

R. D. & B. L. WHEELER.
 ROTATABLE PLANE.
 APPLICATION FILED FEB. 25, 1911.

1,036,044.

Patented Aug. 20, 1912.

Fig. 1.

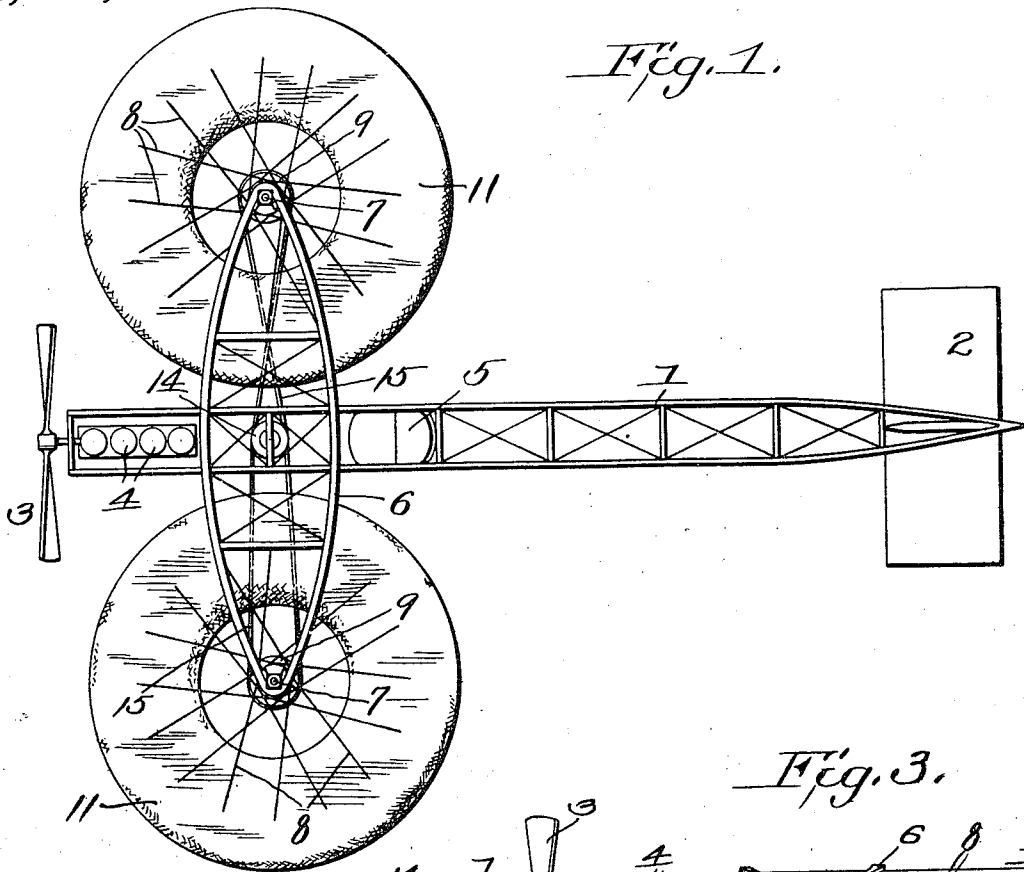


Fig. 3.

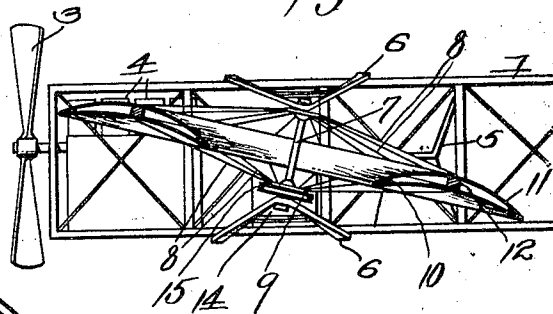
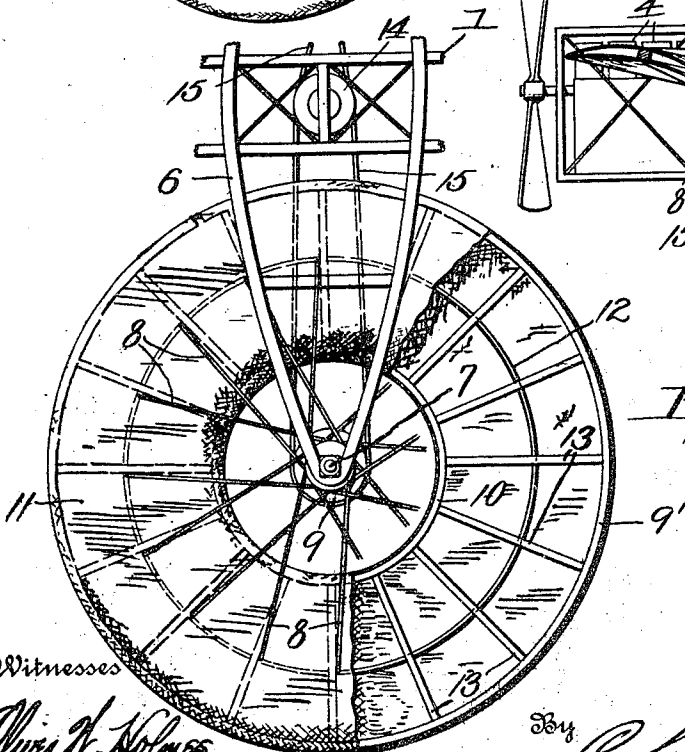


Fig. 2.



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ROTATABLE PLANE.

1,036,044.

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To all whom it may concern:

Be it known that we, ROY D. WHEELER and BERTRAND L. WHEELER, subjects of the King of Great Britain, and residing at Sydney, New South Wales, Australia, and Melbourne, Victoria, Australia, respectively, have invented a new and useful Improvement in Rotatable Planes, of which the following is a specification.

This invention relates to an aeroplane, which we term a rotatable plane.

The object of the invention is to keep the aeroplane on an even keel, to avoid air friction, and to increase the speed of the machine.

The invention consists in providing upon opposite sides of an aeroplane rotatable planes in the form of disks or wheels, which rest and rotate in a horizontal plane, the said wheels being revolved in opposite directions, and by means preferably separate and independent of the motor which lifts and propels the aeroplane. These rotatable planes are not designed for the purpose of lifting the machine in any way from the ground and are not provided with blades or propellers. They are designed solely as supporting planes and can be applied to aeroplanes, and especially to monoplanes, as at present constructed with possibly a few slight alterations.

The invention also consists in the novel features of construction hereinafter described, pointed out in the claims and shown in the accompanying drawings, in which:

Figure 1 is a plan view of a monoplane provided with our invention. Fig. 2 is an enlarged detail view of one of the rotatable planes, parts being broken away. Fig. 3 is a transverse section through the rotatable planes.

In these drawings 1 represents the body of the aeroplane, which is provided with an elevating plane 2, a propeller 3 and suitable engine 4 for driving the propeller. The driver's seat is indicated at 5, and all control mechanism including suitable levers for operating the plane 2 are arranged adjacent said seat. As the steering and controlling mechanism forms a part of the regular aeroplane and is not claimed as a part of our invention the same has not been shown and no description of it is considered necessary,

as it will of course vary with the type of machine used and the arrangement of the lifting and steering planes.

Our invention consists of a suitable transversely arranged frame work 6 which for convenience of description we term an outrigger. This outrigger extends equally upon opposite sides of the body 1 and at its outer ends forms a bearing for a suitable shaft or hub 7, which hub carries spokes 8 and also a pulley 9, or if desired a sprocket may replace the pulley. The hub and spokes are preferably of that type common in bicycle construction and will therefore be readily understood. The spokes 8 support a wheel formed of inner and outer rims 9' and 10, which carry suitable canvas 11. This forms a canvas wheel of any desired diameter, the central portion of which may be considered as cut out, and this centrally cut out portion which is measured by the distance of the inner rim from the hub may be greater or less as may be found desirable.

In practice we have found it desirable to secure the spokes 8 to an intermediate rim 12, concentric with and arranged midway between the outer rim 9' and the inner rim 10, rather than to connect said spokes to either of the first mentioned rims. By this construction we obtain a wheel of greater strength than could be secured by any other construction considered practical, and we also obtain a wheel which has no weak places but is as strong in one part as another. It will of course be understood that the rims 9' and 10 and the intermediate rim 12 are connected and braced by suitable radial ribs 13, which may be regarded as false spokes, to distinguish them from true spokes 8.

In the drawing we have shown the canvas as stretched over and inclosing the frame of the wheel, thus providing two layers of canvas one on top and one on the bottom, but it will be understood that we can use one layer of canvas, either upon top or bottom should it be desired. We have also shown a longitudinal curving of the false spokes 13, thereby dishing the wheel. The planes are upwardly inclined the hubs 7 being given an inclination so as to tilt the planes, thus elevating their forward portions. These planes are driven by a suitable small engine 14 and rotation is transmitted to them by suitable

belts 15, or if sprocket wheels are used chains will be substituted for the belts. As these planes are not depended upon either for lifting the device from the ground, or for propelling it through the air a very small amount of power is required to drive them at a high rate of speed. It will of course be understood that they are in ball bearings of the usual type. If desired the engine 14 may be supplemented by foot operated means for rotating the planes so that in case of accident to the engine 14 the rotatable planes may be kept in rotation by foot power while gliding to a landing place. It will also be understood that more than two of these rotatable planes may be employed if desired.

With planes of this construction rotating in opposite directions the machine is kept on an even keel, and its stability in squalls, high winds and unexpected air currents will be greatly increased. It is also believed that this circular rotatable plane will be less liable to break under sudden strain or gusts than a rigid plane provided with unyielding corners.

We are aware that it has been proposed to employ horizontally arranged blades or propellers in combination with air ships, designed for the purpose of giving vertical movement to the air ship, or to resist and check descent, and we do not claim the use of blades or propellers so arranged.

What we claim is:

1. In a device of the kind described, a rotatable plane, said plane consisting of a hub, of outer, intermediate, and inner rims concentrically arranged, spokes extending from said hub and connected to the interme-

mediate rim, a suitable fabric covering said rims and means connecting the said rims.

2. An aeroplane comprising a body, a transversely arranged outrigger, hubs carried by said outrigger, circular planes consisting of outer, intermediate and inner rims, radial ribs connecting said rims, spokes carried by the hub and secured to the intermediate rim, and a suitable fabric covering said rims.

3. In an aeroplane a central hub arranged vertically, outer, intermediate and inner rims concentric with said hub and in different planes, curved ribs arranged radially with respect to the hub and connecting said rims, and radially extending spokes arranged in upper and lower sets carried respectively by the upper and lower portions of the hub, the spokes of each set being secured to the intermediate rim, and a fabric covering said rims, the spokes passing through said fabric, as and for the purpose set forth.

4. In an aeroplane, a circular, rotatable plane comprising a central hub, inner, intermediate and outer rims, radial ribs connecting the inner and outer rims and secured to the intermediate rim, spokes connected to the intermediate rim and to the hub, a fabric extending from the inner to the outer rims, the radial ribs being longitudinally curved, and their inner ends being normally in a lower plane than their outer ends, thereby causing a transverse curvature of the fabric.

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