

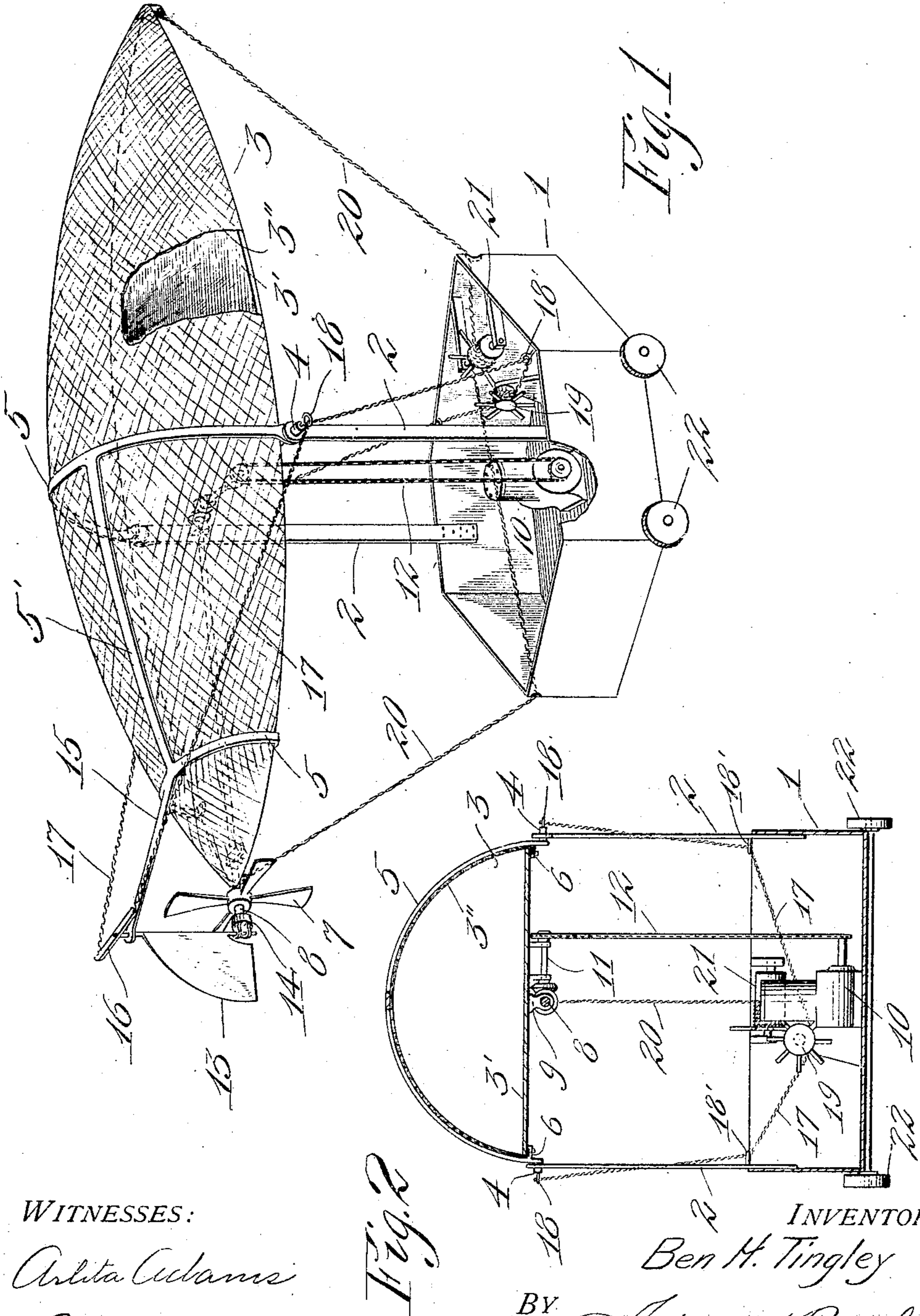
B. H. TINGLEY.

AIR SHIP.

APPLICATION FILED JAN. 18, 1908.

921,915.

Patented May 18, 1909.



WITNESSES:

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BEN H. TINGLEY, OF HAMILTON, WASHINGTON.

AIR-SHIP.

No. 921,915.

Specification of Letters Patent.

Patented May 18, 1909.

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To all whom it may concern:

Be it known that I, BEN H. TINGLEY, a citizen of the United States of America, and a resident of the town of Hamilton, in the county of Skagit and State of Washington, have invented certain new and useful Improvements in Air-Ships, of which the following is a specification.

My invention has for its primary object the provision of an air ship of improved construction, which can be easily controlled in its flight.

A further object resides in the provision of a comparatively simple construction, embodying but few parts which are not liable to readily get out of order.

With the above and other objects in view, to be referred to as the description progresses, the invention resides in the structural features, arrangement and combination of parts hereinafter described and succinctly defined in the appended claim.

Referring now to the accompanying drawing, in which like numerals of reference indicate like parts throughout: Figure 1 is a view in perspective of an air ship constructed in accordance with my invention, parts being broken away, and Fig. 2 is a vertical cross sectional view thereof.

In carrying out my invention, I provide a car, as 1, which may be of any desired construction, said car having fixed to its side walls arms 2, which extend upwardly and have the bottom of the balloon 3 pivotally connected thereto at a point substantially midway its length by horizontally disposed stub shafts 4. Balloon 3, as now considered, is so constructed that by proper adjustment of the same from the horizontal the air ship will be directed either upwardly or downwardly. For this purpose, said balloon is provided with a rigid, flat bottom wall 3', which serves as a rudder in effecting upward movement of the air ship, and a flexible upper wall 3'' which is comparatively wide so as to afford a broad surface adapted to be exposed to the action of the air when it is desired to effect lowering of the air ship. The flexible upper wall 3'' of the balloon may be formed of any suitable material and secured to rigid bottom wall 3' in any desired manner.

To insure of a more substantial support being afforded the car, I provide an open frame to the lower portion of which stub shafts 4 are secured, said frame embodying curved spaced members 5 extending over the flexible upper wall 3'' of the bottom and connected by a longitudinal bar 5'. Members 5 are provided with lugs 6 which extend inwardly beneath the rigid wall 3' and being secured thereto, in any desired manner.

Reference numeral 7 indicates a propeller, fixed to a drive shaft 8, supported for rotation in suitable bearings 9, fixed to the under face of wall 3'. Power from a suitable motor, as 10, mounted in car 1 is transmitted to shaft 8, by a cross shaft 11, which is directly connected to said motor, as by a chain 12.

Reference numeral 13 indicates a rudder for steering the air ship to the right or left, as will be readily understood. While rudder 13 may be otherwise mounted, I prefer to support the same for horizontal swinging in a suitable bearing 14, journaled on the rear end of shaft 8 and in a rearwardly projecting arm 15, fixed to the rear of frame member 5. Fixed to the upper end portions of rudder 13 is a cross arm 16, to which flexible means 17, in the form of ropes or the like are connected. Flexible means 17 extend through guides 18, the former of which are provided on the outer ends of stub shafts 4, and the latter in car 1, to a suitable controlling drum 19.

The means for adjusting the balloon to various angular positions, consists of ropes 20, connected to the end portions of said balloon and wound on a drum, as 21, mounted in the car.

If desired the car may be provided with wheels 22, which will support the air ship when it is on the ground.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent of the United States of America, is:

An air ship comprising a car, a balloon, a frame comprising spaced members extending over said balloon, means rigidly connecting the said spaced members, horizontally disposed stub-shafts fixed to one of said members, means secured to said car and pivotally supported on said stub shafts, a rear-

wardly extending arm fixed to the other member of said frame, a shaft journaled below said arm and provided with a propeller, a bearing journaled on the rear end portion of
5 said shaft, a rudder journaled in said bearing and in said arm, and means for controlling said rudder from said car.

Signed at Seattle, Washington this 11 day of January 1908.

BEN H. TINGLEY.

Witnesses:

WALTER S. FULTON,
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