R. B. BENJAMIN.

AERIAL TOP.

APPLICATION FILED OCT. 12, 1914.

1,260,957.

Patented Mar. 26, 1918

2 SHEETS—SHEET 1.

Fig. 1

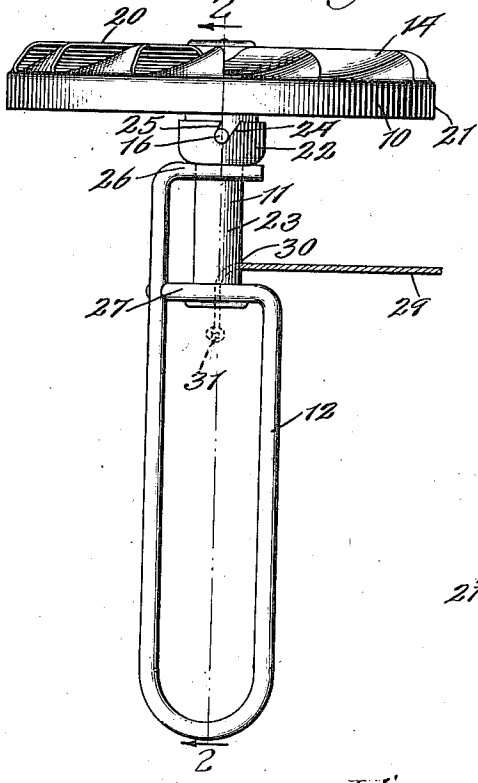


Fig. 2

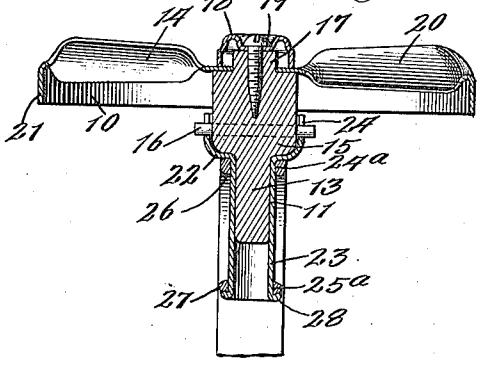


Fig. 5

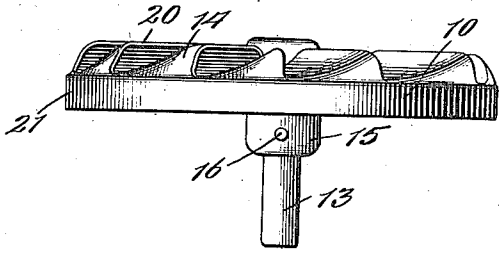


Fig. 3

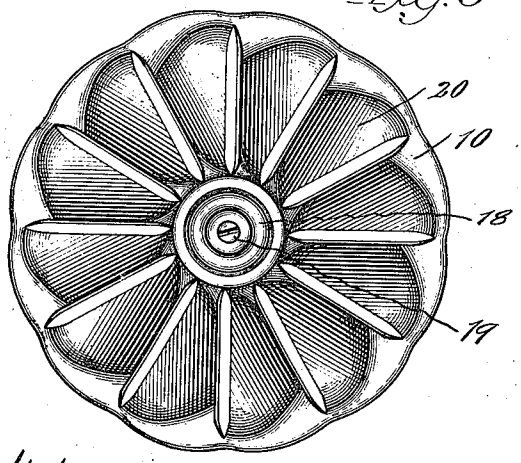
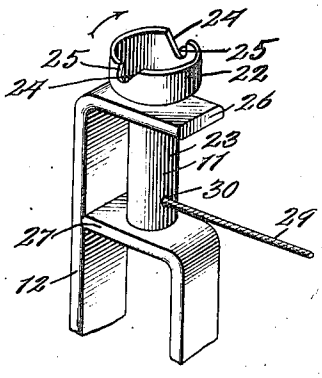


Fig. 4



Witnesses:-

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2 SHEETS—SHEET 2.

Fig. 6.

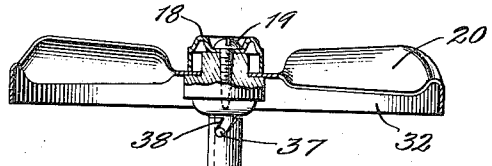


Fig. 7.

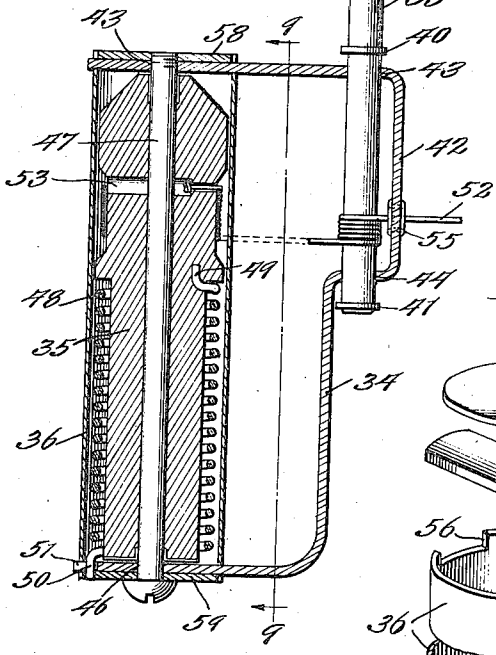


Fig. 8.

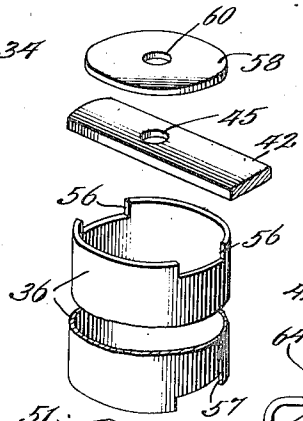
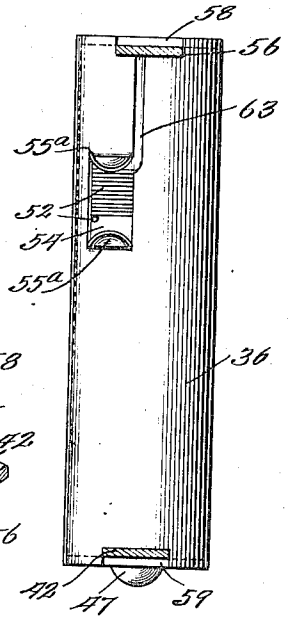
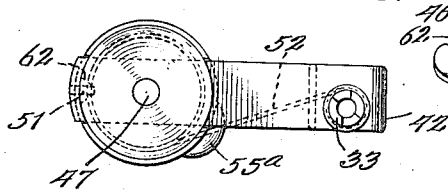


Fig. 9.





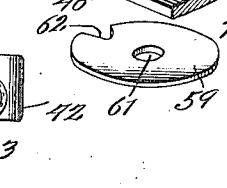
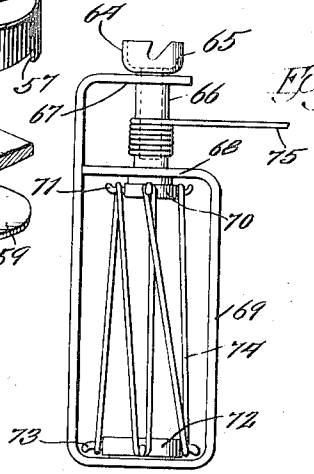


Fig. 10.



Witnesses:

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Atty's.

UNITED STATES PATENT OFFICE.

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AERIAL TOP.

1,260,957. Specification of Letters Patent. Patented Mar. 26, 1918.

Application filed October 12, 1914. Serial No. 866,304.

To all whom it may concern:

Be it known that I, REUBEN B. BENJAMIN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Aerial Tops, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawing, forming a part of this specification.

My invention relates to improvements in aerial tops.

Some of the objects of my invention are to provide a device of this character which will have increased efficiency, which will be provided with a safety feature and which will have automatic means for restoring a manually actuated driving member to its original position. Further objects will appear from the detailed description to follow.

For the purpose of disclosing my invention I have illustrated several embodiments thereof in the accompanying drawings, in which—

Figure 1 is a side elevation of one of the modifications of my device showing the top in place in the holder;

Fig. 2 is a section on the line 2—2 of Fig. 1;

Fig. 3 is a plan view of the top;

Fig. 4 is a perspective view of the rotatable holder and frame;

Fig. 5 is a side elevation of the top;

Fig. 6 is a sectional elevation of a modified form of my device in which a spring drum is employed to rewind the string;

Fig. 7 is a plan view of the manually operated motor, shown in Fig. 6;

Fig. 8 is a view illustrating the manner in which the drum inclosing shell is mounted on the frame;

Fig. 9 is a section on the line 9—9 of Fig. 6, showing the drum inclosing shell; and

Fig. 10 is a side elevation of another modification of my device in which the rotatable holder is returned by means of an endless elastic band.

Referring now to the drawings in detail, reference character 10 indicates the top as a whole mounted in a rotatable holder and driving member 11, which latter is rotatably mounted in a U-shaped frame 12. The top comprises a spindle portion 13 and a rotor or propeller 14. The spindle 13 has an elongated hub portion 15 through which is inserted a pin 16. The hub 15 has a reduced portion 17 extending through a central opening in the propeller 14, the propeller being secured to the hub portion by means of a cap 18 held in place by a screw 19. The propeller has a plurality of inclined blades or wings 20 struck up therefrom and it is also provided with a down-turned skirt or flange 21.

The holder 11 comprises a cup shaped portion 22 and a sleeve portion 23. The cup 22 has a pair of notches 24 on opposite sides thereof, said notches having a slightly over-flanging edge 25, as shown in Figs. 1 and 4, for a purpose to appear hereinafter.

The sleeve 23 extends through openings 24^a and 25^a in the bent-over ends 26 and 27 of the U-shaped frame 12. The end 27 is secured to one arm of the frame 12 in any suitable manner as by riveting or soldering. The sleeve 23 is flanged over below the bent over end 27 as shown at 28 to retain the sleeve in place. A cord 29 is secured to the sleeve 23 by inserting it through an opening 30 therein and tying a knot 31 at the end of the cord, as shown in Fig. 1, after which the cord is drawn up to a position in which the knot is inside of the sleeve 23.

The use and operation of this modification of my device is as follows:

The cord 29 is wound in the proper direction on the sleeve 23 either by rotating the holder 11 directly or by placing the top in the holder and rotating the top in the proper direction. The cord is then given a quick pull causing the holder and top to rotate rapidly. When the cord is all unwound from the sleeve 23 the holder 11 comes to a stop, but the top rides out of the holder, the pin 16 riding up the sides of the notches 24, the inclination of the blades 20 causing the spindle to be lifted from the holder and causing the top to rise in the air. After the top descends it will continue to spin for some time. The purpose of making the edge 25 slightly over-hang the pin is to prevent any possibility of the top leaving the holder before the latter has ceased to rotate.

In the modification of Figs. 6, 7, 8 and 9 I have illustrated a device in which the cord which is pulled to rotate the holder is automatically returned by means of a spring drum. The device of this modificaiton comprises a top 32 similar to the top 10, a rotatable holder 33, a yoke or frame 34, a spring

drum 35, and a casing for said drum 36. The top 32 has a pin 37 extending through the spindle and engaging notches 38 in the holder or driving member 33. The spindle of the top extends through an axial recess in the holder 11. The holder is provided with collars or flanges 40 and 41 for a purpose to hereinafter appear.

The frame 34 is provided with an off-set yoke portion 42 having openings 43 and 44 therein through which the holder 33 extends. The frame 34 is provided with openings 45 and 46 through which extends a screw 47 on which the drum 35 is rotatably mounted. A coiled spring 48 surrounding the drum 35 has one end 49 secured to said drum, its other end 50 extending into a notch 51 in the frame 34, as shown in Fig. 6. A cord 52 having one end secured in an opening 53 in the drum 35 is wound around said drum and extends through an opening 54 in the side of the casing 36, and is wrapped several times around the holder 33 and extends through an eyelet 55 in the frame 34. Lips 55[a] are struck up from the casing 36 above and below the opening 54. The casing 36 is provided with notches 56 and 57 at its upper and lower ends respectively in which the ends of the frame 34 engage. The ends of the casing 36 extend somewhat beyond the frame 34 and fitting in the upper and lower ends of the casing are centering washers 58 and 59 having openings 60 and 61 through which the screw 47 extends for the purpose of holding the casing in place with respect to the drum. The lower washer 59 is provided with a notch 62 to accommodate the end 50 of the spring. The casing 36 is provided with a slot 63 extending from the opening 54 upwardly to the notch 56 for a purpose to appear hereinafter.

The operation of this modification is as follows:

The top 32 is placed in position in the holder 33, the casing 36 is grasped with one hand, and the cord 52 is given a quick pull causing the holder 33 and top 32 to rotate rapidly. When the cord is all unwound from the drum 35 the holder comes to a stop and the top flies out, rises in the air, descends and spins. The purpose of the lips 55[a] is to prevent the fingers of the operator from coming in contact with the cord 52 when the cord is being wound and unwound. After the top leaves the holder the pull on the cord 52 is relaxed and the spring 48 rotates the drum 35 to rewind the cord, placing the parts in position to be again operated. If it is desired to remove the drum from the casing the screw 47 is withdrawn longitudinally and the casing containing the drum is slipped out of the frame 34 by moving it to the left as shown in Fig. 6, the end 50 of the spring slipping out of the notch 51 in the frame 34. The drum together with the spring 48 may then be removed through the upper end of the casing 36, the cord 52 sliding upward in the slot 63 to permit the withdrawal of the drum.

In the modification of Fig. 10 the holder 64 comprises a cup shaped portion 65 and a sleeve 66 rotatably mounted in the bent over ends 67 and 68 of the frame 69. Secured to the lower end of the sleeve 66 in any suitable manner is a collar 70 having upwardly bent pins 71 secured thereto. Secured to the lower part of the frame 69 is a circular member 72 having downwardly bent pins 73 secured thereto. An endless elastic band 74 is laced in zig-zag fashion around the pins 71 and 73; a cord 75 is wound several times around the sleeve 66 and has one end secured thereto.

The operation of the device of this modification is as follows:

The top is placed in position in the holder, the frame 69 is grasped with one hand and the cord 75 is given a quick pull causing the holder to rotate rapidly and causing the strands of the endless band 74 to be twisted together. When the cord is all unwound from the sleeve the holder comes to a stop and the top flies out of the holder. The pull on the cord 75 is then relaxed and the tension on the endless band 74 causes it to untwist rotating the holder 66 and rewinding the cord 75 on the sleeve.

It is to be noted that in all of the modifications the top is mounted in a rotatable holder and that it is free to leave the holder when the holder ceases to rotate, and it is to be noted that in the modifications of Figs. 6 to 10 that means are provided for restoring the manually operated means to their original position after they are manually operated. It is to be noted also that the flange 21 on the rotor or propeller 14 has several functions. It prevents the hand of the operator from coming in contact with the blades 20 and being injured thereby. It increases the moment of inertia of the top with the least possible addition of material and it serves to direct the flight of the top and keep it in a straight course.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:—

A device of the class described comprising a rotatable member, means for rotating said member including an elongated flexible member manually moved in one direction engaging said rotatable member, and a combined handle and support for said rotatable member comprising a single integral piece of sheet material having two spaced portions extending transversely of the axis of said rotatable member and having alined apertures to receive said rotatable member,

a portion connecting said spaced portions on one side of said axis and substantially parallel thereto, and a hand engaging portion extending from one of said spaced portions substantially parallel to the axis of said rotatable member on the other side of said axis.

In witness whereof, I have hereunto subscribed my name in the presence of two witnesses.

REUBEN B. BENJAMIN.

Witnesses:
W. L. POLLARD,
ANNE SOLOMON.