

H. MUELLER.
AEROPLANE.

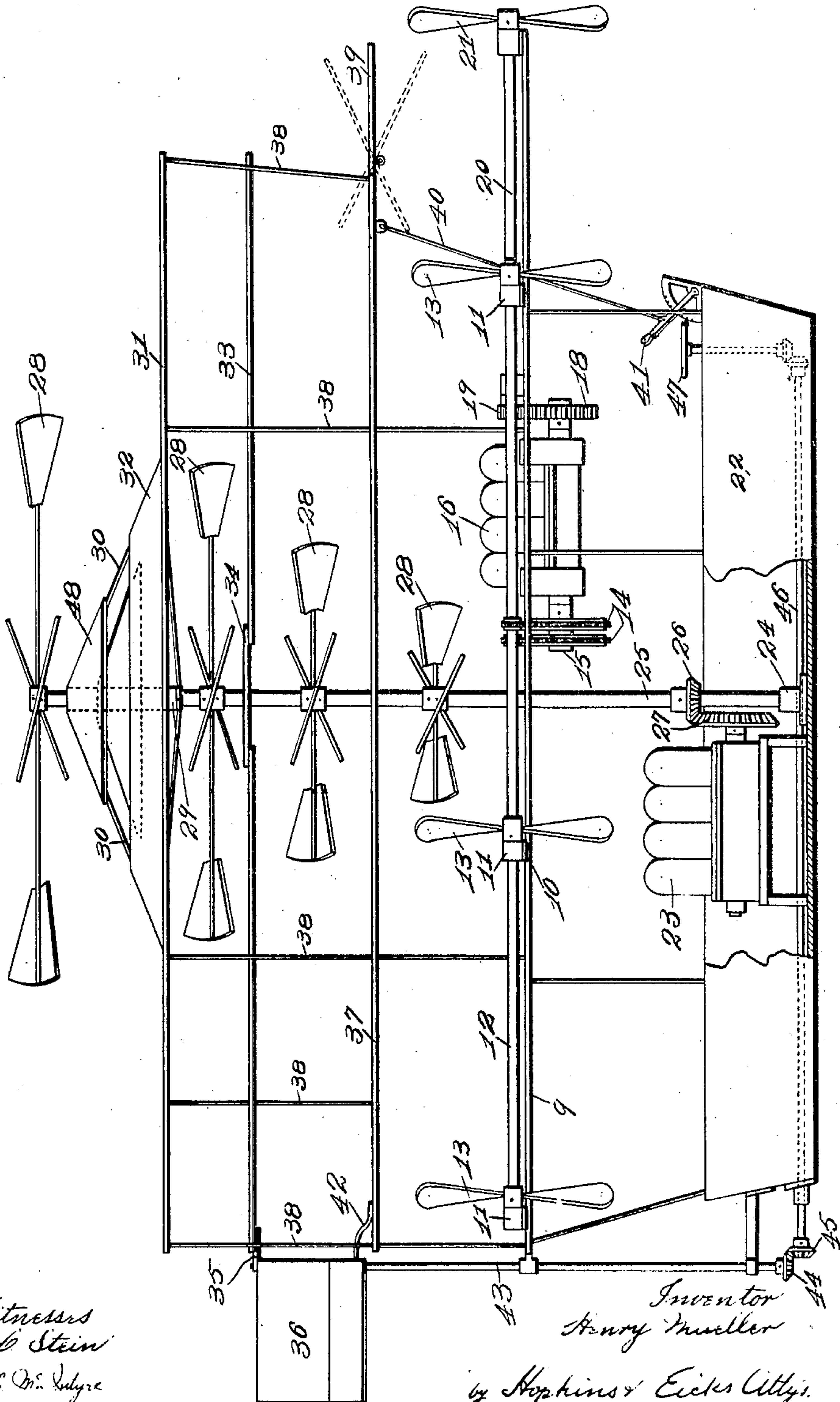
APPLICATION FILED OCT. 31, 1908.

914,969.

Patented Mar. 9, 1909.

4 SHEETS—SHEET 1.

FIG. 1



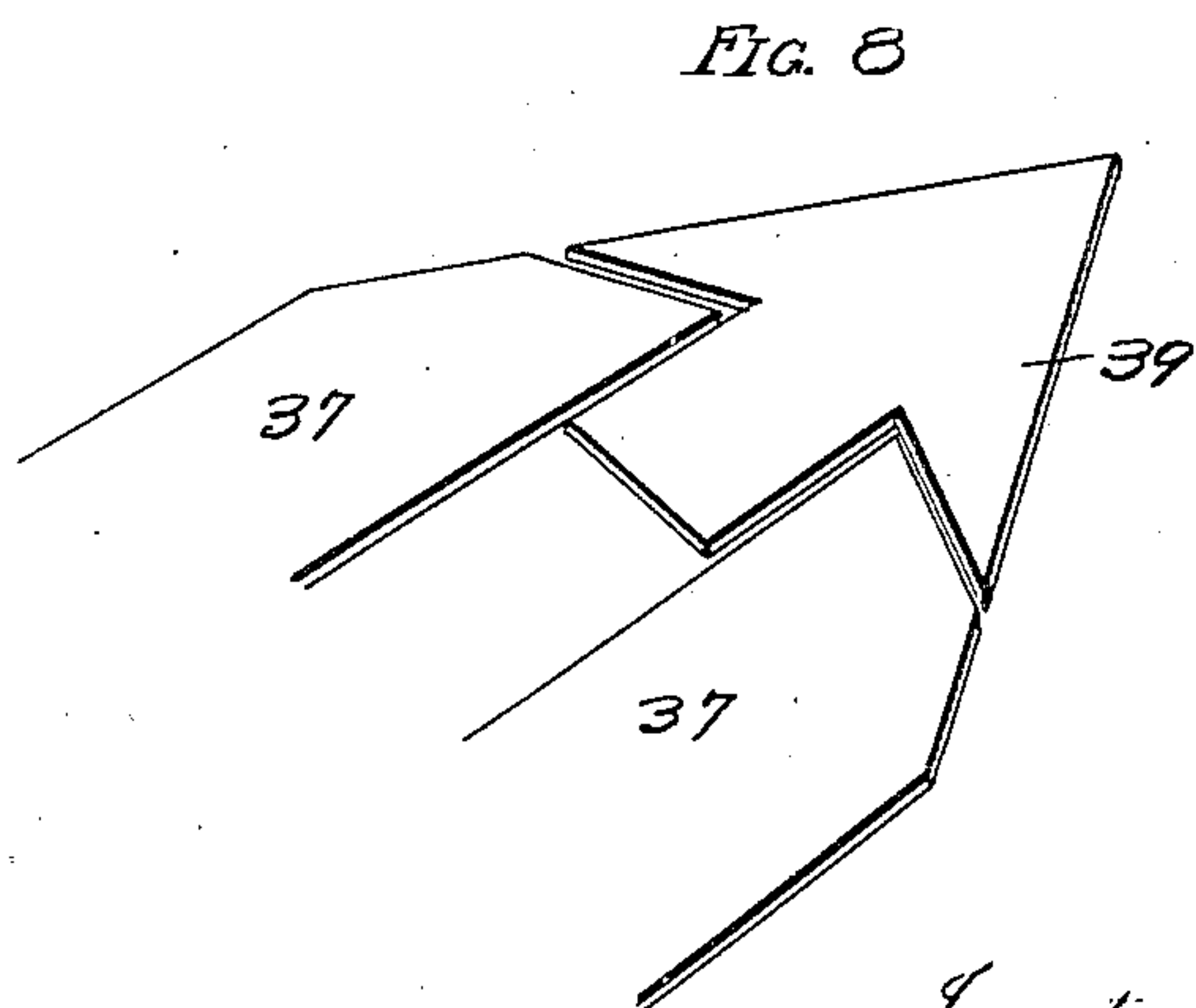
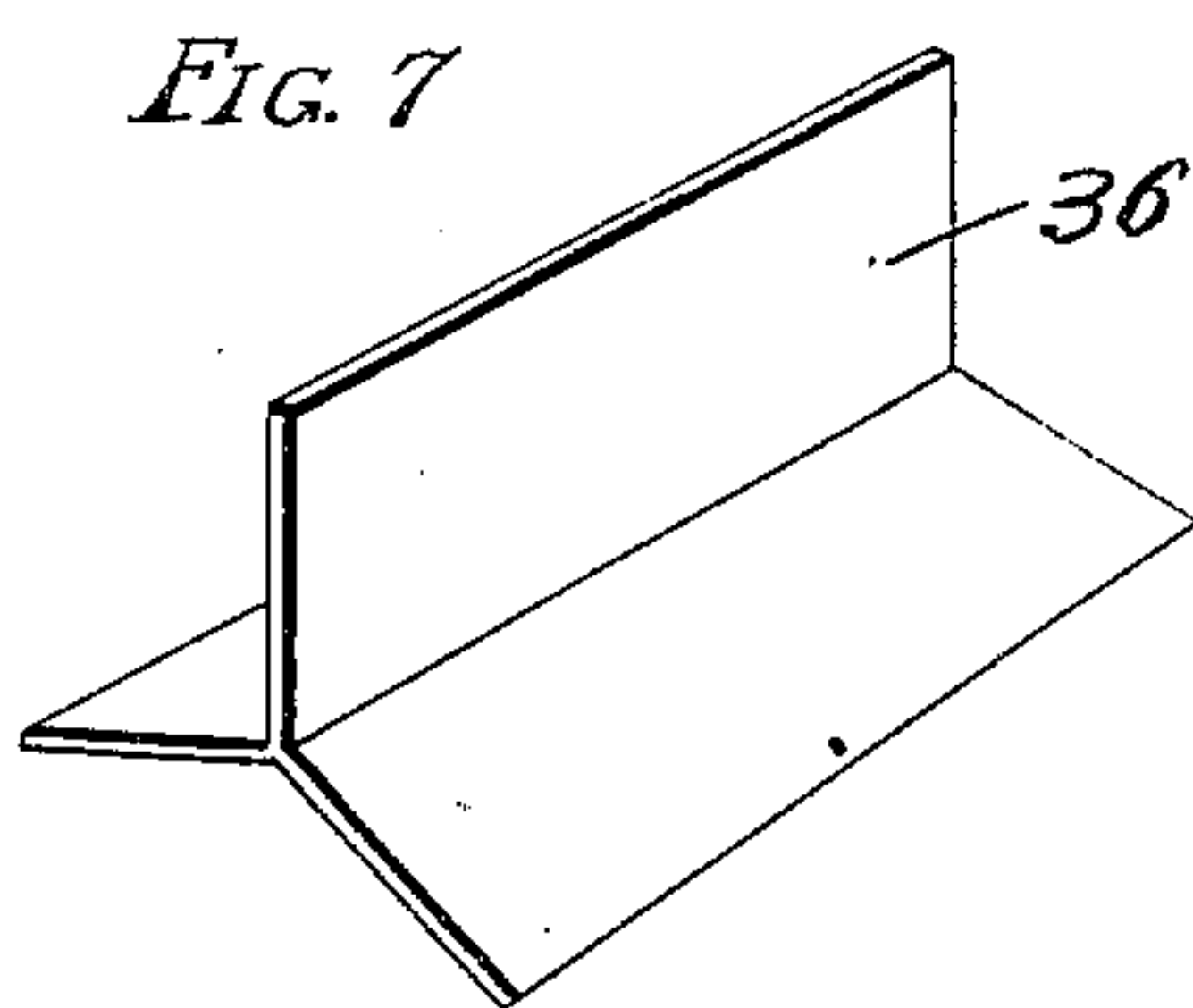
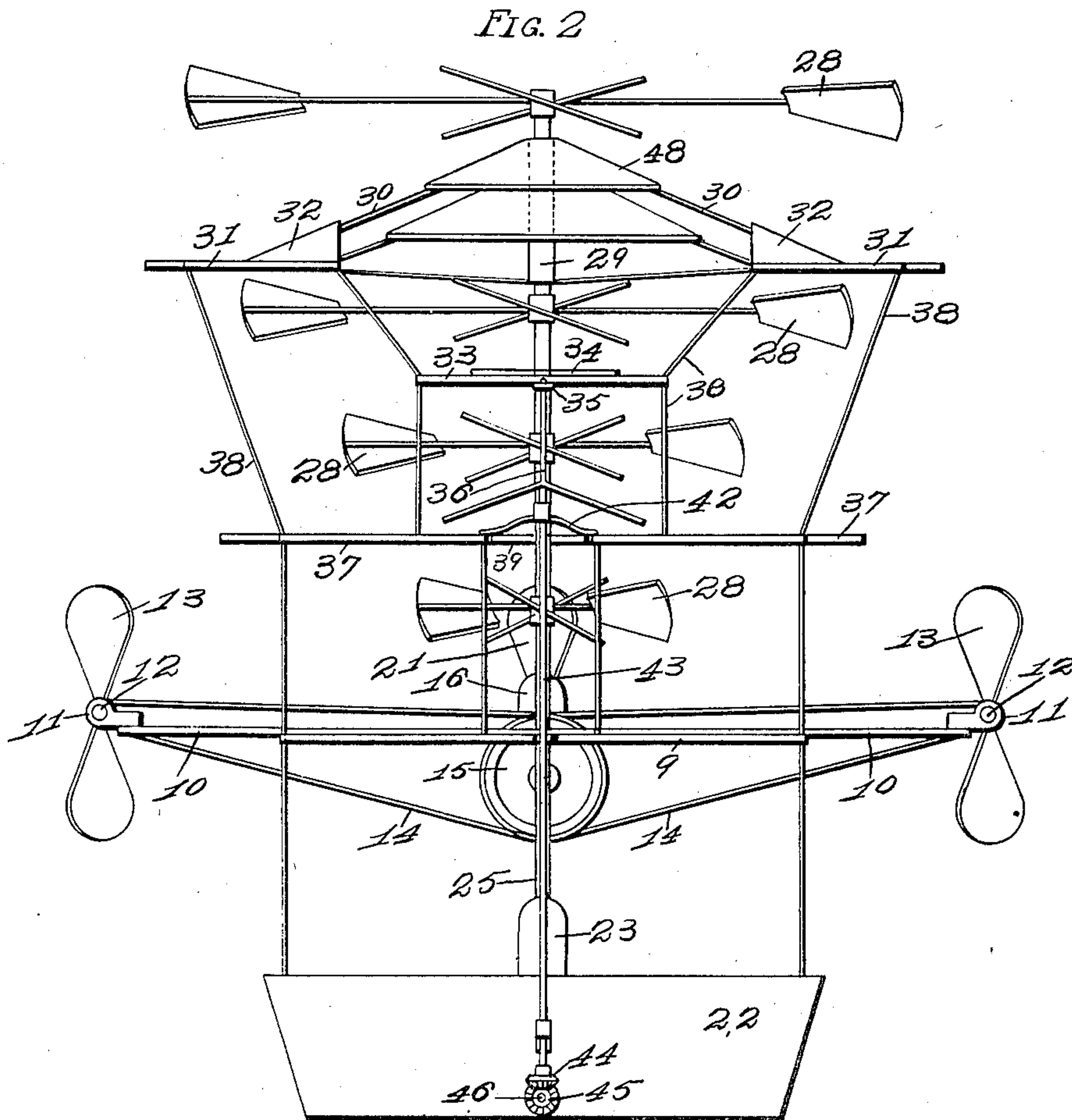
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FIG. 4

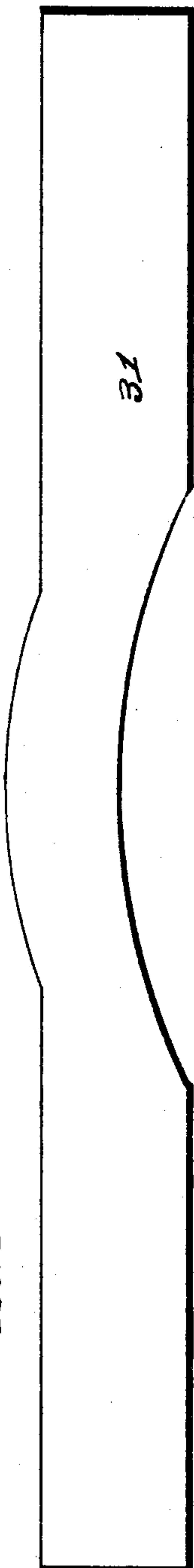
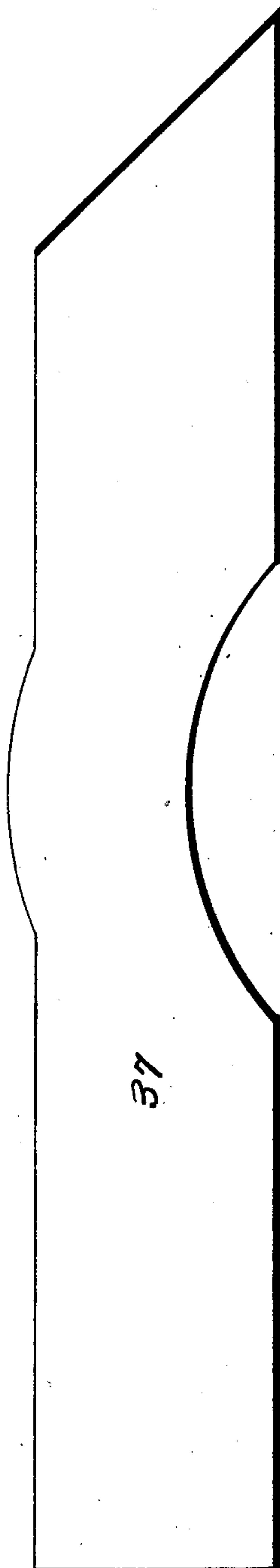


FIG. 5



FIG. 6



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UNITED STATES PATENT OFFICE.

HENRY MUELLER, OF ST. LOUIS, MISSOURI.

AEROPLANE.

No. 914,969.

Specification of Letters Patent.

Patented March 9, 1909.

Application filed October 31, 1908. Serial No. 460,530.

To all whom it may concern:

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

This invention relates to improvements in aeroplanes and has for its object to provide a plurality of planes mounted around a helicopter or whirling planes, a suitable frame provided with a plurality of propellers and an operating mechanism whereby the propellers and whirling planes may be independently operated.

A further object of my invention is to construct an aeroplane with a helicopter or whirling planes whereby the machine may be raised and a plurality of horizontal planes for retaining the machine in the air, and a plurality of propellers for propelling the machine forwardly, the helicopter being at all times in motion to retain the machine in elevated position and preventing the same from capsizing.

In the drawings—Figure 1 is a side elevation of my complete invention with a part of the carriage broken away and in section, showing the position of the motor for operating the whirling planes. Fig. 2 is a rear end view of the same. Fig. 3 is a top plan view of the motor frame. Fig. 4 is a top plan view of one of the upper planes. Fig. 5 is a top plan view of the center plane. Fig. 6 is a top plan view of one of the lower planes. Fig. 7 is a detail perspective view of one of the rudders. Fig. 8 is a detail perspective view of the front end of the lower planes, showing the raising and lowering rudder.

In the construction of my invention I provide a suitable frame 9 on which is supported a plurality of cross-bars 10, on the ends of which are supported bearings 11 in which operate the propeller shafts 12. On the propeller shafts are mounted propellers 13 which are driven by sprocket chains 14 communicating with the drive wheels 15 of the motor 16; the motor 16 is suspended on the frame by means of the supporting bars 17. The opposite end of said motor is provided with a gear wheel 18 meshing with a gear pinion 19, said pinion mounted on the center propeller shaft 20 which extends forwardly and is supported on the projecting end of the frame, and on the end of said shaft is the center propeller 21.

Suspended from the frame 9 is a carriage 22 in which is located a motor 23 and a suitable bearing 24 in which is supported the lower end of the helicopter or whirling plane shaft 25. On the shaft 25 is mounted a bevel gear pinion 26 arranged to mesh with the bevel gear 27 located on the motor shaft and by this mechanism the shaft 25 is revolved. The shaft 25 projects upwardly and on the same is mounted a plurality of whirling planes 28 of increased size, the largest being at the extreme upper end of the shaft. On said shaft 25 is mounted a sleeve 29 from which radiates projecting rods or arms 30 and to the same is attached the upper planes 31. These planes consist of a suitable frame covered with light material, a portion of said planes being securely fastened to the supports 30 and bent upwardly as indicated by the numeral 32 in Fig. 1. These planes are stationary.

Beneath the upper planes and a suitable distance therefrom is located a center plane 33 of the construction as shown in Fig. 5 consisting of two sections, their inner ends connected together by the ring 34, the rear end provided with a bracket 35 to which is pivoted the upper front end of the rudder 36.

Beneath the plane 33 and a suitable distance therefrom is located a pair of lower planes 37, all of said planes being suitably braced together by guy rods 38 and also supported to the frame by similar rods so as to retain the several parts in rigid position.

At the front of the lower planes 37 and between the same is hingedly secured a raising and lowering rudder 39; to this rudder is attached a regulating rod 40 which extends downwardly into the carriage and is manipulated by means of the hand lever 41. This raising and lowering rudder is constructed in the shape of an arrow head and is utilized to assist the operator in tilting the aeroplane so as to ascend or descend, regulating the same in accordance with the movement as shown by dotted lines in Fig. 1.

To the rear end of the lower planes 37 is attached a bracket 42 to which is connected the lower end of the rudder 36 and to said rudder is attached an operating rod 43 by which the same may be shifted in order to regulate the forward movement of the machine. The lower end of the operating rod 43 is provided with a bevel gear 44 which meshes with a like gear 45 mounted upon a shaft 46; this shaft

is supported in the carriage, the front end provided with suitable gearing and the shaft is operated by the rudder wheel 47 located in the front end of the carriage.

5 The motors 16 and 23 can be independently operated as there are times when it is necessary to operate the propellers at a greater speed than to revolve the whirling planes. For that reason it has been found
10 best to provide separate operating devices.

On the supporting frame 30 is located a stationary head 48 which also acts as a plane to retain such air as is agitated by the whirling planes beneath the same and assist in
15 floating the machine.

The operation of my improved aeroplane is as follows: When it is desired to ascend, the operator places in operation the motor 23 rapidly revolving the whirling planes. The
20 raising and lowering rudder is tilted upwardly and the propellers revolved at a very low rate of speed. After the machine has reached the height desired, the movement of the propellers is increased and the revolving
25 planes decreased to a revolution sufficient to retain the same in an elevated position in connection with the horizontal stationary planes and by the continuous revolution of the whirling planes it will cause sufficient agitation of the air beneath the stationary horizontal planes to float the same and prevent
30 the machine from capsizing.

Having fully described my invention, what I claim is:—

35 1. An aeroplane comprising a frame, a plurality of whirling planes; a plurality of stationary horizontal planes interposed between the whirling planes; a plurality of propellers supported on the frame, and means for operating the propellers and whirling planes in-
40 dependently of each other, substantially as specified.

2. An aeroplane comprising a suitable frame; a carriage; a vertical operating shaft supported in said carriage; a plurality of
45 whirling planes supported on said shaft; a plurality of horizontal stationary planes supported around the shaft and interposed between the whirling planes; a motor for operating the whirling planes; a plurality of
50 propellers supported by the frame; a motor for operating the same; a raising and lowering rudder and a guide rudder; and means for operating said rudders, substantially as specified. 55

3. A device of the class described comprising a suitable frame; a plurality of horizontal stationary planes located above the same; a carriage suspended from the frame; a plurality of whirling planes of increased
60 size, the largest located at the top; a shaft for supporting the same, and a motor for placing the same in operation; substantially as specified.

4. A device of the class described comprising a suitable frame; a plurality of horizontal stationary planes supported to each other and to the frame, in combination with a helicopter revolvably mounted between and above said planes; a plurality of propellers
70 and a means for operating the propellers and helicopter at varying speeds simultaneously for raising and advancing the movement of the aeroplane, and a plurality of rudders for guiding the motion of said aeroplane, sub-
75 stantially as described.

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

HENRY MUELLER.

Witnesses:

ALFRED A. EICKS,
WALTER C. STEIN.