

July 14, 1931.

J. J. HICKS

1,814,925

AIRSHIP

Filed Sept. 23, 1929

4 Sheets-Sheet 1

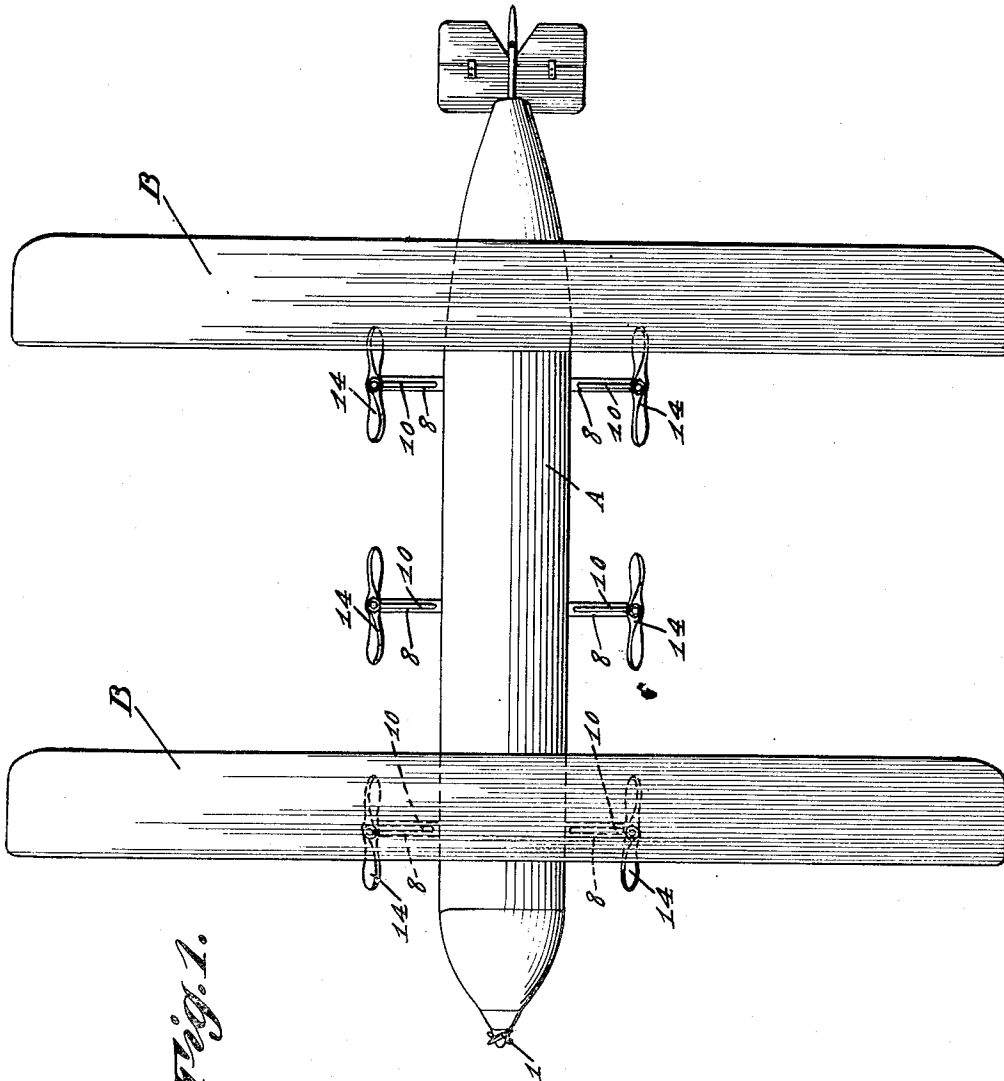


Fig. 1.

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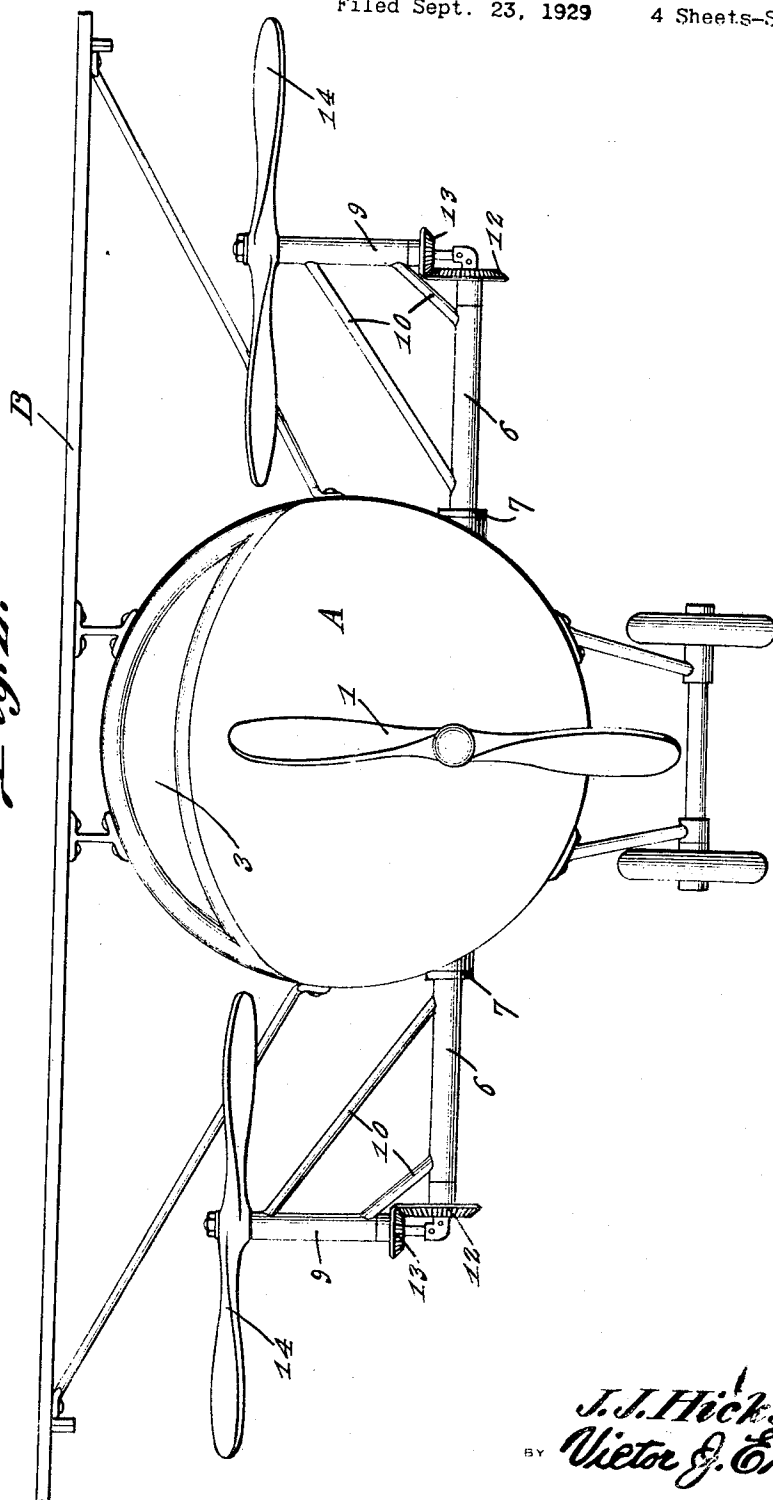
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Fig. 2.



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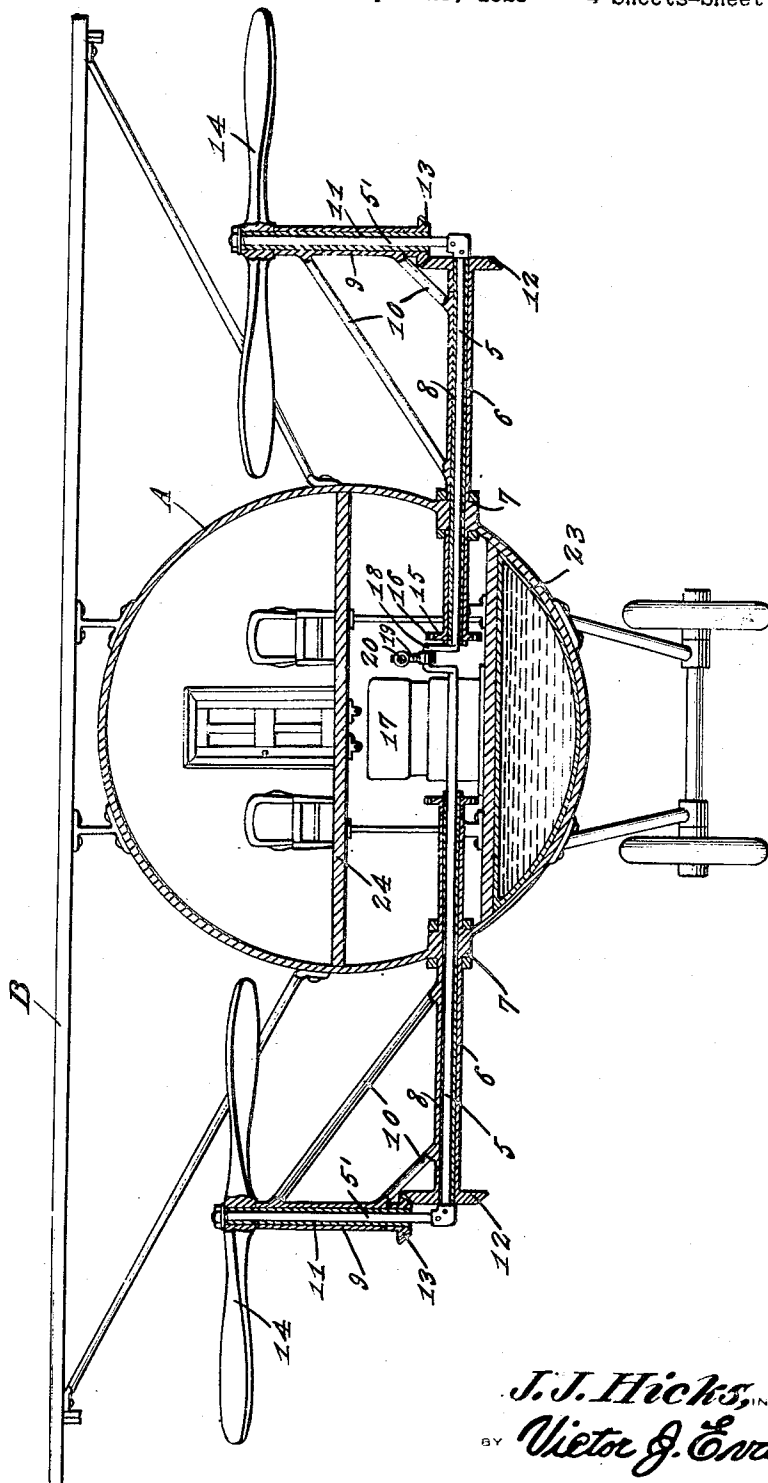
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Fig. 3.



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UNITED STATES PATENT OFFICE

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AIRSHIP

Application filed September 23, 1929. Serial No. 394,525.

This invention relates to an air craft, the general object of the invention being to provide the craft with a plurality of propellers with means whereby the propellers can be moved either into a vertical position or a horizontal position so that the craft can be easily landed or caused to rise by placing the propellers in a horizontal position so that the craft will move in a substantially vertical position and then when the craft is in the air by turning the propellers to a vertical position, said propellers will help the main propeller to drive the craft.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts, to be hereinafter fully described, illustrated in the accompanying drawings and specifically pointed out in the appended claims.

In describing the invention in detail, reference will be had to the accompanying drawings wherein like characters denote like or corresponding parts throughout the several views, and in which:—

Figure 1 is a top plan view of the improved craft with the propellers in horizontal position.

Figure 2 is an end view of Figure 1.

Figure 3 is a transverse sectional view.

Figure 4 is a longitudinal sectional view.

Figure 5 is an elevation showing the propellers in horizontal position in full lines and in vertical position in dotted lines.

In these views, the letter A indicates the body of the craft and the letter B the wings thereof. The body is of substantially cigar shape and has the usual propeller 1 at its front end, the shaft of which is suitably connected with a motor 2, a window 3 being arranged in the top of the body above the nose thereof so that the pilot in the compartment 4 can see where he is going.

A number of transverse shafts 5 pass through the body and project from the sides thereof, each shaft having a section 5' connected with the end which extends at right angles to the shaft. A pair of tubular members 6 is associated with each shaft, these tubular members passing through the sides of the body and being rotatably arranged there-

on, as shown at 7, and the tubular shaft 8 is rotatably arranged in the member 6 and encloses a portion of the shaft 5. A tubular member 9 encloses the section 5' and the tubular member 9 is connected with the adjacent tubular member 6 by braces 10. A tubular shaft 11 passes through the member 9 and surrounds the section 5'. A bevel gear 12 is connected to the outer end of the shaft 8 and a bevel gear 13 is connected to the inner end of the shaft 11. These bevel gears mesh with each other and a propeller 14 is connected with the outer end of the shaft 11. A gear 15 is connected with the inner end of the shaft 8 and the pair of gears 16 is connected with the ends of a shaft of a motor 17 in the body so that each pair of propellers 14 is driven from a single motor through the gears 15, the shafts 8 and 11 and the gears 12 and 13. Each shaft 5 has a crank 18 located within the body and connecting rods 19 connect the cranks of all the shafts 5 with a rod 20, the front end of which is connected by a link 21 with a hand lever 22 extending into the compartment 4 so that the pilot upon manipulating this lever can move the shafts 5 to throw the propellers 14 either into horizontal positions shown in full lines in the drawings or in vertical positions as shown in dotted lines in Figure 5. It will be seen that the propellers can be adjusted without interfering with the rotation of the same by the motors 17.

The fuel tanks 23 are arranged in the lower part of the body below the deck 24 which separates this lower part from the upper part and the space formed by a deck in the top of the body can be divided into compartments for officers and passengers, as shown in Figures 3 and 4.

From the foregoing, it will be seen that when the propellers 14 are arranged in horizontal position, the rotation will cause the craft to move in a substantially vertical direction, thus enabling the craft to make a landing easily and without running along the landing field and the craft can take-off just as easily and without a long run. Then when the craft is in the air by turning the propellers 14 to a vertical position they will

help the main propeller 1 to drive the craft.

It is thought from the foregoing description that the advantages and novel features of the invention will be readily apparent.

5 It is to be understood that changes may be made in the construction and in the combination and arrangement of the several parts, provided that such changes fall within the scope of the appended claims.

What I claim is:

10 1. An air craft comprising a body, a plurality of transversely arranged shafts passing through the body and extending from the sides thereof, a rightangular extension on each end of each shaft, a tubular shaft on
15 each extension, a housing for each tubular shaft, a pair of tubular shafts on each of the first mentioned shafts, gears connecting each last mentioned tubular shaft with the tubular shaft on the extension, a housing for
20 each tubular shaft on the transverse shafts, each housing being rotatably supported in the body, means for connecting each of said housings with a housing on each extension, a propeller connected of the outer end with
25 each tubular shaft and extensions, a motor for driving each pair of tubular shafts, and manually operated means for simultaneously rocking the transverse shafts to move the propellers into either vertical position or horizontal position.
30

2. An aircraft comprising a body, a transversely arranged shaft passing through the body and extending beyond the sides thereof,
35 a rightangular extension on each end of said shaft, tubular shafts on said shaft and its extensions, gears connecting the tubular shaft on each extension with the tubular shaft on the transverse shaft, a propeller connected with the outer end of the tubular shaft on
40 each extension, means for imparting movement to the tubular shafts on the transverse shaft, and supporting means for the tubular shafts rotatably connected with the body, whereby the propellers can be placed in horizontal or vertical positions.
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In testimony whereof I affix my signature.

JOSEPH J. HICKS.

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