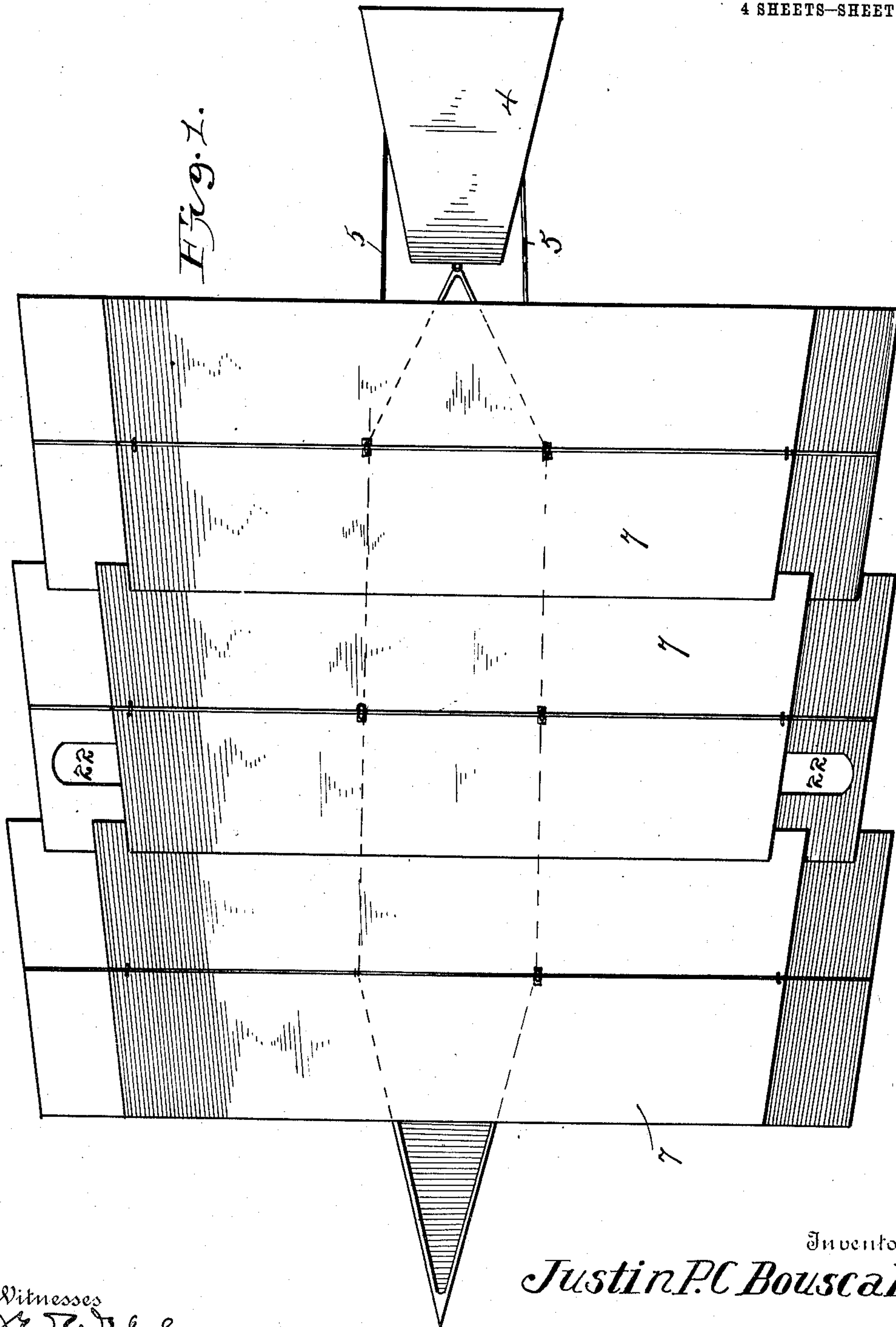


J. P. C. BOUSCAL.
FLOATING FLYING BOAT.
APPLICATION FILED AUG. 16, 1909.

999,149.

Patented July 25, 1911.

4 SHEETS—SHEET 1.



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4 SHEETS—SHEET 2.

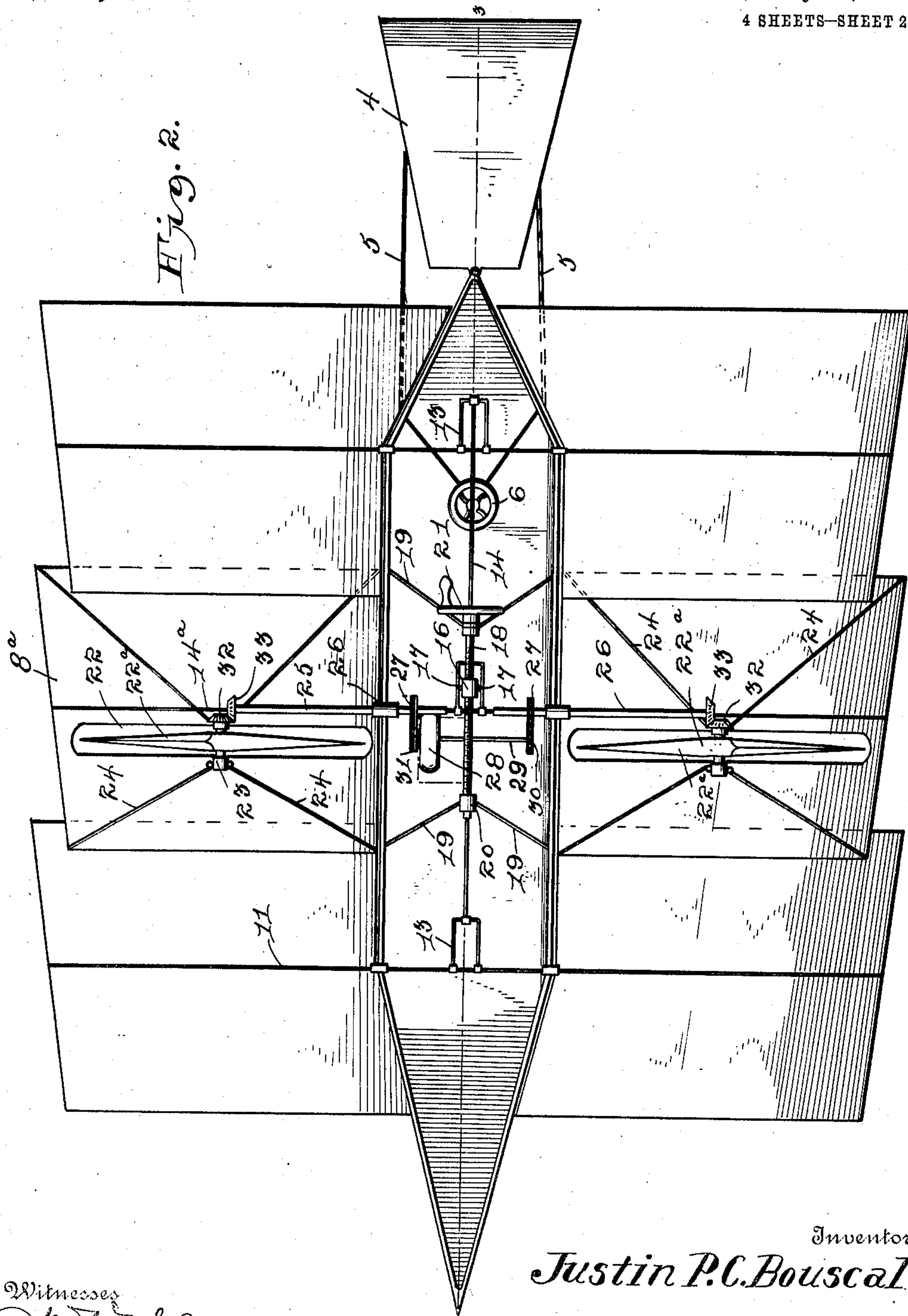


Fig. 2.

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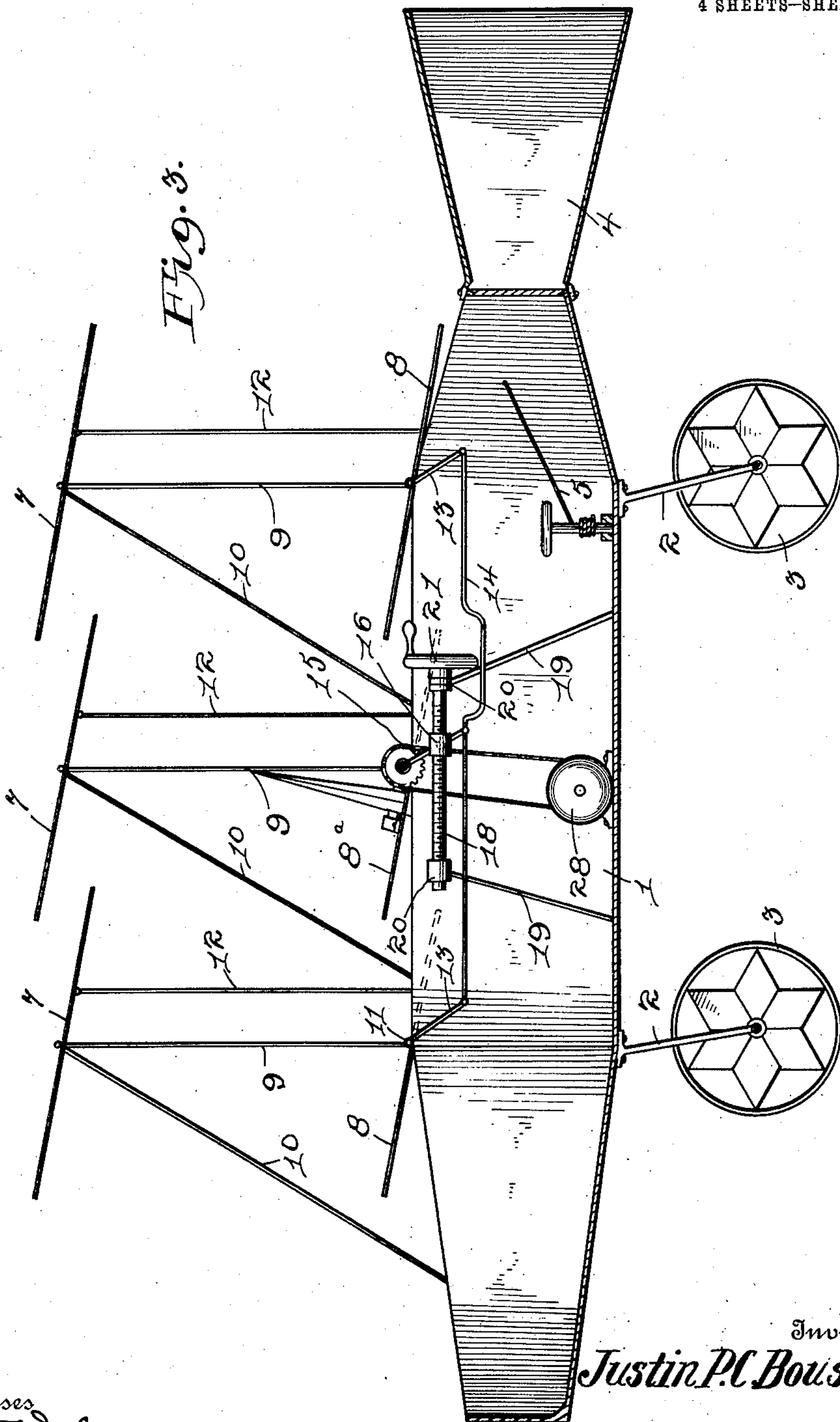
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4 SHEETS—SHEET 3.



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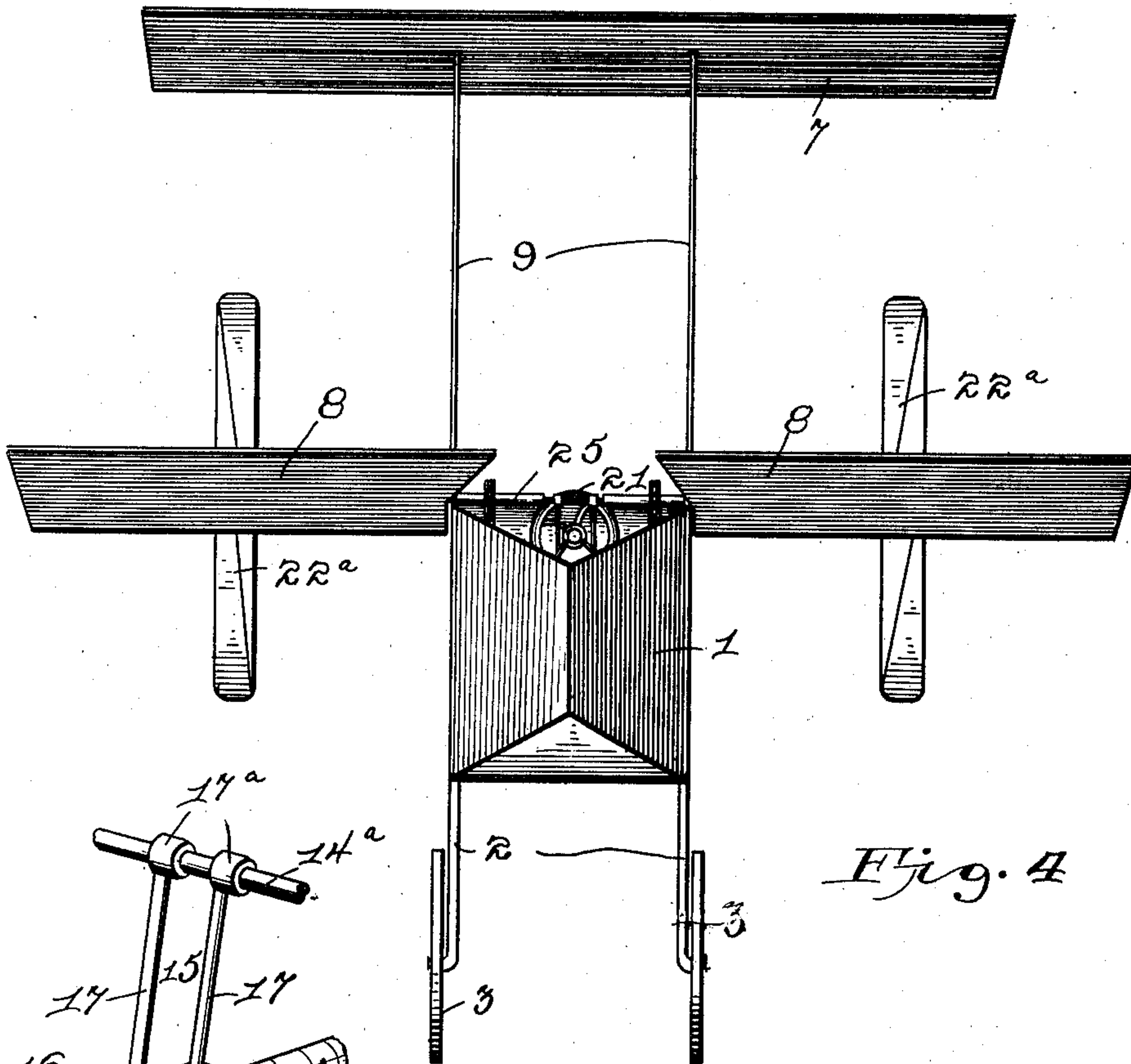


Fig. 4

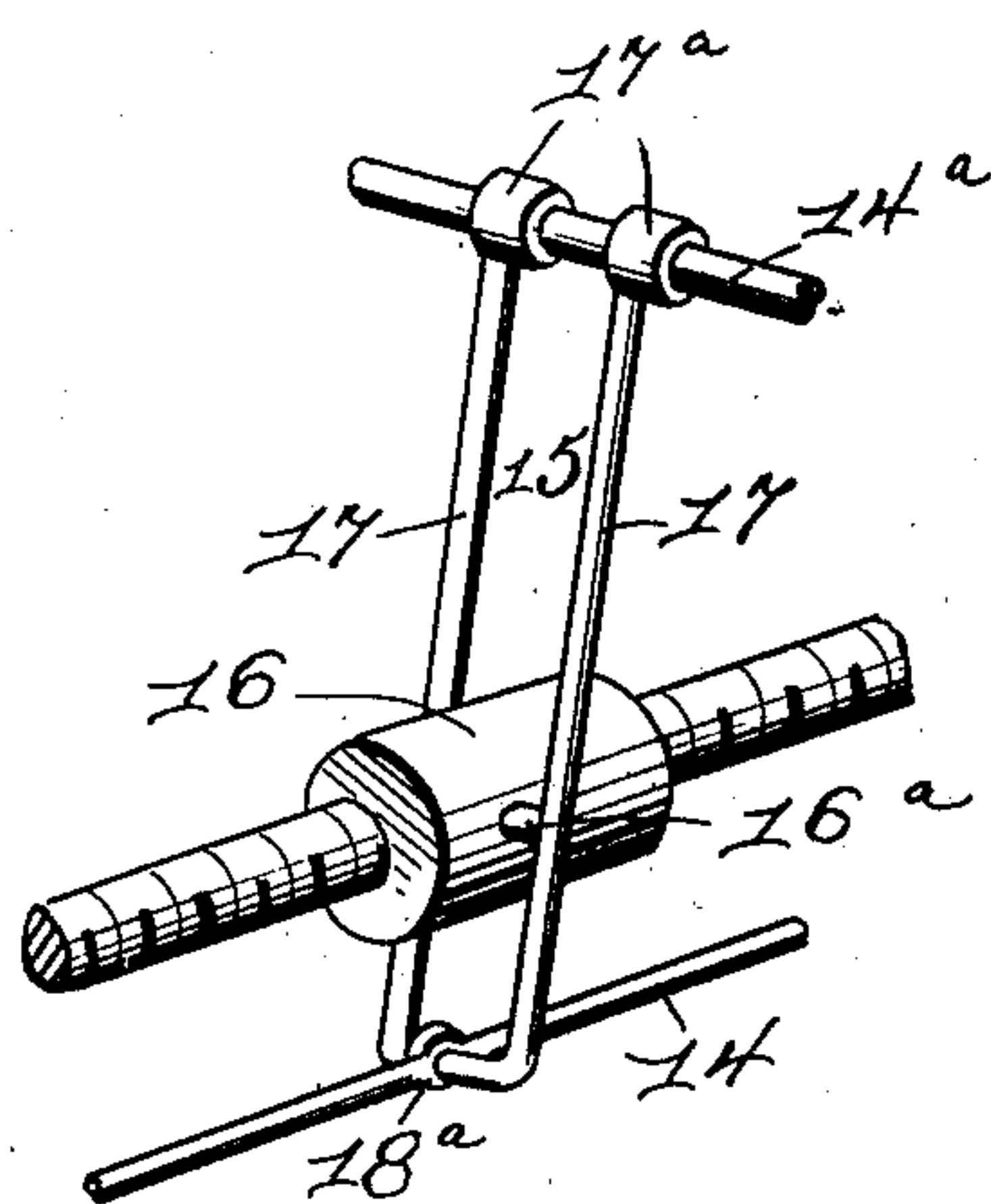


Fig. 5

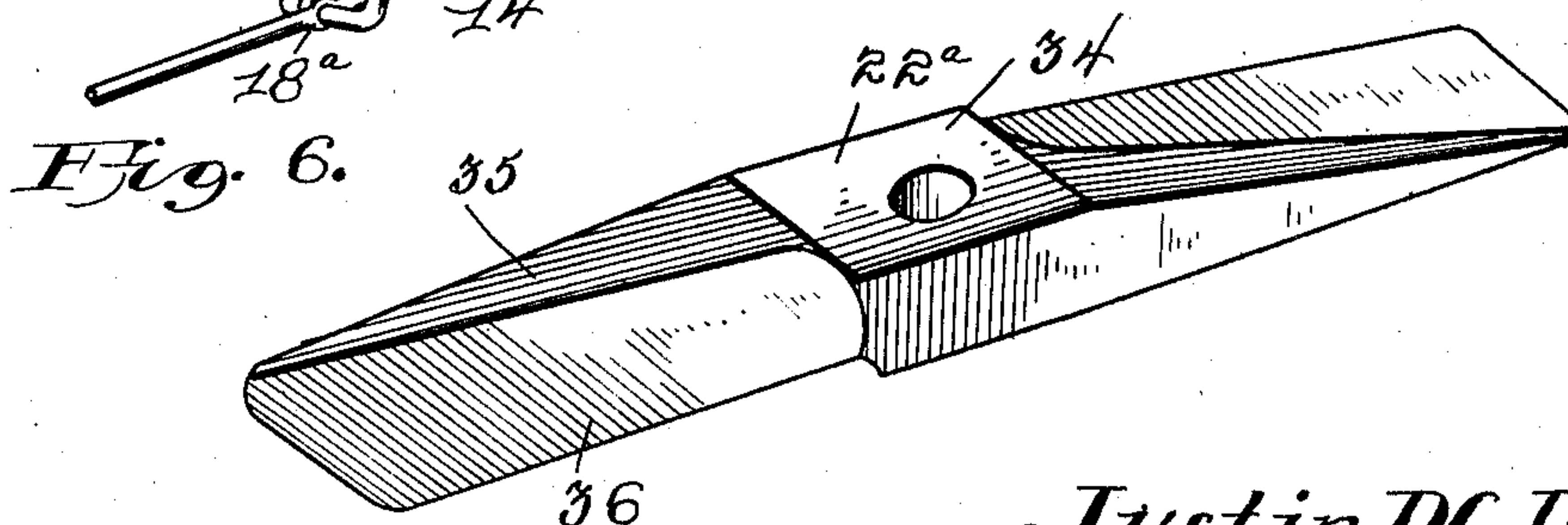


Fig. 6

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UNITED STATES PATENT OFFICE

JUSTIN P. C. BOUSCAL, OF SAN FRANCISCO, CALIFORNIA.

FLOATING FLYING-BOAT.

999,149.

Specification of Letters Patent.

Patented July 25, 1911.

Application filed August 16, 1909. Serial No. 513,154.

To all whom it may concern:

Be it known that I, JUSTIN P. C. BOUSCAL, a citizen of France, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Floating Flying-Boats, of which the following is a specification, reference being had therein to the accompanying drawing.

10 This invention relates to a flying machine, and has for its object the production of a machine provided with a plurality of planes suitably mounted upon the body portion of the machine, so as to be capable of change in
15 angular position.

Another object of this invention is the production of a flying machine, which can safely alight on either land or water.

20 With these and other objects in view this invention consists of certain novel constructions, combinations and arrangements of parts as will be hereinafter fully described and claimed.

25 In the drawings: Figure 1 is a top plan view of the machine; Fig. 2 is a view of the machine showing the top layer of planes removed therefrom; Fig. 3 is a longitudinal section of the machine taken on line 3—3 of Fig. 2; Fig. 4 is a front view of the machine; Fig. 5 is a detail perspective of one
30 of the propeller blades; Fig. 6 is a detail perspective of the device for adjusting the angle of the planes, which also tilts the propellers.

35 Referring to the drawings by numerals, 1 designates the body to the bottom of which are secured brackets or wheel-supporting members 2. The wheel-supporting members 2 carry, at their lower ends, wheels 3 for
40 supporting the body when the machine is brought to rest upon the ground. The body portion 1 is, preferably, in the form of a hull, so as to allow the machine to safely alight upon the water, as well as land. To
45 the rear end of the body or hull 1 is pivotally connected a rudder 4. The rudder 4 is controlled by means of cables 5, which cables are connected to a steering wheel 6, carried within the hull or body 1.

50 Supported upon the body or hull 1 are a plurality of planes, which are arranged in layers positioned one above the other and comprising upper planes 7 and lower planes 8. The planes are supported upon the body
55 by means of vertically-extending rods 9, which pass through the upper planes and

over the top thereof, thereby firmly holding the planes 7 upon the supporting rods 9. The rods 9 are firmly braced by means of diverging brace members 10, which are se- 60 cured, at their lower ends to the body portion, and at their upper ends to the upper end of the supporting rod 9. Each of the planes are braced and supported in a like fashion. The lower planes 8 are supported 65 directly upon a transversely-extending shaft 11, which is journaled upon the upper portion of the body or hull 1. The upper planes 7 and the lower planes 8 are connected by means of a link connection 12, which facili- 70 tates the operation of the upper planes 7 simultaneously with the operation of the lower planes 8.

Substantially U-shaped members 13 are connected to the transversely-extending rods 75 11, which rods support the lower planes 8 and the U-shaped members 13 are connected at their lower ends to a longitudinally-extending member 14. The central plane 8^a is supported upon a transversely-extending 80 supporting member 14^a in a similar manner to the end planes, and a substantially U-shaped member 15 is fixedly secured to said shaft, and is secured at its lower end intermediate the ends of the longitudinally- 85 extending member 14. The central, substantially U-shaped member 15 comprises side members 17, which are secured to the transversely-extending brace member 14^a, supporting the intermediate plane 8, as at 90 17^a. The substantially U-shaped member 15 passes through an enlarged portion 18^a formed intermediate the ends of the longitudinally-extending member 14, and is thereby secured to said longitudinally-ex- 95 tending member for readily actuating the same. The substantially U-shaped member is provided intermediate its ends with extending portions 16^a formed upon the inner side of each of the side members 17 of the 100 substantially U-shaped member 15. The extending portions 16^a engage the collar portion 16, and thereby fixedly secure the same to the substantially U-shaped portion 15.

A longitudinally-extending threaded mem- 105 ber or screw 18 is supported within the body 1 by means of braces 19, which carry at their upper ends journals 20. The respective ends of the threaded member or screw 18 are journaled in the journals 20 of the 110 supporting brackets 19. The screw 18 carries, at one end, an operating wheel 21. The

collar 16 is also threaded and is adapted to work upon the threads of the screw 18. Therefore, it will be obvious that when the wheel 21 is rotated the same will rotate the screw, thereby causing the collar 16 to move forward or backward upon the threads, which will swing the U-shaped members 13 and 15, thereby regulating the angle or pitch of the planes 7 and 8.

The central planes 8^a are provided with slots 22, and upon the upper face of the planes 8^a are placed journals 23, and said planes are braced by means of braces 24, which extend over the corners of the planes 8^a to the journals 23, which are positioned near the center of the planes. A propeller blade 22^a is rotatably mounted upon said journals, and works in the slot 22 formed in the blade 8^a. Upon the transversely-extending brace member 14^a are loosely mounted shafts 25, which are journaled within the journals 26, formed upon the upper portion of the body 1. Upon the shafts 25 are positioned sprocket wheels 27. Within the hull 1 is positioned a motor 28 of any desired type, and is provided with a shaft 29, which carries, at each end a wheel 30 and a sprocket chain 31 passes from said sprocket wheels 30 and 27 and imparts rotary movement to the shafts 25. The propeller wheels 22^a are provided with beveled gears 32, which mesh with gears 33 formed upon the ends of the shafts 25, thereby imparting rotary movement through the medium of said gears to the propeller blades 22^a by means of the motor 28.

The propeller blades 22^a comprise a thickened body portion 34, which terminate into blade portions 35 being beveled upon one side as at 36.

From the foregoing description, it will be readily seen that by means of the present invention the propeller blades will be readily changed to any desired angle at the same time when the angle of the planes is changed.

It will be obvious that by having the upper and lower planes arranged in accordance with the present description and illustration, and the planes overlapping each other that the ship will be made more buoyant in view of the fact that more surface will be presented to be acted upon by the air. When it is desired to ascend, the propellers and blades are adjusted at the desired angle by means of the adjusting screw member 18 and the motor is set into operation, thereby causing the propeller blades to operate, and the ship will immediately rise to any desired height, and when the desired height is reached, the planes 7 and 8 can be adjusted to any position desired, so as to have the ship remain in the desired altitude.

What I claim is:

1. In a flying machine of the class de-

scribed the combination with a body, of a rudder carried thereby, a plurality of planes adjustably supported upon said body, some of said planes provided with slots, propellers journaled to rotate in the slots transversely of the planes, driving means co-operating with said propellers and adapted to actuate the same, said propellers adapted to be adjusted with said planes, and common means carried by said body to swing said planes for adjusting the angle thereof and of said propellers.

2. In a flying boat of the class described the combination with a hull, of a plurality of layers of movable planes supported above said hull, link rods connecting said planes for allowing said planes to be simultaneously operated in pairs, an operating rod co-operating with said pairs of planes in said hull, a threaded member and a sleeve traveling upon said threaded member and connected to said operating rod for swinging said planes when said threaded member is operated, propelling means carried by certain of said planes and extending through the same, and driving means carried by said body.

3. In a flying machine of the class described the combination with a hull, wheels carried by said hull, of a plurality of movable planes carried by said body, said plane arranged in series one above the other, link rods connecting said series of planes in pairs, a screw member supported in said body, a collar positioned upon said screw member and adapted to travel thereon, a longitudinally-extending operating rod connecting said pairs of planes, substantially U-shaped members connected to said rod and said planes, one of said U-shaped members being connected to said collar, said longitudinally-extending rod adapted to be shifted when said collar travels upon said screw threaded member for operating and changing the angle of the planes.

4. In a flying machine of the class described the combination with a body, of adjustable planes, transversely-extending supporting rods supported by said body and supporting said planes upon said body, a substantially U-shaped member fixedly secured to each of said rods, a longitudinally-extending operating rod pivotally secured to the lower ends of said U-shaped members, lugs formed upon one of said members, a collar supported by said lugs, a screw extending through said collar to move the same for causing said substantially U-shaped members to swing backward or forward, whereby the angle of all the planes will be adjusted, and propelling means carried by certain of said planes and extending transversely through the same.

5. A flying machine comprising a body portion, upper and lower adjustable planes

for said body portion, the central ones of said lower planes provided with slots, propellers journaled within said slots and passing through the same, and means for changing the angle of said planes.

6. A flying machine of the character described comprising a body portion, a plurality of upper adjustable planes, a plurality of lower adjustable planes including a pair of centrally disposed planes each having a slot therein extending transversely of the machine, rods connecting said upper planes to said lower planes, pivoted rods secured to said lower planes, propellers journaled to rotate through said slots and each provided

with a bevel gear, sleeves surrounding the pivoted rod connecting said lower central planes, bevel gears upon the outer ends of said sleeves and meshing with the gears of said propellers, means for rotating said sleeves to actuate said propellers and means connected with said pivoted rods to change the angle of said lower and upper planes.

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

JUSTIN P. C. BOUSCAL.

Witnesses:

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E. G. BROJEREUN.