

[54] **AMUSEMENT DEVICE**

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[51] Int. Cl. **A63h 11/02**

[58] Field of Search46/1 C, 243 M, 4;
273/86 E

[56] **References Cited**

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Primary Examiner—Louis G. Mancene

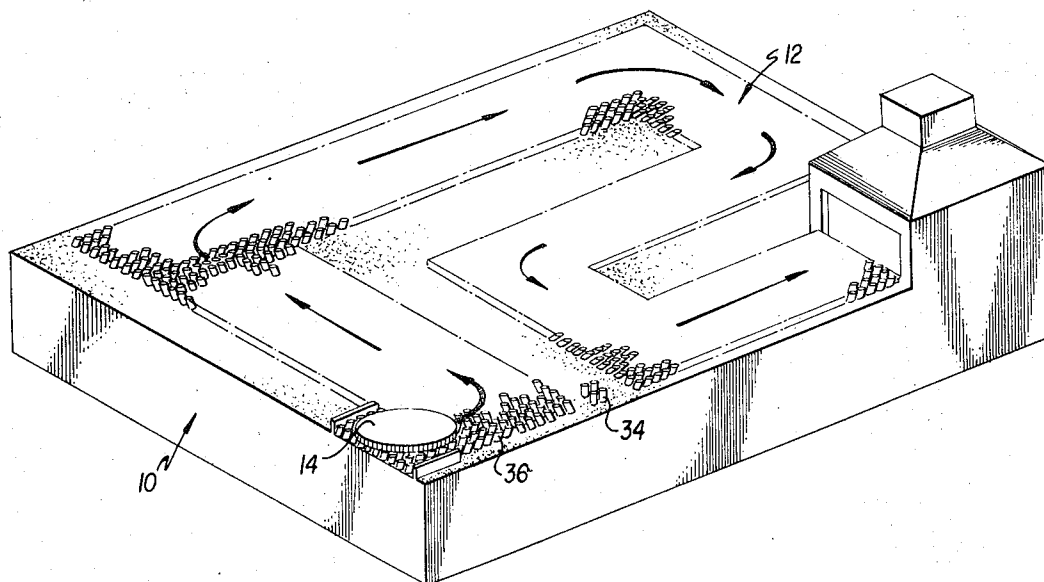
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[57] **ABSTRACT**

An amusement device featuring a vibrating frame upon which a mat is positioned, the mat being provided with a first group of upwardly projecting resilient fingers being generally perpendicular thereto and a second group of upwardly projecting resilient fingers being inclined at an acute angle with respect to the mat, the vibrations imparted to the mat causing one or more playing pieces to move along the second group of fingers in the direction the second group of fingers is inclined.

8 Claims, 7 Drawing Figures



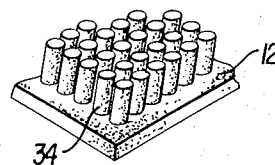
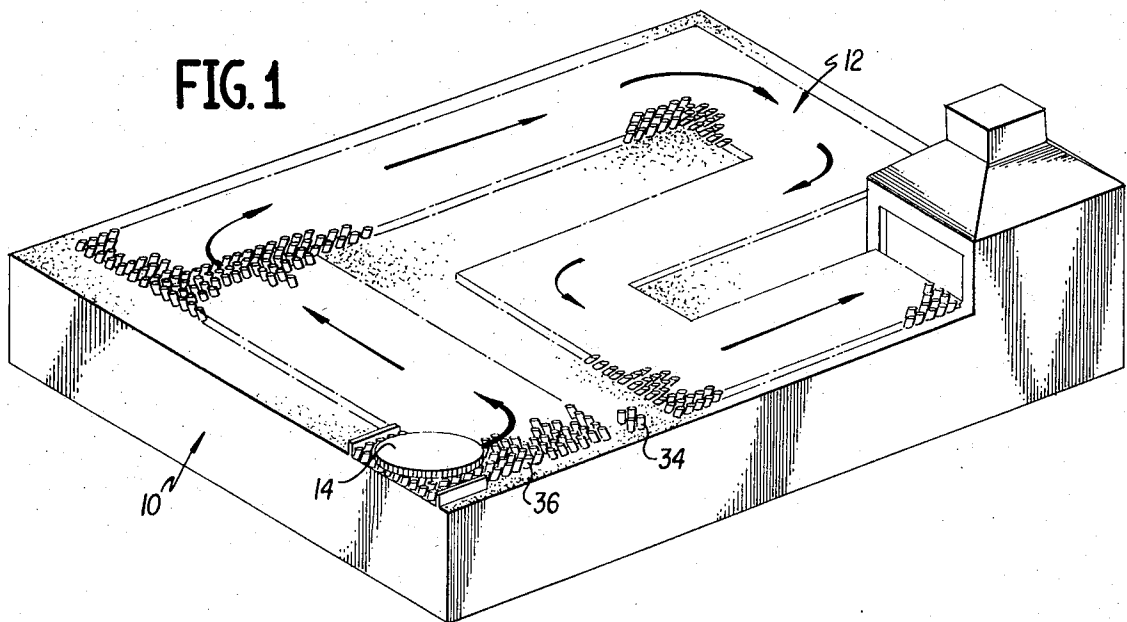


FIG. 2

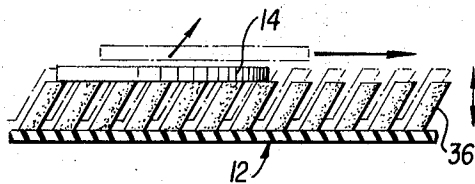


FIG. 3

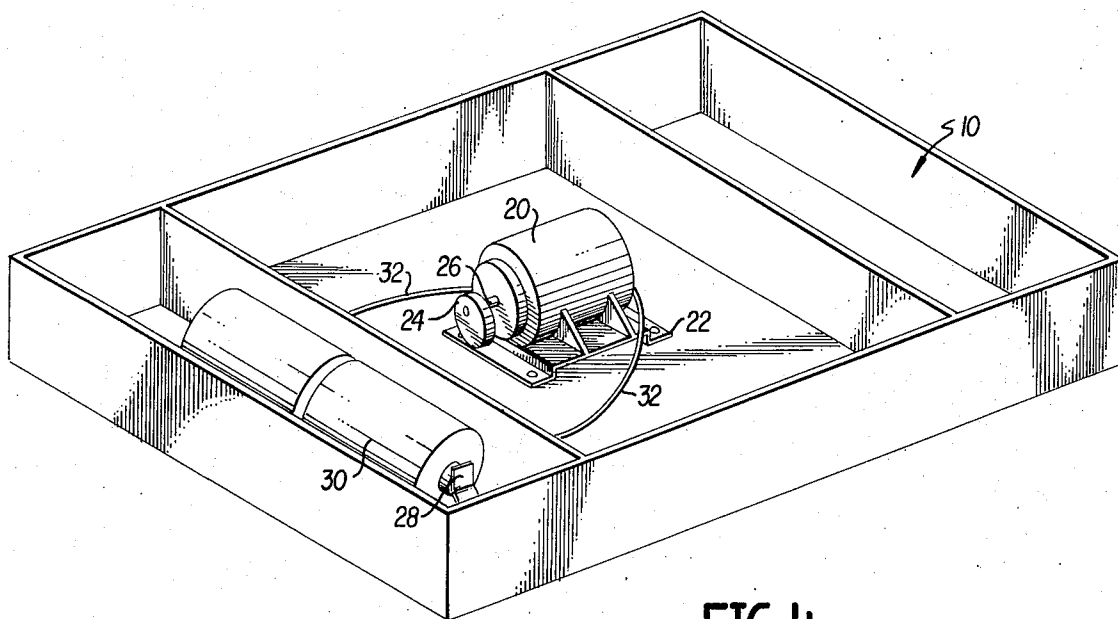


FIG. 4

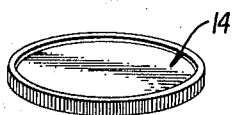


FIG. 5

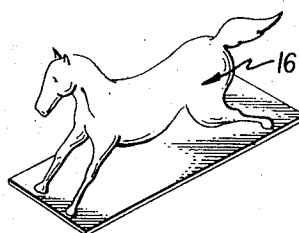


FIG. 6

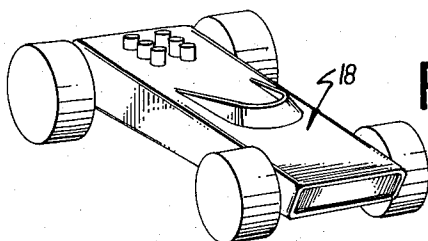


FIG. 7

AMUSEMENT DEVICE

BACKGROUND OF THE INVENTION

The present invention relates to the general class of toys in which one or more playing pieces move along selected paths of a playing surface. In the prior art, relatively complicated and expensive techniques have been employed to direct a series of playing pieces along a single selected path as well as to direct individual pieces along different paths. The present invention constitutes an advancement over known prior art amusement devices in that a vibrating mat characterized by its simplicity of construction and low cost of manufacture is employed to direct one or more pieces along a predetermined path.

SUMMARY OF THE INVENTION

The amusement device of the present invention features a vibrating "magic" rubber mat permitting one or more playing pieces to travel along a predetermined path simulating the action of a variety of sports, for example, horse and car racing. More specifically, the amusement device includes a vibrating frame upon which the mat is mounted. The mat is provided with a first group of resilient fingers positioned generally perpendicular to the surface of the mat. A second group of resilient fingers defining the path of travel of the playing pieces projects upwardly from the mat and are inclined at an acute angle thereto, the playing pieces traveling in the direction of the inclined fingers as the mat vibrates. As will be apparent, a variety of amusement games may incorporate the mat.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view illustrating the mat provided with a first group of resilient fingers perpendicular to the mat and a second group of resilient fingers inclined with respect to the mat and defining the path of travel to be taken by the playing piece, the mat being used in a bank construction permitting coins to travel along a preselected path to be eventually deposited;

FIG. 2 is a perspective view of a portion of the mat illustrating certain of the resilient fingers which project upwardly from the mat and which are perpendicular thereto;

FIG. 3 is a cross-sectional view taken along a portion of the mat illustrating a group of resilient fingers which are inclined with respect to the mat and which direct the playing pieces along the mat as it is vibrating;

FIG. 4 is a perspective view illustrating the frame upon which the mat rests and the mechanism for imparting vibrations thereto;

FIG. 5 is a perspective view of a playing piece, particularly a coin;

FIG. 6 is a perspective view of a playing piece, particularly a racing horse; and

FIG. 7 is a perspective view of a playing piece, particularly a racing car.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The amusement device of the present invention comprises a vibrating frame generally designated by the reference numeral 10 in FIG. 4, a mat 12 which as seen in FIGS. 1-3 rests upon the frame 10 and one or more playing pieces 14, 16 and 18 as illustrated in FIGS. 5,

6 and 7, respectively, which move along a predetermined path of the mat 12.

Turning initially to the vibrating frame 10, an electric motor 20 is suitably mounted thereto by a bracket 22. A fly wheel 24 is eccentrically mounted on the rotating shaft 26 of the motor 20. Within a compartment of the frame 10 are located the necessary housing and electrical contacts 28 for batteries 30 which are suitably connected by wiring 32 to the motor 20. Such miniature electric motor construction is well known in the prior art.

As will now be apparent, as the motor 20 is energized the eccentrically mounted fly wheel 24 causes the entire frame 10 to vibrate. The mat 12 is suitably mounted upon the frame 10 and is thus caused to vibrate.

The mat 12, as illustrated in FIGS. 1-3, is characterized by its elasticity and flexibility and may be made of a soft rubber material. A first group of resilient fingers 34 project upwardly from the mat 12 and are generally perpendicular thereto. A second group of resilient fingers 36 projects upwardly from the mat 12 but are inclined at an acute angle thereto. It has been found that the ideal size for both groups of fingers 34 and 36 is 5-10 mm in length and 1.0-1.5 mm in diameter, although these dimensions are not critical.

As will be apparent, the second group of fingers 36 defines a path through the first group of fingers 34 along the surface of the mat 12. When a playing piece such as the coin designated by reference numeral 14 in FIG. 1 is positioned on the mat 12 and the motor 20 energized, the mat 12 and its projections 34 and 36 vibrate up and down as illustrated in FIG. 3. The playing piece 14 is thus caused to move in the direction the second group of fingers 36 is inclined. More specifically, the playing piece 14 jumps upwardly in a generally vertical direction as the mat 12 moves upwardly. Thereafter, the playing piece 14 falls vertically until it contacts the inclined fingers 36 at which time the weight of the playing piece 14 causes the inclined fingers to be moved downwardly. The resilient fingers 36 then move upwardly under their restoring force assisting in the next upward movement of the vibrating mat 12. The restoring force of the inclined second group of fingers 36 is exerted along the axes of the fingers 36 exerting a forward force against the playing piece 14, as illustrated schematically in FIG. 3. The aforementioned movements continue rapidly and the playing piece 14 is propelled along the second group of fingers 36 which define a passage within the first group of perpendicular fingers 34. The playing piece 14 is prevented from entering into or traveling along the first group of perpendicular fingers 34 which because of their vertical vibration cannot direct the playing piece 14.

As will be apparent, the vibrating frame 10 and the mat 12 may be employed in a variety of amusement devices, the coin bank illustrated in FIG. 1 not being a part of the invention but merely constituting one of many possible applications of the basic principles of the present invention.

The mat 12 may be oval or circular and so designed to simulate a racetrack while the playing pieces may simulate racing horses 16 as illustrated in FIG. 6 or racing cars 18 as illustrated in FIG. 8. In such applications, the second group of inclined fingers 36 is used to define the path or paths the horses 16 or vehicles 18 take while the remaining portions of the mat 12 comprising

the first group of vertically disposed fingers 34 represent those areas in which racing does not take place. It is even possible to construct the mat 12 entirely of the inclined fingers 36.

Still further applications of the basic principle of the present invention include forming the playing pieces as skiers, trains, animals and humans permitting same to travel along preselected paths of the trackway. The playing piece may even comprise articulated components such as bending snakes or separate cars of a train permitting zig-zag movements and the like to the amusement of the user.

As will be further apparent, the vibrating frame 10 and mat 12 of the present invention may be used with an infinite number of small toys owned by the child.

I claim:

1. An amusement device, comprising:

a frame, means vibrating said frame;

a mat positioned upon said frame such that the vibration of said frame in turn vibrates said mat, said mat being provided with a first group of fingers projecting upwardly from said mat and being generally perpendicular thereto; a second group of resilient fingers projecting upwardly from said mat and being inclined at an angle with respect to said mat, said second group of fingers being arranged to define along said mat a continuous path of predetermined dimension and varying configuration, said mat being provided with an opening at the end of said path; and

a playing piece having a generally flat bottom and resting upon said second group of resilient fingers of said mat so as to be propelled along said continu-

ous path to the end thereof as said mat vibrates, said playing piece upon reaching the end of said continuous path dropping through said opening in said mat.

2. An amusement device as in claim 1, wherein said second group of fingers are inclined at an acute angle with respect to said mat.

3. An amusement device as in claim 2, wherein said second group of fingers are soft rubber material.

4. An amusement device as in claim 1, wherein said second group of fingers are within the range 5-10 mm. in length and 1.0-1.5 mm. in diameter.

5. An amusement device as in claim 1, wherein said continuous path defined by said second group of resilient fingers begins at one side of said mat and said end of said continuous path is located near a different side of said mat.

6. An amusement device as in claim 1, including a housing positioned above said opening within said mat, said housing being provided with a side entrance adjacent the end of said continuous path such that said playing piece upon reaching said end of said continuous path enters said side entrance of said housing there-after dropping through said opening within said mat.

7. An amusement device as in claim 6, wherein said playing piece comprises a coin.

8. An amusement device as in claim 1, wherein said means vibrating said frame comprises an electric motor mounted to said frame, a flywheel eccentrically mounted on the shaft of said motor and means mounted within said frame for energizing said motor.

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