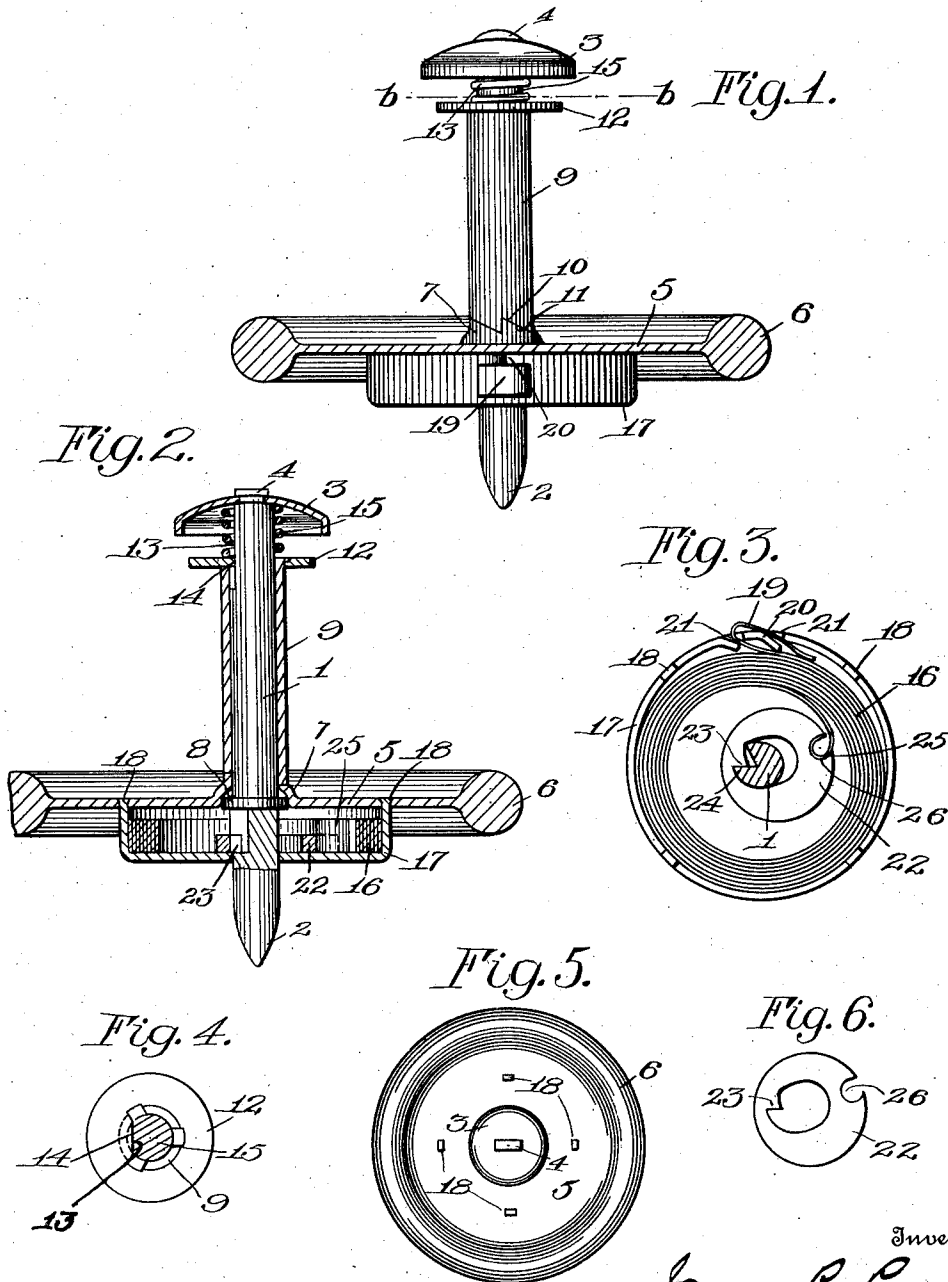


J. R. PEARSALL & A. D. HILL.
SPINNING TOP.
APPLICATION FILED JULY 21, 1911.

1,025,299.

Patented May 7, 1912.



Witnesses
A. M. Whitmore
G. V. Wooden.

Inventor
James R. Pearsall
Albert D. Hill
By H. V. Simms
Attorney

UNITED STATES PATENT OFFICE.

JAMES R. PEARSALL AND ALBERT D. HILL, OF ROCHESTER, NEW YORK, ASSIGNORS
OF ONE-THIRD TO ROBERT WADSWORTH, OF ROCHESTER, NEW YORK.

SPINNING-TOP.

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Specification of Letters Patent.

Patented May 7, 1912.

Application filed July 21, 1911. Serial No. 639,708.

To all whom it may concern:

Be it known that we, JAMES R. PEARSALL and ALBERT D. HILL, of Rochester, in the county of Monroe and State of New York, have invented a new and useful Improvement in Spinning-Tops, which improvement is fully set forth in the following specification and shown in the accompanying drawings.

The present invention relates to spinning tops of the type in which a spring on the top is employed for giving momentum thereto, and an object of the invention is to provide a construction in which the spring is so connected that it cannot be broken or otherwise put out of order by winding the same in the wrong direction.

Another object of the invention is to provide a simple release for said spring conveniently mounted for manipulation by the user supporting the top, thus permitting the top to be operated by one hand.

To these and other ends, the invention consists in certain parts and combinations of parts all of which will be hereinafter described, the novel features being pointed out in the appended claims.

In the drawings: Figure 1 shows the top in side elevation with a portion of its body in section; Fig. 2 is a vertical axial section; Fig. 3 is a top view of the spring container removed, the spindle being shown in horizontal section; Fig. 4 is a section on a line b-b Fig. 1; Fig. 5 is a top view of the device; and Fig. 6 is a detail view of the clutch ring.

In carrying out the invention, there is employed a spindle 1 having its lower end provided with a spinning point 2 and its upper end provided with a hand piece or cap 3 the spindle being reduced, passed through an opening in the cap and upset thereon.

Mounted to turn on the spindle is a body comprising preferably a sheet metal web 5 reinforced at its edges by a weighted ring 6. At its center the web 5 has a perforated boss 7 struck up therefrom and surrounding the spindle 1, said spindle having, in this instance, an annular rib 8 engaged by the under side of the web to support the body.

For the purpose of holding the body against rotation on the spindle, the latter may carry a clutch member preferably in

the form of a sleeve 9 surrounding the spindle above the body and having its lower end provided with a clutch face 10 to co-operate with a clutch face 11 on the boss 7. The sleeve 9 may be held against rotation on the spindle 1 by means of a disk 12 rigidly secured to and forming a flange or finger piece at the upper end of the sleeve, said disk having a noncircular opening which fits the noncircular upper end of the spindle 1, the latter, in this instance, being flattened at 13 to engage a flat face 14 on the disk 12. Normally the clutch member 9 is pressed toward the clutch member 7 on the body by means of a coil spring 15 surrounding the spindle 1 between the disk 12 and the cap 3.

Connected to the spindle 1 and the body of the top is a coil spring 16 preferably of volute form. In this instance, this spring is contained within a housing 17 struck up from sheet metal into cup form and having fins 18 at its upper edge passed through and upset upon the web 5, thus forming part of the body of the top. Of course, the bottom of this housing should have a central opening for the passage of the spindle 1, so that the lower end of the spindle projects below the bottom of the housing. The outer end of the spring 16 is bent into a loop 19 so as to be passed about a projection 20 formed by slitting the side walls of the cup at 21, the walls of said slits being deflected as shown in Fig. 3 to prevent the formation of sharp corners. Between the spindle 1 and the other end of the spring 16 a clutch connection is provided which permits the body of the top to rotate on the spindle in one direction without affecting the spring, while, in the other direction, driving connection between the spring and the spindle is established causing the spring to be wound. In this instance, the clutch is in the form of a ring 22 surrounding the spindle 1 within the container 17, said ring having an internal shoulder 23 which coöperates with the shoulder 24 on the spindle 1, upon the turning of the body in one direction, but rides freely over said spindle and its shoulder upon the turning of the top body in the other direction, this being due to the fact that the opening in the ring is much larger than the diameter of the spindle and its shoulder. The connection between the clutch ring and the spring 16 may be formed

by rolling the inner end of the spring at 25 to fit within a notch 26 in the periphery of the ring.

In the operation of the invention, the cap 3 is engaged by the fingers of one hand while the ring 6 is engaged by the fingers of the other hand to produce a relative rotation between the top body and the spindle 1, thus winding or tightening the spring 16. During this relative rotation, the clutch member 9 yields on the spindle 1 and finally holds the parts in their adjusted positions. The top is now placed with its point 2 against the surface upon which it is to spin. The thumb of one hand is placed upon the cap 3 and the forefinger and middle finger of the same hand are positioned beneath the flange 12 on opposite sides of the sleeve 9 which is now elevated by said fingers, thus freeing the body and permitting it to turn on the spindle 1 under the action of the coil spring 16. Immediately the body begins to turn on the spindle, the top is released and the clutch sleeve 9 under the action of spring 15 enters into engagement with the top body, thus again establishing a connection between said body and the spindle, so that the top turns on the point 2 under the momentum produced in the top body by the spring 16. It will be noted that the tendency of the volute coil, due to the fact that its inner end is secured to the ring 22 substantially diametrically opposite to the shoulder 23, is to hold the shoulder 23 in position to be engaged by the shoulder 24 on the spindle, or in other words that side of the ring containing the shoulder 23 is held against the spindle 1.

From the foregoing, it will be seen that there has been provided a spinning top of the type having its own spring in which all parts thereof are carried to the top. The top is adapted to be released by one hand of the user and its spring is so connected that it cannot be broken or distorted through winding in the wrong direction. Furthermore, should the user fail to release the sleeve 9 before the spring is unwound, there will be no reaction in the top as the body will turn on the spindle.

What we claim and desire to secure by Letters Patent is:—

1. A spinning top comprising a spindle, a body rotatable thereon, a spring having an end secured to one of said parts, and a clutch connection between the spring and the other part adapted to permit the body to rotate freely on the spindle in one direction.

2. A spinning top comprising a spindle, a body rotatable thereon, a spring secured at one end to the body, and a clutch connection between the spring and the spindle adapted to permit the body to rotate freely on the spindle in one direction.

3. A spinning top comprising a spindle, a body rotatable thereon, a coil spring surrounding the spindle, and having one end secured to the body, and a clutch connection between the spindle and the other end of the spring adapted to permit the body to rotate freely on the spindle in one direction.

4. A spinning top comprising a spindle, a body rotatable thereon, a coil spring surrounding the spindle, and having one end secured to the body, and a clutch ring loosely surrounding the spindle and adapted to engage therewith and to permit the body to rotate freely on the spindle in one direction.

5. A spinning top comprising a spindle having a shoulder thereon, a body rotatable on the spindle, a coil spring surrounding the spindle, and having an end secured to the body, and a ring secured to the other end of the spring, surrounding the spindle and having a shoulder for cooperation with the shoulder on the spindle when the body is turned in one direction, said ring shoulder disengaging with the shoulder on the spindle when the body is turned in the other direction.

6. A spinning top comprising a spindle having a hand piece rigid with the upper end thereof, and a spinning point permanently carried by its lower end, a body rotatable on the spindle while the latter is held by the handle, a spring connected to the spindle and to the body, and a clutch connection between the spindle and the body.

7. A spinning top comprising a spindle having a handle rigid with the upper end thereof, and a spinning point permanently carried by its lower end, a body rotatable on said spindle while the latter is held by the handle, a spring connected at one end to the spindle, and at the other end to the body, and a clutch member arranged on the spindle between the handle and the body.

8. A spinning top comprising a spindle having a handle at the upper end thereof, and a spinning point at its lower end, a body rotatable on said spindle, a spring arranged between the spindle and the body, and an axially movable clutch sleeve held against turning on the spindle between the upper end of the latter and the body and adapted to interlock with the latter.

9. A spinning top comprising a spindle having a cap at its upper end, and a turning point at its lower end, a body rotatable on said spindle, a coil spring surrounding the spindle and connected to the latter and to the body, a sleeve surrounding and held against turning on the spindle above the body, having a flange at its upper end and a clutch face at its lower end for cooperation with the body, and a spring arranged between the cap and the flange to hold the

clutch sleeve in connection with the top body.

10. In a spinning top, the combination with a spindle having a shoulder thereon, 5 a hand piece rigid with the upper end of the spindle and a spinning point permanently carried by the lower end of said spindle, of a body rotatable on said spindle and comprising a web supported on the shoulder, 10 a ring about the web, and a cup shaped container having its upper edge secured to the

web; a volute spring arranged in the container and having its outer end connected to the wall of the container and its inner end connected to the spindle and a clutch 15 member arranged on the spindle between the handle and the body.

JAMES R. PEARSALL.

ALBERT D. HILL.

Witnesses:

H. H. SIMMS,

A. M. WHITMORE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."