

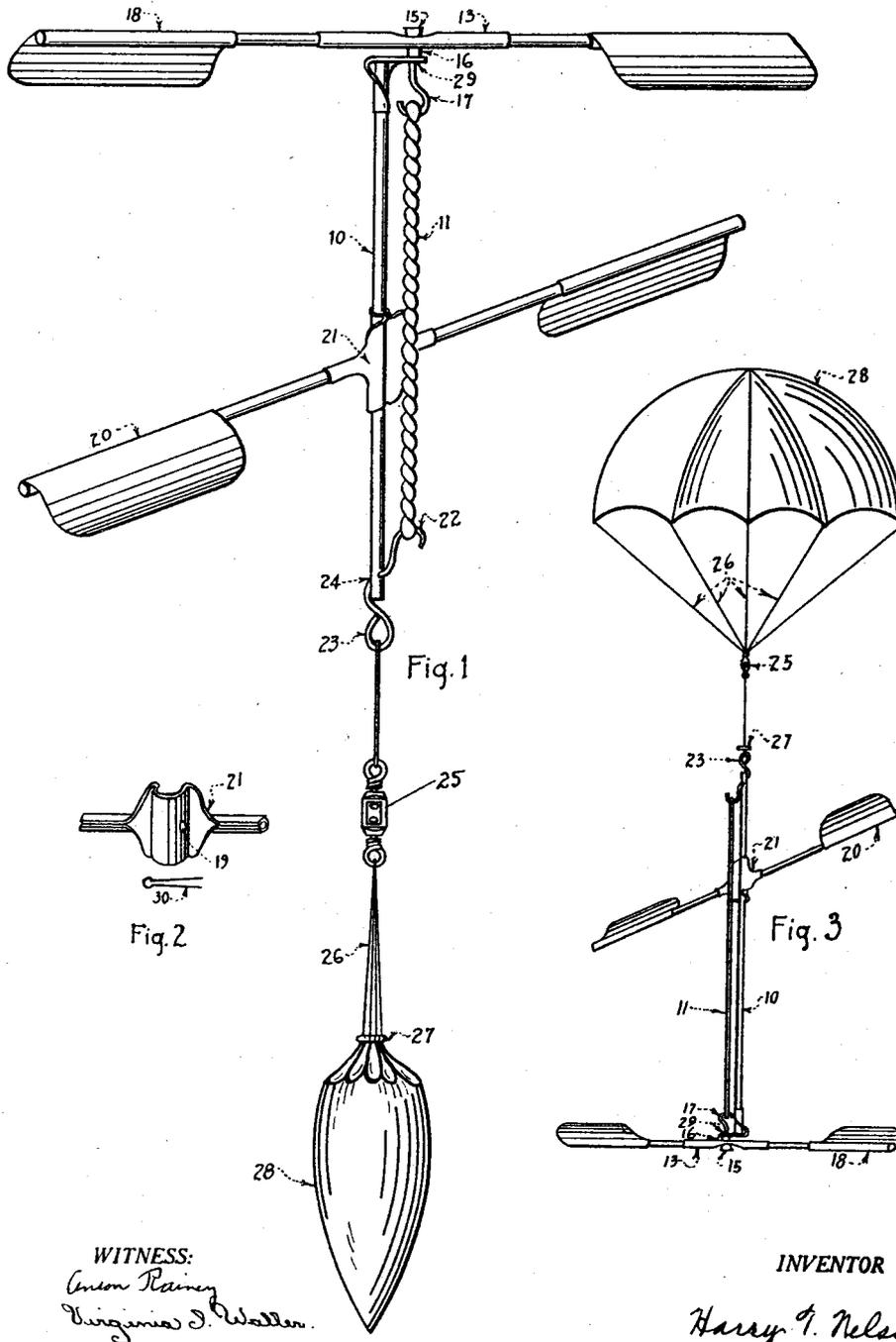
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H. T. NELSON

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HELICOPTER OR FLYING TOY

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WITNESS:
Union Railway
Virginia D. Waller.

INVENTOR

Harry T. Nelson.

UNITED STATES PATENT OFFICE

HARRY TRACY NELSON, OF DALLAS, TEXAS

HELICOPTER OR FLYING TOY

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The invention relates to new and useful improvements in helicopters or flying toys.

The object of the invention is to provide a helicopter, or flying toy which may be used as a toy or for any other purpose for which it is suitable.

One object of the invention is to provide a helicopter with propellers revolving in opposite directions cooperating to propel the device in one direction and with a parachute attached to the lower end of the frame so that when the propellers cease to rotate and the helicopter begins to fall the parachute will be opened, thereby bringing the helicopter safely and comparatively slowly to the ground, such an operation producing either a pleasing or useful effect, or both.

Another object of the invention is to provide a helicopter with a parachute attached to the lower end, preferably by means of a swivel connection, so that the parachute is not rotated by the revolving motion of the helicopter and is free to hang dormant so that its cords will not become twisted while the helicopter is ascending; together with means for holding the parachute closed during the ascent and automatically releasing the parachute to open at the beginning of the descent.

A further object of the invention is to provide a helicopter with a parachute attached to the lower end which by its trailing effect and resistance through the air provides supplemental means of assisting the helicopter to continue in a vertical direction, thereby helping the toy to reach its maximum height.

A further object of the invention is to provide a flying toy of simple and light construction with demountable propellers and easily replaced rubber bands so that it may be quickly and easily mounted or demounted and packed in a small container.

The invention may be more readily understood from a reading of the following specifications and by reference to the accompanying drawings, in which an example of the invention is shown and wherein:

Fig. 1 is a view of the flying toy which is constructed in accordance with the invention and illustrates how it appears when ascending.

Fig. 2 is a view of the connection used for connecting the lower propeller to the frame.

Fig. 3 is a view of the flying toy as it appears when descending.

In the drawings the numeral 10 designates the frame which is preferably made of strong but light wood to which is fastened propeller 20 by means of connection 21 and cotter pin 30 as shown in Fig. 2. This connection is preferably made of aluminum and is so bent that when fastened to frame 10 the blades of propeller 20 are in a straight line which passes approximately through the axis formed by rubber bands 11. At the upper end of frame 10 is an aluminum connection 14 in which is a bearing for propeller 18. The blades of the propellers 18 and 20 are arranged to cooperate in propelling the toy when revolving in opposite directions. Numerous experiments disclosed the fact that the spacing of the propellers from each other as shown gets approximately the same lifting power as if the lower propeller were placed at the extreme lower end of the frame. An added advantage of leaving the space as shown between the lower propeller and the bottom of the frame is found in reducing the danger of the parachute and its connections being tangled with the lower propeller. The axle 17 is fixed to the propeller 18 and having its upper end at 15 either by bradding or the use of a small nut. To reduce friction the boss bearing 16 is provided which rests upon connection 14, and is an enlargement of axle 17. A small washer could be used for the same purpose. The lower end of axle 17 is hook-shaped for receiving rubber bands 11, these being connected at the opposite ends to hook 22 which is fixed to frame 10 through aperture 24. After passing through aperture 24 this hook is continued downward and its lower end forms eyelet 23 to which is connected the parachute 28. The parachute is kept closed during ascension by means of ring 27 which passes around cords 26. A swivel coupling 25 is used to prevent the cords from becoming twisted while the propellers are revolving. It is understood that propeller 20 is fastened rigidly to the frame 10 so that both with their parts revolve together.

The flying toy with propellers revolving in opposite directions is not new within itself as seen from the records of the Patent Office. Heretofore, however, no flying toy of this kind has been invented which has the combination of the improvement which assists it to keep in a vertical direction thereby approaching a maximum height nor the combination which makes it possible for the toy to protect itself from the fall which must necessarily follow the ascension. The combination of the flying toy with propellers revolving in opposite directions and with the parachute eliminates these deficiencies, thereby making a toy that is more interesting and of longer life.

In Fig. 2 connection 21 is shown which is used to receive the blades of propeller 20. As a means of connecting this part to frame 10, a cotter pin 30 is used which passes through hole 19. This makes it easy to dismount the flying toy so that it may be packed into a very small space, for by taking out the cotter pin the lower propeller is dismounted. Then by releasing rubber bands 11 from hooks 17 and 22 the upper propeller may be slipped out of its bearing with an upward lift and side turn. The propellers 18 and 20, rubber bands 11, frame 10, and parachute 28, may then be placed side by side being of approximately the same length.

In winding up the device the frame 10 is held in one hand while the propeller 18 is rotated with the other, as with the well known toy airplane where rubber bands are used for power. It will be noted that no ratchet or locking device is used in order to avoid excessive weight. When sufficient energy is thus stored up by the twisted bands the toy is then held in a vertical position with propeller 18 at the top with the parachute hanging as in Fig. 1. The toy is now ready for its flight which is accomplished by releasing propeller 18 and frame 10.

When the toy is ascending, the parachute is closed by a ring 27 which holds the lower ends of the cords together, as shown in Fig. 1. When the propellers have spent their energy, the toy being heavier, turns over and starts downward. The ring 27, owing to gravity, will slide down the cords 26 and thereby permit the parachute to open, bringing the toy slowly downward as shown in Fig. 3, producing a useful and very attractive device.

Various changes in the size and shape of the different parts, as well as modifications and alterations may be made within the scope of the appended claims.

What I claim is:

1. A flying toy having a parachute connected to the lower end thereof, the cords of the parachute being surrounded by a sliding means operating in the ascent of the toy to hold the parachute against opening, but sliding downward in the descent of the toy to permit the opening of the parachute.
2. A flying toy having a parachute connected to the lower end thereof by means including a swivel coupling, the cords of the parachute being surrounded by a sliding means operating in the ascent of the toy to hold the parachute against opening, but sliding downward in the descent of the toy to permit the opening of the parachute.

HARRY TRACY NELSON.

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