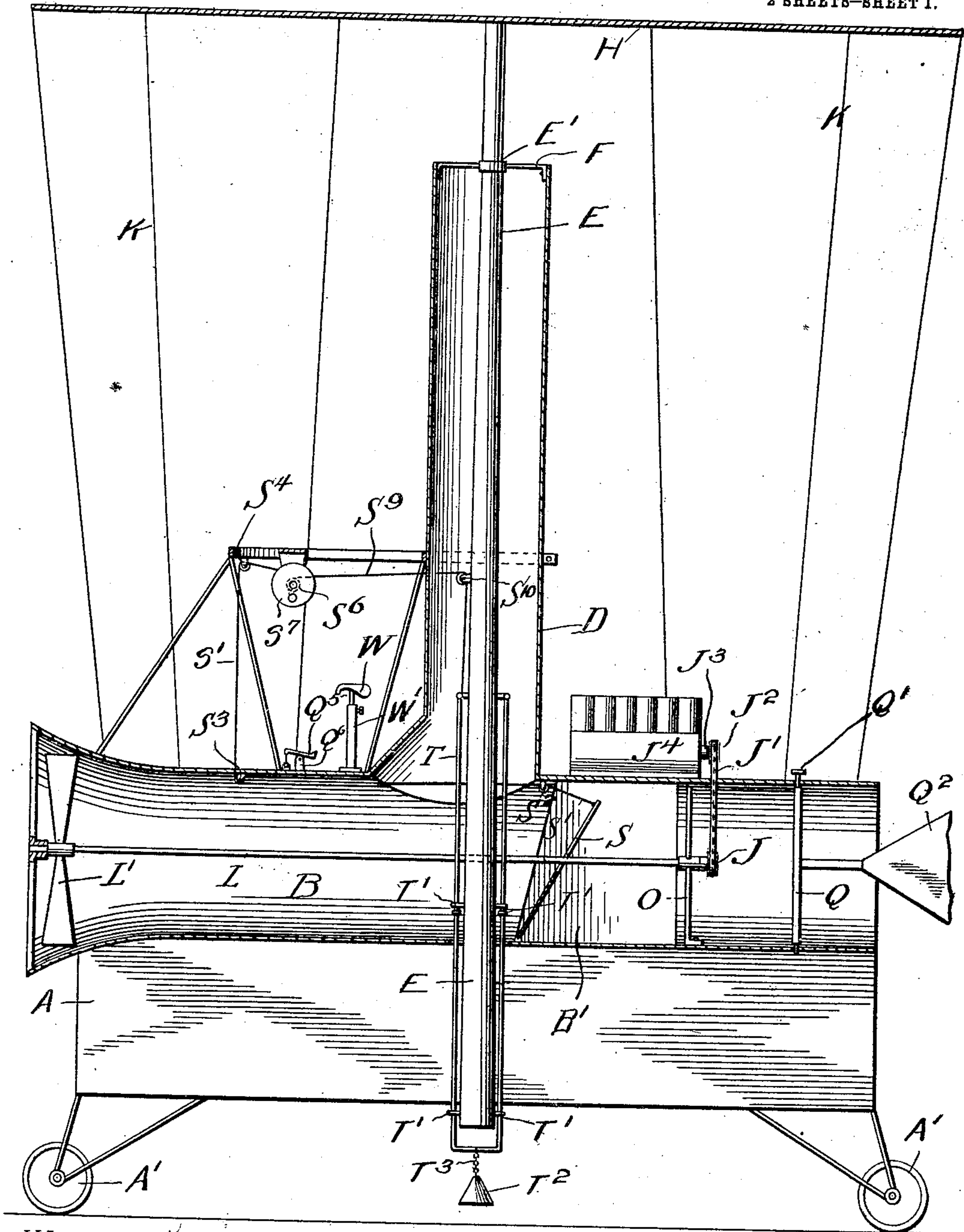


H. FLANAGAN.  
AERIAL NAVIGATING APPARATUS.  
APPLICATION FILED APR. 19, 1911.

999,105.

Patented July 25, 1911.

2 SHEETS—SHEET 1.



WITNESSES:

*H. F. Koyle*  
*J. M. Sherwood*

FIG 1

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2 SHEETS—SHEET 2.

FIG. 2.

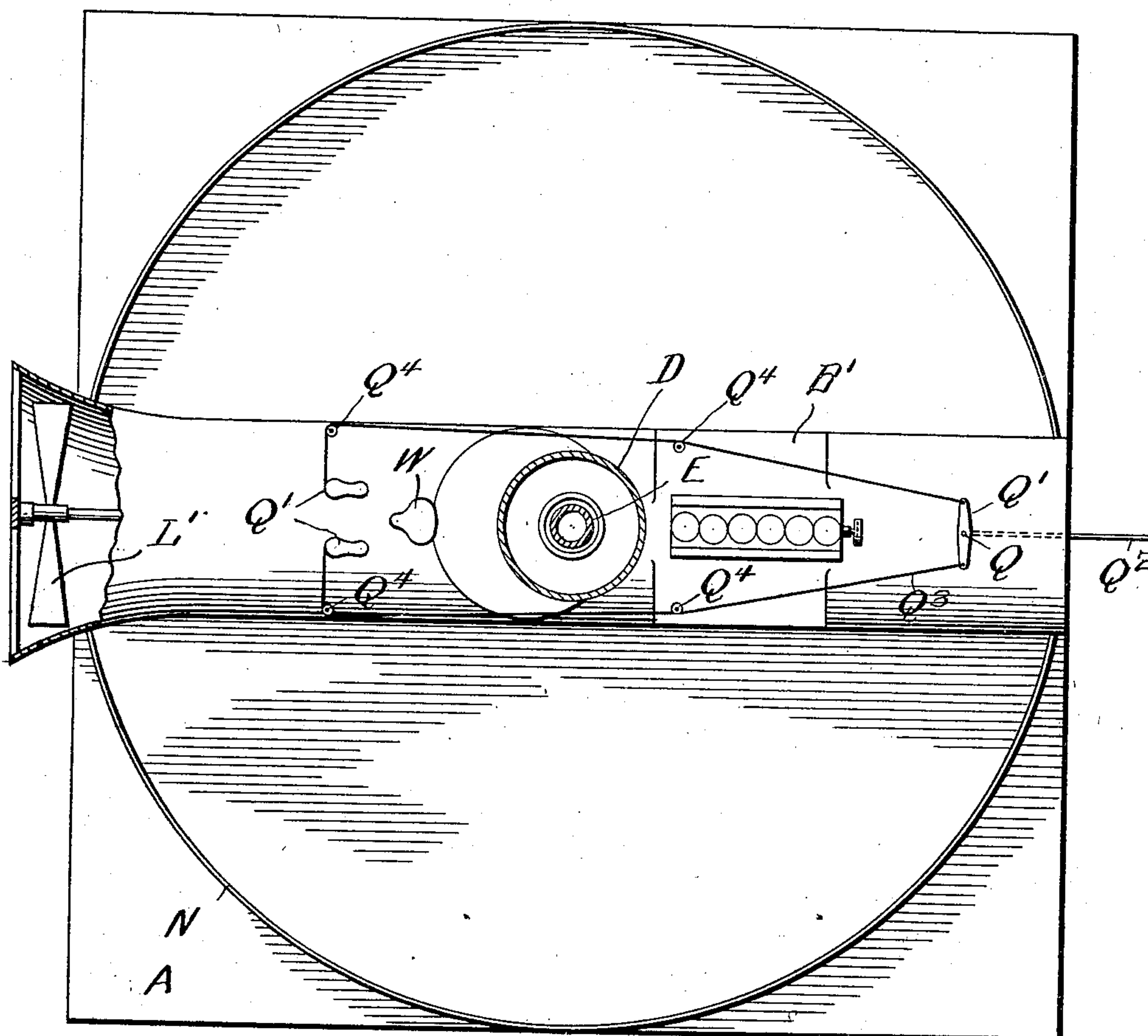
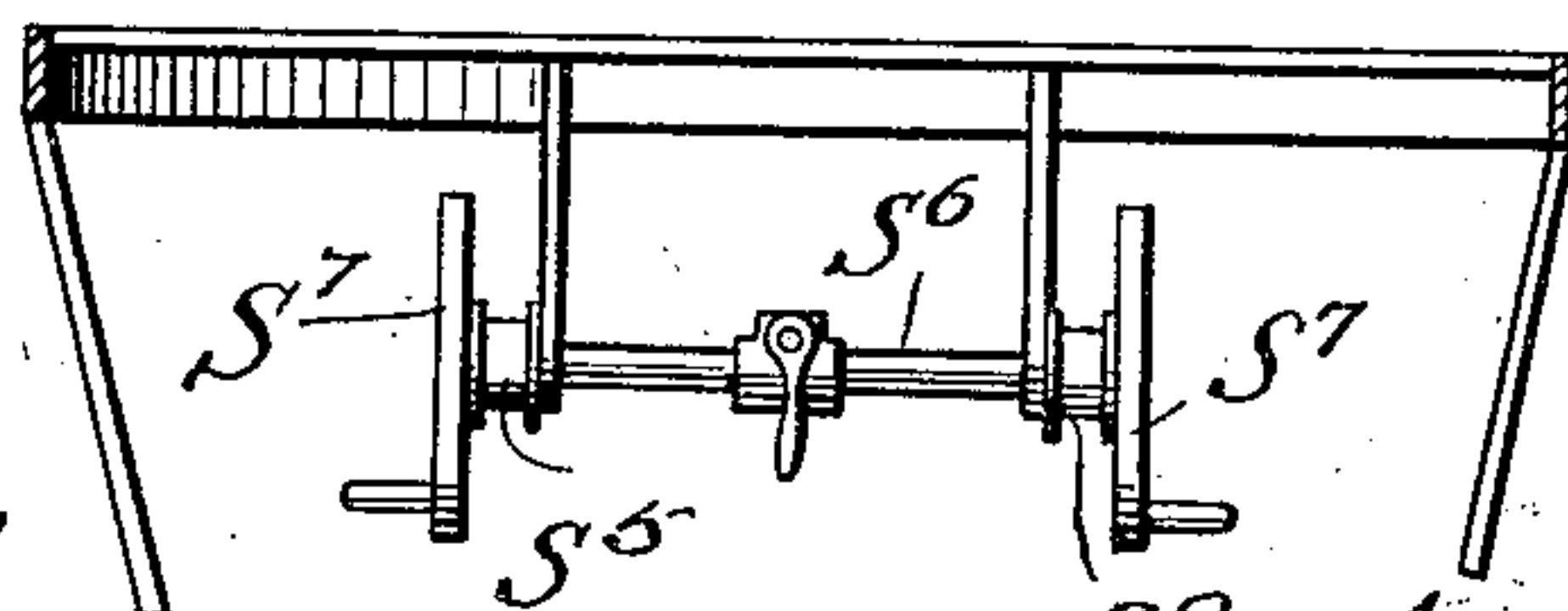


FIG. 3.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

HENRY FLANAGAN, OF FORT WORTH, TEXAS.

AERIAL NAVIGATING APPARATUS.

999,105.

Specification of Letters Patent.

Patented July 25, 1911.

Application filed April 19, 1911. Serial No. 622,046.

*To all whom it may concern:*

Be it known that I, HENRY FLANAGAN, a citizen of the United States, residing at Fort Worth, in the county of Tarrant and State of Texas, have invented new and useful Improvements in Aerial Navigating Apparatus, of which the following is a specification.

This invention relates to new and useful improvements in aerial navigating apparatus and comprises various details of construction and combinations and arrangements of parts which will be hereinafter fully described and then specifically defined in the appended claims.

I illustrate my invention in the accompanying drawings, in which:—

Figure 1 is a vertical sectional view longitudinally through the apparatus. Fig. 2 is a vertical sectional view showing parts in top plan; and Fig. 3 is a detail view in elevation of the controlling shaft.

Reference now being had to the details of the drawings by letter, A designates the frame of the apparatus which is mounted upon suitable wheels A', and mounted within said frame is a tubular shell B, having open ends and extending the length of the frame, and branching from the upper portion of said shell is a similar tubular shell D communicating with the shell B and having its top open. E designates a standard which is mounted vertically within said frame and has a collar E' fastened about its circumference, which collar has radial arms F to the angled ends of which the upper end of the shell D is fastened. Said standard is hollow and is provided with a parachute plane H fastened by means of guy wires K to the circumference of the cylindrical outlined portion N of the frame. Mounted in suitable bearings in the spider arms O, the inner ends of which are fastened to the inner surface of the shell B, is a propeller shaft L to one end of which a propeller L' is fixed to rotate within the flaring or funnel-shaped forward end of the shell, while the opposite end of said shaft carries a sprocket wheel J about which a sprocket chain J' passes and which latter is driven

from a sprocket wheel J<sup>2</sup> upon the shaft J<sup>3</sup> of the engine J<sup>4</sup>.

A shaft Q is journaled at points diametrically opposite within the shell B and has a cross bar Q' fixed to its upper end and a rudder Q<sup>2</sup> is fastened to said bar Q and is adapted to have a lateral swinging movement as the bar Q' is oscillated. Cords or wires Q<sup>3</sup> are fastened one to each end of the bar Q' and pass about the pulleys Q<sup>4</sup>, shown in top plan view in Fig. 2, and each is fastened to a tread member Q<sup>5</sup>, which tread members are pivotally mounted upon lugs Q<sup>6</sup>.

Mounted within a rectangular portion B' of the shell B, the body of which is cylindrical at all other points, is a wind gate S, to the upper free swinging end of which a cord or wire S' is fastened which passes over pulleys S<sup>2</sup> and S<sup>3</sup> within the shell, thence over a pulley S<sup>4</sup>, and winds about a pulley S<sup>5</sup>, shown in Fig. 3, upon the controlling shaft S<sup>6</sup>. Hand wheels S<sup>7</sup> are fastened to each end of said shaft S<sup>6</sup> and a second pulley S<sup>8</sup> is fastened to said shaft and about which a cord or chain S<sup>9</sup> passes, which also passes about a pulley S<sup>10</sup> and is fastened to the movable frame T, which latter comprises two oppositely disposed vertical rods movable through the eyes T' upon the standard E and the lower rectangular end of said frame T has a weight T<sup>2</sup> fastened to the frame by means of a chain T<sup>3</sup>. A suitable seat W, adjustably held in the standard W', is mounted upon the circular platform N and upon which the operator is adapted to sit when controlling the apparatus.

The operation of the apparatus will be as follows: When it is desired to elevate the apparatus, the propeller is set in motion by the engine and a suction formed by the rapid rotary movement of the propeller, causing the air to be forced through the shell B, the gate S being closed or nearly so and in which position it will be disposed at an inclination and cause a draft to be diverted up through the shell D and against the parachute which acts as an aeroplane. When the desired height is attained, the operator, by causing the gate to be thrown down toward a hori-



zontal position, may cause a forward movement to be imparted to the apparatus, the direction of travel being guided by the rudder. At all times a portion of the air entering the shell B passes up through the shell D and exerts a lifting pressure on the aeroplane, but by adjusting the gate to different positions the amount of air flowing through the shell and acting on the aeroplane may be regulated as desired. It will, of course, be understood that the body of the machine is disposed in proper spaced relation to the plane H to prevent the air impelled downward from the plane from exerting a depressing action upon said body before it reacts against the surface of the plane.

When the apparatus is in flight it will be understood that the adjustable weight may be raised or lowered to different positions within its limits of adjustment to act as a balancing medium and to secure a low center of gravity, whereby the equilibrium of the apparatus will be maintained. In the operation of landing the adjustable weight is lowered so that it will contact with and drag upon the ground and operate as an anchor whereby the machine may be brought to a quick stop.

What I claim to be new is:

30 1. An aerial navigating apparatus comprising a frame, a longitudinally disposed open-ended shell mounted thereon, an upright shell projecting from said longitudinally disposed shell at a point between the  
35 ends thereof, said upright shell being open at its upper end and communicating with said longitudinally disposed shell at its lower end, a parachute aeroplane arranged before the upper end of said upright shell, a wind  
40 gate arranged within the longitudinally disposed shell at a point in rear of the point in communication of the upright shell therewith for controlling the amount of air flowing to said upright shell, and means for  
45 adjusting said gate.

2. An aerial navigating apparatus comprising a frame, a longitudinally disposed open-ended shell mounted thereon, an upright shell projecting from said longitudinally disposed shell at a point between the  
50 ends thereof, said upright shell being open at its upper end and communicating with said longitudinally disposed shell at its lower end, a parachute aeroplane arranged  
55 above the upper end of said upright shell, a pivotally mounted swinging gate within the longitudinally disposed shell in rear of the point of communication of the upright shell therewith for controlling the flow of  
60 air therefrom to said upright shell, and controlling means for adjusting said gate.

3. An aerial navigating apparatus comprising a frame, a longitudinally disposed open-ended shell mounted thereon, an open-  
65 ended shell projecting from and communi-

cating with said longitudinally disposed shell, a standard supported by the body and extending through said shells and bracing the upper end of the upright shell, a parachute aeroplane mounted upon the standard  
70 above the upper end of the upright shell, a wind gate arranged within the longitudinally disposed shell in rear of the point of communication of the upright shell therewith for controlling the flow of air to said  
75 upright shell, and means for adjusting said gate.

4. An aerial navigating apparatus comprising a frame, a longitudinally disposed open ended shell mounted thereon, an upright shell projecting from said longitudinally disposed shell and communicating therewith and open at its upper end, a parachute aeroplane arranged above the upper  
80 end of said upright shell, means within the longitudinally disposed shell for controlling the amount of air flowing to the upright shell, a weighted element adjustably mounted below the upright shell, and means for  
85 adjusting the same.

5. An aerial navigating apparatus comprising a frame, a longitudinally disposed open ended shell mounted thereon, an open ended upright shell projecting from said longitudinally disposed shell, a standard  
90 passing through said shells, a parachute aeroplane mounted upon the standard above the upper end of the upright shell, a frame vertically adjustable on the lower end of said standard, a weight carried by said  
100 frame, a wind gate pivotally mounted within the longitudinally disposed shell in rear of the point of communication of the upright shell therewith, means for raising and  
105 lowering the weight carrying frame, and means for tilting the gate.

6. An aerial navigating apparatus comprising a frame, a longitudinally disposed open-ended shell mounted thereon, an open-ended upright shell projecting from and  
110 communicating with said longitudinally disposed shell, a parachute aeroplane arranged above the upper end of said upright shell, a drive shaft arranged within the longitudinally disposed shell, a propeller carried by  
115 said shaft and operating in the forward end of said longitudinally disposed shell, means for driving said shaft, a wing gate arranged within the longitudinally disposed shell at a point in rear of the point of communication of the upright shell therewith, and  
120 means for adjusting said gate.

7. An aerial navigating apparatus comprising a frame, a longitudinally disposed open-ended shell mounted thereon, an open-ended upright shell projecting from and communicating with said longitudinally disposed shell, a standard passing through said shells and extending below the longitudinally  
125 disposed shell and above the upright shell, 130



a parachute aeroplane mounted upon the standard above the upper end of the shell, a frame slidably mounted upon the lower end of said standard, a weight pendent from  
5 said frame, a wind gate arranged within the longitudinally disposed shell in rear of the point of communication of the upright shell therewith, and means for adjusting said slid-

ing frame and opening and closing the wind gate.

10

In testimony whereof I affix my signature in presence of two witnesses.

HENRY FLANAGAN.

Witnesses:

C. C. HINES,

BENNETT S. JONES.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,  
Washington, D. C."