Jan. 11, 1966 D. A. WHITE 3,228,140

STRING SEPARATOR FOR CREATION OF MULTIPLE STRING RETURN TOPS

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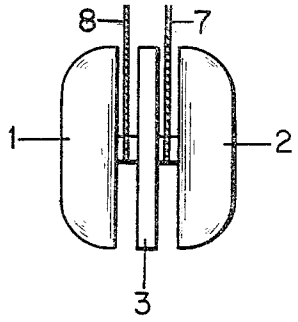


FIG. 1

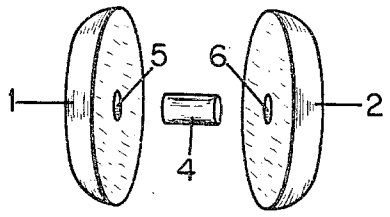


FIG. 2

FIGURE 3

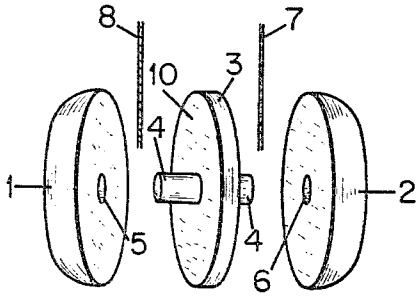


FIGURE 4

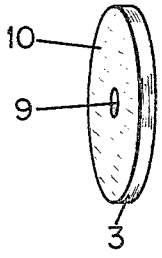
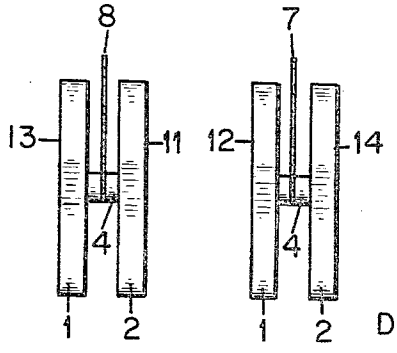


FIGURE 5



DONALD A. WHITE

INVENTOR.

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STRING SEPARATOR FOR CREATION OF MULTIPLE STRING RETURN TOPS

Donald A. White, 4701 E. Kessler View, Indianapolis, Ind.

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This invention relates to spinning toys and more particularly to spinning return tops having a variety of applications for amusement purposes, although certain features may be employed with equal advantage for other purposes.

It contemplates more especially the provision of a more versatile and unique type of return top having the characteristics of a normal return top and also distinctive characteristics of appearance and utilization which are not possible with a conventional type of single string return top and which do add versatility of function to a return top for the purpose of creating and maintaining the interest of children or adults.

Numerous types of tops have heretofore been proposed, but these are usually single purpose in function and therefore limited in use. Without entailing any appreciable additional expense in the construction of a return top, a more versatile return top has been created by the addition of one or more string separators in the construction of the return top. Such a return top of the conventional type might be described as the "Yo-Yo" type of return top which can be spun while vertically suspended with to and fro string movement. Utilizing a string separator in the construction or assembly of this Yo-Yo type of return top, allows an additional string to be added to the return top which will function independently and without confusion to any other strings used in the top and will also permit the independent strings utilized within any single top to operate smoothly in conjunction with one another without danger of entanglement. The teachings of this present invention permit this multiple string return top to be used and controlled in many ways not possible with a conventional single string return top. A return top which would feature two strings separated as defined herein, may be operated by attaching each of the two strings to different fingers, or the two strings may be attached to two hands of the player, or the two strings may be operated by two children or players, each holding one string. A greater degree of skill and coordination are required to operate this multiple string return top than those skills required to operate a conventional return top, however these are easily learned by the player. It is also possible to utilize additional string separators as described herein in the construction of a multiple string return top and which will provide that three or more strings be used in the operation of the return top to provide increased challenge and interest to the player.

One object of the present invention is to present a simple method by which the construction of a multiple string return top may be inexpensively achieved to improve the operation of devices of the character mentioned.

Another object is to provide a return top which has additional distinctive and unique qualities desirable in toy return tops and which greatly increases the versatility of the toy return top.

Still another object is to provide a means by which such a multiple string return top will function properly in the hands of a skilled player.

Still another object is to provide a means by which a modular construction of single string return tops may be so created as to allow the player to assemble a multiple string return top with as many strings as he has desire to operate and control.

Other objects and advantages will appear from the following description of an illustrated embodiment of the present invention.

In the drawing:

FIGURE 1 is an edge view in elevation of the return top embodying features of the present invention, it being illustrated at the bottommost position of a vertical to and fro suspended spin.

FIGURE 2 is an exploded view of the essential parts of a conventional Yo-Yo type of return top and which does not embody any of the features of this invention.

FIGURE 3 is a perspective view of the string separator in position on the center dowel of a return top, the sides of the return top being shown separate from the assembly.

FIGURE 4 is a perspective view of the string separator, viewed as an additional component part of the multiple string return top.

FIGURE 5 is an edge view of two return tops of the Yo-Yo type whose thin ends may be so prepared that they may be joined together in a modular or laminated assembly.

In carrying out the invention, referring now specifically to the drawings, FIGURE 1 represents a return top which utilizes one of the string separators, 3. It must be noted that while the illustrations show the return top and the string separators as component parts of an assembly, that anyone skilled in the art may readily see that the invention could be cast, molded, or otherwise constructed as an integral part of the entire construction. The construction of the string separator 3 may be of any suitable material such as plastic, fiber, wood, metal, so long as it fulfills the purpose in a satisfactory manner. The string separator 3 is a disk which serves to separate string 8 from string 7 as strings 7 and 8 coil and uncoil about the dowel 4 in the normal operation of the return top. As shown in FIGURE 3, the string separator 3 is affixed by appropriate means to the center dowel 4 and the dowel 4 is located in the center of string separator 3. Where the string separator 3 is a separate component as illustrated in FIGURE 4, then this unit may be attached to dowel 4 by glueing, soldering, welding, wedging, or other methods appropriate to securing a tight fit. Strings 7 and 8 may be attached to the return top in the same way as employed in conventional single string return top, by wedging the end of string 8 into hole 5 in the side of the return top and thereafter wedging the dowel 4 into hole 5. The other end of dowel 4 is then wedged into hole 6 into which the bottom of string 7 has been placed. The dowel 4 is of approximately the same or slightly lesser circumference of holes 5 and 6, depending on whether it is desirable to wedge this joint or secure the ends of the dowel 4 to holes 5 and 6 by another process such as glueing, welding, cementing, screwing. As it may readily be seen, the string separator 3 serves to separate the strings 7 and 8 as they coil and uncoil about the dowel 4. The string separator 3 is constructed so that it will have a circumference equal or greater than that maintained by strings 7 and 8 when the strings 7 and 8 are fully wound about the dowel 4. In normal construction the separator would be most conveniently designed to the same circumference as the two ends of the return top 1 and 2.

It is important that when the strings 7 and 8 are attached permanently to the dowel 4 that each string 7 and 8 be attached at points of the dowel 4 which are in parallel alignment when the return top is at its lowest point, so that as the return top continues to spin, strings 7 and 8 will begin to form a new coil about dowel 4 at the same instant.

In FIGURE 1 it is observed that the position of the string separator 3 should be of equal distance between the ends of the return top 1 and 2 and the spatial relation-

ship existing between the inside of the return top ends 1 and 2 and the inside surfaces of the string separator 10 shall be similar in causing strings 7 and 8 to coil and uncoil in parallel sequence about the dowel 4, each coil of string 7 and 8 at all times having a similar circumference with each other throughout the operation of the return top. Should additional string separators 3 be utilized in the construction of a return top, they would also be so placed on dowel 4 as to observe this spatial relationship herein described, for the purposes described.

In the process of manufacturing this multiple string return top using the string separators 3, anyone skilled in the art could determine common methods to allow adjustment of the string separator 3 on dowel 4 to equalize the spatial relationship or to create an adjustment at hole 5 or 6 whereby the distance between the return top ends 1 and 2 might be adjusted on the dowel 4 to equalize these spatial relationships that keep the coils of string in parallel circumference. Where the string separator 3 is manufactured as an integral part of a larger or complete section of the return top, these spatial relationships would be predetermined and incorporated into the manufacturing process.

In FIGURE 5, it is shown that by creating two conventional single string return tops, that the sides 1 and 2 of such return tops may be made thin enough that it is practical to consider attaching the flat ends of the return tops 11 and 12 to each other, thus producing a multiple string return top. These two flat areas 11 and 12 when perfectly combined or attached, will create a single multiple string return top with a common axis and in effect the joining of flat areas 11 and 12 create a laminated string separator 3. There are many methods known to those skilled in the art of joining flat areas 11 and 12 to obtain a common axis, such as by gluing, the use of fastening devices such as nails, screws, bolts, metal or plastic snaps, or by fashioning the ends of the return top so that they may be made to affix themselves to each other by screwing together or otherwise permanently or temporarily attaching themselves to each other. This modular type of construction can be utilized by either the manufacturer or the ultimate user of the return top in the creation of modular units which serve as multiple string return tops.

Greater detail is not required in the description of the multiple string top utilizing the string separator 3 principle, as the basic mathematics and principles involved are common knowledge in reference to the single string return top and the purpose of this invention has been to amplify upon these principles in the creation of a new type of return top which offers increased variety, interest, and skill requirements on the part of the player or operator.

The foregoing is considered as illustrative only of the principles of this invention. Further, since numerous modifications and changes will readily appear to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of my invention as claimed.

Having thus completely and fully described the invention, what is now claimed as new is as follows:

1. A toy return top comprising: one or more disks placed between the two outside ends of an ordinary "Yo-Yo" type of return top, their centers being pierced laterally by a dowel which forms a mutual center axis for the two outside ends of the return top and the string separators, each string separator having two sides which have a similar spatial relationship to the opposing sides of the return top and other string separators employed in the return top.

2. The top as set forth in claim 1, wherein the string separator is formed as an integral part of the dowel section of the return top.

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DELBERT B. LOWE, *Primary Examiner.*

R. F. CUTTING, *Assistant Examiner.*