

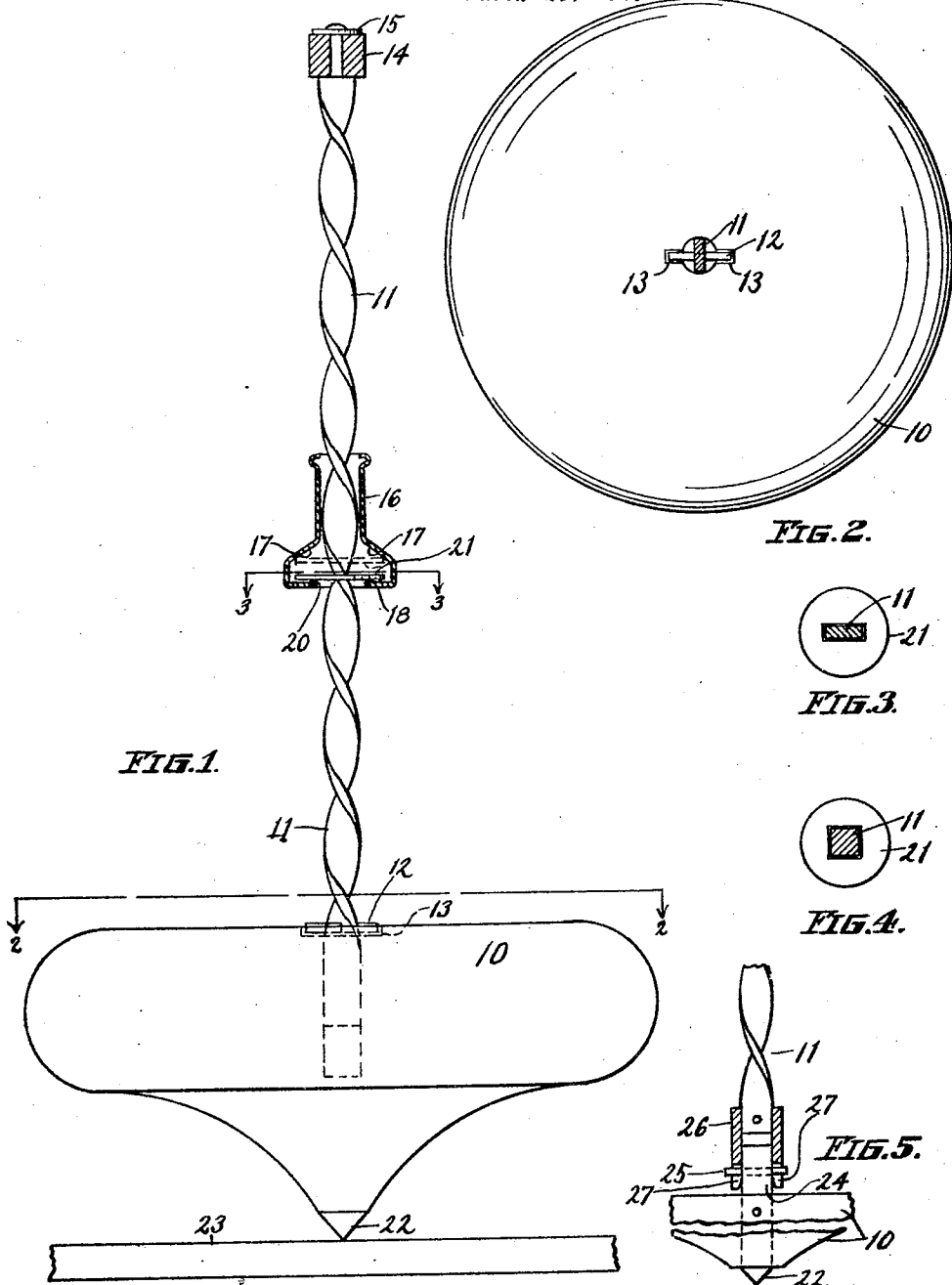
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A. L. ZANDER ET AL

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TOP

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ALEX L. ZANDER AND WALTER A. BOHLAND, OF ST. PAUL, MINNESOTA.

TOP.

Application filed March 26, 1925. Serial No. 18,405.

To all whom it may concern:

Be it known that we, ALEX L. ZANDER and WALTER A. BOHLAND, citizens of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Tops, of which the following is a specification.

Our invention relates to tops and has for its object to further improve upon the top structure shown in U. S. Patent No. 1,461,843 which was granted to A. L. Zander one of the present inventors on July 17, 1923.

In the accompanying drawing;

Fig. 1 is a side elevation of our improved top.

Fig. 2 is a section on the line 2—2 in Fig. 1.

Fig. 3 is a section on the line 3—3 in Fig. 1 with the operating piece or thimble omitted.

Fig. 4 is Fig. 3 modified.

Fig. 5 is a partly sectional side view on a reduced scale, showing a modified connection between the body and the spindle of the top.

Referring to the drawing by reference numerals 10 designates the top body which may be either solid or hollow inside and in the middle of which is mounted a spirally twisted upright spindle 11 which may be made of a flat metal bar as in Figs. 1 and 3 or of a square bar as in Fig. 4. The spindle may be fixed rigidly in the top body, or it may be set loosely in the central hole thereof so as to be readily removable. In the latter case it may have a fixed pin 12 adapted to drop into radial notches 13 in the body.

The top end of the spindle is provided with a rotatable collar 14 retained by a washer 15 or other suitable means.

Freely slidable and rotatable upon the spindle is a short sleeve 16 having its lower end formed with an internal cone face 17, below which it has a bottom 18 with a central hole 19 for the spindle. The inner edge of the bottom is formed with an upwardly disposed ridge 20 upon which rests loosely a washer 21 having a central hole fitting the spindle closely enough to cause the two to rotate together.

In the operation of the top the operator grasps the collar 14 between the fingers of one hand sets the top with its bottom point 22 upon a hard surface 23, and with the other hand he grasps the sleeve 16 and moves it up

and down rapidly a few strokes and then releases the top to let it spin. In this operation it will be understood that every time the sleeve moves upward the friction washer 21 is at liberty to rotate freely upon the ridge 20, and every time the sleeve is forced downward the conic face 17 engages frictionally the outer edge of the washer and causes it to rotate the spindle until the top attains the desired speed.

As already stated when the top has reached a satisfactory speed the operator lets go of both the sleeve 16 and the collar 14.

But if the spindle is made extra long it is best to remove it by picking it straight upward out of the started top. This is easily done by pulling the sleeve 16 up under the collar 14 until the spindle is lifted away.

In the modification shown in Fig. 5 the top body may have its center point 22 secured in the body and extended above the latter to form a round central stem 24 with a pin 25 secured in it, and the spindle 11 may have a tubular coupling member 26 fixed to it and provided with notches 27 arranged to receive the projecting ends of the pin 25. In this form when the spindle is removed it simply takes with it the collar or coupling member 26, leaving the stem 24 to rotate with the top body.

Among other advantages of the improvement is the reduction of cost in making the spindle by merely twisting a metal rod having several flat sides instead of milling out spiral grooves. And the noiselessness and inexpensiveness of using a simple friction disc in a friction cone instead of ratchet teeth. And the removable spindle which permits of making the spindle so long that one or two movements of the sleeve 16 will give the top a great speed.

What we claim is:

1. The combination in a top, of a balancing body with a central base point, of an upright spindle mounted centrally in the said body and formed with a spiral, a sleeve slidable and rotatable on the spindle and having an internal conic face and a centrally open bottom spaced below the conic face, and a friction washer in said space with a central aperture of a form causing said washer to slidably engage the spindle so as to rotate it when moved downwardly or it while in frictional contact with the cone.
2. The structure specified in claim 1, said

bottom of the sleeve having an upwardly raised ridge near its inner edge for supporting the washer with minimum of friction when the sleeve is raised on the spindle.

5 3. The structure specified in claim 1, in which the spindle has a rotatable top collar preventing upward escape of the sleeve and means near the lower end for limiting the downward movement of the sleeve.

10 4. The structure specified in claim 1, in which the spindle has a rotatable top collar preventing upward escape of the sleeve and means near the lower end for limiting

the downward movement of the sleeve, and said spindle being detachable from the top 15 body.

5. The structure specified in claim 1, in which the spindle is formed by twisting a metal bar having several flat sides, and the aperture in the friction washer fits loosely 20 the contour of said spindle.

In testimony whereof we affix our signatures.

ALEX L. ZANDER.
WALTER A. BOHLAND.