April 28, 1931. H. CASTADY 1,803,005

AIRSHIP COACH

Filed June 24, 1930 2 Sheets-Sheet 1

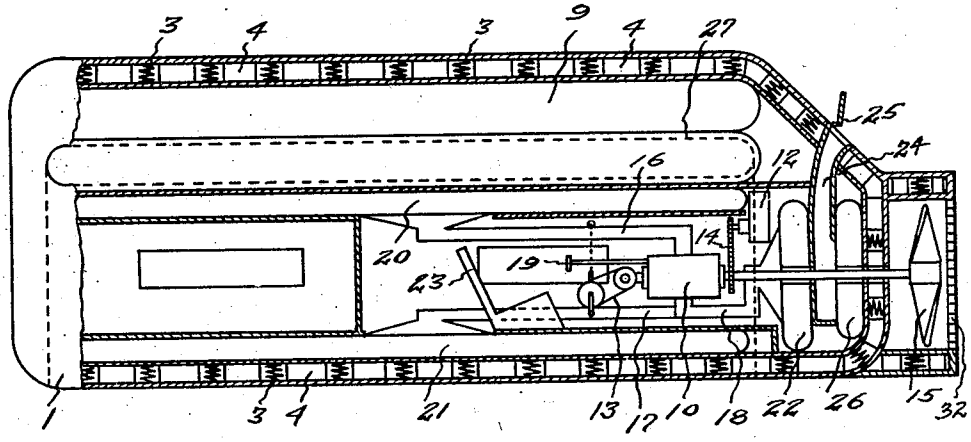


Fig. 1

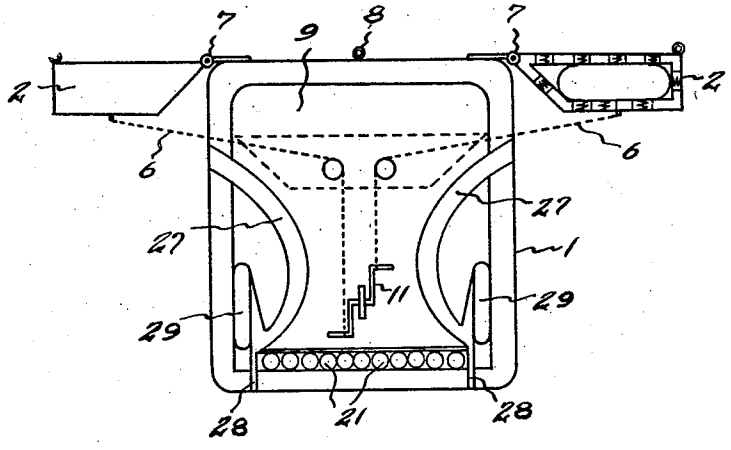


Fig. 2

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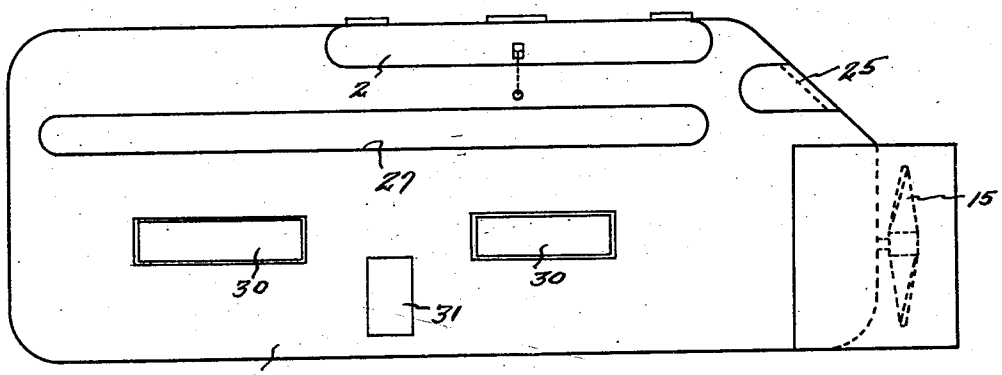


FIG 3

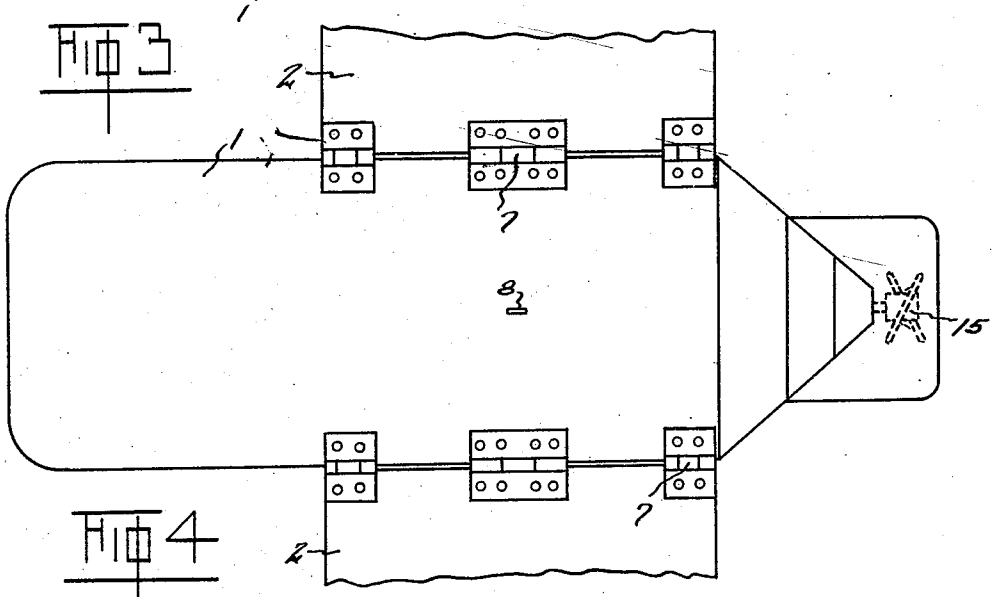


FIG 4

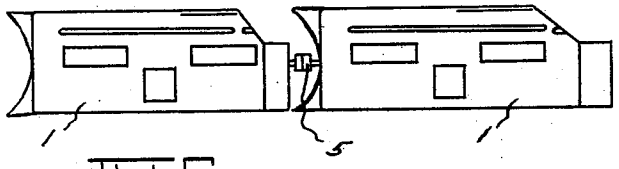


FIG 5

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UNITED STATES PATENT OFFICE

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AIRSHIP COACH

Application filed June 24, 1930. Serial No. 463,493.

This invention relates to airships, and more particularly to that type of airship known as lighter-than-aircraft. Specifically, the present invention resides in a form of aircraft made in the shape of a coach and having flapping wings attachable thereto by hinges.

Among the objects of this invention the following may be enumerated:

(*a*) To provide a novel and useful form of airship-coach which shall be particularly adapted for the safe transport of passengers and their baggage.

(*b*) To provide a novel and useful form of airship-coach which shall be substantially collision-proof, that is, which shall be substantially immune to damage as a result of collisions.

(*c*) To provide a new and useful form of airship-coach in which the several operating parts thereof are entirely enclosed therein.

(*d*) To provide a new and useful airship of the class mentioned having means thereon to assure of a smooth, jerkless landing of said ship.

(*e*) Numerous other objects of this invention will be apparent to those skilled in the art to which it pertains from the detailed description thereof given below.

The foregoing objects are attained by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a diagrammatic view, partly in elevation and partly in section, of the entire airship-coach;

Figure 2 is a cross-sectional diagrammatic view partly in section taken transversely through the device shown in Fig. 1;

Figure 3 is an elevation of the invention;

Figure 4 is a plan view of the invention, the wings being broken away; and

Figure 5 is a diagrammatic sketch illustrating the coupling together of a plurality of the coaches forming this invention to constitute a train of airship-coaches.

Similar numerals refer to similar parts throughout the several views.

The body of the airship, designated as a whole by reference numeral 1, is formed in substantially the shape of a coach, provided as shown with wings 2. I have therefore designated this invention as Eurika Ptera, or the airship with wings.

To render the coach 1 substantially immune to damage by collision, or any similar cause, I provide the entire exterior thereof with a protective cover of springs 3 and cork 4. A similar protective and shock-absorbing cover of springs and cork is provided about the exterior of the wings 2. It will thus be seen that no damage can result to the body of the airship-coach 1 as result of its running into or striking any external object, as a wall or another airship.

As shown in Figure 5, several of the coaches constituting my invention may be coupled together to form a train thereof. This coupling may be accomplished while the coaches are in the air or on the ground. The presence of the shock absorbing covers on the coaches is especially advantageous while this coupling is being effected, as any bumping together of the coaches is not felt by the passengers. Any conventional or suitable coupling means, indicated by reference numeral 5 (in Fig. 5), may be employed.

Hingedly secured to the sides of the coach at the top thereof are a pair of wings 2. These wings 2 are hollow in character, and are suitably filled with helium gas. To impart a flapping action to the wings 2, flexible members 6, which may be chains or the like connect the wings to an operating means, (described in detail below), in the interior of the ship. By means of the members 6, the wings may be pulled downwardly, and the hinges 7, which are provided with spring means, return the wings to the horizontal position shown in Fig. 2. When it is not desired to take advantage of the flappable wings 2, they may be folded back over the top of the ship, to which they may be secured by any desirable fastening means 8.

Disposed at the top of the device, interiorly of the shock-absorbing cover, is a compartment 9 adapted to be suitably filled with helium gas, for lifting purposes.

Coming now to the means for operating the airship, this comprises primarily an air-blower 10, adapted to be operated either

manually, as by the pedal 11, or mechanically, as by the fuel motor 12. The pedals 11 are operatively connected to the blower 10 by the belt gearing 13; and the fuel motor 12 is operatively connected thereto by the toothed gearing 14.

Extending forwardly of the body of the airship is the windmill-like propeller 15, which is adapted to be driven by the manual or mechanical means, above described, through the blower 10. In addition, as speed is attained, the rapid rotation of the propeller helps to make the blower run faster.

Connected to the said blower and extending therefrom are three air-conveying ducts 16, 17 and 18. A conventional three-way valve operable by means of the handle 19 controls the flow of the air from the blower through these ducts. Each of the said air-conveying ducts terminates in a funnel-shaped end, as shown.

By means of the duct 16, a blast or current of air may be blown upwardly against an air bag 20. The latter is disposed at the top of the coach inwardly of the helium containing compartment. The purpose of such a blast of air is to augment the lifting-power of the helium, and help to urge the ship upwardly.

By means of the duct 17, a blast of air may be blown downwardly against an air cushion 21 disposed on the floor of the ship. By this means, and with the aid of the motor, the ship may be forced downwardly so that a landing may be accomplished.

By means of the duct 18, a current of air may be forced against the air bag 22 disposed in the forward part of the airship. Such a current of air assists in urging the ship forwardly.

A convenient seat is provided for the operator of the device, as shown at 23.

The flexible wing-operating members 6 are attached to the pedals 11, so that a simultaneous flapping of the wings, rotation of the propeller and operation of the air blower may occur.

At the front of the ship, one or more horseshoe like shaped ducts 24 may be provided. The uppermost ends of these ducts open forwardly and may be provided with a cover 25. The lowermost ends of said ducts may terminate adjacent an air bag 26. Thus, as the ship moves rapidly through the air a current of air may be forced into said ducts and against the bag 26, thus further assisting the forward movement of the airship.

A pair of horseshoe-like shaped stabilizing ducts 27 are provided, one opening on each side of the ship adjacent the top thereof. These ducts extend substantially the length of the ship. A narrow duct 28 is provided for the slow escape of the air.

Wind, entering the top of said stabilizing ducts, hits the lower sides of the insides of the ship which are air-cushioned, as at 29. This helps the coach to keep a straight course and correct balance.

The entire structure of the body of the coach, all partitions, and the exterior walls thereof are preferably made of duralumin.

Suitable windows 30 and a door 31 may be provided.

These airship coaches may be made of any desirable size or length, capable of carrying from 1 passenger up to 50.

The fuel motor or motors can be either motors especially designed for airships or any other fuel motor.

A particular advantage of the hinged character of the wings is that should it be necessary to navigate the ship through a narrow space, they may be folded up and the width of the device thus diminished. In this way, the ship may be stored in a relatively narrow space in a hangar.

It will thus be seen that I have provided a new and useful type of airship-coach which can singly, or joined as a train, land anywhere, on a roof, ground, or water, having a specially constructed bottom for said purpose. Also it can start from any place large enough to hold it, as it gathers enough speed right on the start and rises forward quickly.

It will be understood from the foregoing that in the event the fuel motor should become inoperative from any cause, that the airship may be brought down or continue its course by the action of the air blower. The said air blower used in the airship coach is of the huge type and in the event that a large airship coach is hopeless, up in the air or anywhere, with all its fuel motors out of order, there with be extra air blowers of the huge type to direct the said coach as desired.

It is also understood that a through passage from one coach to the other is available.

Thus it can be clearly understood that this invention can arrange from one small coach with flapping wings for one person only up to any size of airship coaches which can be coupled together, as many as desired, and form a train of airship coaches, capable enough to carry up to a thousand people. This is the most gigantic and safest way of air transportation that was ever known to science.

To more particularly protect the propeller the body of the ship is extended to enclose the propeller 15, as shown in Figure 1. The forward wall of this enclosure is provided with a grated opening 32. The said rear of the body is made in a funnel shape in order to gather the hind winds for additional speed forward.

I claim:

1. In an airship-coach, a pair of flapping wings hinged to and operable from the body of the coach, each wing comprising spaced

inner and outer walls, alternately arranged shock-absorbing cushion springs and cork blocks in the space between said walls, the inner walls defining a closed gas-containing chamber.

2. In an airship-coach, a pair of flapping wings hinged to and operable from the body of the coach, each wing comprising spaced inner and outer walls having a shock-absorbing means therebetween, the inner walls defining a closed gas-containing chamber, said wings foldable flush with the top of said body, and means for securing the wings in their folded position.

3. In an airship-coach, a pair of flapping wings hinged to and operable from the body of the coach, the body and each wing comprising spaced inner and outer walls, alternately arranged shock-absorbing cushion springs and cork blocks in the space between the walls, the inner walls of each wing defining a closed gas-containing chamber, and gas-containing bags within the body.

In testimony whereof, I have hereunto set my hand this 2nd day of April, 1930.

HARRY CASTADY.