

(No Model.)

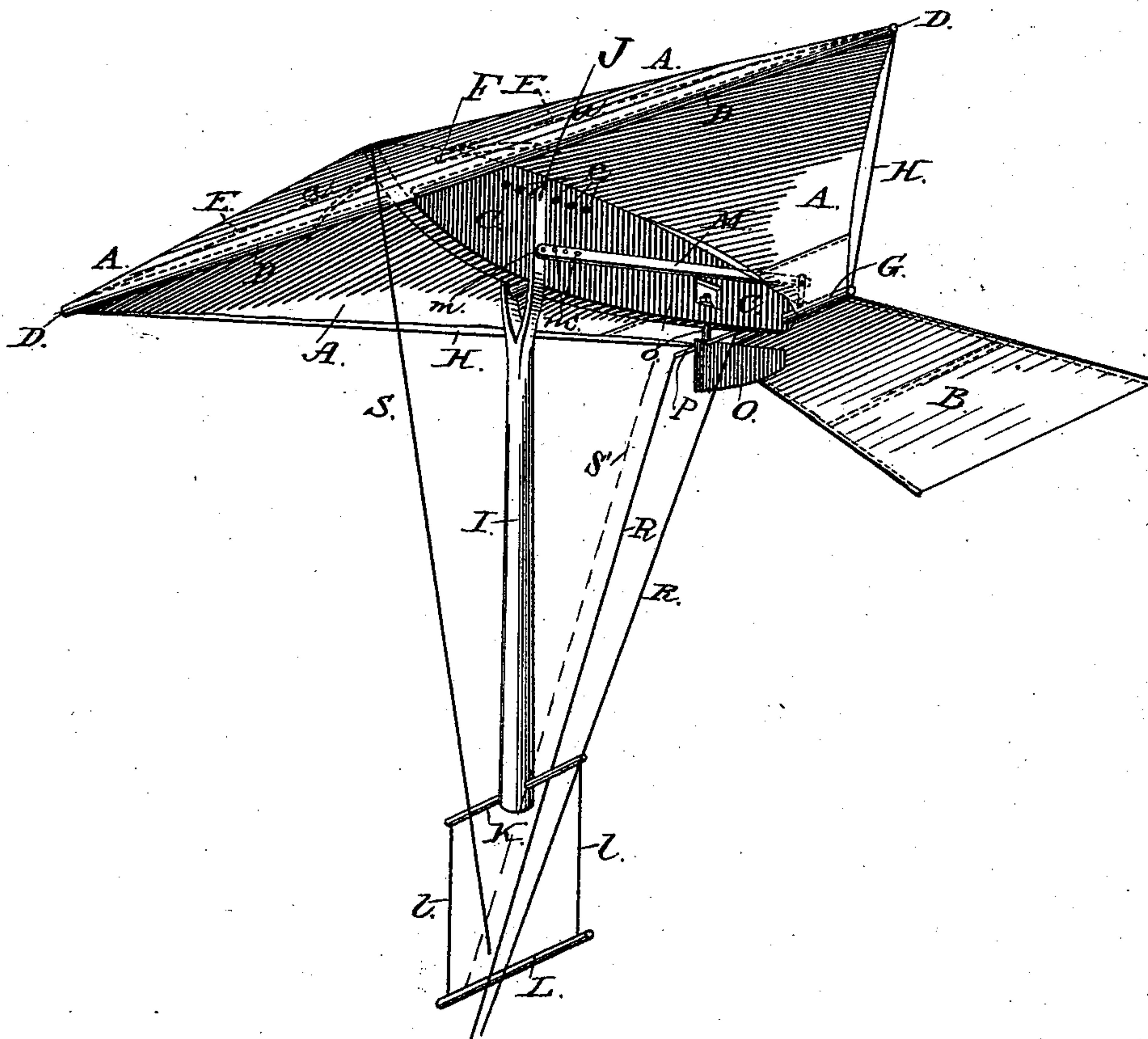
2 Sheets—Sheet 1.

W. BEESON.
FLYING MACHINE.

No. 376,937.

Patented Jan. 24, 1888.

Fig. 1.



WITNESSES:

John A. Ellis
C. Sedgwick

INVENTOR:

W. Beeson
BY *Munn & Co.*
ATTORNEYS.

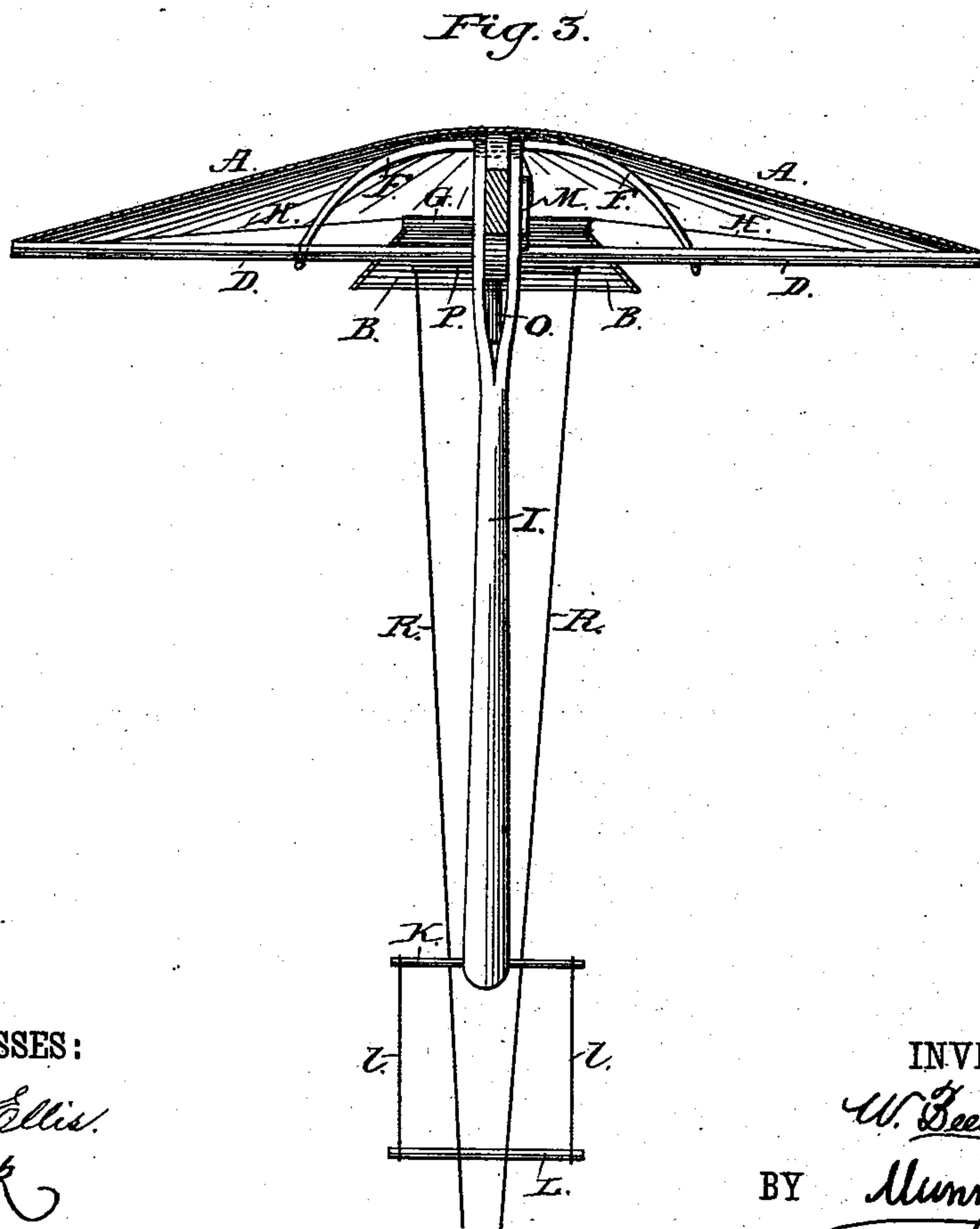
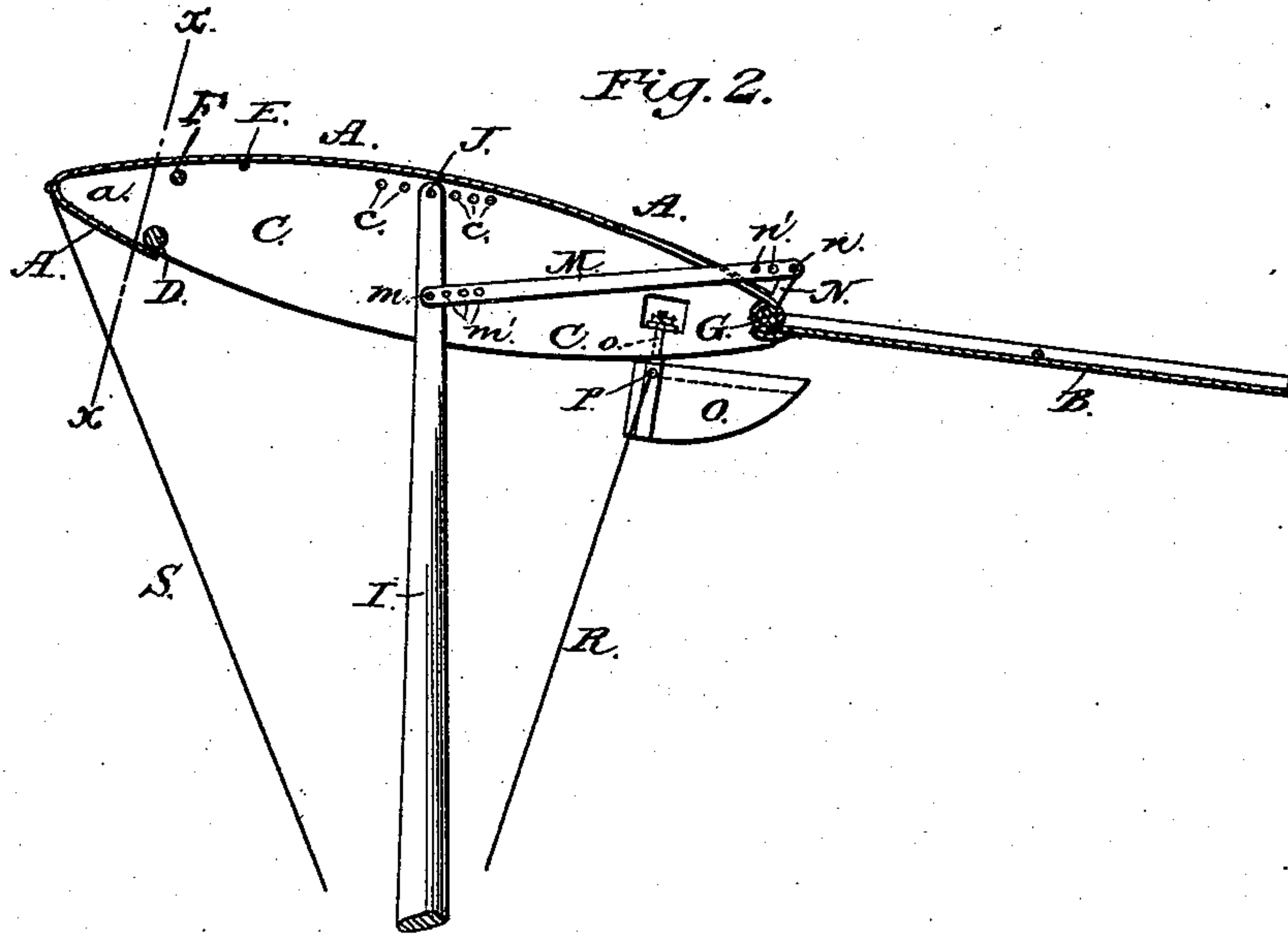
(No Model.)

2 Sheets—Sheet 2.

W. BEESON.
FLYING MACHINE.

No. 376,937.

Patented Jan. 24, 1888.



WITNESSES:

John A. Ellis.
C. Bedgwick

INVENTOR:

W. Beeson

BY

Munn & Co.

ATTORNEYS.

UNITED STATES PATENT OFFICE.

WILLIAM BEESON, OF DILLON, MONTANA TERRITORY.

FLYING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 376,937, dated January 24, 1888.

Application filed September 2, 1887. Serial No. 248,588. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM BEESON, of Dillon, in the county of Beaver Head and Territory of Montana, have invented a new and Improved Flying-Machine, of which the following is a full, clear, and exact description.

My invention relates to a machine for navigating the air, and has for its object to provide a simple and efficient machine of this character.

10 The invention consists in certain novel features of construction and combinations of parts of the flying-machine, all as hereinafter described and claimed.

Reference is to be had to the accompanying 15 drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a front perspective view of my improved flying-machine. Fig. 2 is a side 20 view thereof, partly broken away, and with the aerial plane or sail in longitudinal section; and Fig. 3 is a front view of the machine with parts in transverse section on the line *x x* in Fig. 2.

25 The aerial plane of this improved flying-machine consists of a mainsail, A, and a tail or back sail, B, both of which are supported on or from a plate or board, C, which ranges fore and aft under the mainsail A, and about 30 at the center of it, so that the sides of this sail, which is broader at its front than at its rear end, may be considered a fair representation of the two wings of a bird, while the plate C represents the backbone or body of the bird.

35 The plate C is convexed at its upper edge, and preferably at its lower edge also, and the sail A extends over, forward, and downward around the plate to a curved cross-bar, D, to which the entire front edge of the sail is fixed, and 40 whereby the front of the sail is formed into or with a pocket, *a*, which catches the wind, and thus materially assists in propelling the machine forward. A rope or rod, E, (shown in dotted lines in Fig. 1,) is attached to the plate

45 C some distance from the point or nose of the plate, and is extended to the opposite ends of the cross-bar D, to which it is made fast, and thus serves as a stretcher to support the broader forward part of the mainsail, and a brace rod 50 or bar, F, which is held at its center in or to the plate C, extends laterally therefrom both

ways, and enters or is suitably fixed to the cross-bar D, to serve as an additional brace between it and the plate. The tail B of the aerial plane is made of a cloth or other fabric stretched 55 over any suitable frame of rods, which is fixed rigidly in a cross-bar, G, which is journaled in a bearing at or near the back end of the plate C, and from the ends of this bar G ropes or frame-rods H H pass to the opposite ends of 60 the front cross-bar, D, of the mainsail A, to brace the cross-bars D G to each other without interfering with the aerial movement of the bar G in the plate C, for purposes presently explained.

65 To the plate C a pendulum-bar, I, is pivoted by the passage of a pin, J, through the upper forked end of the pendulum and through any one of a series of holes, *c*, made in the plate, and at its lower end the pendulum is provided 70 with a fixed cross-bar, K, from which a trapeze-bar, L, is hung by ropes *l l*, as a rest or support to an aeronaut, who may, however, be supported on or in any suitable structure held to the pendulum, the trapeze being preferred 75 as a light strong support, offering little resistance to the air, and hence having little effect to disturb the movements of the aerial plane above it.

A bar, M, is pivotally connected at one end, 80 by a pin, *m*, to the upper end or part of the pendulum I, and this bar, as shown, projects through the mainsail A and is connected pivotally at *n* to the end of an arm, N, which is fixed to the tail cross-bar G and projects up- 85 ward therefrom. With this construction any deviation in general plane of the mainsail A will, through the medium of the parts G N M I, at once act on the tail B to raise or lower its outer end, or set it at proper incline to au- 90 tomatically bring the mainsail and the entire machine into proper adjustment for the best effect of the wind-currents on the sails, to assure true, easy, and proper flight of the machine.

95 A rudder, O, is pivoted by its post *o* at the back end of the plate C, and the body of the rudder normally extends aft of the post, like a ship's rudder, as most clearly shown in Figs. 1 and 2 of the drawings. A laterally-extending cross-bar, P, is fixed at its center to the 100 rudder post, and ropes R R, connected to op-

posite ends of the bar P, are conducted to the trapeze, where the aeronaut may handle them as tiller-ropes to adjust the rudder for steering the machine to either side.

5 It will be noticed that the broad flat sides of the center plate, C, offer considerable area to the air-pressure to carry the machine side-wise in its flight, or to take any desired diagonal course as controlled by the rudder.

10 A rope, S, connected to the forward end or part of the plate C, or it may be to the cross-bar D, also leads to the trapeze and in reach of the aeronaut, who may, by pulling on it and the rudder-ropes, give any desired incline to
15 the mainsail to set it in a proper plane for the best propelling effect of the wind on it. A rope, S, may be connected to the back end of the plate C, as shown in dotted lines in Fig. 1, or to the mainsail-frame, to be used with the
20 forward rope, S, to adjust the aerial plane, as last above described, instead of using the rudder-ropes for this purpose.

Any suitable or necessary frame-work of rods or cords other than those above named
25 may be used to support the area of the sails A B, which may be attached to their frame in any approved way. The mean relative positions or planes of the sails A B may be regulated or controlled at will by shifting the pivot-
30 pin J to hang the pendulum I from or at either of the holes *c* in the plate C, and by shifting the pivot *n* into any one of a series of holes, *n'*, in the rod M, and it may be also by shifting the pivot *m* to any one of a series of
35 holes, *m'*, made in the rod M.

It will be noticed that the least deviation of the mainsail A from its normal plane will, through the compound lever M N, be instantly
40 felt and responded to by the back-sail or tail B, which thus will correct tendencies to wild flight of the machine by automatically holding the mainsail to its proper plane, and the machine will be self-supporting in a light
45 wind—say of ten miles or more per hour—and when once raised by a kite or otherwise and cut loose the machine will of itself perform the evolutions of a soaring bird and rise to any altitude.

The machine may also be made and used as
50 a toy, and as such will afford amusement to many persons.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A flying-machine constructed with an 55 aerial plane comprising a mainsail and a back or tailsail connected pivotally thereto, a pendulum-bar pivotally connected to the mainsail, and a lever connecting the pendulum and tail-sail, substantially as shown and described, 60 whereby a deviation of the mainsail will be responded to by the tail, as and for the purposes herein set forth.

2. A flying-machine constructed with an 65 aerial plane comprising a mainsail and a tail-sail pivoted thereto, a pendulum-bar carrying a support for an aeronaut and connected pivotally to the mainsail, a lever connecting the pendulum and tail-sail, and cords leading from the front and rear parts of the mainsail to the 70 aeronaut, substantially as described, for the purposes set forth.

3. A flying-machine constructed with an aerial plane comprising a mainsail, a tail-sail pivoted thereto, a pendulum-bar carrying a 75 support for the aeronaut and connected pivotally to the mainsail, a lever connecting the pendulum and the tail-sail, a rudder pivoted to the mainsail, and ropes connected to the rudder and leading to the aeronaut, substan- 80 tially as described, for the purposes set forth.

4. The combination, in a flying-machine, of a mainsail, a tail-sail pivoted thereto, a pendulum-bar connected pivotally to the mainsail, and a lever connecting the pendulum and tail- 85 sail, and said mainsail being formed with a front wind-pocket, *a*, substantially as described, for the purposes set forth.

5. The combination, in a flying-machine, of a mainsail, A, a plate, C, connected thereto, a 90 tail-sail, B, pivoted by a bar, G, to the plate C, a pendulum, I, pivoted to the plate C, an arm, N, fixed to the bar G, and a rod, M, pivotally connecting the parts I N, substantially as described, for the purposes set forth.

WILLIAM BEESON.

Witnesses:

JOHN W. BALL,
A. BROWN.