H. COOLEY.

RACE GAME APPARATUS.

APPLICATION FILED JAN. 30, 1913.

1,125,818.

Patented Jan. 19, 1915.

2 SHEETS—SHEET 1.

Fig. 1.

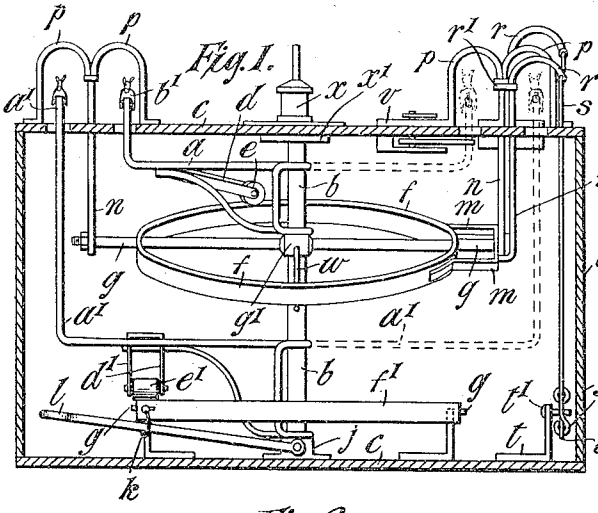
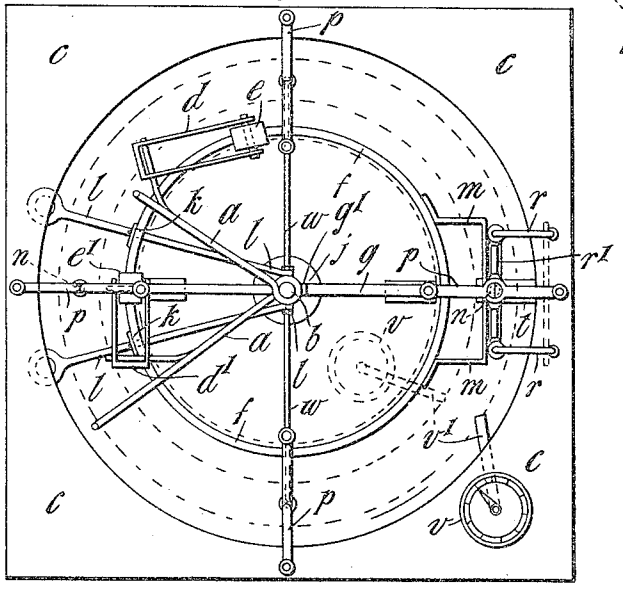


Fig. 3.



Fig. 2.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 6.

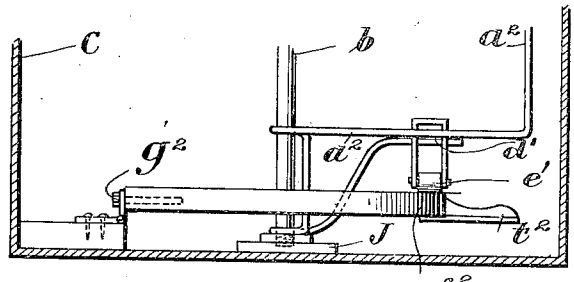


Fig. 4.

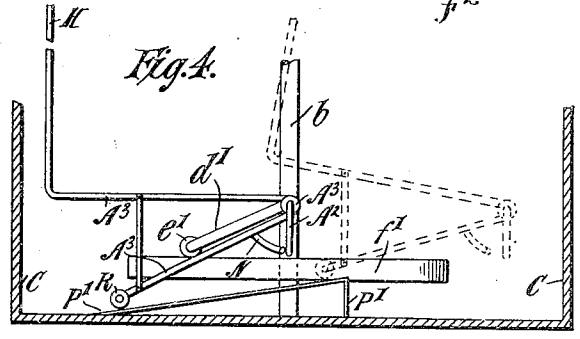
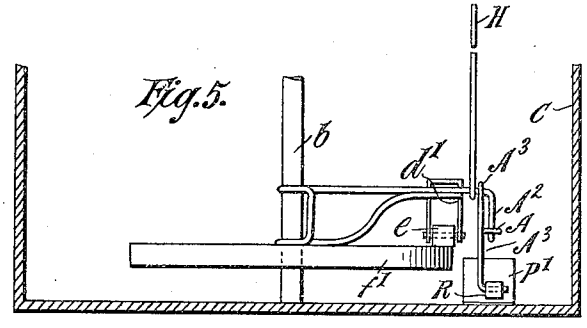


Fig. 5.



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RACE-GAME APPARATUS.

1,125,818. Specification of Letters Patent. Patented Jan. 19, 1915.

Application filed January 30, 1913. Serial No. 745,240.

To all whom it may concern:

Be it known that I, HORATIO COOLEY, civil engineer, subject of the King of Great Britain, residing at 43 Pendlestone road, Walthamstow, Essex, England, have invented certain new and useful Improved Race-Game Apparatus, of which the following is a specification.

This invention relates to toy race games and the like, in which one or more horses or other figures are represented.

The object of this invention is to employ a method of imparting a continuous circular movement to figures or animals or the like generally used in race and like games by means of actuated tilting or incline planes and radially moving arms to which the said figures are fixed.

The further object of the invention is to furnish each of the said arms with a runner arranged to travel over the said tilting or inclined plane and capable of adapting itself to the varying degrees of inclination thereof as the plane is tilted so as to cause the figure or object to move at a speed dependent upon the skill and dexterity with which the inclined plane is manipulated to maintain the said continuous circular movement.

In the accompanying drawings I have shown one practical form of my invention which will now be described in greater detail with reference thereto although it will be understood that my invention is susceptible of change or modification in various ways within the ambit of the subjoined claims.

Figure 1 is an elevation with the side of the box removed to reveal the interior of my improved race game. Fig. 2 is a plan. Fig. 3 is a detail view showing the method of carrying the figure so as to permit of lateral movement of the figure as it moves forward along the track. Figs. 4 and 5 are side and front elevations of a further modified form of my invention provided with mechanical means by which a horse attached to each radial arm may be caused to jump a hurdle or other obstacle on the track. Fig. 6 is a section through the supporting casing of the device showing a modified form of operating mechanism for tilting the circular planes.

Referring to the drawings, *a a'* are the radially moving arms which as shown are bracket-like in shape bent to revolve on the central upright tube or rod *b*. These arms are extended horizontally as shown when they are upwardly bent at right angles so as to bring their ends above the casing *c*. To these ends are fitted any suitable figure or object.

Suspended from the revolving radial arms *a a'* are the swinging carriers *d d'* carrying small rollers or wheels *e e'* which travel upon their respective tilting circular planes *f f'* when the latter are actuated in the manner hereinafter described. The swinging carriers with their rollers or wheels *e e'* are attached to the revolving arms at the desired angle by bending the bracket ends of the arms and passing the ends through holes made in the carriers for the purpose as shown in Fig. 2 to revolve in a given radius.

Carried at convenient heights and having their centers coincident with the center of the upright rod *b*, are the rings or circular planes *f f'*.

The ring *f* is shown attached to the upright by the socketed arms *g g* and is represented tilted in Fig. 1. The ring *f'* is attached to the bottom of the casing by the brackets *h h* and is shown in a horizontal position.

The socket *g'* in addition to carrying the arms *g g* also provides a base for carrying the revolving arm *a*.

The revolving arm *a'* is shown carried by the socket screwed on to the bottom of the box at the center. Into this socket also is firmly screwed the upright rod *b*.

Attached to the ring *f'* by means of small hanging rings *k k* are the levers *l l;* the lower end of each lever is bored with a hole through which a screw passes into the socket *j*, thus forming a fulcrum.

It will be seen from a perusal of the drawings that the socketed arms *g g* are carried both ways through the ring *f;* at one end is shown the bracket *m;* this bracket is firmly screwed to the ring and the arm *g* extends through and beyond *m* also. Threaded on the ends of the arms *g g* are the rods *n n*. These rods are carried upward through the top and have their upper ends attached to the arches *p p*. The arches *p p* are themselves bolted firmly to the casing *c*. As will be seen the rods *n n* give a considerable amount of support to the ring *f*.

Attached to the bracket *m* at equidistance from the arm *g* are two upright bent over

levers *r r*. These levers are supported upright by passing them through holes in the ends of an arm *r'* which is firmly held horizontal by fixing it to the adjacent upright *n;* and the holes at each end of *r'* are made sufficiently large to permit of the free vertical movement of the levers *r r*.

Midway and vertically below the levers *r r* is fixed to the bottom of the casing the bracket *t* carrying a stud *t'* to which is pivoted horizontally a bar *u* shown in dotted lines in plan and to each end of this bar are connected respectively the lower ends of the connecting rod *s*.

The object of the upright levers *r* is to enable an operator to impart movement to the upper ring or plane *f* from the lower part of the box and to do this it is necessary that the power should be transmitted over the top of the outside revolving figure as shown by dotted lines in Fig. 2.

The revolving arm *a'* is shown fitted with the carriers *d'* at whose extremities the rollers or wheels *e'* bear upon the upper circumferential edge of the lower ring or plane *f'*, attached to the latter by means of small pendent rings *k k* are the levers *l l* which are fulcrumed upon a screw passed through the socket *j*.

Fig. 2 shows two clockwork registers *v v* which are actuated by the arms *v'* which lie along the track of the revolving arms or the objects carried thereby in such a position as to be struck thereby so as to be swung upon their center pins and to be returned by a spring. The arms each carry a pivoted catch which operates a ratchet wheel to the extent of one or more teeth for each revolution of the respective radial arms. A screw cap *x* with the screw plate *x'* are intended to clamp firmly the disk portion of the casing to the center rod *b*.

w w are wire stays fitted to the center rod *b* passed at a convenient distance under the top plane or ring *f* brought upward and secured in a convenient manner to the arches *p p*. These stays limit the movement of the plane *f* and prevent it tilting beyond the length of the carriers and so prevent the wheel *e* leaving the track.

The arrow shows the direction of movement of the figures. The drawings show provision for two figures for which two concentric grooves in the top are provided.

Access to the levers *l* and *u* is obtained through holes in the side of the casing conveniently large therefor.

Method of working.—The object of the competitors is to cause the figures or objects fixed to the ends of the radially moving arms *a a'* to move around the course with the highest speed or number of revolutions and so win the game. To do this one competitor imparts a rocking movement to the bar *u* which has the effect of alternately tilting the upper plane *f* while another competitor gives an alternate depression of the levers *l l* to impart a corresponding movement to the plane *f'* to which they are connected. To obtain a continuous forward movement of the figure the competitor must so manipulate his levers that the roller is caused to continuously descend the downward inclines and increasing speed can only be obtained by judging the right moment when to alter the tilt of the plane or ring; that is, the roller should be brought down the incline with as great an impetus as possible, and the tilt of the plane should be altered only at the moment when it offers the least resistance to the onward movement of the roller. It will be understood, the movement of the roller varies with the movement of the lever, and also that movement ceases by working the levers either too fast or too slow.

The great advantage obtained by this system of similar rings or planes as regards racing is that the inside horse has no advantage respecting distance over the outside one; that is, the race is equivalent to being run on a straight course, since each horse depends upon the runner propelling it, and as the rollers revolve on equal circles consequently they traverse equal distances for each round.

As a modification to the previous description of the improvement, instead of carrying the figure rigidly on the end of upright portion of the revolving arm, the end may be bent over and the figure carried on a pivoted rod as shown at A A' Fig. 3. The figure shows a diagram sketch in which A is the end of the revolving arm and A' a rod bent around it to form a swivel or pivot, and F represents the figure; the upper end of the rod A' carrying the figure F, and the lower end of the counterbalance or weight W.

To maintain an upright position of the figure when stationary it is necessary that the weight W be greater than that of the figure.

If an arrangement similar to Fig. 3 be attached to the end of the revolving arm *a'* Fig. 1 and movement set up, it follows that the rod carrying the figure is inclined from the vertical line X Y and assumes the position shown in Fig. 3, more or less, according to the speed obtained. The object of obtaining this movement, is that if a figure representing a lancer with a lance pointed forward is fixed at F, it would incline inward more and more as the speed increased. On the inner side somewhere above the track, a small light ring, is suspended in such a position that as the figure moves slowly the point end of the lance just passes the ring, but if quickly the lance would be tilted so that its point would enter the ring

and take it from its support. Again, a horse may be represented as jumping an obstacle such as a hurdle in the track. To do this the end of the rod *a* (Fig. 1) is turned down as at A^2 (Figs. 4 and 5) and loosely fitted to it so as to form a swivel, is the bent rod A^3. At the lower end of A^3 is carried a little runner R, at A^2 is the swivel, and the figure is carried at the higher end H. The bent arm A^3 extends sufficiently upward to carry the figure above the groove in the top of the casing.

Fixed at any convenient point on the line of circle described by the runner R is an inclined plane P′ P′. As the figure at H revolves the runner R comes in contact with the inclined plane P′ P′ and consequently is drawn up it; the position then is shown by the dotted lines in the diagram. Fixed on the lower arm of A^3 is a bent stay N. This comes in contact with the downright portion of the revolving rod and so keeps the upper arm of A^3 horizontal when the roller R is freed from the inclined plane P′.

It is necessary that the rise of the inclined plane P′ should be greater than the height of the obstacle over which the figure has to pass.

To prevent an operator accidentally interfering with his opponent's figure if at any time it is found necessary to touch the figure for re-starting, a lever may be attached at any convenient part of the revolving arm.

As shown in Fig. 6 the planes f^2 may be pivoted or hinged at one point of the circumference as indicated at g^2. A handle t^2 is provided upon the opposite side of the plane f' for the purpose of elevating or depressing the plane as desired.

What I do claim as my invention and desire to secure by Letters Patent is:—

1. A game of the character described comprising planes, arms carrying supports that engage the planes, and means for tilting the planes to impart rotary movement to the arms.

2. A game of the character described comprising tiltable planes, radially movable arms having depending carriers provided with rollers that engage the planes, figures carried by the arms, and means for tilting the planes to rotate the arms.

3. The combination in a race game as specified of tilting or inclined planes, means for actuating the said planes, radially moving arms carrying figures or objects, and swinging carriers suspended therefrom and adapted to impart a continuous circular movement to the said arms when the said planes are respectively tilted or inclined substantially as described.

4. A game of the character described comprising a shaft, tiltable planes surrounding the same, radial arms loosely carried by the shaft and provided with figures, carriers depending from the arms and having rollers that travel on the planes, and means for tilting the planes to cause the carriers to rotate the arms.

In witness whereof, I have signed this specification in presence of two witnesses.

HORATIO COOLEY.

Witnesses:
GEORGE PRINGLE,
G. HUGHES.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."