PATENT SPECIFICATION

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COMPLETE SPECIFICATION.

Aircraft Toy.

We, BING-WERKE, vorm. Gebr. Bing A.G., of 16, Blumenstrasse, Nurnberg, Germany, a German joint stock company, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

Aircraft toys operated by spring mechanism are known, in which the rotatable framework supporting the aircraft is moved up and down an upright stationary threaded spindle. The supporting framework is actuated by means of a rotatable slotted sleeve surrounding the threaded spindle and caused to rotate by spring mechanism housed in the base of the roundabout. In comparison therewith, the invention differs, in the first place, in that the spring mechanism actuating the supporting framework is housed, not in the base of the toy but in one of the aircraft, so that the rotation of said framework is produced by the propeller of the aircraft. The invention also comprises a braking device which, at the same time serves to reverse the direction of flight of the aircraft as soon as it has reached the highest point, and enable it to glide down again with the motive power shut off. This device also enables a certain actuating impulse to be imparted, in the new direction, to the aircraft, that is, the supporting framework, at the moment of reversing the direction. According to the invention the supporting framework is designed as a beam in two parts articulated together and so arranged at the point of articulation as to form a divided guide nut for the threaded spindle.

The invention will be clearly understood from the following description aided by the annexed drawings in which an embodiment of the invention is illustrated, Figure 1 representing a perspective view of the aircraft toy; Figure 2 a perspective view of the central portion of the beam; Figure 3 a cross section through the upper portion of the rod guiding the wire spiral, with the brake lever of the reversing gear, and Figures 4 and 5 a side elevation and plan of the left arm of the beam.

The aircraft toy consists substantially of the base 1, with a threaded spindle 2 mounted thereon; the supporting beam 3, 4, with an aeroplane 5 suspended from the one arm, and a counterpoise in the form of an airship 6, or other flying machine, suspended from the other arm.

The threaded spindle 2 consists of a rod 8, surrounded by a wire spiral 9, and inserted in a socket 7 on the base 1. The beam is composed of two arms 3, 4 of U shape in cross section, connected together by means of a plate 10 and bent-over lugs 11, 12 and 13, 14. The plate 10 consists of two parts, joined together by a hinge 15, and held in the closed position by means of a small latch 16 as soon as the recess 17 slips over the projection 18. The plate 10 has a central opening and is provided with lugs or tongues 19 and 20 bent respectively downward and upward out of its plane and forming in combination, the guide nut for the spirally wound wire 9.

On the upper end of the tubular rod 8 is mounted a sheet metal cylinder 21 provided with a transverse slot 22. Inside the cylinder 21 is arranged a spiral spring 23 coiled round the stationary rod 8 and attached to said rod at one end, whilst the other end bears against an arm 24 which is guided in the transverse slot 22.

Along the left arm 3 of the beam is positioned a rotatable shaft 27 mounted

therein by means of bent lugs 25, 26 and carrying on its outer end a crown wheel 28 engaging a pinion 30 mounted in a bow 29 on the arm 3. The inner end of the shaft 27 is integrally connected to an arm 31. The aeroplane 5 and the counterpoise 6 are suspended from the arms 3 and 4 by means of hooked members 32 and 33.

The aircraft toy operates in the following manner. The threaded spindle 2 being inserted in the base 1, the arms of the beam, in the open position, are laid on the supporting disc 34 and closed, the two parts of the plate 10 being held together by the latch 16. The lugs 19 and 20 engage with the thread of the spindle 2. On now attaching the aircraft 5 and counterpoise 6 and winding up the spring mechanism in the former, the aircraft, carrying with it the rotatable beam, will screw itself upward on the threaded spindle. On reaching the top, the arm 31 on the shaft 27 comes in contact with the arm 24 protruding from the cylinder 21, forcing it backward and thereby putting the spiral spring 23 in tension. At the same time the arm 31 is also relatively reversed, thereby imparting a rotational movement to the shaft 27. Consequently, the crown wheel 28 turns the small pinion through about 180°, so that the aircraft also is turned round through 180°, that is to say in the reverse direction of flight. The tensioned spring 23 now uncoils again and thereby imparts a certain impulse in the reverse direction, so that the aircraft, propeller in front, glides downwards. The strength of the spring mechanism is so calculated that it will have run down by the time the aircraft is automatically reversed. The braking spring 23 may, however, be omitted, in which event the braking arm 24 acts solely as a fixed stop.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

1. Aircraft toy with a supporting beam carrying the aircraft and adapted to rotate about a stationary threaded spindle, characterised in that the spiral ascent of the beam is effected by the spring mechanism housed in the aircraft itself.

2. Aircraft toy according to Claim 1, characterised by a braking device which comes into action at the highest point of the track of flight and reverses the direction of flight of the aircraft.

3. Aircraft toy according to Claims 1 and 2, characterised in that a stop is provided at the upper end of the threaded spindle and is encountered by an arm secured to a rotatable shaft on the supporting arm so that the rotation of said shaft, acting through gearing, swings the aircraft round into the opposite direction of flight.

4. Aircraft toy according to Claims 1—3 characterised by a stop on the upper end of the threaded spindle and adapted to be forced backward, thereby tensioning a spring, said stop transmitting the energy, stored up in tensioning the spring, as an actuating impulse to the beam which is changing its direction of rotation.

5. Aircraft toy according to Claims 1—4, characterised in that the beam consists of two arms articulated together by means of a plate.

6. Aircraft toy according to Claims 1—5, characterised in that the plate connecting the two arms of the beam is provided with two lugs bent respectively downward and upward out of its plane and forming the guide nut for the spirally wound wire of the spindle.

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Fig. 1

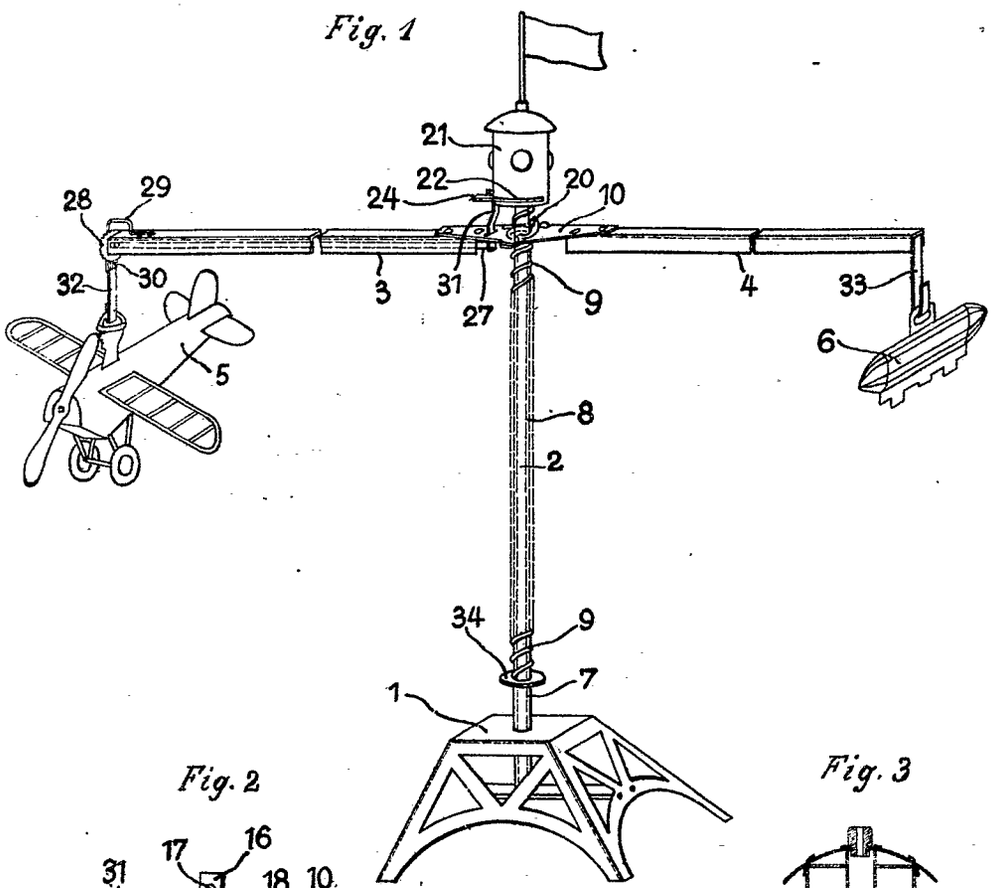


Fig. 2

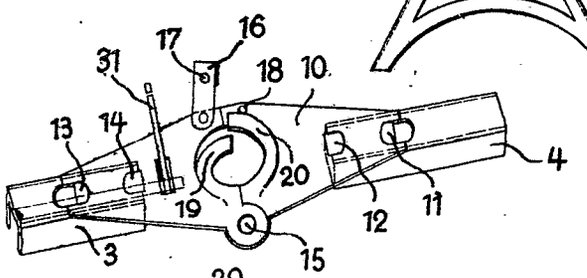


Fig. 3

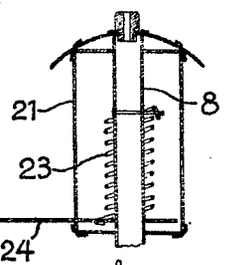
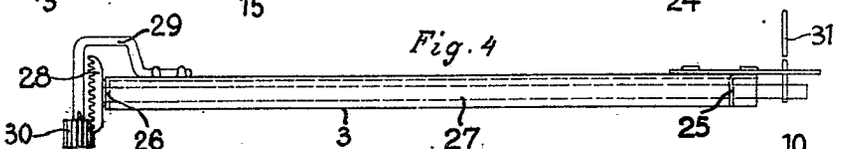


Fig. 4



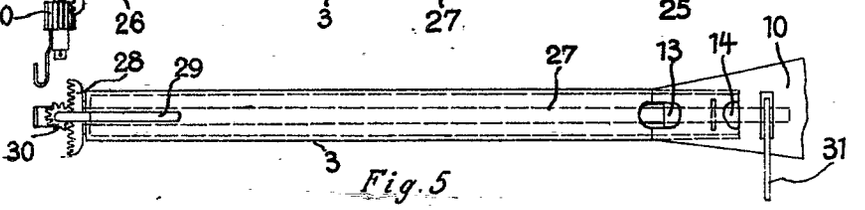


Fig. 5

Charles & Read Ltd. Photo Litho.