June 10, 1930. M. O. FIXEN 1,762,620

TOY

Filed Sept. 28, 1928

Fig. 1.

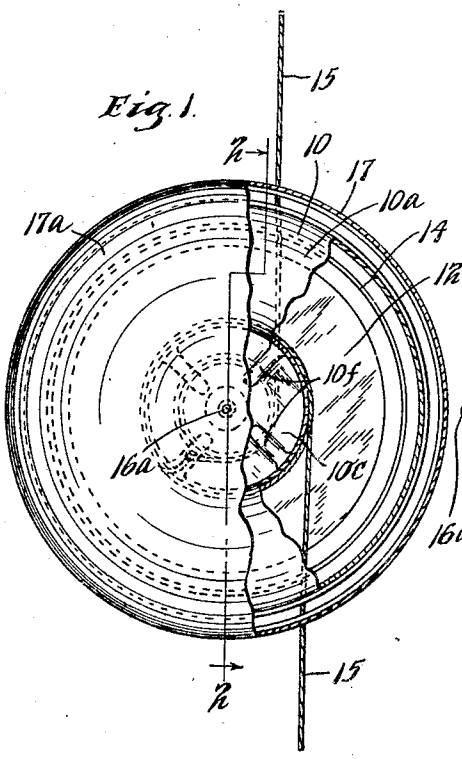


Fig. 2.

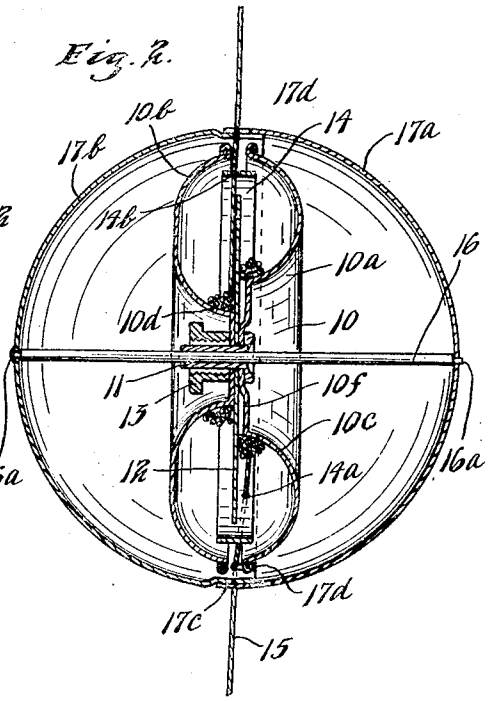


Fig. 3.

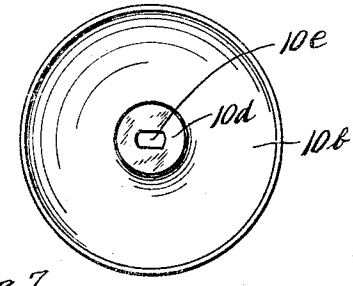


Fig. 4.

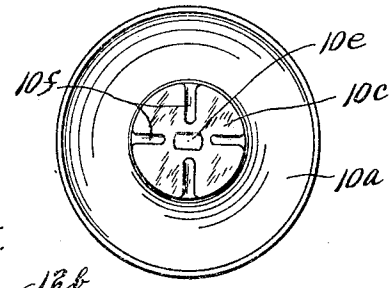


Fig. 7.



Fig. 6.

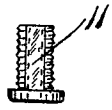
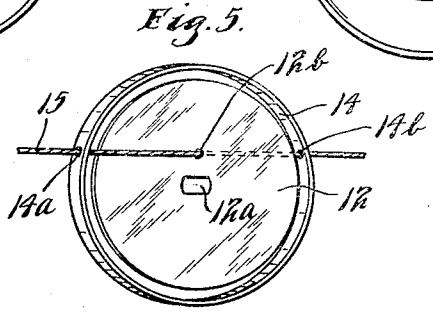


Fig. 5.



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Patented June 10, 1930 1,762,620

UNITED STATES PATENT OFFICE

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TOY

Application filed September 28, 1928. Serial No. 309,074.

This invention relates to a toy or amusement device, and particularly to such a device operated by a cord or string.

It is an object of this invention to provide a device mounted on a string and having a very simple and efficient construction by means of which it can be made to move up and down on a string.

It is a further object of the invention to provide a toy device mounted on a string, comprising a casing formed of a pair of sheet metal members having inwardly disposed central portions forming drums of different diameters, on which said string may be wound.

It is still another object of the invention to provide a device comprising a casing formed of a pair of members which will rotatably move on the string and on which is mounted a nonrotatable member enclosing said casing and moved thereby.

These and other objects and advantages of the invention will be fully set forth in the following description made in connection with the accompanying drawings in which like reference characters refer to the same parts throughout the different views, and in which,

Fig. 1 is a view in side elevation of the device, certain parts being broken away and others shown in vertical section;

Fig. 2 is a vertical section taken on line 2—2 of Fig. 1, as indicated by the arrows;

Figs. 3 and 4 are respectively plan views of the inner sides of the two parts of the casing used;

Fig. 5 is a perspective view of two of the parts used;

Fig. 6 is a view in side elevation of a screw used for holding the parts together; and

Fig. 7 is a top plan view of the screw shown in Fig. 6.

Referring to the drawings, the device is shown comprising a casing 10 formed of two parts, 10^a and 10^b. While these parts might be of various shapes and variously formed, in the embodiment of the invention illustrated they are shown as formed of sheet metal and as of circular, cup-shaped form, having central inwardly projecting, substantially frusto-conical portions 10^c and 10^d respectively. Members 10^a and 10^b are thus in the form of annular troughs or cups. It will be seen that the inner ends of portions 10^c and 10^d are closed and these ends are provided with elongated slots 10^e, through which passes a screw 11, having its threaded shank shaped in cross section similarly to the slots 10^e. As shown, the outer edges of parts 10^a and 10^b are provided with outwardly rolled beads and it will be noted that these edges are slightly separated, leaving an annular crack or space between said sections. A separating member or disc 12 is disposed between the ends of portions 10^c and 10^d, said disc also having an elongated central slot 12^a through which screw 11 passes and fits. A nut 13 preferably having a knurled head screws on the screw 11 and holds the parts in assembled relation, as shown in Fig. 2. The end of portion 10^c is provided with a plurality of radially disposed raised ribs 10^f, terminating a short distance from the opening 10^e. These ribs are pressed out of the metal and thus form grooves at the inner side of said end. A ring 14 is provided of somewhat greater diameter than disc 12, the same having holes 14^a and 14^b formed therethrough at substantially opposite sides thereof, which holes are preferably circular in shape. The disc 12 is provided with an aperture 12^b which also is preferably circular in shape and is disposed at a short distance from the center thereof. A cord 15 is provided which passes in between the sections 10^a and 10^b, through aperture 14^a, then passes several times around the drum formed by the portion 10^c, then through the opening 12^b in disc 12, whence it is wound several times about the drum formed by portion 10^d, then passing through opening 14^b in ring 14 and out again between the sections 10^a and 10^b.

The device may be used with just the parts so far described. In such use the operator holds the ends of cord 15 at opposite sides of the device in his hands and inclines the string to the vertical, the end passing through the opening 14^b being at the lower

end of the string. The casing formed by parts 10^a and 10^b will then move down the string by gravity, the string unwinding from the drum formed by portion 10^d and winding up on the drum formed by portion 10^c. When the string is all unwound from the drum portion 10^d the casing will stop. The operator then pulls on the string or on the lower end thereof and this acts to unwind the string from the drum portion 10^c, causing the same to rotate and the casing then moves up the string, the cord again winding up on the drum portion 10^d. It will be noted that the drum portion 10^c is of considerably larger diameter than the drum portion 10^d and a differential pull or force is thus obtained to move the casing up the string and wind up the cord on drum 10^d. The casing will, of course, move up the string by such a pull if the cord is still wound on both drums, due to the fact that one drum is larger than the other. The parts 10^a and 10^b are held in fixed relation to each other and to the disc 12 by the screw 11 in slots 10^e and 12^a. The ring 14 is provided to keep the cord 15 in proper position and disposed at substantially opposite sides of the casing 10. If it were not for this ring the device has a tendency to sag when the cord 15 is slackened and to immediately revolve and twist the parts of cord 15 at opposite sides of the casing together. This twisting action which is apt to tangle the string, is prevented by the ring 14. It will be seen that the cord 15 does not move out of the casing 10 at exactly opposite sides but at points in line with tangents to the drums formed by portions 10^c and 10^d. It will also be noted that the aperture 12^b is disposed slightly outward radially of the drum on portion 10^d. The cord may also move in one of the grooves formed by the ribs 10^f, moving to aperture 12^b from the drum on portion 10^c.

It is often desirable to have the device appear stationary as it moves on the string. For this purpose the screw 11 is provided with an axial passage 11^a through which is disposed a small rod 16 adapted to rotate in the screw 11. The rod 16 is provided with reduced portions 16^a at its ends adapted to be disposed in small holes formed in the sections 17^a and 17^b of a ball or casing 17. While this ball or casing might take various forms, in the embodiment of the invention illustrated it is shown in the form of a sphere section 17^b having a flange 17^c of smaller diameter than the sphere at its edge over which the edge of section 17^a fits in the manner of a lid. The parts are provided with registering slots 17^d forming openings through which the cord 15 may pass. When the device is operated with the ball 17 thereon, the ball moves up and down the string with the casing 10 without rotation, the screw 11 rotating on the rod 16. The head of screw 11 may be provided with a concave recess and when the rod 15 is not used the cup formed by portion 10^c may constitute a part of a puzzle. (5) Five balls (not shown) may be placed in the portion 10^c and an effort made to have them distributed respectively in the pockets formed between ribs 10^f and in the recess in the head of screw 11.

From the above description it is seen that applicant has provided a very simple and at the same time a very entertaining toy. The device can be easily operated by one person or if desired, the string 15 can be made quite long and the ends thereof held by different parties. The casing 10 can be made of different colors so as to give pleasing effects when rotating and the ball 17 can also be colored to simulate a balloon or other object. The device has been amply demonstrated in actual practice and found to be very successful and efficient.

It will, of course, be understood that various changes may be made in the form, details, arrangement and proportions of the parts without departing from the scope of applicant's invention, which, generally stated, consists in a device capable of carrying out the objects above set forth, such as shown and described and defined in the appended claims.

What is claimed is:

1. A toy having in combination, a casing comprising a pair of hollow members, separated only by an annular slot of comparatively small width, one of said members having a drum on its interior and the other of said members having a smaller drum on its interior, a member disposed between said members and drums and closely adjacent the same, means for holding said members in fixed relation, a cord adapted to be wound on said drums passing through said last mentioned member and having its ends passing between said first mentioned members at substantially opposite sides thereof, whereby said casing will move down said cord by gravity and may be moved up said cord by placing tension on the latter.

2. A toy having in combination, a casing comprising a pair of cup-shaped members formed of sheet metal, having central inwardly projecting, substantially frusto-conical portions forming drums at the interior of said members respectively, the drum on one of said members being of greater diameter than the drum on the other, a disc disposed between and engaged by the inner ends of said portions, means for holding said members and disc assembled in fixed relation, said cup-shaped members being slightly separated at their edges and a cord adapted to be wound on said drums passing through said disc and having its ends extending out-

ward between the edges of said members, substantially at opposite sides thereof.

3. A toy device having in combination, a round casing substantially oblong in diametric cross section having drums of different diameter formed on the opposite sides of its interior and co-axial with said casing, said casing having a circumferential opening of small width at its largest circumference, a member in said casing disposed between and separating said drums, said member and casing being held in fixed relation, a cord passing through said last mentioned member and adapted to be wound on said drums respectively and having its ends respectively passing through said opening whereby said casing may be moved up and down on said cord.

4. The structure set forth in claim 3, and a member surrounding said member and having apertures at substantially opposite sides thereof through which said cord passes, for guiding and preventing tangling of said cord.

5. A toy device having in combination, a casing comprising a pair of cup-shaped sections assembled in reverse relation and having inwardly projecting portions forming drums on the interiors thereof, said drums being of different diameters, a member disposed between said sections and drums, a bolt passing centrally through said sections and member for holding the same in fixed relation, a cord passing through said last mentioned member and adapted to be wound respectively on said drums and having its ends passing between the edges of said sections, a rod journaled in said bolt and passing axially therethrough, and a casing comprising separable sections carried respectively at opposite ends of said rod, having openings at opposite sides thereof through which the ends of said cord pass.

6. The structure set forth in claim 2, and a ring in said casing surrounding said drums and disk and having openings at substantially opposite sides thereof through which said cord passes.

In testimony whereof I affix my signature.

MARTIN O. FIXEN.