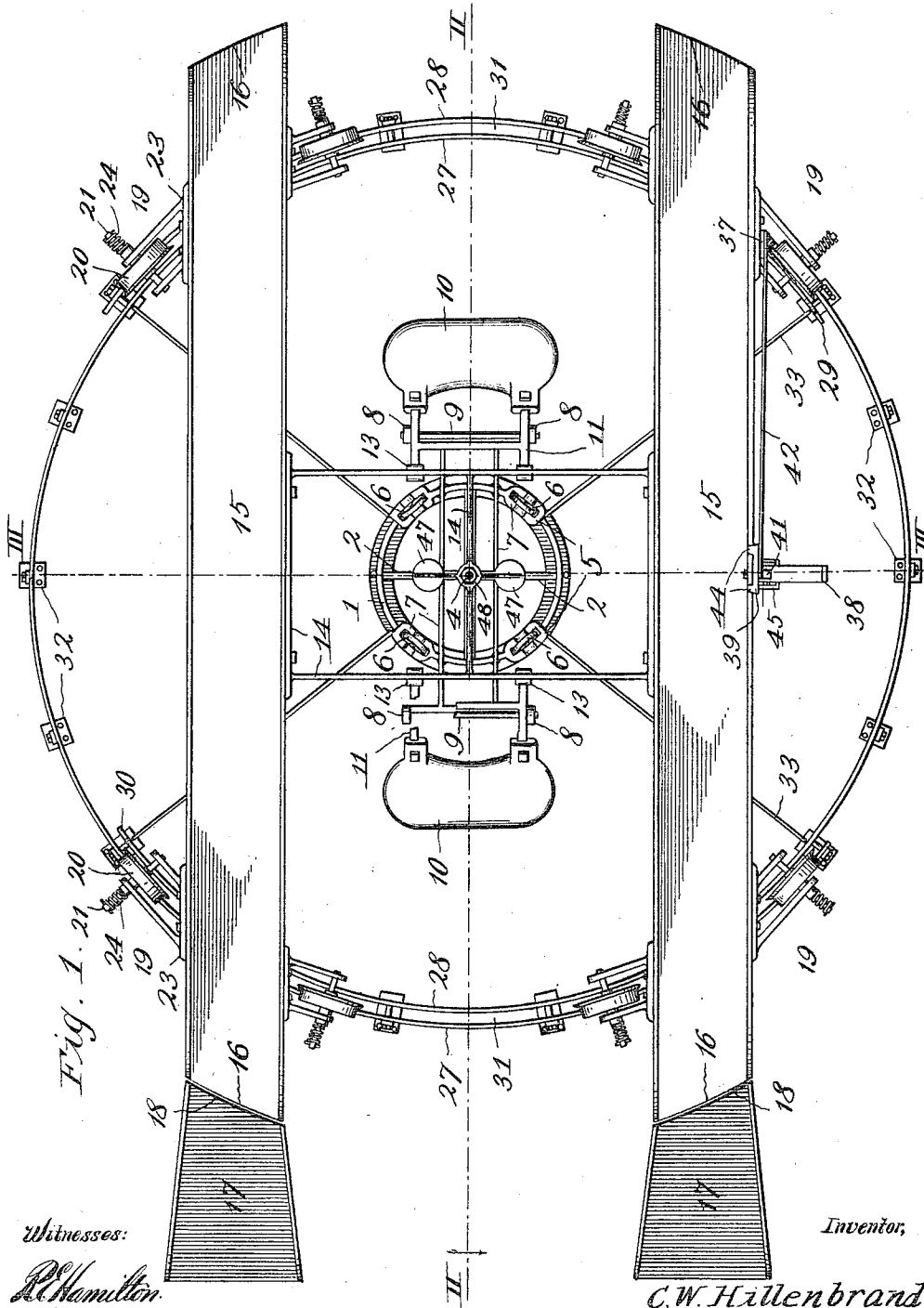


C. W. HILLENBRAND.
 AUTOMATIC TURN TABLE.
 APPLICATION FILED MAY 5, 1909.

Patented July 19, 1910.

3 SHEETS—SHEET 1.

964,514.



Witnesses:
R. Hamilton.
M. Cox

Inventor,
C.W. Hillenbrand,
 By *F. G. Fischer, Atty.*

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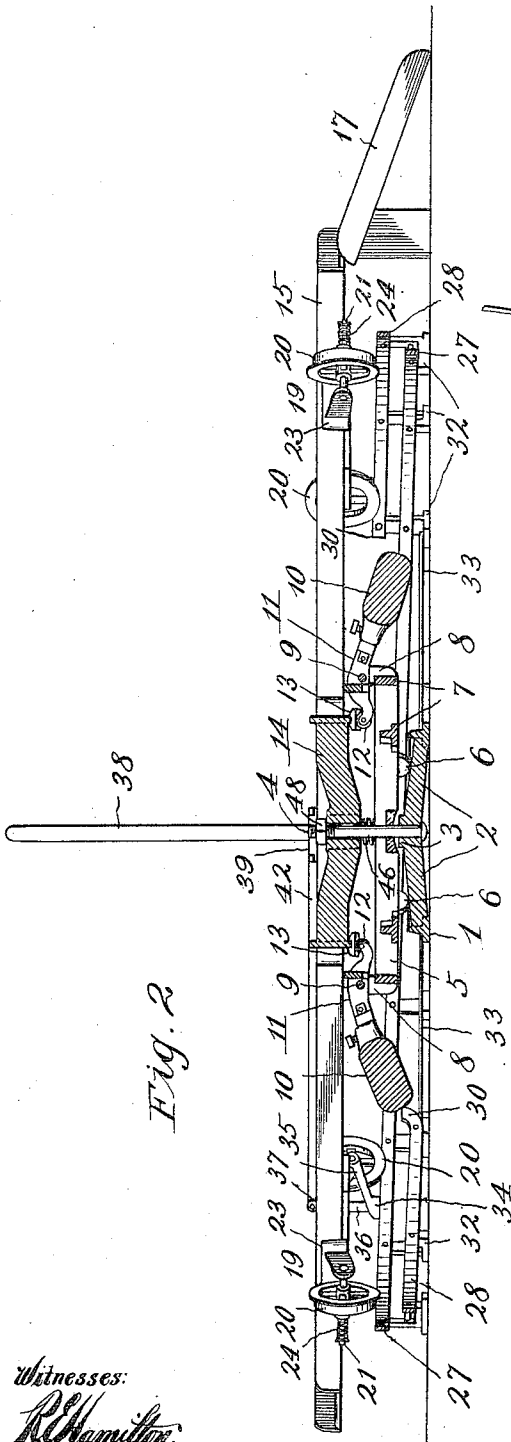


Fig. 2

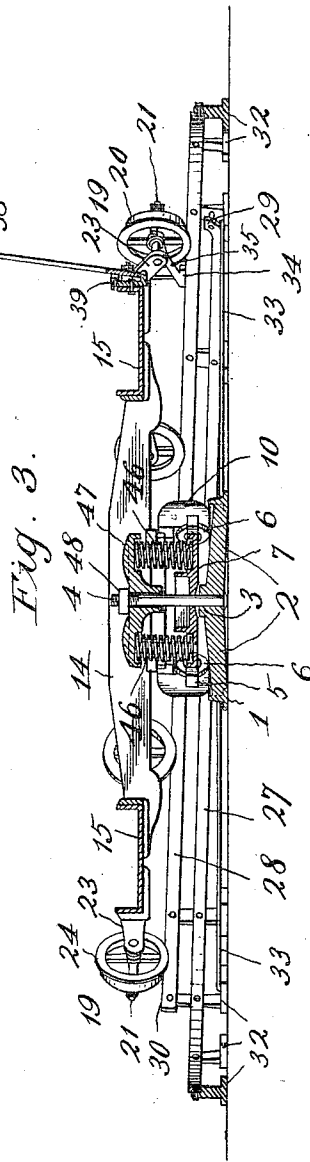


Fig. 3.

Witnesses:
R. Hamilton
M. Cox

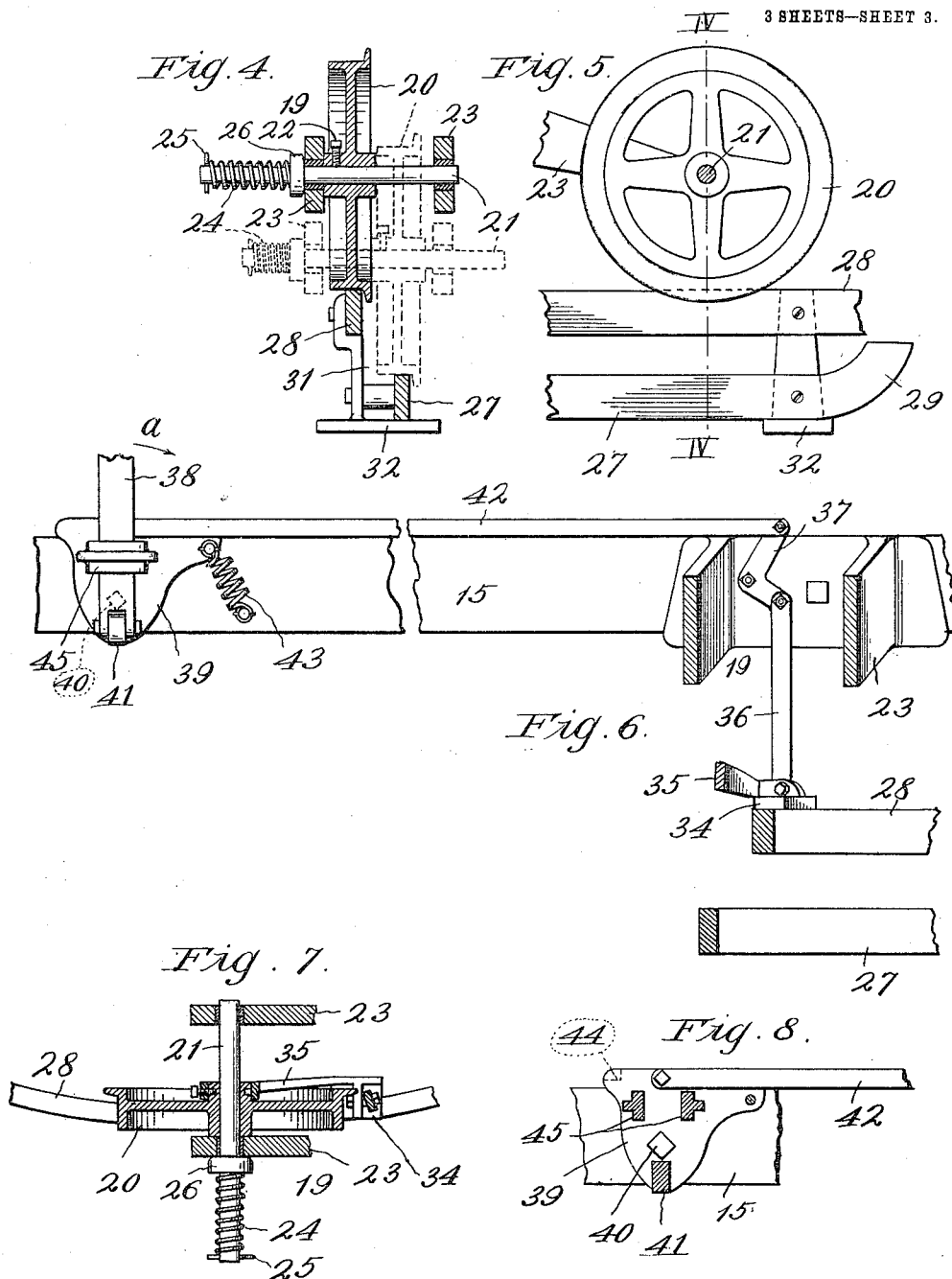
Inventor,
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 By *F. G. Fischer*, atty.

UNITED STATES PATENT OFFICE.

CHARLES W. HILLENBRAND, OF KANSAS CITY, KANSAS, ASSIGNOR, BY MESNE ASSIGNMENTS, OF ONE-HALF TO JOSEPH H. WITTMANN, OF KANSAS CITY, MISSOURI.

AUTOMATIC TURN-TABLE.

964,514.

Specification of Letters Patent.

Patented July 19, 1910.

Application filed May 5, 1909. Serial No. 494,196.

To all whom it may concern:

Be it known that I, CHARLES W. HILLENBRAND, a citizen of the United States, residing at Kansas City, in the county of Wyandotte and State of Kansas, have invented certain new and useful Improvements in Automatic Turn-Tables, of which the following is a specification.

My invention relates to an automatic turntable; and my object is to provide an appliance of this character for handling motor cars in garages or manufactories.

My turntable is actuated by the weight of the car thereon, and as it enables the car to turn within its length, reduces the space ordinarily required to maneuver cars. It also permits the car to face the door, so that the risk and inconvenience arising from backing out of a garage is obviated.

In order that the invention may be fully understood, reference will now be made to the accompanying drawings, in which:

Figure 1 represents a plan view of the turntable. Fig. 2 is a longitudinal section on line II—II of Fig. 1. Fig. 3 is a cross section on line III—III of Fig. 1. Fig. 4 is a vertical section on line IV—IV of Fig. 1. Fig. 5 is a broken detail of the rails and one of the trucks employed in carrying out the invention. Fig. 6 is a broken side elevation showing a brake employed in carrying out the invention. Fig. 7 is a horizontal section of one of the truck-wheels and the brake mechanism. Fig. 8 is a broken side elevation partly in section of a portion of the brake mechanism.

In carrying out the invention I employ a centrally-disposed annular track 1, provided with arms 2, radiating from a central hub 3, provided with an upwardly-extending king-bolt 4.

5 designates a truck comprising a plurality of rollers 6 mounted on track 1, and a frame 7 mounted upon said track and provided with a plurality of upturned lugs 8, having a pair of shafts 9, which carry a pair of counter-balance weights 10, provided with arms 11 which are fulcrumed upon shafts 9 and provided at their inner ends with antifriction rollers 12, engaging lugs 13 integral with the underside of a spider 14, which unites a pair of runways 15 upon which a car is supported preparatory to turning the same around. Runways 15 may be in the form of a single platform or run-

way, but I prefer to employ them in parallel pairs as shown. Their terminals 16 are curved so that a pair of inclined approaches 17 having upper curved terminals 18 may be placed adjacent thereto. A portion of the weight of the runways and the car thereon is carried by truck 5, and the remainder of said weight is carried by a plurality of two-wheeled trucks 19, one of which is located near each end of a runway, and comprises a pair of flanged rollers 20 at opposite sides of the runways, a pair of shafts 21 upon which said rollers are fixed by set-screws 22, and a pair of brackets 23 secured at their inner ends to the runways and in the outer ends of which shafts 21 are slidably and rotatably mounted. Each shaft is radially-disposed with respect to the center of track 1, and extends outward beyond one side of its bearing in the bracket, and is provided with an expansion spring 24 bearing at its ends against a cotter-pin 25 and a washer 26, which latter bears against the adjacent side of the bracket 23.

Rollers 20 are arranged to traverse a track consisting of two segmental rails 27 and 28, having lower upturned terminals 29 and 30, respectively, to prevent the rollers from running off the rails when said rollers reach the lower ends thereof. The ends of one rail extend beyond the ends of the companion rail, and spaces 31 are left between the same so that rollers 20 will not scrape against the sides of the upper portions of the rails when on the lower portions of said rails, as shown by dotted lines on Fig. 4. Rails 27 and 28 are arranged slightly eccentric to each other and to the king-bolt 4, and incline downward in opposite directions to their innermost terminals as shown in Figs. 2 and 3.

32 designates a plurality of chairs upon which the rails are mounted, four of said chairs being connected to the annular track 1 by diagonally-arranged tie-rods 33, to prevent the chairs and the rails from spreading.

The travel of trucks 19 upon rails 27 and 28 is checked by a brake consisting of a shoe 34 adapted to engage the upper surface of either rail, an arm 35 carrying said shoe and swiveled upon the hub of one of the rollers 20, a link 36 pivoted at its lower end to shoe 34 to permit the same to swing laterally from one rail to the other, a bell-crank lever

37 pivoted upon the adjacent truck 19 and to the upper end of link 36, a hand-lever 38, a secondary lever 39 pivotally-secured by a bolt 40 to the adjacent runway, and provided with a lug 41 to which the lower end of lever 38 is pivoted, and a connecting-rod 42 pivoted at its ends to lever 39 and the upper terminal of the bell-crank lever 37. Hand-lever 28 is arranged centrally of one of the runways so that it will be within convenient reach of a person sitting in the car irrespective of the direction in which the same is facing, and by pivoting the lever at its lower end it will normally incline outwardly and thus clear the hubs of the car.

43 designates a contractile spring secured at its terminals to lever 39 and the adjacent runway, to normally hold the brake-shoe 34 in engagement with the upper surface of one of the rails. The action of spring 43 on lever 39 is limited by a pair of lugs 44 extending inwardly over the top of the adjacent runway. Said lever is also provided with a loop 45 to limit the outward movement of the lever 38 on lug 41.

46 designates a pair of vertically-arranged expansion springs seated upon truck 5 and bearing at their upper ends against a cap 47 cast integral with spider 14, and loosely engaging the king-bolt 4 which extends through the center thereof. King-bolt 4 is provided at its upper end with a nut 48 to limit the upward movement of cap 47 and the expansion of springs 46, which assist the counterweights 10 to restore the runways to their uppermost positions, as will hereinafter appear.

In practice approaches 17 may be arranged at either end of the runways, so that a car may approach the same from either direction. After the car has been run upon the runways lever 38 is thrown in the direction of arrow *a*, Fig. 6, to lift shoe 34 from the rail upon which it is bearing. The weight of the car upon the runways will then cause rollers 20 to travel down toward the lower ends of the inclined rails until the runways have turned a half revolution, when lever 38 is released to set the brake and lock the runways in proper position for the car to return in the direction from which it came. As the trucks 19 travel toward the lower ends of rails 27 and 28, the runways will move straight downwardly and through the intermediacy of spider 14 and cap 47 lift the counter-balance weights 10 and compress the springs 46, hence when the car leaves the runways, the same will immediately be lifted to their normal position, or until spider 14 contacts with nut 48, by weights 10 and springs 46. As the rollers 20 are carried upward with the runways out of engagement with the lower portions of the rails, springs 24, which have been compressed by the longitudinal movements of

shafts 21 while rollers 20 were moving to the lower ends of the rails, expand and move the rollers 20 laterally from the dotted position shown in Fig. 4, so that they will engage the upper surface of the uppermost portions of the rails. The runways are prevented from moving laterally with rollers 20 by the king-bolt 4 upon which the spider 14 is rotatably mounted.

Having thus described my invention, what I claim is:—

1. A turntable, consisting of a stationary inclined curved track, a runway arranged to travel from the upper to the lower portions of the track, said runway being actuated by the weight of a vehicle thereon, and automatic means for restoring the runway to the upper portion of the track when relieved of the weight of the vehicle.

2. An automatic turntable, consisting of a stationary inclined curved track, trucks arranged to travel from the upper to the lower portions of said track, a runway carried by said trucks, means for automatically lifting the trucks to the upper portion of the track, and a brake for controlling the travel of the trucks.

3. A turntable, consisting of a stationary inclined curved track, a runway arranged to travel from the upper to the lower portions of the track, said runway being actuated by the weight of a vehicle thereon, and counterweights for restoring the runway to the upper portion of the track when relieved of the weight of the vehicle.

4. A turntable, consisting of an inclined curved track, a runway arranged to travel from the upper to the lower portions of said track, an annular track within the curved track, a truck mounted to turn upon said annular track, and means carried by said truck for restoring the runway to the upper portion of the curved track.

5. A turntable, consisting of a stationary inclined curved track, a runway arranged to travel from the upper to the lower portions of the track, said runway being actuated by the weight of a vehicle thereon, counterweights for restoring the runway to the upper portion of the track when relieved of the weight of the vehicle, and a brake for controlling the travel of the runway.

6. A turntable, consisting of an inclined curved track, a runway arranged to travel from the upper to the lower portions of said track, an annular track within the curved track, a truck mounted to turn upon said annular track, and counterweights for lifting the runway to the upper portion of the curved track.

7. A turntable consisting of an inclined curved track, connected parallel runways, rollers upon which said runways are mounted arranged to travel from the upper to the lower portions of said track, said

rollers having limited lateral movement, and means for restoring said rollers to the upper portion of the track.

8. An automatic turntable consisting of two parallel connected runways, supporting rollers located at the ends of each runway at the inner and outer sides thereof and having limited lateral movement, an inclined curved track upon which said rollers are adapted to travel from the upper to the lower end thereof, and automatic means to lift said rollers from the lower to the upper portion of the track.

9. An automatic turntable, consisting of two parallel connected runways, supporting rollers located at the inner and outer sides of said runways, at each end thereof, an inclined curved track upon which said rollers are adapted to travel, and intermediate supporting rollers located centrally of the runways.

10. An automatic turntable, consisting of an inclined curved track, rollers arranged to travel from the upper to the lower portion of said track, said rollers having limited lateral movement, means for restoring said rollers to the upper portion of the track, a pair of runways carried by said rollers, and a spider connecting said runways.

11. An automatic turntable, consisting of two parallel runways, rollers for supporting said runways having their axis disposed radially of a center common to both runways and capable of limited axial movement, an inclined curved track upon which said rollers are arranged to travel from the upper to the lower portion of said track, and means for restoring said rollers to the upper portion of the track.

12. An automatic turntable, consisting of two parallel connected runways, supporting rollers located at the inner and outer sides of said runways at each end thereof, an inclined curved track upon which said rollers are adapted to travel, intermediate supporting rollers, an annular track carrying said intermediate rollers, and surrounding a center common to both runways, and tie-rods for holding the curved track and said annular track in proper relation to each other.

13. An automatic turntable, consisting of two inclined segmental rails the ends of which extend beyond each other and are spaced apart, rollers adapted to travel upon said rails and capable of limited lateral movement, a runway carried by said rollers, and means for restoring the rollers to the upper portions of said rails.

14. An automatic turntable, consisting of two segmental rails inclined in opposite directions, the lower portion of one rail being adjacent to the upper portion of its companion and lying within the same, a runway, brackets thereon, axles slidably and rotatably mounted in said brackets, rollers

fixed to said axles and arranged to travel from the upper to the lower portions of the rails, and means for lifting the rollers from the lower to the upper portions of said rails.

15. An automatic turntable, consisting of two segmental rails inclined in opposite directions, the lower portion of one rail being adjacent to the upper portion of its companion and lying within the same, a runway, brackets thereon, axles slidably and rotatably mounted in said brackets, rollers fixed to said axles and arranged to travel from the upper to the lower portions of the rails, counterweights for lifting the rollers from the lower portions of the rails to or slightly above a level with the upper portions of said rails, and means for automatically shifting the rollers laterally into engagement with the upper portions of the rails.

16. An automatic turntable, consisting of two segmental rails inclined in opposite directions, the lower portion of one rail being adjacent to the upper portion of its companion and lying within the same, a runway, brackets thereon, axles slidably and rotatably mounted in said brackets, rollers fixed to said axles and arranged to travel from the upper to the lower portions of the rails, means for lifting the rollers from the lower portions of the rails to or above a level with the upper portions thereof, and resilient means embracing the axles for shifting the rollers laterally into engagement with the upper portions of the rails.

17. An automatic turntable, consisting of two segmental rails inclined in opposite directions, the lower portion of one rail being adjacent to the upper portion of its companion and lying within the same, a runway, brackets thereon, axles slidably and rotatably mounted in said brackets, rollers fixed to said axles and arranged to travel from the upper to the lower portions of the rails, a truck located centrally of the runway, counterweights fulcrumed on said truck and engaging the runway to lift the same and the rollers until the latter are on a plane slightly above the upper portions of the rails, and means for automatically shifting the rollers longitudinally into engagement with said upper portions of the rails.

18. A turntable, consisting of a stationary inclined curved track, a runway arranged to travel from the upper to the lower portions of the track, said runway being actuated by the weight of a vehicle thereon, and resilient means for restoring the runway to the upper portion of the track when relieved of the weight of the vehicle.

19. An automatic turntable, consisting of two segmental inclined rails, the ends of which extend beyond each other, rollers adapted to travel from the upper to the lower portions of said rails, a platform or

runway carried by said rollers, means for lifting the rollers from the lower to the upper portions of the rails, and resilient means for moving the rollers laterally into position
5 upon the upper portions of the rails.

20. An automatic turntable, consisting of two segmental inclined rails, the ends of which extend beyond each other, rollers adapted to travel from the upper to the
10 lower portions of said rails, a platform or runway carried by said rollers, means for lifting the rollers from the lower to the upper portions of the rails, means for moving
15 the rollers laterally into position upon the rails, and means for checking the rollers at any point in their travel upon the rails.

21. An automatic turntable, consisting of two segmental inclined rails, the upper ends of which extend beyond the lower upturned
20 ends, rollers adapted to travel from the upper to the lower portions of said rails, a platform or runway carried by said rollers, means for lifting the rollers from the lower to the upper portions of the rails, means for

moving the rollers laterally into position 25 upon the upper portions of the rails, and a brake for checking the movement of the rollers at any point in their travel upon the rails.

22. An automatic turntable consisting of 30 two segmental inclined rails, the ends of which extend beyond each other, rollers adapted to travel from the upper to the lower portions of said rails, a platform or runway carried by said rollers, a centrally-
35 disposed king-bolt around which the platform or runway rotates, means for lifting the rollers from the lower to the upper portions of the rails, and automatic means for moving the rollers laterally into position
40 upon the upper portions of the rails.

In testimony whereof I affix my signature, in the presence of two witnesses.

CHARLES W. HILLENBRAND.

Witnesses:

F. G. FISCHER,
M. COX.