

No. 769,721.

PATENTED SEPT. 13, 1904.

G. W. THOMPSON.
FLYING MACHINE.

APPLICATION FILED JULY 9, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1

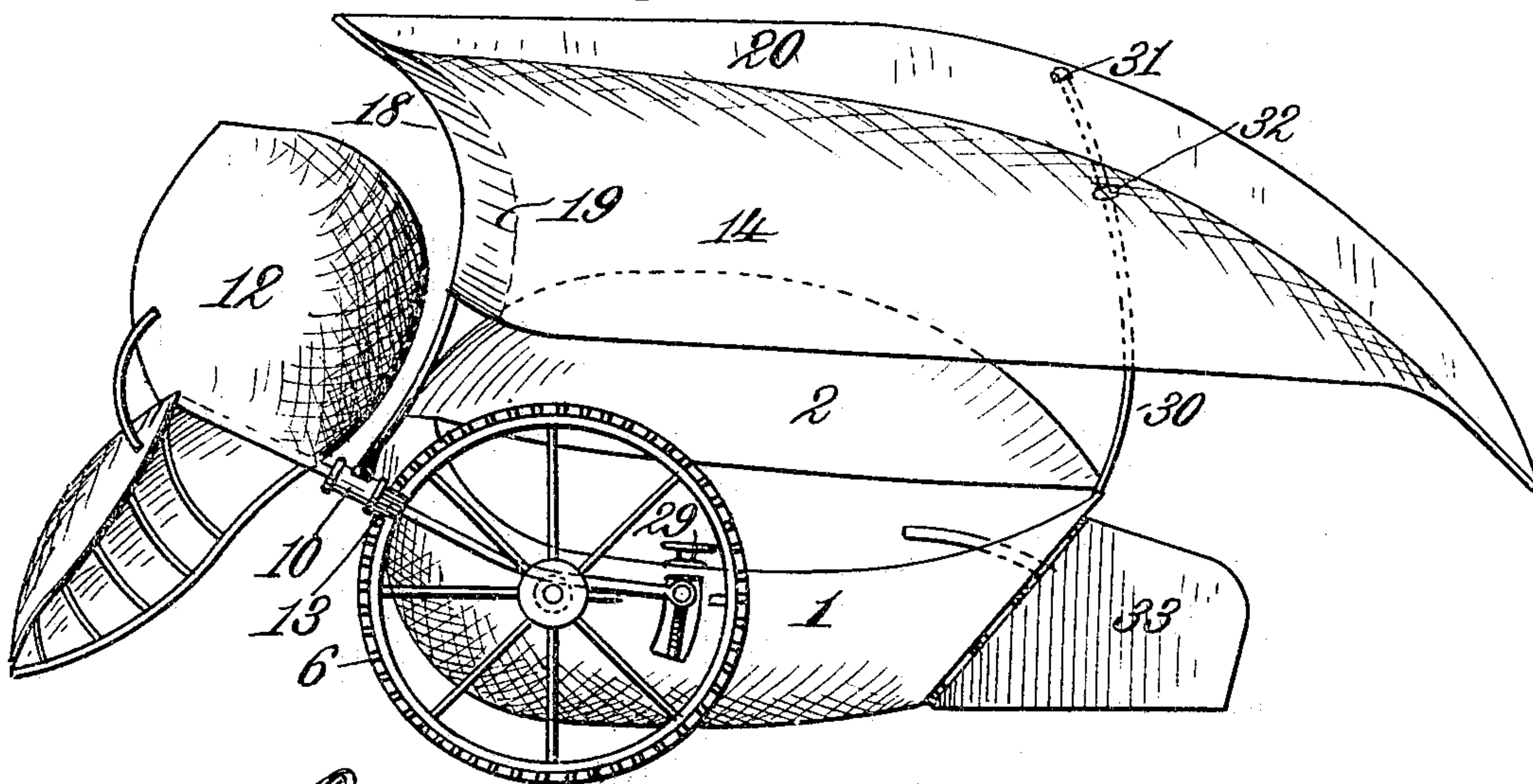
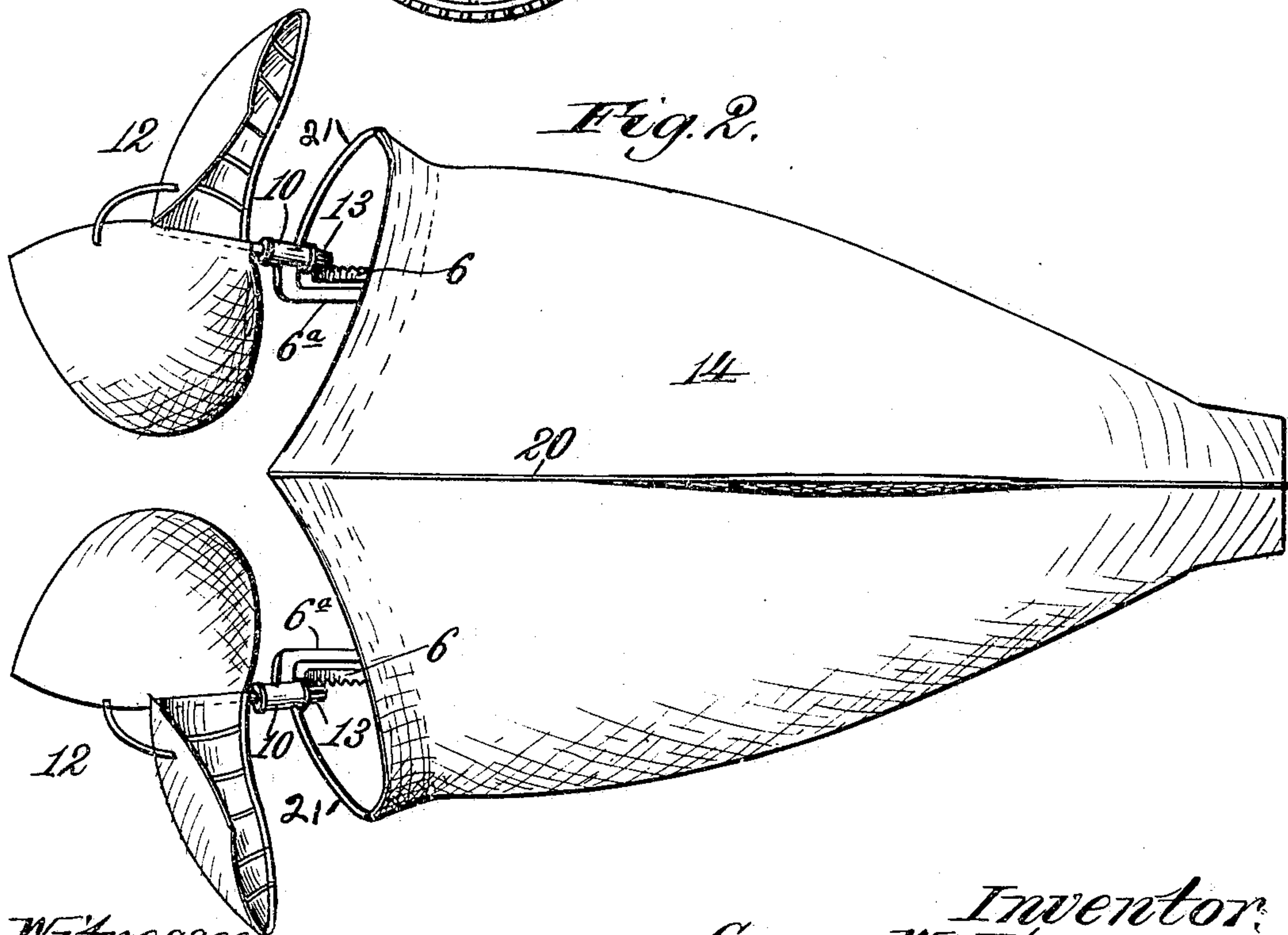


Fig. 2.



Witnesses.
Robert Everett.
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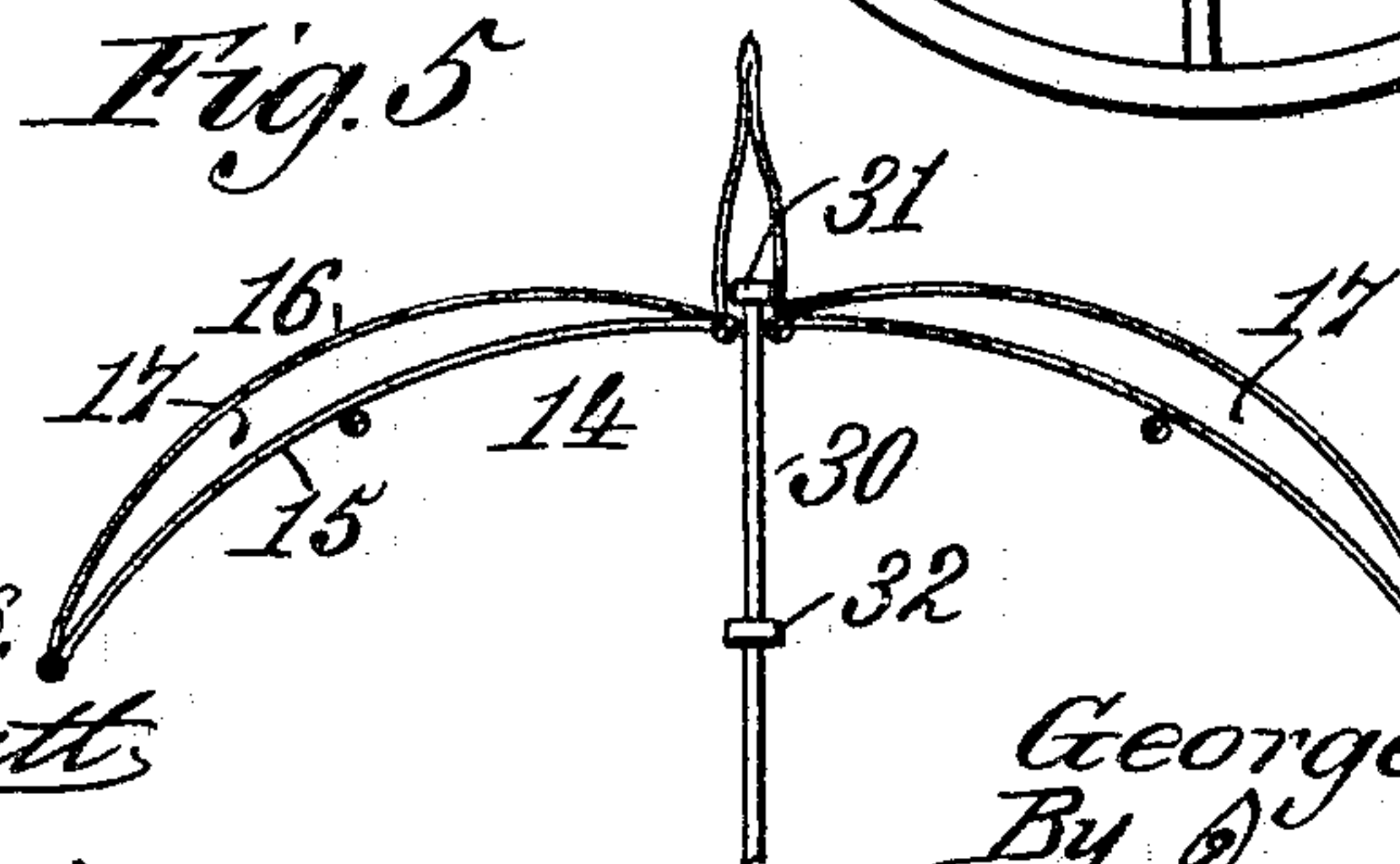
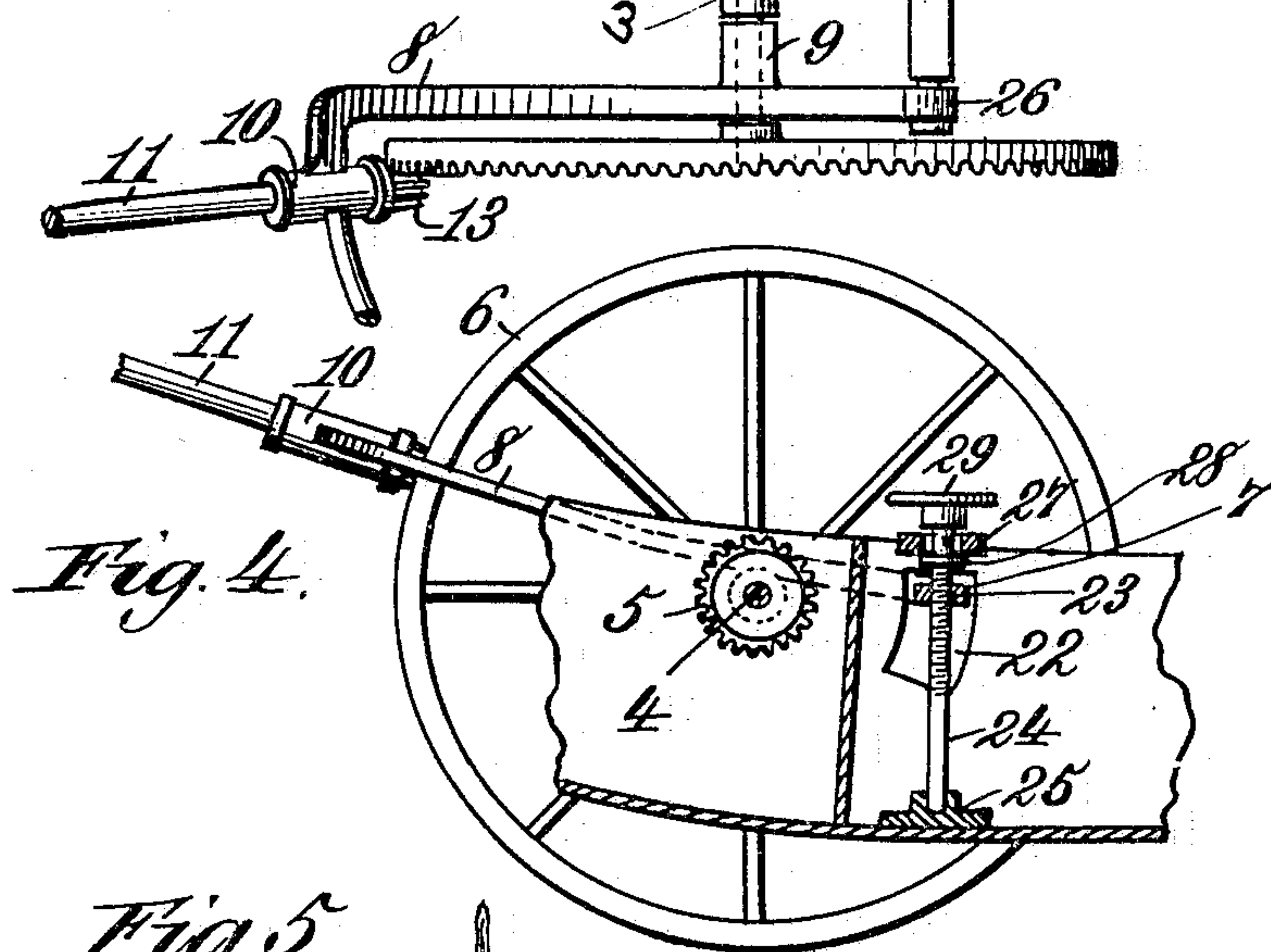
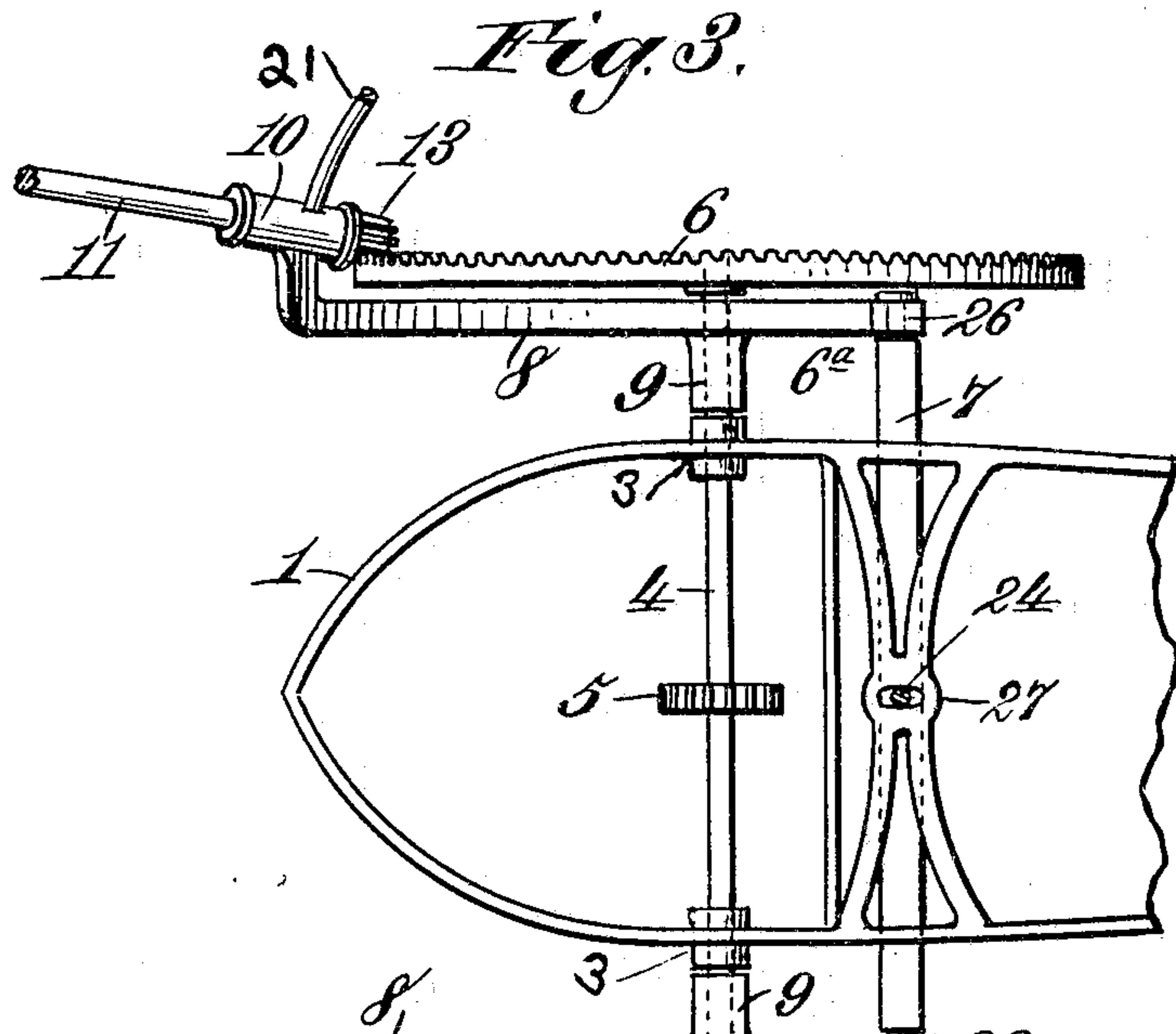
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2 SHEETS—SHEET 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

GEORGE W. THOMPSON, OF WOODVILLE, INDIAN TERRITORY.

FLYING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 769,721, dated September 13, 1904.

Application filed July 9, 1903. Serial No. 164,896. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. THOMPSON, a citizen of the United States, residing at Woodville, Indian Territory, have invented
5 new and useful Improvements in Flying-Machines, of which the following is a specification.

My invention relates to improvements in the art of aerial navigation, and has for its
10 object to provide an air-ship or flying-machine in which a series of propellers are located at the front of the machine and at such an angle to the horizontal that as said propellers are rotated their blades will beat downward upon
15 the air and have a tendency to cause the machine to rise, to provide in connection with said propellers an adjustable hood, which is so arranged in relation to the propellers that the air will be forced by said propellers back-
20 ward beneath the hood, and thereby increase the tendency of the machine to rise and to float in the air.

Detail objects of the invention relate to the construction, arrangement, and operation of
25 parts, as hereinafter described, and particularly pointed out in the claims.

I have illustrated my invention in the accompanying drawings.

Figure 1 is a view in side elevation of an air-
30 ship constructed according to my invention. Fig. 2 is a top plan view of the same. Fig. 3 is a top plan view of a car-body, the top or cover thereof being removed. Fig. 4 is an enlarged sectional detail view illustrating the
35 mechanism for raising the hood, and Fig. 5 is a transverse sectional view of the hood.

Referring now to the drawings, 1 indicates the car, which will be provided in any suitable manner with a cover or top 2. Suitably jour-
40 naled in the bearings 3 in the forward part of the car is a driving-shaft 4, which is provided with a gear-wheel 5, by means of which the shaft may be rotated from any suitable source of power, as a gas-engine. The par-
45 ticular manner of driving the shaft, however, forms no part of my invention, and therefore no illustration thereof is made. It may be stated that the forward part of the car will constitute the engine-room, which will be
50 divided from the rear part of the car, which

latter will be suitably constructed for the purpose of carrying passengers.

On either end of the shaft 4 are provided large gear-wheels 6. Pivotally mounted on the shaft 4 is a frame comprising a longitudi-
55 nal beam 7, at each end of which are provided forwardly-extending arms 8. The arms 8 are provided with sleeves 9, which are loosely mounted on the shaft 4 adjacent to the gear-
60 wheels 6, by means of which sleeves the said frame is pivotally mounted upon said shaft. On the outer end of each arm 8 is a sleeve-bearing 10, each of which is adapted to loosely receive the stub-shaft 11 of a propeller 12. Each of the stub-shafts 11 carries a spur-gear
65 13, which is enmeshed with the adjacent large gear 6.

14 indicates a hood which, as shown by Fig. 2, has an outline the shape of a shield. Said hood is concavo-convex in cross-section and
70 is preferably provided with two walls 15 16, providing a chamber 17, whereby the hood may be inflated with gas or other volatile medium. The walls 15 16 of the hood converge at the edges of the hood, however, so
75 as to present a sharp edge to the hood at all points. The forward edge portion of the hood is preferably cut away on a circular line from the center to each edge, as indicated at
80 18, to provide a space for the movements of the propellers, and this forward edge portion of the hood is preferably upwardly inclined relative to the remaining body of the hood, as indicated at 19. The hood as a whole is
85 or may be constructed in the manner of an umbrella when the same is raised—that is to say, it will comprise suitable frame-wires over which will be stretched silk, canvas, or the like. Extending along the median line of the hood on the upper side is a thin up-
90 wardly-projecting fin or rib 20, which is to assist in causing the machine to travel in a given path. In other words, the fin or rib 20 answers the same purpose as the centerboard of a sailing vessel and will tend to prevent
95 the machine from drifting sidewise through the air. The forward frame-wires 21 of the hood have their outer ends secured to the sleeve-bearings 10. The hood 14 is thus connected to and forms a part of the frame formed
100

by the longitudinal beam 7 and the arms 8. The beam 7 extends through slots 22, formed in the sides of the car 1, and is provided with a screw-threaded bearing or aperture 23, through which extends a screw-threaded rod 24, having engagement at its lower end in a bearing 25 on the floor of the car 1.

The ends of the cross-beam 7 are pivotally mounted in the inner ends of the arms 8, as indicated at 26. The upper end of the screw-threaded rod 24 works loosely in a bearing 27 and is provided with a collar 28, engaging the under side of the bearing 27, and said rod is further provided at its upper end with a hand-wheel 29, by means of which said screw-threaded rod 24 may be rotated, and the cross-beam 7 will thereby be raised or lowered, the frame 6^a as a whole rocking by means of the sleeves 9 on the shaft 4, so that by this movement the forward end of the hood may be raised or lowered and the hood as a whole thus inclined more or less to the horizontal, whereby the machine may be caused to rise or descend, due to the angle at which said hood strikes against the air.

Extending upward from the rear end of the car is an arm 30, which projects through the hood and is provided on its outer end with a button 31 and intermediate its ends with a collar 32, whereby to limit the movement of the hood in either direction.

On the rear of the car I provide a rudder 33, operative in any preferred manner, by means of which the machine as a whole may be guided to one side or the other.

Each of the propellers 12 consists, as shown, of two blades concavo-convex in shape and spirally arranged or disposed with their working faces or concaved sides toward the front edge of the hood 14. In revolving the edges of the propeller-blades pass in close proximity to the edges of the cut-away portions 18 of the hood, and the air is driven backward beneath the hood and up against the under side thereof. The arms 8 of the frame 6^a are upwardly inclined, and this inclination of the arms causes the propellers to assume such a position that in revolving they beat downward upon the air, and thus cause the air-ship to rise.

In order to adjust the inclination of the hood 14, it is only necessary to turn the hand-wheel 29 in one direction or the other, which will cause the frame 6^a to swing on the shaft 4, and thereby incline the hood as a whole to a more or less inclined position or to a practically horizontal position. The inclined portion 19 of the hood assists the same in riding up on the air, so to speak.

It will be seen that an air-ship constructed according to my invention is extremely simple in construction and possesses the great advantage of being very light, so that the power necessary for driving the propellers

may be derived from a very small engine, such as a gas-engine.

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

1. In an air-ship in combination with a car, a hood adjustably mounted above the same, a series of propellers disposed in front of the hood entirely below the upper edge portion thereof, said propellers being normally inclined relative to the hood and movable therewith, and means carried by the car for driving said propellers.

2. In an air-ship, in combination with a car, a hood adjustably mounted above the same and having a flaring forward edge, a rudder carried by the car, a series of propellers disposed in front of the hood entirely below the plane of the upper edge portion thereof, said propellers being normally inclined relative to the hood and movable therewith, and means carried by the car for driving said propellers.

3. In an air-ship, in combination with a car, an inflated hood mounted above the same and being concavo-convex in cross-section, a series of propellers disposed in front of said hood entirely below the upper edge portion thereof, said propellers being normally inclined relative to the hood and movable therewith, and means carried by the car for driving said propellers.

4. In an air-ship, in combination with a car, a hood adjustably mounted above the same and being concavo-convex in cross-section and provided with circular cut-away portions in its forward edge, a series of propellers disposed in front of said hood entirely below the upper edge portion thereof and adapted to work in said cut-away portions, said propellers being normally inclined relative to the hood and movable therewith, and means carried by the car for driving said propellers.

5. In an air-ship, in combination with a car, a driving-shaft mounted in the same and projecting from opposite sides thereof, gear-wheels mounted on each end of said shaft, a frame pivotally mounted on said shaft, propellers mounted in said frame, and provided with spur-gears in mesh with said gear-wheels, a hood mounted on said frame and located above the car, and means carried by the car for adjusting the inclination of said frame whereby to vary the position of the hood relative to the car.

6. In an air-ship, in combination with a car, a driving-shaft mounted therein and projecting from each side thereof, a gear-wheel mounted on each end of said shaft, a frame comprising a cross-beam adjustably mounted in said car and provided at each end with arms, sleeves carried by said arms and loosely mounted on said shaft, sleeve-bearings carried by the outer ends of said arms, a series of propellers, each of which is provided with a stub-shaft mount-

ed in one of said sleeve-bearings, a spur-gear
mounted on each stub-shaft and in mesh with
one of said gear-wheels, a hood carried by said
frame and means on the car for raising and
5 lowering said cross-beam, whereby to vary the
inclination of said hood relative to the car.

In testimony whereof I have hereunto set

my hand in presence of two subscribing wit-
nesses.

GEORGE W. THOMPSON.

Witnesses:

JAMES L. NORRIS,

BRUCE S. ELLIOTT.