Sept. 20, 1932. E. BEAVER 1,878,808

AEROPLANE

Filed Nov. 5, 1931 3 Sheets-Sheet 1

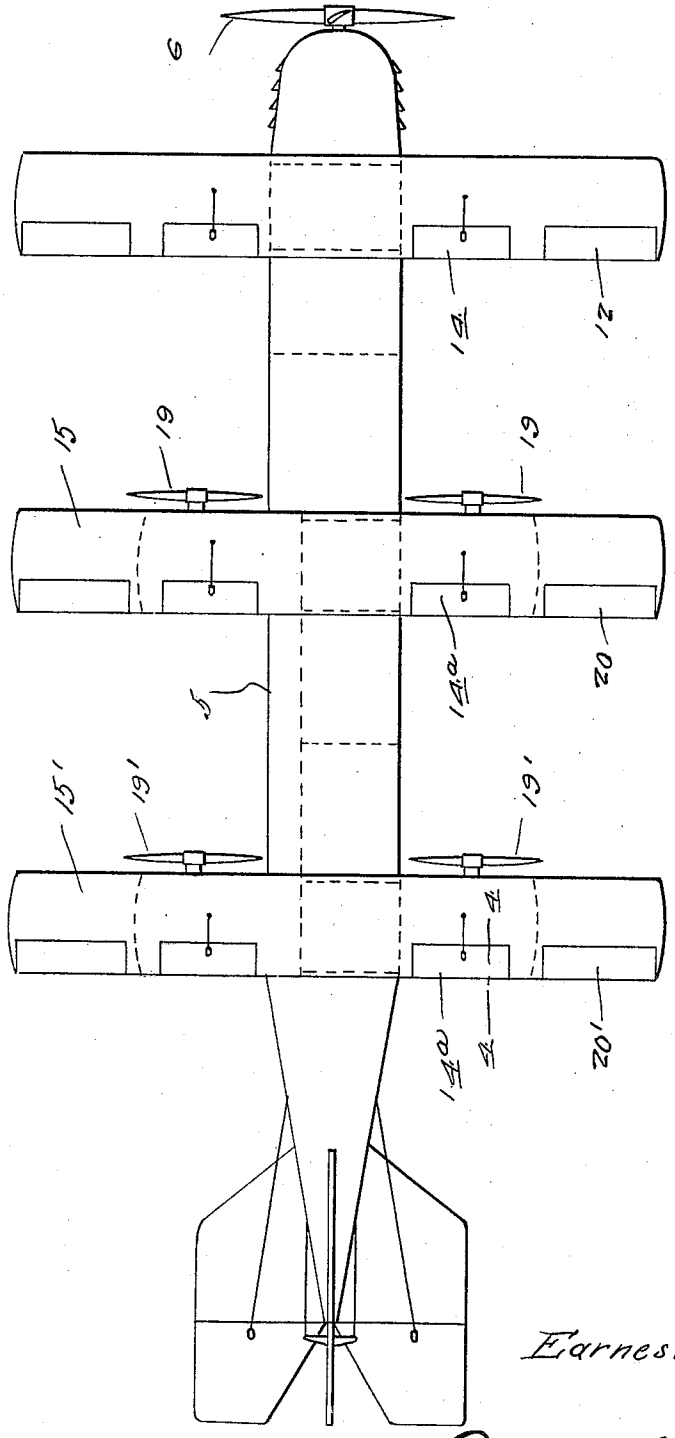


Fig. 1.

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AEROPLANE

Filed Nov. 5, 1931 3 Sheets-Sheet 2

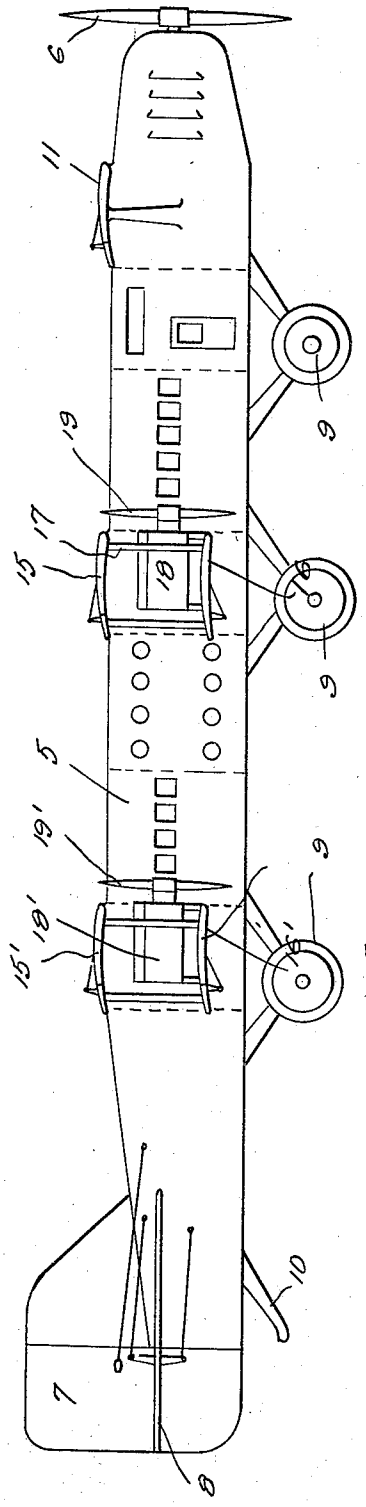


Fig. 2.

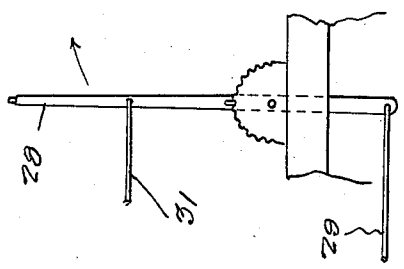


Fig. 6.

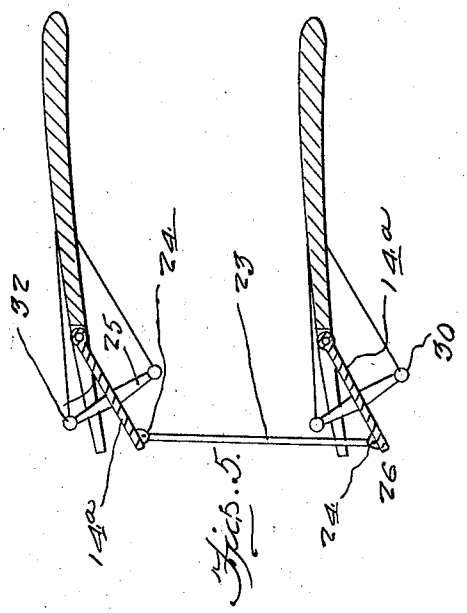


Fig. 5.

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AEROPLANE

Filed Nov. 5, 1931 3 Sheets-Sheet 3

Fig. 4.

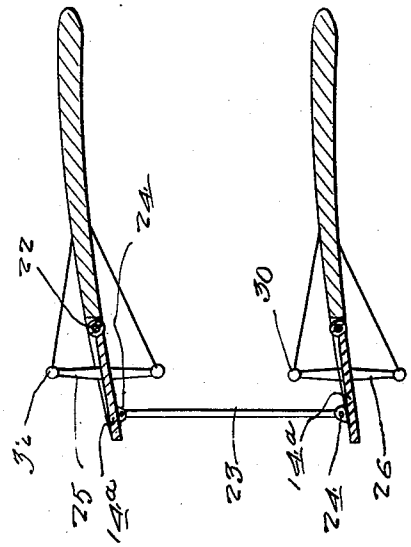
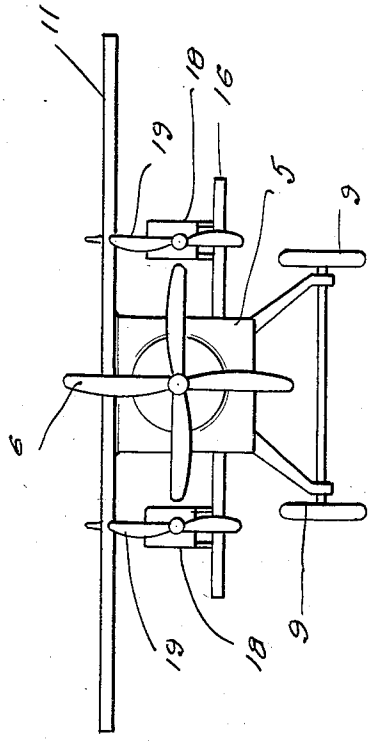


Fig. 5.



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UNITED STATES PATENT OFFICE

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AEROPLANE

Application filed November 5, 1931. Serial No. 573,262.

The present invention relates to improvements in aeroplanes and having for an object an aeroplane providing a novel arrangement of extension planes or wings, whereby to lend to the flight and lifting efficiency of the machine in order that the same may be successfully used where the body or fuselage of the aeroplane is much larger than those now in common use.

Another very important object of the invention resides in the provision of control means incorporated in the lifting planes or swings to afford greater efficiency in launching the aeroplane in the air and in landing on the ground.

Another very important object of the invention resides in the provision of an aeroplane of this nature wherein a plurality of retaining surfaces which are distributed along the fuselage at various points for the purpose of augmenting the lifting and retaining efficiency thereof.

Another very important object of the invention resides in the provision of an aeroplane of this nature which is easy to control in the necessary maneuvers incident to successful flights of a relatively large aeroplane in the air.

With the above and numerous other objects in view as will appear as the description proceeds, the invention resides in certain novel features of construction, and in the combination and arrangement of parts as will be hereinafter more fully described and claimed.

In the drawings:

Figure 1 is a top plan view of the aeroplane embodying the features of my invention,

Figure 2 is a side elevation thereof,

Figure 3 is a front elevation thereof,

Figure 4 is a detail section taken substantially on the line 4—4 of Figure 1,

Figure 5 is a similar view showing the hinged retaining plane members in a different position, and

Figure 6 is a detail elevation showing the control levers for the improved retaining plane members.

Referring to the drawings in detail it will be seen that the numeral 5 denotes an elongated fuselage having in its nose or front end a motor, interiorly thereof and not visible in the drawings, with a propeller 6 operatively connected therewith in the usual well known manner.

The tail structure is conventional and includes rudders 7 and elevators 8. The running gears 9 are conventional as is also the tail skid 10.

Adjacent the front I provide a pair of laterally extending wings 11 of the monoplane type which are provided in their trailing edges with the usual ailerons 12, and also with sustaining plane members 14. At about the center of the fuselage are laterally extending wing structures of the biplane type including upper wings 15 and lower wings 16 connected together by their rods 17 and it is to be noted that the bottom wings 16 do not project out as far as the upper wings 15.

Motors 18 are supported on the lower wings 16 and have forwardly disposed propellers operatively connected therewith. In the trailing edges of the upper wings 15 are the usual ailerons 20 and my improved sustaining plane members 14*a* and in the trailing edges of the lower wings are similar members 14*a*.

At the rear of the fuselage in front of the tail structure there is provided biplane wing structures comprising upper wings 15′ and lower wings 16′ similar in all respects to wings 15 and 16 respectively and motors 18′ are mounted on the wings 16′ and have front propellers 19′.

The wing 15′ is provided with ailerons 20′ and wing 16′ is provided with members 14A.

Referring to Figures 4 and 5 particularly,

it will be seen that I have illustrated in detail the mounting of the members 14 and 14*a* all of which are similar that is hingedly mounted as at 22 at their forward edges and at the trailing edges of the respective wings.

The members 14*a* which are disposed one above the other in the wings 15 and 16 or 15′ and 16′ are connected together by links 23 pivotally engaged as at 24 with the entering edges of the members. The upper members 14 and 14*a* are provided with bars 25 rising therefrom and the lower members 14*a* are provided with bars 26 depending therefrom.

In the fuselage there is a lever 28. A cable 29 is engaged with the lever 28 and has branches trained over pulleys 30 and connected to members 26 while to the lever 28 there is also engaged a cable 31 having branches trained over pulleys 32 and connected with bars 25.

In the above detailed description it will be seen that I have devised an aeroplane with a great amount of sustaining surface afforded by a plurality of planes or wings and particularly have provided controls enabling the aeroplanes to take off from the ground in spite of its great length and to make an easy and safe landing.

With the aid of the sustaining plane members, it will be seen that this aeroplane may be made to take the air as easily as the aeroplane of the present day design since these members are hinged so as to be let down so that their trailing edges may catch the force of air in the take off while the ship is aloft they can be pulled up even with the rest of the wing through the medium of a single control lever to be complementary to the lifting surface of said wings.

It is thought that the construction, operation, utility and advantages of this invention will now be quite apparent to those skilled in this art without a more detailed description thereof.

The present embodiment of the invention has been disclosed in considerable detail merely for the purposes of exemplification since in actual practice it attains the features of advantage enumerated as desirable in the statement of the above invention and description.

It will be apparent that changes in the details of construction, and in the combination and arrangement of parts may be resorted to without departing from the spirit or scope of the invention as hereinafter claimed or sacrificing any of its advantages.

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

In an aeroplane, an elongated fuselage, a monoplane wing structure at the front of the fuselage, biplane wing structure at the center of the fuselage, and a biplane wing structure at the end of the fuselage, the lower wing of each biplane wing structure being shorter than the upper wings, motors mounted on said lower wings and having forwardly disposed propellers operatively connected thereto, all of said wings having recesses in their rear edges located adjacent the fuselage, a sustaining plane member hingedly connected at its front edge with the front wall of said recess, and means for raising and lowering the trailing edges of said members simultaneously.

In testimony whereof I affix my signature.

EARNEST BEAVER.