

J. L. GARSED.

APPARATUS FOR OPERATING PLANES OR WINGS AND RUDDERS OF AERIAL MACHINES.

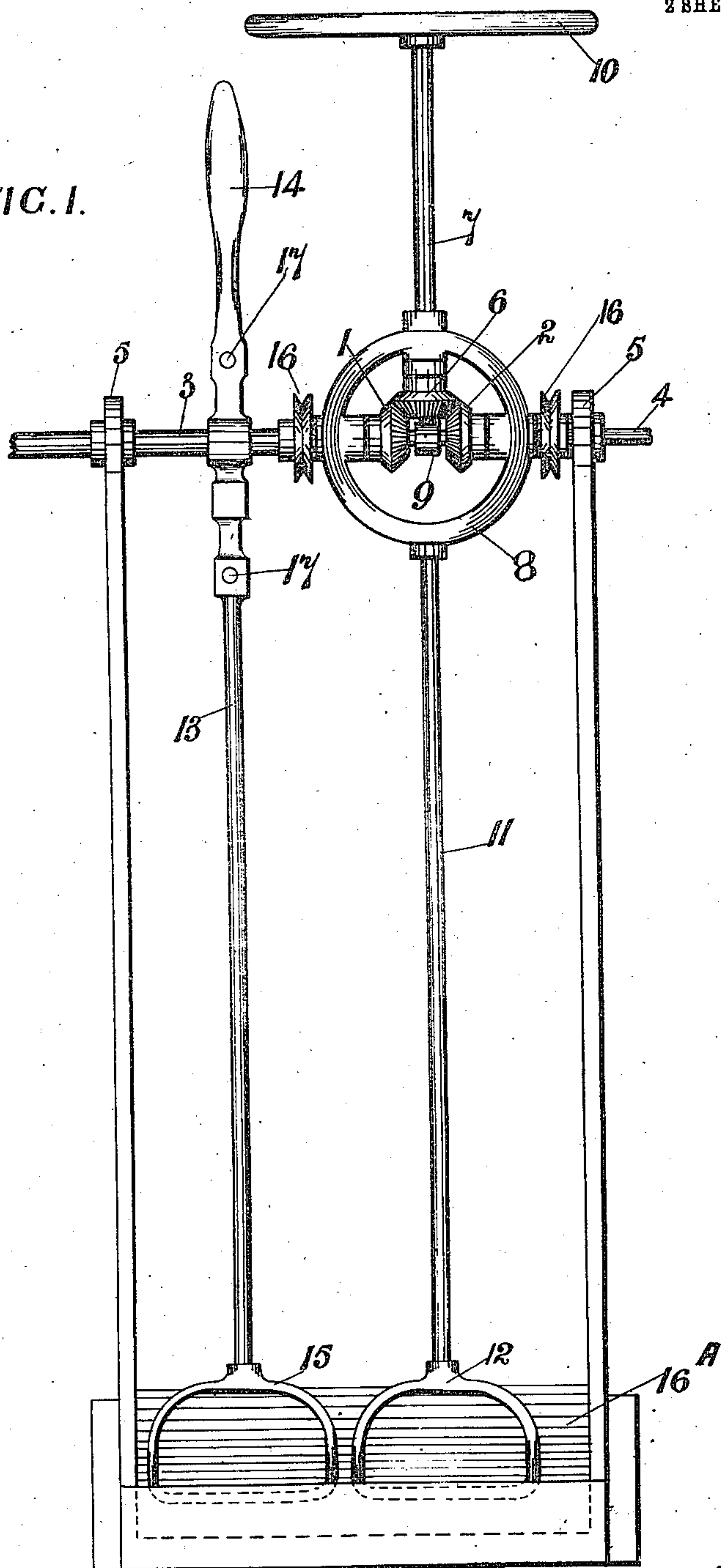
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965,289.

Patented July 26, 1910.

2 SHEETS—SHEET 1.

FIG. 1.



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2 SHEETS—SHEET 2.

FIG. 2.

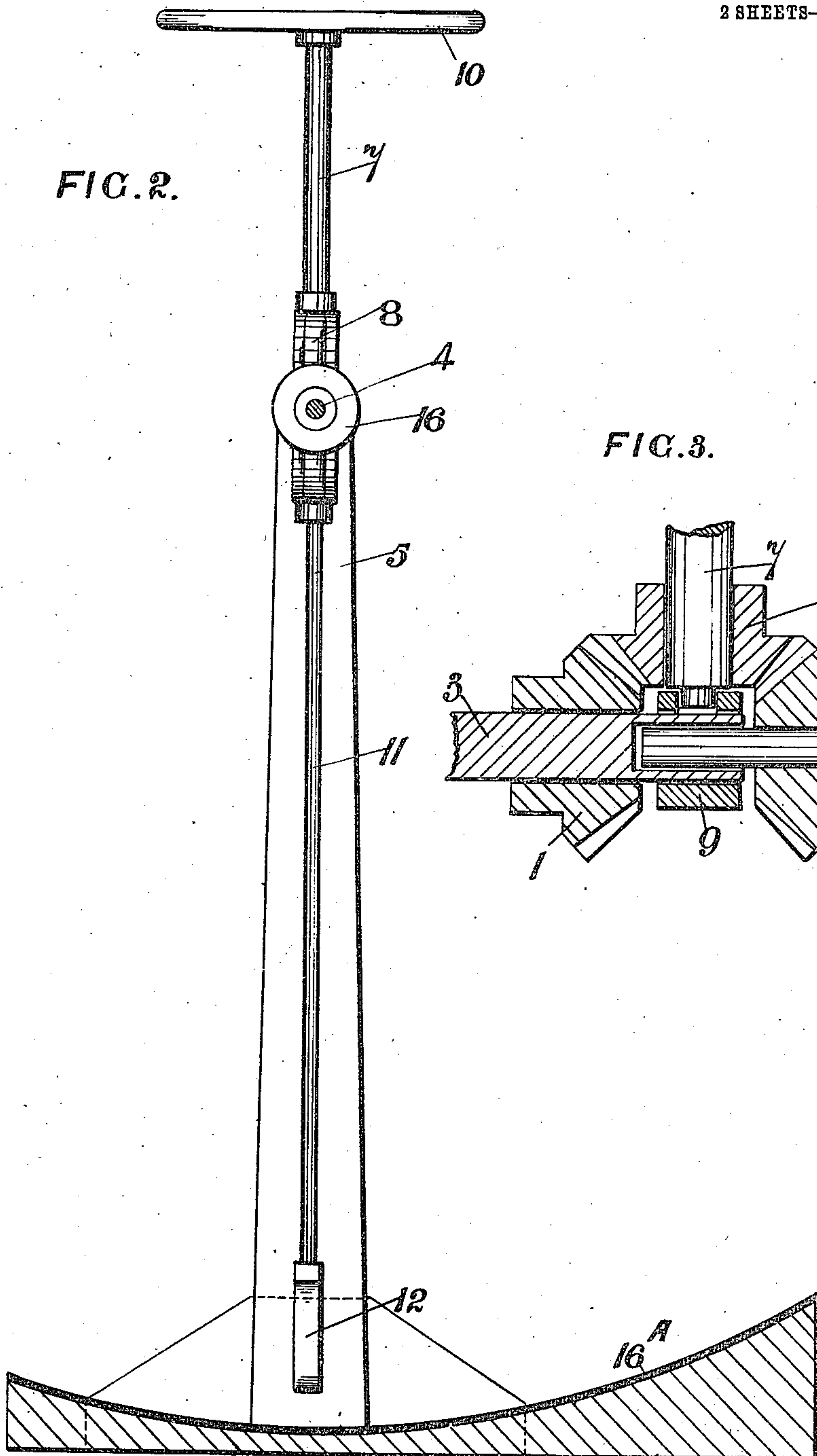
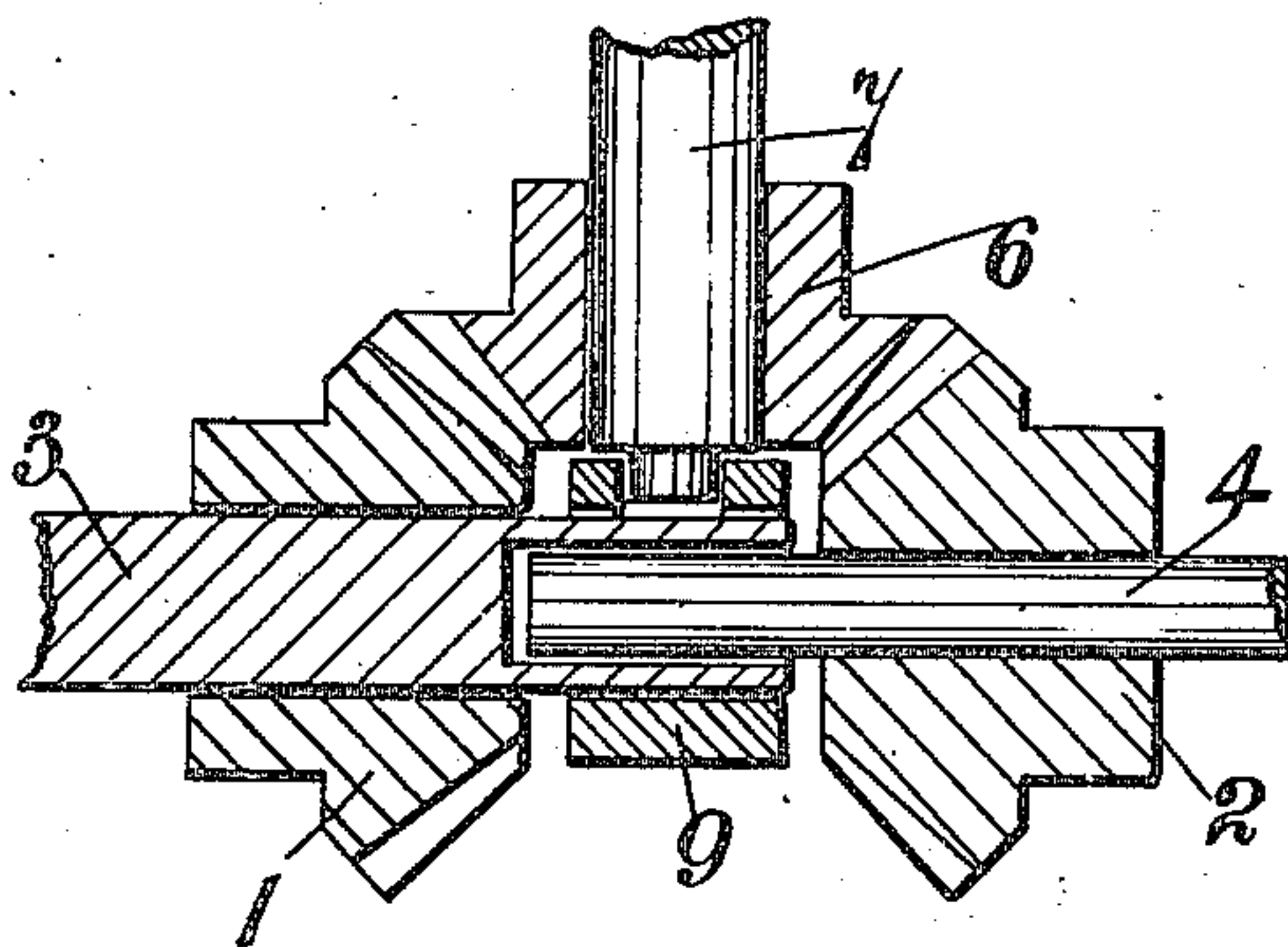


FIG. 3.



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UNITED STATES PATENT OFFICE.

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APPARATUS FOR OPERATING PLANES OR WINGS AND RUDDERS OF AERIAL MACHINES.

965,289.

Specification of Letters Patent. Patented July 26, 1910.

Application filed November 11, 1909. Serial No. 527,385.

To all whom it may concern:

Be it known that I, JOHN LAW GARSEED, residing at North House, Elland, in the county of York, England, have invented certain new and useful Improvements in Apparatus for Operating Planes or Wings and Rudders of Aerial Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in apparatus or mechanism for operating and controlling or setting the steering or elevating planes and rudders or warping or controlling the wings or planes generally in aerial machines either separately and independently or simultaneously the object being to enable the aeronaut to control and steer the machine and counteract any adverse tendencies arising from sudden gusts of wind or air currents which are liable to cause the machine to oscillate in various directions and so to endanger its equilibrium or course.

The hereinafter described simple mechanism or apparatus places the control of the machine at the will of the aeronaut who can actuate the various parts connected with the apparatus either by hand or foot power or partly by both and the aeronaut's hands are more at liberty than heretofore.

Referring to the drawings which form a part of this specification:—Figure 1 is a front elevation of the apparatus. Fig. 2 is a sectional end elevation of Fig. 1. Fig. 3 is a sectional view of part of Fig. 1.

The improved mechanism comprises two bevel wheels 1—2 the wheel 1 being fixed on the shaft 3 and the wheel 2 fixed on the shaft 4. The shafts 3—4 are arranged end to end and the end of one shaft 4 is received in the hollow end of the other shaft 3 (see Fig. 3) to insure rigidity and compactness the two shafts 3—4 affording mutual support. The shafts 3—4 are carried in brackets or pedestals 5—5 or in bearings arranged in any convenient part of the framing of the machine and the shafts 3—4 extend to any desired part of the machine but they are shown broken off in the drawings. A miter wheel 6 meshing with the two wheels 1—2 is fixed on the shaft 7 which is loosely carried in the frame 8 with its lower end or foot resting in and further

supported by the step formed in the boss 9 loose on the shaft 3. The upper end of the shaft 7 is furnished with a hand wheel 10 by means of which the miter wheel 6 can be turned in either direction as desired.

The frame 8 is loosely mounted on or carried by the shafts 3—4 and to the lower part of the frame 8 is attached the rod 11 to the lower end of which is fixed the stirrup or pedal 12. There is also loosely mounted on or carried by one or other of the shafts 3—4 a rod 13 the upper end of which is furnished with a handle 14 and the lower end is fitted with a pedal or stirrup similar to that on the rod 11. The two stirrups 12—15 are just clear of the roughened or rubber covered surface or platform 16^a the contour of which corresponds with the arc described by the stirrups 12—15 when the rods 11—13 are rocked with a pendulous motion on their shaft. Each of the shafts 3—4 is preferably provided with a pulley 16 or lever or crank and the rod 13 is furnished with hooks or eyelets 17. The inner or tread portion of the pedals or stirrups is roughened or rubber covered to prevent the feet slipping.

The aeronaut sits adjacent to the mechanism or apparatus with his heels upon the platform 16^a and his toes in the stirrups 12—15 respectively and he is thus able to manipulate the mechanism in the following manner—By moving the stirrup 12 with his foot he can rock the frame 8 in either direction and the frame 8 carries with it the miter wheel 6 and the latter bars or carries the wheels 1—2 with it and these wheels being fixed on the shafts 3—4 the latter are rotated in either direction as desired but both in the same direction. In like manner the frame 8 can be rocked by the hand wheel 10 and when moved or set to the required position held by the foot when the hand wheel 10 is released. By turning the hand wheel 10 in either direction the wheels 1—2 are caused to rotate and the shafts 3—4 with them but in this case they rotate in opposite directions. In a like manner the rod 13 can be rocked in either direction either by the hand or foot of the aeronaut. As the stirrups 12—15 move over the curved surface or platform 16^a the aeronaut can without difficulty hold either or both of them in any desired position the roughened or rubber covered surface of the platform 16^a facilitating this.

The mechanism or apparatus can be connected with the planes rudders or wings in various ways say for example—The elevating planes or front and rear horizontal rudders or either of them can be connected by wires or cords with the eyes or hooks 17 in the rod 13 or they may be connected with the frame 8 or with the pulleys 16 or levers or cranks on the shafts 3—4. The lateral planes may be mounted upon or connected with the outer portions of the shafts 3—4 so that they can be tilted or inclined in the same direction and angle or in different directions and angles at one and the same time and these movements can be effected independently or simultaneously at the will of the aeronaut and by the hands or by the joint action of the hands and feet.

Having now described my invention what I claim as new and desire to secure by Letters Patent is:—

1. The combination, with a stationary frame, and two shafts arranged end to end and journaled therein; of a rocking frame mounted on the said shafts, a rod provided with a foot-piece and secured to the said rocking frame, a shaft journaled in the said rocking frame and provided with means for revolving it, and a miter wheel secured on the last said shaft and gearing into the said wheels.

2. The combination, with a stationary frame, and two shafts arranged end to end and journaled therein; of a rocking frame mounted on the said shafts, a rod provided with a foot-piece and secured to the said rocking frame, beveled toothed wheels secured to the said shafts, a miter wheel carried by the said rocking frame and gearing into the said wheels, and a curved guide for the heel of the operator arranged under the said foot-piece.

3. The combination, with a stationary frame, and two shafts arranged end to end and journaled therein; of a rocking frame mounted on the said shafts, a rod provided with a foot-piece and secured to the said rocking frame, beveled toothed wheels secured to the said shafts, a miter wheel carried by the said rocking frame and gearing into the said wheels, and a second rod pivoted on one of the said shafts and provided with a foot-piece at one end arranged adjacent to the aforesaid foot-piece and having a handle at its other end.

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

JOHN LAW GARSED.

Witnesses:

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LOUIS WARDLE.