No. 849,970. PATENTED APR. 9, 1907.

P. BOYTON.

AMUSEMENT DEVICE.

APPLICATION FILED AUG. 27, 1904.

8 SHEETS—SHEET 1.

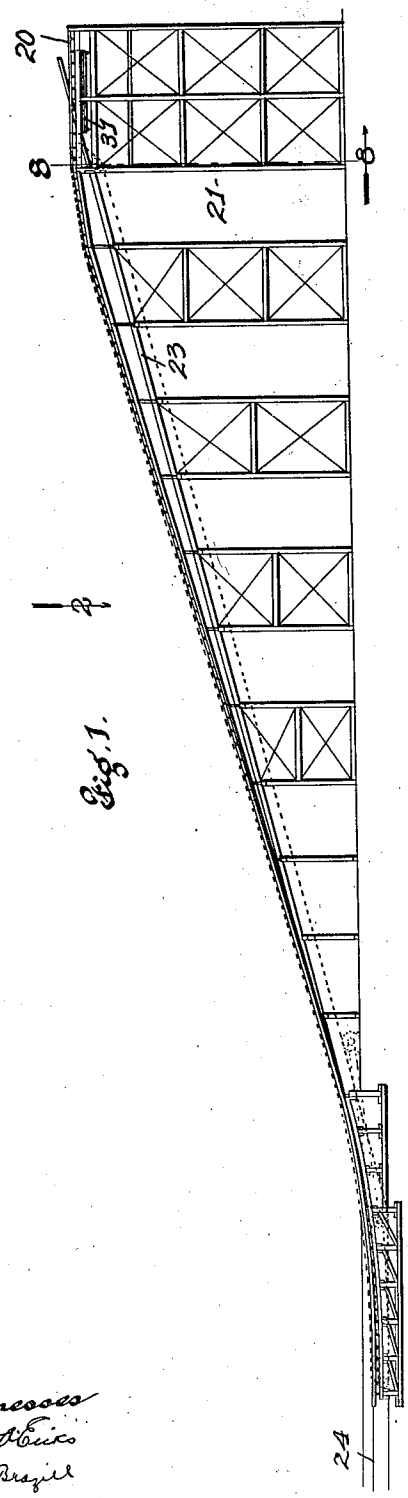

Fig. 1.

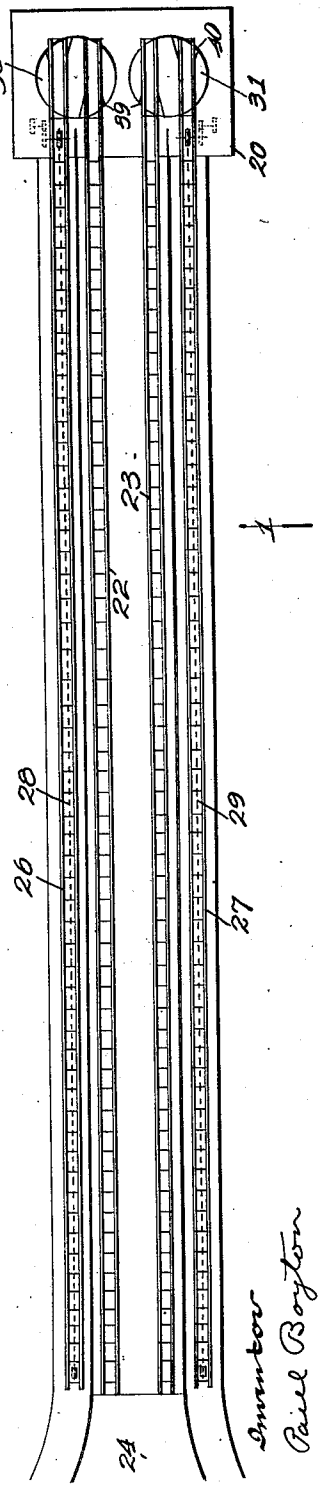

Fig. 2.

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8 SHEETS—SHEET 2.

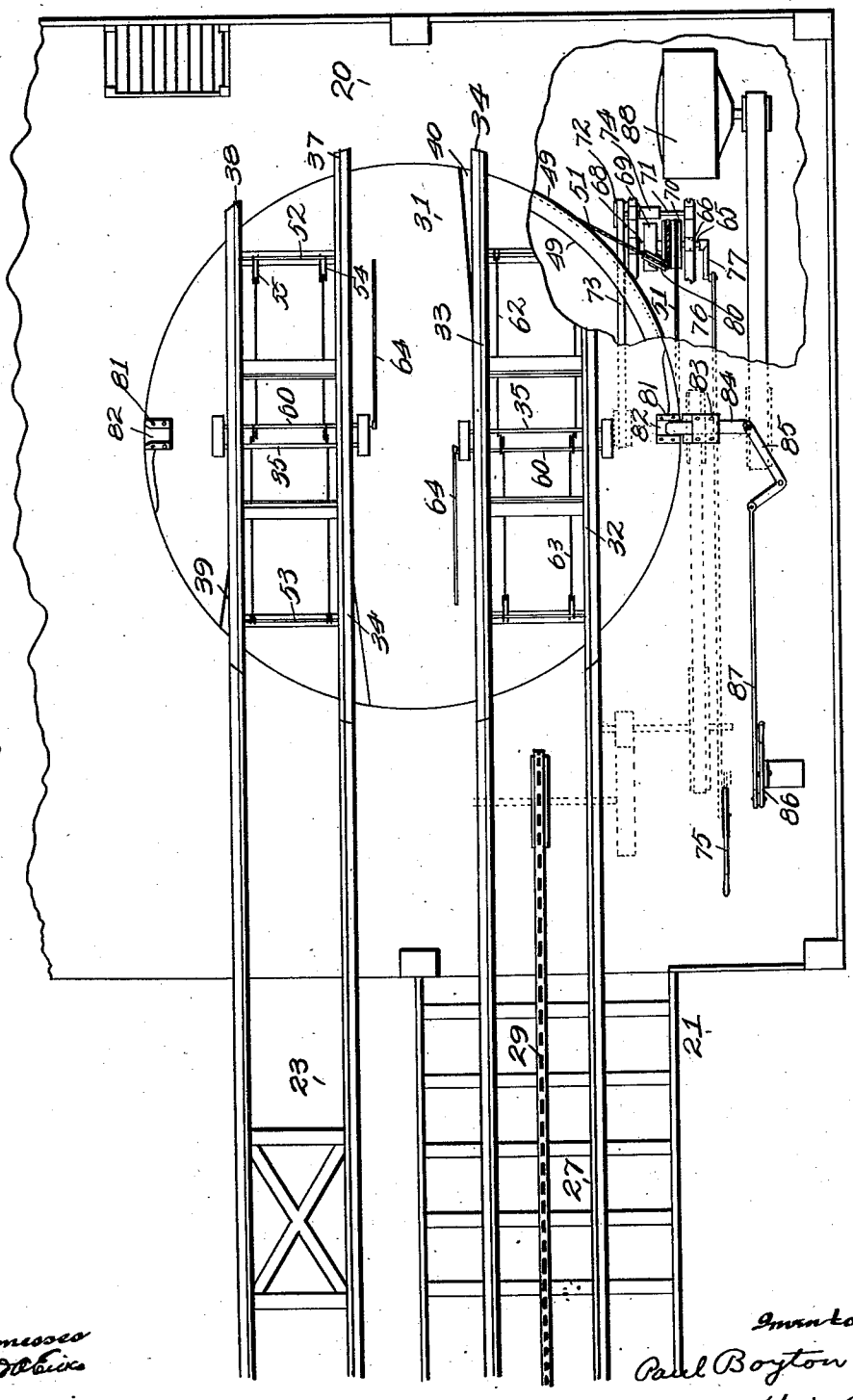

Fig. 3

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No. 849,970. PATENTED APR. 9, 1907.

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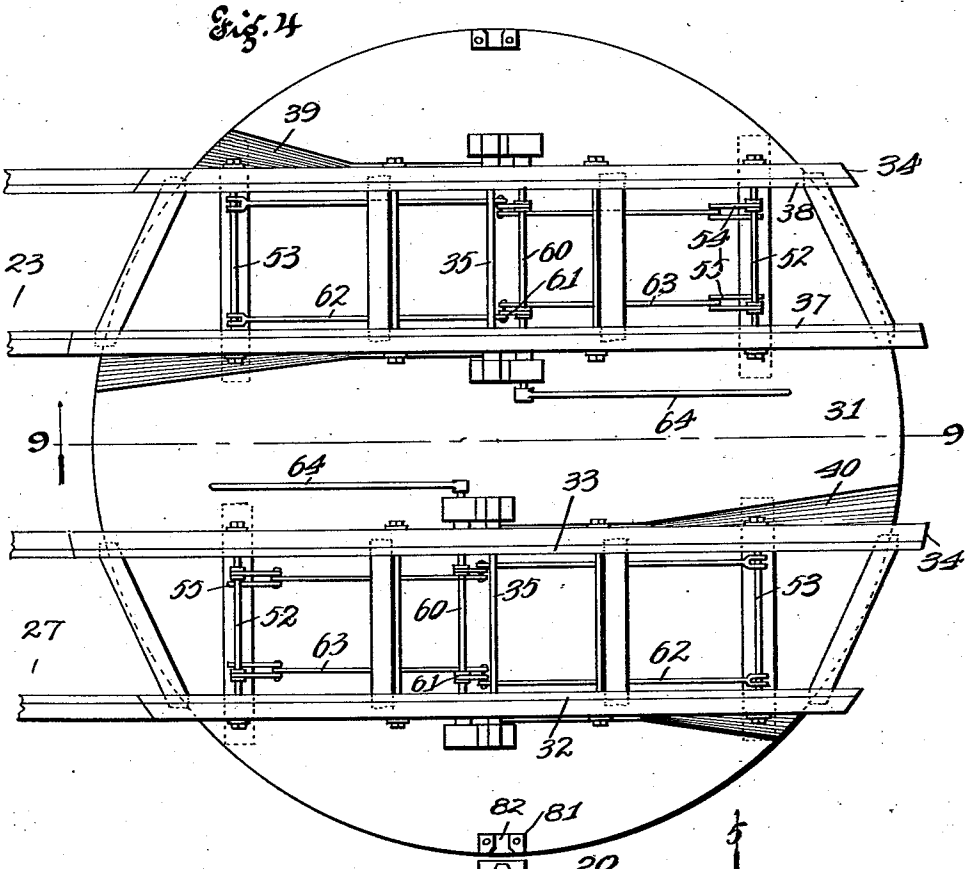
8 SHEETS—SHEET 3.

Fig. 4



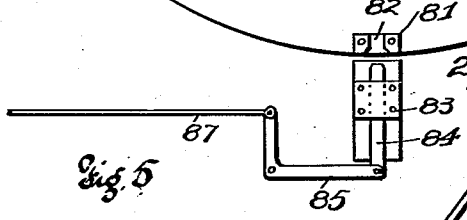
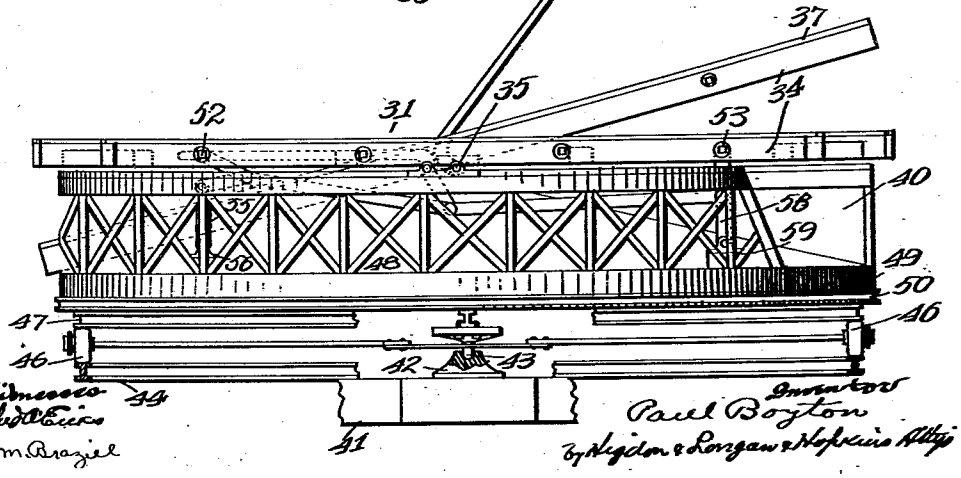


Fig. 5



Witnesses
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8 SHEETS—SHEET 4.

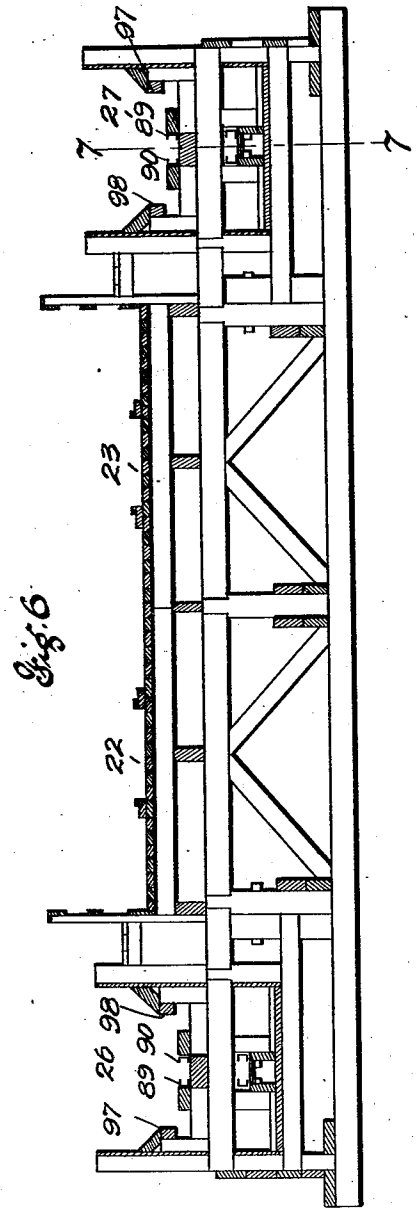

Fig. 6.

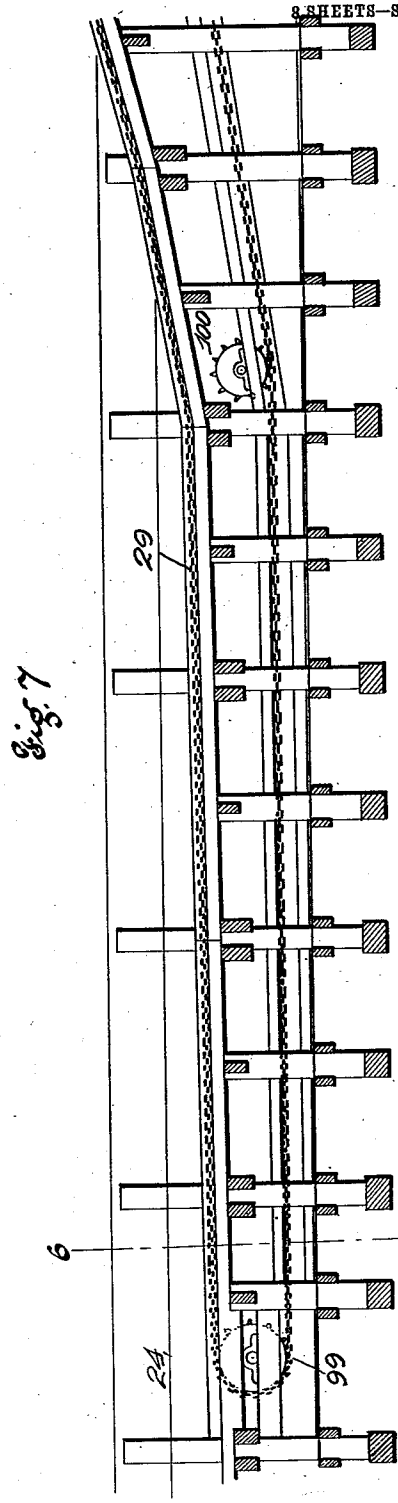

Fig. 7.

Witnesses
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8 SHEETS—SHEET 5.

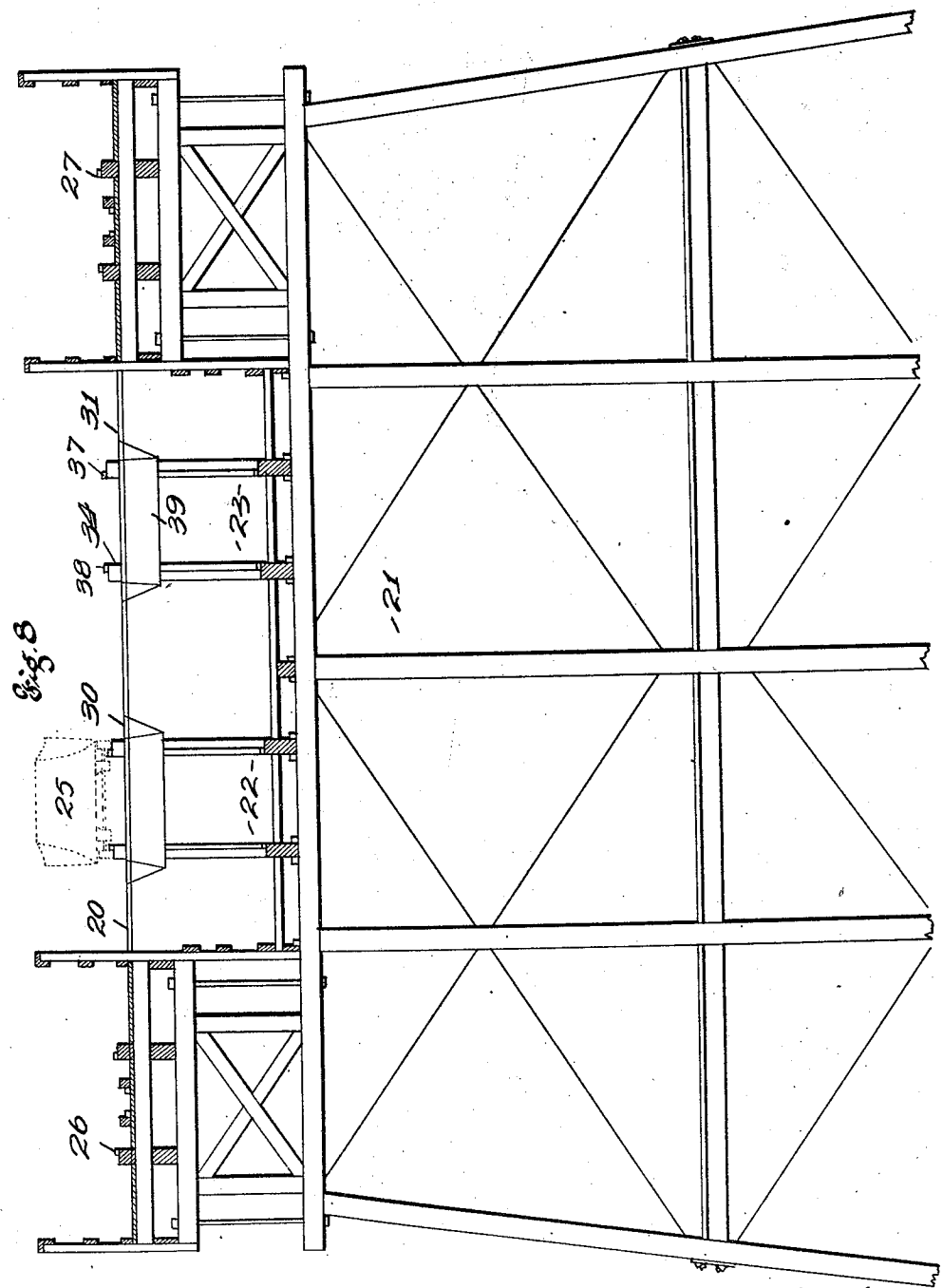

Fig. 8

Witnesses
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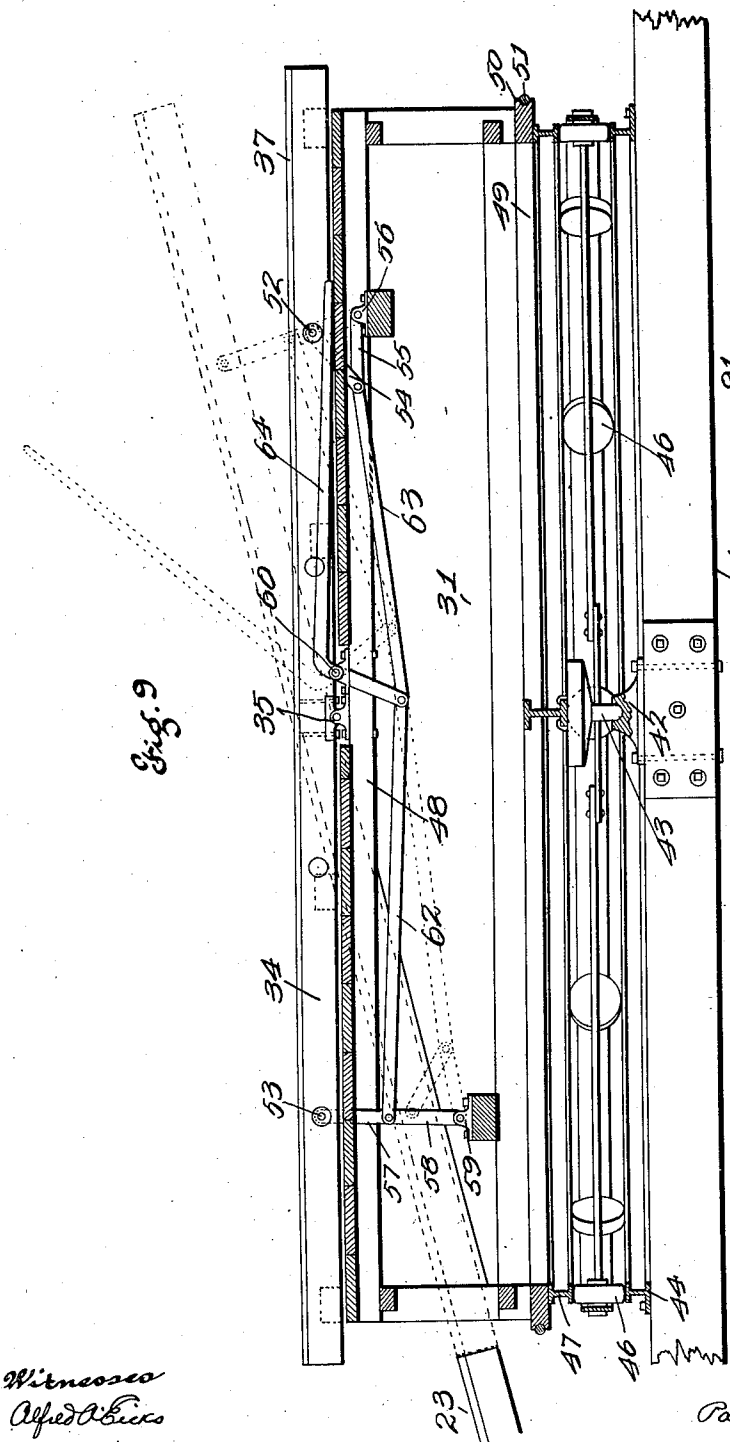
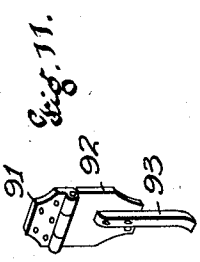
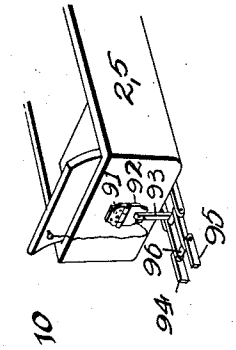
APPLICATION FILED AUG. 27, 1904.

8 SHEETS—SHEET 6.







Witnesses
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No. 849,970. PATENTED APR. 9, 1907.

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8 SHEETS—SHEET 7.

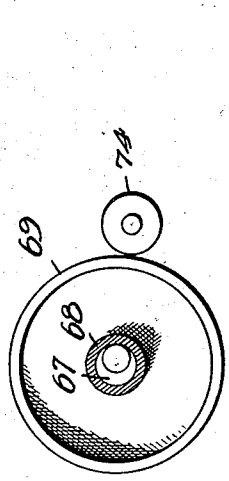

Fig. 14.

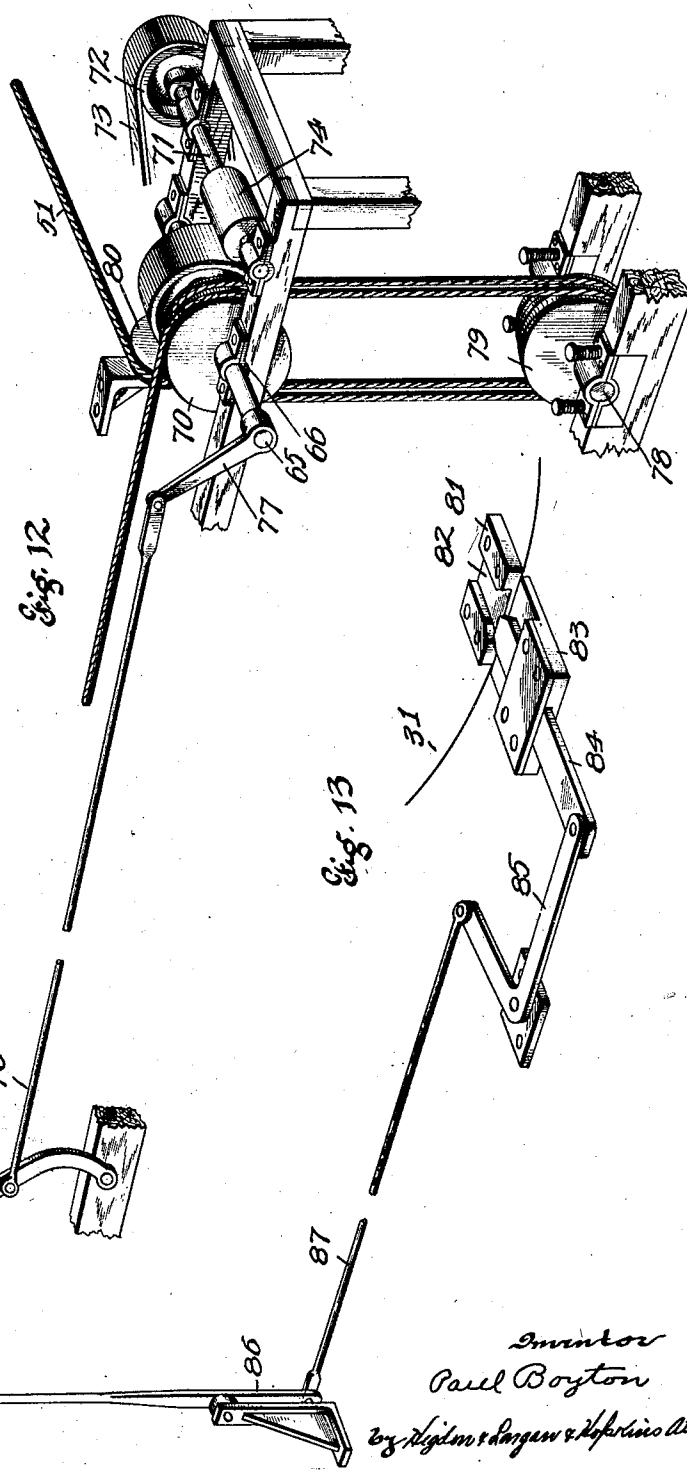

Fig. 12.

Fig. 13.

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No. 849,970. PATENTED APR. 9, 1907.

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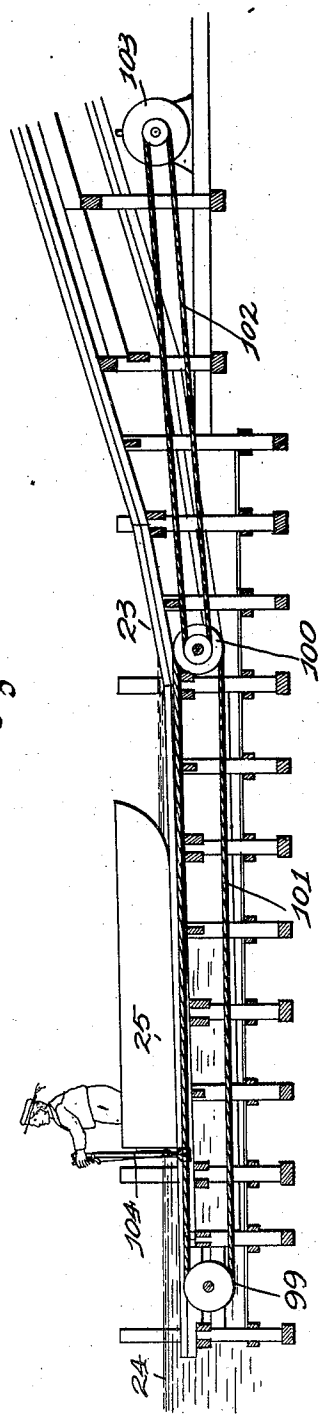
AMUSEMENT DEVICE.

APPLICATION FILED AUG. 27, 1904.

8 SHEETS—SHEET 8.

Fig. 15.



Witnesses
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M. M. Brazil

Inventor
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UNITED STATES PATENT OFFICE.

PAUL BOYTON, OF ST. LOUIS, MISSOURI.

AMUSEMENT DEVICE.

No. 849,970. Specification of Letters Patent. Patented April 9, 1907.

Application filed August 27, 1904. Serial No. 222,441.

To all whom it may concern:

Be it known that I, PAUL BOYTON, a citizen of the United States, and a resident of the city of St. Louis, State of Missouri, have invented certain new and useful Improvements in Amusement Devices, of which the following is a specification containing a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to improvements in amusement devices, and consists of the novel features herein shown and described and claimed.

In the drawings, Figure 1 is a side elevation of a complete amusement device embodying the principles of my invention as seen looking in the direction indicated by the arrow 1 in Fig. 2. Fig. 2 is a top plan view as seen looking in the direction indicated by the arrow 2 in Fig. 1. Fig. 3 is an enlarged detail of one of the tilting turn-tables and the means of operating the same, the parts being broken away to economize space. Fig. 4 is a view analogous to Fig. 3, upon a larger scale, parts being omitted to more clearly show the other parts. Fig. 5 is a side elevation of the parts shown in Fig. 4 as seen looking in the direction indicated by the arrow 5 in Fig. 4. Fig. 6 is an enlarged cross-section substantially on the lines 6 6 of Fig. 7. Fig. 7 is an enlarged sectional elevation at the lower end of the chute and taken substantially on lines 7 7 of Fig. 6. Fig. 8 is an enlarged cross-section on the line 8 8 of Fig. 1 and looking in the direction indicated by the arrow. Fig. 9 is an enlarged sectional elevation on the line 9 9 of Fig. 4 and looking in the direction indicated by the arrow. Fig. 10 is a perspective of the rear end of one of the boats and showing the connection between the boat and the cable which runs the boat uphill. Fig. 11 is an enlarged detail perspective of the dog shown on Fig. 10 removed from the boat. Fig. 12 is an enlarged detail perspective of the means of operating the turning-tables, other parts being broken away. Fig. 13 is an enlarged detail perspective of the means of stopping the turning-tables in alinement with the tracks. Fig. 14 is a cross-section showing the friction driving mechanism whereby the turning-tables are started and stopped. Fig. 15 is a sectional detail.

My improved amusement device is of the type known as "shoot the chutes," my object being to economize space in the construction of such a device, to increase the speed of operation, and to improve the details of construction.

Referring to the drawings in detail, the platform 20 is mounted upon a suitable scaffolding 21. The inside tracks 22 and 23 lead from the platform 20 to points below the water-level 24, and the boats 25 coast down these tracks. The outer tracks 26 and 27 lead from the water to the platform 20, the lines followed by the outer tracks near their upper ends being higher than the inner tracks, as clearly shown in Fig. 1. Endless chains 28 and 29 operate between the rails of the tracks 26 and 27 to form carriers to carry the boats from the water up the tracks 26 and 27 to the platform.

The device shown is a double-track mechanism, there being two tracks down and two tracks up, the tracks 22 and 26 forming one pair and tracks 23 and 27 forming the other pair. A turn-table 30 is mounted upon the platform 20 for the tracks 22 and 26, and a similar turn-table 31 is mounted upon the platform 20 for the tracks 23 and 27. Upon the turn-table 30, at the upper end of the track 22, is a pair of rails 32 and 33, mounted upon a tilting frame 34, said frame turning upon the pivot 35. Upon this same platform, at the upper end of the track 23, is a pair of rails 37 and 38, mounted in a similar manner. The front side of the platform 20, under the tracks 22 and 23, is lowered, and notches 39 and 40 are cut in the turn-table, so that when the rails upon the turn-table are in alinement with the rails of track 23 said rails may tilt, as shown in Fig. 5, to bring the forward ends of the rails upon the turn-table into inclined alinement with the ends of the rails of the track 23, so that the boat may slide down the track to the water. In constructing the platform 20 a timber 41 is located under each turn-table and a bearing-block 42 is placed upon the timber. The pivot 43 of the turn-table operates in the bearing-block 42. A circular track 44 is mounted upon the timber 41 and upon other timbers. A suitable frame has arms radiating from the pivot 43, and wheels 46 are journaled upon the outer ends of these arms in position to travel upon the track 44. A track 47, similar to track 44, is mounted upon the wheels 46, and the turn-table is built and supported upon the track 47 and upon the pivot 43, said turn-table consisting of suitable framework 48, supporting the

pivot 35. The base 49 of this turn-table framework is in the form of a wheel, rotating horizontally and having a groove 50 in its periphery to receive the cable 51. The means of tilting the turn-table tracks each comprise a shaft 52, mounted transversely of the tilting frame upon one side of the pivot 35; a similar shaft 53 upon the opposite side of the pivot; links 54 and 55, connected together and connected to the shaft 52 and connected to a bearing-plate 56 upon a rigid part of the frame to form a toggle-joint connection between that end of the tilting frame and the rigid frame; links 57 and 58, connected to the shaft 53 and connected together and connected to bearing-blocks 59, secured to a rigid part of the frame, so as to form toggle-joint connections between that end of the tilting frame and the rigid frame; an operating-shaft 60, mounted upon the rigid frame near the pivot 35 and transversely of the tilting frame; crank-arms 61, extending downwardly from the shaft 60; connecting-rods 62, connecting the lower ends of the crank-arms to the central pivot of the links 54 and 55; connecting-rods 63, connecting the lower ends of the crank-arms 61 to the central pivots of the links 57 and 58, and an operating-lever 64 upon the outer end of the shaft 60, so that when the tilting frame is in a horizontal position the toggle-joint formed by the levers 57 and 58 is straight and the toggle-joint formed by levers 54 and 55 is bent and so that when the toggle-joint formed by levers 54 and 55 is straight and the other toggle-joint bent the tilting frame is in an incline position and the tracks upon the frame are in incline alinement with the chute-tracks 22 or 23. The means of operating the turn-tables comprise for each turn-table a crank-shaft 65, mounted in bearings 66; an eccentric 67, fixed upon the crank-shaft between the bearings; a sleeve 68, rotatably mounted upon the eccentric; a friction-wheel 69, fixed upon the sleeve; grooved driving-pulleys 70, fixed upon the sleeve; a driving-shaft 71, mounted parallel with the crank-shaft 65; a driving-pulley 72 upon the driving-shaft; the driving-belt 73 upon the pulleys; the friction drive-wheel 74 upon the shaft 71 in position to be engaged by the friction-wheel 69; the shifting-lever 75, pivotally mounted; the connecting-rod 76, connecting the lever 75 to the crank 77 upon the crank-shaft 65; the counter-shaft 78, and the pulleys 79 upon the counter-shaft, together with the cable 51, operating in the groove 50, running over the pulleys 70 and 79 two or more times and over the guide-pulley 80, so that when the lever 75 is operated in one direction the friction-wheel 69 will be placed against the friction drive-wheel 74, thereby rotating the wheel 69, driving the pulleys 70, and moving the cable 51 and rotating the turn-table and so that when the lever is operated in the opposite direction the friction-wheel will be disconnected and the turn-table stopped.

In order that the tracks upon the turn-table may be brought into exact alinement with the chute-tracks, it is necessary to stop the turn-tables precisely in the right place, and the means for accomplishing this end comprise a plate 81, mounted upon the turn-table and having a slot 82; the latch-housing 83, mounted upon the frame; the latch 84, slidingly mounted in the housing in position to engage in the slot 82; the bell-crank lever 85 for operating the latch; the hand-lever 86, pivotally mounted, and the connecting-rod 87, connecting the hand-lever to the bell-crank lever, so that when the hand-lever is moved in one direction the latch 84 will engage in the slot and stop the turn-table and so that when the lever is moved in the opposite direction the latch will be withdrawn to release the turn-table.

The levers 64 are mounted near the center of the turn-table, and a man is to be stationed at this point for operating these levers. The levers 75 and 86 are mounted upon the platform outside of the turn-table, as shown in Fig. 3, there being a pair of these levers for each turn-table, and a man is stationed in place to operate these levers, there being one man upon each side of the platform for this purpose. The mechanism is all driven from the motor 88. The chains 28 and 29 are operated in a guideway formed by the plates 89 and 90, so as to keep the chains from moving laterally. The means of connecting the boats to the chains is shown in detail in Figs. 10 and 11 and comprises an attaching-plate 91, secured to the rear end of the boat 25, the swinging plate 92, hinged to the attaching-plate, and the dog 93, secured to the swinging plate 92 and extending below the bottom of the boat, the lower end of said dog being bent backwardly to form a hook, so that when the boat floats into the path of the chain the dog will drop down between the side bars of the chain and hook under one of the cross-bars between the side bars 94 and 95 and hook under one of the cross-bars 96, so that as the chain moves up the incline the boat will be carried upon the track. At the lower ends of the tracks 26 and 27 there are guide-rails 97 and 98 to guide the boat into position to be engaged by the chain. The framework supporting the tracks and chains is shown in Figs. 6 and 7.

When the boat standing comparatively still is connected to the chain by dropping the dog 93, the boat is violently jerked, and to overcome this objection I provide a means shown in Fig. 15. Pulleys 99 and 100 are mounted under the water at the lower end of the chains, and an endless cable 101 is mounted upon the pulleys. The pulley 100 is driven by a cable 102, driven by the motor

103. When the boats are dropped near to the lower ends of the inclines, the operator grasps the cable 101 with a pair of tongs 104 and at the rear of the boat, and as the cable moves the tongs are brought against the rear end of the boat and move the boat toward the lower end of the chain, and then the dog 93 connects the chain while the boat is in motion, thereby reducing the shock to the occupants of the boat. The tongs 104 may be carried by the operator into the boat and laid upon the platform convenient for the use of other operators. By the use of the tongs it is not necessary that the boat be squarely over the cable. If the tongs were rigidly secured to the boat for the purpose of engaging the cable, it would be necessary that the boat be brought accurately into line with the cable, whereas with the use of the disconnected tongs the cable may be at either side of the boat or anywhere within reach of the operator.

The details of construction may be widely varied, as it is only necessary to have the moving cable and a pair of tongs for gripping the cable, so as to start the boat toward or up the incline before it is connected to the chain.

The operation of my improved amusement device is as follows: A series of boats is placed upon the water 24, the machinery is started, the boats are floated into position between the guide-rails 97 and 98 one at a time for each pair of tracks. The passengers or patrons step into the boats, the boats are brought into position to be connected to the chains, and the chains carry the boats up the inclined tracks 26 and 27. At the upper ends of these tracks the tilting platforms are in horizontal positions in alinement with the tracks and the boats are carried onto the platforms. Then an operator engages the handle 86 to release the turn-table, operates the lever 75 to rotate the turn-tables halfway around, thus bringing the boat into alinement with the chute-tracks. The operation upon the turn-table operates the lever, tilts the frame, and the boat descends the chute-track, and this operation goes on in rapid succession. By the use of the turn-tables and the tilting frames it is possible to turn the boat and start it down the incline in a great deal less space and a great deal less time than has been accomplished by any of the old constructions.

I call special attention to the fact that I take on the passengers at the lower ends of the incline and that the passengers are carried rapidly up the incline, quickly turned and shot down, and that with the exception of the operators necessary and the machinery necessary there is nothing upon the platform 20—all of the patrons going and coming and waiting are upon the ground at the lower ends of the incline. This is a matter of great importance in economy of space and in safety of operation.

I claim—

In an amusement device, an inclined track, a turn-table arranged for operation at the upper end of said track, a track arranged on the turn-table and adapted to coincide with the inclined track, locking-plates fixed on the turn-table at right angles to the track thereon, a housing secured to the framework outside the turn-table, a locking-bolt operating through said housing and adapted to engage either one of the locking-plates, a bell-crank having one end pivotally connected to the locking-bolt, a rod pivotally connected at one end to the opposite end of the bell-crank, and a hand-lever pivotally connected to the opposite end of said rod; substantially as specified.

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

PAUL BOYTON.

Witnesses:
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M. M. BRAZILL.