W. J. WELLS & D. LEWIS.

AIRSHIP.

APPLICATION FILED APR. 9, 1912.

1,067,086.

Patented July 8, 1913.

2 SHEETS—SHEET 1.

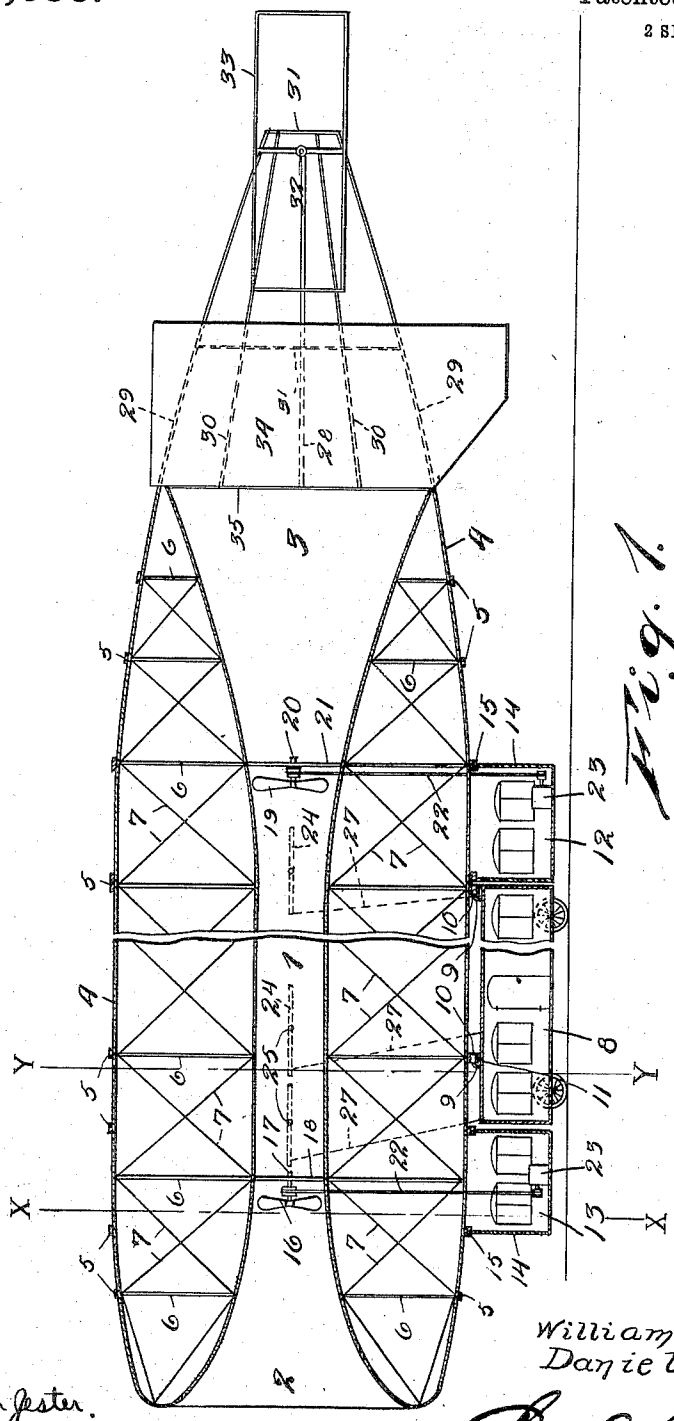


Fig. 1.

Witnesses

J. Milton Jester.

A. H. Andrews Jr.

Inventors

William J. Wells

Daniel Lewis

By Chas. A. Briscoe.

Attorney

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2 SHEETS—SHEET 2.

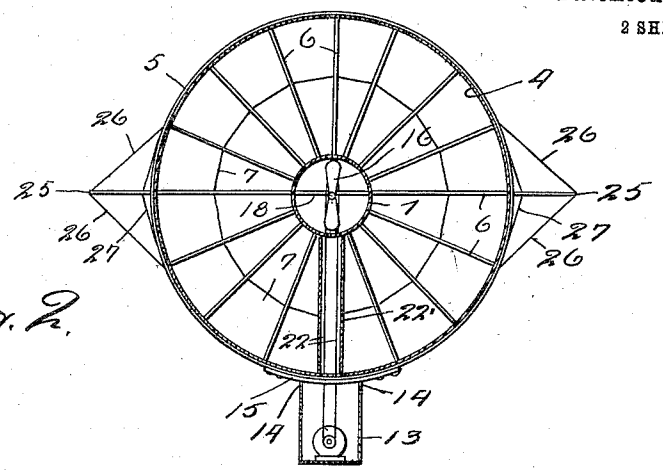


Fig. 2.

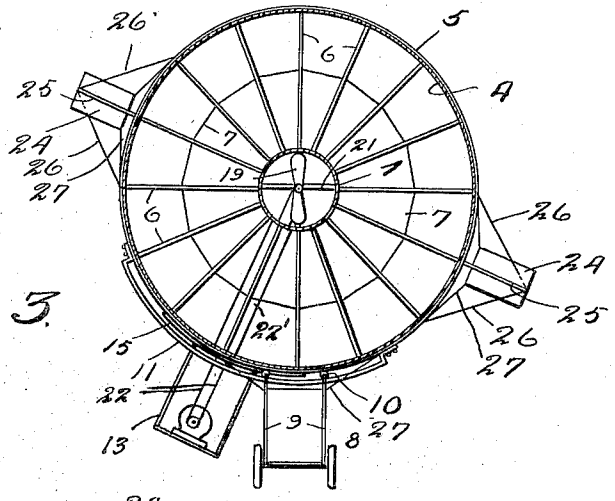


Fig. 3.

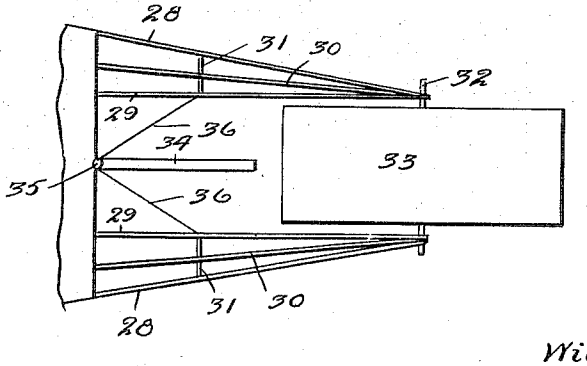


Fig. 4.

Witnesses

J. Milton Jester.

V. Landreth, Jr.

Inventors

William J. Wells

Daniel Lewis

By Chas. A. Briscoe.

Attorney

UNITED STATES PATENT OFFICE.

WILLIAM JAMES WELLS AND DANIEL LEWIS, OF CANANEA, MEXICO, ASSIGNORS, BY DIRECT AND MESNE ASSIGNMENTS, OF ONE-SIXTH TO DANIEL LEWIS, ONE-THIRD TO WILLIAM JAMES WELLS, ONE-THIRD TO ROBERT JOHN WELLS, AND ONE-SIXTH TO JACOB REUTIMANN.

AIRSHIP.

1,067,086. Specification of Letters Patent. Patented July 8, 1913.

Application filed April 9, 1912. Serial No. 689,621.

To all whom it may concern:

Be it known that we, WILLIAM J. WELLS and DANIEL LEWIS, citizens of the United States, residing at Cananea, in the State of Sonora, Mexico, have invented certain new and useful Improvements in Airships, of which the following is a specification.

This invention relates to dirigible balloons and has especial reference to dirigible balloons of the Zeppelin type, constructed with an oblong, cylindrical gas bag or gas container, and an oblong passenger car, and motive power suspended beneath said gas bag.

The invention has for its object to provide an improved dirigible balloon of this character, so constructed and arranged as to add to the propelling power of the air ship and to increase its speed.

The invention further has for its object to provide an improved dirigible balloon of this kind, with means for counteracting the tendency of the balloon to roll.

The invention further has for its object to maintain the equilibrium of the car of the balloon and also regulate the rolling movement of the balloon.

Referring to the accompanying drawing: Figure 1 is a view in longitudinal section of a dirigible air ship constructed in accordance with this invention. Fig. 2 is an end view in cross section on the line X—X of Fig. 1. Fig. 3 is an end view in cross section on the line Y—Y of Fig. 1, but showing a gas container at one stage of its rolling motion. Fig. 4 is a plan view of the rear end of the air ship.

In carrying out the invention the air ship is constructed with a longitudinal tube 1 of suitable width and with the flaring open ends 2 and 3. The tube 1 extends from end to end of the gas bag, or gas container 4 constructed of suitable material and secured to the ends of the tube 1 in any suitable manner, and held in extended position lengthwise thereof by means of annular bands or rings 5 of suitable material and rods 6 of light metal extending radially from the tube 1 and having their ends secured to the tube and the rings 5. The rods 6 are braced by crossed stay wires 7 secured to said rods.

8 indicates an oblong passenger car located beneath the gas container and constructed in any suitable manner. The car is suspended from the gas container in any suitable manner, and, as here shown, in order to maintain its equilibrium, is suspended by means of wires 9, connected at their lower ends to the car 8, and at their upper ends to the ball bearings 10, movable in an arcuate shaped track 11 mounted on a ring 5. By this means as the gas container rolls, the equilibrium of the car is maintained. Located at the rear end of the car is an engine room 12, and at the front end an engine room 13. The engine rooms 12 and 13 are suspended from the gas container by wires 14, or other suitable form of hangers, connected to an arcuate shaped bar 15 secured to a ring 5.

Located at the rear of the flaring mouth 2, in the tube 1, is a propeller 16, having its shaft 17 mounted in a bracket 18 secured to the tube 1; and located at the rear end of the flaring mouth 3 is a propeller 19 having its shaft 20 mounted in a bracket 21 secured to the tube 1. Each of the propellers 16 and 19 is driven by an endless belt 22 connected with a pulley on the propeller shaft and with a pulley on the shaft of an electric motor, 23, or other suitable form of engine in the engine rooms 12 and 13. Each of the belts 22 extends through a casing 22′ having its ends mounted on the tube 1, and a support on the outer surface of the gas container through which the casing 22′ extends.

By means of the arrangement of the propellers 16 and 19 in the tube 1 at the rear of the flaring mouths 2 and 3 respectively, increased speed is given to the propellers 16 and 19 by the air rushing through the tube 1, caused by the flight of the air ship.

In order to counteract the tendency of the gas bag to roll, a number of ailerons or balancing planes 24 are mounted on each side of the gas container from end to end thereof. The planes 24 are pivotally mounted on projections 25 secured to the rings 5 between the top and bottom of the gas container, and braced by wire stays 26. The ailerons are connected by means of wires 27 with the car 8. By this means as the gas container rolls, the ailerons assume on one side an elevating position and on the other a lowering position, which will have a tendency to right the gas container.

Secured to and extending from the rear end of the tube 1 are light rods or wires 28, 29 and 30, connected by cross ties 31, and united at their outer ends to form bearings for the shaft or axis 32 of the horizontal elevating and lowering plane 33. A rudder 34 is hinged to a rudder post 35 mounted on the end of the tube 1, and braced by stay wires 36.

It will be seen from the foregoing description that an improved air ship is provided, by means of which the speed of the propellers is accelerated by the rush of air through a tube; that the rolling of the gas bag or container is retarded, and the equilibrium of the car is maintained; and a better steering control of the air ship obtained.

Having described the invention, we claim:

1. In an air ship, a cylindrical casing, a shaft mounted centrally and longitudinally therein and provided with propellers, said casing provided interiorly thereof with a belt casing radially thereof, an engine room suspended from said casing and rigidly attached thereto, a motor mounted in said engine room, flexible connection extending through said casing between said engine and said propeller shaft and a car suspended from said casing and adapted to swing laterally by gravity.

2. In an air ship, a cylindrical casing, a shaft mounted centrally and longitudinally thereof and provided with propellers, said cylindrical casing provided with belt casings radially thereof and disposed at the respective ends of said cylindrical casing, an engine room adjacent to the outer extremity of each belt casing, suspended from said cylindrical casing and rigidly attached thereto, a motor mounted in each of said engine rooms, flexible connection extending through said belt casings between said engines and said propeller shaft and a car suspended from said cylindrical casing between said engine rooms and adapted to swing laterally by gravity.

In testimony whereof we affix our signatures in presence of two witnesses.

WM. JAMES WELLS.
DAN. LEWIS.

Witnesses:
J. S. CARMICHAEL,
R. L. ROBERTSON.