July 30, 1929. J. C. JOHNSON 1,722,922

TOY

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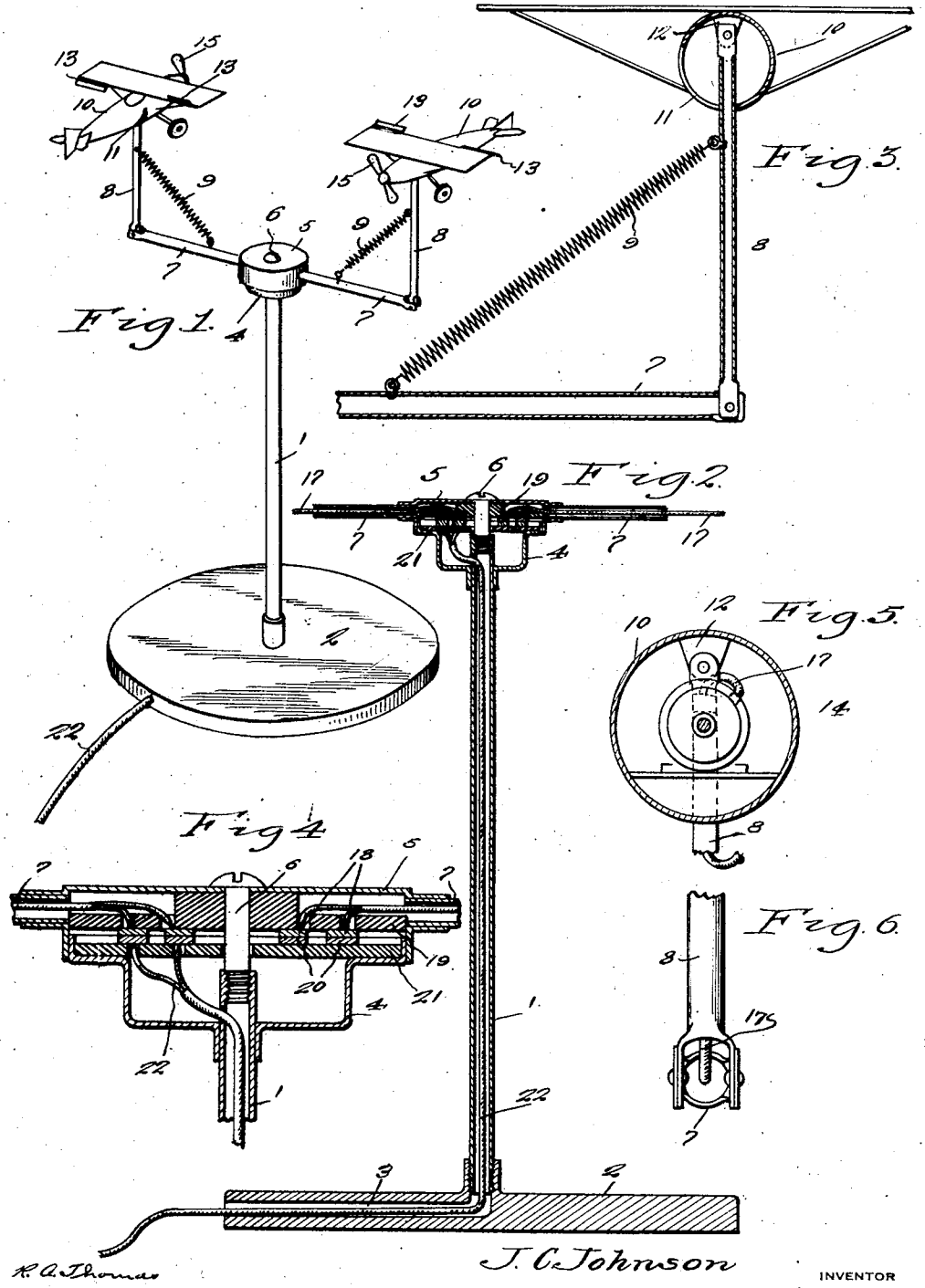

WITNESS: R. A. Thomas

J. C. Johnson INVENTOR

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Fig. 7

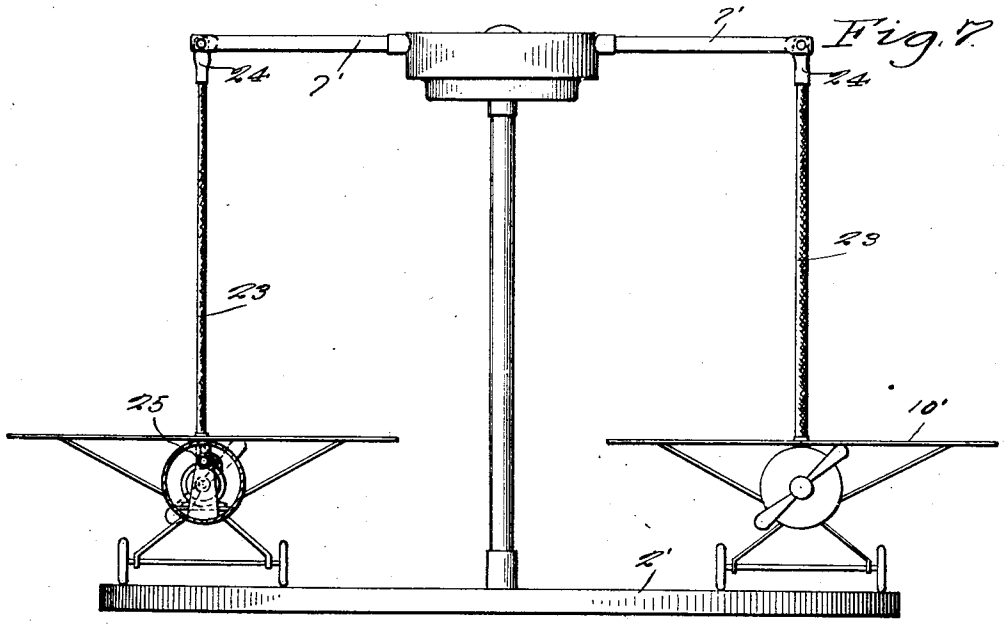


Fig. 8

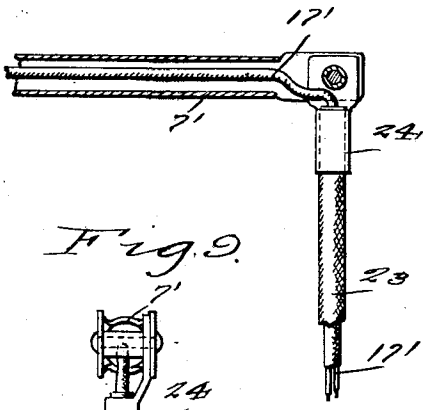


Fig. 10.

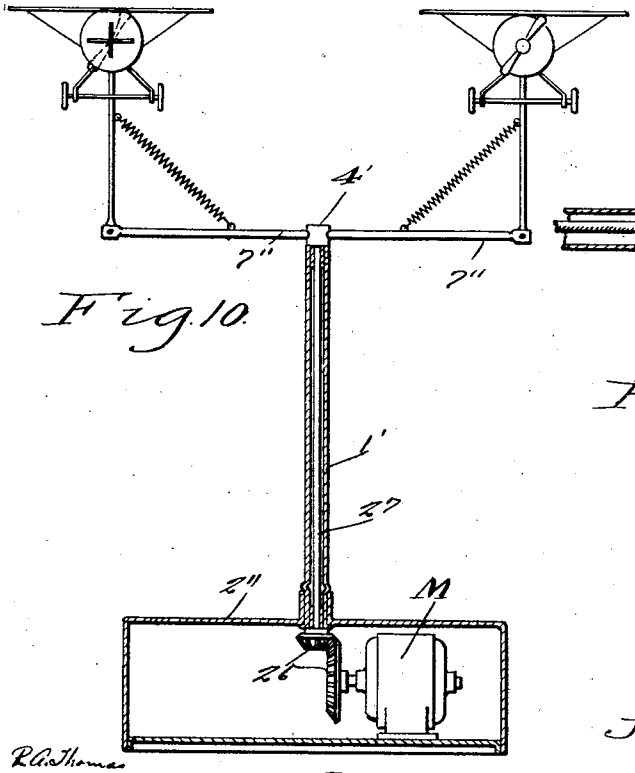


Fig. 9.

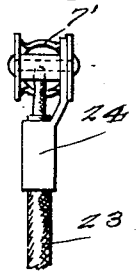
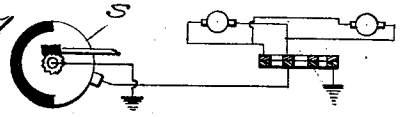


Fig. 11



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Patented July 30, 1929. 1,722,922

UNITED STATES PATENT OFFICE.

JESSE C. JOHNSON, OF DELRAY, FLORIDA, ASSIGNOR TO JOHNSON HELICOPTER TOY AEROPLANE CORPORATION, OF NEW YORK, N. Y., A CORPORATION OF DELAWARE.

TOY.

Application filed January 27, 1928. Serial No. 249,939.

This invention relates to a toy, the general object of the invention being to provide means for supporting a pair of toy aeroplanes in such a manner that they can move in a circular path and when so moved, will swing outwardly under the action of centrifugal force, with means for causing each plane to remain in a horizontal position as it moves outwardly and means for causing the planes to revolve.

Another object of the invention is to either propel the planes by motor driven propellers or to provide a single motor for rotating the supporting means of the planes.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts, to be hereinafter fully described, illustrated in the accompanying drawings and specifically pointed out in the appended claims.

In describing my invention in detail, reference will be had to the accompanying drawings wherein like characters denote like or corresponding parts throughout the several views, and in which:—

Figure 1 is a perspective view of one form of the invention.

Figure 2 is a sectional view through the supporting means.

Figure 3 is an enlarged sectional view through one of the planes and portions of its supporting means.

Figure 4 is an enlarged sectional view through the casing at the upper end of the post, showing the brushes and portions of the conductors for supplying current to the motors of the planes.

Figure 5 is a transverse sectional view through one of the planes, showing how the conductors are connected with the motor thereof.

Figure 6 is an end view.

Figure 7 is an elevation showing a modification.

Figure 8 is a view partly in section, showing how the flexible depending member for supporting each aeroplane is connected with the cross piece.

Figure 9 is an end view of Figure 8.

Figure 10 is a view, partly in section, showing another modification.

Figure 11 is a diagrammatic view of the circuit.

Referring to Figures 1 to 6, the numeral 1 indicates a tubular post which is supported by a base 2 which has a passage 3 therein which communicates with the interior of the post. A casing 4 is secured to the upper end of the post and the cap 5 of the casing is rotatably supported thereon by means of the screw 6 which has its threaded end engaging interior threads in the upper end of the post. A pair of tubular arms 7 extends outwardly from opposite sides of the cap and a tube 8 is pivoted to the outer end of each arm. Each tube 8 is so fastened to its arm that the tube cannot move inwardly beyond a vertical plane, but it can move outwardly and downwardly, as will be seen from Figures 3 and 6. A spring 9, connected with each tube and its arm, holds the tube in vertical position. An aeroplane 10 is pivoted to the upper end of each tube, the tube passing through a slot 11 formed in the fuselage of the plane and is pivoted to a depending part 12 in the fuselage. Each plane is provided with the ailerons 13 which tend to hold the plane in a horizontal position during the rotation of the device as the tubes 8 swing outwardly under the action of centrifugal force, this being permitted by the manner of pivoting the plane to the tube and the provision of the slot 11.

Each plane is provided with an electric motor 14 for revolving its propeller 15 and the conductors 17 of each motor pass through the tube 8 and the arm 7 into the cap, where they are connected with the inner and outer rings 18 fastened to the disk 19 of non-conducting material arranged in the cap. These rings contact with similar rings 20 carried by a disk 21 of non-conducting material arranged in the casing 4 and these rings 20 have connected thereto the conductors 22 which pass downwardly through the post 1 and through the passage 3 in the base 2 to a suitable source of supply.

From the foregoing it will be seen that when current is supplied through the conductors and the rings to the motors, the propellers of the aeroplanes will cause said planes, together with the tubes and arms and the cap, to revolve on the casing and when the parts reach a certain speed, the tubes will swing outwardly and downwardly against the action of the springs 9, carrying the aeroplanes with them, but the aeroplanes will remain in a horizontal position, due to the action of the ailerons 13 against the air, the relative movement of each plane

with the tube being permitted by the pivotal connection between the tube and the lug 12 and the provision of the slot 11.

The modification shown in Figures 7, 8 and 9 has the same arrangement of base, post, casing and arms, but instead of using the upright tubes 8, I use tubular flexible members 23 which are connected with the arms 7′ by the clips 24 which are pivoted to the arms and clips 25 are connected with the lower ends of the members 23 and are pivoted to parts within the fuselage of the aeroplanes 10′, the body of each aeroplane being provided with a slot in which each clip 25 can move during the relative movement of the aeroplane and member 23 under the action of the ailerons of the plane so that the aeroplane will remain in horizontal position as it swings outwardly under the action of centrifugal force. The conductors 17′ from the motors pass through these tubular members 23. These members 23 are long enough to permit the wheels of the planes to rest upon the base 2′ when the device is at rest.

When current is turned on to the motors of the aeroplanes, the planes will first run upon the base for awhile until a speed is reached which will cause the planes to take off into the air. As they move outwardly under the action of centrifugal force, they will turn on their pivots which connect them with the members 23, so that they will remain in horizontal position.

The modification shown in Figure 10 is somewhat similar to that shown in the first form of the invention, but instead of having the motors on the planes, a single motor M is placed in the base 2″ which is in the shape of a casing and said motor is connected by the gears 26 with a shaft 27 which passes through the post 1′ and is connected with a cap or casing 4′ rotatably supported at the top of the post and to which the arms 7″ are connected. In other respects, this form of the invention is similar to that first described. If desired, a time switch S may be arranged in the circuit of each of the devices shown, so that the current will be automatically cut off after the aeroplanes have revolved for a certain time so that the planes can come to rest and then the circuit will be closed again to start up the device again and this will be kept up until the main switch of the circuit is closed.

It is thought from the foregoing description that the advantages and novel features of my invention will be readily apparent.

It is to be understood that I may make changes in the construction and in the combination and arrangement of the several parts, provided that such changes fall within the scope of the appended claims.

What I claim is:—

1. A toy of the class described comprising an upright, a horizontal member rotatably supported at the upper end of the upright, an upright member pivotally connected with each end of the horizontal member so that it can move outwardly under the action of centrifugal force, stop means for preventing the upright members from moving inwardly beyond a vertical position, yieldable means connected with the upright members and with the horizontal member for resisting the outward movement of the upright members, an aeroplane pivotally connected with the free end of each of the last mentioned members, means for causing the aeroplanes to remain in horizontal position as their supporting members move outwardly under the action of centrifugal force, and a motor in each aeroplane for rotating the propeller thereof to cause the aeroplanes, together with their supporting members and the horizontal member to rotate on the upright member.

2. A toy of the class described comprising an upright, a horizontal member rotatably supported at the upper end of the upright, a member pivotally connected with each end of the horizontal member so that it can move outwardly under the action of centrifugal force, stop means associated with each pivoted member for preventing said member from moving inwardly beyond a vertical position, an aeroplane pivotally connected with the free end of each of the last mentioned members, ailerons connected with the aeroplanes for causing the aeroplanes to remain in horizontal position as their supporting members move outwardly under the action of centrifugal force, means for rotating the horizontal member, the aeroplanes and their supporting members, and spring means for resisting the outward movement of the supporting members for the aeroplanes.

In testimony whereof I affix my signature.

JESSE C. JOHNSON.