

L. L. CRANE.
FLYING MACHINE.
APPLICATION FILED DEC. 21, 1909.

960,831.

Patented June 7, 1910.

2 SHEETS—SHEET 1.

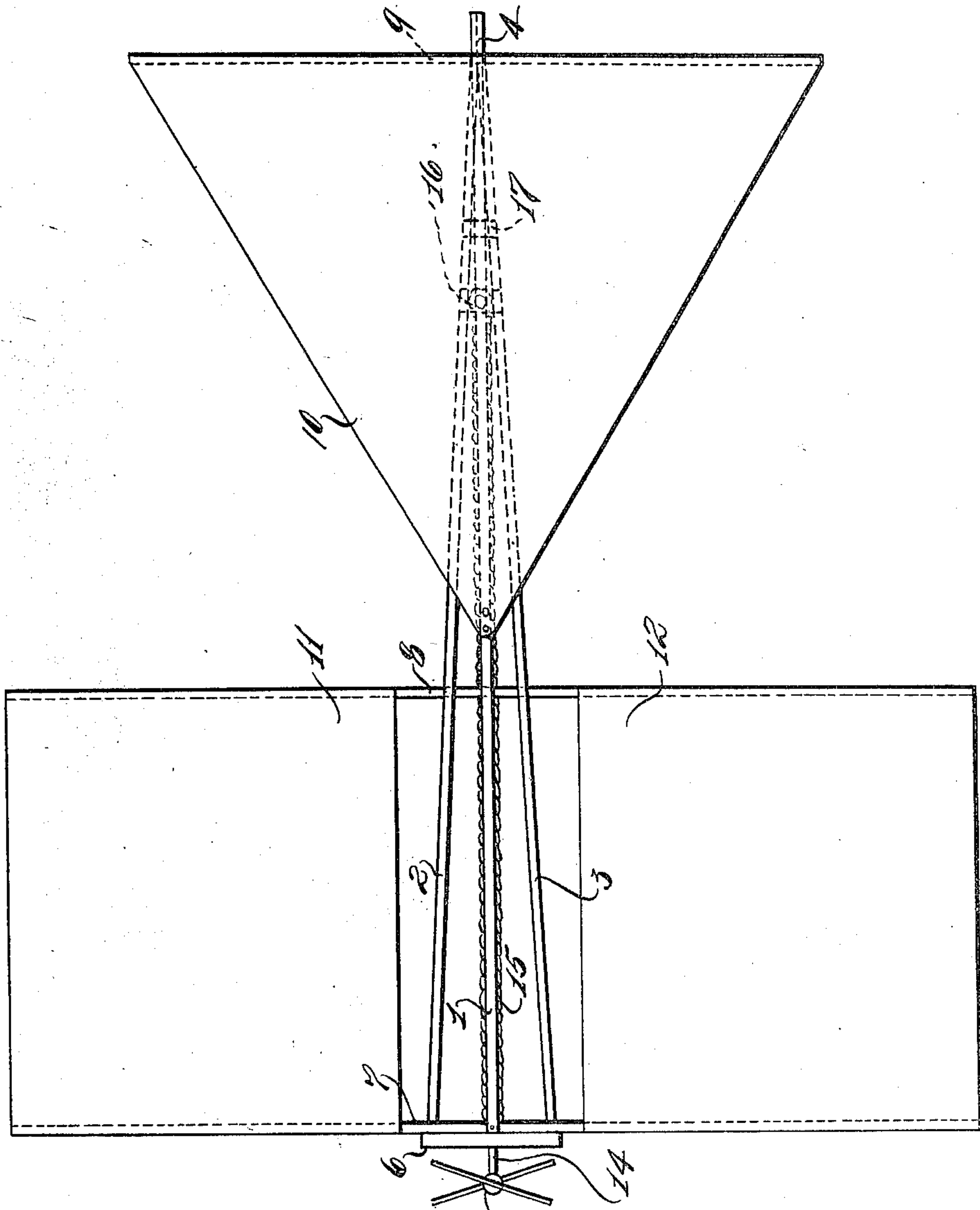


Fig. 1.

Witnesses:
C. A. Jarvis
Benjamin O. Hunt

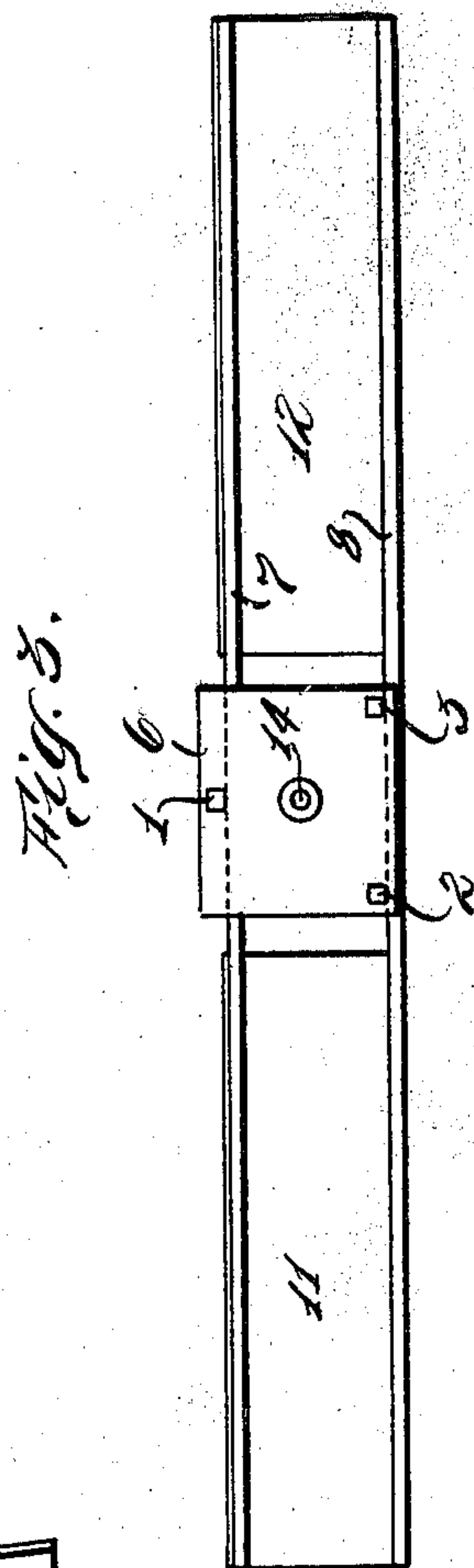
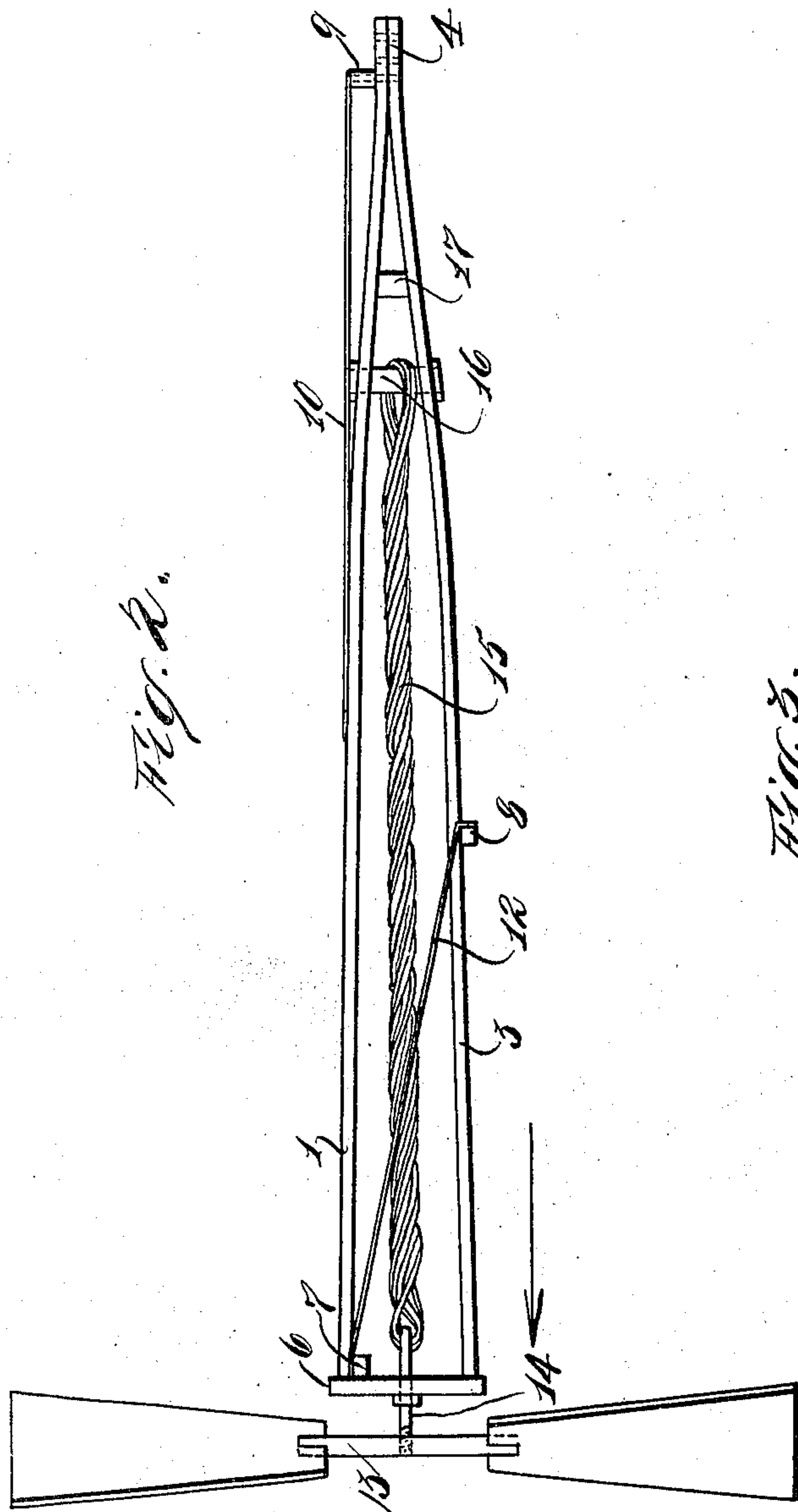
Inventor:
Louis L. Crane
by Chrystie and Wright
attorneys.

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UNITED STATES PATENT OFFICE.

LOUIS L. CRANE, OF NEW YORK, N. Y.

FLYING-MACHINE.

960,831.

Specification of Letters Patent.

Patented June 7, 1910.

Application filed December 21, 1909. Serial No. 534,291.

To all whom it may concern:

Be it known that I, LOUIS L. CRANE, a citizen of the United States, residing at Brooklyn, in the county of Kings, city and State of New York, have invented certain new and useful Improvements in Flying-Machines, of which the following is a clear, full, and exact description.

This invention relates to flying machines, containing principles which may be used to advantage in man-carrying, engine propelling vehicles. It is particularly applicable and designed for use as a toy, but is capable nevertheless of demonstrating aeronautic principles to the users thereof.

In carrying out my invention I make use of an elongated frame carrying the propelling means, preferably in the form of strands of twisted rubber bands. A journal plate carries the motor shaft with a propeller mounted thereon in front of the aeroplane. The plane is preferably of three parts; two forward wings identical on each side of the center, with an upward tilt, and a third; preferably as a triangular tail having the apex of the triangle above the lowest point of the forward wings.

The scope of my invention will be pointed out in the claims.

In carrying out my invention: Figure 1 is a plan view of an aeroplane constructed according to my invention. Fig. 2 is a side elevation thereof. Fig. 3 is a front elevation with the propeller removed.

As shown in the drawings, the main frame is composed of longitudinal rods 1, 2 and 3, held in triangular position in the journal plate 6 at one end and bound together at 4, whereby a tripod is produced forming an elongated chamber for the motive power. Posts 17 and 16 near the tail of the frame serve to space it, and to form a post, around which strands of rubber 15 may be stationarily secured. At right angles to the end of the frame, I secure a cross bar 9 carrying the triangular tail 10 secured at its apex to one of the members of the tripod frame.

In the journal plate 6 I mount a shaft 14, to one end of which is looped the rubber bands 15 within the tripod frame, and to the free end of which I secure the propeller blades 13; the outer end of the shaft 14 may be threaded to screw into the rod connecting the propeller blades. Across the journal plate I mount at right angles a bar 7 extending each side of the tripod frame, and

below such rod and to the rear thereof across the two lower rods 2 and 3 I mount a similar cross rod 8. Wings 11 and 12, one on each side of the tripod frame, are carried and stretched between the cross bars 7 and 8. Upon winding the propeller by the finger the rubber bands will be put under torsional stress, and in unwinding will propel the machine through the air for a distance depending upon the turns of the rubber bands. The tail piece 10 serves to keep the aeroplane in horizontal position, while the tilt of the wings 11 and 12 when the propeller is in motion, serve to hold the machine up in the air.

I am aware that toys have heretofore been made which will fly vertically by propeller blades under torsion, and I do not claim such as my invention.

In carrying out this invention, details of construction may be varied from those shown, and yet the essence of the invention be retained; some parts might be employed without others, and new features thereof might be combined with elements old in the art in diverse ways, although the herein described type is regarded as embodying substantial improvements over such modifications.

As many changes could be made in the above construction, and many apparently widely different embodiments of the invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted in an illustrative and not in a limiting sense. It is furthermore desired to be understood that the language used in the following claims is intended to cover all the generic and specific features of the invention herein described, and all statements of the scope of the invention which as a matter of language might be said to fall therebetween.

I claim as my invention:

1. The herein described aeroplane, consisting of a rotating shaft, a propeller thereon, a twisted torsional driving means for the propeller, an elongated frame carrying the same, cross bars to the frame, side wings and a tail, the side wings having a slant from the upper bar to a lower bar, the tail being of triangular shape and secured at its apex to the frame, forward of the cross bar therefor.
2. The herein described aeroplane, having an elongated frame of a number of rods

spaced apart at the front end and joined together at the rear end, a journal plate at the front end, a shaft therein, a propeller on the shaft in front of the plate, torsional driving means within the frame, tilted side wings on each side of the forward end of the frame, a triangular tail piece having its apex fixed to one of the elongated rods, and a cross bar near the end of the frame to which the other end of the tail is secured.

3. The herein described aeroplane consisting of a journal plate, three longitudinal rods, one secured at the upper part of the plate, the other two at the bottom, the free

ends of such rods being joined together to form a tripod, a torsional driving means in the shape of twisted rubber bands within the tripod, a shaft in the plate, a propeller in front of the shaft and secured thereto, a pair of tilted wings, one on each side of the forward part of the frame, and a triangular tail at the rear thereof.

Signed at New York city this 20 day of December 1909.

LOUIS L. CRANE.

Witnesses:

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BENJAMIN OKSENKRUG.