

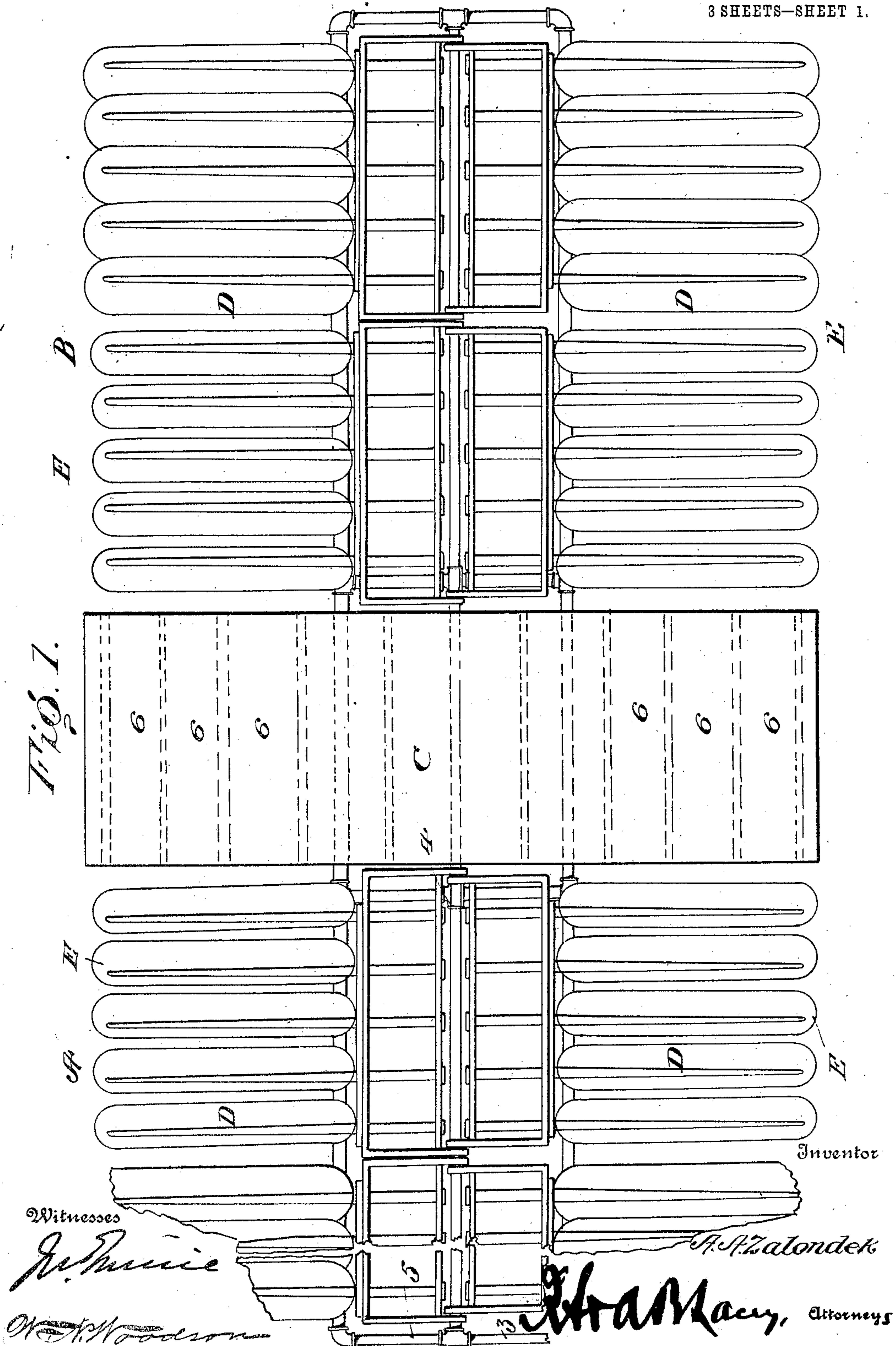
A. A. ZALONDEK.  
FLYING MACHINE.  
APPLICATION FILED JAN. 7, 1909.

929,362.

Patented July 27, 1909.

3 SHEETS—SHEET 1.

Fig. 1.



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FIG. 2.

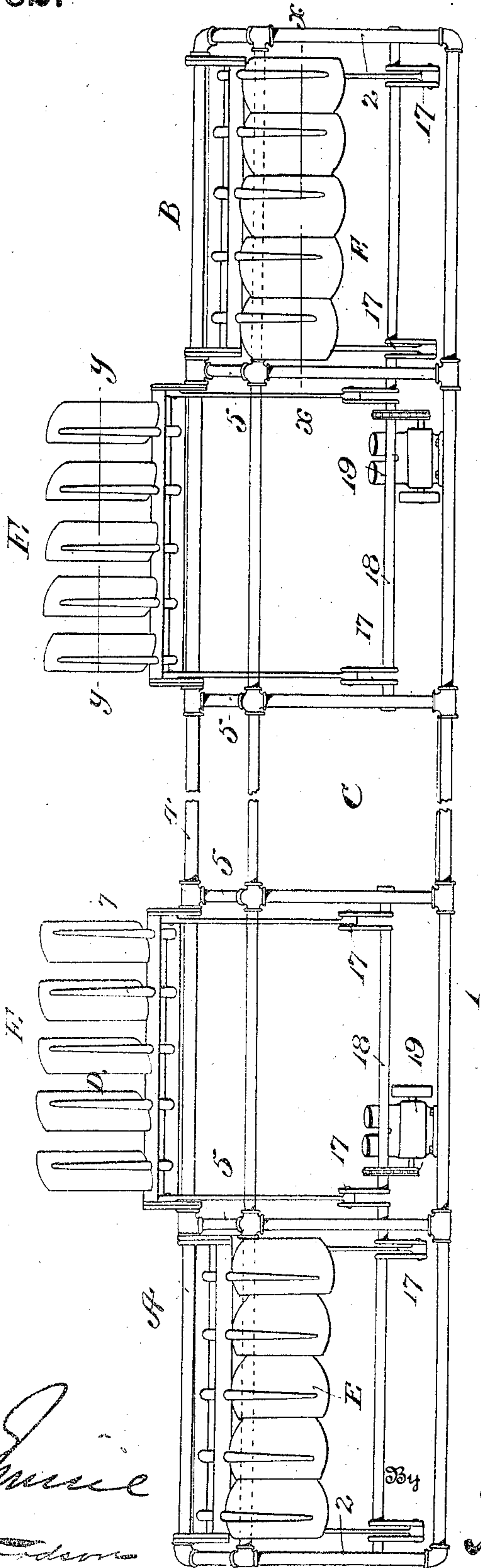


FIG. 8.

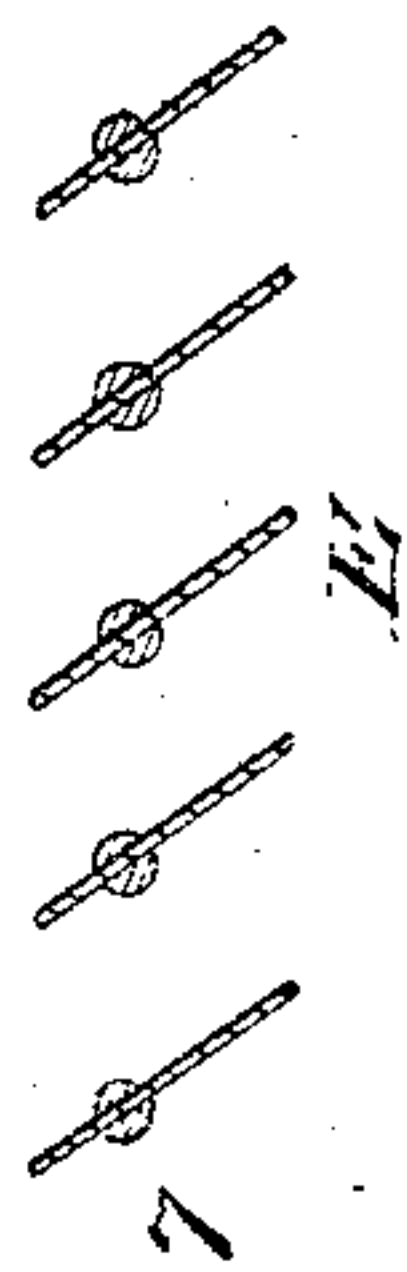
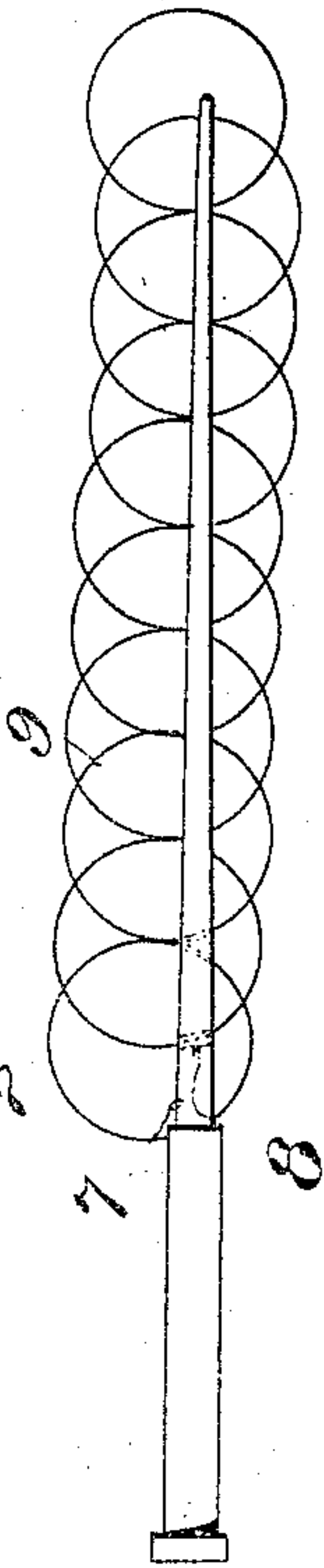


FIG. 9.



FIG. 7.



Witnesses

*[Signature]*  
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Inventor

A. A. Zalondek.

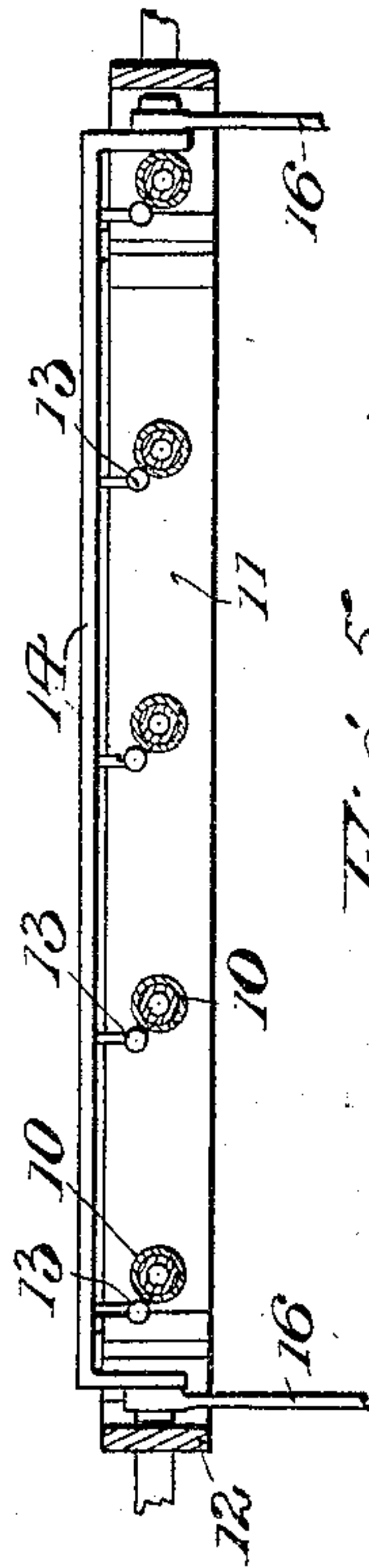
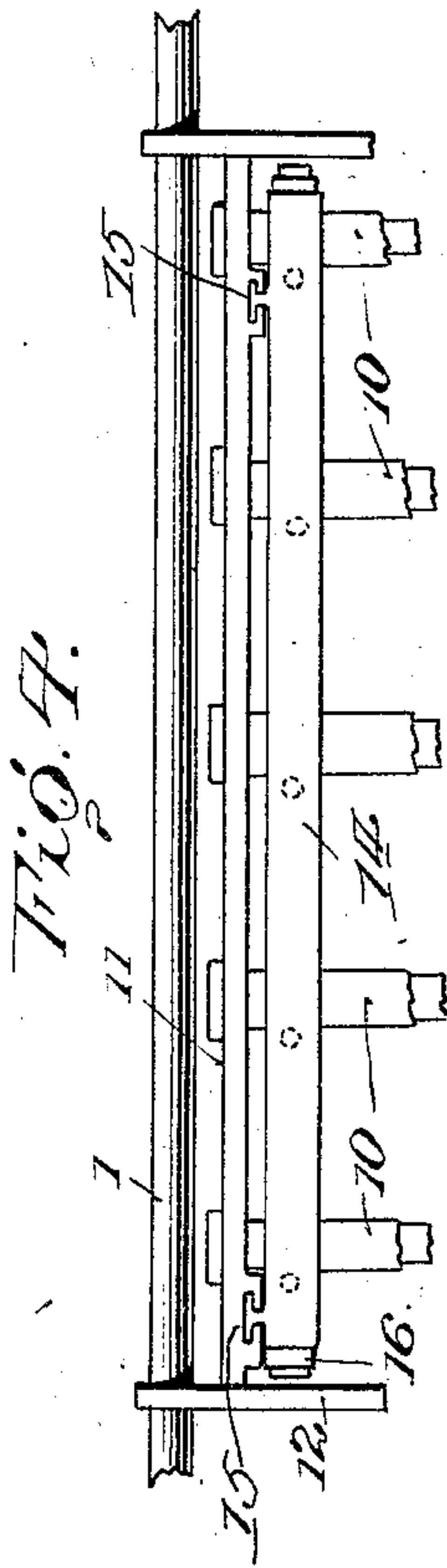
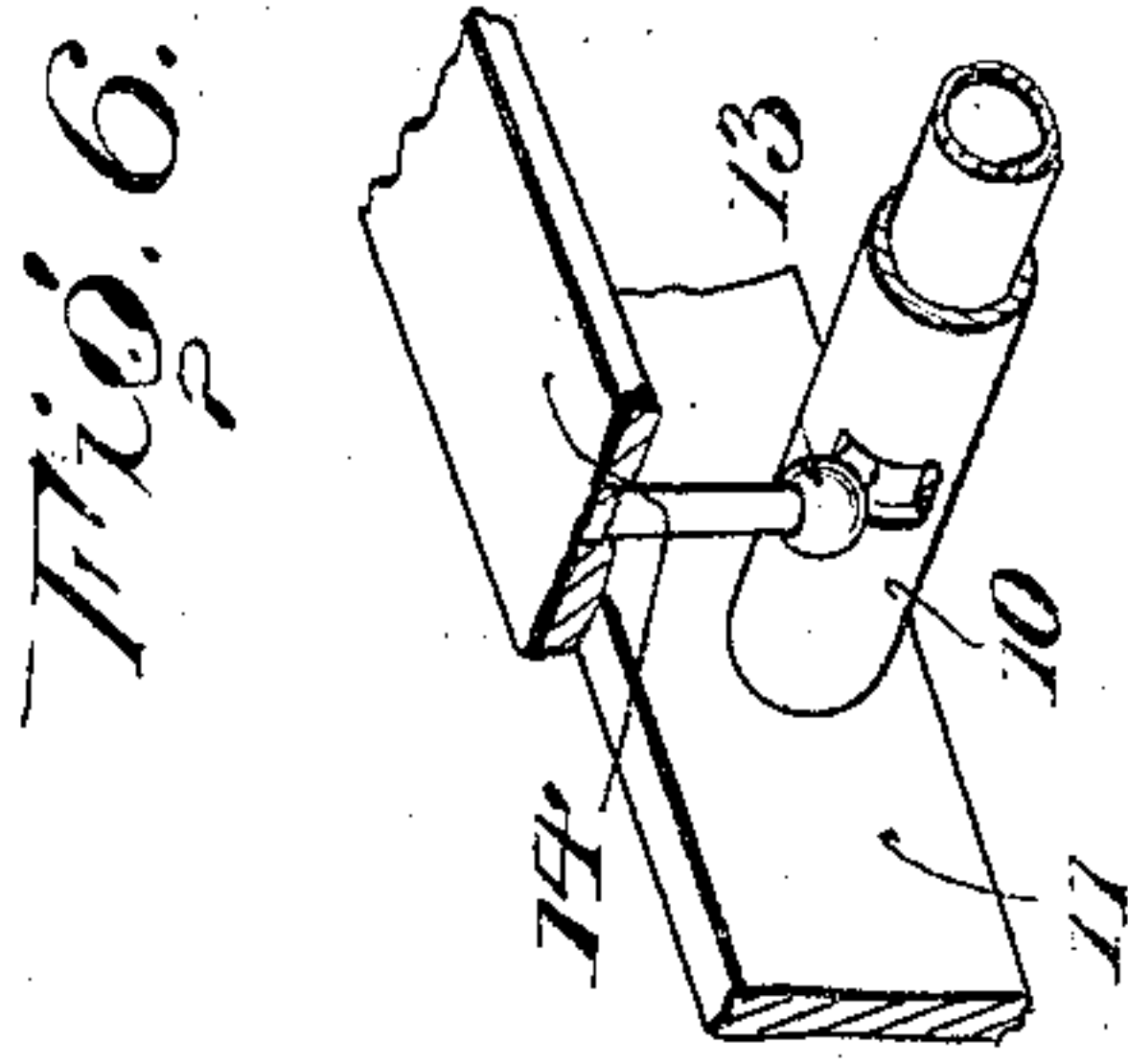
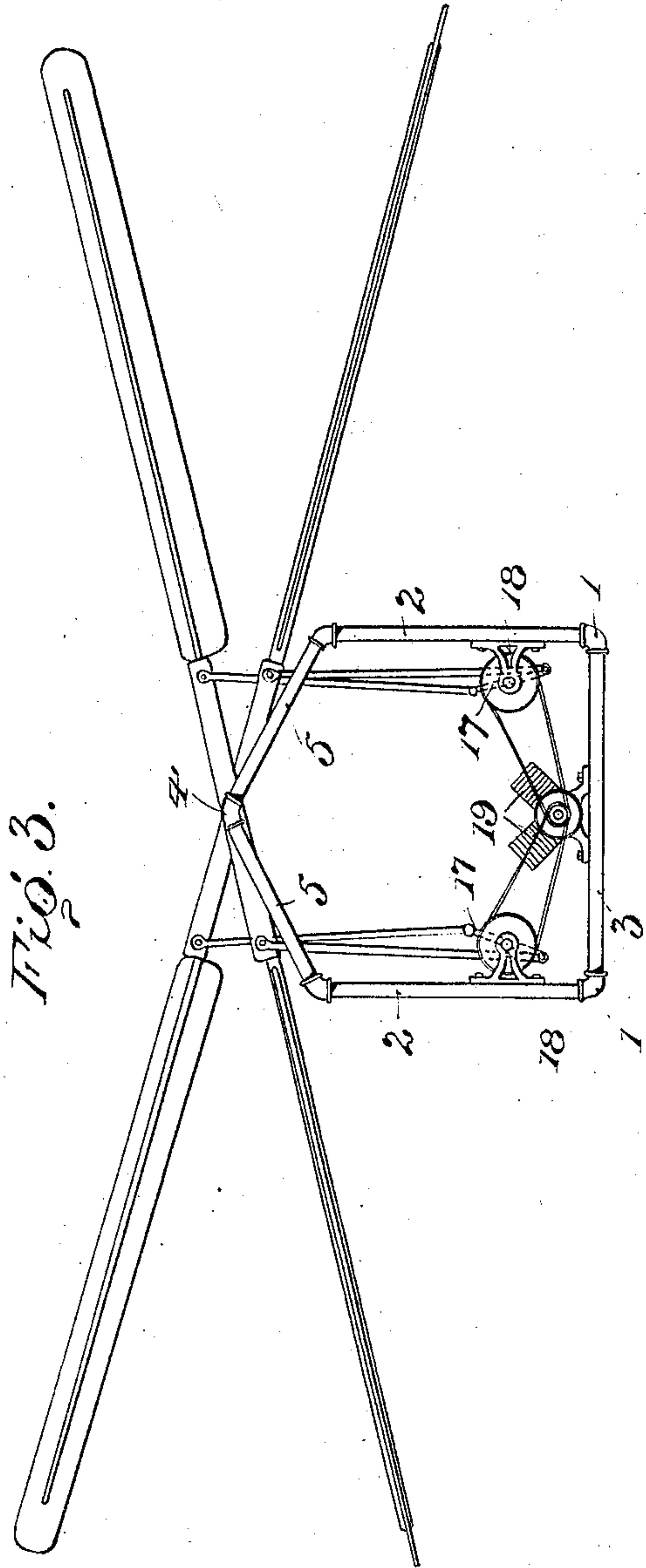
*[Signature]* Attorney &

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3 SHEETS—SHEET 3.



Witnesses  
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Inventor  
A. A. Zalondek



# UNITED STATES PATENT OFFICE.

ANTON A. ZALONDEK, OF OKLAHOMA, OKLAHOMA.

## FLYING-MACHINE.

No. 929,362.

Specification of Letters Patent.

Patented July 27, 1909.

Application filed January 7, 1909. Serial No. 471,203.

*To all whom it may concern:*

Be it known that I, ANTON A. ZALONDEK, citizen of the United States, residing in Oklahoma city, in the county of Oklahoma and State of Oklahoma, have invented certain new and useful Improvements in Flying-Machines, of which the following is a specification.

This invention comprehends certain new and useful improvement in flying machines of the heavier than air type, and the primary object of the invention is an improved structure of this character which operates with a wing motion to raise itself to the desired elevation and to propel itself forward by the action of the air, the parts being so arranged that one pair of wings on the down stroke will sustain the machine while another pair of wings are making an upward stroke and propelling the machine forward by the angular disposition of the blades of such wings. And a further object of the invention is a machine of this character which will be simple in construction, durable and efficient in operation, and which will combine lightness with strength, and lifting with propelling powers to a marked degree.

For a full understanding of the invention, reference is to be had to the following description and accompanying drawings in which:

Figure 1 is a top plan view of a flying machine constructed in accordance with my invention; Fig. 2 is a side elevation thereof; Fig. 3 is an end view; Fig. 4 is a fragmentary plan view illustrating the manner of connecting the blades to the frame; Fig. 5 is a similar view in section; Fig. 6 is a detail view in perspective, showing the connection between one blade and the frame; Fig. 7 is a plan view of one of the blades showing the frame like structure before the canvas is applied thereto; Fig. 8 is a diagrammatic view showing the blades open or in inoperative position; and, Fig. 9 is a similar view showing the blades closed.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

My improved flying machine comprises front and rear wing sections designated A and B and an intermediate aeroplane section C. The frame work of the machine is preferably composed of steel tubing and

comprises in the present instance two upper and two lower longitudinally extending tubes 1 connected together at their front and rear ends with upright tubes 2 and lower cross tubes 3, said longitudinally extending tubes being also braced intermediate of their ends, preferably at the juncture of the intermediate aeroplane sections with the wing sections, by corresponding upright and lower cross tubes. The frame work also embodies an upper intermediate longitudinally extending tube 4 positioned in a plane above and half way between the two upper longitudinally extending tubes 1 and braced as shown by means of obliquely extending brace tubes 5 at their front and rear ends and intermediate points.

The intermediate aeroplane section C embodies planes that are composed of ratan ribs 6 covered with paper and canvas or silk, waterproofed, or any other material which will be found suitable for the purpose. The wing sections A and B embody a desired number of wings D disposed in oppositely extending pairs, each wing comprising a series of feathering blades E. Each blade E consists of a preferably bamboo rib 7 formed with a series of holes 8 for the ratan lacing 9, said lacing being preferably covered with paper and canvas or silk, waterproofed, or any other covering may be employed that may be found suitable for the purpose. In the present instance I have shown each wing section as comprising four wings, that is, two pairs of oppositely disposed wings.

The ribs 7 are disposed transversely as shown, and extend outwardly from and beyond the sides of the supporting frame work, and said ribs are journaled at their inner ends to turn about their longitudinal axes in preferably steel sleeves 10 secured in and carried by rectangular oscillating wing frames 11 that are journaled at their inner ends of their cross bars 12 to swing about horizontal axes on the intermediate upper longitudinally extending tube 4. The several ribs 7 of a wing are respectively connected by ball and socket joint 13 to a connecting bar 14 arranged for limiting sliding movement relative to the wing-frames 11 by tongue and groove connection 15 as clearly illustrated in the drawings. Pitmen 16 are pivotally joined at their ends to the respective connecting bars 14 for the purpose of turning the blades axially as the wing frames



are swung up and down by the same pitmen, it being noted that the lower ends of said pitmen are connected to cranks 17 of the longitudinally extending crank shafts 18, said shafts being driven in any desired way as by sprocket chains and sprocket wheels from the engine or motor 19.

In the practical operation of a flying machine constructed as set forth in the foregoing description and illustrated in the accompanying drawings, it is manifest that by the arrangement of oscillating wing frames and the axially rotatable wing blades, correspondingly opposite wings of a wing section will be raised while the other wings of said section are being lowered, as the crank shaft 18 rotates. It will also be evident that the blades and the like open and close just before the stroke is completed, the blades being closed as they are depressed, and open as they are raised, so that they will have a maximum resistance to the air on a downward stroke and a minimum resistance to the air on an upward stroke.

Preferably the steel tubing which constitutes the main supporting framework of the machine, may carry the water or fuel supply for the engine. If the motor employed is a steam engine, the water in the tubes may be used to generate such steam, or if the motor be an internal combustion engine, this water may be used to cool the jacket of such engine, or the tubes may be used to carry the gasoline or the like for the motor.

Preferably all of the steel tubing is oval except the wings so as to offer the least possible resistance to the air. It is to be understood that the wings on the down stroke sustain the machine, while the wings that are making the upward stroke propel the machine forward by the angular disposition of the blades in such last named wing.

In starting the machine the front pair of wings are set in motion inclining the machine upward at the front portion thereof. The rear pairs of wings are then started lifting the machine from the ground, the machine ascending at an angle depending upon the variation of the speed of the wings.

It is to be understood that my invention is not limited to the exact construction, arrangement and combination of the parts illustrated in the accompanying drawings, and that various changes may be made without departing from the scope of the invention as defined in the appended claims.

Having thus described the invention, what is claimed as new is:

1. A flying machine, comprising front and rear wing sections, an intermediate aeroplane section, the wing sections embodying oppositely disposed wings, means for moving said wings upwardly and downwardly, the said wings embodying a series of blades, and means for opening the blades on the upstroke, and for closing said blades on the down stroke.

2. A flying machine comprising a supporting framework, front and rear wing sections, said wing sections embodying oscillating wing frames mounted to turn about horizontal axes, means for oscillating said frames, a series of transversely extending blades provided with ribs mounted for an axial movement in said wing frames, and a connection between said ribs and wing frames arranged to produce an opening movement of the blades upon the up stroke of the wing frames, and a closing movement of the blades upon the down stroke of said frames.

3. A flying machine, comprising a supporting frame work, wing frames mounted to oscillate about horizontal axes in said framework, said frames being provided with a series of transversely extending sleeves, transversely extending blades provided with ribs mounted to turn about their longitudinal axes in said sleeves, connecting bars having universal joint connection with said ribs, pitmen connected to said connection bars and means for driving said pitmen.

4. A flying machine comprising a supporting framework, wing frames mounted to oscillate about horizontal axes in said framework, said frames being provided with a series of transversely extending sleeves, transversely extending blades provided with ribs mounted to turn about their longitudinal axes in said sleeves, connecting bars having a universal joint connection with said ribs, and having a sliding connection with said frame, pitmen connected to said connecting bars and means for driving said pitmen.

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

ANTON A. ZALONDEK. [L. S.]

Witnesses:

M. E. TEETER,

LILLIAN DARVILLE.