

so that such wind pressure may be utilized to propel the balloon in directions oblique to the direction of the wind pressure.

4. In a balloon, the combination with levitating means; of a rotary body having its axis substantially horizontal; means supporting said axis, permitting free but limited oscillatory movement thereof in a direction parallel with said axis; and, means adjustable with respect to said axis, arranged to receive wind pressure in variable angular relation, whereby wind pressure tending to turn the balloon from a predetermined direction of traverse, may be opposed by the gyroscopic effect of said rotary body, so that such wind pressure may be utilized to propel the balloon in directions oblique to the direction of the wind pressure.

5. In a balloon, the combination with a rotary body; of electrical means to rotate said body at such speed as to produce a gyroscopic effect; and, means supporting said body, so that it has a freedom with respect to

an axis eccentric to the axis of rotation of said body, substantially as set forth.

6. The combination with a rotary body; of means to rotate said body at such speed as to produce a gyroscopic effect; and, means supporting said body, so that it has a freedom with respect to a horizontal axis eccentric to the axis of rotation of said body, substantially as set forth.

7. The combination with a rotary body; of means to rotate said body at such speed as to produce a gyroscopic effect; and, means supporting said body, so that it has a freedom with respect to a horizontal axis eccentric to and above the axis of rotation of said body, substantially as set forth.

In testimony whereof, I have hereunto signed my name at Philadelphia, Pennsylvania, this 24th day of December 1907.

RUSSELL THAYER.

Witnesses:

EDWIN J. MOLE,
HIRAM BARNES.

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