

J. A. RIGNON.
AIR SHIP.

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932,999.

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Fig. 1.

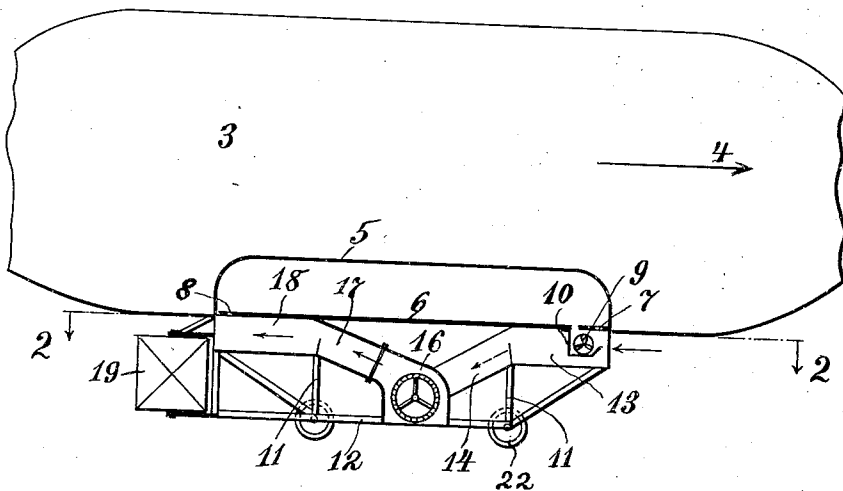
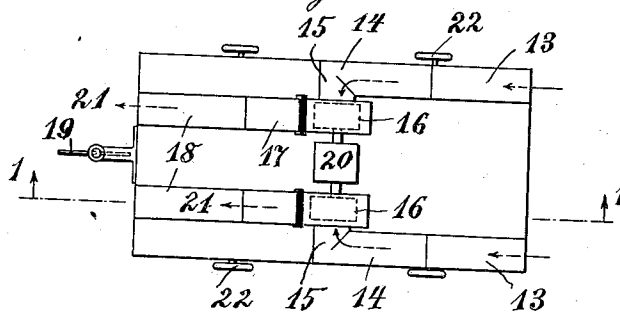


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

JOSEPH ALBERT RIGNON, OF BERLIN, GERMANY.

AIR-SHIP.

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To all whom it may concern:

Be it known that I, JOSEPH ALBERT RIGNON, a subject of the King of Italy, and a resident of 160 Berlinerstrasse, Gross-Lichterfelde-Ost, near Berlin, Germany, have invented certain new and useful Improvements relating to Air-Ships, of which the following is a specification.

This invention relates to improvements in air-ships and has for its object to effect economy in the space required for the propelling machinery and reduction of the attention required to be devoted by the aeronaut to the handling of the air-ship.

Accordingly the invention consists of an improved arrangement of the air-propelling organs in the air-trunks, and an improved arrangement of automatic controlling device for the ballonnet.

The invention is illustrated in the accompanying drawings in which:

Figure 1 is a vertical section on line 1, 1 of Fig. 2 and shows so much of an air ship as is necessary to illustrate in desirable form the present invention. Fig. 2 is a plan on line 2—2 of Fig. 1 of the arrangement of the machinery on the platform, the upper balloon or aerial floating body being removed.

In carrying the invention into effect according to the form illustrated the balloon or gas bag 3 is of the elongated shape illustrated, and travels in the direction of the arrow 4. Within the balloon or gas bag 3 there is arranged the ballonnet 5 which, as is known, helps to preserve the shape of the balloon even during long journeys. The ballonnet 5 is arranged over a bottom 6 and this bottom 6 has one or several holes 7 at its fore end. At the aft-end of the plate 6, holes 8 are provided. The holes 7 and 8 are continually open and the holes 7 are of considerably greater cross section than the holes 8. In this way air, during traveling, enters through the holes 7 and owing to the small area of the exit at the holes 8 a certain amount of tension is obtained within the ballonnet 5 which is sufficient to cause this ballonnet automatically to retain its form. By providing open holes 7 and 8 fore and aft of the bottom 6 in this way not only is there a certain degree of pressure maintained within the ballonnet but this pressure is automatically regulated as any excessive pressure within the ballonnet is impossible owing to the open holes which thereby act as safety valves. The dangers encountered by an in-

closed body of air which was subjected to various temperatures are therefore avoided and less attention by the aeronaut is required in handling the air ship.

If desired the pressure within the ballonnet 5 may be increased by means of an air-propelling organ 9 arranged within a casing 10 disposed before the opening 7; thus when traveling with the wind or when owing to other reasons a sufficient pressure is not automatically obtained by the forward motion of the air-ship the propeller 9 may be started. This propeller is diagrammatically illustrated and may be of any convenient form and driven for instance by an electric motor.

Supported from the aerial body 3 there is a frame 11 carrying a platform 12. The platform 12 accommodates the passengers and also the propelling, steering and other machinery required. The steering and other machinery has been omitted from the drawing as the same forms no part of the present invention.

Pipes 13 arranged in the fore and aft direction of the air ship are supported by the frame 11. The pipes 13 are preferably arranged as shown close to the bottom of the balloon. These pipes are then bent downward at 14 and then at right angles at 15 so as to enter axially the casing of an air propelling organ. The air propelling organ may be of any convenient type such as a cellular pump, single or multi-stage or a fan of the Sirocco-type or the like. For the purpose of illustration a Sirocco-fan is shown. This type of fan, as is well known, contains a large number of short and broad blades and its power may be increased within certain limits by increasing the breadth of the blades. From the casing 16 of the air propelling organ the pipes or conduits 17 rise toward the bottom of the balloon. The conduits 17 are then continued along the bottom of the balloon in the fore and aft direction of travel. It will be seen that the conduits 17, 18 after leaving the pumps 16 are closer together than the conduits 13 and in fact come within the region of the rudder 19 whereby the steering may be assisted. The pumps 16 are conveniently mounted co-axially and driven by means of a motor 20. With this arrangement the air passes through the pipes 13 in the direction of the arrows and is driven through the pipes 17 and 18, as shown by the arrows 21.

The advantage of arranging the air propelling organ in the bends 15 is that the power of the pumps or air-propelling organs 16 may be increased by increasing their axial length without increasing their diameter. This method of increasing the power and obtaining any desired degree of pressure is not possible when an air propelling organ is arranged in a straight length of piping as hitherto known. The frame and platform 12 may be provided with wheels 22 by which said frame and platform may be transported from place to place on land.

I claim:—

- 15 1. In combination in an aerial floating body, a gas bag and a ballonnet having free openings therein at the fore and aft-ends in the direction of travel of said aerial body,

the openings at the fore end being of greater cross section than the openings at the rear end. 20

2. In combination in an aerial floating body, a gas bag, a ballonnet having free openings therein at the front and rear ends in the direction of travel of said aerial body, the openings at the front end being of greater cross section than the openings at the rear end, and an air-propelling organ opposite the openings at the front end. 25

Signed at Berlin, German Empire this 30
13th day of March 1909.

JOSEPH ALBERT RIGNON.

Witnesses:

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