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E. V. BABBITT

RACING GAME

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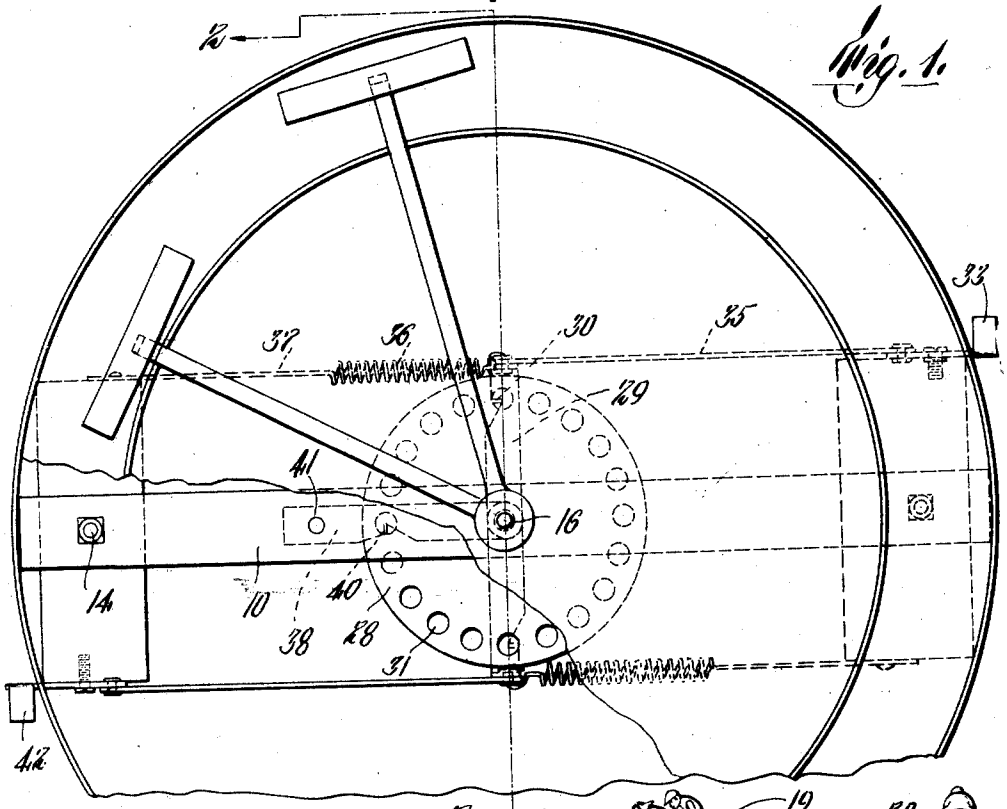


Fig. 1.

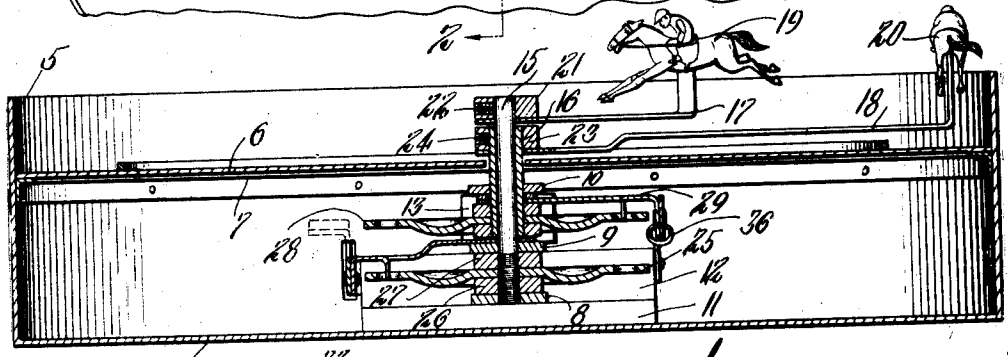


Fig. 2.

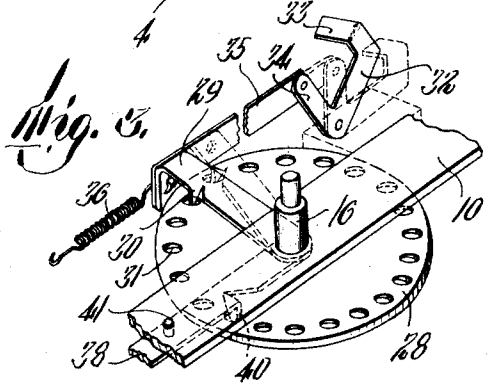


Fig. 3.

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UNITED STATES PATENT OFFICE.

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RACING GAME.

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This invention relates to a racing game embodied in a machine by which two or more objects may be moved independently of one another by a like number of contestants or players through mechanism. The moving objects may simulate men, horses, automobiles, or any other animals, machines, or what not between which races may be arranged.

The object of the invention is to produce a game apparatus of this nature in which the speed imparted to the moving objects by the competing players affords a real test of the skill of the players and the coordination between their mental and physical powers. A further object is to embody such qualities or characteristics of the game in an apparatus of such simple and inexpensive construction that it may be purchased by large numbers of the public interested in such games; and also to make the apparatus of such dimensions and so light in weight that it may be used for amusement in homes, when supported on any convenient table or stand, and may be laid away when not in use, not requiring a special standard.

Referring now to the drawings which illustrate a preferred practical embodiment of the invention,—

Figure 1 is a plan view of my racing game apparatus partly broken away.

Figure 2 represents a cross section of the apparatus taken on line 2—2 of Figure 1.

Figure 3 is a perspective view showing in detail the manually operated propelling mechanism for one of the racing objects.

Like reference characters designate the same parts in all the figures wherever they occur.

The case or outer frame is preferably similar to a circular pan, having a bottom 4 and a cylindrical side wall 5, which may be made of sheet metal, in one or more pieces, fabricated according to any of the methods known to the arts of the tinsmiths and sheet metal workers. This casing or pan may be made of any convenient dimensions. For instance, I have made the casing in one of my designs with a diameter of about eleven inches, but it may be larger or smaller than that. It may also be made of other materials than sheet metal, such as wood for the base and pasteboard for the side wall, since the side wall is not called upon to bear any substantial stresses. Its only duty is to support a plate or table 6, representing a race track, and to enclose the operating mechanism which is placed beneath this plate or table. I have here shown such plate or table as resting upon an annular shelf 7 secured to the encircling wall 5.

For supporting the racing objects and the propelling mechanism, I have provided a secondary frame which is mounted on the base within the surrounding wall. This secondary frame consists of three or more bars 8, 9 and 10, respectively, placed one over another in parallel and secured at their ends to supporting and spacing blocks 11, 12 and 13, the means for thus securing the bars and blocks being conveniently bolts 14 which also secure the entire frame structure to the base 4. A shaft 15 has its bearings in the lower and intermediate bars 8 and 9, and in a sleeve or tubular shaft 16, which latter has a bearing in the uppermost bar 10 and surrounds the inner shaft 15. These two shafts carry respectively arms 17 and 18 on the ends of which are mounted the racing objects 19 and 20. Such arms and racing objects are located so that they will pass one another without interference. The arm 17 is secured to a block 21 which is screwed on the inner shaft 15 and is additionally made fast by a set screw 22; and the arm 18 is connected to a similar block or nut 23 which is screwed on the tubular shaft and further secured by a set screw 24. Thus, by rotating the shafts, the racing objects are caused to travel around the track, and according as either of the shafts is turned faster than the other the racing object carried by that shaft gains on the other racing object.

I have shown here as the racing objects running horses carrying mounted jockeys. I will, therefore, in the following description generally refer to these objects as horses; but since numerous other and specifically different objects, simulating other racers, may be substituted for these horses, it will be understood that in thus designating the objects I have not intended any limitation in the scope of my protection as to these objects.

There is secured to the inner shaft 15, between the frame bars 8 and 9, a ratchet wheel 25. A convenient means for thus connecting this ratchet wheel to the shaft comprises threading it upon the shaft and clamping it between nuts 26 and 27, which are also threaded on the shaft. A second ratchet wheel 28 is

similarly secured to the tubular shaft 16 between the bars 9 and 10. These ratchet wheels may be supported by the bars next below them and may thus support their connected shafts.

I have provided similar mechanisms for driving both ratchet wheels. These mechanisms are shown both in Figures 1 and 2, and the one for driving the upper ratchet wheel 28 is shown in complete detail in Figure 3 and will now be described.

A pawl carrier 29 is arranged to oscillate about the tubular shaft 16 and is provided with a pawl 30 arranged to cooperate with the abutments or teeth of the ratchet wheel. As here shown the pawl carrier is made of a strip of thin, resilient sheet metal, preferably spring steel, and the pawl 30 is formed by a spur partly severed from one edge of the pawl carrier and bent down so as to engage the ratchet wheel. The resilience of the pawl carrier itself provides the spring which engages the pawl with the ratchet and allows the pawl to be disengaged in its backward movement, and the inclination which is given to one edge of the spur forming the pawl is the means which causes such disengagement. Preferably the ratchet wheel is a disk stamped from sheet metal of greater thickness and rigidity than the pawl carrier, and the teeth or abutments of the wheel are made by punching holes 31 near the rim of the disk, the material between such holes being the teeth.

A bell crank lever 32 is pivoted to one end of the lower spacing block 12 and has one arm which passes through the encircling wall of the case and carries a finger piece or trigger 33 accessible for depression by a digit of the player. The second arm 34 of the bell crank lever is inside of the wall and is connected with the pawl carrier by means of a link 35, the opposite ends of which are suitably connected by pivots to the bell crank and to the down turned end of the pawl carrier arm 29. A spring 36 is connected at one end to the pawl carrier, preferably by forming its end into a hook and passing such hook through the tubular rivet which serves as the pivot between the pawl carrier and the link. The other end of this spring is connected to a bar or rod 37 which is secured to and projects from the spacing block at the opposite end of the inner frame. This spacing block is thus, in effect, the abutment which takes the reaction of the spring.

In the arrangement of the mechanism as here organized depression of the finger piece or key 33 causes the pawl to be retracted from the ratchet tooth with which it was previously engaged and brought into engagement with the next ratchet tooth; at the same time putting the spring 36 under stress. Upon release of the key the spring moves the pawl forward, at the same time turning the ratchet wheel and propelling forward through one step the horse which is connected to that wheel. It is possible, of course, to reverse the arrangement of finger key and spring, and to apply the operator's pressure as the force for propelling the horse and rely on the spring for retracting the pawl. Such a reversal is within the protection which I claim.

A holding pawl 38, preferably of similar construction to the driving pawl, that is, made with a spur 40, struck down from one edge of a resilient spring strip, is arranged to prevent backward movement of the ratchet, being threaded at one end over the tubular shaft and at the other end over a pin 41 which passes through the bars of the frame.

A similar propelling mechanism for the shaft 15 and horse 19 is designated by the same reference characters applied to corresponding parts except that its finger key is distinctively designated by the numeral 42.

The contestants playing this game station themselves so that each can manipulate his key 33 or 42 with one digit. Each contestant then endeavors, by rapidly vibrating his key, to drive his own racing horse faster than that of his opponent. Each depression of the key drives the horse forward through one step of the ratchet. In the actual apparatus the number of steps in one revolution is substantially greater than indicated in the drawings, for in said drawings the holes 30 have been made much larger in proportion and more widely spaced than in the commercial apparatus, for clearness of illustration. Hence a very rapid vibration of the keys is required to develop speed in the horses, and this requires the players to use all their resources of dexterity and muscular control in the effort to win the race.

Although I have shown the apparatus as equipped with only two racers to be driven by two contestants, it is evident that the principles of the mechanism here illustrated are capable of indefinite extension to accommodate any number of contestants, limited only by the outside dimensions of the apparatus.

The apparatus is capable of being made at small expense, since not only may the pawls and ratchets be stamped from sheet metal, as previously stated, but also the key levers and connecting links may be of similar materials, and the links may be of the thinnest and lightest character, since they are not required to be stiff. The bars 8, 9 and 10 of the frame may also be of sheet or rolled strip metal and the supporting and spacing blocks may be of wood. The bars are spaced apart at the shafts by the interposed ratchets, nuts, bolts and washers, as shown in Figure 2, and any way are not subjected to lateral stresses so that even for these members no great stiffness is required and they also may be made of light material.

While that feature of the apparatus which involves propelling the racers by means of a key through a tapping motion of the player's

finger is of particular value, and is, therefore, claimed as an important feature of the invention, nevertheless I may drive the racers by other means, and in that phase of the invention which is concerned primarily with the characteristics of the apparatus adapting it to widespread use, the character of the means for receiving the power from the operator is of secondary importance. Hence as to these aspects of the invention, the protection which I claim may include other specific primary driving means.

What I claim and desire to secure by Letters Patent is:

1. A racing game apparatus comprising a plurality of independently rotatable ratchet wheels, separate pawls for said ratchet wheels, springs associated independently with the several pawls and organized to apply force thereto in the ratchet-propelling direction, and separate key levers connected to said pawls for retracting them after their propelling movements, each lever being arranged to be operated by a contestant, and racing objects connected respectively to the ratchet wheels and driven in prescribed courses by said wheels.

2. A racing game apparatus comprising racing objects independently movable in prescribed paths, a ratchet wheel coupled to each of said racing objects and adapted to drive the same progressively forward in its prescribed path when the ratchet wheel is rotated step by step, a pawl complemental to each ratchet wheel, a spring connected to each pawl for moving it in the propelling direction, and a vibratory key lever connected to each pawl for retracting it and arranged to be operated by a tapping movement of the operator's finger.

3. A racing game apparatus comprising a frame, coaxial shafts, one within another, supported by the frame and each being rotatable independently of the other, ratchet wheels secured to each of said shafts, pawls complemental to each of the ratchet wheels and mounted to oscillate about the common axis of said shafts, operator-impelled vibratory key levers coupled to said pawls respectively, and racing objects connected to and driven by the respective shafts.

4. A racing game apparatus comprising coaxial shafts, one within another, a ratchet wheel secured to each of said shafts, a pawl cooperating with each of said ratchet wheels, each pawl comprising a spring metal strip mounted to oscillate about the axis of the shafts as a pawl carrier and having a spur struck down to engage the ratchet wheel as a pawl, means for vibrating said pawls, and racing objects connected to the respective shafts.

5. A racing game apparatus comprising independently movable racing objects constrained to travel in prescribed paths, ratchet wheels coupled to the several objects adapted to propel them progressively forward with a step by step motion, pawls cooperating with the several ratchet wheels, operator-controlled key levers coupled to said pawls for retracting them after forward propelling movements, and driving springs connected to said pawls for imparting propelling movement thereto when said key levers are released.

6. A racing game apparatus comprising an outer casing, an inner frame within said casing composed of a plurality of separated bars arranged above one another, coaxial shafts rotatably mounted in said bars, one of said shafts being within another and projecting below such other, a ratchet wheel mounted on the projecting part of said inner shaft between two of the frame bars, another ratchet wheel mounted on the outer shaft between other bars of the frame, operator-controlled pawls cooperating with the several ratchet wheels to propel them step by step, and racing objects separately connected to the said shafts to be propelled forwardly by rotation thereof.

In testimony whereof I have affixed my signature.

EDWIN V. BABBITT.