No. 858,960. PATENTED JULY 2, 1907.

M. G. CUMMINGS & S. M. DUNLAP.

CIRCLE SWING.

APPLICATION FILED NOV. 13, 1905.

3 SHEETS—SHEET 1.

Fig. 1.

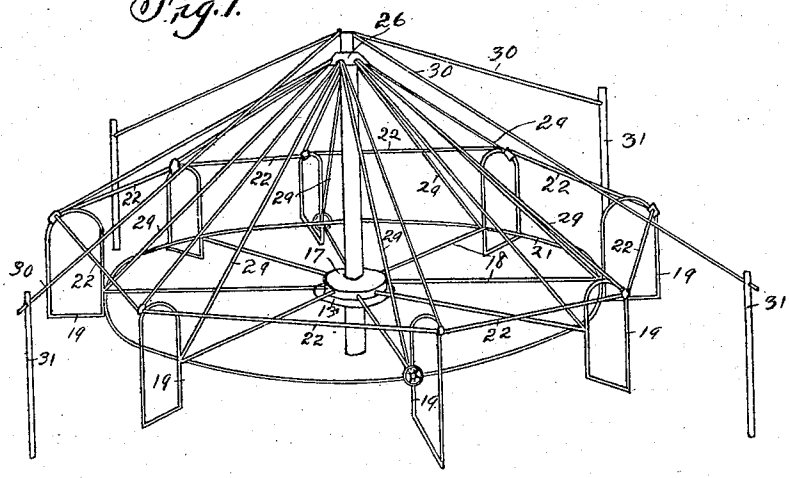
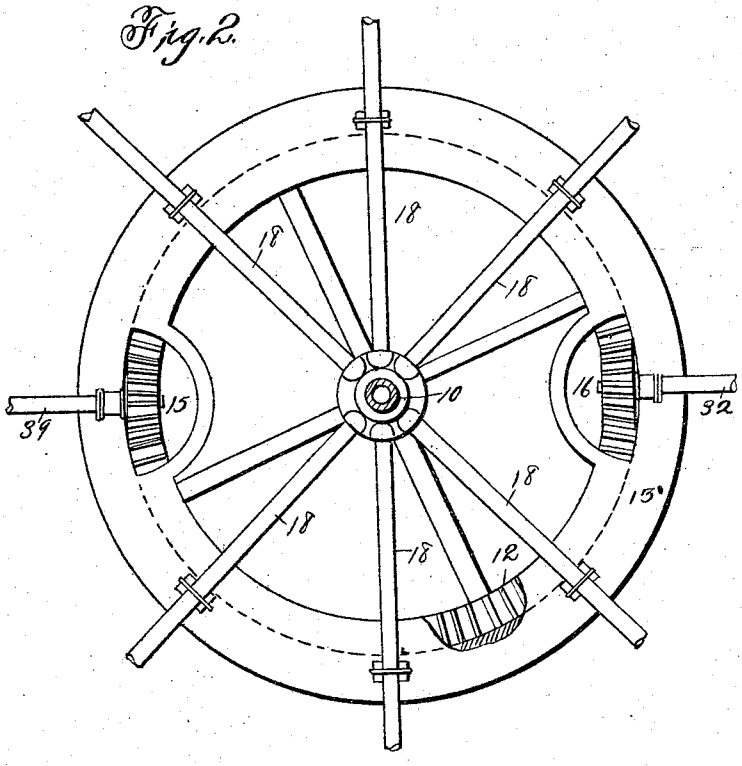


Fig. 2.



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3 SHEETS—SHEET 2.

Fig. 3.

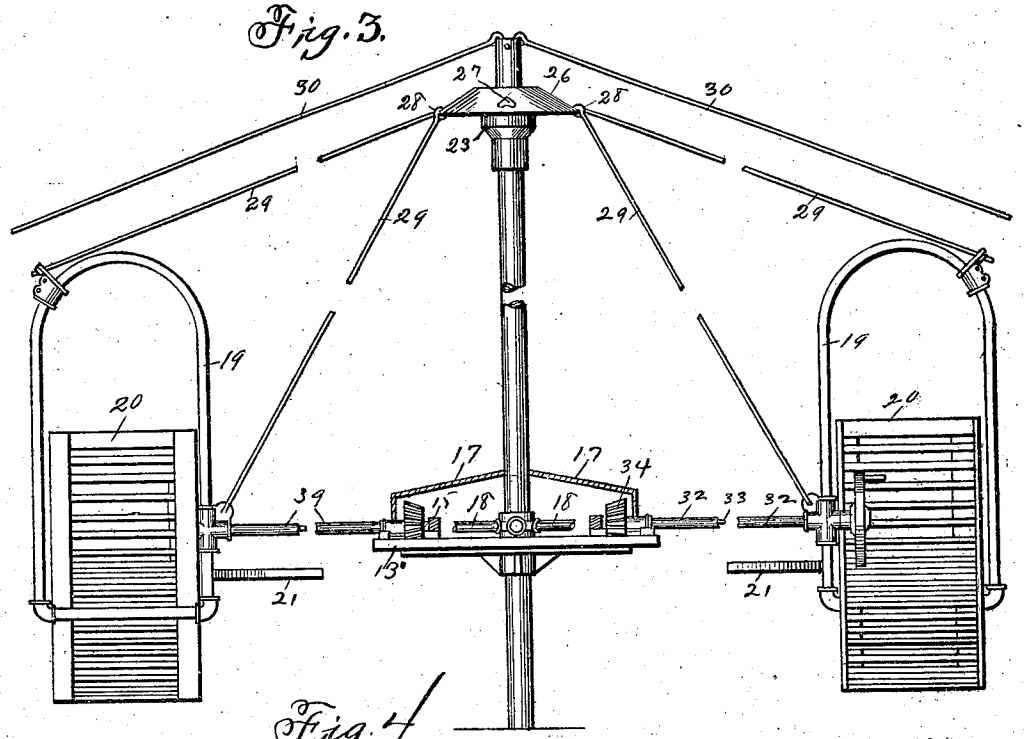
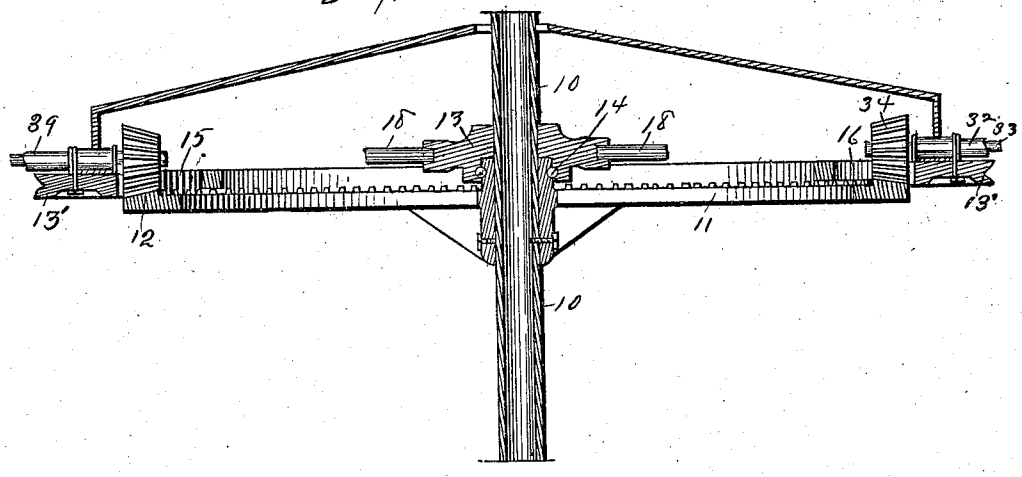


Fig. 4.



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3 SHEETS—SHEET 3.

Fig. 6.

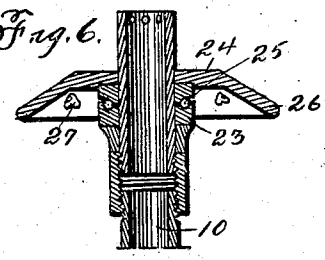


Fig. 5.

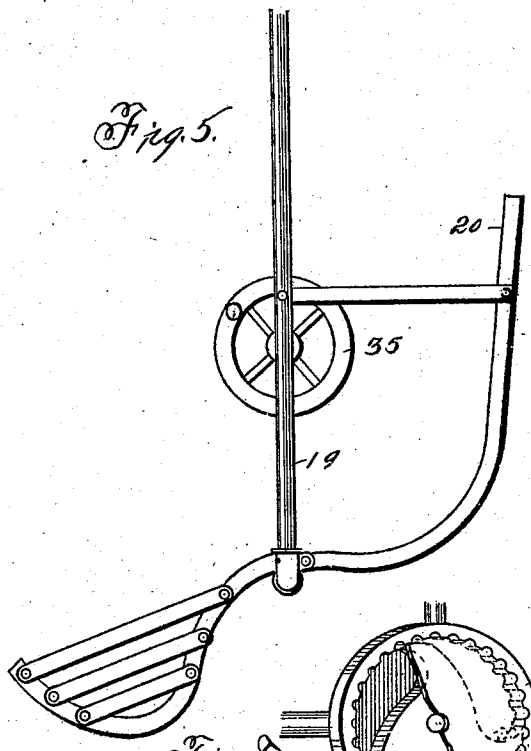


Fig. 7.

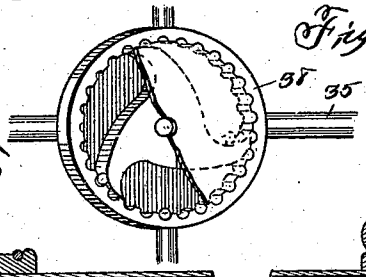


Fig. 8.

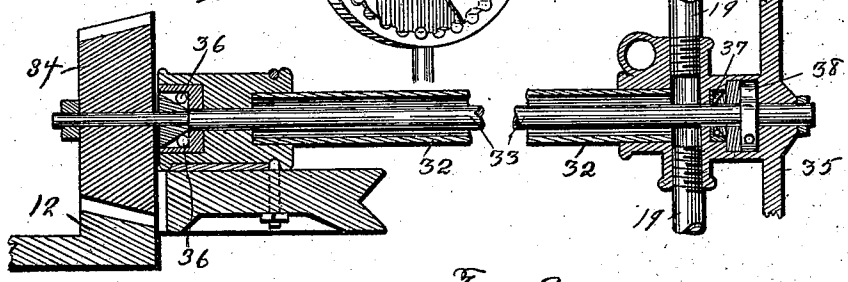
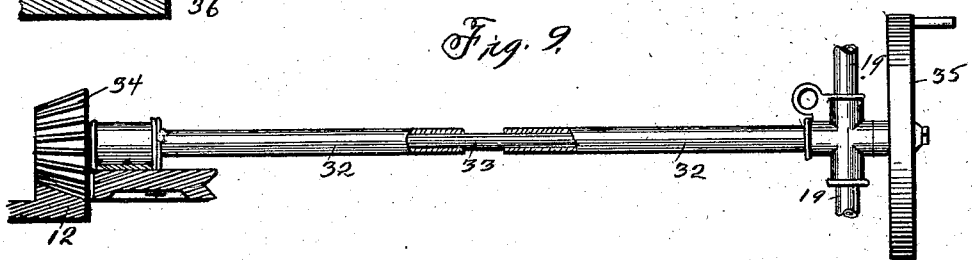


Fig. 9.



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UNITED STATES PATENT OFFICE.

MILO G. CUMMINGS AND SYLVESTER M. DUNLAP, OF DES MOINES, IOWA.

CIRCLE-SWING.

No. 858,960. Specification of Letters Patent. Patented July 2, 1907.

Application filed November 13, 1905. Serial No. 287,003.

To all whom it may concern:

Be it known that we, MILO G. CUMMINGS and SYLVESTER M. DUNLAP, citizens of the United States, residing in Des Moines, county of Polk, and State of Iowa, having invented a new and useful Improvement in Circle-Swings, of which the following is a specification.

The object of our invention is to provide a circle swing simple, strong, and durable in construction and so designed that all of the seats and all of the mechanism adapted to operate the machine may be suspended from the center-pole.

A further object is to provide a circle swing capable of carrying a number of passengers with but one or two of the passengers being necessary to furnish the motive power.

Our invention consists of certain details of construction hereinafter set forth, pointed out in our claims and illustrated in the accompanying drawings, in which

Figure 1 shows a perspective view of our device; Fig. 2 shows a plan view of a lower turn-table and gearing we employ; Fig. 3 shows a detail view of the seats and center-pole; Fig. 4 shows a longitudinal sectional view of the plates of the lower turn-table; Fig. 5 shows a side elevation of one of the seats provided with a hand wheel; Fig. 6 shows a longitudinal sectional view of the upper turn-table, the upper plate having a collar mounted thereon; Fig. 7 shows a detail view of the ball ratchet we employ; Fig. 8 shows a longitudinal sectional view of the hollow pipe, cylindrical shaft, gear wheel and hand wheel we employ; and, Fig. 9 shows a side elevation view, a portion being in section of the same.

Referring to the accompanying drawings, the reference numeral 10 is used to indicate a center-pole firmly planted in the ground, to which, a short distance above the ground, is rigidly secured the under plate 11 of a turn-table we employ, the upper surface of said plate being provided near its periphery with a series of recesses and teeth 12 extending completely around the upper surface of said plate in a circular form and designed to receive and engage gear wheels hereinafter described.

The numeral 13 indicates the upper plate of the turn-table being designed to operate on the under plate by means of balls 14, said plate 13 being loosely mounted on and designed to rotate around, the center-pole 10, and the numerals 15 and 16 indicate recesses or openings located at directly opposite points in the upper plate, said openings being adapted to receive the gear wheels hereinafter described, and to permit these to extend upwardly therethrough by means of which the swing is operated.

The numeral 17 indicates a covering for the upper plate 13 designed to protect the gearing mentioned from dust and dirt, said covering, like the plate 13, being loosely secured to the center-pole 10, and designed to rotate around it when the swing is in operation.

The reference numerals 18 are used to indicate brace rods extending from the ring-like plate 13′ of the turn-table to the brackets 19 arranged in circular form around and the usual distance from, the center-pole 10, said brackets being designed to receive the seats 20.

The numerals 21 indicate brace rods extending from the inner side of one bracket to the inner side of the bracket immediately ahead, and the numerals 22 indicate like brace rods located on the outer side of the brackets, said brace rods being designed to secure the brackets firmly to one another at equal distances apart.

Near the upper portion of the center-pole 10 we have rigidly secured the under plate 23 of a second turn-table we employ, the upper plate 24 being loosely mounted on the center-pole 10 and designed to rotate around it and the plate 23 by means of balls 25, and the numeral 26 indicates a collar, rigidly attached to the upper plate 24, provided with perforations 27 at regular intervals and in a circular manner therein, said perforations being adapted to receive the hook ends 28 of support rods 29, two of which we employ to connect said collar with each bracket 19, thus obviously suspending the brackets 19 containing the seats 20 from the top of the center-pole 10.

The numerals 30 indicate guy wires or cable extending from the top of the center-pole 10 to posts 31 firmly secured in the ground.

Thus it is obvious that the object of suspending the entire swing from the center pole 10 and throwing all of the weight thereon and thus being able to do away with the track and running gear usually employed under a platform located immediately under the seats has been accomplished.

The numeral 32 indicates a hollow pipe extending from the inner side of one of the seats 20 to the recess 16 in the upper plate 13 and the numeral 33 indicates a cylindrical shaft extending through the channel in said hollow pipe 32, having secured to its forward end a beveled gear wheel 34 designed to be received by and project upwardly through the opening 16 in the upper plate 13 and to mesh with the recesses and teeth 12 in the under plate 11, and provided on its outer end with a hand wheel 35 designed to be operated by a person sitting on the inner side of the seat 20. The shaft 33 operates within the channel in the hollow pipe 32 upon two sets of ball bearings 36 and 37 respectively, one located near the outer end of said hollow pipe and the other located near the inner end of said hollow pipe, thus obviously reducing the friction.

The numeral 38 indicates a ball ratchet located within the hub of the hand wheel 35.

The numeral 39 indicates a like hollow pipe located directly opposite the hollow pipe 32 designed to receive

a cylindrical shaft provided with a beveled gear wheel, adapted to be received by the openings 15 in the upper plate 13, on one end, a hand wheel on its other end, all being exactly similar in construction to the hollow pipe 32 and the shaft 33.

In practical operation a person sitting on the inner side of the seat 20 provided with the hand wheel 35 secured to the shaft 33, or two people located in directly opposite sides of the swing, as has been described, turning the hand wheel, causes the swing to revolve around the center-pole 10 by means of the beveled gear wheel secured to the ends of the shafts described meshing with and operating in the recesses and teeth 12 in the upper surface of the stationary under-plate 11 of the turn-table.

Having thus described our invention, what we claim and desire to secure by Letters Patent of the United States is:

A circle swing embodying a center pole, a toothed plate rigidly secured thereto, a revoluble plate mounted on said pole, a ring like plate formed with openings at points overlying the teeth of said toothed plate, horizontal brace rods extending in said revoluble plate and rigidly secured to said ring-like plate, seat brackets, hollow shafts secured to said brackets at one end and to said ring-like plate at their opposite ends, shafts passing through said hollow shafts and having gears at one end extending through said opening of said ring-like plate and engaging said toothed plate, operating wheels on the other ends of said shafts, a revoluble top plate at the upper end of said center pole, diagonal braces leading to the connection between said hollow shafts and said seat brackets, and further diagonal braces leading from said top plate to the upper portions of said seat brackets.

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