 10 is an aerofoil or air supporting surface mounted beneath the gas bag 11, and at the front of the machine a suitable propeller 12 is mounted to drive air into the passage 13 the same being expelled through the cone-like rearward portion 14 which terminates in a transverse cylindrical portion 15 upon which is preferably rotatably mounted a portion terminating in the hollow surface 17 thus permitting the surface 17 to move upwardly or downwardly looking at Fig. 1, the ends of the cylindrical portions 15 being closed and the end of the tail surface 17 being opened at 18 to allow for the discharging of air driven rearwardly by the propeller 12. This rapid draft of air it will also be understood draws the atmosphere in through the opening 19 through the aerofoil 10 from beneath the bag 11.

20 indicates another hollow flat surface open at the end 20' and serving as a rudder, the same being rotatably connected beneath the elevator surface 17 as shown and being movable therewith and provided with

an inwardly projecting deflector 21 which is adapted to cause part of the air which passes outwardly from the cone 14 to be deflected through the rudder 20 as well as the elevator 17. The elevator 17 is preferably connected at opposite ends by a suitable cable 21' which is connected at 22 with the cable 23 which passes over the pulley 24 and downwardly over one of the pilot wheels 8. A similar connection 21' is also secured to the other end of the cable 23 so that by operating the pilot wheel, the elevator 17 may be raised or lowered as desired. The rudder 20 is also suitably connected by a cable to another of the pilot wheels 8 as shown and suitable sliding connection is provided between the elevator 17 and the rudder 20 as shown at 24.

25 indicates suitable air vents or discharging members rotatably mounted at 26 so as to allow air to discharge therefrom and to strike upwardly beneath the planes 10 or in any other direction according to the position in which the air outlets 25 may be rotated, each of these air vents or outlets being connected to cone-shaped passages 27 in the lower ends of which are mounted suitable fans or propellers such as 28 which draw air from the passages 13—39 when rotated by suitable sprocket chains as shown. In the position shown in Fig. 1 the air outlets are directed aft, each succeeding one pointing above or below the other so as to allow the air to react upon the atmosphere in such a manner as to drive the craft forwardly, the air being drawn in at the front 29' into the passage 13 and through the top passage 19 through the aeroplane surface 10. By operating one of the pilot wheels 8, these air outlets may be simultaneously rotated downwardly when alighting to reduce the shock of landing.

From the foregoing it will be seen that in addition to the part 20 providing a rudder surface, the action of the same is augmented by virtue of the reaction of the air emitted from the end thereof, and it will also be observed that the same applies to the elevator 17. The air drawn in through the aerofoil 10 relieves the pressure of atmosphere upon the top of said aerofoil and applies it through the outlets referred to where it is utilized to advantage. Of course it will be understood that the gas bag 11 may be eliminated if desired and in fact various modifications may be made in the

construction and arrangement of parts without departing from the spirit of the invention as claimed.

I claim:

- 5 1. In an apparatus of the class described, a lighter-than-air superstructure, an aerofoil, immediately beneath the same, a car beneath said aerofoil, means for drawing air at the front of said apparatus through said car and from between said superstructure and aerofoil through the latter and for discharging said air beneath said aerofoil, said 20 aerofoil being adjustable upwardly and rearwardly.
- 10 2. In an apparatus of the class described, a lighter-than-air superstructure, an aerofoil immediately beneath the same, a car be-

neath said aerofoil, means for drawing air at the front of said apparatus through said car and from between said superstructure and aerofoil through the latter and for discharging said air beneath said aerofoil, said 20 aerofoil being adjustable upwardly and rearwardly.

In testimony whereof I hereunto affix my signature in the presence of two witnesses. 25

HENRY W. SCHMIDT.

Witnesses:

ANNA F. DUFFY,
DAVID H. DOUGLAS.