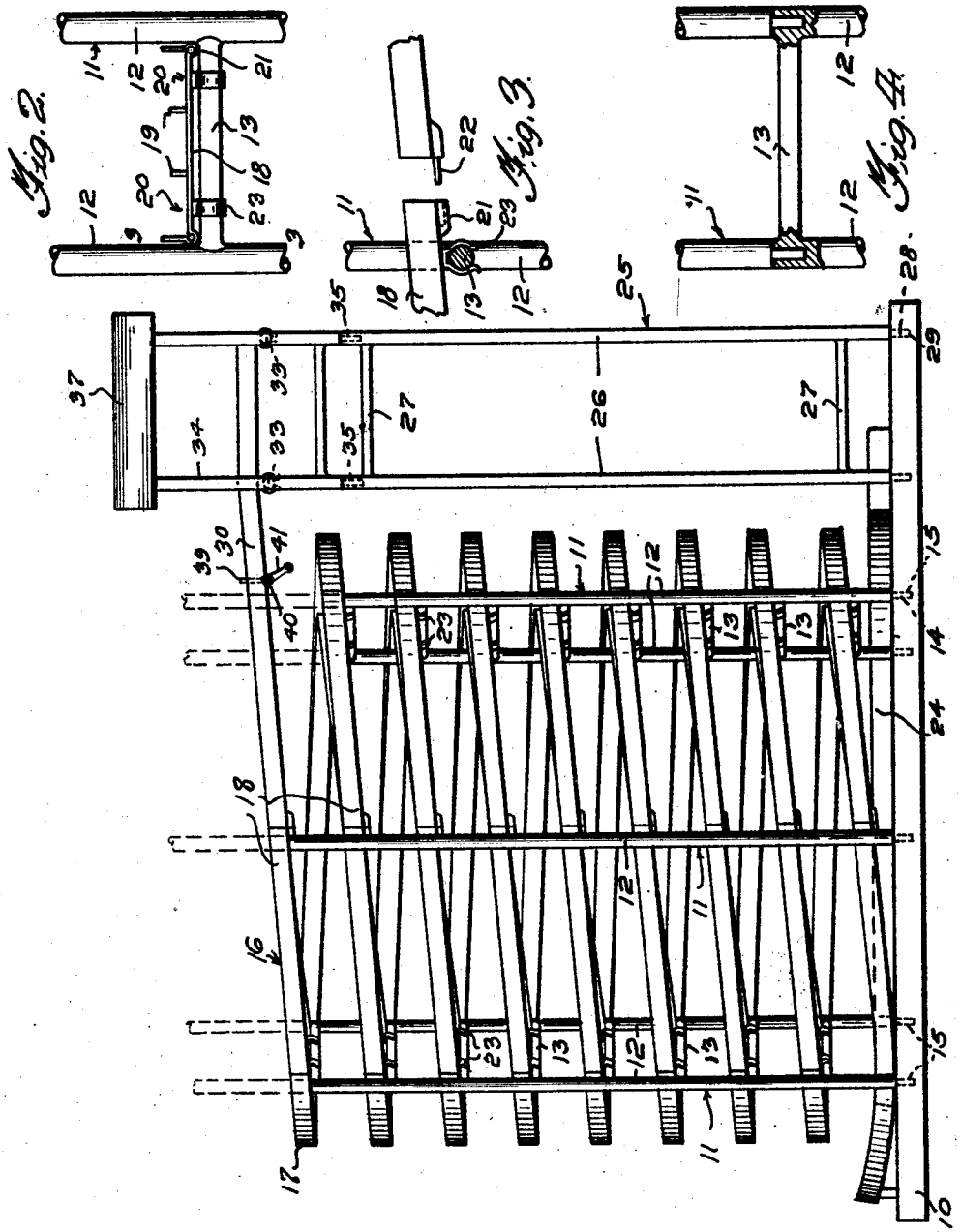
Sept. 23, 1930. M. E. SIMMONS 1,776,640

MECHANICAL TOY

Filed June 3, 1929 2 Sheets-Sheet 1



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MECHANICAL TOY

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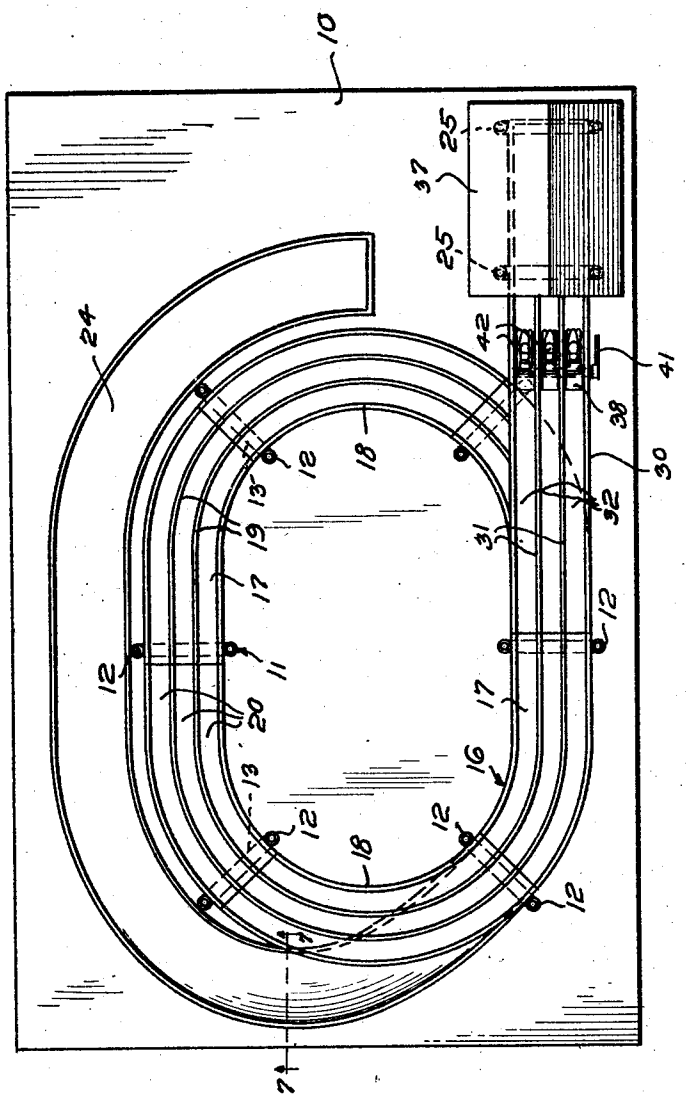


Fig. 5.

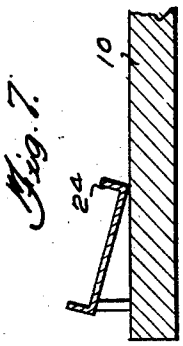


Fig. 7.

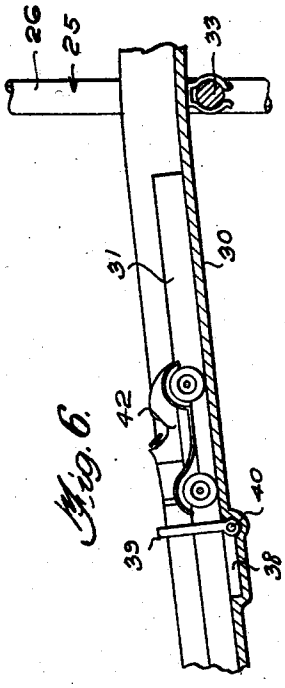


Fig. 6.

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UNITED STATES PATENT OFFICE

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MECHANICAL TOY

Application filed June 3, 1929. Serial No. 368,077.

My invention relates to mechanical toys, wherein a plurality of gravity operated rolling elements, are employed in a contest or race.

In accordance with my invention, a track is provided arranged in a generally spiral manner, and wheeled racing elements, preferably simulating automobiles or the like, are caused to travel down the spiral track by gravity. The track is preferably provided with longitudinal partitions, dividing the same into separate raceways for receiving the racing elements, so that they do not contact with each other, when traveling down upon the track. At the lower or outlet end of the track, the racing elements discharge upon a track section which is preferably free from the partitions, whereby the racing elements may contact with each other. This introduces an element of chance into the operation of the apparatus. The track and the supporting elements therefore are preferably formed in detachable sections, whereby the entire structure may be collapsed for the purpose of shipment or the like.

In the accompanying drawings, forming a part of this specification, and in which like numerals are employed to designate like parts throughout the same,

Figure 1 is a side elevation of the toy embodying my invention,

Figure 2 is a fragmentary side elevation of one of the track supporting uprights,

Figure 3 is a fragmentary side elevation of track sections, showing their adjacent ends separated and in position to be assembled, the supporting element being shown in section,

Figure 4 is a fragmentary side elevation of two of the track supporting elements, arranged in superposed relation,

Figure 5 is a plan view of the toy,

Figure 6 is a central longitudinal section through the starting track section or platform, and,

Figure 7 is a detailed section through the end of finishing track section, taken on line 7—7 of Figure 5.

In the drawings, wherein for the purpose of illustration is shown a preferred embodiment of my invention, the numeral 10 designates a base, upon which the several elements of the toy are mounted. Arranged above the base 10 are ladder track supporting elements 11. Each of these ladder track supporting elements embodies a pair of vertical uprights or rods 12, connected at spaced intervals by horizontal rods 13. The supporting elements 11 are identical, except that they are graduated in length, the uppermost horizontal rod 13 of each element being arranged adjacent to the top of the same, and the remaining horizontal elements being equi-distantly spaced. At their lower ends, the vertical rods 12 are preferably provided with reduced extensions 14, adapted to be removably mounted within recesses 15, formed in the base 10. In Figure 5, I have shown six of the supporting elements 11, arranged in a generally elliptical group, but the invention is not restricted to this particular arrangement or number, as the same may be varied.

The elements 11 support a generally elliptical spiral track, designated as a whole by the numeral 16. This track is preferably made up of side and end track sections 17 and 18, which are substantialy identical. The track sections are provided with spaced longitudinal flanges or partitions 19, serving to divide the same into separate longitudinal raceways 20. The rear end of each track section 17 is provided with sockets 21, to detachably receive pins 22, carried by the adjacent forward end of the next track section, as clearly shown in Figure 3. The several track sections when assembled, are supported upon the horizontal rods 13, which are arranged at elevations defining a spiral plane. The rear end of each track section is equipped with a pair of spring catches 23, Figure 3, adapted to releasably engage over the adjacent horizontal rod 13.

The lowermost or discharge track section 17, Figure 1, leads into a finishing track section 24, Figure 1, and may be detachably secured thereto by means of the socket and pin joints, as shown in Figure 3. The finishing track section preferably has its rear or inlet end transversely inclined or banked, and this

finishing track section 24, preferably extends about the exterior of the adjacent supporting elements 11, as clearly shown in Figure 5. It is preferred that the finishing track section be free from the flanges or partitions 19, so that the racing elements discharging into the same may possibly contact with each other or avoid such contact, thereby introducing an element of chance into the operation of the apparatus. While it is preferred to use this finishing track section, the invention is not necessarily restricted to such use, as some degree of success may be employed by omitting the same.

The apparatus further embodies a starting tower, embodying a pair of supporting elements 25, each of which includes vertical rods 26, connected near their upper and lower ends by horizontal rods 27. The rods 26 are provided at their lower ends with reduced extensions or pins 28, to be removably mounted within recesses 29, formed in the base 10. The starting tower further embodies an inclined starting track section 30, similar to the track sections 17, and having longitudinal flanges or partitions 31, Figure 6, to register with the flanges 19 of the adjacent track section 17, thus affording longitudinal raceways 32, registering with the raceways 20. The inclined starting track section 30 is removably mounted upon horizontal rods 33, and is preferably provided with the same resilient catches 23, Figure 3. The horizontal rods 33 are rigidly attached to vertical rods 34. The rods 34 are provided at their lower ends with reduced extensions or pins 35, to be removably mounted within sockets formed in the upper ends of the vertical rods 26. The forward ends of the starting track section 30 are equipped with pins 36, to enter the sockets 21 at the rear end of the uppermost track section 17. The upper ends of the rods 34 may be connected by a top or cover 37.

The starting track section 30, Figure 6, is provided in the bottoms of the raceways 32, with depressions or recesses 38, adapted to receive gates 39, which are rigidly mounted upon a rock shaft 40 turned by a crank 41. These gates are adapted to be swung to upright or horizontal positions.

The numeral 42 designates wheeled racing elements, preferably simulating automobiles, while the same may be made to simulate horses or may be made in any other suitable shape or design.

As before stated, the several track sections are separable from each other and from the supporting elements. I also contemplate forming a track in different lengths, by adding a unit or units upon the top of the same. To accomplish this, the vertical rods 12 are provided in their upper ends with sockets, for receiving the pins or extensions 15 carried at the lower end of additional supporting elements 11. Additional track sections 17 would be employed and mounted upon the supporting elements 11 of the next upper unit, and connected with the uppermost track section of the lower unit. I would also increase the height of the starting tower accordingly, and employ an additional unit or units of the supporting elements 25.

The operation of the toy is as follows:

The crank 41 is turned in the direction to bring the gates 39 to the upright position, and the racing elements 42 are arranged behind these gates upon the starting track section 30. When the gates 39 are swung forwardly to the horizontal position, the racing elements start by gravity and roll over the gates and enter the several raceways 20 and roll down the track. The racing elements upon approaching the lowermost track section discharge into the finishing track section 24, which is horizontally arranged for the major portion of its length, and the speed of travel of the racing elements is somewhat retarded. If one racing element reaches the finishing track section considerably in advance of the other racing elements, it will pass through the finishing track section to the finishing point, without liability of engaging other racing elements. When two or more of the racing elements reach the finishing track section at about the same time, it is a matter of chance which racing element will contact with the other racing element or elements or clear the same. Hence the element of chance is introduced into the final result.

While I have shown and described the track as equipped with three raceways, the invention is in no sense restricted to this number, as any suitable number may be employed, in which event a corresponding number of racing elements will be used.

It is to be understood that the form of my invention, herewith shown and described, is to be taken as a preferred example of the same, and that various changes in the shape, size and arrangement of parts, may be resorted to without departing from the spirit of my invention, or the scope of the subjoined claims.

Having thus described my invention, I claim:—

1. A toy comprising an inclined track having longitudinal partitions for affording separate raceways, gravity operated racing elements to travel down said raceways, and a finishing track section receiving the racing elements from the separate raceways and being free from longitudinal partitions.

2. A toy comprising a generally spiral track having longitudinal partitions for affording separate raceways, supporting means for the track, gravity operated racing elements to travel downwardly through the raceways, and a starting device to hold the racing elements against movement and to release the same.

3. A toy comprising a plurality of upstanding supporting elements, each supporting element embodying a pair of substantially vertical rods and vertically spaced horizontal rods, a generally spiral track embodying track sections having their ends detachably connected, means for detachably connecting the track sections with the horizontal rods, and racing elements to travel down said track.

4. A toy comprising a plurality of spaced supporting elements, each supporting element embodying a pair of substantially vertical rods and vertically spaced horizontal rods, the supporting elements being arranged in a peripherial group, a generally spiral track embodying track sections which are detachably connected at their ends, said track sections being arranged above and adjacent to the horizontal rods, each track section being provided with resilient catches to engage with the adjacent horizontal rod, longitudinal partitions arranged within each track section to divide the same into a plurality of separate raceways, a starting tower arranged near the uppermost track section, an inclined starting track section carried by the tower and having its forward end detachably connected with the rear end of the uppermost track section, longitudinal partitions arranged within the starting track section to divide the same into separate raceways leading into the separate raceways of the track sections, swinging gates mounted within the raceways of the starting track section, and means to move the gates.

5. A toy comprising a generally spiral inclined track having separate longitudinal raceways, a finishing track section leading into the discharge end of said raceway and disposed outwardly of and near said track, whereby the racing elements may be readily observed therein, and racing elements to travel down the inclined track.

6. A toy comprising a substantially elliptical inclined track having separate longitudinal raceways, and a finishing track section arranged outwardly of said track and near the same and leading into said raceways, the outer arrangement of the finishing track rendering it easy to observe the racing elements, and racing elements to travel down the inclined track.

In testimony whereof I affix my signature.

MARY ETTA SIMMONS.