

Aug. 24, 1965

A. T. DALHART

3,201,896

SPINNING TOP

Filed Jan. 2, 1963

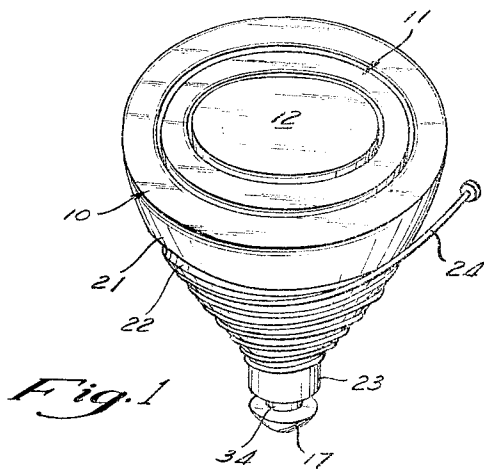


Fig. 1

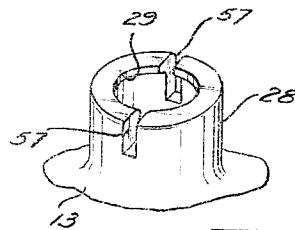


Fig. 3

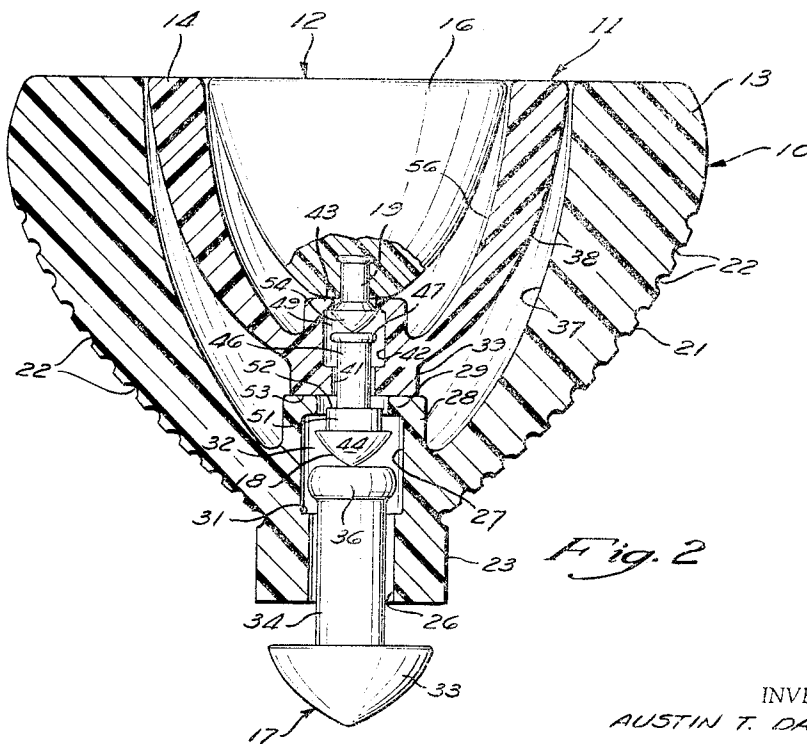


Fig. 2

INVENTOR.

AUSTIN T. DALHART

BY

RICHEY MCNENNY & FARRINGTON

Donald W. Farrington

ATTORNEYS

1

3,201,896

SPINNING TOP

Austin T. Dalhart, 28905 Osborn, Bay Village, Ohio

Filed Jan. 2, 1963, Ser. No. 248,998

4 Claims. (Cl. 46-65)

This invention relates generally to spinning tops and more particularly to a novel and improved spinning top assembly combining two or more nested tops which separate and individually spin after being pitched by the player as a single assembly.

It is an important object of this invention to provide a novel and improved multiple spinning top having two or more tops which are nested for pitching and which separate and individually spin when the surface on which the top assembly is pitched is engaged by the assembly.

It is another important object of this invention to provide a novel and improved low cost multiple spinning top having locking means to secure the separable tops together during handling until after being pitched by the player and also incorporating means to positively eject the individual tops so that they spin individually after being pitched as an assembly.

It is still another object of this invention to provide a novel and improved multiple spinning top having a minimum of parts which co-act to lock the individual tops in a nested relationship until the assembly engages the surface on which the top is to spin in combination with means to positively separate the nested tops for separate spinning.

Further objects and advantages will appear from the following description and drawings wherein:

FIGURE 1 is a perspective view of a preferred form of multiple spinning top incorporating this invention illustrating the top in the assembled or nested condition;

FIGURE 2 is a side elevation in section illustrating the structural detail of the assembled multiple spinning top; and

FIGURE 3 is a fragmentary perspective view of the locking collar structure for securing the tops together until after the assembled top is pitched by the player.

In the drawings an embodiment is illustrated including three nested tops which separate after pitching by the player and spin individually. However, it should be understood that this invention contemplates multiple tops having other number of separable tops greater than one.

The illustrated embodiment includes an outer top 10, an intermediate top 11 and an inner top 12. The intermediate top 11 nests within the outer top 10 and the inner top 12 nests within the intermediate top 11. Each of the tops 10, 11 and 12, includes a moulded plastic generally conical body 13, 14 and 16, respectively and a spinning point 17, 18 and 19, respectively. The bodies are preferably moulded of polyethylene or other suitable plastic and the spinning points are preferably metal parts formed on an automatic screw machine. It should be understood however that other materials and methods of manufacture may be utilized for producing these elements.

The outer top body 13 is formed with a convex outer surface 21 having a plurality of annular shallow grooves 22 formed therein. At the lower end of the body 13 there is formed a cylindrical section which cooperates with the annular groove 22 to prevent a cord 24 from sliding down the convex surface 21. The cord 24 is wound around the convex portion 21 as illustrated in

2

FIGURE 1 so that the tops spin as the player pitches the assembly, thus imparting a high speed of rotation thereto.

The cylindrical section 23 is formed with a first bore 26 open at the lower end of the body 13 and extending to a co-axial larger diameter bore 27. The bore 27 extends up into a cylindrical projection 28 inside of the body 13 and terminating at an inwardly extending flange 29. A shoulder 31 connecting the bores 26 and 27 cooperates with the bore 27 and the flange 29 to define a recess 32 restricted at both ends.

The spinning point 17 is formed with a conical portion 33 at its lower end, a stem 34 extending upwardly from the portion 33 and an upper head 36 positioned within the recess 32. The head 36 is formed with a diameter slightly larger than the bore 26 and the stem 34 is formed with a diameter to fit through the bore 26 with clearance which has been exaggerated for purposes of illustration in the drawings. The body 13 is formed with a generally conical cavity 37 proportioned to receive the intermediate top 11. Sufficient thickness however is provided in the body 13 to prevent any substantial distortion of the top when the cord 24 is wound or the top is used.

The body 14 of the intermediate top 11 is formed with a generally conical outer surface 38 extending to a cylindrical portion 39. The apex of the body 14 is formed with a first bore 41, a second co-axial bore 42, having a diameter larger than the first bore, and an inturned flange 43. This structure is substantially the same as the corresponding structure of the outer top 10 but is dimensionally smaller. The spinning point 18 is formed with a conical end portion 44, a stem 46 and a head 47, with the head 47 positioned in a cavity 48 defined by the bore 42, the flange 43 and the shoulder joining the bores 41 and 42. Here again the general structure of the spinning point 18 is similar to the structure of the spinning point 17. However, the spinning point 18 is formed with an enlarged cylindrical section 51 between the stem 46 and the end portion 44, which has an end face 52 having a diameter larger than the bore 41 to engage the end 53 of the body 14. The end portion 44 has a diameter slightly larger than the opening defined by the flange 29 in the body 13 so that the outer top 10 and the intermediate top 11 are locked in the assembled position when the end portion 44 is pushed past the flange 29 as illustrated in FIGURE 2.

The inner top 12 is proportioned to nest in a conical recess 56 in the intermediate body 14 and is provided with a spinning tip 19 which is securely imbedded at the apex of the body 16. In this case the spinning point 19 is firmly anchored in the body 16 against all movement relative thereto. However, the spinning point 19 is provided with an end portion 54 having a conical shape and a maximum diameter slightly larger than the diameter of the opening defined by the inturned flange 43 of the intermediate top. The end portion 54 is also spaced from the end of the body 16 to provide an annular recess to receive the flange 43.

The inner end of the body 16 engages the upper surface of the flange 43 when the inner top 12 is pressed into the assembled position illustrated in FIGURE 2. The ends of the bodies 13, 14 and 16, are proportioned so that their upper surfaces are substantially aligned when the three tops are in the nested position of FIGURES 1 and 2.

3

Referring to FIGURE 3, the cylindrical projection 28 is formed with two or more axial slots 57 which add flexibility to the projections 28 and permit resilient radial deflection so that the end 44 can pass the flange 29 during assembly of the tops and the ejection or disassembly occurring during the spinning operation. The flange 43 on the body 14 of the intermediate top 11 is formed with a similar pair of axial slots (not shown) to permit the flange 43 to resiliently spread and allow passage of the end portion 54. This permits repeated assembly and use of the top without producing wear which would eliminate the locking action of the tops.

The head 36 of the spinning point 17 has a diameter slightly larger than the bore 26 but there is sufficient resiliency of the material forming the body 13 to permit it to be pressed into the installed position. Since the spinning point 17 is not removed during use, it is not necessary to provide any wear reducing slots. Similarly the head 47 is pressed through the bore 41 and once the spinning point 18 is installed it remains in the installed position. The various elements are proportioned however so that the spinning points 17 and 18 may move axially relative to their associated bodies 13 and 14 respectively.

In operation the three tops 10, 11 and 12, are pressed into the assembled position of FIGURES 1 and 2, and the cord 24 is wound around the outer top 10 in the usual manner. When the top is pitched it engages the floor or other surface upon which the tops are spun. Engagement of the spinning point 17 with the surface causes the spinning point 17 to move upwardly relative to the bodies 13 and 14. Engagement between the lower end of the spinning point 18 and the upper end of the spinning point 17 causes the spinning point 18 to move upwardly relative to the intermediate top 11. The various elements are proportioned so that the upper end of the spinning point 18 engages the lower end of the spinning point 19 before the upper surface 52 of the cylindrical portion 51 engages the end of the body 14. Therefore, the initial portion of upward movement of the spinning point 17, relative to the outer top 10, causes the end portion 54 of the spinning point on the inner top 12 to be pressed past the flange 43 ejecting the inner top from its nested position. During the pitching of the tops, before they impact the floor or other similar surface, the three tops attain spinning rotation so when the inner top 12 is ejected from the assembled position and falls to the floor it spins separately. The spring action of the flange 43, after the maximum diameter portion of the end passes, causes an additional separating force as the inner end of the flange 43 snaps back in along the lower camming surface of the end portion 54.

The elements are proportioned so that the larger section of the end portion 54 is past the flange 43 before the end surface 52 engages the surface 53. Therefore, the inner top is ejected before the intermediate top 11 is caused to be pushed up by further upward movement of the spinning point 17. When the two surfaces 52 and 53 engage it prevents further relative movement between the spinning point 18 and the intermediate top 11. Further upward movement of the spinning point 18 relative to the outer top 10 causes the intermediate top 11 to be ejected from the nested position. Here again the spring action of the flange 29 as it passes the maximum diameter portion of the end 44 of the spinning point 18 causes a snap action to assist in the ejection of the intermediate top 11. Therefore, the intermediate top 11 is separately ejected from the intermediate position and falls to the floor where it spins individually. The outer top, of course, continues to spin with the body 13 resting on the end 33 of the spinning point 17.

It should be understood that if more than three nested tops are to be utilized, a structure functionally similar to the intermediate top 11 would be duplicated to provide the additional tops. On the other hand, if a combination top is provided having only two separable tops the inter-

4

mediate top 11 and the spinning point 18 would be eliminated and the proportions arranged so that the inner top 12 would fit within the outer top in a manner similar to the manner in which it fits within the illustrated intermediate top 11.

Although a preferred embodiment of this invention is illustrated, it is to be understood that various modifications and rearrangements of parts may be resorted to without departing from the scope of the invention as defined in the following claims.

I claim:

1. A multiple spinning top comprising inner and outer bodies each symmetrical about an axis and proportioned for nesting of said inner body within said outer body with said axes co-axial, means including a radially deflectable surface on said outer body normally spaced from the axis thereof by a predetermined distance, a spinning point on said inner body having a portion spaced from the axis thereof by a distance greater than said predetermined distance, said portion being positioned below said surface when said bodies are nested locking said bodies in said nested position, a spinning point on said outer body axially movable relative thereto to an inner position when said outer body is supported and spinning thereon, said means maintaining said spinning point on said inner body in alignment with said spinning point on said outer body while said portion is below said deflectable surface, movement of said spinning point to said inner position pressing said portion past said surface ejecting said inner body from said outer body.

2. A combination spinning top adapted to spin on a surface comprising a conical outer body, a first point element mounted at the apex of said outer body for limited axial movement relative thereto, a conical inner body, a second point element mounted on the apex of said inner body, said outer and inner bodies being formed to nest said inner body within said outer body, said second point being formed with an enlarged shoulder spaced from the end of said inner body, said outer body being formed with a central recess having an inturned flange at one end defining an opening smaller than said shoulder, said second point projecting into said recess with said shoulder past said flange when said bodies are nested, maintaining said second point in alignment with said first point, said flange being resiliently deflectable to permit passage of said shoulder, said first point engaging said second point and pushing said shoulder past said flange when said first point moves inward relative to said outer body in response to engagement with said surface.

3. A combination spinning top adapted to spin on a surface comprising a conical outer body, a first point element mounted at the apex of said outer body for limited axial movement relative thereto, a conical inner body, a second point element mounted on the apex of said inner body, said outer and inner bodies being formed to nest said inner body within said outer body, said second point being formed with an enlarged shoulder spaced from the end of said inner body, said outer body being formed with a central recess having an inturned flange at one end defining an opening smaller than said shoulder, said second point projecting into said recess with said shoulder past said flange when said bodies are nested, maintaining said first and second point elements in alignment, axial notches in said flange permitting radial deflection thereof to permit passage of said shoulder, said first point engaging said second point and pushing said shoulder past said flange when said first point moves inward relative to said outer body in response to engagement with said surface.

4. A combination spinning top adapted to spin on a surface comprising a conical outer body, a first point element mounted at the apex of said outer body for limited axial movement relative thereto, a conical inner body, a second point element mounted on the apex of said inner body, said outer and inner bodies being formed to nest said inner body within said outer body, said second

5

point being formed with an enlarged shoulder spaced from the end of said inner body and an inclined camming face, said outer body being formed with a central recess having an intumed flange at one end defining an opening smaller than said shoulder, said second point projecting into said recess with said shoulder past said flange when said bodies are nested, maintaining said first and second point elements in alignment, said flange being resiliently deflectable to permit passage of said shoulder, said first point engaging said second point and pushing said shoulder past said flange when said first point moves inward relative to said outer body in response to engagement with said sur-

5

10

6

face, engagement of said flange with said camming face accelerating said second point and inner body out of the nested position.

References Cited by the Examiner

UNITED STATES PATENTS

1,089,668	3/14	Prendergast	-----	46—65
2,619,769	12/52	Gallaher	-----	46—65
2,752,726	7/56	Calverley	-----	46—22

RICHARD C. PINKHAM, *Primary Examiner.*