Sept. 18, 1928.

1,684,796

G. HABICHT

TOY ROUNDABOUT

Filed Aug. 15, 1927

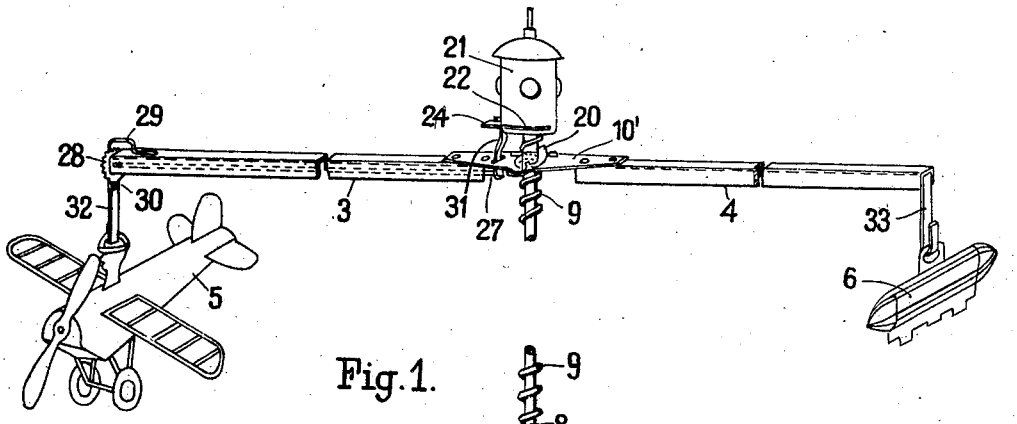


Fig.1.

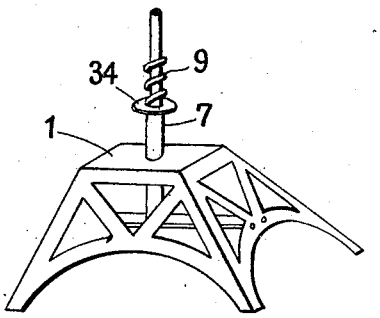


Fig.2.

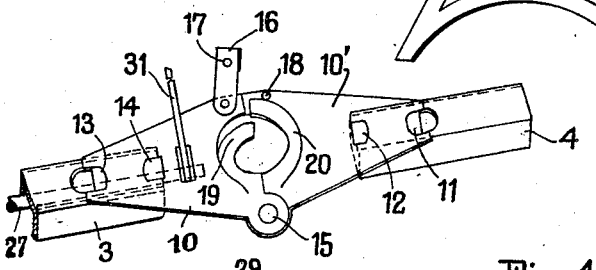


Fig.3.

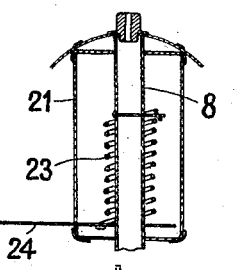


Fig.4.

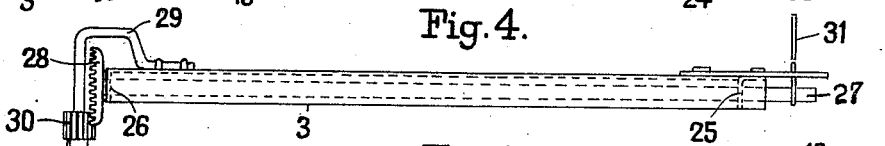
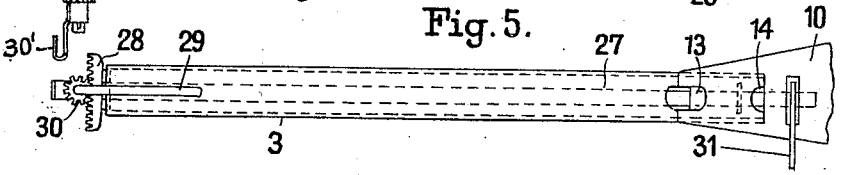


Fig.5.



Inventor:
. Georg Habicht
by Kenschaeen
Atty

Patented Sept. 18, 1928. 1,684,796

UNITED STATES PATENT OFFICE.

GEORG HABICHT, OF NUREMBERG, GERMANY, ASSIGNOR TO THE FIRM BING-WERKE, VORM. GEBR. BING AKTIENGESELLSCHAFT.

TOY ROUNDABOUT.

Application filed August 15, 1927, Serial No. 212,997, and in Germany December 31, 1926.

My invention relates to toy roundabouts of the type in which models representing airplanes, airships or the like, are reciprocated along a vertical threaded spindle while rotating bodily about the spindle. The models are suspended from a girder which is adapted to rotate on the spindle while engaging its thread so that vertical motion is imparted to the girder while it is rotating. The rotation of the girder is effected by means of the models each of which is equipped with a propeller and an independent motor, as clockwork.

It is an object of my invention to improve a roundabout of this type and to this end I provide means for reversing the apparatus so that the models will start from below, will rise to the highest point and will then be reversed and glide back.

It is another object of my invention to so effect the reversing of the model at the highest point that it is started for the glide, and to this end resilient means are connected with the reversing mechanism.

It is a further object of my invention to provide a collapsible girder comprising two pivotally connected arms which in operative position constitute a nut for engaging the thread of the spindle, and, when not in operation, can be folded to half the length of the complete girder.

In the accompanying drawing an apparatus embodying my invention is illustrated diagrammatically by way of example.

In the drawings,

Fig. 1 is a perspective illustration of the complete apparatus,

Fig. 2 is a similar view showing, on a larger scale, the connection of the two girder arms,

Fig. 3 is a section along the axis of the spindle showing the reversing and gliding mechanism,

Fig. 4 is an elevation, and

Fig. 5 is a plan view of a girder arm.

Referring to Fig. 1, 1 is the pedestal of the apparatus, 7 is a vertical sleeve on the pedestal, 34 is a supporting plate at the upper end of the sleeve on which the girder is resting in its initial position, 8 is a spindle secured in the sleeve 7, 9 is a wire wound about the spindle so as to constitute a thread, 3 and 4 are the pivotally connected arms of the girder, 5 is a model of an airplane which is suspended from the girder 3 by means which will presently be described, and 6 is a balance weight for the airplane model 5 which in the present instance has the form of an airship.

It will be understood that I am not limited to a spindle the thread of which is constituted by a wire as shown and described, although this construction is preferred on account of its cheapness, nor am I limited to any definite number of girders and models attached thereto, and, instead of the balance weight 6 I might provide another airplane model.

A motor (not shown) of some suitable kind, for instance of the clockwork type, is provided for imparting rotation to the propeller of the model 5.

The girder comprises two arms 3, 4 which may be of channel section, as shown. 10 is a bracket secured to the inner end of the arm 3, 10′ is a bracket secured to the corresponding end of arm 4 through the medium of tongues 13, 14 and 11, 12, respectively, 15 is a pivot connecting the brackets 10, 10′ and 16 is a link with a hole 17, which is pivoted in the bracket 10 and is adapted to engage a pin on the bracket 10′. Both brackets are recessed for the spindle 8 at their joint and provided with tongues 19 and 20 constituting parts of a female thread engaging the thread of the spindle 8 so that the recesses, with the arms connected by the link 16, will form a complete nut for the thread of the spindle 8.

21 is a casing secured to the other end of the spindle 8 which, as shown in Fig. 3, may be tubular for lightness. 23 is a spring surrounding the tube or spindle 8, and 24 is a catch connected with the spring and projecting from a slot 22 in the wall of the casing 21.

27 is a reversing shaft which is pivotally supported in the arm 3 on which the model is suspended, tongues 25 and 26 constituting the bearings for the shaft. 31 is a lever projecting from the inner end of the shaft 27 and adapted to engage the catch 24. 28 is a crown gear at the outer end of the shaft, 30 is a pinion meshing with the crown gear 28 and carried on a bracket 29 at the arm 3, and 30′ is a hook secured to the boss of the pinion 30 and adapted to support a link 32 from which the model 5 is suspended. 33 is a hook at the outer end of the girder on which the balance weight 6 is suspended.

The operation of this apparatus is as follows:

The spindle 8 is inserted in the sleeve 7 of the pedestal 1, the brackets 10 and 10′ are placed on the lower end of the spindle so as to be supported on the plate 34 and are closed on the spindle by means of the link 16 so that the tongues 19 and 20 of the brackets engage the thread of the spindle 8. The airplane model 5 and the balance weight 6 are now attached to their respective hooks 30′ and 33, the motor of the model 5 is started and the airplane will now rise while rotating bodily with the girder 3, 4. In the uppermost position of the model the lever 31 on the reversing shaft 27 strikes the catch 24 and the reaction of the spring 23 causes the shaft 27 to be rotated in its bearings 25 and 26. The crown gear 28 rotates the pinion 30 through about 180°, the model 5 is reversed, the reaction of the spring 23 starts the girder 3, 4 in the new direction and the air plane will now glide by gravity, as its motor is so designed as to be cut out or run down when the airplane is reversed.

If desired, the spring 23 may be dispensed with so that the catch 24 is rigidly secured to the spindle 8, and merely acts to reverse the model but not to start it for the guide.

While I have illustrated a roundabout having a motor unit at one end, and a dummy at the other end of its girder, it is understood that I am not limited to this particular construction but may provide any number of propelling units and dummies, or no dummies at all, and any number of arms on the girder from which the models or dummies, if any, are suspended, and in general I wish it to be understood that I do not desire to be limited to the exact details of construction shown and described, for obvious modifications will occur to a person skilled in the art.

I claim:—

1. A toy roundabout comprising a stationary threaded spindle, a girder provided with thread-engaging means adapted to rotate bodily about said spindle, a model of an air craft comprising propelling means attached to said girder, a check on said spindle, and mechanism on said girder adapted to be operated by said check in a given relative position of said spindle and said girder so as to reverse the fore-and-aft position of said model.

2. A toy roundabout comprising a stationary threaded spindle, a girder provided with thread-engaging means adapted to rotate bodily about said spindle, a model of an air craft comprising propelling means attached to said girder, a check on said spindle, and mechanism on said girder adapted to be operated by said check in a given relative position of said spindle and said girder so as to reverse the fore-and-aft position of said model, and resilient means operatively connected with said check and adapted to start said girder in the direction of rotation which the reversing of the fore-and-aft position of said model tends to impart to said girder.

3. A toy roundabout comprising a stationary threaded spindle, a girder provided with thread-engaging means adapted to rotate bodily about said spindle, a bracket rotatably carried at one end of said girder and a model of an air craft comprising propelling means detachably secured to said bracket, a shaft in said girder, a connection between said shaft and said bracket adapted to rotate said bracket when said shaft is rotated, a check on said spindle and a lug on said shaft adapted to be engaged by said check in a given relative position of said spindle and said girder.

4. A toy roundabout comprising a stationary threaded spindle, a girder provided with thread-engaging means adapted to rotate bodily about said spindle, a bracket rotatably carried at one end of said girder and a model of an air craft comprising propelling means detachably secured to said bracket, a shaft in said girder, a connection between said shaft and said bracket adapted to rotate said bracket when said shaft is rotated, a check pivoted on said spindle, a spring operatively connected with said check so as to oppose rotation of said check in a given direction, and a lug on said shaft adapted to be engaged by said check in a given relative position of said spindle and said girder.

5. A toy roundabout comprising a stationary spindle, a girder comprising two pivotally connected arms, each arm having part of a thread adapted to constitute, in combination with the other part, a complete thread adapted to engage the thread on said spindle, a model of an air craft comprising propelling means attached to said girder, a check on said spindle, and mechanism on said girder adapted to be operated by said check in a given relative position of said spindle and said girder so as to reverse the fore-and-aft position of said model.

6. A toy roundabout comprising a stationary threaded spindle, a girder provided with thread-engaging means adapted to rotate bodily about said spindle, a model of an air craft comprising propelling means attached to said girder, a check on said spindle, mechanism on said girder adapted to be operated by said check in a given relative position of said spindle and said girder so as to reverse the fore-and-aft position of said model and a dummy representing an air craft attached to said girder so as to balance said propelling model.

In testimony whereof I affix my signature.

GEORG HABICHT.