

(No Model.)

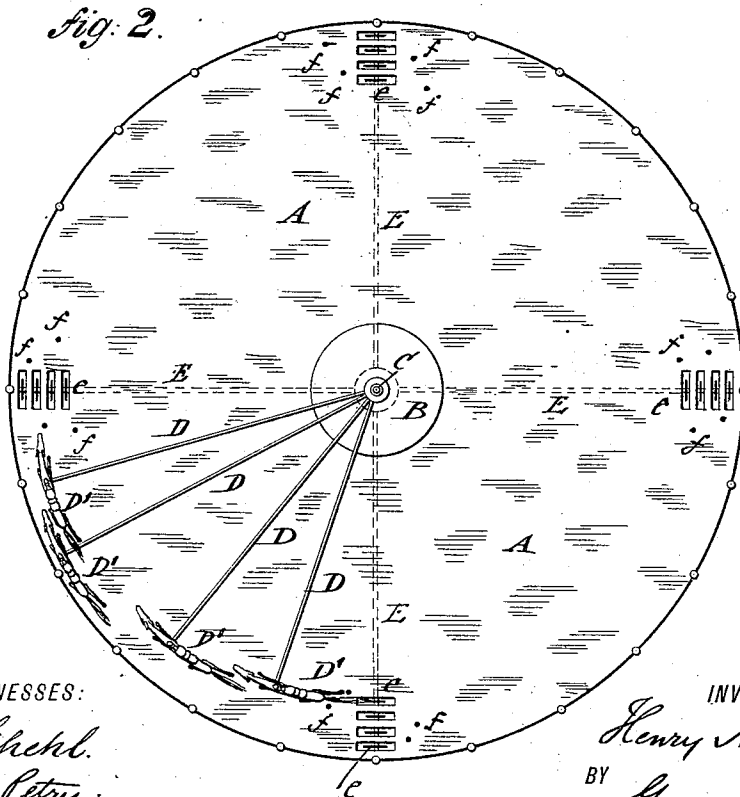
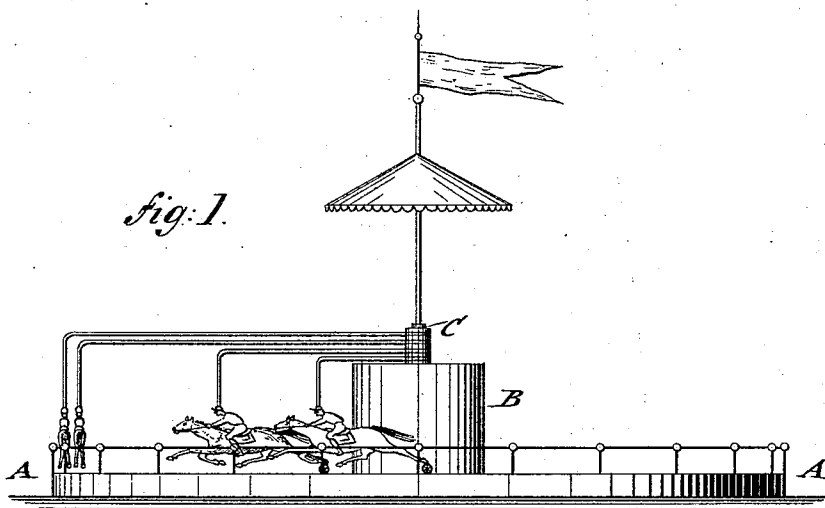
3 Sheets—Sheet 1.

H. A. CORDRAY.

TOY RACE COURSE.

No. 361,812.

Patented Apr. 26, 1887.



WITNESSES:

A. Schehl.
Martin Petry.

INVENTOR

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ATTORNEYS.

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3 Sheets—Sheet 2.

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Fig. 3.

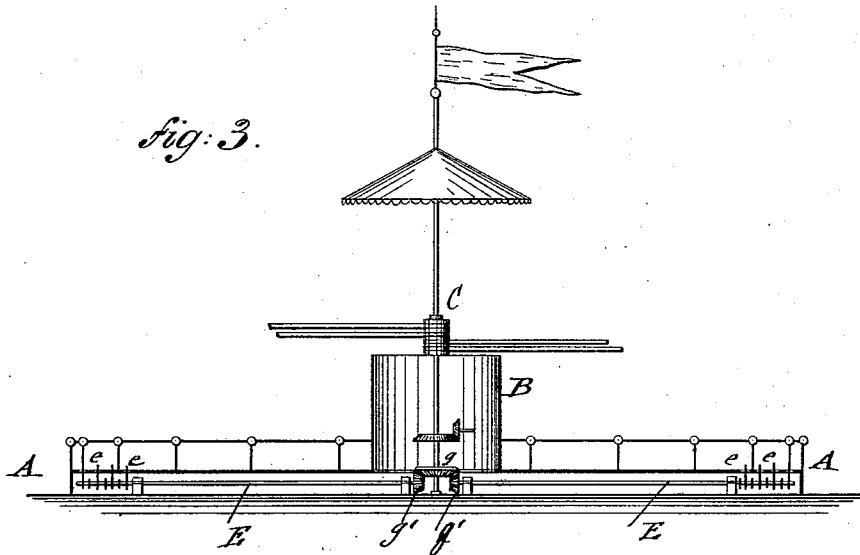
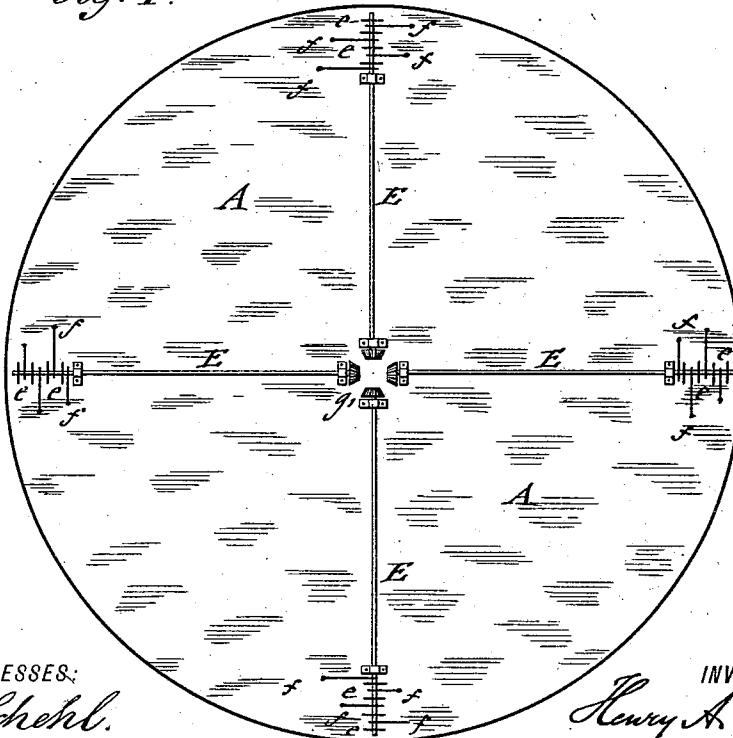


Fig. 4.



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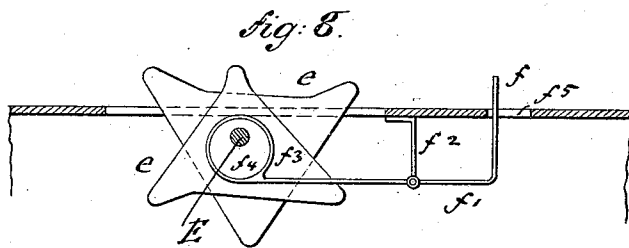
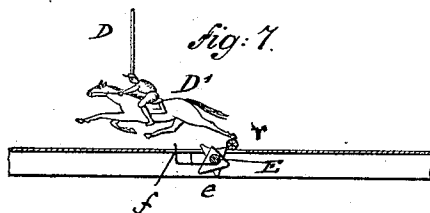
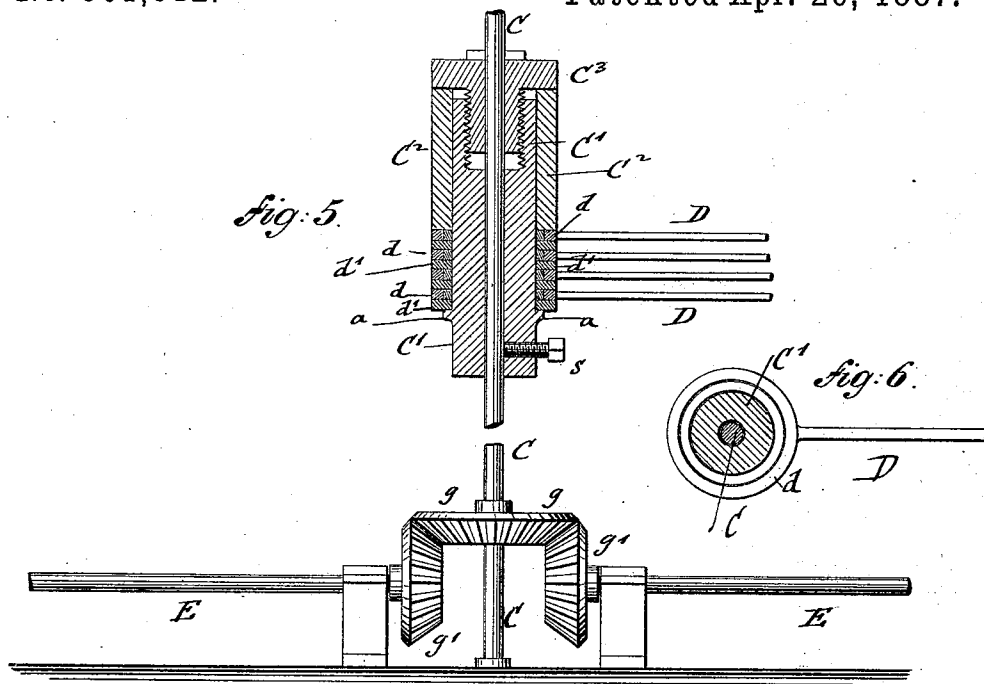
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UNITED STATES PATENT OFFICE.

HENRY A. CORDRAY, OF BRENHAM, TEXAS, ASSIGNOR OF ONE-HALF TO
WILLIAM H. MURPHY, OF SAME PLACE.

TOY RACE-COURSE.

SPECIFICATION forming part of Letters Patent No. 361,812, dated April 26, 1887.

Application filed December 27, 1886. Serial No. 222,545. (No model.)

To all whom it may concern:

Be it known that I, HENRY A. CORDRAY, of Brenham, in the county of Washington and State of Texas, have invented certain new and useful Improvements in Toy Race-Courses, of which the following is a specification.

This invention relates to an improved toy race-course of that class in which a real race is simulated by means of rotating miniature figures representing horses and riders; and the invention consists of a toy race-course, in which a number of miniature figures attached to radial arms are rotated around a common vertical pivot-shaft propelled by a suitable motive power, said figures being retarded intermittently by means of obstructions placed in their path, and consisting of cams also rotated by the motive power, said cams projecting through slots of the platform, and of pins that are applied by fulcrumed levers to eccentrics on the shafts of the cams, so as to be intermittently projected through the supporting-platform into the path of the figures, as will be more fully described hereinafter, and finally be pointed out in the claims.

In the accompanying drawings, which form a part of the specification, Figure 1 represents a side elevation of my improved toy race-course. Fig. 2 is a plan; Fig. 3, a vertical central section; Fig. 4, a bottom view of the same. Figs. 5 and 6 are a vertical and a horizontal section of the central pivot-shaft and the connection of the horizontal arms with the same. Fig. 7 is a side view, showing the obstructions for the rotating figures; and Fig. 8 is a detail side view of the obstructions drawn on a larger scale.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents a platform, of circular or other shape, said platform being made of wood, metal, or other suitable material and of any suitable size. The platform is supported on a circumferential flange and inclosed by an imitation fence. At the center of the platform A is arranged a cylindrical casing, B, and which incloses the motive power, such as a spring-motor or a transmitting train of gear-wheels, which may be turned by a crank-shaft, or any other suitable

motive power, of which, however, only the last set of bevel-gears are shown in Fig. 3. The spring-motor or other motive power imparts rotary motion to a vertical shaft, C, which turns in bearings of the platform A and casing B, said shaft carrying at its upper end a canopy in imitation of the judges' stand and a flag above the same.

To the shaft C is rigidly keyed, by a clamping-screw, s, or otherwise, a short tubular shaft, C', which has a shoulder, a, at its lower end, above which shoulder are arranged the ring-shaped ends d of a number of horizontal arms, D. The ring-shaped ends d are separated from each other and the shoulder a by intermediate ring-shaped washers, d', as shown clearly in Figs. 5 and 6. The ring-shaped ends d and the washers d' are pressed together by a sleeve, C², and a head-screw, C³, which latter engages a threaded socket of the short tubular shaft C and establishes thereby the proper degree of friction between the ring-shaped ends d of the horizontal arms D and the shaft C', so that the horizontal arms are taken along and revolved with the same, while they have at the same time sufficient play thereon, so as to slip when any one of the horizontal arms is obstructed.

The horizontal arms D are bent in downward direction at their outer ends and provided with miniature figures D', representing horses and riders or other suitable bodies. The horses are provided at their hind ends with small rollers r, by which they move over the platform A. After the figures are started they are intermittently retarded by passing over obstructions arranged in their path, said obstructions projecting through slots and openings of the platform A. These obstructions are of two kinds—namely, cams e of triangular shape and pins f. They are both operated by the spring-motor or other motive power, by means of a bevel-gear transmission, g g', that transfers rotary motion from the shaft C to radial shafts E, which turn in bearings at the under side of the platform A, as shown in Fig. 4. The cams e are keyed eccentrically to the shafts E, as shown in Fig. 8, so as to project at each rotation thereof by their rounded-off corners (more or less) above the platform A,

whereby a greater or smaller degree of retardation is exerted on the revolving figures. As the figures pass over the cams they are retarded in their motion more or less, according as the longer or shorter corners of the cams project above the platform A.

To give still greater variation to the retardation of the speed of the individual figures, the pins f are arranged as auxiliary obstructions, said pins being formed at the upwardly-bent ends of levers f' , which are fulcrumed to arms or brackets f^2 at the under side of the platform A, the opposite end of the levers being made in the form of ring-shaped bands f^3 , and placed on fixed eccentrics f^4 , located on the shafts E, intermediately between the cams e , said eccentrics serving also as washers for said cams.

The eccentrics f^4 are made of metal, hard wood, or any other material which has little wear, and by which the friction with the bands of the oscillating levers f' is diminished. At each rotation of the fixed eccentric f^4 the pin f is gradually raised above the platform through a slot, f^5 , in the same and withdrawn to a position on a level with the same. The figures which during their rotation do not happen to strike one of the projecting pins f are therefore enabled to complete their revolution quicker than the figures which happen to strike a partly or entirely projecting pin, f .

The obstructing cams and pins produce a very large degree of variation in the retardation of the figures, so that it is impossible for any one to know beforehand which figure will be the first or last to complete one or more rotations, so that the full sport and excitement connected with a real race is produced.

When starting the toy race, all the horses, wherever they may be on the table, are brought to the starting-point and started together by the motive power. The obstructions impart no abrupt stops to the miniature horses, but exert only a slightly-retarding action to one or the other, so that at one time one horse and then another is ahead of the rest, whereby the nature and appearance of a real race is imparted.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination of a supporting-plat-

form, horizontal arms journaled to a rotary center shaft, miniature figures at the outer ends of said arms, cam-shaped obstructions projecting through openings of the platform into the path of said figures, and transmitting mechanism for imparting rotary motion to said obstructions from the center shaft, substantially as set forth.

2. The combination, with a supporting-platform, of horizontal arms journaled to a rotary center shaft, a friction device applied to the journaled ends of the arms, miniature figures at the outer ends of the horizontal shafts, radial shafts rotated by a bevel-gear transmission from the center shaft, and cam-shaped obstructions keyed to the ends of the radial shafts and projecting through slots of the platform, substantially as set forth.

3. The combination of a supporting-platform, a vertical rotary center shaft, horizontal arms journaled to said center shaft, miniature figures at the outer ends of said arms, radial shafts rotated by the center-shaft, fulcrumed levers having pins at one end projecting through slots of the platform and ring-shaped bands at the other ends, and eccentrics keyed to radial shafts, said bands being strapped around said eccentrics, substantially as set forth.

4. The combination, with a supporting-platform, of a vertical rotary center shaft, horizontal arms journaled by friction devices to said center shaft, miniature figures at the outer ends of said horizontal arms, radial shafts rotated by the center shaft, cam-shaped obstructions keyed eccentrically to said radial shafts and projecting through slots of the platforms, fulcrumed levers having pins at one end and ring-shaped bands at the other end, and eccentric washers on the radial shafts, around which the ring-shaped bands are placed, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

HENRY A. CORDRAY.

Witnesses:

E. B. MUSE,

R. E. PENNINGTON.