June 18, 1929. G. C. BROWN 1,718,109

HEAVIER-THAN-AIR AIRSHIP

Filed May 12, 1928

FIG. 1.

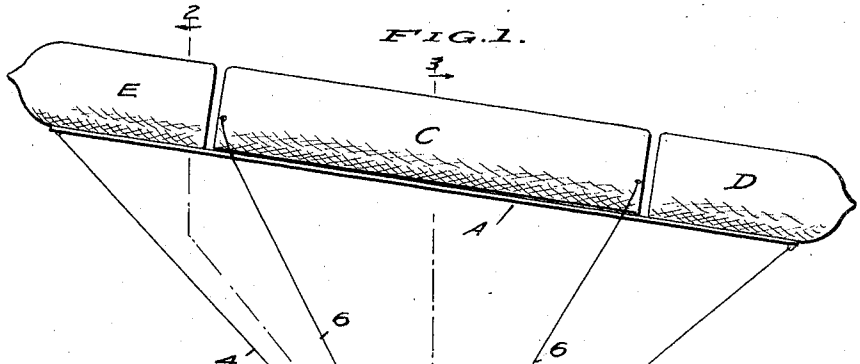
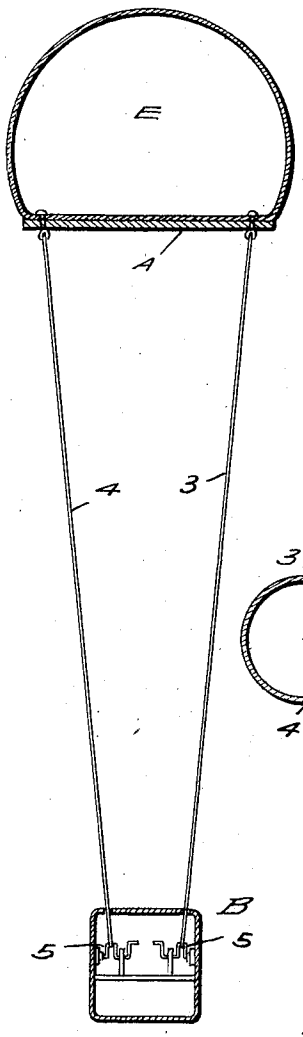


FIG. 2.



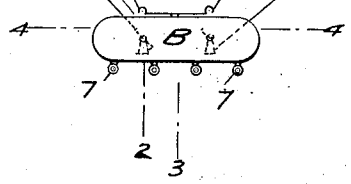


FIG. 3.

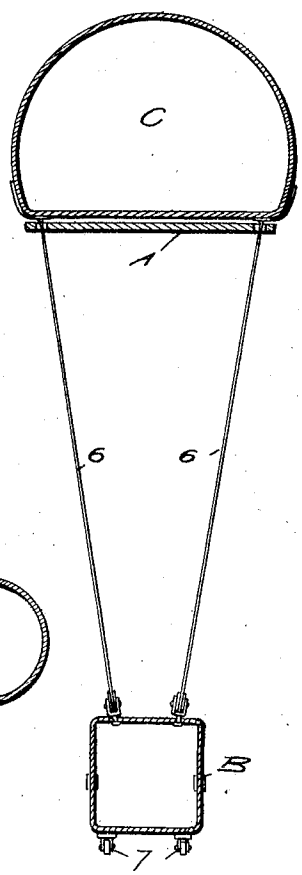
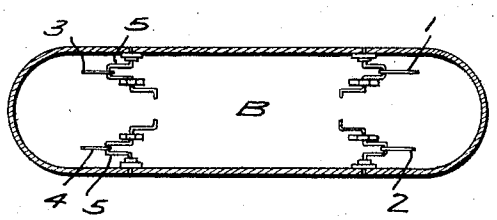


FIG. 4.



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UNITED STATES PATENT OFFICE.

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HEAVIER-THAN-AIR AIRSHIP.

Application filed May 12, 1928. Serial No. 277,333.

This invention relates to a heavier-than-air airship and to a method of operating the same, it being designed more especially as an improvement upon the structure disclosed in Patent Number 1,315,084 issued to me on September 2nd, 1919.

One of the objects of the invention is to provide an airship of this type utilizing a central gas container which is connected to the car of the airship, this container being of such size as to nearly lift the car and its load, there being a frame beneath and separate from the the central container provided at its ends with additional gas containers, means being employed by which the plane can be shifted relative to the supported car so as to cause the airship to ascend, descend, go forwardly, and to be turned in any desired direction.

A further object is to provide a novel arrangement of cables or other operating connections so located and proportioned as to shift the plane properly during the actuation of the airship.

With the foregoing and other objects in view which will appear as the description proceeds the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed it being understood that changes in the precise embodiment of the invention herein disclosed may be made within the scope of what is claimed without departing from the spirit of the invention.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings,

Figure 1 is a side elevation of the airship.

Figure 2 is a section on line 2—2, Figure 1.

Figure 3 is a section on line 3—3, Figure 1.

Figure 4 is a section on line 4—4, Figure 1.

Referring to the figures by characters of reference A designates an elongated plane extending above the top of a car B. This plane is extended along the bottom of a central gas container C, a front gas container D, and a rear gas container E, all of these containers being in alinement as shown and the plane being inclined upwardly and rearwardly. Relatively short cables 1 and 2 are connected to the front end of the plane at the corners thereof and longer cables 3 and 4 are connected to the corner portions of the plane at the rear end thereof. These cables converge downwardly into the car B where they are attached to operating cranks 5 adapted to be rotated by any suitable power means located in the car. The front and back containers D and E carried by the plane are located beyond the front and rear ends respectively of the car whereas the middle container C, which is connected to the car, is located directly over the car and is separate from the plane. This container has cables 6 which are extended downwardly and connected to the car B as shown. The car B and the equipment carried thereby constitute a load somewhat heavier than that which can be lifted by the gas contained in the containers C, D, and E but the gas in the end containers D and E will be sufficient to maintain the plane A in elevated position above the car.

In practice it has been found that best results can be obtained by using a plane A approximately five times as long as it is wide and that the plane should be inclined at from five to fifteen degrees. It has also been found desirable to have the end cables 1, 2, 3, and 4 extended at approximately forty-five degrees in the direction of the length of the airship and approximately five degrees transversely of the airship. These angles are disclosed approximately in Figures 1 and 2.

It has also been found desirable to make the ends of the containers D and E rounded or pointed to facilitate forward travel while the upper surfaces of these containers are rounded to facilitate the ascent of the airship. The bottom surface of the plane A is either flat or concaved transversely so as to insure proper downward displacement of air during the actuation of the mechanism. Supporting wheels 7 can be connected to the bottom of the car B to aid it in leaving the ground and while making a landing.

In practice the gas container C, which is arranged directly over and connected to the car, is inflated to sustain a part, but not all, of the weight of the car and its load. By using this container the load which can be carried by the airship is greatly increased over what would be possible should the gas container be eliminated.

The airship heretofore described is operated to ascend and to go forward through the air by pulling on and releasing the cables in proper succession, this being done by means of the motor driven cranks 5. The

cable 2 is first pulled by a crank and thereafter the cables 3, 1, and 4 are pulled in the order named. This actuation of the cables is effected with sufficient rapidity to produce an up and down flapping action of the plane which will be sufficient to elevate the entire airship, this lifting action due to the movement of the plane relative to the car B being such as to displace sufficient air downwardly to more than compensate for the difference between the weight of the airship and the air displaced thereby.

By continuing the operation just described the airship is elevated to a desired altitude where it can be maintained by continuing the actuation of the plane at a lower speed. While the cables are operated successively during the ascent of the airship, as already explained, any suitable means may be employed for separately actuating the cranks so that the cables will be operated in pairs. If the front cables 1 and 2 are operated in unison followed by the operation of the rear cables 3 and 4 the airship can be caused to move forwardly. The turning of the airship can be effected by operating the cables 1 and 4 more rapidly than the cables 2 and 3 or vice versa, thereby turning the vehicle either to the right or to the left.

It is to be understood of course that the drawing only illustrates this invention diagrammatically. Any type of car can be used and obviously the shape of the plane can be varied to produce desired results.

What is claimed is:

A heavier-than-air airship comprising an elongated plane the width of which is equal to or less than one-fifth the length thereof, a car below the center of the plane, said plane being inclined downwardly and forwardly relative to the car at an angle of from five to fifteen degrees, a central gas container separate from the plane and connected to and directly over the car, said central container being of such size as to nearly support the weight of the car and its load, end gas containers carried by and adapted to support the plane, cables connecting the sides of the front portion of the plane to the sides of the front portion of the car, longer cables connecting the sides of the rear portion of the plane to the sides of the rear portion of the car, means for pulling the cables in predetermined succession thereby to successively pull upon predetermined corner portions of the plane to elevate the car relative to the plane and for subsequently paying out the cables in predetermined succession to allow the corresponding portions of the plane to rise under the action of the gas in the container, said relative movement of the gas sustained plane operating to propel the airship in a desired direction.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature.

GEORGE COLEMAN BROWN.