

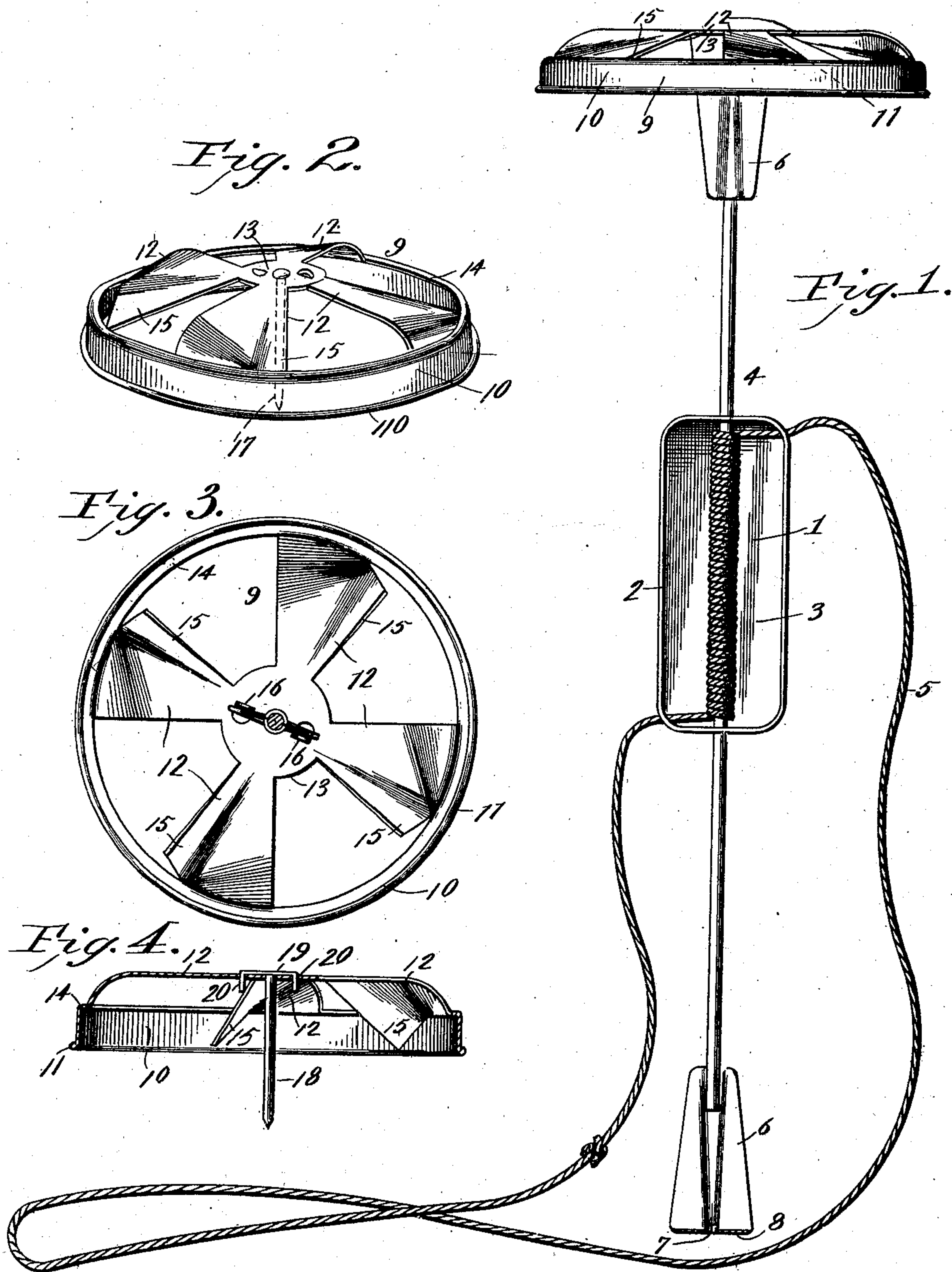
No. 693,328.

Patented Feb. 11, 1902.

A. W. MORGAN.  
FLYING TOP.

(Application filed Feb. 18, 1901.)

(No Model.)



Witnesses

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# UNITED STATES PATENT OFFICE.

ALFRED WHITE MORGAN, OF URBANA, ILLINOIS, ASSIGNOR OF ONE-HALF  
TO FRANK GIRTY, ADMINISTRATOR OF GEORGE I. GIRTY, DECEASED.

## FLYING-TOP.

SPECIFICATION forming part of Letters Patent No. 693,328, dated February 11, 1902.

Application filed February 18, 1901. Serial No. 47,798. (No model.)

*To all whom it may concern:*

Be it known that I, ALFRED WHITE MORGAN, a citizen of the United States, residing at Urbana, in the county of Champaign and State of Illinois, have invented a new and useful Flying-Top, of which the following is a specification.

This invention relates to flying-tops; and the objects of the same are to provide a general, simple, and effective means for causing the flier or top portion to be initially rotated with rapidity and automatically disengage itself from the spinning means, to have the flier or top portion of a cheap and durable construction and provided with structural features to permit the air to pass therethrough without frictional obstruction to the rapid rotation of the same, and to have the spinning means reversible, so that either end of the same may be employed to effect the operation desired without requiring manual winding of the cord, and also embodying other features which will prevent obstructive entanglement or disarrangement of the primary operating devices, including a spindle and holder.

The invention consists in the construction and arrangement of the several parts, which will be more fully hereinafter described and claimed and subject to such variations in the form, size, proportions, and minor details as fairly fall within the scope of the invention.

In the drawings, Figure 1 is an elevation of a flying-top, embodying the features of the invention. Fig. 2 is a detail perspective view of the improved flier. Fig. 3 is a horizontal section showing the flier inverted and one of the engaging ends of the spindle in operative relation thereto. Fig. 4 is a transverse vertical section of the improved flier, showing a slight modification.

Similar characters of reference are employed to indicate corresponding parts in the several views.

The numeral 1 designates a holder, which is preferably of elongated oval form and comprises an outstanding inclosing rim 2 and a continuous resilient back 3. Freely rotatable in and longitudinally slidable through the opposite end portions of the rim 2 is a spindle 4, and engaging the latter is an operating-cord 5, extending away from the said

spindle in reverse directions and having free movement through eyes in the end portions of the holder. The cord is wound a suitable distance on the spindle within the confines of the holder, and the coils thereof are held in regular condition and prevented from having a too slack application by the said back 3, said cord being also secured to the spindle at a proper point, so as to alternately move or slide the same through the holder in accordance with the portion of the cord engaged and operated to rotate the spindle.

The improved device as thus far described is similar in all respects to that disclosed by Patent No. 658,489, granted to me September 25, 1900, with the exception that the cord is continuous in the present instance. As in the patent referred to, the spindle also has a reversible use, and the cord when unwound from the spindle to rotate the spindle by grasping one portion thereof will cause winding of the opposite portion of said cord, and, further, when the one spindle extremity is projected from the one end of the holder in actuating and causing the top in engagement with said extremity to perform the operation sought the opposite extremity will be drawn in toward the opposite end of the holder and ready for use to produce a subsequent similar flying movement of the top. On each end of the spindle is a blade 6, which increases in width toward its outer free end, the said blade having a longitudinally-extending socket 7 in the center thereof, with its larger extremity innermost to fit over the spindle end, as shown by Fig. 1, and the reduced portion outermost and terminally open to loosely receive a portion of the top, which will be presently set forth. The blades, which are formed of doubled pieces of sheet metal, are immovably fixed on the terminals of the spindle and have outer straight end edges 8.

The flier or top 9 comprises a circular rim 10, having a lower reinforce-bead 11 and radial blades 12, mainly above the plane of the upper edge of said rim and extending outwardly from a central web 13, the one edge of each blade having a convex flare above the plane of the upper edge of the rim to horizontally catch the air and cause an elevation of the flier. To prevent interference



with the regular rise of the flier, the upper edge 14 of the rim is struck inwardly, and at their points of jointure with the rim the blades are broadened and have angularly-disposed depending deflecting-wings 15 at one edge, the said wings having their corner portions projecting downwardly inside of the rim and close to the lower edge of the latter, so as to throw the air below the said lower edge of the rim and prevent friction being set up between the inner surface of the rim and the air-currents, and thereby avoid counteracting obstruction to the free-rising movement of the flier. In the form of the flier shown by Figs. 2 and 3 the web 13 has ears 16 cut therefrom and struck down to form opposite stops to receive the outer edge of either blade 6 between them, as shown by Fig. 3. These ears are located on opposite sides of a diametric line drawn between them and are struck down from opposite sides of said line to provide means for easily receiving the end of the blade and establish a positive hold between the latter and the flier to impart the rotary motion of the spindle to the flier. Depending from the center of the web 13 is a pin or post 17, which is loosely received in the outer reduced portion of the socket 7 of either blade 6, the said pin or post being long enough to steady the flier in its rising movement from the blade after the cord portion at opposite sides of the holder has been drawn out its maximum extent and the spindle impelled outwardly from the holder its full prearranged limit. When the spindle has been so impelled outwardly in either direction, the flier or top will automatically disengage itself from the blade and gradually rise with a rapid whirling movement, which causes its ascent, and in the event that the flier returns to the ground, floor, or other surface before its whirling motion is spent it will spin as a top on the free end of the pin or post 17. In another use of the device the flier can be reversed and caused to spin on a table, floor, or other surface and by a very simple and obvious addition be transformed into a reversible top without detracting from its flying characteristics. The pin or post 17 is headed and inserted through the web 13; but in the form shown by Fig. 4 the pin or post 18 is centrally secured to and depends from a cap-plate 19, having depending angularly-bent ends 20, which have a relation to each other similar to the ears heretofore set forth and are in like manner engaged by the blades 6 for holding the flier in operative engagement with the spindle.

By having the cord 5 continuous or doubled, as shown, an important advantage results in the practical operation of the device. When the one portion of the cord which is forcefully drawn from the spindle by the operator to rotate the spindle reaches its terminal in accordance with the predetermined adjustment, the other portion, which has been winding on the spindle at the same time,

reaches its maximum coiled extent, and at this time the two portions of the cord will be drawn taut and suddenly check or limit the rotation of the spindle and throw the flier off the spindle-terminal in an automatic manner.

The entire device is simple and durable in its construction and can be cheaply manufactured, and though the preferred form has been shown and described it is obvious that further changes can be made.

Having thus described the invention, what is claimed as new is—

1. In a device of the class described, the combination of a rotatable longitudinally-movable spindle having blades at the opposite extremities with sockets therein, a holder through which the spindle moves, a continuous doubled cord engaging the spindle to have one portion wind thereon when another portion is unwinding, the cord moving through opposite portions of the holder, and a flier having stop devices to loosely contact with the blades and engage the sockets in the latter, the doubled cord in its operation limiting the rotation of the spindle and causing the flier to be thrown off the latter.

2. A flier having a surrounding rim and upper radial blades, the rim being in the form of a depending band in a plane at a right angle to the blades and the latter provided with depending angularly-disposed wings at their outer extremities to direct the air-currents to the lower edge of the band, the said wings extending downwardly inside of the band from the upper edge of latter to near the lower edge of the same, and an operating device with which said flier is adapted to engage.

3. In a device of the class described, the combination of a rotatable longitudinally-movable spindle having blades on the opposite extremities with sockets therein, and a flier having centrally-located stop devices to contact with the blades and a pin or post to loosely engage the sockets of the blades.

4. In a device of the character set forth, the combination of a rotatable longitudinally-movable spindle having blades on opposite extremities for reversible use, the blades being increased in width toward their outer ends and provided with central sockets, and a flier to engage either blade having oppositely-arranged stop devices and a depending pin or post between them to loosely and removably engage the blades.

5. A flier having a rim and upper radial blades with a portion of their side edges formed with an upper convex flare and also provided with depending angularly-disposed wings at their outer extremities extending downwardly close to the lower edge of the said rim to deflect the air-currents beneath the latter, the center of the flier having oppositely-disposed stop devices and a central depending pin or post, and an operating device with which the said flier is adapted to engage.



6. A top-spinning device, consisting of a block or holder, a rod endwise movable within a longitudinal channel therein, and having at one end an extended lateral portion opposite ends of which are rigidly affixed to the rod, said lateral portion having an opening therein to receive the pin on a top, and a cord wound upon said rod within said channel, substantially as described.

7. A top-spinning device, consisting of a block or holder, a rod endwise movable therein, and having at its end an extended lateral portion, with opening to receive the pin on a top and braced at both ends to the rod, a cord wound upon the rod within the block holder, means for guiding the rod at the ends of the block holder, and means for turning the cord laterally at the ends of the block holder as set forth.

8. A top-spinning device, consisting of a block or holder, with a longitudinal channel, a rod endwise movable in said channel while being rotated, said rod having at each end an extended lateral portion braced to the rod at each end, and having opening to receive the pin on a top, means at the ends of the block holder for guiding the rod, a cord wound upon the said rod within the channel of the block holder, and means at the ends of the block holder for turning the cord at substantially a right angle to the length of the rod, as set forth.

9. A top-spinning device, consisting of a block holder, a rod endwise movable therein simultaneously with its rotation and having at each end an extended lateral portion with both ends thereof braced to the rod with a central opening to receive the pin on a top, means at the ends of the block holder for guiding the rod, a cord wound upon the rod within the channel of the block holder, and means for preventing overwrapping of the cord, as set forth.

10. A top-spinning device, consisting of a block holder, a rod endwise movable therein simultaneously with its rotation and having at its end an extended lateral portion braced to the rod at opposite ends, and having a central opening to receive the pin on a top, a cord wound upon the rod within the block holder, rod-guiding means on the ends of the block holder, and lateral passages through the sides of the block between said guiding means and the end of the block for causing the cord to turn laterally and thus prevent its overwrapping as set forth.

11. In a top-spinning device a rod or shaft having at its end a holder with opening to receive the pin on a top, and a lateral portion braced at its opposite ends to the rod or shaft, as set forth.

12. A top-spinning device, consisting of a block, a rod rotatable therein and endwise movable simultaneously with its rotation and having at its end an extended lateral portion braced at both ends to the rod, and having central opening to receive the pin on a top, a

cord wound upon the rod within the block, and means on the block for turning the cord at substantially a right angle to the length of the rod, as set forth.

13. A flying-top having a ring, a top portion depending holding lugs and wings all formed from a single integral piece of material, said ring being disposed at substantially right angles to the top and the latter disposed wholly above the upper edge of the ring, substantially as described.

14. A flying-top having its ring, top portion and wings all of a single piece of material with the top portion above the upper edge of the ring, and provided centrally with a pin and lugs independent thereof to engage upon opposite sides of a holder, as set forth.

15. A flying-top having a ring portion, a top portion disposed above the upper edge of said ring portion, a central pin and lugs upon opposite sides thereof, as set forth.

16. A flying-top having a ring portion, a curved top portion disposed above the upper edge of the ring portion, wings extending from the top portion and lugs projecting centrally from the top portion with a pin substantially parallel with the lugs and projected below the lower edge of the ring portion, as set forth.

17. A flying-top, comprising in a single element a substantially vertical ring portion with beaded lower edge, a rounded top, wings with their lower edges terminating within the area of the ring portion and lugs extending at substantially right angles from the center of the top portion, as set forth.

18. A flying-top formed of a single piece of material and comprising a substantially vertical ring portion, a top portion, with lugs and wings having portions separated from the ring portion and extended downward within the latter and terminating within the area of said ring portion, as set forth.

19. The flying-top herein described, comprising the substantially vertical ring portion, having beaded lower edge, a curved top portion disposed above the upper edge of the ring portion, and having wings and lugs all formed of a single piece of material, and a centrally-disposed pin extending substantially parallel with the ring portion and projected beyond the edge thereof, as set forth.

20. In a top-spinning device, a rod or shaft having a terminal blade for engaging a top, said blade being reduced in width from its outer end toward its inner end and consisting of a blank of sheet metal folded upon itself, with the extremity of the rod or shaft held between its folds.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ALFRED WHITE MORGAN.

Witnesses:

T. A. BURT,  
FRED HESS.