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B. ZABEL

LOOP-THE-LOOP TOY

Filed Jan. 20, 1926

Fig. 1.

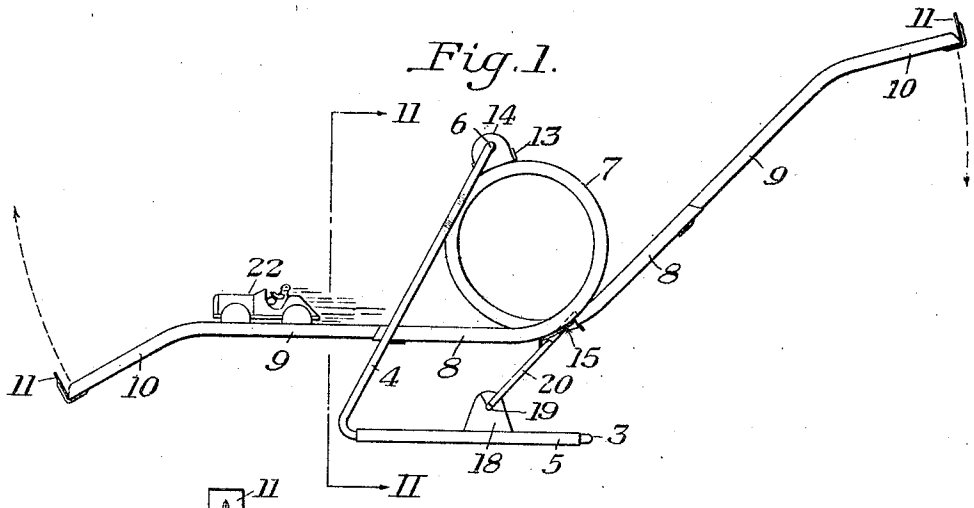


Fig. 2.

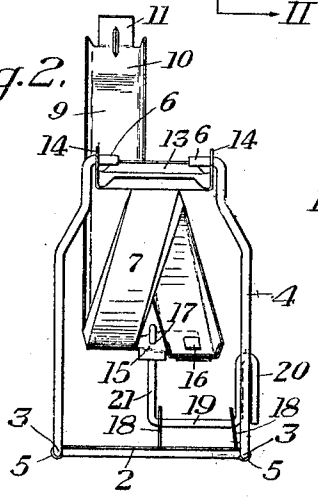


Fig. 3.

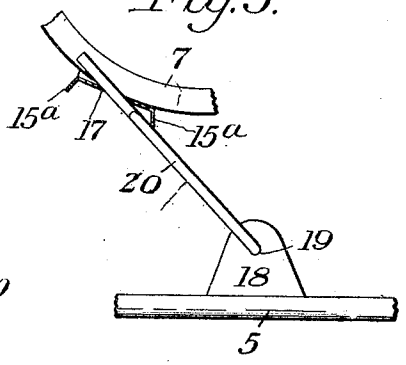
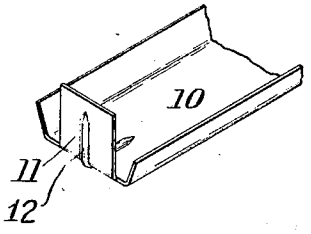


Fig. 4.



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UNITED STATES PATENT OFFICE.

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LOOP-THE-LOOP TOY.

Application filed January 20, 1926. Serial No. 82,480.

This invention relates to mechanical toys, and more particularly to mechanical toys of the type having a looped track, the track having a central looped portion with oppositely inclined extensions at each side thereof.

It has heretofore been proposed to provide toys of this kind wherein there is a centrally looped track having oppositely inclined extensions, the track being so mounted in a frame that it can be oscillated to alternately raise one end of the track higher than the other whereby a gravity propelled object guided in the track is caused to move from one end of the track to the other. In so doing, it acquires sufficient velocity to carry it around the loop. As heretofore constructed, it has been proposed that such toys be operated by a spring motor. Where a spring motor is employed, the cost of the toy is very considerably increased and the toy cannot be operated by small children who are unable to wind a spring motor.

The present invention has for its object to provide a toy of this kind with a simple hand operating mechanism by means of which the track may be rocked, the mechanism for rocking the track being of such simple construction that the toy can be very cheaply made and can be operated by a small child.

The present invention also has for its object to provide an improved and simple construction by means of which the manufacture of the toys may be very materially cheapened.

The invention may be readily understood by reference to the accompanying drawings which illustrate one embodiment of my invention, but it will be understood that various changes and modifications may be made within the spirit of the invention.

In the drawings,—

Figure 1 represents a side elevation of the complete toy;

Figure 2 represents a transverse vertical section in the plane of line II—II of Figure 1;

Figure 3 represents an enlarged detail view of the operating mechanism by means of which the track may be rocked; and

Figure 4 shows a perspective view of a preferred form of terminal construction for one of the track extensions.

In the drawings, 2 represents a suitable sheet-metal base which serves to impart rigidity to a wire supporting frame 3 having uprights 4 thereon which are preferably inclined in the manner shown so as to overhang the center of the base 2. The wire frame 3 may be formed of a single length of wire bent to the desired shape, and the base 2 may be secured thereto by having its edges curled around the wire, as indicated at 5. The upper ends of the upright portions 4 are turned inwardly, providing supports for the track as hereinafter described. These inturned portions are designated 6.

The track, which is of a substantially trough-like formation, has a looped portion 7 with oppositely inclined extensions 8. Connected with the extensions 8 are inclined outer portions 9 which are preferably removable so that the toy, when packed in a carton, may be made very compact. Each of the extensions 9 has a bent terminal portion 10 whose angularity is such as to receive and hold a gravity propelled object for a desired length of time as the track moves from one position to another.

Each of the terminal portions 10 has an integral bumper thereon for stopping the car or other gravity propelled object which rolls along the track, and this bumper is preferably in the form of a tongue 11 formed integrally with the track portion 9 and bent upwardly at right angles thereto, as clearly shown in Figure 4. This bent up portion has a rib 12 therein which continues into the bottom of the terminal portion 10 and makes the stop member 11 quite stiff.

At the top of the looped track 7 is a suitable supporting element in the form of a transverse bar 13 secured to the top of the loop and having ears 14 thereon through which the inturned portions 6 of the uprights 4 pass to provide a pivotal support for the track.

Connecting the two bottom portions of the loop is a cross brace 15, which may be secured to the track in any suitable way, but which preferably has ears 16 thereon which pass through the track and are bent over, as shown in Figure 2 to firmly attach them to the track. This cross-member 15 has a central slot 17 therein.

Struck up from the base 2 are a pair of ears 18 through which passes a rock shaft or wire 19 having an operating handle or

lever portion 20 and having a second lever portion 21 whose upper end projects through the slot 17 in the cross-member 15. By reference to Figure 3 it will be seen that the cross-member 15 preferably has downwardly turned flanges 15ª thereon.

In operation, the handle 20 is moved through an arc whereby the shaft 19 is rocked. This causes the arm 21 to swing. By reason of the fact that the arm 21 passes through the cross-member 15, it will cause the looped track structure to be rocked. The track may be rocked in one direction until one of the flanges 15ª comes into contact with the lever arm 21, as clearly shown in Figure 3. The motion of the handle 20 may then be reversed to rock the track in the opposite direction and to the same extent until its movement is again limited by the other flange 15ª coming into contact with the lever 21. It is important that the center of the shaft 19 be directly under the center of support for the looped track in order that the track may be tilted to the same extent in each direction. In other words, the rock shaft 19 is directly under the pivoting supports for the track at 6.

When the track is caused to rock in this manner, one end of the track and then the other will be alternately raised to an uppermost position. If a gravity propelled object, such as the toy car 22, is mounted on the track, it will be caused, by this movement of the track, to travel first in one direction and then in the other along the track to the opposite ends thereof. In moving from the highest point of the track, it gains sufficient speed to carry it around the loop 7 and out to the terminal at the other end of the track. The angularity of the terminals is such that, when the track reverses its movement, the car will be retained thereon until it has been elevated to such a point that, when it finally does roll off the terminal, the track will be inclined sufficiently to give the car enough momentum to go around the loop.

The hand operated device herein described is one by means of which a very smooth and regular motion may be imparted to the track so that the proper operation of the toy will be assured. At the same time, the construction is one which is extremely simple and can be very cheaply manufactured so that the toy can be marketed for a relatively small price. While the flanges 15ª on the cross-member 15 could be omitted, in which event the metal around the slot 17 would cooperate with the lever 21 to limit the rocking motion of the track, it has been found that with such an arrangement the metal becomes distorted and bent so that proper operation is not at all times assured.

While I have disclosed a particular form of looped track structure, it will be understood that any form of looped track structure commonly employed in toys of this kind might be substituted.

I claim as my invention:

1. A mechanical toy including a looped track having oppositely inclined end sections, a base, means for pivotally supporting the track on the base, a rock shaft on the base, a lever on the rock shaft operatively connected with the track, and an operating handle on the rock shaft.

2. A mechanical toy including a track member having oppositely inclined track sections, a supporting frame in which the track member is tiltably mounted, a rock shaft in the supporting frame, a track tilting lever on the rock shaft, and an operating lever on the rock shaft.

3. A mechanical toy including a looped track member having oppositely inclined end sections, a base member, an upright supporting frame on the base, means on the top of the looped track by which it is suspended from the upright support, a rock shaft on the base, a lever on the rock shaft, means on the bottom of the looped track through which said lever passes, and an operating element on the rock shaft.

4. A mechanical toy including a looped track member having oppositely inclined end sections, a base member, an upright supporting frame on the base, means on the top of the looped track by which it is suspended from the upright support, a rock shaft on the base, a lever on the rock shaft, a cross member on the bottom of the track having downwardly turned lugs at opposite sides thereof and having a hole between the lugs, said lever on the rock shaft passing through the hole, said lugs being arranged to contact with the lever to limit the rocking movement thereof, and an operating element on the rock shaft.

5. A mechanical toy including a base, an upright on the base, a track element having oppositely inclined ends pivotally supported on the upright, a rock shaft on the base transversely disposed with respect to the track and centrally under the pivotal support for the track, a lever on the rock shaft, means on the track through which the lever passes for tilting the track when the rock shaft is rocked, and an operating element on the rock shaft.

6. A trough-like track of sheet-metal having a terminal portion with a stop thereon, said stop being comprised of an integral tongue at the end of the trough and at right angles thereto, the tongue having an integral rib therein which continues therealong into the bottom of the terminal portion of the track.

In testimony whereof I have hereunto set my hand.

BRUNO ZABEL.