

C. EHLERS.

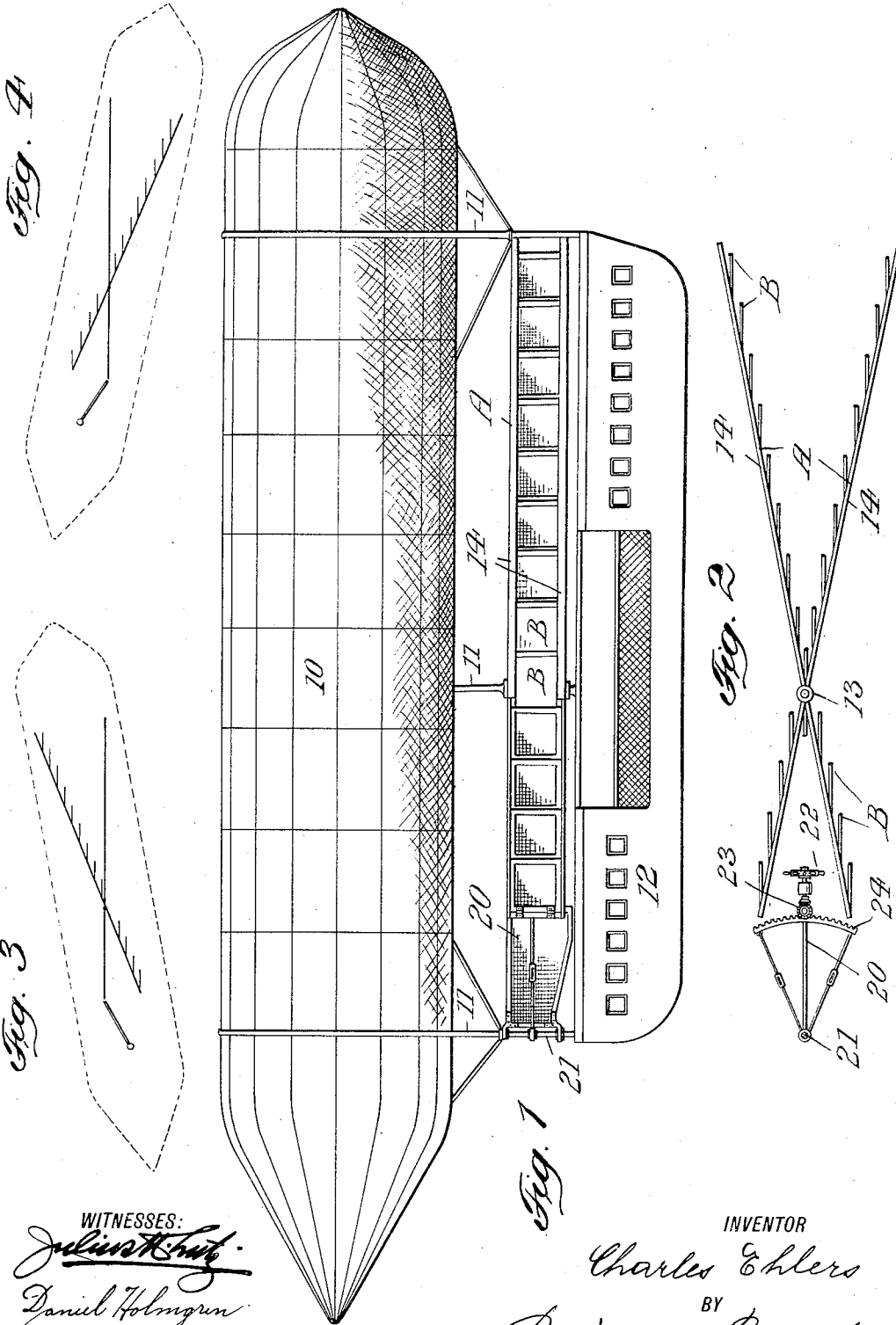
AIRSHIP.

APPLICATION FILED MAY 3, 1912.

1,033,234.

Patented July 23, 1912.

2 SHEETS-SHEET 1.



WITNESSES:
Julius H. Felt
Daniel Holmgren

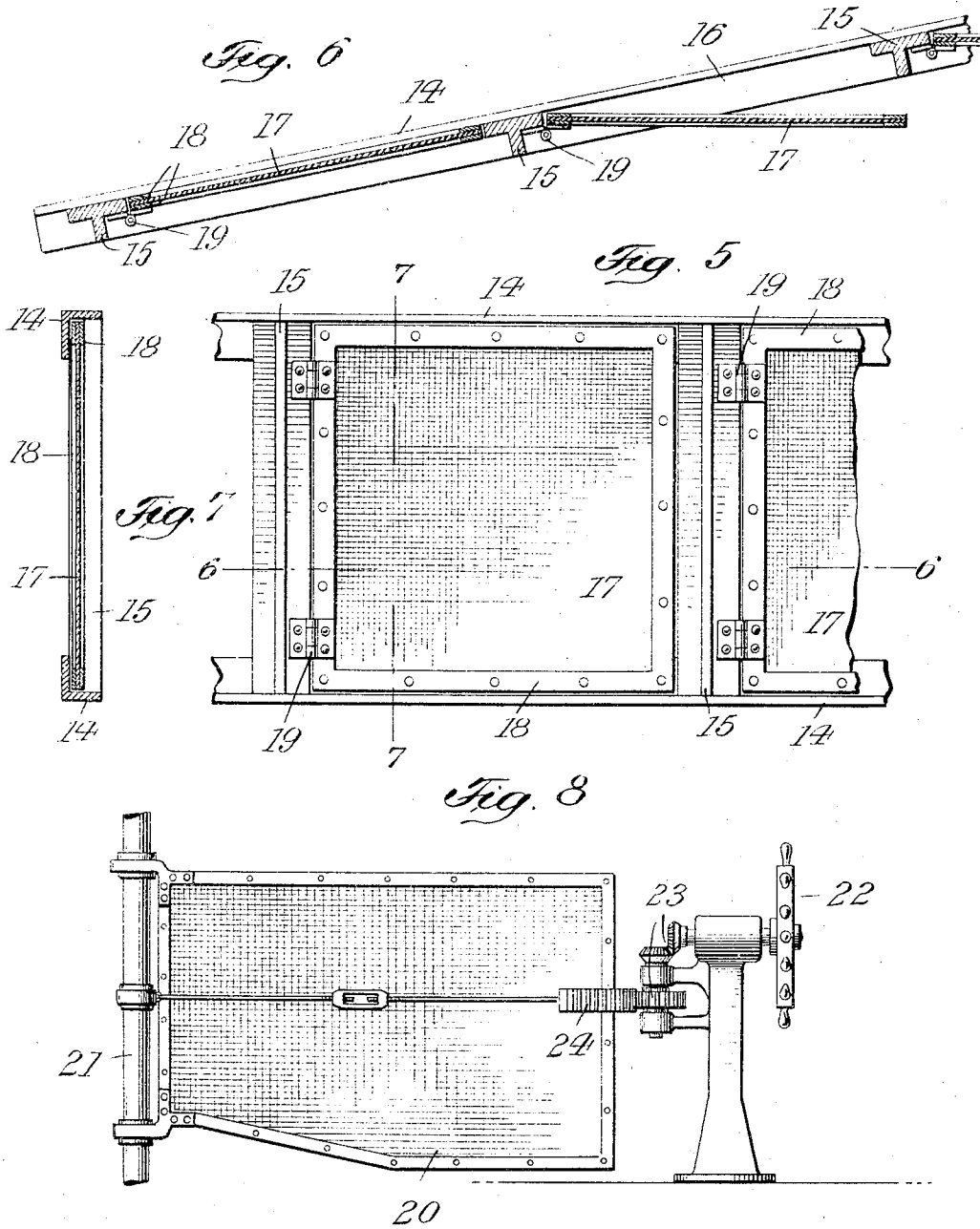
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Charles Ehlers
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UNITED STATES PATENT OFFICE.

CHARLES EHLERS, OF WEST HOBOKEN, NEW JERSEY.

AIRSHIP.

1,033,234.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CHARLES EHLERS, a citizen of the United States, residing at West Hoboken, county of Hudson, and State of New Jersey, have invented a new and Improved Airship, of which the following is a specification.

This invention relates to an air ship of novel construction, and more particularly to novel and efficient means for steadying the same and for facilitating its steering when subjected to the force of strong winds.

In the accompanying drawing: Figure 1 is a side elevation of an air ship embodying my invention; Fig. 2 a plan of the steering and steadying mechanism proper; Fig. 3 is a diagram showing the position of the rudder and gates when pointing toward the left; Fig. 4 a similar diagram showing the position of the parts when pointing toward the right; Fig. 5 a side view of part of the steadying structure; Fig. 6 a horizontal section thereof, taken on line 6—6, Fig. 5; Fig. 7 a vertical section on line 7—7, Fig. 5, and Fig. 8 a side view of the rudder.

The air ship comprises essentially a gas balloon 10 from which there is suspended by hangers 11, the car 12, in such a manner that a clearance is formed intermediate balloon and car. Within this clearance is fitted a substantially X-shaped wind compensating structure comprising a pair of intersecting members A, said members being secured to the balloon as well as to the car by the hangers 11 or otherwise. The correlation of the parts is such that the point of intersection 13 of the members A is located about centrally beneath the balloon 10. Furthermore one third portion of the length of each member is located in front of point 13, while two thirds thereof are located back of such point, so that the span between the forward ends of the members, is one half that of the span between the rear ends thereof.

Each member A is composed of upper and lower horizontal rails 14 and of a number of spaced vertical posts 15 that form a continuous row of longitudinally alined openings 16. It is preferred to make rails 14 of L-shape and post 15 of T-shape in cross section as shown. The openings 16 are controlled by gates B which are hinged to posts 15 and are adapted to open and close said openings. The gates of one frame member 14 are opposed to those of the other frame member, so that when the ship is subjected

to a side wind, the openings in one member will be closed while those in the other member are opened. Calling that frame member A, the rear end of which is located to the right, the "starboard member", then the gates of such member are freely oscillable to the left, while the gates of the port member are oscillable toward the right. This feature is not altered by the fact that the members cross each other, and that therefore the outer side of either one member back of point 13 becomes the inner side of such member in front of such point.

It is preferred to form each gate B of a canvas body 17, the edges of which are fitted between a pair of metal frames 18, one of which is hung to post 15 by hinges 19, while the other frame is adapted to engage the flanges of rails 14 and posts 15 when the gate is closed.

The rudder 20 of the air ship is hung to swing backwardly from a post 21, which is centered at such a distance in front of structure A, that the rear edge of the rudder will clear the front edge of such structure. The rudder may be operated by a steering wheel 22 and a gear train 23 that meshes into a rear toothed segment 24 of the rudder.

When the ship is driven against a head wind, all gates will be opened so as not to impede the free movement thereof. When the ship is to be steered obliquely against the wind, the windward gates will close while the leeward gates will open. Thus as illustrated in Fig. 3, when the ship is steered toward port, the rudder is swung toward starboard and the wind pressure when exercised against the right side of the gates on the starboard member A, will open such gates and close the gates of the port member. During this operation, the wind blowing against the face of the rudder and which would tend to deflect the ship to the left to an undue extent, will be compensated for by the wind pressure against the closed gates of the port member. In this way the ship is eased against the objectionable influence of strong winds, which would otherwise interfere with its free obedience to the rudder. In Fig. 4, the ship is shown while steering to starboard, the position of the rudder and gates being here reversed.

I claim:

1. An air ship comprising a gas balloon, a structure depending therefrom and including a pair of intersecting horizontally dis-

posed members that are provided with a plurality of longitudinally arranged openings, and gates controlling said openings, the gates of one member being opposed to
5 those of the other member.

2. An air ship comprising a gas balloon, a structure depending therefrom and including a pair of intersecting horizontally disposed members that are provided with a
10 plurality of longitudinally arranged openings, and gates controlling said openings, the gates on each member being arranged on the same side of said member and opposed to those of the other member.

15 3. An air ship comprising a gas balloon, a structure depending therefrom and including a pair of intersecting horizontally disposed members that are provided with a plurality of longitudinally arranged openings, opposed gates controlling said openings, and a rudder centered in advance of
20 the structure.

4. An air ship comprising a gas balloon, a car depending therefrom, a structure arranged intermediate the balloon and car and comprising a pair of intersecting horizontally disposed members that are provided

with a plurality of longitudinally arranged openings, and opposed gates controlling said openings.

5. An air ship comprising a gas balloon, a car depending therefrom, a structure arranged intermediate the balloon and car and comprising a pair of intersecting horizontally disposed members that are provided with a plurality of longitudinally
35 arranged openings, and opposed gates controlling said openings, said gates being composed of a canvas body and of a pair of metal frames that bind the edges of said
40 body.

6. An air ship comprising a gas balloon, a car depending therefrom, a pair of horizontally disposed intersecting members arranged between the balloon and car, each
45 of said members being composed of a pair of horizontal rails and of a plurality of spaced upright posts, and gates hinged to said posts, the gates of one member being opposed to those of the other member.

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Witnesses:

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