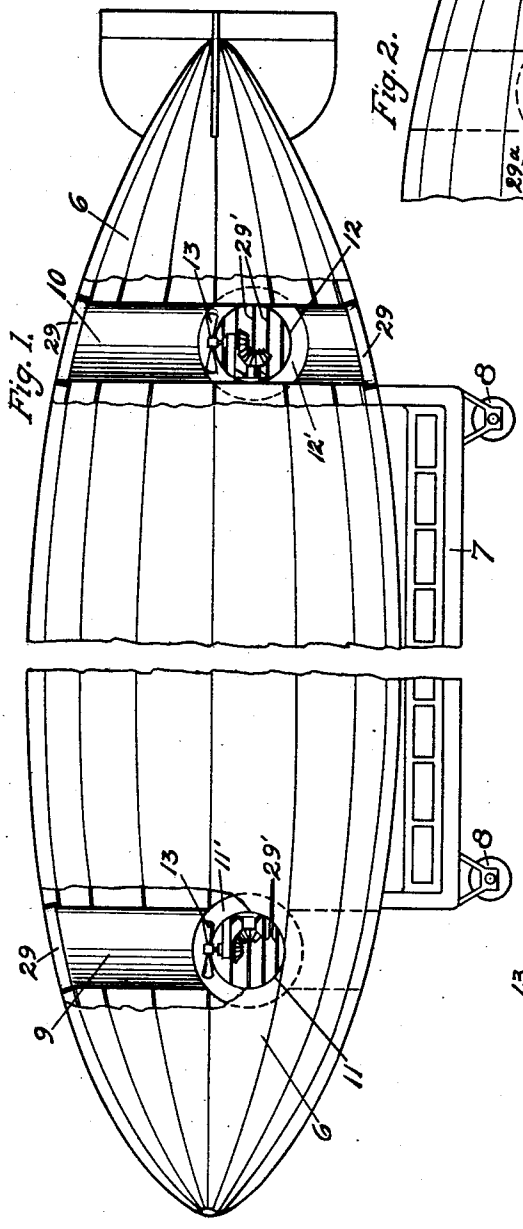
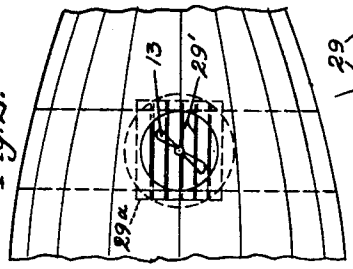
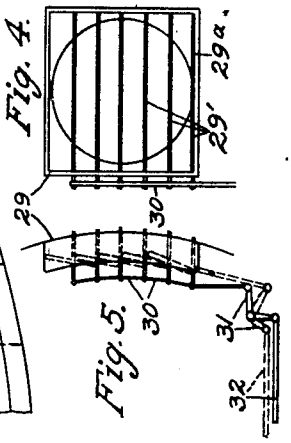
Oct. 14, 1930. H. PARK ET AL 1,778,273

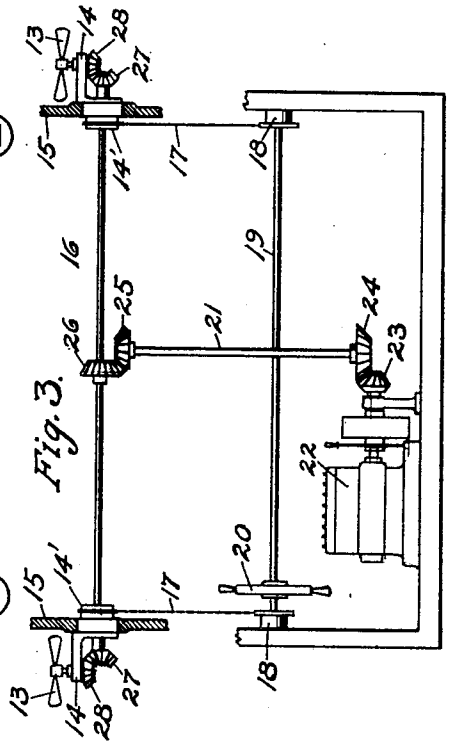
DIRIGIBLE AIRSHIP

Filed Oct. 2, 1929









Inventors
Harry Park and
By William R Litzenberg
W. R. Litzenberg
Attorney

Patented Oct. 14, 1930 1,778,273

UNITED STATES PATENT OFFICE

HARRY PARK AND WILLIAM R. LITZENBERG, OF LOS ANGELES, CALIFORNIA

DIRIGIBLE AIRSHIP

Application filed October 2, 1929. Serial No. 396,663.

Our invention relates to dirigible air ships, and more particularly to certain improvements therein whereby we provide means for moving said dirigible air ship transversely of its longitudinal axis, whether up or down or to either side, and independently of the propelling means.

Broadly considered, our invention contemplates the provision through said dirigible air ship body of open wells or shafts therethrough, with means therein or associated therewith and wholly within said well or shaft for causing a forced draught therethrough in either direction for the purpose of causing said air ship to rise or to descend or to move sidewise in either direction.

In order to explain our invention, we have illustrated one form of air ship with two vertical shafts therethrough and with intersecting transverse shafts horizontally therethrough, and have shown propellers or fans therein for creating a forced draught therethrough, and in the particular embodiment of our invention here shown for explanatory purposes, we have shown a fan or propeller mounted in the shafts in such position that it can be turned up or down or to horizontal positions for creating such forced draught in either direction horizontally through the horizontal shafts.

We have also provided means for closing each end of each shaft, realizing that open wells or shafts would cause resistance in the movement of said air ship. We have also provided a construction and arrangement which is wholly within the body of the air ship with no projections to offer resistance to its forward movement.

We are aware that any suitable power can be used, and any suitable driving connections made for driving the fans or propellers, and that separate and independent fans can be provided for each shaft, and that various kinds of means can be used for reversing the direction of the draught created through said shafts or wells. We are aware that it will not require the same power to move the air ship bodily axially of said open shafts by the creation of the forced draught therethrough, as it takes for propelling the air ship forwardly at traveling speed. We have not shown the propelling power plants, as any suitable and standard power means can be used and forms no part of this invention.

In the drawings:

Figure 1 is a side elevation of a dirigible air ship embodying our invention, with portions broken out to show the open shafts therethrough, and with a middle portion broken to reduce the size of the figure;

Figure 2 is a fragmentary top plan view over one of the vertical wells or shafts;

Figure 3 is a view showing the driving connections and motor for driving the fans or propellers;

Figure 4 is an enlarged view showing a form of closure shutters for closing the well or shaft, there being one at each end of each well or shaft; and

Figure 5 is an edge view of the same, showing the operating means for opening and closing said shutters.

Referring in detail to the drawings, the dirigible body is designated 6, with cabin 7 supported thereunder, and with traction wheels 8, 8, under the opposite ends of said cabin. The size and shape of the body is immaterial and forms no special part of our invention. We have shown no means for propelling the air ship, it being understood that any suitable motor propelling means can be used.

Our invention resides in the provision of open wells or shafts through the body of the air ship. In the drawings we have shown two vertical shafts, designated, 9 and 10, respectively, and two horizontal shafts, designated 11 and 12, and in the present showing, the horizontal shafts are positioned to intersect the vertical shafts 9 and 10.

In the present embodiment of the invention, we have shown one fan or propeller, as 13, for each well or shaft, said propeller in each case being supported in a bracket 14, rotatably supported in the wall or frame of the structure designated 15, Fig. 3, with a driving shaft 16, shown extended through from one propeller mechanism to the other, as illustrated in Fig. 3. Each of the brackets 14 is provided with a drum portion 14′ inside

the wall structure supporting it, and is provided with a cable 17, running to a similar drum, 18, on a shaft 19, in the cabin, and provided with a hand wheel 20, whereby the pilot or operator can revolve said supporting brackets 14, 14, together for the purpose of turning the fans or propellers into different positions for changing the direction of the forced draught through the well or shaft. A shaft 21 is shown extended from a motor 22, with beveled gears 23 and 24 at its lower end, and beveled gears 25 and 26 at its upper end for driving the shaft 16. The opposite ends of said shaft 16, are connected by means of beveled gears at each end, designated 27 and 28, with the propellers 13, 13, as clearly shown, for driving said propellers.

We have provided in the ends of said open shafts or wells, closure shutters designated as a whole 29, Figs. 4 and 5, and including shutter members 29′, hingedly mounted in the frame 29ª and connected for simultaneous operation by means of members, as 30, connected to a bell crank 31 and by means of an operating rod or connection 32, extended to any suitable or convenient place for manual manipulation. This shutter closure being old, it forms no part of our invention other than a closure means for the open shafts which makes it possible for these open shafts to be closed when not used for the purpose for which they are provided in our air ship body.

It will be apparent that our horizontal shafts, with the propellers properly adjusted for creating a forced draught therethrough, can be used in steering the air ship, and might by a very effective emergency steering and maneuvering means, and if the propellers were adjusted to develop draughts in different directions through the horizontal shafts, it will be seen that the air ship could be turned around about its middle vertical axis, or substantially so.

While we have shown and described one embodiment of our invention for descriptive purposes, we are aware that many changes in the general construction and arrangement can be made without departing from the spirit thereof, and we do not, therefore, limit our invention to the details shown and described, other than we may be limited by the hereto appended claims.

We claim:

1. A dirigible air ship having an open shaft therethrough vertically and an open shaft therethrough horizontally, a fan for causing a forced draught through said open shafts for moving said airship axially of said open shafts, means for adjusting said fan from the vertical to the horizontal shaft at will, and power means for driving said fan.

2. In combination with a dirigible airship and its propelling mechanism, means for maneuvering said airship which includes intersecting open shafts through the body of said airship vertically and horizontally, a fan for causing a forced draught through said open shafts for moving said airship axially of said shafts, said fan being operable for either the vertical or the horizontal shaft as desired for moving said airship up and down vertically or sidewise, and power means for driving said fan.

3. In combination with a dirigible airship and its propelling mechanism, of means for moving said air ship vertically on a horizontal keel, said means including two vertical open shafts through the body thereof fore and aft and provided with closure shutters in their ends for closing said shafts to eliminate resistance therefrom when not in use, propeller means in said shafts near the longitudinal axis of said airship for causing forced draught therethrough for raising or lowering said airship, and power means for driving said propeller means within said shafts, said propeller means being adjustable to change the direction of the forced draught.

4. In combination with a dirigible airship and its propelling mechanism, of means for moving said airship vertically and sidewise on a horizontal keel and including vertical and horizontal air shafts through the body of said airship, closure shutters in the ends of said shafts for closing them when desired, propeller means operable to selectively create a forced draught through said air shafts for raising or lowering or moving said airship sidewise axially of the shaft through which the forced draught is created, and power means for driving said propeller means.

5. A dirigible airship having an open shaft therethrough vertically and an open shaft therethrough horizontally and intersecting said first shaft, shutter means for closing the ends of said shafts at will to eliminate resistance therefrom when not in use, a propeller mounted in said shafts at the intersection and adjustable to create a forced draught through either of said shafts for causing said airship to move axially of said shaft, and power means for driving said propeller.

Signed at Los Angeles, Los Angeles County, California, this 18th day of September, 1929.

HARRY PARK.
WILLIAM R. LITZENBERG.