Sept. 24, 1957 R. T. DAVIES 2,807,117

REVOLVING SPRING TOY

Filed April 23, 1956

Fig. 1.

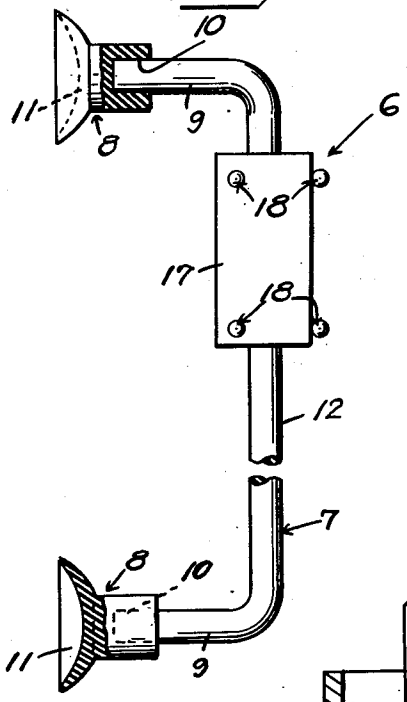


Fig. 2.

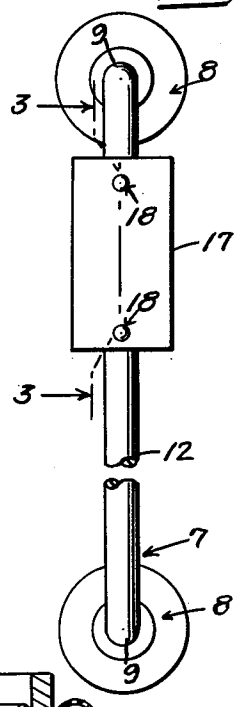


Fig. 3.

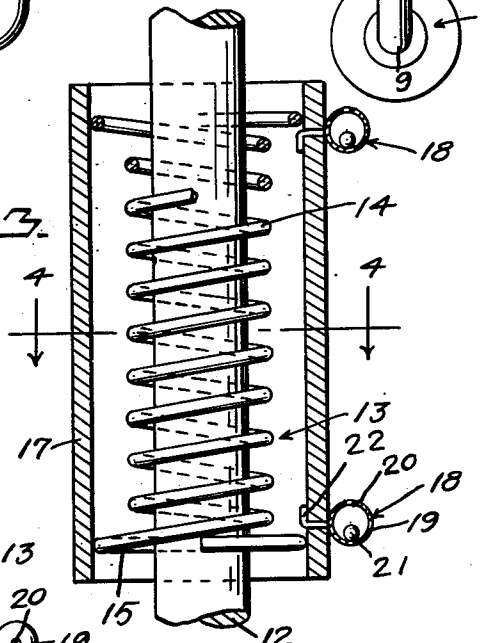
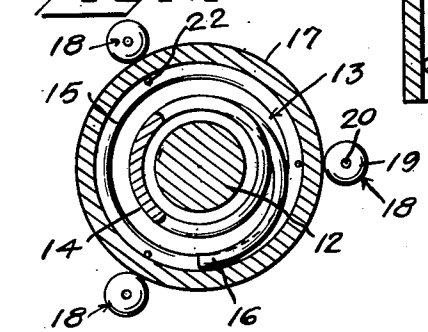


Fig. 4.



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REVOLVING SPRING TOY

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1 Claim. (Cl. 46—47)

This invention relates to a novel toy and more particularly relates to a toy of unique construction including an element or elements which are mounted for free sliding movement relative to an upright support yet which will travel down the support at a slow speed when said element or elements are rotating about the support.

More particularly, it is an aim of the present invention to provide a toy of simple construction involving a novel principle of operation which may be effectively utilized to furnish amusement.

Various other objects and advantages of the invention will hereinafter become more fully apparent from the following description of the drawing, illustrating a presently preferred embodiment thereof, and wherein:

Figure 1 is a side elevational view, partly in section and broken away, of the toy;

Figure 2 is a fragmentary front elevational view thereof looking from right to left of Figure 1;

Figure 3 is an enlarged fragmentary vertical sectional view, partly in elevation, taken substantially along a plane as indicated by the line 3—3 of Figure 2, and

Figure 4 is a cross sectional view in detail of the toy, taken substantially along a plane as indicated by the line 4—4 of Figure 3.

Referring more specifically to the drawing, the toy in its entirety and comprising the invention is designated generally **6** and includes a standard or post **7** equipped with supporting means **8**. In the embodiment of the invention as disclosed, the supporting means **8** comprise a pair of conventional suction cups. The standard or post **7** is shown as having its end portions **9** extending in the same direction from the remainder of the post **7** and disposed substantially parallel. The terminals of said end portions **9** are secured in outwardly opening sockets **10** of the suction cups **8** so that the concave faces **11** of the suction cups are disposed in the same plane. Said concave faces **11** of the suction cups are adapted to be secured in a conventional manner to an upright surface so that the intermediate portion **12** of the post or standard will be disposed with its axis substantially vertical, as illustrated in the drawing. It will be understood that any other suitable supporting means could be substituted for the supporting means **8** for positioning the upright standard or post portion **12** in a substantially upright or vertical position. The post or standard **7** is illustrated as a solid rod. However, as the description proceeds it will be understood that said post may be hollow or tubular so long as the exterior of the upright portion **12** thereof is of circular outline and of uniform diameter, as illustrated in Figures 1 and 2.

The toy **6** also includes a spring, designated generally **13**, having a plurality of open intermediate convolutions **14** which are of substantially the same interior diameters, and end convolutions **15** of larger diameter than the convolutions **14**. As seen in Figures 3 and 4 the ends **16** of the strand forming the spring **13** are disposed in the

circles defined by the end convolutions **15** and are thus spaced outwardly with respect to the intermediate convolutions **14**, as best illustrated in Figure 4. The spring **13** is disposed around the upright post or standard **12** and as best seen in Figure 4, the inner diameters of the intermediate convolutions **14** are sufficiently larger than the outer diameter of the standard **12** so that the convolutions **14** when disposed concentrically around the standard **12** will be spaced therefrom and out of contact therewith, as seen in Figures 3 and 4.

As will be readily apparent, the spring **13** will slide freely on the standard or post **12** and if raised thereon and released will drop to the lower end of the standard or post. However, by raising the spring from the lower end of the stndard or post and imparting a rotary motion to the spring in either direction, the spring will gradually descend along the post **12**. It is believed that centrifugal force created by the rotary motion of the spring in combination with the weight of the spring causes portions of the convolutions **14** through frictional contact with the exterior surface of the post **12** to resist downward movement of the spring so that a gradual descent of the spring results. The rate of descent of the revolving spring very nearly corresponds to the pitch of the spring convolutions, that is, the spring appears to descend at a rate substantially equal to the pitch of the spring for each complete rotation of the spring. However, the spring descends the standard **12** in the same manner irrespective of which direction it is revolved.

The toy **6** also includes a cylindrical cover **17** which is somewhat longer than the spring **13**, as seen in Figure 3, and which has an internal diameter slightly less than or equal to the exterior diameter of the end convolutions **15**. Thus, the end convolutions **15** frictionally engage the inner surface of the cover **17** to support it on the spring. The exterior of the cover **17** is provided with suitable means to attract attention and provide amusement and which is operative in response to rotation of the cover. Such means, designated generally **18**, may assume the form of audible devices such as bells, as illustrated. Each bell **18** includes a hollow casing **19** preferably formed of metal of a type used in the construction of bells and which has at least one aperture **20**. The sounding device **18** has a heavy shot or pellet **21** loosely contained therein. An anchoring element **22** which extends from the shell **19** projects through and is anchored in the wall of the cover **17**. Any desired number of sounding devices **18** may be mounted on the exterior of the cover **17**, preferably in a balanced manner. The cover **17** is formed of any suitable lightweight material such as cardboard or plastic. The cover **17** which is thus of relatively lightweight construction enhances the aforedescribed gradual rotary descent of the spring, and it will be understood that the cover rotates with the spring for actuating the sounding devices **18**. The ends **16** of the spring **13** are so disposed as to not contact the post **12** so that the abrupted ends thereof will not obstruct the novel movement of the spring, and said flared ends, the end convolutions **15**, the cover **17** and the parts carried thereby insure that sufficient centrifugal force is imparted to the spring **13** to maintain proper frictional contact between the convolutions **14** and post **12** while the parts are being revolved around the post to insure the gradual descent of said parts.

The inner diameter of the spring convolutions **14** is preferably about one sixteenth of an inch greater than the diameter of the post **12** to obtain satisfactory results. The spring is preferably composed of galvanized steel wire of approximately .064 inch gauge. The post **12** for satisfactory results may be 5/16 inch in diameter and the inside diameter of the intermediate spring convolutions **14**

are then preferably 3/8 of an inch to provide a radial gap of 1/32 of an inch between the convolutions **14** and standard **12.**

Various modifications and changes are contemplated and may obviously be resorted to, without departing from the spirit or scope of the invention as hereinafter defined by the appended claim.

I claim as my invention:

A toy comprising a post of circular outline in cross section, means supporting said post in an upright position, a spring loosely disposed on the post provided with a plurality of convolutions of uniform diameter having an internal diameter slightly greater than the external diameter of said post to permit free sliding movement of the spring relative to the post, said spring being freely rotatable on the post for causing frictional contact between portions of said convolutions and the post whereby a braking action is set up to check descent of the spring along the post, said spring including end convolutions of

larger diameter than said aforementioned intermediate convolutions, and a cylindrical cover disposed around said spring and engaged and supported by said end convolutions for increasing the centrifugal force imparted to the spring when revolved therewith.

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