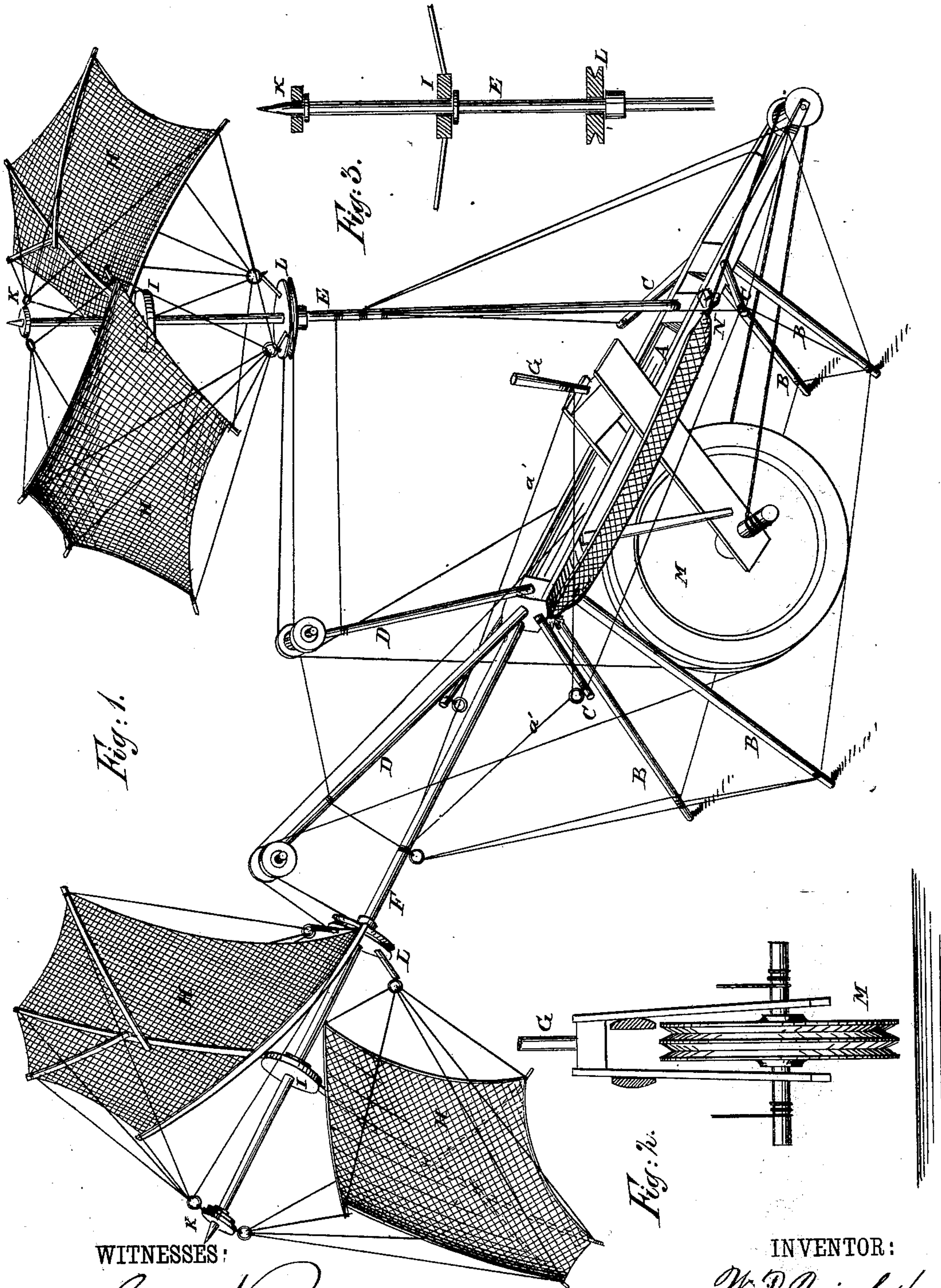


W. F. QUINBY.
Aerial-Ship.

No. 218,573.

Patented Aug. 12, 1879.



WITNESSES:

WITNESSES:
Chas. Nida.
C. Sedgwick.

INVENTOR:

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UNITED STATES PATENT OFFICE.

WATSON F. QUINBY, OF WILMINGTON, DELAWARE.

IMPROVEMENT IN AERIAL SHIPS.

Specification forming part of Letters Patent No. **218,573**, dated August 12, 1879; application filed January 16, 1879.

To all whom it may concern:

Be it known that I, WATSON F. QUINBY, of Wilmington, in the county of New Castle and State of Delaware, have invented a new and Improved Aerial Ship, of which the following is a specification.

Figure 1 is a view of the ship in perspective. Fig. 2 shows the main wheel and its supporting-frame. Fig. 3 is an upright view of the masts, showing in section the revolving pulleys or blocks.

Similar letters of reference indicate corresponding parts.

The invention consists essentially of a central axis, A, composed of two parallel pieces of light wood or other suitable material, having radiating rods attached, which are maintained in any desired position by taut ropes. Four of these rods, B B B B, constitute legs which support the machine when on the ground. As two of these legs are shorter than the others, though this is by no means necessary, the forward part of the axis is higher than the rear part. Four other rods, C C C C, project horizontally from the axis of the stay-rods. Two rods, D D, support pulleys. A perpendicular rod or mast, E, supports the two principal wings, and a rod or mast, F, projecting anteriorly, supports or sustains the tractor-wings.

All the rods are fixed and stationary except the anterior one, which is capable of a motion from side to side, determined by cords *a' a'*, wound around the capstan G. This motion from side to side is for the purpose of steering the vessel by means of the tractor-wings.

It will be seen that in this mode of structure all strains are in the direction of the length of the supports.

The wings H H H H consist of some light fabric stretched on a light frame-work of rods well secured together.

The inner end of the central or principal rod of each frame is inserted and held in revolving blocks I I, as shown. The extreme or outer ends of the rods are stayed upward in the desired position by cords secured to rings which, in turn, are secured to the small revolving blocks K K; and after the same man-

ner they are stayed downward to the revolving grooved blocks L L. The extremities of the rod at the base of each wing are stayed to about the center of the base of the opposite wing.

In each instance, the arrangement is the same, and it is obvious that by adjustment of the stays, any desired curve, angle, or position can be given to the wings.

These blocks all move freely round upon the supporting rods or masts, but are prevented from downward movement by shoulders or stops placed under each of them.

The wings are preferably set as shown, with their outer extremities elevated higher than the inner ones, so that the angles made by them with the masts are greater on their under surfaces than on their upper surfaces.

The rods of the frame-work, which radiate from the main or central one, may be either hinged or immovably fixed to it, as may be best for giving any desired shape to the wings.

Motion is communicated to the wings by means of cords, belts, or ropes, which pass around the grooved blocks or pulleys L L, the pulleys or rods D D, and the main wheel or pulley M. When suitable power is applied to revolve the main pulley, in the peripheral grooves of which the cords or belts lie, the wings are made to revolve. The principal wings have a tendency then to lift the ship, and the tractor-wings to draw it forward and to lift the forward part.

The tendency of the main lifting-wings when in motion is to turn the whole machine in the opposite direction. This may be counteracted by turning the anterior wings somewhat toward the left.

Two rubber springs, N, are shown as actuating the movement of the main pulley M; but this is merely for the purpose of illustration, as it is evident that in practice another style of motor would be required.

It will be seen that to give rotary motion to the wings, to be able to set the wings on any desired plane or angle, and to change their shape by means of the stays, and to devise effective tractor-wings are the main objects of this invention, care being had of course to se-

cure the greatest possible strength consistent with least weight of material.

The number and size of the wings and the diversity of their arrangement will be restricted only by the possibilities of this method of construction.

On examination a new style of rope-gearing, it may be called, will be seen. It consists of giving one or more complete turns of the rope around each gear-wheel, as shown on revolving grooved blocks L L, to secure greater adhesion of the rope and prevent any possible slipping. The face or groove of the block may be widened to admit of two or more complete turns, if desired.

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

1. In an air-ship, the central axis A, provided with radial rods B, held by taut ropes, as shown and described.

2. The wings H, connected by cords with rotary blocks I K L, on a stationary shaft, as and for the purpose set forth.

3. The combination, with the masts and wings, of one series of cords connecting the under sides of wings with the rotary blocks L and another series of cords connecting with the upper sides of wings the rotary blocks K, as described.

WATSON FELL QUINBY.

Witnesses:

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