

No. 648,266.

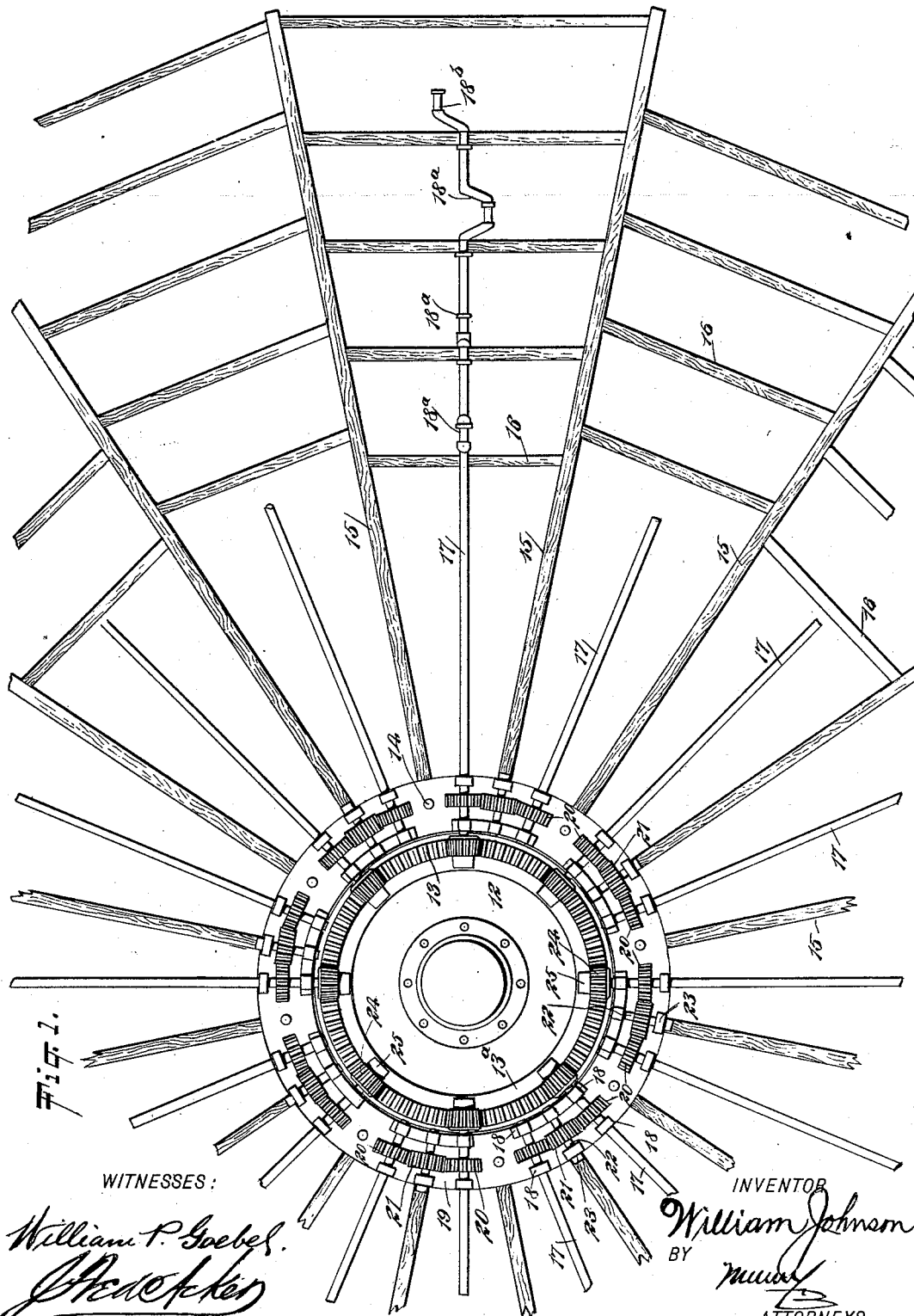
Patented Apr. 24, 1900.

W. JOHNSON.  
MERRY-GO-ROUND.

(Application filed Dec. 28, 1899.)

(No Model.)

3 Sheets—Sheet 1.



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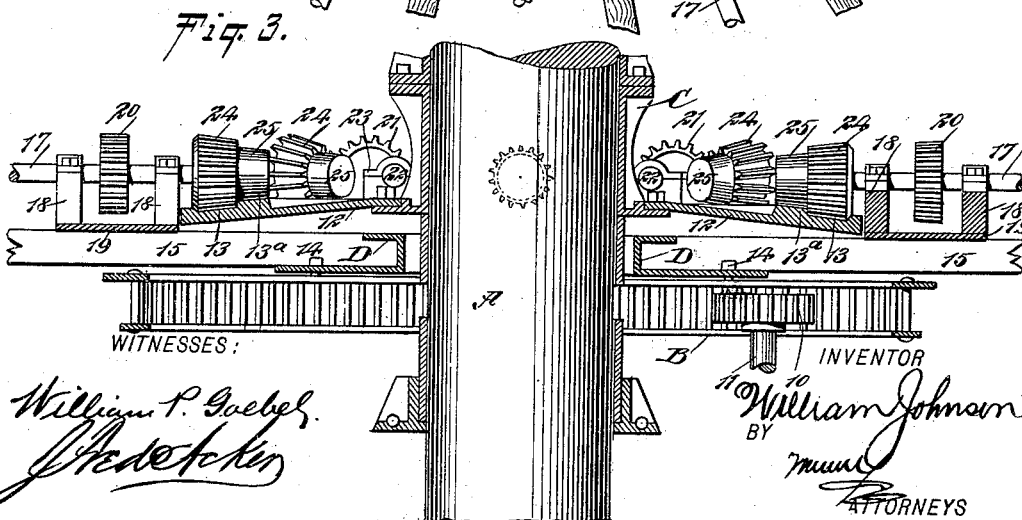
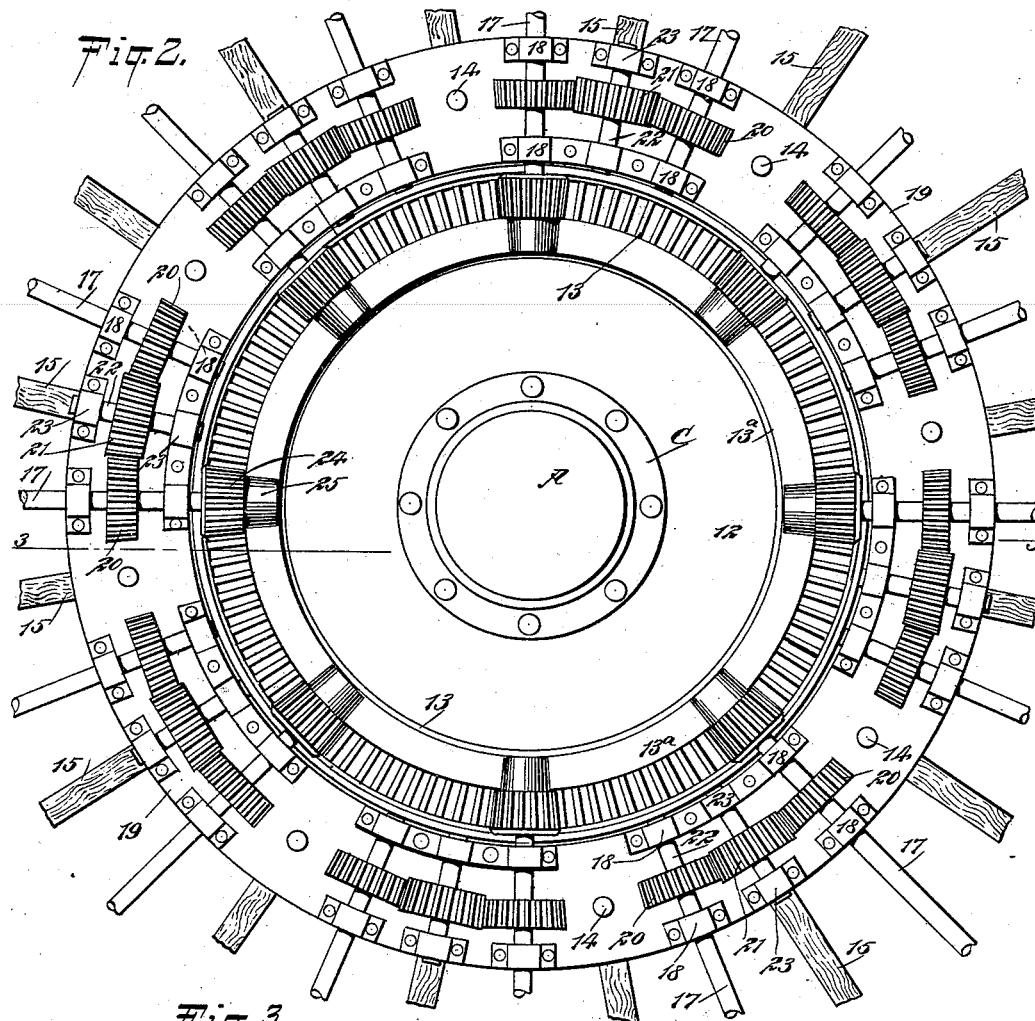
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Fig. 4.

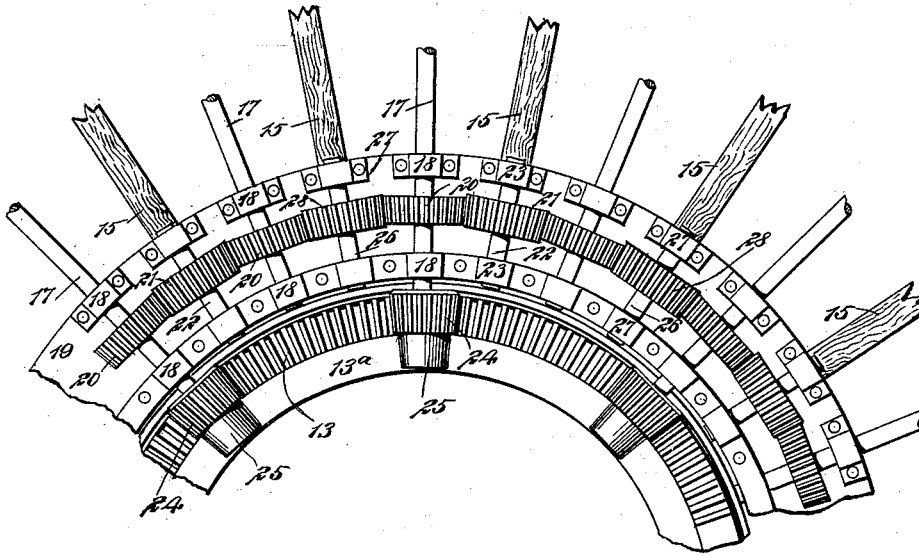
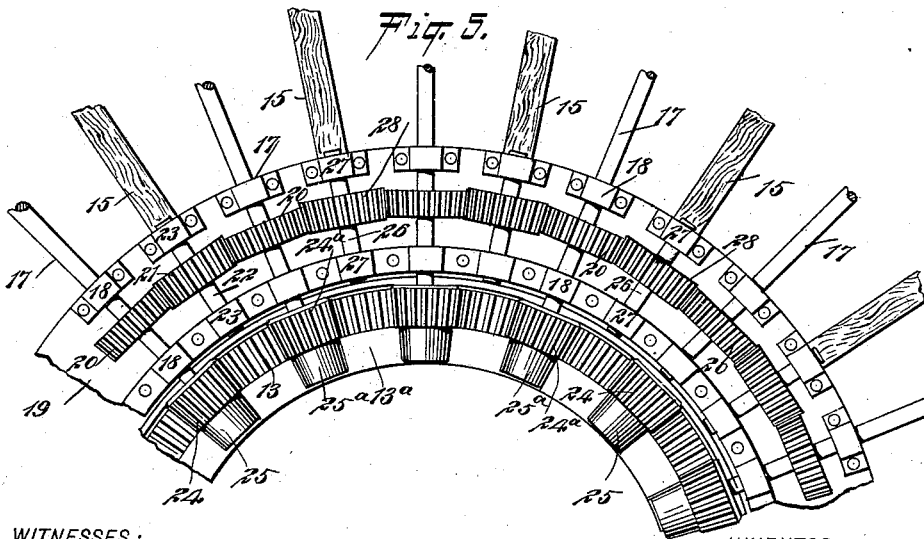


Fig. 5.



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# UNITED STATES PATENT OFFICE.

WILLIAM JOHNSON, OF NEW YORK, N. Y.

## MERRY-GO-ROUND.

SPECIFICATION forming part of Letters Patent No. 648,266, dated April 24, 1900.

Application filed December 28, 1899. Serial No. 741,836. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM JOHNSON, a citizen of the United States, and a resident of the city of New York, (Coney Island,) borough of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Merry-Go-Round, of which the following is a full, clear, and exact description.

One object of the invention is to so improve that form of merry-go-round which employs crank-arms as supports for seats that as the shafts carrying the crank-arms revolve the crank-arms will descend as regularly as they ascend, thus avoiding the quick return usual to this form of the machine and the discomfort consequent on such motion to the person carried by the machine.

A further object of the invention is to so construct the gear and crank-shafts that all unnecessary strain will be taken off from the track upon which the gearing for the crank-shafts travels.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of a merry-go-round, illustrating the application of my improvement. Fig. 2 is a plan view of the central portion of the structure shown in Fig. 1, drawn on an enlarged scale. Fig. 3 is a vertical section through the upper central portion of the merry-go-round, the section being taken on the line 3 3 of Fig. 2; and Figs. 4 and 5 are plan views of the upper central portion of the structure of the merry-go-round, illustrating slight deviations from the construction shown in the other views.

A represents a post of any description, and B a pin-wheel or lantern-wheel mounted to turn on the post A; but these parts constitute no portion of my invention. Brackets C are secured to the post above the pin-wheel or lantern-wheel, to which brackets a ring platform 12 is securely fastened, having more or less of a downward and outward pitch, as shown in Fig. 3. The said ring platform is

provided with a circular toothed track 13, formed upon its upper face at its periphery, together with a plain track 13<sup>a</sup> inside of and quite close to the toothed track 13, as is also shown in Fig. 3. A circular frame D is mounted to travel freely around the post and is located between the brackets C and the pin-wheel or lantern-wheel B and is connected with the latter through the medium of a series of bolts 14. This wheel B is adapted to turn the frame D, and said wheel is revolved through the medium of a gear 10, engaging therewith and carried by a shaft 11, or by other suitable means.

Arms 15 are secured to the frame D and radiate therefrom, as illustrated in Figs. 1, 2, 4, and 5. The arms are of any desired length and are connected by suitable braces 16, as shown especially in Fig. 1. Between the arms on the braces 16 horizontal crank-shafts 17 are journaled, the inner ends of said crank-shafts being held to turn in suitable bearings 18, secured upon the arms 15, which are secured to the frame D. The bearings are preferably attached to the arms 15 through the medium of a ring-like support 19. (Shown in Fig. 3.) At suitable intervals between the center of each shaft 17 and its outer end crank-arms 18<sup>a</sup> are formed, from which the horses or other objects adapted to seat riders are suspended, and a single crank-arm 18<sup>b</sup> is at the outer end of each crank-shaft and is adapted for the same purpose as the intermediate crank-arms 18<sup>a</sup>.

The crank-shafts 17 are usually geared together in pairs, as shown in Figs. 1, 2, and 3. At the inner end of each pair of crank-shafts a pinion 20 is secured, which pinions are spaced from the toothed track 13, as shown particularly in Fig. 3, but are connected by intermediate pinions 21, and said intermediate pinions are secured upon short shafts 22, the said shafts being journaled in suitable bearings 23, located on the ring-like support 19 and between the crank-shafts. Thus it will be observed that the pinions of each pair or set of shafts are connected by an intervening pinion and that the shafts 17 will be compelled to move regularly throughout the entire revolution of the crank-arms, rendering it impossible for any sudden dropping motion to be communicated to any objects supported

upon the crank-shafts. The shafts 17 of each pair are driven by a bevel-pinion 24, secured to one of the shafts 17 and arranged to travel upon the toothed track 13, and these pinions 5 carry each a friction-roller 25, which travels upon the plain track 13<sup>a</sup>.

It will be observed that each set of two crank-arms is provided with a train of three gears and a single driving-gear carried by one 10 of the arms of a set. By the foregoing arrangement of parts the entire structure is rendered much more durable, simpler, and more economic than heretofore, and the said system of gearing not only prevents undue 15 wear upon the track, but also of the gears themselves, and likewise enables a crank-machine to impart to the objects supported upon its crank-arms a uniform and regular vertical movement.

20 Under the construction shown in Fig. 4 a short shaft 26 is journaled in suitable bearings 27 between each set of two crank-arms, the bearings 27 being secured upon the ring-like support 19, and each of the additional 25 shafts 26 carries a pinion 28, which pinions mesh with the adjoining pinions on the crank-arms, so that there is virtually a continuous chain of pinions or gearing around the entire circular upper frame of the machine.

30 In the construction shown in Fig. 5 the auxiliary outer pinions 28 of the chain of gearing are preserved; but in addition each crank-shaft 17 at its inner end is provided with a pinion 24<sup>a</sup>, adapted to travel on the 35 track 13, and a roller 25<sup>a</sup>, adapted to travel on the plain track 13<sup>a</sup>.

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

40 1. In a merry-go-round or carousel, the combination with a fixed toothed track of a revoluble frame, crank-shafts carried by the said frame, gears carried by the said shafts, 45 which gears are out of engagement with the toothed track, connecting-gears meshing with the gears on the crank-shafts, driving-pinions secured to the inner ends of sundry of the shafts, which pinions mesh with the teeth of the toothed track and support the revoluble 50 frame and serve as drivers for the shafts.

2. In a merry-go-round or carousel, the combination, with a stationary toothed track, of a shaft arranged to revolve around the track, crank-shafts carried by the said frame 55 and arranged in sets, each shaft of a set being provided with a gear, an intermediate shaft also provided with a gear and engaging with the gears on the main shafts of a set,

and a pinion carried by one of the main shafts of a set, which pinion engages with the said 60 toothed track, the pinions of the various sets of shafts acting to support the revolving frame and to communicate motion to the connecting-gears.

3. In a merry-go-round or carousel, the 65 combination, with a stationary toothed track, a plain stationary track adjacent thereto, and a revoluble frame, of shafts carried by the said frame and arranged in sets, each shaft of a set being provided with a gear out of en- 70 gagement with the tracks, a shaft intermediate of the main shafts, a connecting-gear on the intermediate shaft in mesh with the gears on the main shaft, and a pinion located on the inner end of one of the main shafts and 75 engaging with the toothed track, and a friction-roller carried by the said pinion and engaging with the plain track, as described.

4. In a merry-go-round or carousel, the combination, with a stationary toothed track, 80 a frame mounted to revolve around the said track, and means for turning the said frame, of crank-shafts journaled upon the frame, having gear connection with the toothed track, which gears serve as supports for the 85 revolving frame, and gears secured to the crank-shafts over the frame upon which they are mounted and independent of the toothed track, plain shafts located between the crank-shafts, and connecting-gears carried by the 90 plain shafts and meshing with the gears on the crank-shafts, as described.

5. A merry-go-round or carousel provided with crank-carrying shafts, the crank-carrying 95 shafts being arranged in sets of two outside crank-shafts and an intermediate communicating shaft, the crank-shafts being provided with gears and the communicating shafts with connecting-gears, a revoluble 100 frame upon which the shafts are mounted, a stationary toothed track and a stationary plain track, and pinions carried by sundry of the crank-shafts, and meshing with the teeth of the toothed track, and rollers carried by the said pinions and engaging with the 105 plain track, the pinions and rollers serving as supports for the revolving frame, as and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of 110 two subscribing witnesses.

WILLIAM JOHNSON.

Witnesses:

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EVERARD BOLTON MARSHALL.