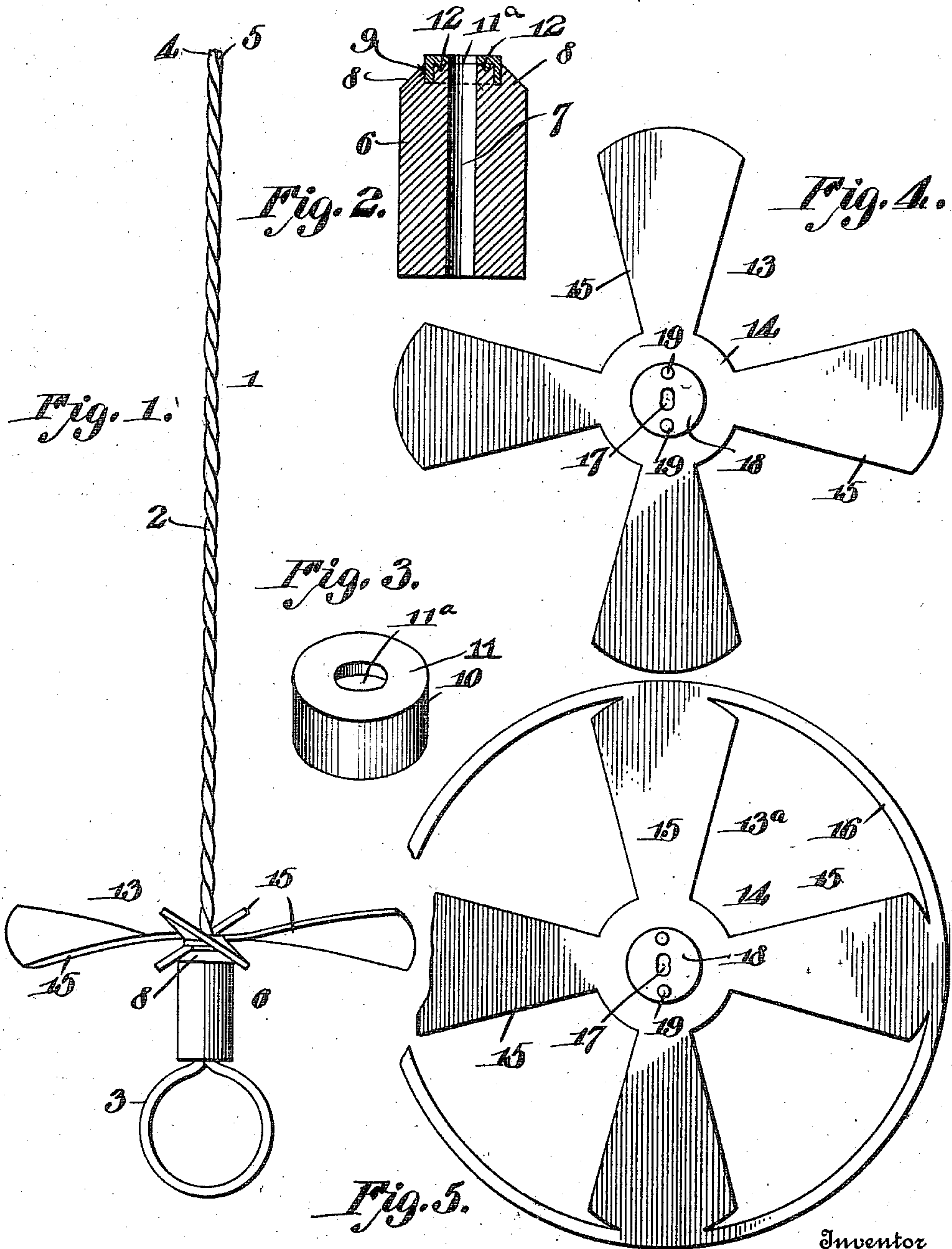


J. KNOWLES.  
AERIAL TOY.

APPLICATION FILED AUG. 10, 1910.

983,147.

Patented Jan. 31, 1911.



Witnesses  
*V. J. Evans*

*C. C. Hines*

Inventor  
*Jerome Knowles.*

By *Victor J. Evans*  
Attorney



# UNITED STATES PATENT OFFICE.

JEROME KNOWLES, OF NEWPORT NEWS, VIRGINIA.

## AERIAL TOY.

983,147.

Specification of Letters Patent.

Patented Jan. 31, 1911.

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*To all whom it may concern:*

Be it known that I, JEROME KNOWLES, a citizen of the United States, residing at Newport News, in the county of Warwick and State of Virginia, have invented new and useful Improvements in Aerial Toys, of which the following is a specification.

This invention relates to aerial toys, and consists of the novel features of construction and combination of parts hereinafter described.

In the accompanying drawing:—Figure 1 is a side elevation of the toy. Fig. 2 is a longitudinal section of the sliding sleeve. Fig. 3 is a detail view of the contact piece thereof. Fig. 4 is a plan view of one of the fliers. Fig. 5 is a similar view of a modified form of flier.

Referring to the drawing, 1 designates a rod having a longitudinal spiral thread 2 and provided at one end with a finger loop 3. This rod is preferably formed, as shown, of a single piece of wire, the central portion of which is bent to provide the finger loop 3, while the end portions 4 and 5 of the wire are spirally wound or twisted upon one another to produce the screw threads. By this construction a simple and inexpensive form of spirally threaded rod is produced which may be made of wire of smaller gage than a single twisted rod and which is substantially of the form of the figure 8 in cross section and hence stronger and less liable to binding or deflection than a single twisted rod.

Arranged to slide upon the rod is a sleeve 6 having a longitudinal bore 7 for the passage of the rod. At its forward end the sleeve is beveled, as shown at 8, and provided with an annular groove 9 concentric with the said bore and in which is fitted a metallic contact piece 10. This contact piece 10 is of cup form and consists of an annular body portion provided at its outer end with an inwardly extending annular flange 11 provided with an opening 11<sup>a</sup> alining with the bore 7 for the passage of the rod and with the spurs 12 engaging the sleeve. The body portion is fitted within the groove and the flange contacts with the flattened outer end of the sleeve and projects beyond the beveled face to form the contact surface.

A flier 13 is provided for movement along the rod and comprises a central disk 14 having an annular series of radial blades 15

arranged at proper angles for aerial flight. In the form of flier shown in Fig. 4, the blades are free from connection at their outer ends. In the form of flier 13<sup>a</sup> shown in Fig. 5, the blades are connected at their outer ends by an annular reinforcing band 16, which may be employed under some condition of service and especially where the flier is made of some considerable diameter. The disk 14 of each flier is formed with an opening 17 for the passage of the rod and has secured to the rear face thereof a bearing plate 18, preferably fixed to the disk by rivets 19. This bearing plate is formed with an elongated opening 20 alining with the opening 17, said opening 20 having substantially the form of the figure 8 to fit the spiraled portions of the rod, the bearing plate being thus adapted to act as a means for travel along the rod to impart rotary motion to the flier.

By the described construction of the rod and plate the extent of bearing surface of the plate on the rod is increased and the tendency of the flier to wobble and bind upon the rod is materially diminished.

In operation, the sleeve is first placed upon the rod, and then the flier is fitted upon the rod with its bearing plate in engagement with the contact piece of the sleeve. By then grasping the loop 3 between the finger and thumb of one hand, and grasping the sleeve 6 between the finger and thumb of the other hand, the operator, by pushing the sleeve along the spiral rod in a direction away from the loop, will slide the flier in such direction, the flier being revolved rapidly upon the rod by the spiral threads thereof, so that when it passes beyond the end of the rod it will fly through the air. It will be understood, of course, that the length and direction of the flight will depend upon the speed of movement of the flier, construction of the blades thereof, and the direction in which the rod is pointed.

A toy of this character will afford considerable amusement as well as instruction in securing a knowledge of some of the problems of aerial flight.

Having thus described the invention what I claim as new is:—

In an aerial toy comprising a spirally threaded rod, a bladed flier having a body portion provided with an opening for the passage of the rod, bearing plates secured

to the said flier to engage the threads of the rod, a sleeve slidable upon the rod and having a forwardly beveled end, a bore, a groove at its outer end concentric with the  
5 bore, and a contact piece carried by the said sleeve to engage the bearing plates of the flier, said contact piece comprising an annular body portion seated in said groove and having at its outer end an inwardly ex-

tending annular flange provided on its 10 underside with spurs engaging the end of the sleeve.

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

JEROME KNOWLES.

Witnesses:

JAMES H. MOSS,  
PERCY POARCH.