Feb. 10, 1931. A. BISCH 1,791,655

AIR PILOT TRAINING DEVICE AND THE LIKE

Filed Dec. 5, 1929

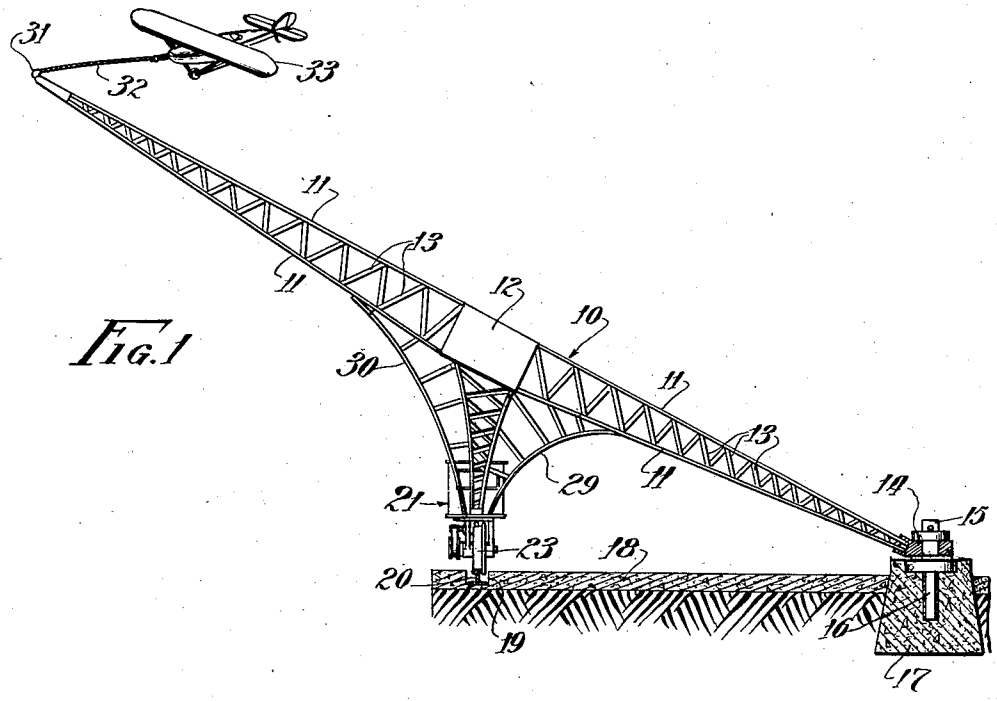

FIG. 1

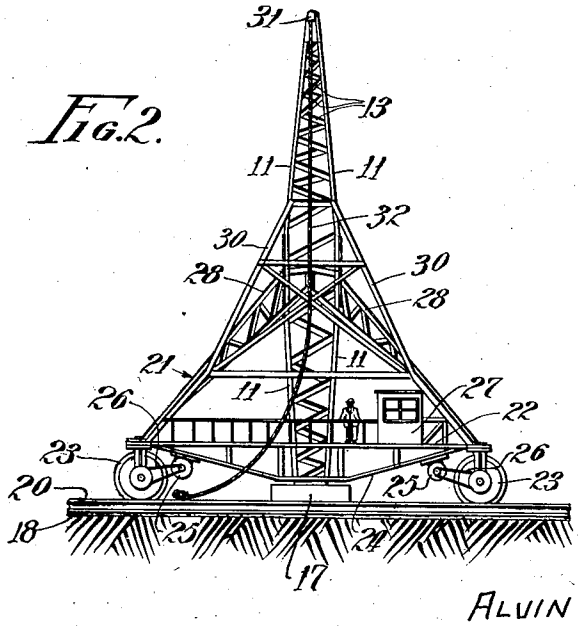

FIG. 2.

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UNITED STATES PATENT OFFICE

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AIR-PILOT-TRAINING DEVICE AND THE LIKE

Application filed December 5, 1929. Serial No. 411,794.

The present invention is directed to a device which is adapted for the use of training pilots or aviators, and familiarizing them with the various controls of the conventional type of airplane.

The device may also be adapted for the use of an amusement device in which the operator of the same may manipulate the controls of the airplane for guiding the same without the danger of a crash. One of the important or primary objects of the present invention is to provide a device in which an airplane is permitted to move bodily with respect to the revolving structure, so that the operator thereof can guide, dip, dive, or bank the plane, and is permitted a wide range of control of the airplane within the limits of the range of the flexible cable connecting the plane to the revolving structure.

A still further object of the invention is to provide a novel and improved aviator training device, amusement device, or toy, in which the conventional type of airplane is complete in every respect with the exception that the airplane is minus the propeller and the motor, and is held in captivity or connected with the revolving frame structure with a flexible cable, which may be lengthened or shortened for varying the range of the free movement of the airplane with respect to the revolving structure.

A still further object of the invention is to provide a simple arrangement of an inclined braced trestle structure in the form of a beam, in which one end thereof is pivoted to a post with the intermediate portion thereof supported on a truck adapted to travel on a circular track.

The description of my improved device will be directed to an aviator's training device, but it will of course be understood that the same may be adapted as an amusement device or may be made in miniature form for use as a toy.

These and other objects are accomplished by providing a construction and arrangement of the various parts in the manner hereinafter described, and particularly pointed out in the appended claims.

Referring to the drawings,

Fig. 1 is a front elevational view of my improved aviator training device showing the cross section of the ground or support on which the device is mounted; and

Fig. 2 is an end elevational view of the same.

In the drawings I have illustrated one embodiment of my invention which is an improvement over the form of my invention described and claimed in my co-pending application Serial No. 342,959, filed Feb. 27, 1929, on "Device for training aviators or for amusement purposes."

In the drawings I have shown a trestle revolving structure comprising a single beam generally indicated by the reference character 10, which is preferably made of four sets of angle irons 11, which are secured together by steel plates 12 at the center thereof, at which point they are held in relatively spaced relation with respect to each other, and converged towards the other ends thereof, so as to form the effect of two tapered beams. These angle members are suitably braced with cross braces as indicated at 13 on the four sides thereof. The inner end of the beam 10 is provided with a pivot bracket 14, which is secured thereto in any well known manner. This pivot bracket is journalled on a stud 15, which in turn is imbedded as shown at 16 in a cement block or pillar 17. The cement block 17 is in turn imbedded in the ground in any well known manner. Extending concentrically about the cement pillar 17 is a cement base 18 having a circular recess 19 in which a circular track 20 is mounted. The revolving beam 10 is supported and sustained in an inclined position of substantially 30°, as shown in Fig. 1 of the drawings by a revolving truck generally indicated by the reference character 21. This revolving truck comprises a platform frame structure 22, which is mounted on conventional form of flange car wheels 23. This truck is suitably braced and supported by supplemental frame members 24. Each of these wheels is driven through the medium of electric motors 25 supported to the substructure of the truck 21, geared to each of the respective wheels by means of belts 26. Mounted on the platform 22 of the truck 21 is

a control cabin 27 in which the operator may be seated for controlling the operation of the device. This truck 21 is provided with two diverging reinforced frame members as shown at 28, which have their upper ends suitably connected to the beam 10 in any well known manner. Each of these diverging frame members is connected laterally to the beam 10 by means of curved truss members as shown at 29 and 30.

Similar to the manner disclosed and described in my previous mentioned co-pending application, the outer or free end of the beam 10 is provided with a swivel bracket 31 which has mounted therein a pulley (not shown), over which is trained a flexible cable 32 to the free end of which is connected an airplane 33 of the conventional type. The free end of the cable 32 is connected to the nose of the airplane at a point where the propeller would ordinarily be located. The airplane is of the regular type, and provided with the usual fuselage, wings, ailerons, rudder and tail, as well as the controls for manipulating the usual movable parts thereof so that the direction of the airplane is under the control of the operator seated in the fuselage. The airplane is also provided with a conventional form of landing gear so as to insure proper landing of the airplane on the ground when the revolving beam comes to rest.

In the manner similarly described in my previous co-pending application, the length of the cable connecting the airplane with the revolving beam may be increased or diminished so that the range of freedom of the plane with respect to the end of the beam may be controlled by the operator in the cabin 27 of the truck 21.

From the above description it will be seen that when the operator in the cabin 27 connects or operates the control for driving the electric motors 25, which in turn drive the truck wheels 23, the beam 12 will be revolved about its pivot 15, which in turn will cause the airplane to rise from the ground and follow the path described by the outer or free end of the beam 10, and when sufficient speed is attained, the operator in the airplane may manipulate the controls for the purpose of banking, diving or doing other stunts within the range of freedom permitted by the cable. These various stunts may be indulged in by the operator without fear of a crash on account of the connection of the cable with the free end of the arm or beam of the device.

From the above description it will also be seen that I have provided a very simple device in which by providing the inclined beam I have eliminated the necessity of a large center standard structure as is required in my previous co-pending application, and as is disclosed in prior patents of this general construction. It will also be noted that any number of these beams from one to six may be similarly constructed and connected together about a single track, so that a greater number of these devices or beams may be manipulated by the one operator.

While in the above specification I have described my device as being particularly adapted to an aviator's training device, it will of course be understood that the same is capable of use as an amusement device, or the same may be made in miniature form with the truck thereof driven by a spring motor, so that the principal features of my invention may be the embodiment of a toy.

While in the above specification I have described one embodiment which my invention may assume, in practice it will of course be understood that the same is capable of modification, and that modification may be employed without departing from the spirit or scope of my invention, as expressed in the following claims.

What I claim as my invention and desire to secure by Letters Patent is:

1. A device of the class described comprising an inclined beam having the lower end thereof pivotally connected to a standard, a truck connected at an intermediate portion of said beam for supporting and operatively driving said beam about the pivot thereof, and an airplane connected by cable to the free end of said beam.

2. A device of the class described comprising a single beam having one end thereof pivotally anchored, means for supporting the other end of said beam in an elevated position and means for connecting an airplane to the elevated end of said beam.

3. A device of the class described comprising a beam, said beam being pivotally anchored at one end thereof, the other end thereof being flexibly connected to an airplane, and an intermediate portion of said beam being supported on and driven by a truck.

4. A device of the class described comprising a beam having its intermediate portion relatively wide and tapering toward the outer ends thereof, one end of said beam being pivotally anchored to the ground and the other end of said beam being flexibly connected to an airplane, and a driving truck connected to and supporting one end of said beam in an elevated position and for revolving said beam about its pivot.

5. A device of the class described comprising a member having one end of said member pivotally connected adjacent the ground and the other end thereof in an elevated position and flexibly connected to an airplane, and means for supporting and driving said member about its pivot.

6. A device of the class described comprising a base, a stud secured in the center of said base, a circular track arranged concentric with said stud, a beam having one end

pivotally connected to said stud, an airplane flexibly connected to the other end of said beam, and a power driven truck mounted on said track, and connected with said beam for revolving said beam about said stud.

7. A device of the class described comprising a base, a stud secured to said base, a track encircling said stud, an inclined beam having one end thereof pivoted on said stud, and the other end thereof flexibly connected to an airplane, a driving truck mounted on said track for supporting and driving said beam about said stud.

8. A device of the class described comprising an inclined beam having the intermediate portion thereof relatively wider and the outer end thereof gradually converging, the lower end of said beam being pivotally connected at a point adjacent the ground, and the other end of said beam being in an elevated position and flexibly connected to an airplane, and a triangularly arranged truck frame having wheels mounted in the fore and aft portion thereof for supporting and driving said beam in an elevated position around its pivot.

In testimony whereof I have signed my name to this specification, on this 21st day of November, A. D. 1929.

ALVIN BISCH.