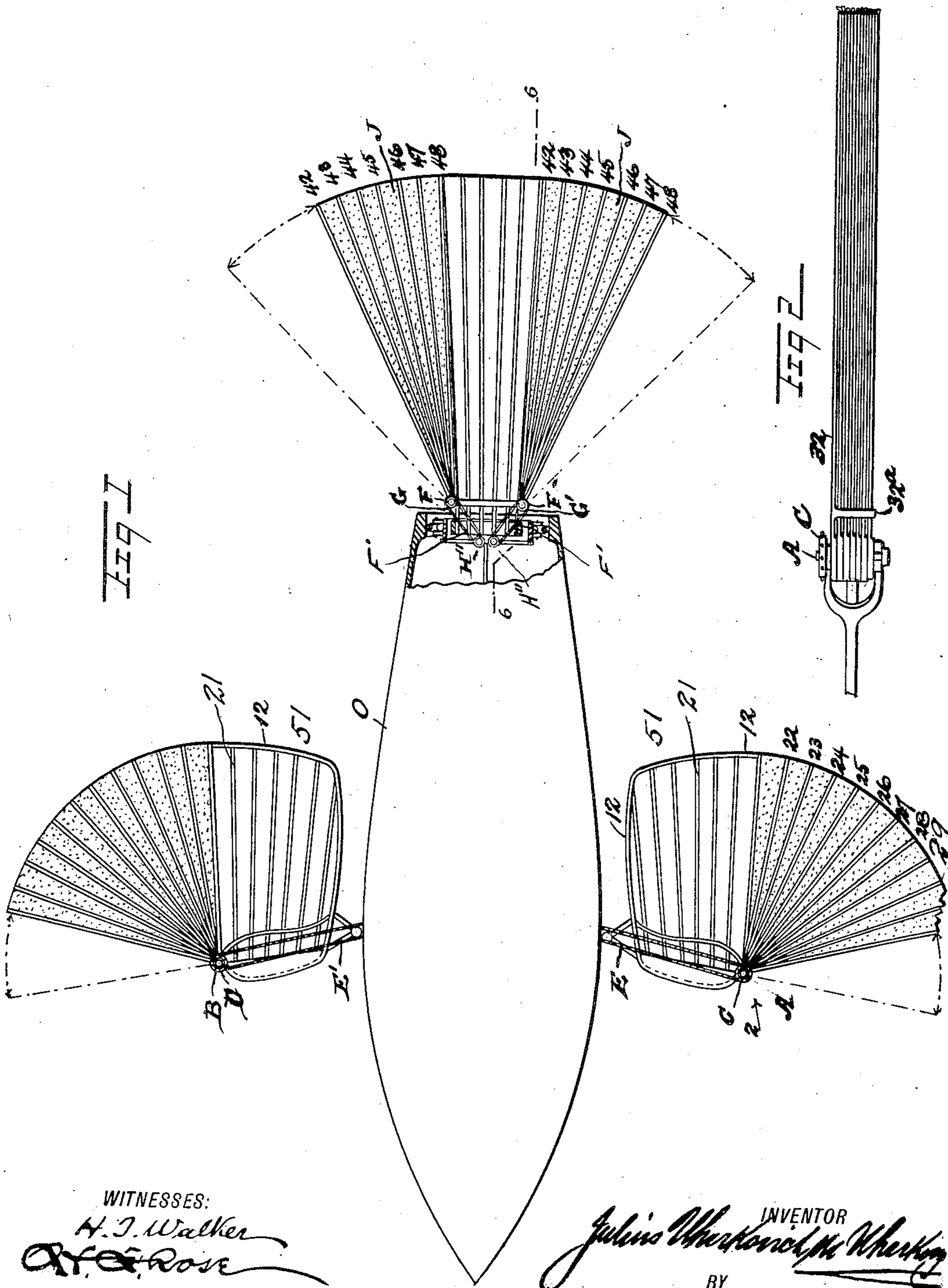


J. U. DE UHERKOCZ.
 WINGED PROPELLING AND GUIDING MECHANISM FOR AIR SHIPS.
 APPLICATION FILED JAN. 2, 1908.

920,792.

Patented May 4, 1909.

3 SHEETS—SHEET 1.



WITNESSES:
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3 SHEETS—SHEET 2.



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Agave

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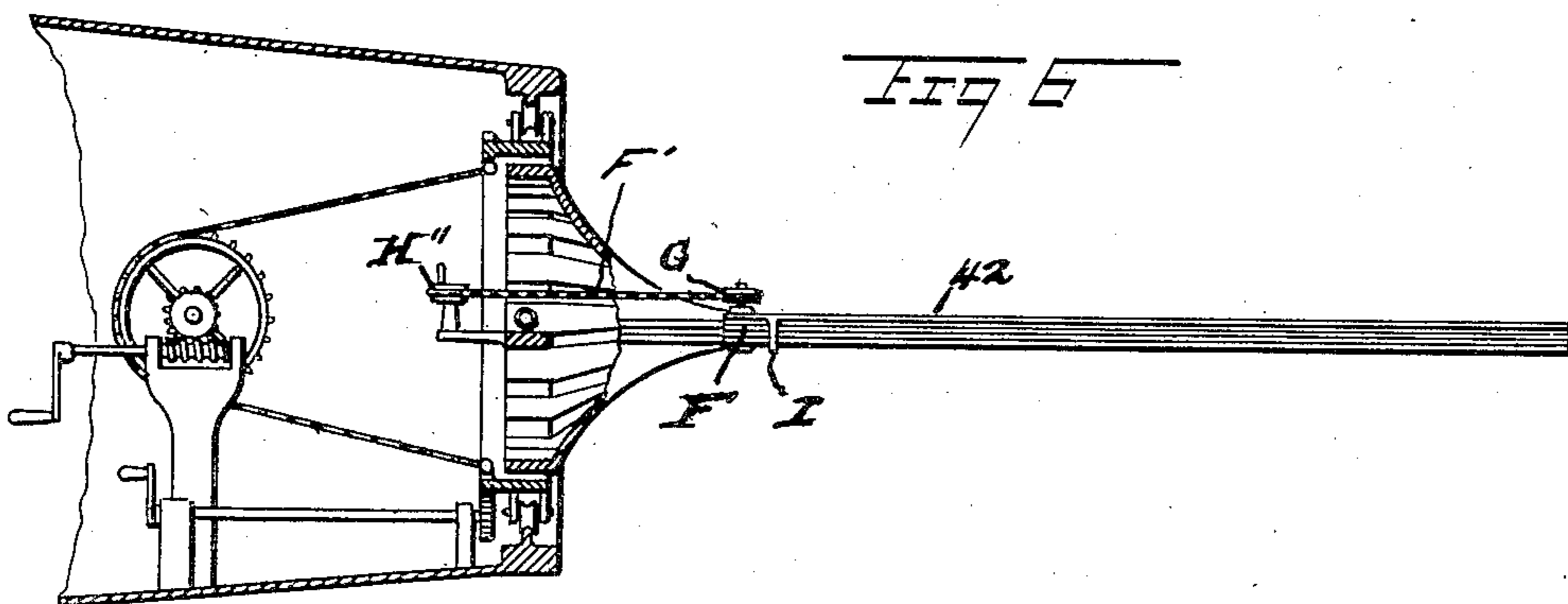
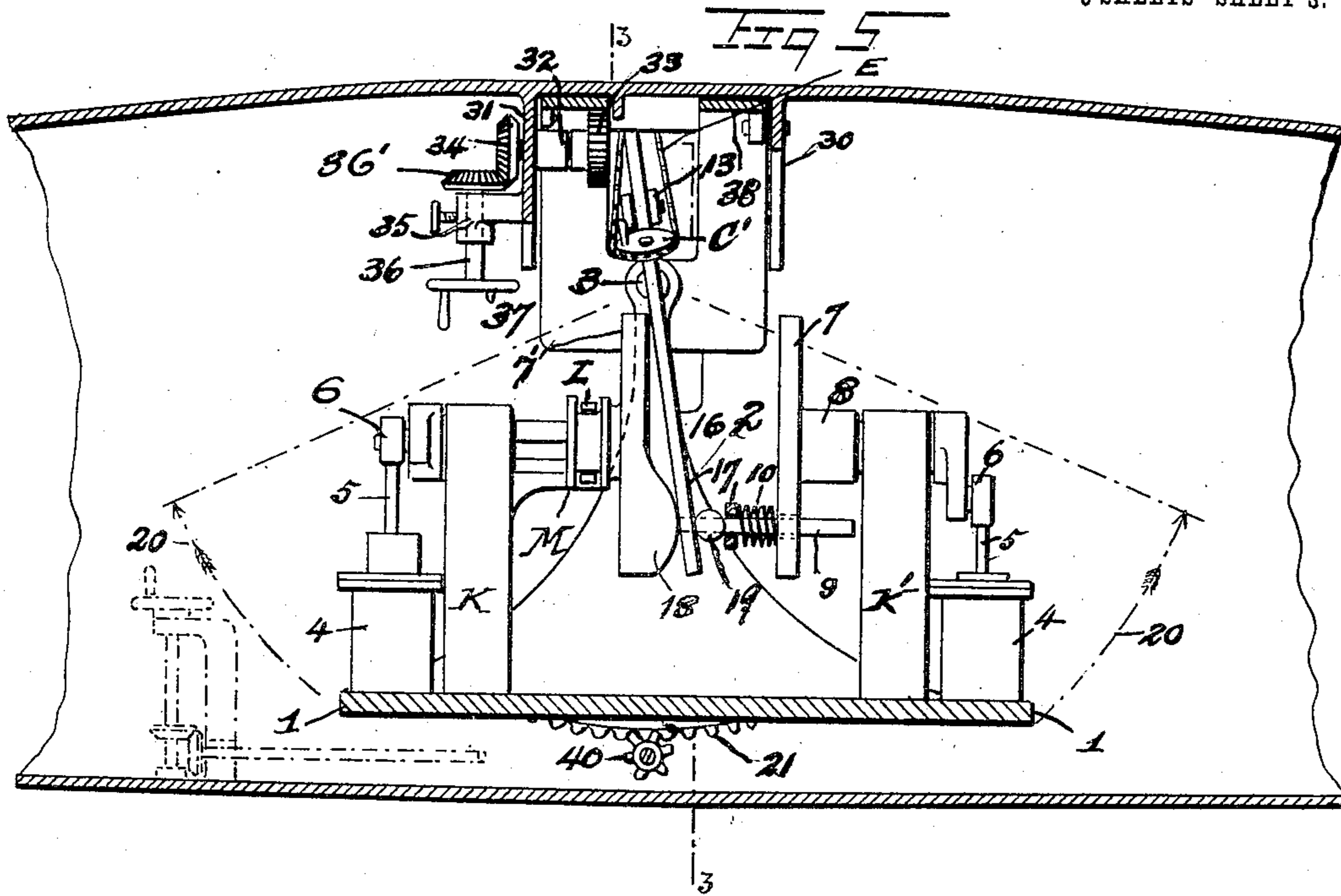
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WITNESSES:
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UNITED STATES PATENT OFFICE.

JULIUS UHERKOVICH DE UHERKOCZ, OF BAYONNE, NEW JERSEY.

WINGED PROPELLING AND GUIDING MECHANISM FOR AIR-SHIPS.

No. 920,792.

Specification of Letters Patent.

Patented May 4, 1909.

Application filed January 2, 1908. Serial No. 408,934.

To all whom it may concern:

Be it known that I, JULIUS UHERKOVICH DE UHERKOCZ, a citizen of the United States, residing at Bayonne city, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Winged Propelling and Guiding Mechanisms for Air-Ships, of which the following is a specification.

My invention relates to improvements in winged propelling mechanism and winged sustaining motive power for flying machines and air ships.

The object of my invention is to provide means for an adjustable winged movement which will sustain air ships in the air, as well as a guiding mechanism for controlling the course of air ships or flying machines in their sustaining powers and movements, which shall in all respects imitate as far as possible the flight of a bird in the movement of its wings and tail. This guiding mechanism is fan-shaped in form and is constructed on lines in imitation of a bird and aids the wings in elevating and sustaining the equilibrium of the ship as well as lowering it or changing its course when in the air.

With these and other objects in view, my invention comprises certain novel constructions, combinations and arrangement of parts as will be hereinafter fully described and claimed.

In the drawings: Figure 1 is a broken plan view showing my invention generally, smaller details being omitted. Fig. 2 is an enlarged elevation of one of the wings taken from the view point 2 of Fig. 1. Fig. 3 is a cross-section of the body of the ship on an enlarged scale taken on line 3, 3 of Fig. 4. Fig. 4 is a sectional plan of a portion of the ship taken on line 4, 4 of Fig. 3. Fig. 5, is a longitudinal section taken on line 5, 5 of Fig. 3, and Fig. 6 is a longitudinal section taken on line 6, 6 of Fig. 1.

In the construction and operation of my invention, I have preferably a framed body portion O represented in outline in Fig. 1, and circular in transverse form as shown in cross-section in Fig. 3. The frame-work has a curved top and bottom on the lines as shown in Fig. 5. The forward end of my machine, which may be termed the prow, is pointed as shown in Fig. 1, and from this prow the body portion is developed in an

elongated shape and conforms generally to the outlines of a cigar.

Within the body O is a curved movable platform 1 (Figs. 3 and 5) from which extend on either side, the arms 2, 2 having pivotal connection by means of the pivots 3, 3, with a segmental frame 38 as shown in Figs. 3 and 5 and which segmental frame has on its inner periphery, a series of cogs, 39 as shown in Fig. 3.

On the movable platform I mount my engines 4, 4, for motive power and the piston rods 5, 5, turn the cranks 6, 6, which turn the disk wheels 7 and 7' revolving on the shafts 8, 8. The wheels 7 and 7' are connected by a crank pin 9 upon which is mounted a coiled spring 10, and the wheels are thus coupled to revolve together. Through the sides of the body portion O extend a pair of lever arms 11, 11, integral with the wing frames 12, 12, as shown in Figs. 3 and 4. These arms or levers of the wing frames are hinged upon the axes 13, 13 as shown in Figs. 3 and 4 and the axes in turn are supported in a ball and socket bearing 14, 14 which ball and socket bearing is supported by the brackets 15, 15 as shown in Figs. 3 and 4.

The arms 11 of the wing frame 12 extend through openings and into the body portion O where they terminate in the curved portion 16, 16, and the diagonal slotted braces 17, 17, as shown in Fig. 3. Through the slots in the braces 17, 17, passes the crank-pin 9, which revolves with the disks 7' and 7. Disk 7' is formed with a cam or undulating surface 18. Thus as the crank pin 9 revolves, turned by the disks 7' and 7, the two slotted arms 17, 17, are not only vibrated vertically, but are moved horizontally by cam 18, the spring 10 constantly bearing down upon the arms and forcing them to respond to the cam or undulating surface 18 of the disk 7'. On crank-shaft 9 and between the arms 17, 17, is mounted a ball 19, which separates and holds apart, by a yielding resistance, the two arms, while at the same time insuring their freedom of vibration. To further add to the free movement of the winged arms and to aid in the change of direction of the pitch of the wings, the movable platform 1, can be swung backward and forward on its pivots 3, 3, as shown in Figs. 3 and 5 and in the direction indicated by the curved lines 20, 20 in Fig. 5. This

swinging movement of the platform 1, is accomplished by means of the cog gearing 21, as shown in Fig. 5. Thus the curve described by the wing arms is under the immediate control of the operator and it is possible to describe many forms of operation.

The wing arms 12, 12, have a series of rigid ribs 21, and at the outer edge are pivoted a series of ribs 22, 23, 24, 25, 26, 27, 28, and 29 journaled on pivots A and B and mounted on these pivots A and B are the sprocket wheels C and D around which wheels the sprocket chains E and E' pass into the body portion and about the sprocket wheels C and D which are supported on the lever arms 11, 11, and are provided with the turn handles H and H' respectively. Thus the operator can by this means, turn the sprocket wheels and open or close the wings at his pleasure and thus adjust the extent of the wing surface. To add to the freedom of movement and multiply the varied positions in which the vibrating wings may be placed, I have mounted upon the upper inner surface of the body O, the downwardly extending supports 30 and 31 in which is supported the shaft 32 as shown in Fig. 5, carrying the cog wheel 33 and bevel wheel 34. The support 31 is formed with a bracket 35 in which is mounted the shaft 36 carrying bevel wheel 36' meshing with the wheel 34. The movement is controlled by the hand wheel 37 on shaft 36 and as wheel 33 meshes with the teeth 39 on frame 38, said frame is turned by means of hand wheel 37.

On the standard K on the platform 1, is mounted a clutch mechanism M. When it is desired to give the wings a simple vertical movement the handle L is moved by the operator so as to bring the undulating or cam surface 18 of the disk wheel 7' clear and out of contact with the arms 11, 11, thereby rendering the undulating surface inoperative, and the lever arms 11, 11, will then be worked in a vertical direction only, by means of the crank-pin, 9, as described.

The steering gear of my device is mounted upon the frame and as it is fully described in my Patent No. 868,039, dated October 15, 1907 the details need not be entered into here.

The novel feature of my device consists in a fan-like structure constructed in the same manner as that already described in the patent referred to in connection with my propelling mechanism in this device, the steering gear consists of a series of ribs pivoted at F, F as shown in Fig. 1 and Fig. 6, and actuated by sprocket wheels G and G' and sprocket chains F' and F' as shown in Figs. 1 and 6, controlled by wheels H'' and H'' as shown in Figs. 1 and 6. Each series of ribs 42—43—44—45—46—47 and 48 as shown in Fig. 6, consists of a number of ribs pivoted one over the other, as shown in Fig. 6. The

upper outer ribs 32 of the wings and 42 of the tail piece have respectively upon each, a guard projection 32^a and I, as shown in Fig. 2 and Fig. 6. As the upper rib 42 is moved inward to contract the frame of the steering gear, it draws together each of the lower ribs and binds them together when closed. Rib 42 is turned outward, and the flexible material J, J as shown attached to this and the other ribs mentioned, is drawn outward by the upper rib and thus draws in turn each succeeding rib with it and thus the frame is spread.

Having thus described my invention what I claim as new and for which I desire Letters Patent is as follows:

1. An air ship comprising a shell, a frame movably supported in the top of the shell, a platform hung from said frame, means for shifting the frame transversely in the shell, wings pivotally supported by the frame, motive power on the platform, and connections between the motive power and wings.

2. In combination with the body of a vessel, of a supporting frame within and depending from said body, pivotal supports carried by said frame, means for shifting said frame, a platform pivotally hung from the frame, motive power on the platform, means for shifting the platform, wings mounted on the pivotal supports, means for folding and spreading the wings, a rudder and means for adjusting the same, and connections between the motive power and the wings.

3. An airship comprising a shell, a platform adjustably mounted in said shell, motive power carried thereby, wings adjustably carried on the shell, connection between the motive power and the wings, a rudder comprising extensible wings and means for adjusting the wings of the rudder.

4. The combination in an air ship, of a shell, a movable frame and a platform suspended therefrom, a rack bar on the frame, a cog wheel engaging said rack bar and means for rotating said cog wheel to shift said frame transversely of the shell, wings supported on said frame and means for operating said wings.

5. In an air ship, the combination of a shell, a movable frame and a platform suspended therefrom, means for shifting said frame transversely of the shell, elongated cogs formed on said platform, a cog wheel engaging said cogs and means for rotating said cog wheel, wings supported on the frame and means for operating said wings.

6. In an air ship, the combination of a shell, a movable frame and a platform suspended therefrom, a rack bar on the frame, a cog wheel engaging therewith and means for rotating said wheel to shift said frame transversely, a rack portion on the platform, a cog wheel engaging said rack portion and means for rotating said cog wheel to move

the platform longitudinally; wings supported on the frame, and means for operating said wings.

5 7. The combination in an air ship of a pair of wing frames pivotally supported in a movable frame, and having slotted lever arms and a crank pin passed through said slotted arms, a pair of rotary disks connected by said pin and means for rotating

said disks, and a cam-face on one of the disks for imparting a swinging movement to said lever arms.

In testimony whereof I have affixed my signature, in presence of two witnesses.

JULIUS UHERKOVICH DE UHERKOCZ.

Witnesses:

H. T. WALKER,

H. F. ROSE.