

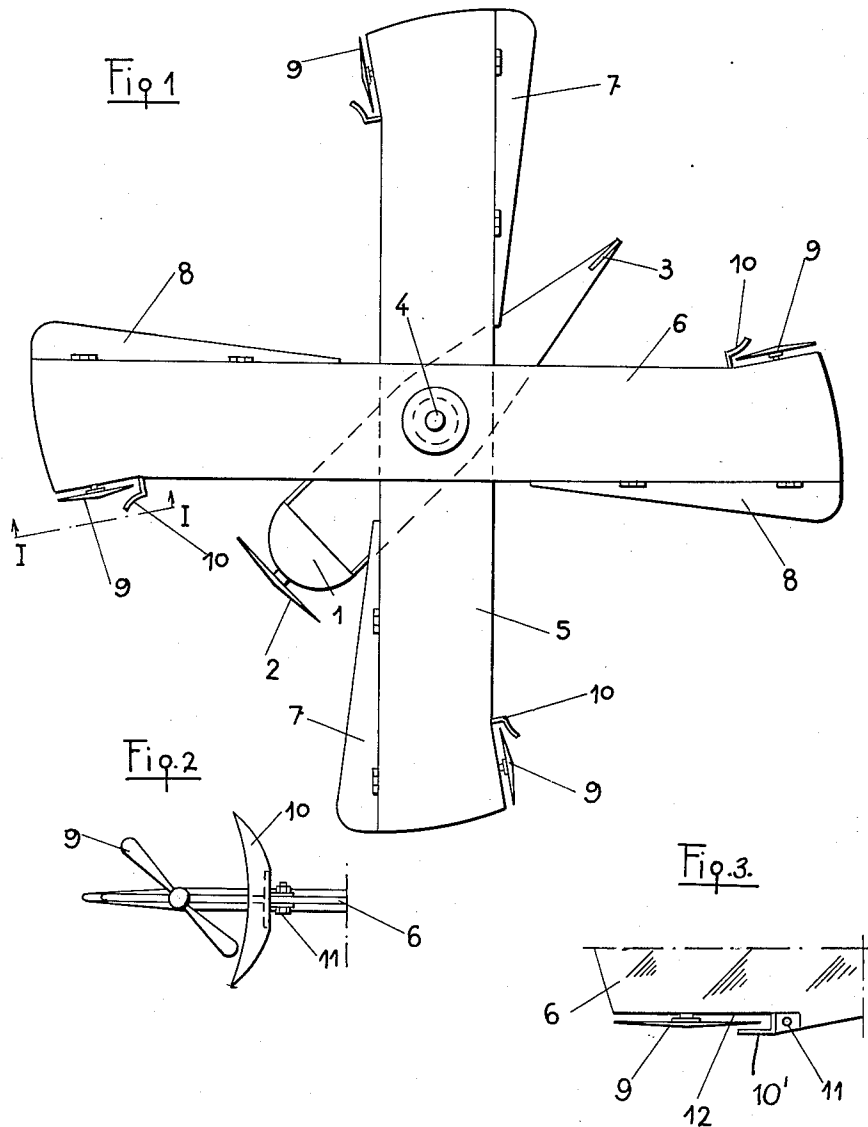
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FLYING MACHINE AND MORE PARTICULARLY HELICOPTER

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1

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2 Claims. (Cl. 244—17.11)

The present invention relates generally to flying machines and more particularly to helicopters and has for its primary object to provide a new or improved machine of this kind of simple and yet efficient construction.

It is another object of the present invention to provide a flying machine and more particularly a helicopter comprising a frame in which a shaft and one or several movable lifting aerofoil members are mounted, on each of which members a pair of spaced propellers is secured for rotating the members about the shaft, and means being provided for actuating said propellers.

It is still a further object of the present invention to provide an improved flying machine and more particularly a helicopter, as aforesaid, including a screen adjacent each propeller for imparting a circular direction to the tractive stress thereof, further propellers being provided, when desirable, on the lifting member or members for co-operation with the screen.

With these and such other objects in view as will incidentally appear hereafter, the invention comprising the novel construction and combination of parts will be clearly understood from the following detailed description, in combination with the accompanying diagrammatic drawings exemplifying the same, in which:

FIGURE 1 is a top plan view of the improved flying machine forming a helicopter according to the present invention;

FIG. 2 is a fragmentary sectional view drawn to a larger scale along the lines 1—1 of FIG. 1;

FIG. 3 is a fragmentary view showing a constructional modification of the edge notched portion of the lifting member carrying the propeller and adjacent to it the guiding screen.

Referring now to the drawings, and in particular to FIGS. 1 and 2, the improved flying machine comprises a cabin 1 provided at its front end with a propeller 2 and at its rear end with a rudder 3. This cabin 1 is mounted about a shaft 4 which is supported in turn by a frame of conventional type (not shown) which carries the cabin.

About the shaft 4 are rotatably mounted a pair of lifting wing or aerofoil members 5 and 6, each of which has rudder flaps 7, 7 and 8, 8, respectively, extending along its opposite sides. Each lifting wing member 5 and 6 is provided adjacent its opposite ends with propellers 9 adapted to impart rational tractive stress thereto.

Each lifting wing member 5 or 6 is provided, adjacent the portion of its surface along which the air stream generated by each propeller 9 strikes, with a screen or vane 10, in order to confine the air stream substantially in the direction of the axis of the propellers 9 along said surface. The latter extends between said

2

surface and vertically to both sides of the central portion of the wing member and is secured thereto by means of screws or bolts 11. In the showing of FIG. 3, the screen 10' is fixed on the side portion of a notch 12 formed in the lifting wing member 6 for nesting the corresponding propeller 9.

The propellers 9, arranged and sized as to impart rotation to the wing members 5, 6, have a large diameter and may be actuated either by an individual prime mover or by a common prime mover imparting motive power to both propellers 9 of each of the wing members 5 and 6.

The purpose of each screen or vane 10 is to impart to the tractive stress, generated by the corresponding propeller 9, a direction extending tangentially to a circle, the center of which coincides with the rotational axis of the lifting wing member 5 or 6, the radius of said circle being equal to the distance from it to the rotational axis of the propeller 9, and thus to limit any escape of the air stream originating from the propeller 9 in a direction other than tangentially to said circle.

As an alternative arrangement, there may be provided only one lifting wing member on the shaft 4, said wing member comprising a pair of aerofoils defining an intermediate space in which the propellers 9 are accommodated.

Where the flying machine is an airplane, the screen may be movable.

While I have disclosed one embodiment of the present invention, it is to be understood that this embodiment is given by example only and not in a limiting sense, the scope of the present invention being determined by the objects and the claims.

I claim:

1. A flying machine and more particularly a helicopter comprising a frame, a vertical shaft mounted in said frame, at least one lifting air-foil member rotatably mounted on said shaft, a propeller rotatably mounted on a horizontal shaft and disposed in front of each end of said lifting air-foil to create an air stream above and below said air-foil member, drive means disposed in said frame and operatively connected with said horizontal shafts, a vane disposed in front of and within the operating range of each of said propellers, said vane being located at and restricted to an area at the innermost point of said propeller along said air-foil.

2. The flying machine, as set forth in claim 1, wherein said air-foil member has a marginal recess receiving said propeller, and said vane is secured to the edge of said recess.

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