2 Sheets—Sheet 1.

A. P. KEITH.

AERIAL CAR.

No. 100,415. Patented Mar. 1, 1870.

Fig. 1.

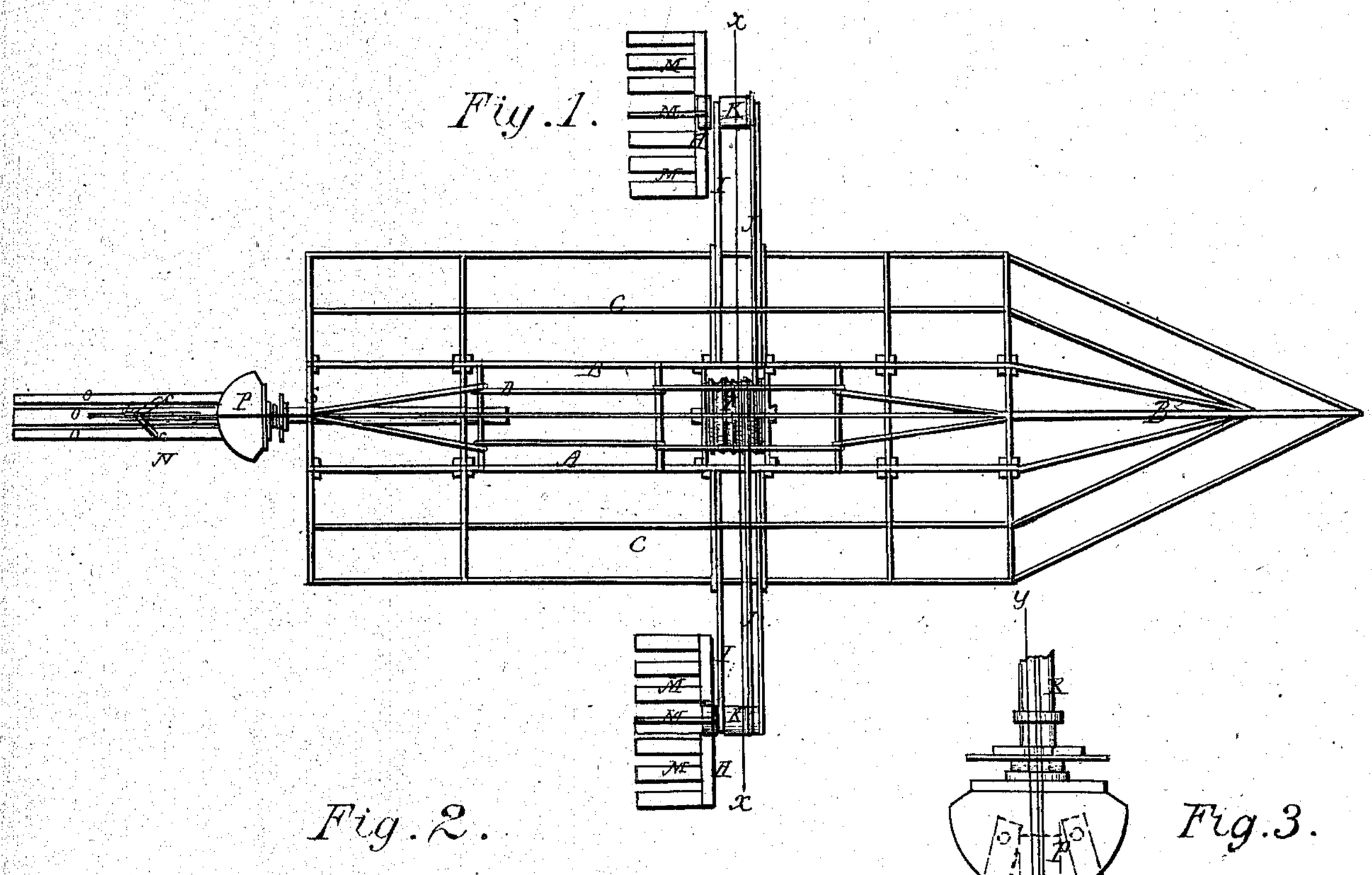


Fig. 2.

Fig. 3.

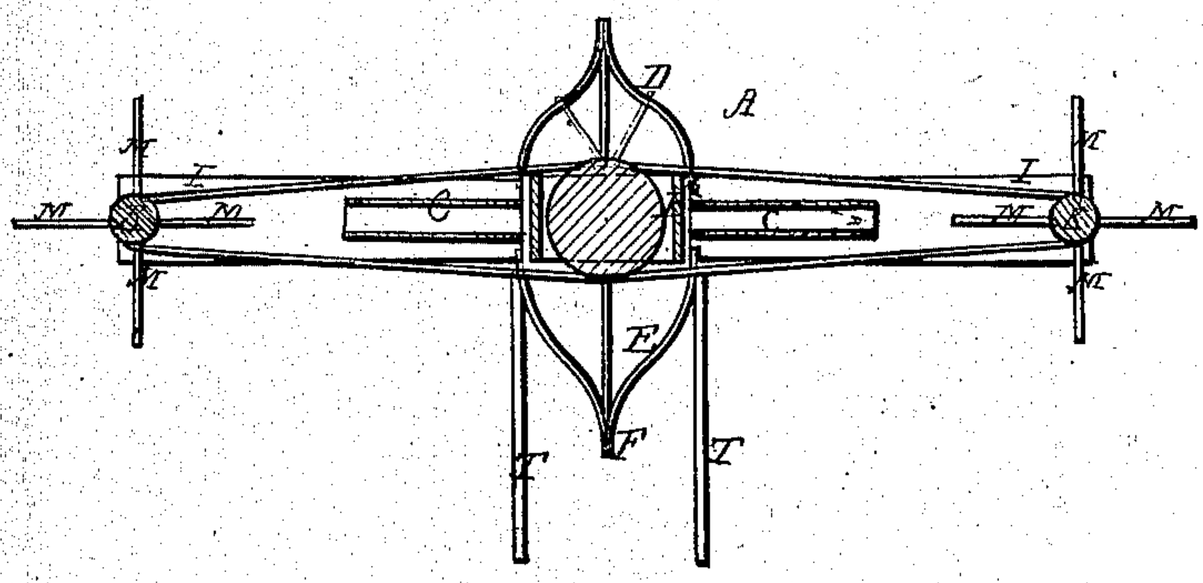
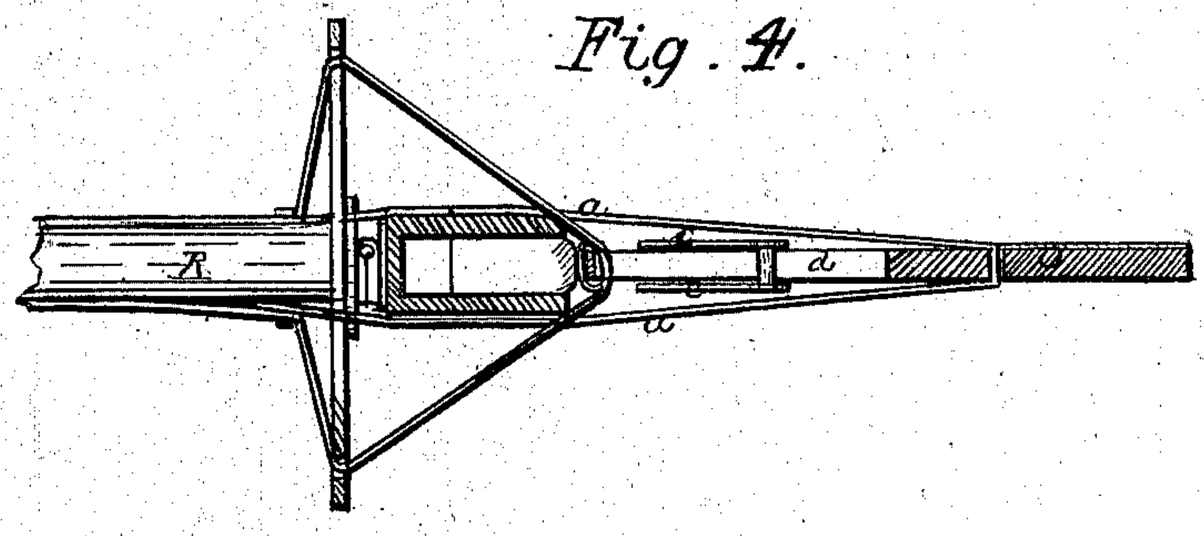


Fig. 4.



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WITNESSES.

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2 Sheets—Sheet 2.

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AERIAL CAR.

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Fig. 5.

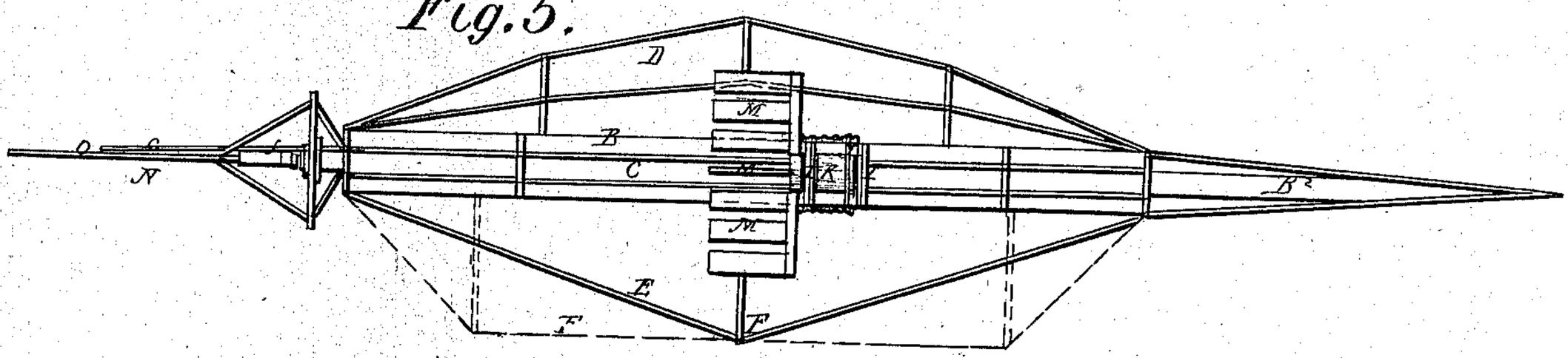


Fig. 6.

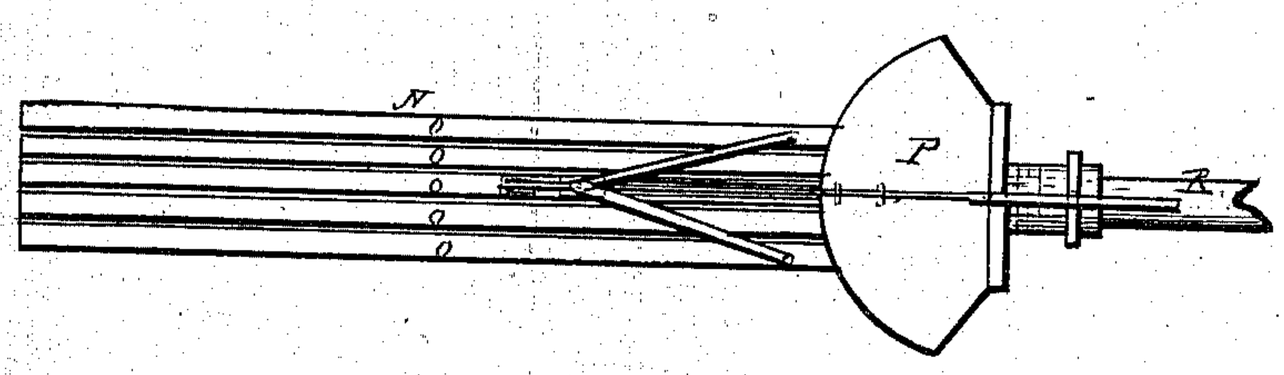


Fig. 7.

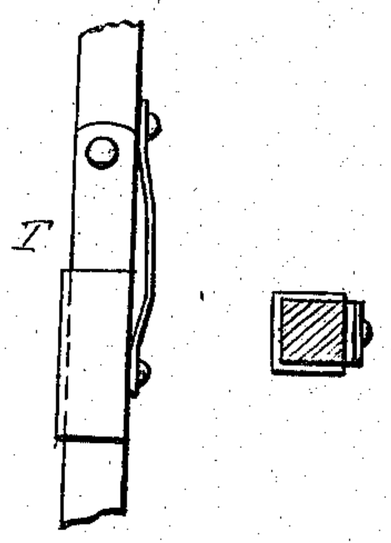
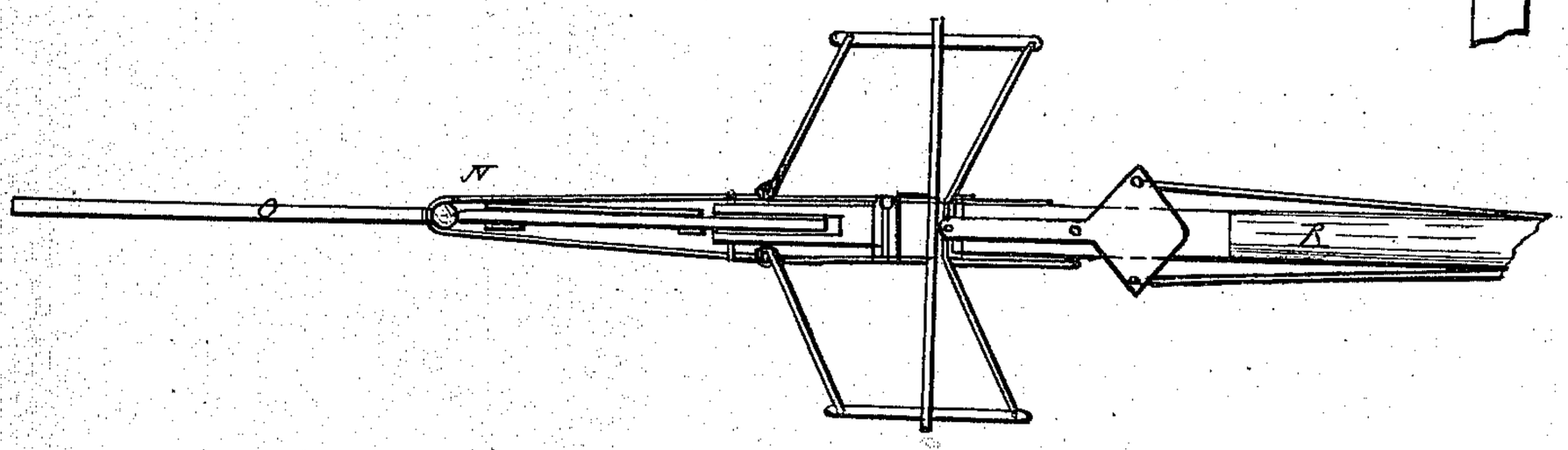


Fig. 8.



WITNESSES

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Letters Patent No. 100,415, *dated March* 1, 1870.

IMPROVEMENT IN AERIAL CARS

The Schedule referred to in these Letters Patent and making part of the same.

To all persons to whom these presents shall come:

Be it known that I, A. P. KEITH, of Easton, in the county of Bristol, and State of Massachusetts, have invented certain new and useful Improvements in Machines or Apparatus for the Navigation of the Air, or, in other words, in aerial ships, so termed, and that the following is a full and exact description of the same, reference being had to the accompanying plates of drawings hereinafter referred to.

This invention consists generally in constructing a vessel or other chamber of light and strong material, in a shape to present the smallest possible amount of resistance to the air in its passage through it, while at the same time the requisites of equilibrium are insured, and a sufficient hold, as it were, of the air is obtained to enable the vessel to be steered, together with sufficient space or room for the reception and arrangement of the devices generating the motive or actuating-power for paddle or other driving-wheels to act upon the air, and the accommodation of the operators and passengers, together with storage for provisions, baggage, &c., according as may be desired.

In addition to the above, this invention also consists in a novel arrangement and construction of a rudder, if it may be so termed, for the guidance of the vessel through the air, whereby said rudder can be raised or lowered, revolved or open, and closed either more or less, and with such movements entirely independent of each other.

In the accompanying plates of drawings my "improved aerial ship" is illustrated.

In plate 1, Figure 1 is a plan or top view of the same, showing its frame-work uncovered.

Figure 2, a transverse vertical section, taken in the plane of the line *x x*, fig. 1.

Figure 3, a plan view of the rudder or steering device detached, and drawn somewhat enlarged from it, as shown in fig. 1, for the more perfect illustration of its construction.

Figure 4, a central longitudinal section, in plane, of line *y y*, fig. 3.

In plate 2, Figure 5 is a side view of the aerial ship.

Figures 6 and 8, respectively, a plan and a side view of the steering device, showing a modification of the operating parts for it and the blades thereto, and also an increased number of blades from that shown in figs. 1 and 3, plate 1.

Figure 7, a detail view, to be hereinafter referred to.

A in the accompanying drawings represents the body or hull, if it may be so termed, of the aerial ship embraced herein.

This body or hull A is constructed with a central portion, B, extending along the length of the same, tapering to a point at the end B^2, and upon each side is provided with a similar horizontal extension-frame, C, to be made of light but strong material, and upon the upper and lower sides with incasing or inclosing frame-works D and E, in each instance made of such form and shape as shown more particularly in fig. 4, plate 1, and fig. 5, plate 2, that is, tapering in all directions from end to end and top to bottom, to present the least resistance to the air in the passage of the vessel through the same.

The frame on the lower side of the body A is extended, to form a keel, F, two forms of which are shown in fig. 5, (one by dotted lines,) the purpose and object of the keel being the same as that of a keel to a vessel for navigation in water.

These several frames are to be covered or sheathed in any suitable manner to render them air-tight.

In the central part B of the vessel, suitable mechanism is to be located for generating power, and it is also to be constructed for the storage of fuel, baggage, provisions, accommodation of operators, passengers, &c., according to the capacity which it is designed the ship shall have for weight.

H, paddle-wheels, located in extension-arms I, to the body A, one upon each side of the same, to which paddle-wheels motion is to be communicated through any suitable arrangement of mechanism, such as belts J and pulleys K and L, as shown.

The said wheels H are arranged to revolve in planes across the width of the vessel, and are constructed with vanes or wings M, (see drawings,) made in sections and of suitable form, by their combined action on the atmosphere. to raise and propel the vessel through it.

N, the rudder or means used for the purpose of steering or guiding the vessel A. This rudder is composed of blades O, which may be more or less in number, hung in and to a holder, P, so as to be susceptible of being opened or closed upon each other, and along the same, at their outer ends, are to be connected together by a flexible material, Q, of sufficient strength to resist the action of the atmosphere thereon, and yet susceptible of closing or folding up.

The holder or stock P to the rudder is hinged to one end of a shaft, R, and is arranged to turn within the end pieces S of the vessel A. By being hinged, it is obvious it can be changed in position, that is, either inclined downward or upward or placed horizontal, cords *a a* being provided for such manipulation of the same.

For the blades to the rudder to be opened and closed, link-pieces *c* are provided, that at one end are hung to the outside blade, and at the other ends are arranged to have a conjoint motion forward and backward within a longitudinal slot, *d*, of the center blade, by and through the means of cords or other lines *f* extended therefrom over and through suitable guides into the body A.

Each of the several described movements for the

rudder is independent of the others, whatever may have been the previous adjustment of position of any of the parts composing the rudder, as is obvious from the detail description of their construction and arrangement, without further explanation.

By the arrangement of a rudder as above described, it is manifest the guiding of the vessel is secured in any horizontal plane or direction, and it is also enabled to be guided in an upward or downward course, or in any course between a horizontal and a vertical plane.

As a means of support to the vessel when not in use, legs T are provided, which legs it is intended to construct and arrange so that when the vessel is in use they can be folded up under the body A thereof, and thus out of the way, one form being shown in fig. 7, which is by constructing them in sections, hinged together.

Having thus described my improvements in aerial ships, I will state my claims, as follows.

What I claim as my invention, and desire to have secured to me by Letters Patent, is—

1. A ship for aerial navigation, consisting of a central body, with side, top, and under extension-chambers, with the latter or under chamber terminating in a keel, substantially as and for the purpose described.

2. The rudder N, made in sections O, connected by flexible material, and the several sections fastened to stock P and shaft R, constructed and arranged and provided with devices suitable for operating the rudder, substantially as and for the purposes described.

The above specification of my invention signed by me, this 21st day of September, 1869.

A. P. KEITH.

Witnesses:

NEWLAND F. HOWARD,

EDWIN W. BROWN.