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CONTROL HANDLE FOR MODEL AIRPLANES

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Fig. 1

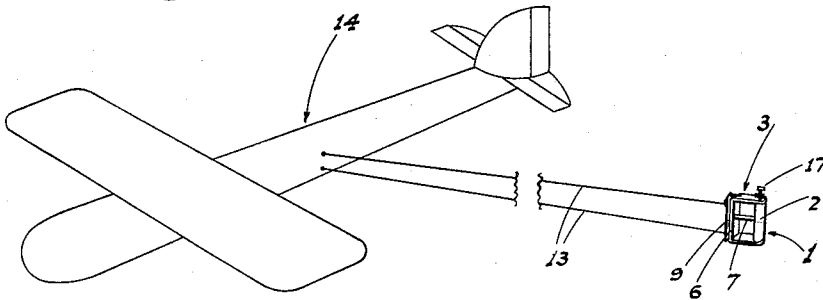


Fig. 2

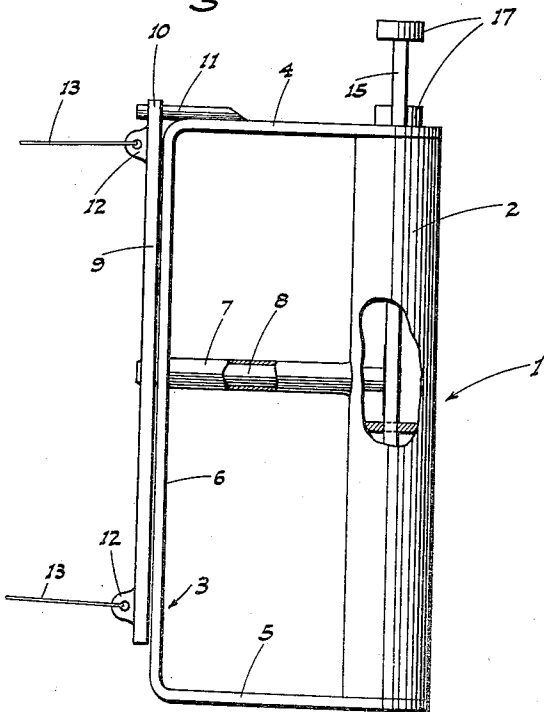
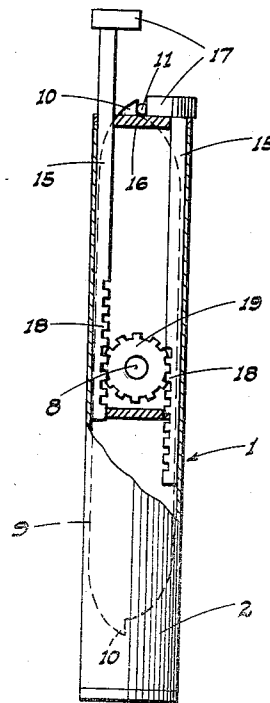


Fig. 3



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CONTROL HANDLE FOR MODEL AIRPLANES

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10 Claims. (Cl. 46-77)

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This invention is directed to, and it is an object to provide, a novel handle for controlling engine powered model or toy airplanes in tethered flight, i. e. wherein the tether comprises generally vertically spaced, flexible control cords leading to the airplane from a handle.

At present, to fly a model airplane upside down, the operator must invert the handle in his hand or twist his wrist a half-turn to obtain the desired result. Neither of such practices is practical or convenient.

It is therefore another object of the present invention to provide a control handle, for the purpose described, which permits the operator to fly the airplane in conventional right-side-up flight, or to invert it as an acrobatic maneuver and to then fly the airplane upside down; all with the hand-engaging portion of said handle in the same general position.

A further object of the invention is to provide a control handle, as in the preceding paragraph, which includes a hand grip, and an upstanding attachment bar mounted thereon at the front for movement to reverse the same endwise, whereby to change the relative positions, vertically, of the control cords connected to opposite ends of said bar.

An additional object of the invention is to provide an acrobatic control handle for model or toy airplanes, as above, which includes novel finger actuated mechanism on the grip operative to reverse the attachment bar at the will of the operator.

A further object of the invention is to provide a practical control handle for model or toy airplanes, and one which will be exceedingly effective for the purpose for which it is designed.

These objects are accomplished by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawings:

Fig. 1 is a perspective view of the control handle showing, diagrammatically, its manner of use.

Fig. 2 is an enlarged side elevation of the device.

Fig. 3 is an enlarged rear end elevation of the device partly broken away, and partly in section.

Referring now more particularly to the characters of reference on the drawings, the acrobatic control handle for model or toy airplanes comprises a hand grip, indicated generally at 1, which grip comprises an upstanding tubular body 2.

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The body 2 is fitted with a forwardly projecting yoke 3 which includes a top arm 4 and a bottom arm 5, the outer ends of said arms 4 and 5 being connected together by an upstanding front member 6.

Substantially centrally between the top arm 4 and bottom arm 5, there is a horizontal sleeve 7 which extends from the front member 6 rearwardly to the body 2, and a spindle 8 is rotatably mounted in the sleeve 7; projecting at its forward end beyond the front member 6 and projecting at its rear end into the tubular body 2.

An upstanding attachment bar 9 is disposed in front of the member 6, and said attachment bar is secured, centrally of its ends, to the forward end of the spindle 8 whereby said bar is rotatable with such spindle.

At opposite ends the attachment bar 9 is formed with stop shoulders 10, each adapted to engage with an abutment or stop pin 11 secured on the top arm 4 and projecting into the path of travel of the outer ends of said attachment bar 9. With this arrangement the bar 9 cannot rotate through more than a half circle.

At the front thereof the attachment bar 9 is formed, at opposite ends, with attachment ears 12, to which the pair of flexible control cords 13 are connected in generally vertically spaced relation; such control cords comprising the tether by means of which a powered model or toy airplane, indicated generally at 14, is controlled in flight. This type of tethering and control of powered model or toy airplanes is generally conventional, and therefore it is only shown diagrammatically in the present instance; the control being of the flight elevation of the airplane, and such control being accomplished by relative longitudinal motion of the cords 13. Such relative longitudinal motion of the cords 13 is accomplished, by the operator, by canting the control handle in a vertical plane.

It has been found that by inverting the handle in the operator's hand, or by turning the operator's wrist a half-turn to invert the handle, a powered model or toy airplane can be caused to make a half loop and then fly upside down. However, to invert the handle in the operator's hand, or to turn the wrist a half-turn to accomplish the desired result, is not convenient, and the present device is therefore provided.

With the grip 1 held in the hand of the operator, the attachment bar is reversed endwise, by causing a half turn thereof, and when this occurs the flexible control cords 13 are reversed, for the purpose of upside down flight of the

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model or toy airplane 14. The operator effects such reverse of the attachment bar 9 by means of the following finger actuated mechanism:

A pair of plungers 15, one raised and the other lowered, are disposed in slidable relation in the tubular body 2 and project through the top 16 thereof; such plungers 15 having push buttons 17 on their upper ends above said top 16.

Within the body 2, and on adjacent sides, the plungers 15 are formed with racks 18 which both mesh with a gear 19, on the inner end of the spindle 8, on opposite sides.

It will thus be seen that when the raised plunger is depressed, the result is to rotate the spindle 8, and attachment bar 9, through a half turn and until the motion is stopped by abutment of one of the shoulders 10 with the pin 11. At the same time the other plunger, which started in a down position, rises, so that it is then ready for actuation to return the attachment bar 9 to its starting position.

Therefore, by means of the simple manipulation of the push buttons 17 by the thumb of the operator's hand which engages the grip 1, the attachment bar 9, as well as the connected control cords 13, can be reversed.

The device is of simple and practical construction, functions smoothly, and has no parts which can readily get out of order.

From the foregoing description it will be readily seen that there has been produced such a device as substantially fulfills the objects of the invention, as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

Having thus described the invention, the following is claimed as new and useful, and upon which Letters Patent are desired:

1. A control handle for tethered, power driven model or toy airplanes wherein the tether is a vertically spaced pair of flexible cords, the handle comprising a hand grip, an upstanding attachment bar disposed ahead of the grip, means to attach the cords to the bar in spaced relation lengthwise thereof, means mounting the attachment bar on the hand grip for motion to reverse said bar endwise, and a hand actuated mechanism mounted on the grip and connected to said bar to so reverse the same.

2. A control handle for tethered, power driven model or toy airplanes wherein the tether is a vertically spaced pair of flexible cords, the handle comprising a hand grip, an upstanding attachment bar disposed ahead of the grip, means to attach the cords to the bar in spaced relation lengthwise thereof, means mounting the attachment bar on the hand grip for motion to reverse said bar endwise, and hand actuated means on the grip connected to said bar to so reverse the same; said hand actuated means comprising push buttons on the handle in position for easy finger access.

3. A control handle for tethered, power driven model or toy airplanes wherein the tether is a vertically spaced pair of flexible cords, the handle comprising a hand grip, an upstanding attachment bar disposed ahead of the grip, means to attach the cords to the bar in spaced relation lengthwise thereof, means mounting the attachment bar on the hand grip for motion to reverse said bar endwise, and hand actuated means on

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the grip connected to said bar to so reverse the same; said hand actuated means comprising push buttons on top of the handle in side by side relation for easy finger access.

4. A control handle for tethered, power driven model or toy airplanes wherein the tether is a vertically spaced pair of flexible cords, the handle comprising a hand grip, an upstanding attachment bar disposed ahead of the grip, means to attach the cords to the bar in spaced relation lengthwise thereof, means mounting the attachment bar on the hand grip for motion to reverse said bar endwise, and hand actuated means on the grip connected to said bar to so reverse the same; said hand actuated means comprising a spindle secured to the bar intermediate the ends of the latter, a gear on the spindle, a pair of plungers slidably mounted on the grip, said plungers having racks in mesh with opposite sides of the gear, and exposed finger engaging members on the plungers.

5. A control handle for tethered, power driven model or toy airplanes wherein the tether is a vertically spaced pair of flexible cords, the handle comprising a hand grip, said hand grip including an upstanding tubular body, a spindle journaled in the body intermediate its ends and projecting forwardly therefrom, an upstanding attachment bar secured intermediate its ends to the spindle in front of the body, means to attach cords to the bar on opposite sides of its axis, and hand actuated means on the body adapted to rotate the spindle and bar.

6. A control handle for tethered, power driven model or toy airplanes wherein the tether is a vertically spaced pair of flexible cords, the handle comprising a hand grip, said hand grip including an upstanding tubular body, a spindle journaled in the body intermediate its ends and projecting forwardly therefrom, an upstanding attachment bar secured intermediate its ends to the spindle in front of the body, means to attach cords to the bar on opposite sides of its axis, and hand actuated means on the body adapted to rotate the spindle and bar; there being means to limit such rotation to one-half revolution.

7. A control handle for tethered, power driven model or toy airplanes wherein the tether is a vertically spaced pair of flexible cords, the handle comprising a hand grip, said hand grip including an upstanding tubular body, a spindle journaled in the body intermediate its ends and projecting forwardly therefrom, an upstanding attachment bar secured intermediate its ends to the spindle in front of the body, means to attach cords to the bar on opposite sides of its axis, a gear on the spindle, and hand actuated plunger racks vertically slidable on the body and meshing with opposite sides of the gear.

8. A control handle for tethered, power driven model or toy airplanes wherein the tether is a vertically spaced pair of flexible cords, the handle comprising a hand grip, said hand grip including an upstanding tubular body, a spindle journaled in the body intermediate its ends and projecting forwardly therefrom, a generally U-shaped yoke secured to and projecting forwardly from the upstanding body, the spindle extending through and beyond the yoke, an upstanding attachment bar secured to the spindle in front of the yoke, means to attach cords to the bar on opposite sides of its axis, a gear on the spindle in the body, a pair of plunger racks slidable in the body in mesh with opposite sides of the gear, said plunger racks extending above

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the body, and push buttons on the upper ends of the plunger racks.

9. A control handle for tethered, power driven model or toy airplanes wherein the tether is a vertically spaced pair of flexible cords, the handle comprising a hand grip, said hand grip including an upstanding tubular body, a spindle journaled in the body intermediate its ends and projecting forwardly therefrom, a generally U-shaped yoke secured to and projecting forwardly from the upstanding body, the spindle extending through and beyond the yoke, an upstanding attachment bar secured to the spindle in front of the yoke, means to attach cords to the bar on opposite sides of its axis, a gear on the spindle in the body, a pair of plunger racks slidable in the body in mesh with opposite sides of the gear, said plunger racks extending above the body, and push buttons on the upper ends of the plunger racks; there being means between the yoke and bar to limit rotation of the latter to one-half revolution.

10. A control handle for tethered, power driven model or toy airplanes wherein the tether is a

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vertically spaced pair of flexible cords, the latter comprising a hand grip, vertically spaced cord attachment elements, means mounting said elements on the handle for relative reversal of the positions occupied thereby, and a finger operated mechanism on the grip connected to said mounting means to so reverse the positions of said elements.

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