June 10, 1924. 1,497,555

C. H. DONALDSON ET AL

TOY AEROPLANE

Filed June 19, 1922

Fig. 1.

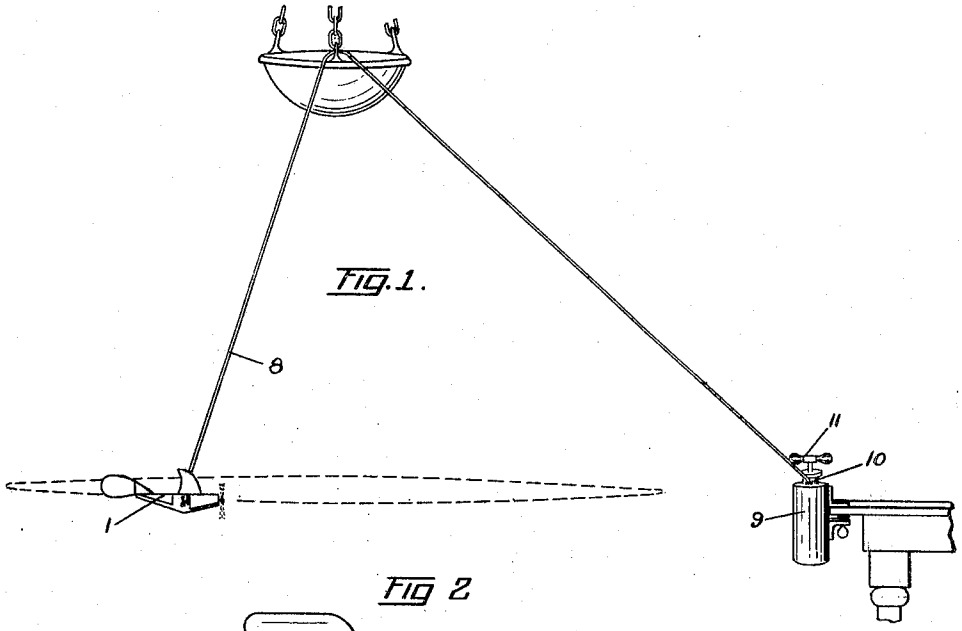


Fig 2

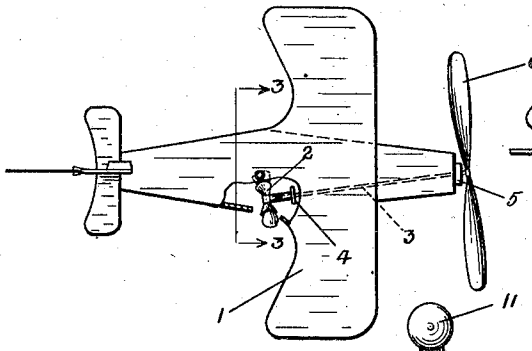


Fig 3

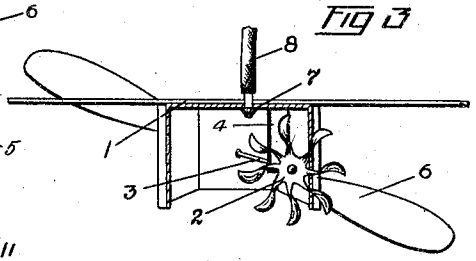
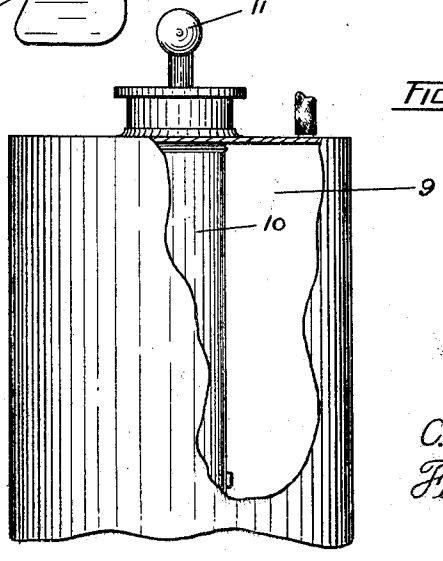


Fig 4



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UNITED STATES PATENT OFFICE.

CHARLES HANNAH DONALDSON AND JOHN WHITTLE, OF TORONTO, ONTARIO, CANADA.

TOY AEROPLANE.

Application filed June 19, 1922. Serial No. 569,286.

To all whom it may concern:

Be it known that we, CHARLES HANNAH DONALDSON and JOHN WHITTLE, subjects of the King of Great Britain, of the city of Toronto, in the county of York, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Toy Aeroplanes, of which the following is the specification.

Our invention relates to improvements in toy aeroplanes and means for propelling the same and the object of the invention is to devise a toy aeroplane that when suitably suspended can be driven by air from an air pump.

A further object is to devise means for causing the supply of air to be constant in order that the aeroplane may be driven continuously in a circular path.

Our invention consists of a device constructed and arranged all as hereinafter more particularly described and illustrated in the accompanying drawing in which:

Fig. 1 represents a view of an aeroplane supported from a chandelier by a rubber tube which is connected with an air pump.

Fig. 2 is a plan view of the aeroplane showing the air motor connected to the propeller.

Fig. 3 is an enlarged sectional view through the line 3—3 Figure 2, and

Fig. 4 is an elevational view, partly in section, of the upper portion of the air reservoir and pump contained therein.

Like characters of reference indicate corresponding parts in the different views.

1 is an aeroplane which may be of any suitable type and constructed of any suitable material, said aeroplane being provided with the air motor 2 consisting of a vaned rotor connected to the shaft 3 which is journalled at its rear end in the bearing 4, the forward end of said shaft freely extending through the boss 5 and being provided with the propeller 6.

7 is a nozzle suitably mounted on the aeroplane and adapted to project air onto the respective vanes of the rotor 2, thus causing it to revolve. 8 is a tube leading from the nozzle 7 to the air reservoir 9 in which is mounted the usual cylindrical pump 10 provided with a T-shaped handle 11 extending exteriorly of the reservoir 9.

On reference to Figure 1 it will be seen that the tube 8 in addition to supplying air to the air motor serves to support the aeroplane to the ceiling or any suitable fixture.

The operation of our device is as follows:

On reciprocating the plunger 12 by the handle 11 air is pumped into the air reservoir 9 and flows therefrom through the tube 8 to the nozzle 9 from whence it is projected onto the vanes of the rotor 2, thus revolving the same and with it the shaft 3, causing the propeller 6 to be revolved, such propeller pulling along the machine and as sufficient centrifugal force is developed, causing it to revolve in a circular direction. By pumping faster or slower as the case may be, the machine may be propelled faster or slower and when it is propelled faster it will be seen that the centrifugal force will cause it to swing out about the point of suspension, which will resemble climbing in the ordinary aeroplane.

By inserting the pump cylinder into the reservoir or tank 9 a considerable economy in space will be effected as the pump discharges directly into such tank. By so doing the pressure of air issuing from the nozzle onto the vanes of the rotor is continuous and not intermittent as would be the case if the reservoir 9 were done away with and the pump 10 directly connected to the nozzle 7 by the tube 8.

From the above description it will be seen that we have devised a simple and effective toy aeroplane and means for propelling the same which will be simple in use and can be cheaply constructed.

What we claim as our invention is.

The combination with a suspended toy aeroplane, of a propeller therefor, a vaned rotor connected to the propeller, a nozzle positioned in alignment with the vanes, a flexible hollow supporting means for the aeroplane connected to the nozzle and compressed air means connected to the free end of the hollow supporting means whereby the compressed air is directed from the nozzle onto the vanes of the rotor.

CHARLES HANNAH DONALDSON.
JOHN WHITTLE.