D. A. ALPERT.

AMUSEMENT DEVICE.

APPLICATION FILED APR. 2, 1919.

1,386,590.

Patented Aug. 9, 1921.

2 SHEETS—SHEET 1.

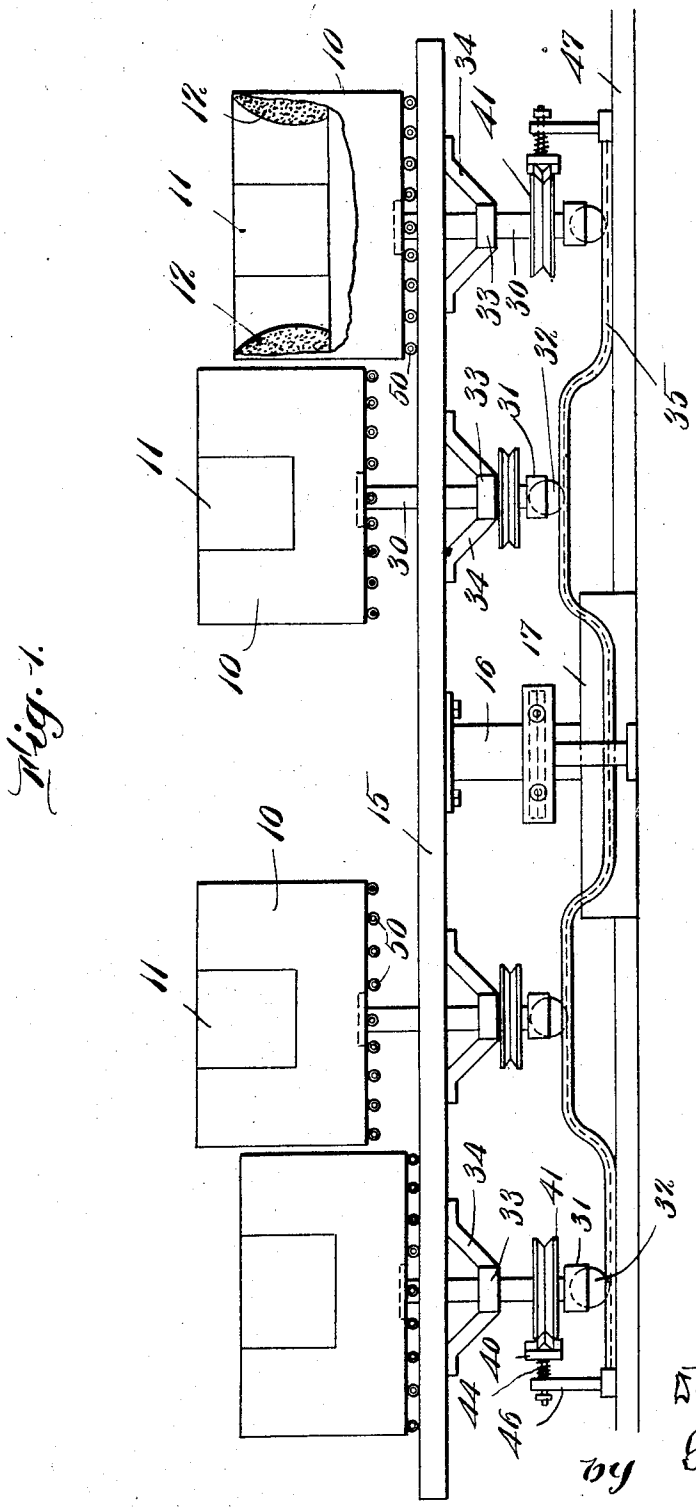


Fig. 1.

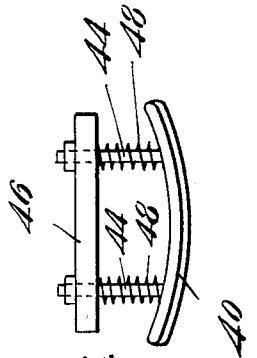


Fig. 4.

Inventor
David A. Alpert
by Francis J. Dakin
atty.

D. A. ALPERT.

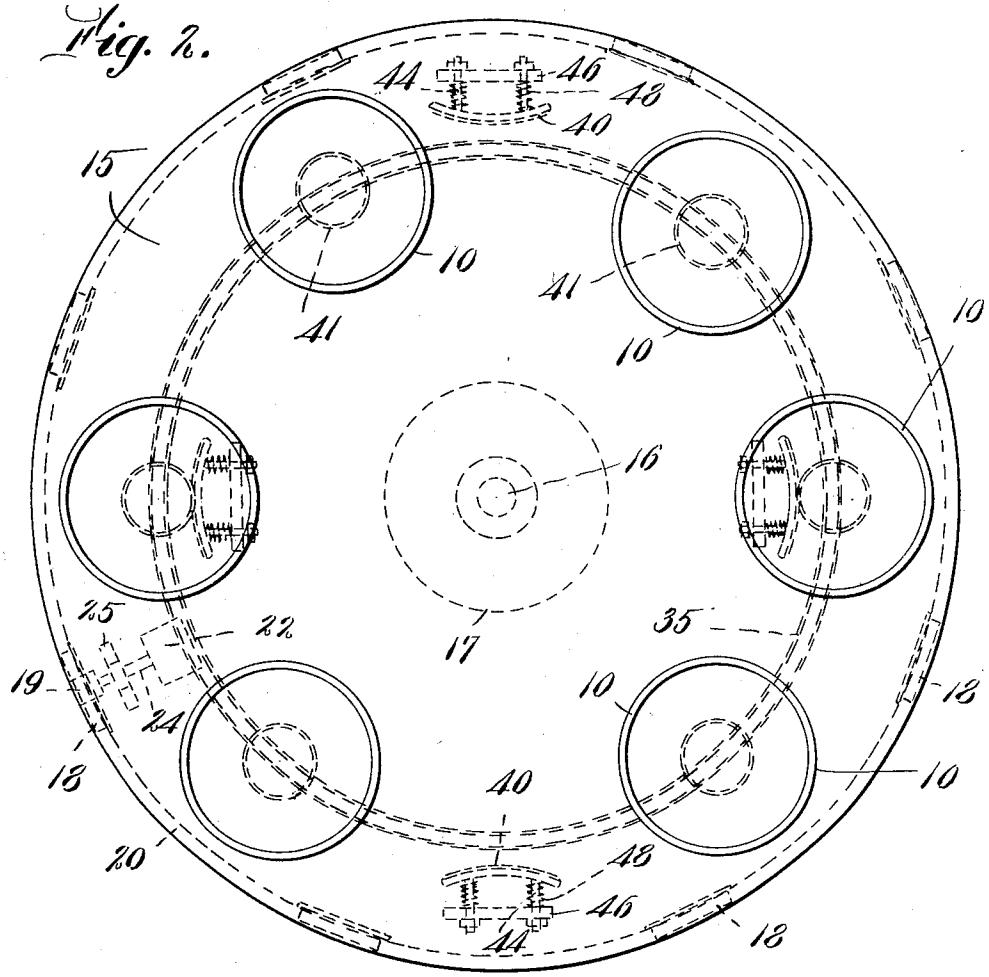
AMUSEMENT DEVICE.

APPLICATION FILED APR. 2, 1919.

1,386,590. **Patented Aug. 9, 1921.**

2 SHEETS—SHEET 2.

Fig. 2.



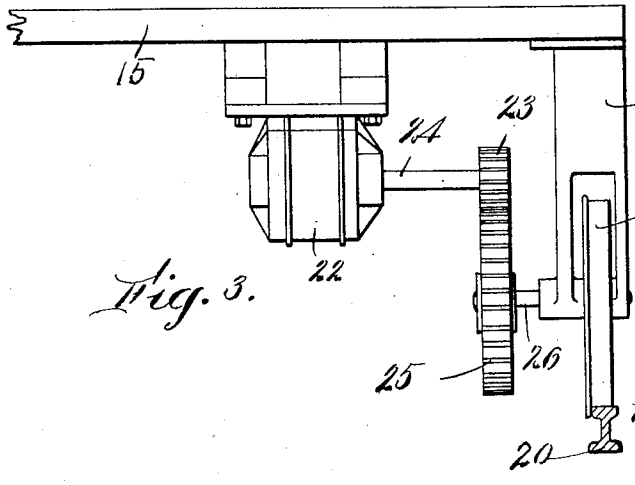


Fig. 3.

Inventor
David A. Alpert
by Francis J. Dakin
Atty.

UNITED STATES PATENT OFFICE.

DAVID A. ALPERT, OF BEACHMONT, MASSACHUSETTS.

AMUSEMENT DEVICE.

1,386,590. Specification of Letters Patent. Patented Aug. 9, 1921.

Application filed April 2, 1919. Serial No. 286,962.

To all whom it may concern:

Be it known that I, DAVID A. ALPERT, a citizen of the United States, residing at Beachmont, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Amusement Devices, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to amusement devices and more particularly to a riding machine in which a rotating member carries a plurality of cars adapted for passengers.

The main object of my invention is to provide an amusement device of the character described in which the passenger cars, in addition to being carried in a circular path, are given various intermittent movements, such as an up and down movement and a whirling movement, in alternate directions.

Another object of the invention is to provide simple and efficient means for imparting vertical and whirling movements to the passenger cars while they are traveling in a circular path.

Another object of the invention is to provide a device simple and cheap in construction and safe in operation.

Other objects of the invention will be more specifically set forth and described hereinafter.

Briefly my invention contemplates a riding machine comprising a plurality of passenger cars adapted for travel in a circular path with means for intermittently raising and lowering the cars while traveling in the circular path, and for giving the cars a whirling movement first in one direction and then in a reverse direction.

In the drawings illustrating the preferred form of my invention, Figure 1 is a side elevation of a riding machine constructed and operated in accordance with my invention; Fig. 2 is a plan view of the same; Fig. 3 is a side elevation of the driving means for said machine and Fig. 4 is a plan view in detail, on an enlarged scale, of a quadrant for imparting a whirling movement to the passenger cars.

In the drawings illustrating the preferred embodiment of my invention, I provide a plurality of passenger cars 10 which are preferably circular in form, each having an entrance 11 and a circular seat 12 within. The cars may be of a size suitable for one or for a number of passengers as desired.

The cars 10 may be carried by any suitable supporting member arranged to move the cars through a certain prescribed path, but preferably a circular platform 15 is employed, the platform being centrally supported on a standard 16 set in a suitable block or bearing 17 and the edge of the platform at or near its periphery being provided with a plurality of wheels 18 journaled in depending brackets 19 secured to the under surface of the platform. The wheels 18 engage and run upon a circular rail 20. In operation the platform rotates upon the standard 16 as a center, being supported by the wheels 18 at its periphery.

Any suitable means may be provided for rotating the circular platform, and one such means is shown in the drawings comprising an electric motor 22 having a pinion 23 mounted on a shaft 24, said pinion engaging a gear-wheel 25 mounted on the shaft 26 of one of the wheels 18. The starting of the motor causes the pinion 23 to rotate operating the gear 25 and the particular wheel 18 to which it is applied. Various other means may be substituted for rotating the platform or supporting member for the cars, as these means are well known and form no part of my invention.

When the platform is rotated the passenger cars 10 travel through a circular path and for the purpose of imparting a vertical movement up and down to the cars as they travel in this circular path, I provide the following means. Each car is mounted on a central shaft or standard 30 passing downwardly loosely through the platform in a suitable bearing and having at its lower end a cup-shaped bearing 31 adapted to hold a ball 32. The shaft 30 is further supported against lateral movement by a bearing 33 carried by a bracket 34 secured to the under side of the platform. Underneath the platform I arrange a circular track 35, having a series of elevated portions. The track is so arranged that the bearings 32 travel on it when the platform is rotated, the track being provided with side flanges to hold the ball-bearings 32 thereon. As the platform rotates carrying the passenger cars, the balls 32 travel on the track and when the ball of any one car reaches an elevated portion of the track it rides up on that portion, thereby causing the passenger car to be raised up as shown in Fig. 1. The result is that the rotation of the platform gives to each car an

alternate upward and downward movement, these movements being intermittent and separated by the flat portions of the track 35.

In addition to the foregoing movements imparted to the cars 10 I provide suitable means for whirling each car alternately in opposite directions as it is carried through its circular path. Any suitable means may be employed for this purpose and one such is shown in the drawings consisting of a series of quadrants 40 adapted to engage shives 41 on the shaft 30 of the cars. Each quadrant is curved, having the base engaging the shive wedge-shaped in order to enter the groove in the periphery of the shive and thereby secure a firm grip. Each quadrant is mounted on two rods 44, 44, loosely mounted in a bracket 46 secured to the foundation 47, and upon the rod 44 are springs 48 which maintain the quadrant in a forward position yet permit of its being retracted as the shive rides over it. By mounting the quadrants alternately on different sides of the track 35 I secure a whirling movement of the car first in one direction and then in the reverse. In the drawings I have shown the quadrants arranged to impart the whirling movements when the cars are traveling in their lower position and on the depressed portions of the track 35, but, if desired, the quadrants may be arranged adjacent to the elevated portions in order to impart the whirling movements when the cars are in a raised position. In order to reduce friction between the car and the platform when it is whirled, the base of each car is provided with a number of suitable rollers 50.

The operation of my device is of extreme simplicity. The starting of the motor 22 causes the platform 15 to revolve and the cars 10 are thereby carried along a circular path. Taking one car for example, and assuming it to be in its lower position with the ball-bearing 32 at the bottom of its shaft 30, resting on a depressed portion of the track 35, the car travels in its lower position until the ball-bearing 32 reaches the elevated portion of the track when it rides up the incline in the track, thereby raising the car. The car then travels for a time in a raised position until the decline is reached when it drops. As the car then travels in a lower position and reaches a quadrant, the shive 41 comes into engagement with the wedge-shaped surface of the quadrant causing a winding between the two which results in turning the car in a direction dependent upon whether the quadrant is arranged on one side or the other of the circular path. The duration of the whirling movement of the car will depend to some extent upon the speed of the platform and the length of the quadrant and these may be varied to attain varying results.

After the car is disengaged from the quadrant it is again raised and travels for a time in that position. When it next reaches a depressed portion of the track the shive engages a quadrant located upon the opposite side of the circular path and is whirled in a direction reverse to the former whirling movement.

The further operation is merely a repetition of the foregoing.

It will be apparent that my invention introduces a number of novel and amusing movements in a riding machine and that the various operating elements may be so grouped as to vary the arrangement, sequence and duration of the particular movements without departing from my invention.

It is further to be observed that my invention is not to be limited to passenger carrying cars because various devices may be substituted in place of the cars and be operated in the same manner as the cars, such, for instance, as wooden horses or other devices intended to carry but one passenger each.

What I claim is:—

1. In a riding machine, the combination of a revolving support, a standard vertically slidable therein, a passenger carrying car fixed on the top of said standard, said car being provided on its bottom with roller bearings, a fixed undulated track, a suitable bearing mounted in the lower end of said standard and in engagement with said undulated track and means for revolving said support to cause said car to rise and fall in its path of travel.

2. In a riding machine, the combination of a revolving support, means for revolving said support, a standard slidably mounted in a vertical position, a passenger car fixed on top of said standard, a plurality of roller bearings mounted on the bottom of said car, a bearing in the lower end of said standard and a fixed track upon which said bearing travels, said track being undulated in order to cause said standard and passenger car to rise and fall in its course of travel when said support is revolved.

3. In a riding machine, the combination of a revolving support, means for revolving said support, a standard slidably mounted in said support in a vertical position, a passenger car carried by said standard, a plurality of roller bearings mounted on the bottom of said car, a roller bearing in the lower end of said standard, a fixed track upon which said bearing travels, said track being undulated in order to cause said passenger car to rise and fall in its course of travel when said support is revolved and means for rotating said standard and passenger car during its course of travel.

4. In a riding machine, the combination of a revolving support, means for revolving said support, a standard slidably mounted in

said support in a vertical position, a passenger car carried by said standard, a roller bearing in the lower end of said standard, a fixed track upon which said bearing travels, said track being undulated in order to cause said passenger car to rise and fall in its course of travel when said support is revolved and means for rotating said standard and said car at intermittent periods during its course of travel; said means comprising a shive fixed on said standard and having a grooved periphery and a plurality of fixed quadrants, each having a wedge-shaped face for engaging the groove in said shive.

5. In a riding machine, the combination of a revolving support, means for revolving said support, a standard slidably mounted in said support in a vertical position, a passenger car carried by said standard, a roller bearing in the lower end of said standard, a fixed track upon which said bearing travels, said track being undulated in order to cause said passenger car to rise and fall in its course of travel when said support is revolved and means for rotating said car intermittently during its course of travel, first in one direction and then in the reverse direction; said means comprising a shive fixed on said standard and a plurality of quadrants arranged alternately on two sides of the path of travel of said shive, each of said quadrants having its face wedge-shaped in order to make a tight engagement with the grooved periphery of said shive as the same is rotated.

6. In a riding machine, the combination of a revolving support, means for revolving said support, a standard slidably mounted in a vertical position in said support, a bracket support for said standard, a passenger car fixed on top of said standard, a bearing in the lower end of said standard, a plurality of roller bearings mounted on the bottom of said car and adapted to engage said revolving support when said car is in a lowermost position, a fixed track upon which said bearing travels, said track being undulated in order to cause said standard and passenger car to rise and fall in its course of travel when said support is revolved, said means comprising a shive fixed on said standard and provided with a grooved periphery and a fixed quadrant having a wedge-shaped face and adapted to be engaged by said shive.

In witness whereof, I hereunto set my hand this twenty-first day of March, 1919.

DAVID A. ALPERT.