

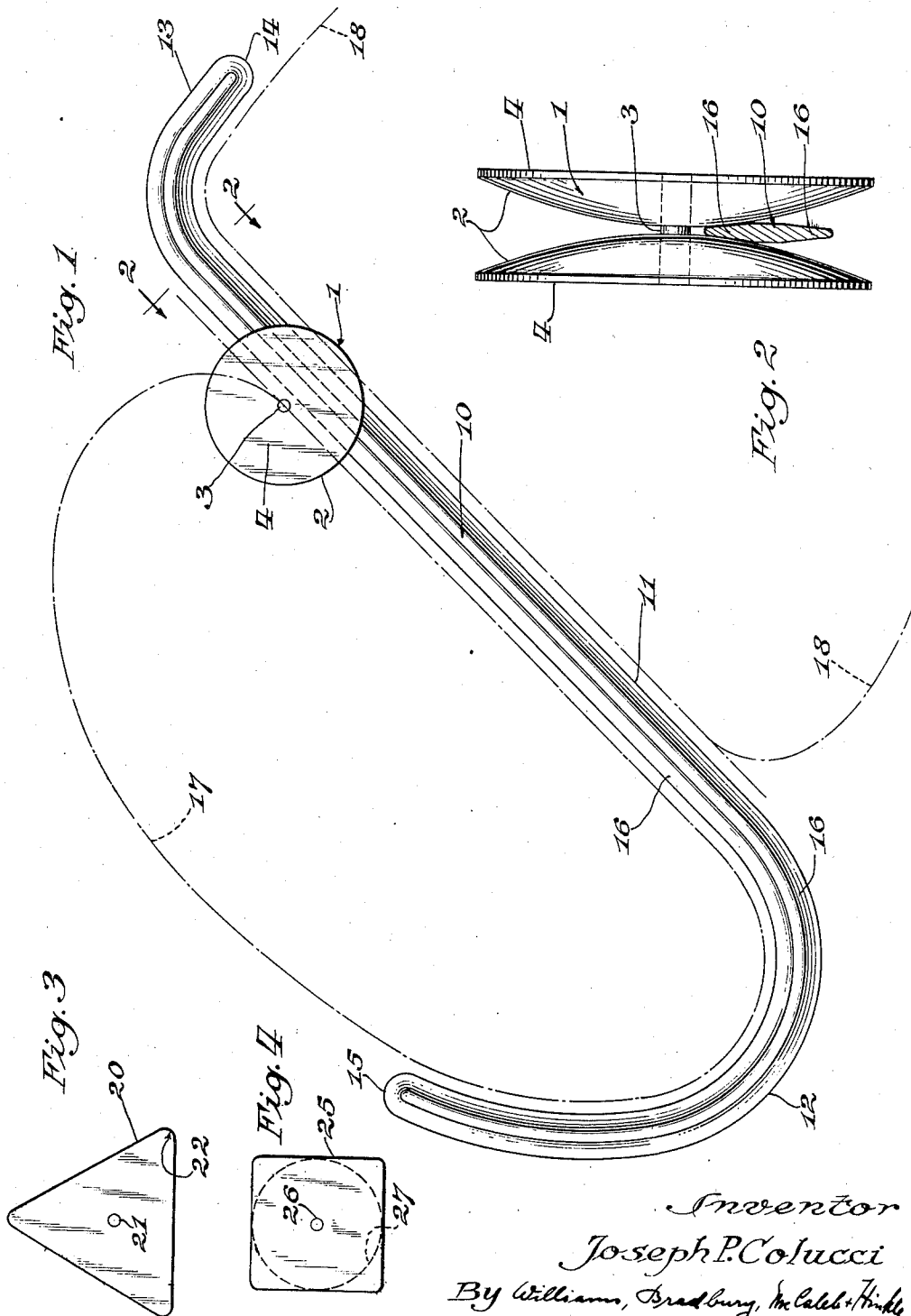
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AMUSEMENT DEVICE

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AMUSEMENT DEVICE

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3 Claims. (Cl. 46—47)

My invention relates to amusement devices, particularly to the class of amusement devices comprising a simple instrument for manipulating an attractively decorated spool to impart a rotating motion thereto and for projecting the same up into the air.

I am aware that various devices have been proposed for projecting rotating objects such as marbles or metal spheres up into the air. One such device employs a track having a long straight portion terminating in an upward curve. A metal sphere rolls down the track and is projected from the upward curve of the track up into the air under the combined action of gravity and of a deft manual movement. To facilitate this manual movement the track, which has a rather complicated cross-section, is provided with a centrally located handle. In order to retrieve the ball while it is still in the air, the upper end of the track is provided with a cup, the relatively large diameter of whose rim increases the ease with which the ball may be caught.

Devices such as the one above mentioned are too complex for large scale commercial production, for one of the essential requirements of the novelty toy trade is simplicity, and extremely low cost. It is also generally believed that the gaudiness or the spectacular effect of a toy is a direct gage of its popular success, provided other important requirements are met. It is manifestly impossible to modify the shape of a ball, or its size beyond a certain limit. The amount of decoration that can be applied thereto is likewise limited.

One of the objects of my invention is, therefore, to provide an extremely simple and inexpensive, but fascinating, amusement device.

Another object of my invention is to provide a device for projecting into the air rotating objects such as spools of diverse shapes and sizes attractively decorated.

Another object of my invention is to provide a harmless toy suitable for children of all ages, requiring only moderate skill for its successful operation, but giving opportunity for the development of greater skill because of the numerous methods of operating the toy.

Further objects and advantages of this invention will become apparent upon reading the following description in conjunction with the attached drawing, in which:

Fig. 1 is a front elevation of my invention in the position in which it is normally held for use;

Fig. 2 is a section taken along the lines 2—2 of Fig. 1;

Fig. 3 is a front elevation of a modified form of spool for use with my invention; and

Fig. 4 is a front elevation of still another form of spool for use with my invention.

In the attached drawing, like numbers refer to like parts.

An amusement device according to my invention consists preferably of only two parts, a spool 1, and a curved track 10.

The track 10 consists of an S-shaped piece of wood or similar material, or rather narrow cross-section. The track comprises a long substantially straight portion 11, having an upwardly and rearwardly curved continuation 12 at one end thereof, and an oppositely curved continuation 13 of the other end of the straight portion terminating substantially at right angles thereto. The ends 14 and 15 of the track are rounded both to avoid possible injury from sharp corners, and also to provide further opportunities for deriving amusement from the device, as will be described subsequently. The edges of the track are beveled, chamfered, or "feathered," as at 16, around the entire periphery of the track, yielding what is often called a "feather-edge." The cross-section of the track 10 as shown in Fig. 2 illustrates the shape of this feathered-edge 16, which is more or less trapezoidal, but is somewhat smoothed and rounded to avoid sharp corners. The exact cross-section of the track is best determined by trial with the type of spool intended for use therewith.

The spool 1 may suitably consist of two flanges 2 spacedly joined by a pin 3. The inner faces of the flanges are convex. They seat upon the feathered-edge 16 of track 10 with a slight wedging action, so that the spool may roll along the track without slipping and without lateral movement. The spool rolls down the straight portion 11 of track 10 under the influence of gravity alone, so that the grip of the flanges 2 upon the feathered-edge 16 must be sufficient to give the spool traction, but must not be so tight as to create unnecessary friction, which tends to retard the rolling speed of the spool.

To operate the device, the track may be grasped by the curved portion 13, serving alternatively as a handle. The spool is then allowed to roll down the inclined straight portion 11 of the track. The spool thereby acquires sufficient momentum to roll around the curved continuation 12 of the track 10. This momentum is augmented by a quick upward flip manually imparted to the track by the operator by means of handle 13, which results in imparting an upward acceleration to

the spool sufficient to project it off of the end 15 of the curved continuation 12 of the track, up into the air. Because the curved portion 12 extends rearwardly, the trajectory 17 of the spool is directed toward the operator, making it possible for him readily to retrieve the spool by allowing it to drop down upon him and to be re-seated upon track 10. It is a test of the operator's skill to determine how many times in succession he can catch the spool near the top of the straight portion of the track and to repeat the cycle of operation. The trajectory 17 of the spool has been illustrated as being rather low. However, depending upon the vigor of the manual operation of the device, this trajectory may be much higher, although in all cases, because of the rearward curvature of the curved end 12 of the track, the spool will be projected back towards the observer, who can then retrieve the spool with relative ease.

When my amusement device is operated as described, the curved end 13 is used as a handle, or a separate handle may be used instead of this mere continuation of the track 10. Because the track 10 is two-edged, being feathered on both sides or, more strictly speaking, around its entire periphery, it may be reversed, in which case the curved portion 12 is used as the handle, and the spool 1 is caused to roll around the curved portion 13, which is upwardly curved when the track is held in the reversed position. More skill is required to operate the device in this way because the curved portion 13 terminates substantially at right angles to the straight portion 11. Under normal conditions the spool will consequently be projected either straight up into the air or along a trajectory 18 directed somewhat ahead of the operator, who must run forward at some speed in order to retrieve the spool at the top of track 10.

The above described method of operation requires considerably more skill and activity than the first described method of operation. It is a characteristic of my invention that only moderate skill is required for its successful operation, but that it also provides opportunity for the exercise of greater skill because of the several ways in which the invention may be used. For instance, a test of extreme skill is the ability to cause the spool 1 to roll around one of the sharply rounded ends 14 or 15 of the track 10 without leaving the track.

Although I have shown a preferred embodiment including two types of curved continuations of track 10, I do not wish to restrict myself to this arrangement, because either type may be used singly in combination with a separate handle, or two curves of the same type differing only in their degree of curvature may be included on one track.

The two types of curves referred to are, of course, the rearwardly extending curve and the upwardly extending curve terminating substantially at right angles to the straight portion of the track. Throughout the specification and claims I use these terms to cover curves whose respective curvatures are more or less than a right angle, so that the respective trajectories of the spools projected therefrom extend either substantially straight up into the air or forward of the operator, or the trajectories are directed toward the operator. I intend to use the term upwardly curved continuation to include both types of curves.

Although I have spoken of a long straight por-

tion 11 of the track 10, I do not wish to confine myself to an absolutely straight segment, because section 11 of the track may have one or more slight curves therein without departing from the scope of this invention. I use the term long straight portion only as indicating the function of the inclined portion of my track, which consists of allowing the spool 1 to accelerate under the action of gravity. It is obvious that a slight curvature of portion 11 of the track or a change in the length thereof will not affect its function. Therefore, I use the term long substantially straight portion, throughout my claims, as including such slight departures from the preferred embodiment described.

The shape of the spool is critical only to the extent previously indicated, namely, the degree of tractive cooperation of the flanges of the spool with the feather-edges of the track. The inner faces of the flanges 2 of the spool need therefore be convex only near their circle of contact with the track. The outer faces 4 of the flanges may be of any desired surface contour compatible with proper balance of the spool. The spool must be balanced or it will not roll freely.

The flanges 2 need not be circular, but may be of any shape symmetrical around the axis of pin 3. For instance, the spool may be triangular as shown in Fig. 3. The triangular flanges 20 have convex inner faces, and are spacedly joined by a pin 21. I have found it useful to round off the corners 22 of the triangular flanges, both to decrease the danger of injury from sharp corners, and to avoid chipping of the same. Another modification of the spool is shown in Fig. 4, in which the flanges 25 are square. They are likewise spacedly joined by means of a pin 26. The inner faces of the flanges in this modification are convex except at the corners, which are flat. The resulting line of demarkation is shown at 27.

I have found that the value of my invention is greatly increased by the use of attractively colored spools of different shapes, and especially by the use of the polygonal spools described. When these are gaudily decorated, they provide a fascinating spectacle for both children and adults, as they whirl through the air.

Although I have described only a few modifications of my invention, I do not wish to be restricted thereto, nor to the materials which I have suggested for their manufacture. Metal, wood, rubber, or composition are equally suitable materials of construction.

I claim:

1. An amusement device comprising a narrow feather-edge track having a long substantially straight portion and an upwardly and rearwardly curved continuation at one end thereof, and a spool including two convex inner surfaces for straddling the feather-edge and tractively engaging opposite faces of said feather-edge and adapted to roll along said track and to be projected from the upwardly curved end of said track into the air over a trajectory leading toward the operator of the device, under the combined action of gravity and of a deft manual movement of said track.

2. An amusement device comprising a thin feather-edge track having a long substantially straight portion and a curved portion projecting upwardly and rearwardly with respect to said straight portion, a handle secured to said track by means of which the track can be manually manipulated, a spool composed of two closely

spaced discs held together at their central portions, the contiguous faces of said discs being convex, the distance between said discs being such that when the spool is set upon the track, the point of contact between the spool and the track is spaced outwardly from the center of the spool at distance less than half the radius of the track tangential to the convex faces of the spool being relatively acute so that when the spool is dropped upon the track the impact will tend to wedge the spool and track together, whereby when the spool is tossed into the air and caught upon the track as it falls, it is restrained against rebounding therefrom.

3. In an amusement device comprised of a spool adapted to be tossed into the air and a track upon which the spool may be caught as it falls and retossed into the air, the improvement which consists in forming the mating surfaces of the track and spool so that the spool straddles the track and is wedged thereagainst by its impact when dropped upon the track from a short distance so that when the spool is tossed into the air and caught upon the track the wedging action between the track and spool is sufficient to prevent the spool from bounding upwardly from the track.

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