No. 665,763. Patented Jan. 8, 1901.

# LA MARCUS A. THOMPSON.

## PLEASURE RAILWAY.

(Application filed Oct. 5, 1896.)

(No Model.) 7 Sheets—Sheet 1.

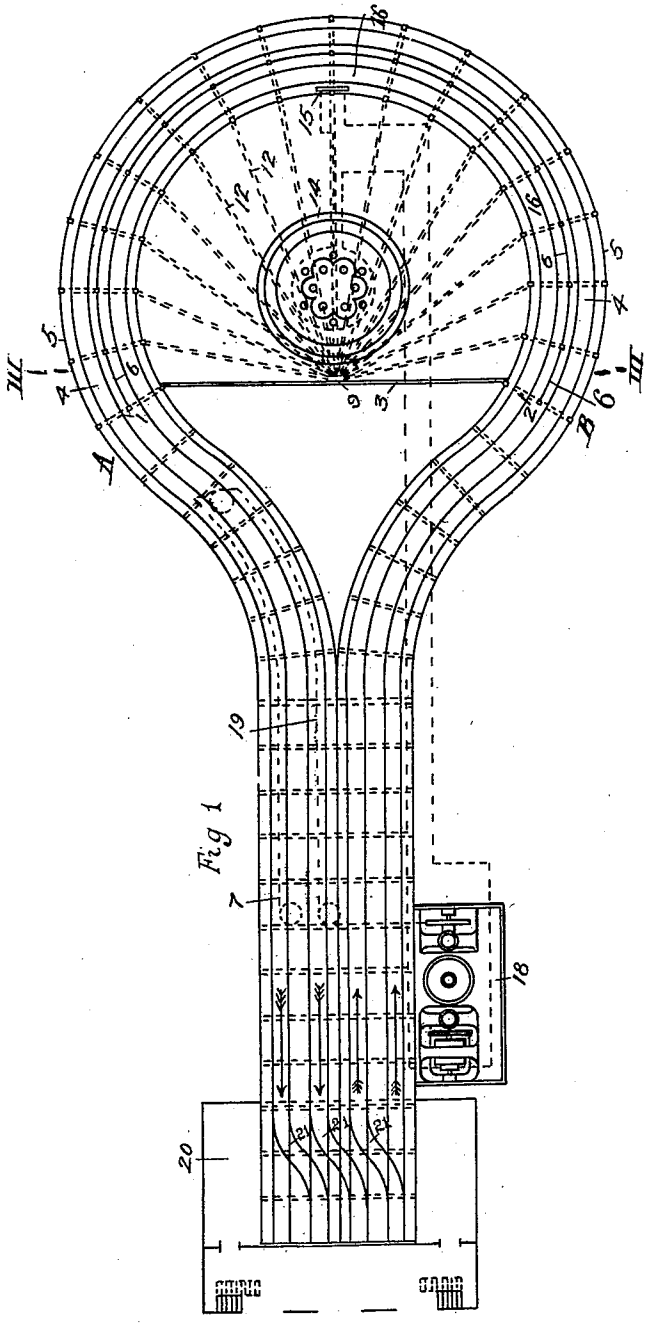

Fig 1

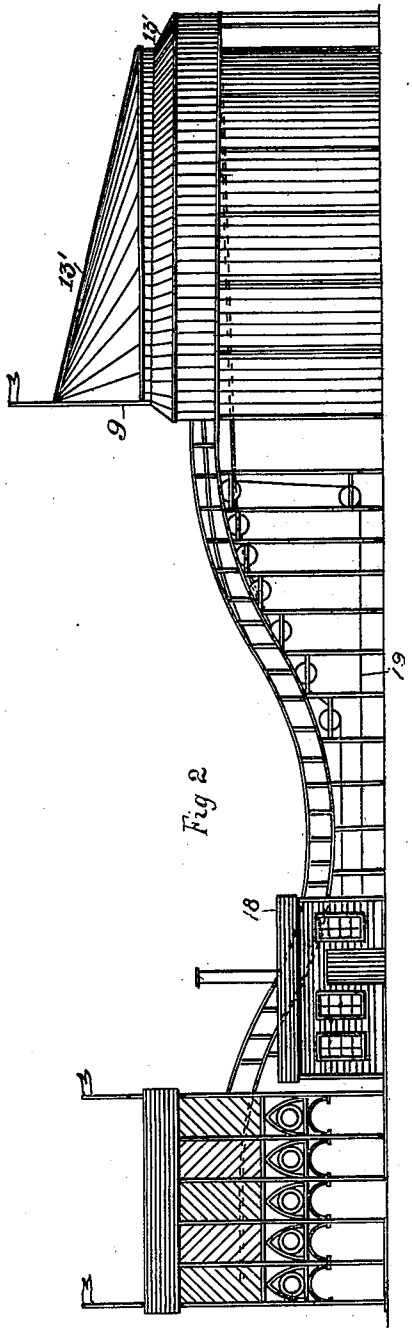

Fig 2

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## PLEASURE RAILWAY.

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(No Model.) 7 Sheets—Sheet 2.

Fig 3

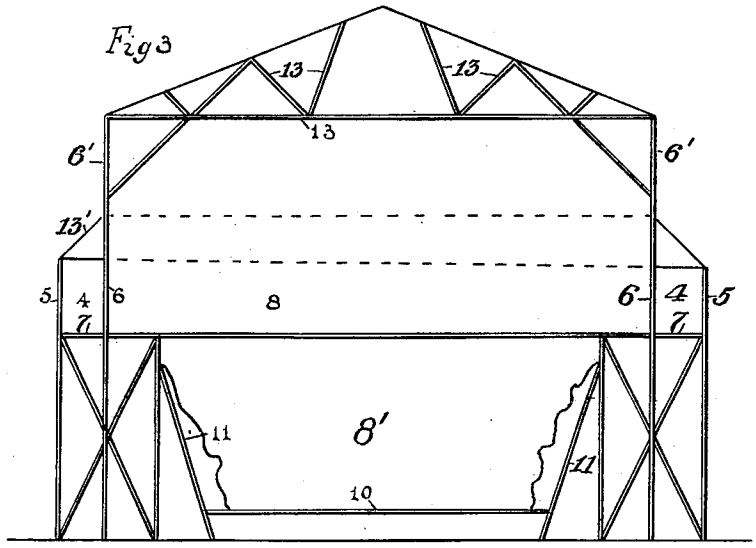
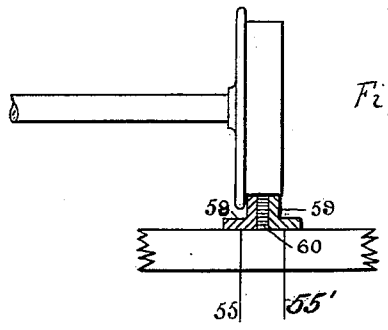



Fig 7a

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## PLEASURE RAILWAY.

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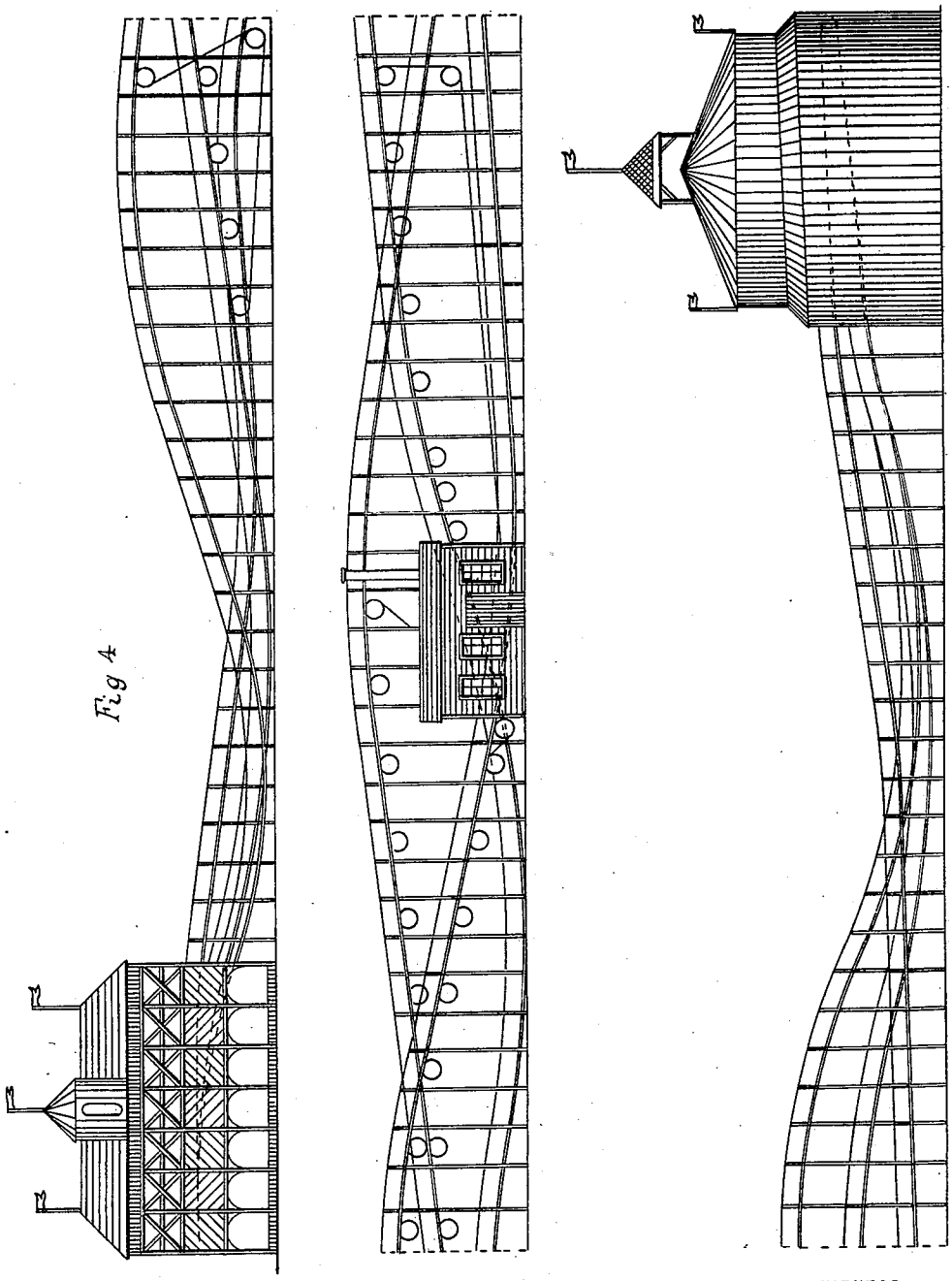

Fig 4

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## PLEASURE RAILWAY.

(Application filed Oct. 5, 1896.)

(No Model.) 7 Sheets—Sheet 4.

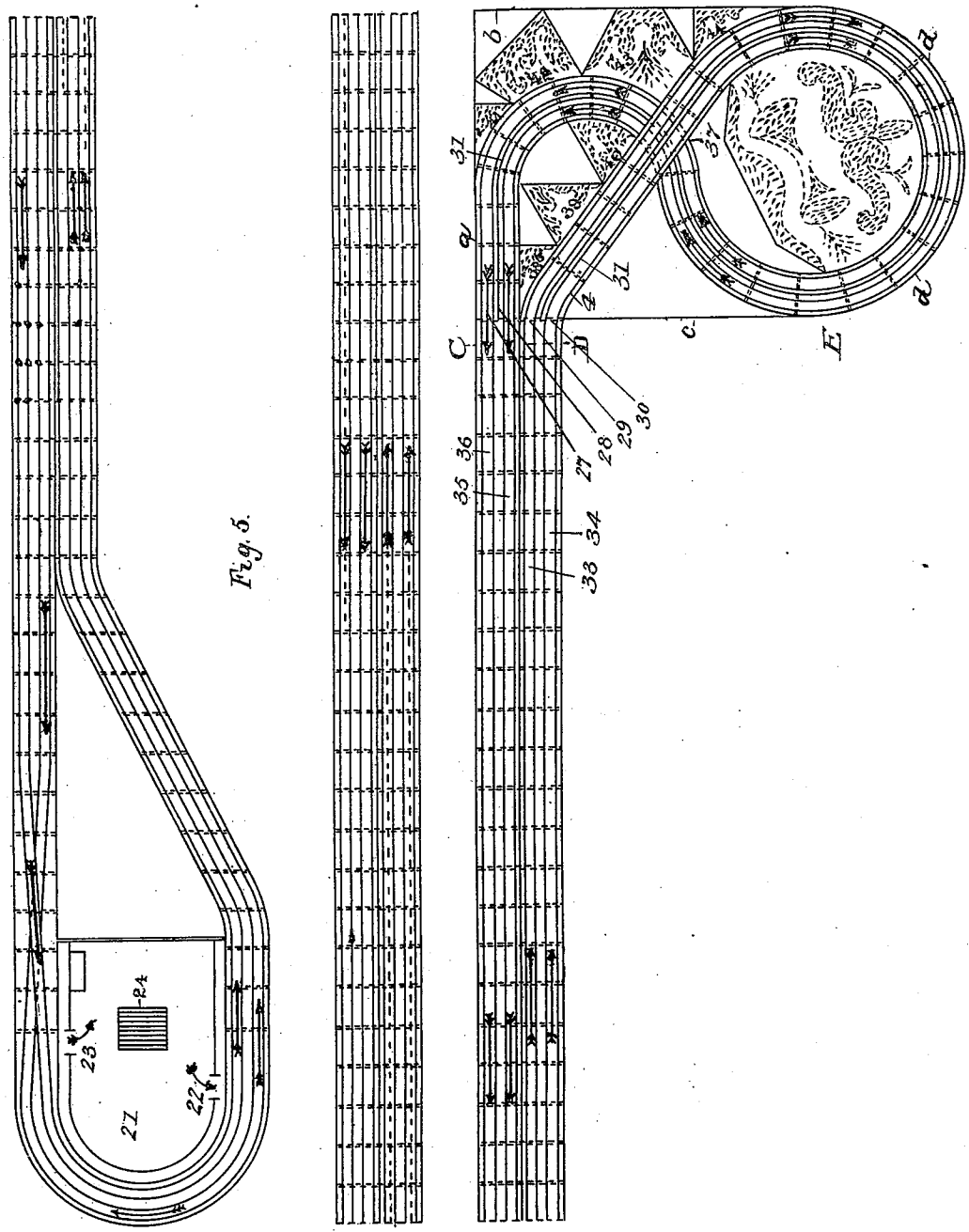


Fig. 5.

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PLEASURE RAILWAY.

(Application filed Oct. 5, 1898.)

(No Model.) 7 Sheets—Sheet 5.

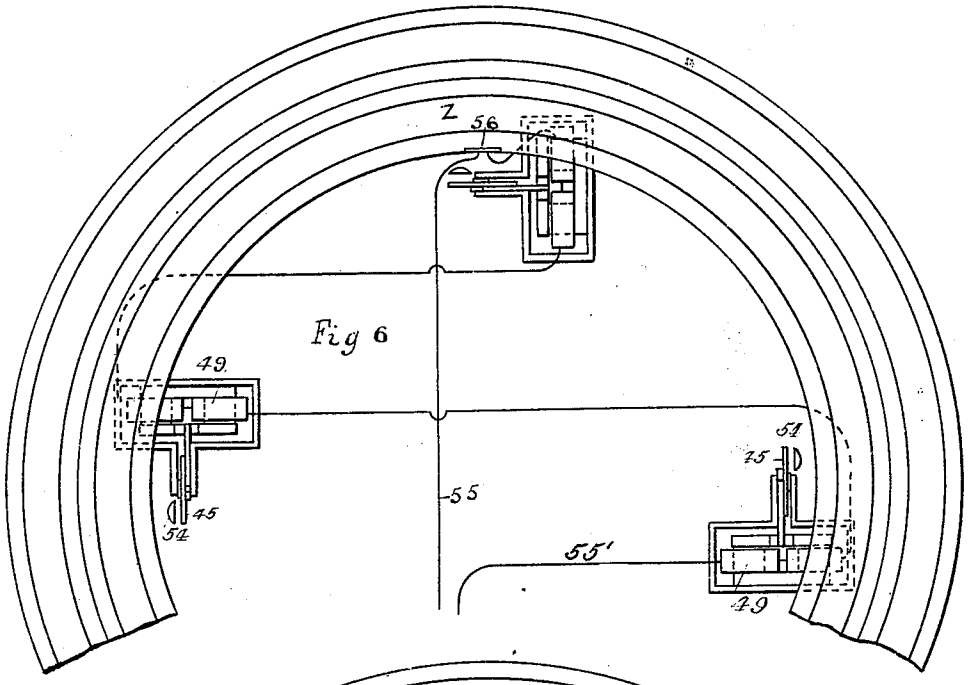


Fig 6

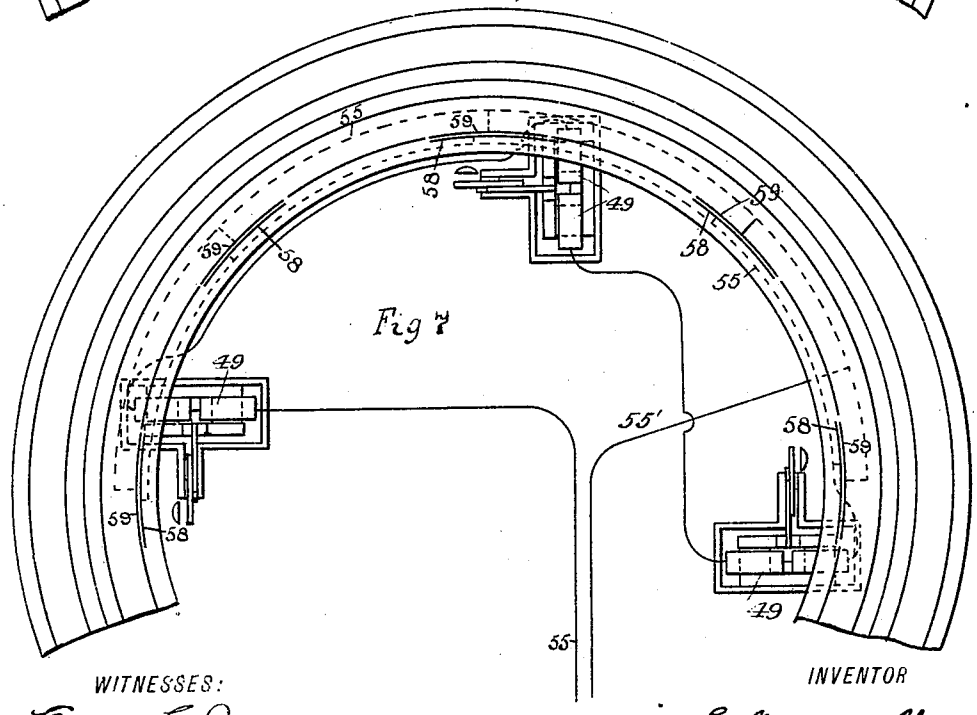


Fig 7

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PLEASURE RAILWAY.

(Application filed Oct. 5, 1896.)

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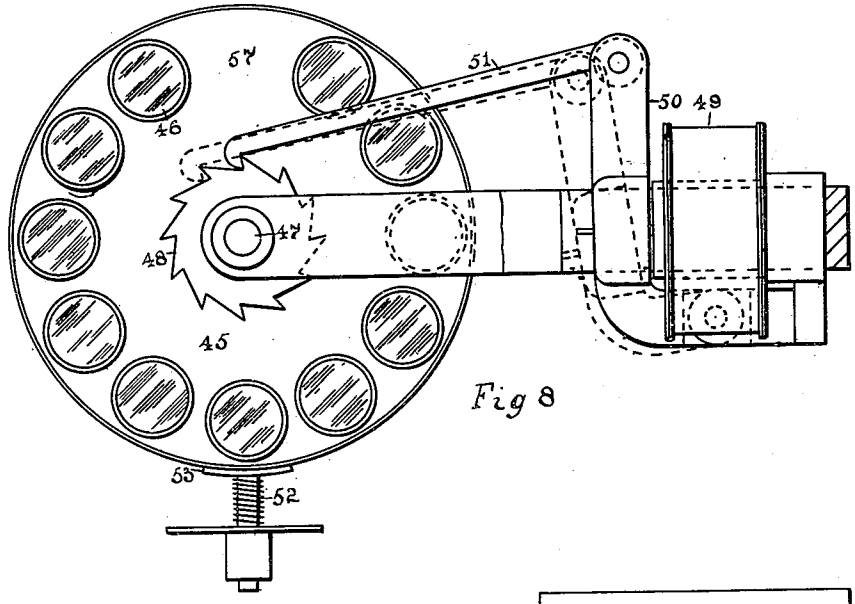
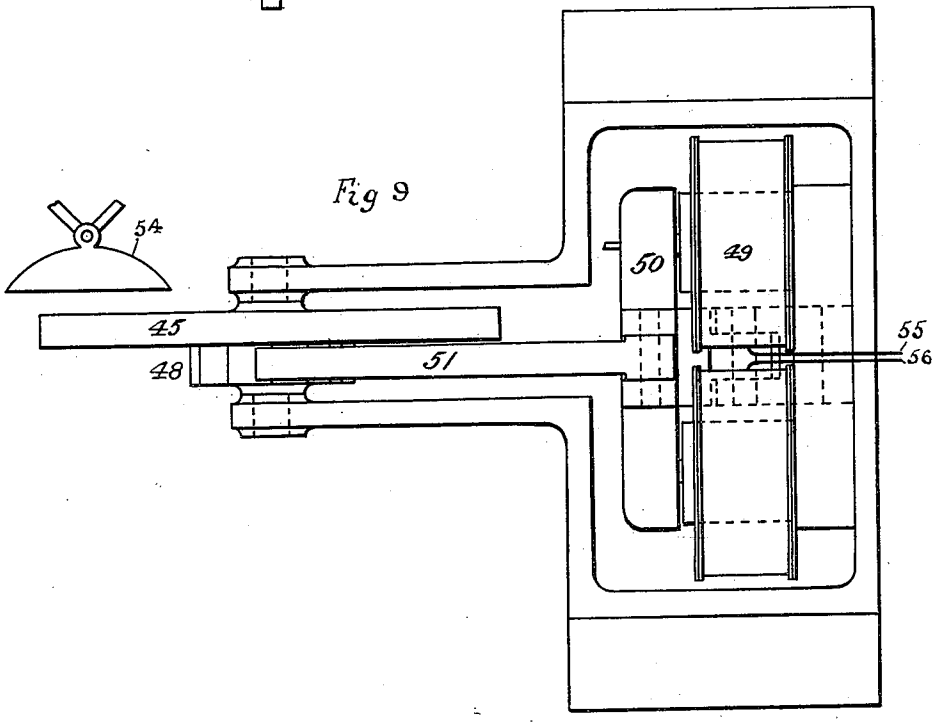



Fig 8

Fig 9

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## PLEASURE RAILWAY.

(Application filed Oct. 5, 1896.)

(No Model.) 7 Sheets—Sheet 7.

Fig 10

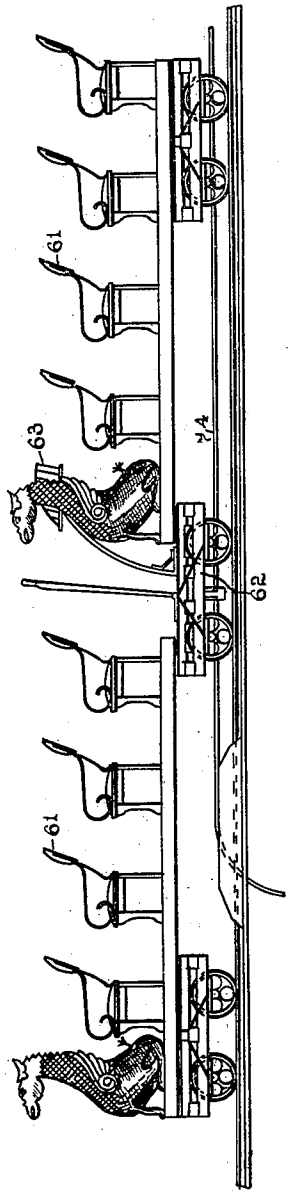



Fig 12

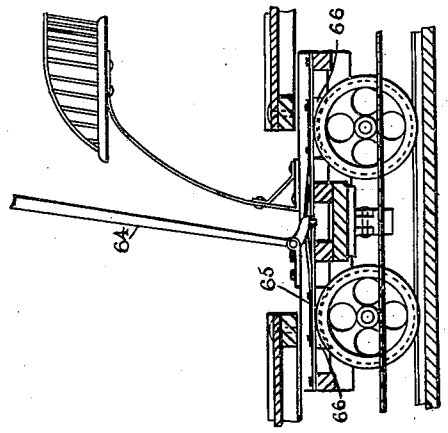
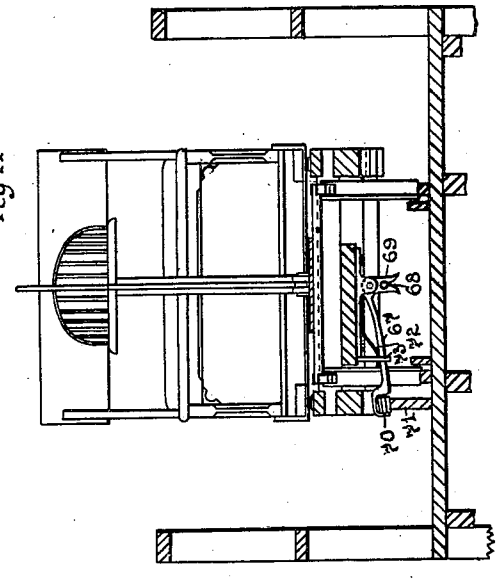



Fig 11

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# UNITED STATES PATENT OFFICE.

LA MARCUS A. THOMPSON, OF CHICAGO, ILLINOIS.

## PLEASURE-RAILWAY.

SPECIFICATION forming part of Letters Patent No. 665,763, dated January 8, 1901.

Application filed October 5, 1896. Serial No. 607,977. (No model.)

*To all whom it may concern:*

Be it known that I, LA MARCUS A. THOMPSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Pleasure-Railways, of which the following is a specification.

My present invention relates to the construction of pleasure-railways and means for operating the same; and it has for its object to provide places and means in the structure for carrying passengers and for affording them amusement while in transit or stationary at points along the line of the railway.

In the accompanying drawings, forming part of this specification, and in which like symbols of reference refer to like parts, Figure 1 is a plan view of a pleasure-railway operated partly by gravity and partly by cables positively driven having courses connected by curves and loops at one end and having means of transferring the cars to another track at the other end, showing my present invention applied at one of the pavilions forming part of the superstructure of the railway. Fig. 2 is a side elevation of Fig. 1. Fig. 3 is a section on the line III III of Fig. 1. Fig. 4 is a side elevation of a railway operated partly by gravity and partly by cables positively driven having continuous courses connected by loops and curves, showing my present invention applied at one of the pavilions forming part of the superstructure of the railway. Fig. 5 is a plan view of the same. Fig. 6 is a detailed view of the tracks in connection with the apparatus for lighting the amphitheater. Fig. 7 is a detailed view showing means by which the lighting mechanism may be operated automatically by the passage of the cars over the tracks. Fig. 7ª is a view of the circuit-closer of the mechanism shown in Fig. 7. Fig. 8 is a detailed view of the apparatus for admitting light to the amphitheater. Fig. 9 is a top plan view of Fig. 8. Fig. 10 is an elevation of the cars used in the operation of the railway. Fig. 11 is a transverse section of the middle truck of such cars, showing an automatic gripping device. Fig. 12 is a longitudinal section of the same, showing the braking mechanism.

My invention is applicable to those pleasure-railways wherein the length of the courses is limited by pavilions at the ends thereof, whether the courses are continuous or not; but, preferably, it applies to those pleasure-railways wherein the courses are continuous and the cars travel from the starting-pavilion along a continuous course to a pavilion at the most distant point in the course, returning to the starting-point without transferring of cars from one course to another by switching or transferring devices.

In describing my invention hereinafter the starting-pavilion—that is to say, the pavilion from which the cars start upon their trips—will be designated "starting-pavilion," and the pavilion at the distant end of the course from which the cars start on their return-trip will be designated "returning-pavilion."

The general construction of the courses, cars, and operating devices of the class of railways to which my invention relates is well known to persons acquainted with the art and is accurately described in the specification forming part of Letters Patent No. 470,220, granted to me March 8, 1892.

In those pleasure-railways wherein the courses are continuous, the outbound and inbound courses being connected by curves and loops, there is considerable space within the loops and curves which heretofore has not been utilized for the operation of the cars or for other purpose in connection with the transportation and amusement of passengers. This space also exists in a modified way in those pleasure-railways wherein the courses are direct and the cars are started from the starting-pavilion, arrive and stop at the returning-pavilion, and are there transferred from the outbound to the inbound course by switching or transferring devices and returned to the starting-pavilion. One of the principal objects of this invention is to utilize this heretofore-unutilized space by so constructing the superstructure as to form an inclosed space wherein any suitable means of amusement or instruction may be operated for the benefit of the passengers. The space referred to when my present invention is applied to but one end of such railways is shown in Fig. 1 as included in the outside lines of that part of the structure beyond the line A B and in Fig. 5 by that portion of the structure beyond the line C D. This space

may occur at both ends of the railway or at an intermediate point, and I do not wish to be understood as limiting myself in the application of my invention to but one end of such railways.

The amphitheater forming part of the superstructure of the railway as applied to a railway not having continuous courses is shown in Figs. 1, 2, and 3. All of the superstructure of the railway beyond the line A B formed by the cross-beams 1, 2, and the wall 3 of the amphitheater is inclosed. The structure is also constructed (see Fig. 3) as to inclose a portion of the course 7 of the railway in a tunnel 4, which is made light-proof by means of the floor of the tunnel, the walls 5 6′, and roof 13′. The amphitheater 8 is formed, as shown in Fig. 3, by carrying up the uprights 6 of the trestle-work of the railway to a sufficient height, closing the openings between said uprights by the partition or wall 6′, and roofing in the whole space, which is preferably done by erecting a column or support 9 at or near the middle of the amphitheater, resting one end of the roof-trusses 12 upon this support and the other end upon the several uprights of the trestle-work, as shown in Fig. 1, the trusses 12 being additionally supported by the braces 13. The amphitheater is floored, as at 10, and is inclosed between the level of the railway-course and the floor by any suitable means 11, preferably by boarding the same up with lumber, which construction forms a well 8′. On the floor 10 of the well 8′ is placed an electric fountain 14, (see Fig. 1,) which is controlled by a switch 15, accessible from a car traversing course 16 of the railway. The sides 11 of the well 8′ are decorated in any suitable manner, while the wall 3 of the amphitheater is also decorated, preferably, to give cycloramic effects. The amphitheater, as well as the tunnel 4, is made as nearly as may be light proof, so that when passengers traversing course 16 are introduced into it they find it dark. When the car reaches the electric switch or controlling device 15, it is stopped by the attendant, who, by manipulating the switch, operates the fountain and lights up the amphitheater. The engine and dynamo for the purpose of furnishing light and power for operating the fountain 14 and the cables 19 are contained in the house 18.

The electric fountain placed in the well of the amphitheater is merely typical of many objects which may be placed therein for the amusement and instruction of passengers. The fountain or other objects may be substituted by a stage for performance of any desired character.

Courses 7 and 16 of Fig. 1 are not continuous, course 7 traversing the tunnel only and course 16 passing through the amphitheater; but the courses are connected at the starting-pavilion 20 by switches 21.

In Fig. 5 the returning-pavilion E is shown as part of a pleasure-railway having continuous courses. The car after having been started and traversing all of the tracks forming the courses of the railway without transfer comes to a stopping-point a short distance from the starting-point and upon the same course. In the starting-pavilion, 22 is the starting-point and 23 the stopping-point, 24 being a set of stairs by which passengers may approach and depart. The car when leaving the starting-point 22 runs over the courses in a continuous trip in the direction indicated by the arrows, there being two outbound and two inbound courses, all parallel. The amphitheater is formed by arranging the returning-pavilion E as shown in Figs. 4 and 5, in which the pavilion is shown as inclosed by walls *a b c* and curved wall *d*, suitable openings being left in the wall *c* at 27, 28, 29, and 30 for ingress and egress of the cars. The walls *a b c d* are made as nearly light-proof as possible, and the whole pavilion is constructed at one side of the main line of the courses for more effectually shutting off the entrance of light into the amphitheater proper through the openings 27 28 29 30. As in Fig. 1, the pavilion of Fig. 5 contains a tunnel and an inclosed amphitheater, with spaces between the walls *a*, *b*, *c*, and *d*. The tunnel extends from the point 29 in the outbound course 33 to the point 28 in the inbound course 35 and is separated from the course 34 by a partition 31, which may be continuous, as shown in Fig. 5, or arranged with openings, so that the decorations may be viewed from either or both courses, as may be desired. The well 8′ of the amphitheater is circular and is included in the space between the loops of the outbound and inbound courses. The partition 31 in this portion of the structure is preferably continuous from the point 37 of the outbound course to the same point in the inbound course, the courses crossing one another in different planes at this point. The primary object in thus constructing the pavilion is to render the objects exhibited in the tunnel visible only from the first course 33 outbound and to confine the range of vision of the passengers on the second trip around the course while traversing courses 34 and 36 to the decorations and objects placed in the amphitheater. In the spaces 38, 39, 40, 41, 42, 43, and 44 in the pavilion E is placed framework, forming supporting-frames, upon which decorations of any character may be placed. Preferably these decorations are made of papier-mâché in connection with rocks and plants and are formed so as to simulate natural scenery and elaborated by painting the walls or by canvas stretched on the same, so as to give the whole a cycloramic effect; but any mechanical, pictorial, or other artistic decoration may be placed in these spaces, the tunnel, or the amphitheater for the instruction or amusement of passengers, suitable devices or machinery for illuminating the same being employed.

Fig. 8 shows an elevation of a device which

is placed at any suitable point in the amphitheater, tunnel, or spaces contained in the amphitheater, by means of which light of various colors may be shed upon the objects to be exhibited or the decorations of the tunnel or spaces. It consists, chiefly, in a rotating disk 45, having apertures 46 situate around its edge. The disk 45 is fixedly mounted on a shaft 47, upon which shaft is placed a ratchet-wheel 48, which ratchet-wheel is rotated by a magnet 49 through the medium of the armature 50, pivotally connected to a pawl 51. The apertures 46 of the disk 45 are furnished with lenses of glass or other transparent medium of different colors. The disk 45 is also provided with a brake 53, which is held against the same by means of a spring 52. The function of the brake is to regulate the motion of the disk 45 when operated by the magnet 49, it being intended that the disk shall move through just so much of an arc of a circle as the movement of the magnet in connection with the teeth of the magnet will allow it without lost motion in either direction.

In Fig. 9, which is a plan view of Fig. 8, 54 represents the source of light for illumination. It may be a calcium light or an arc-light of any description of sufficient power to project the beams of lights through the apertures 46 of the disk 45. The coils of the magnet 49 are connected with the conductor 55, which in turn is connected to the dynamo-terminals.

Fig. 6 shows the electrical connection between the lighting apparatus and the switch 56. In this figure illuminating apparatus, such as shown in Figs. 8 and 9, are connected in series to conductor 55 and in series with the switch 56, which switch is operated by an attendant on the car. When the car reaches the point Z, the attendant opens and closes the switch 56, causing the disk 45 to revolve, each opening and closing of the switch presenting a differently-colored screen in front of the source of light. It is proposed always to leave the disk 45 in such position that the light shall be intercepted by the blank space 57 on the disk, so that the tunnel or amphitheater shall be in darkness when the car enters the same.

Fig. 7 shows a plan of illuminating the different portions of the structure automatically by the passage of the cars. In Fig. 7[a] is shown the conductor 55, joined to two angle-pieces 58 and 59, separated by insulation 60, the circuit being closed by the passage of the metallic wheel of the car over the angle-pieces. This device may be employed as a substitute for the switch 56. (Shown in Fig. 6.) For the purpose of operating the illuminating apparatus automatically by the passage of the cars the coils of the magnets 49 are connected in series to the conductor 55. From the terminal of the magnet last in the series the conductor 55 is led successively to the series of contacts 58, being connected with each of them and being interrupted by the insulation between said contacts and their corresponding series of contacts 59, which are connected to conductor 55', which forms the return-circuit to the dynamo. All of the magnet-coils of the lighting apparatus are connected with each other in series in conductor 55, the contacts 58 and 59 being connected in multiple between conductors 55 and 55'. The several lighting apparatus by means of these connections are operated simultaneously either to shut off the light or to vary the colors, as may be desired.

In Fig. 10, 61 represents cars provided with seats for the passengers, preferably coupled together by a swivel-truck 62, which is provided with automatic cable-gripping devices and braking mechanism and also with a seat 63 for the attendant. In Fig. 12 the braking mechanism consists of fulcrumed lever 64, a flat spring 65, and brake-shoes 66. The cable-gripping device shown in Fig. 11 consists of a pivoted lever 67, provided with a jaw 68. Said lever 67 is pivoted in a base bolted to the under side of the truck, said base having a fixed jaw 69. The lever 67 is also provided with a roller 70, so constructed as to roll upon a bridge-piece 71, affixed to the cross-beams of the course at suitable points. To the base of the gripping device is also affixed a spring 72, which is in contact with the lever 67 and projects, with said lever, through a guide 73, which is stirrup-shaped and attached to the base of the gripping device. Normally the jaws of the gripping device are closed; but on approaching the point at which it is desired to propel the car by means of the cable the jaws open by reason of the lever 67 being elevated by contact of its end 70 with the bridge-piece 71 of the track and grip the cable automatically, which then propels the car until the jaws of the gripping device are opened by a bridge-piece 71 at the point at which it is desired to sever the connection between the car and the cable.

The operation of my invention is as follows: The engine controlling the movement of the cables is started and the cables caused to travel in the desired direction along the courses. The electric plant is operated for the purpose of illuminating the ampitheater, tunnel, pavilions, and courses, and the car is brought to the point 22 in the course 33, Fig. 5. Here the passengers board the car, and it proceeds by gravity down the first gradient of the course until it reaches the first ascending grade, where the automatic cable-gripping device grips the cable and the car is hauled to the summit of the grade, at which point the cable-gripping device is released automatically and the car proceeds down the descending grade by gravity, and so on it alternately descends the downgrades by gravity and is hauled up the ascending grades by cable until it enters the returning pavilion at the point 29 and, proceeding through the tunnel, reaches the point 28. Passing out of the tunnel at this

point the car returns over the gradients of the course to the starting-pavilion and proceeds on the second trip around the courses, on this trip not entering the tunnel, but traversing the track in the amphitheater, where the lighting apparatus is operated either automatically by the passage of the cars or by the attendant, as described. After leaving the returning-pavilion the car proceeds along the course until it reaches the point 23 in the starting-pavilion, where the passengers leave the car, and the car is allowed to run by gravity to the point 22, where it is ready for another load of passengers to make another trip. As many trains of cars may be run at the same time as is consistent with safety and convenience.

I claim—

1. In a pleasure-railway structure, a loading and unloading station at one end of the railway; an exhibition and amusement pavilion at the other end of said railway, said exhibition and amusement pavilion containing an open amphitheater and a tunnel separated from each other; an undulatory line of railway extending from said station to said amusement-pavilion, passing through the tunnel only and returning to the said station; and a second line of undulatory railway also extending from said station to said amusement-pavilion, skirting the amphitheater, and returning to said station.

2. In a pleasure-railway structure, a loading and unloading station at one end of the railway; an exhibition and amusement pavilion, containing an open amphitheater and a tunnel separated from each other, at the other end of said railway; an undulatory line of railway extending from said station to said amusement-pavilion, passing through the tunnel only and returning to said station; a second line of undulatory railway also extending from said station to said amusement-pavilion, skirting the amphitheater, and returning to said station; and means of amusement contained and operated within said amphitheater.

3. In a pleasure-railway structure, a loading and unloading station at one end of the railway; an exhibition and amusement pavilion at the other end of said railway, said exhibition and amusement pavilion containing an open amphitheater and a tunnel separated from each other; an undulatory line of railway extending from said station to said amusement-pavilion, passing through the tunnel only and returning to said station; a second line of undulatory railway also extending from said station to said amusement-pavilion, skirting the amphitheater, and returning to said station; means of amusement contained and operated within said amphitheater; and cars adapted to be operated upon said undulatory lines of railway partly by gravity and partly by power.

4. In a pleasure-railway, the combination of a loading and unloading station at one end of the railway; a pavilion at the other end of said railway, forming part of the structure of said railway and containing an amphitheater and a tunnel; said amphitheater being formed by locating the supports of the course of said railway so as to include an exhibition-space visible from and traversed by a course of said railway; said tunnel being separated from said amphitheater and traversed by a course of said railway; means of amusement contained and operated in said exhibition-space, and lines of track of said railway connecting said station and said pavilion; substantially as described.

5. In a pleasure-railway, the combination of pavilions connected by undulating courses, one pavilion being the loading and unloading pavilion and the other containing an amphitheater formed by so locating the supports of the courses of said railway as to inclose an exhibition-space between the tracks of the inner line of railway in said pavilion; said supports, the courses thereon, and said exhibition-space being inclosed in said pavilion so as to render the exhibition-space visible from said inner line of railway; means of amusement contained and operated in said amphitheater; and cars adapted to be operated upon said undulating courses partly by gravity and partly by power; substantially as described.

Witness my hand this 6th day of August, 1896.

LA MARCUS A. THOMPSON.

Witnesses:
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WM. W. FORD.