

Sept. 5, 1933.

H. L. FOURNIER

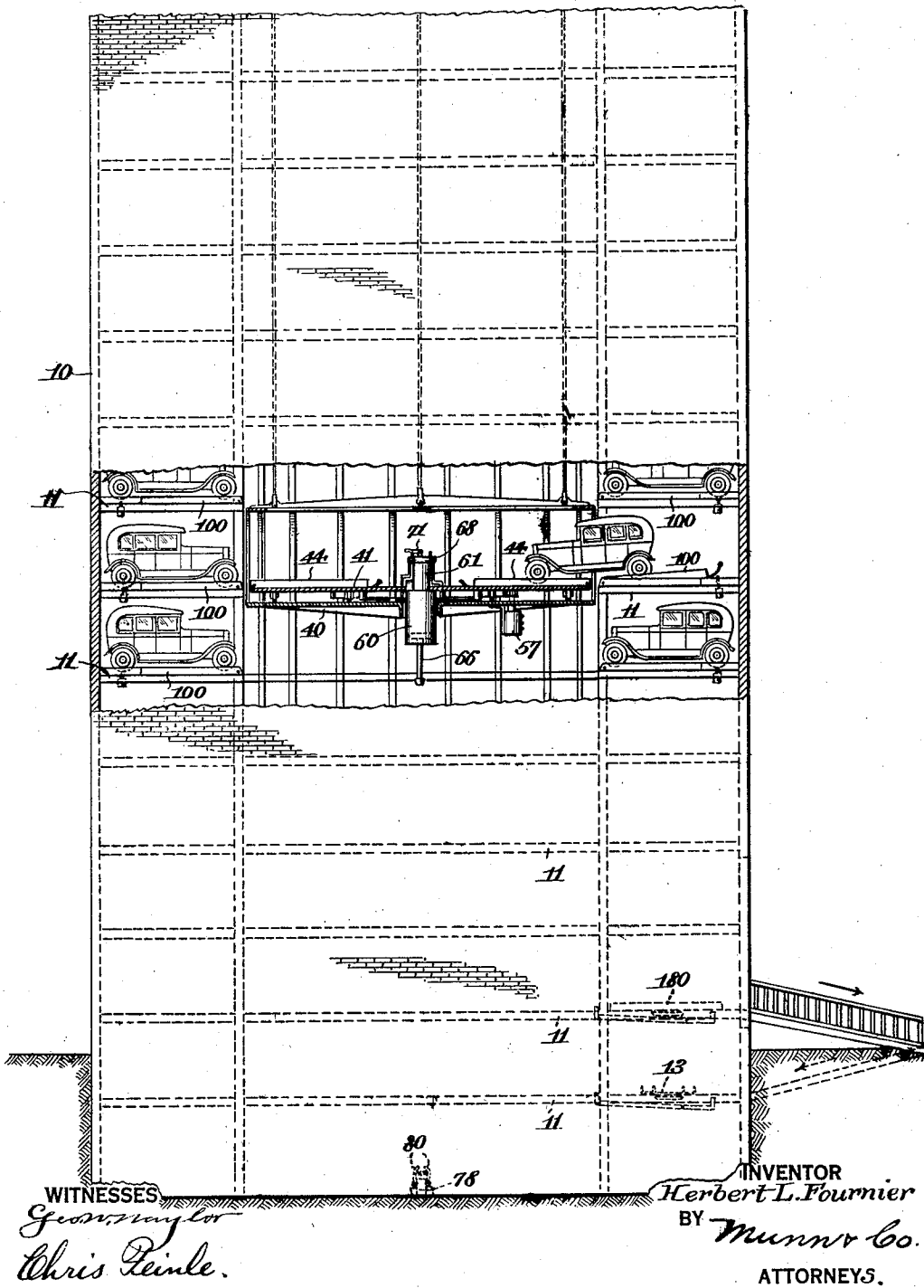
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GARAGE

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Fig. 1.



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Fig. 2.

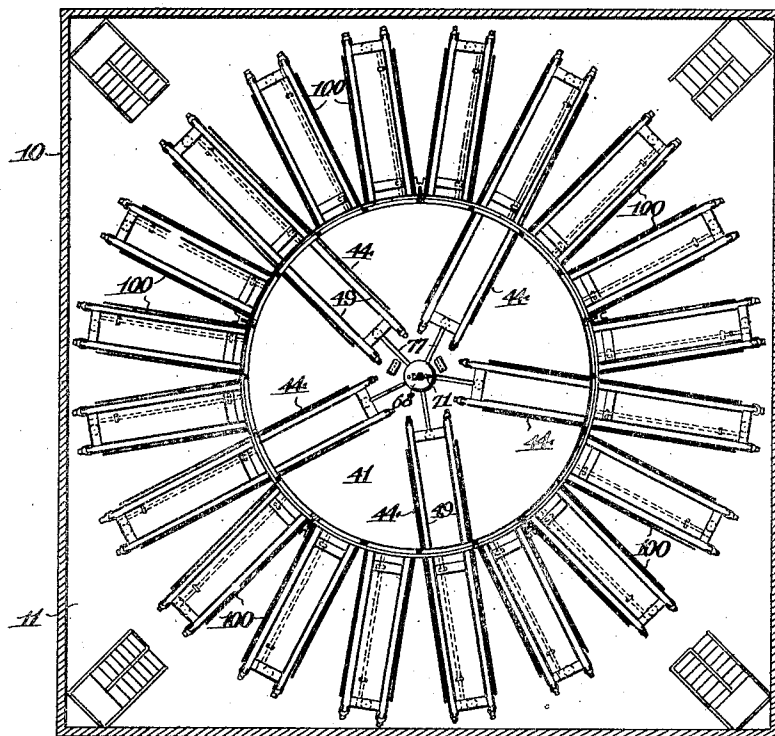
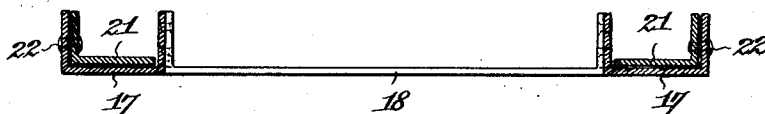


Fig. 5.



WITNESSES

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Fig. 3.

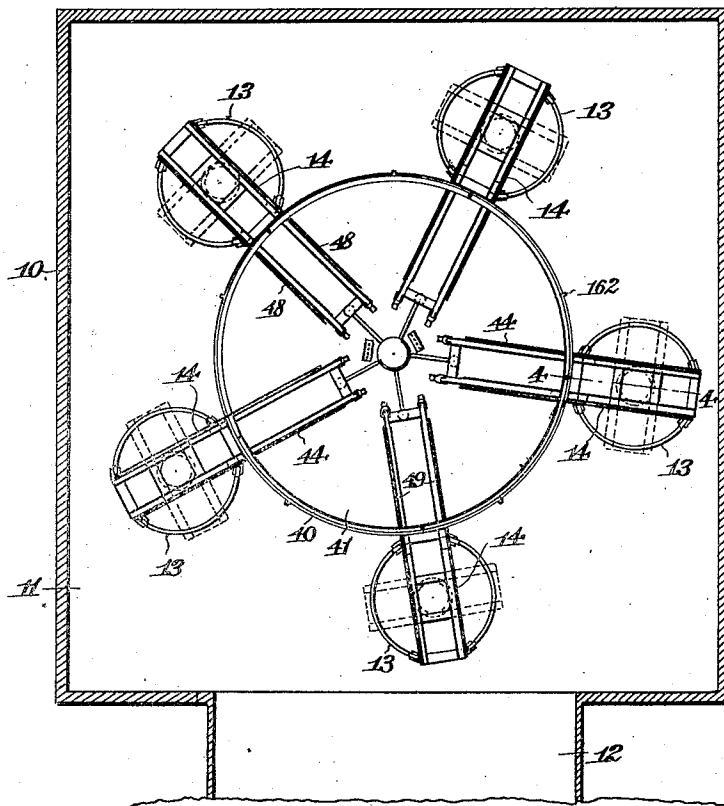
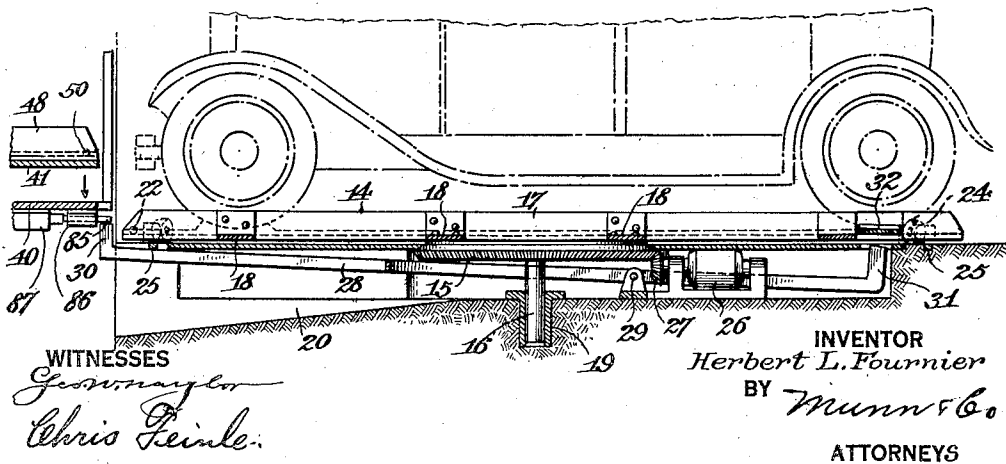


Fig. 4.



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Fig. 6.

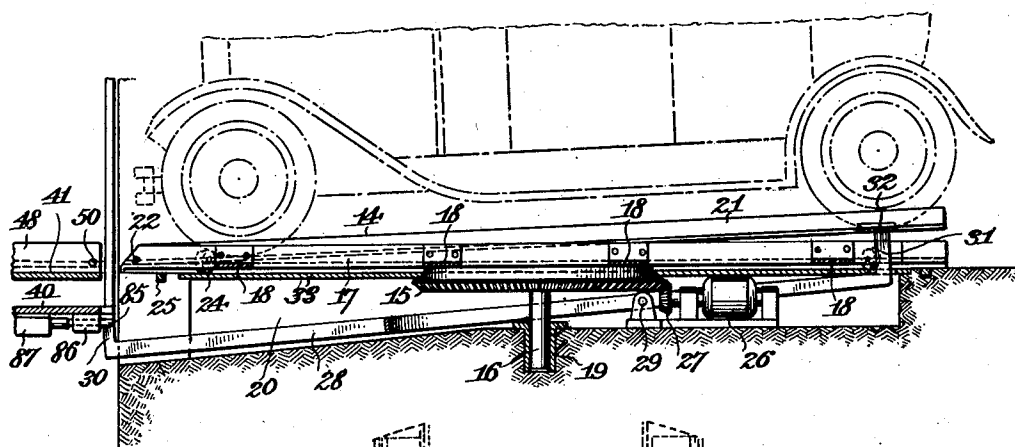
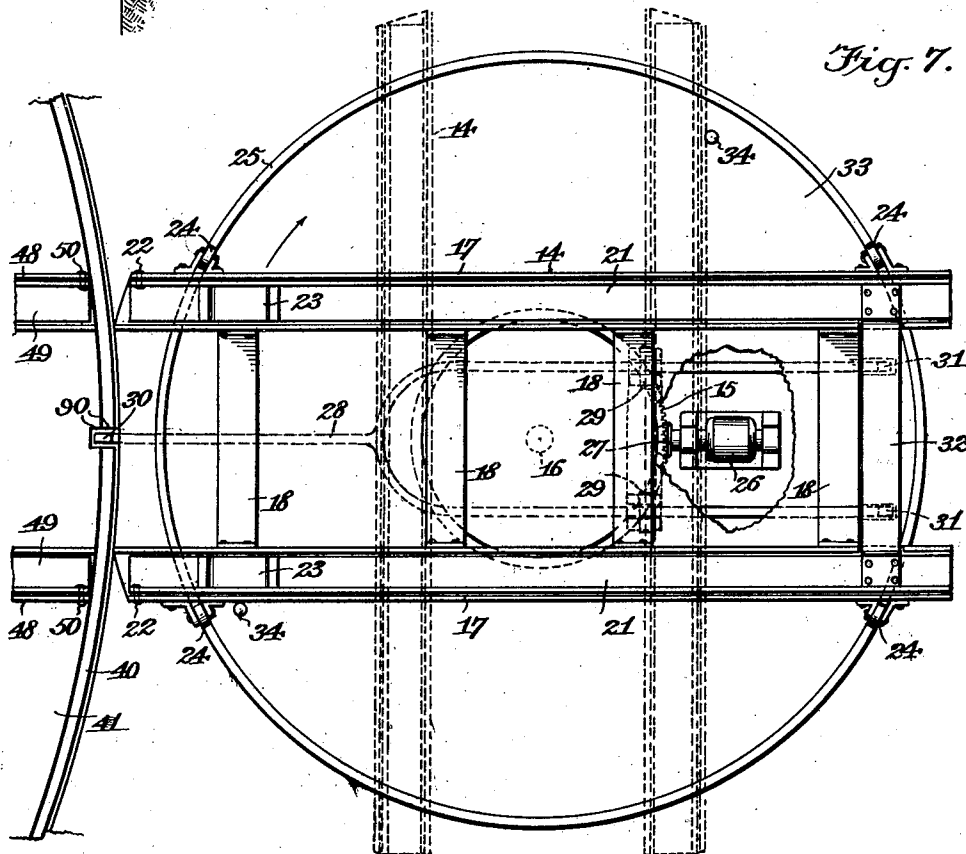


Fig. 7.



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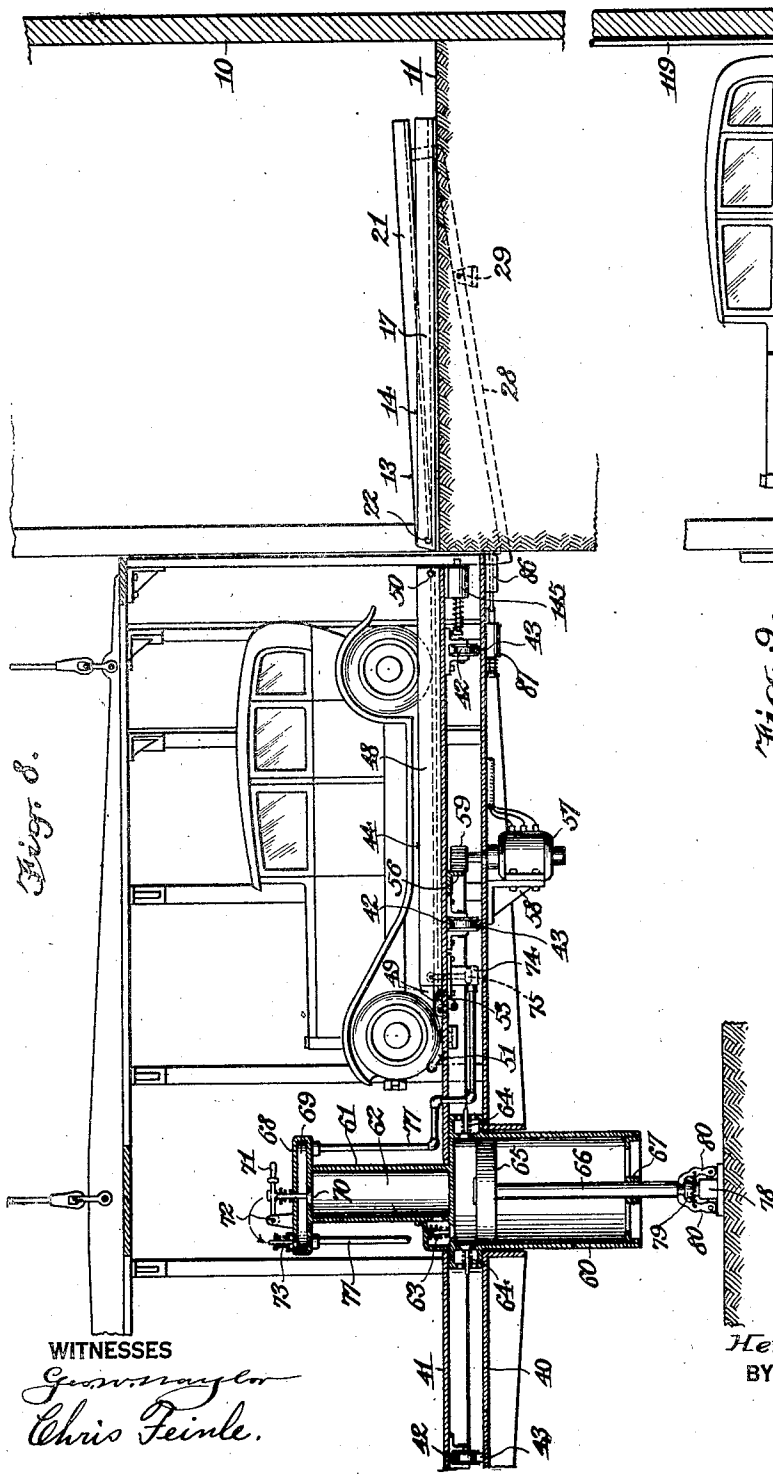


Fig. 8.

WITNESSES
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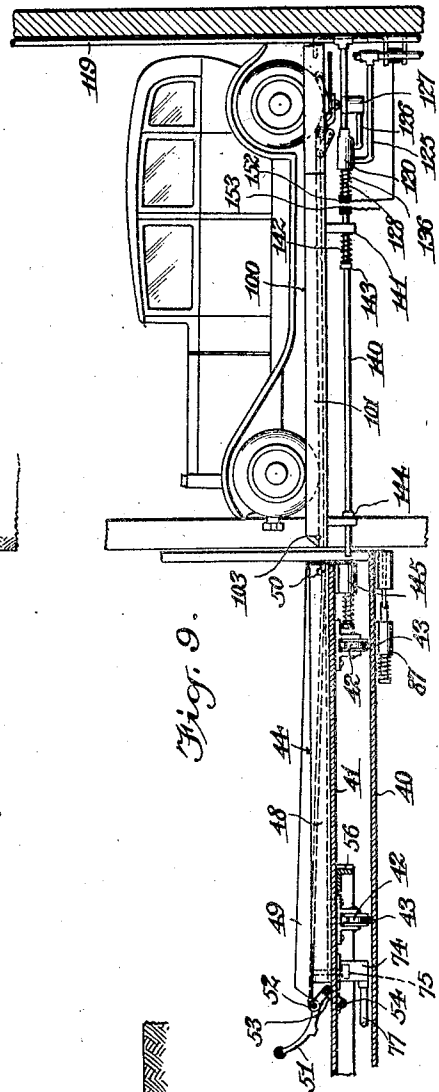


Fig. 9.

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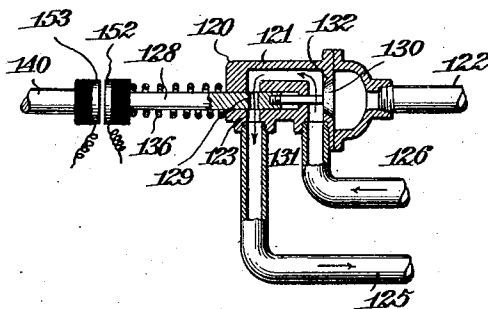
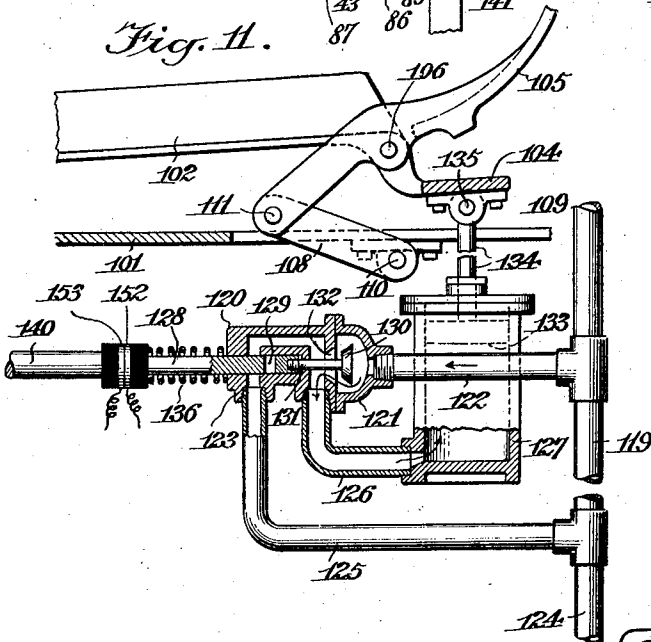
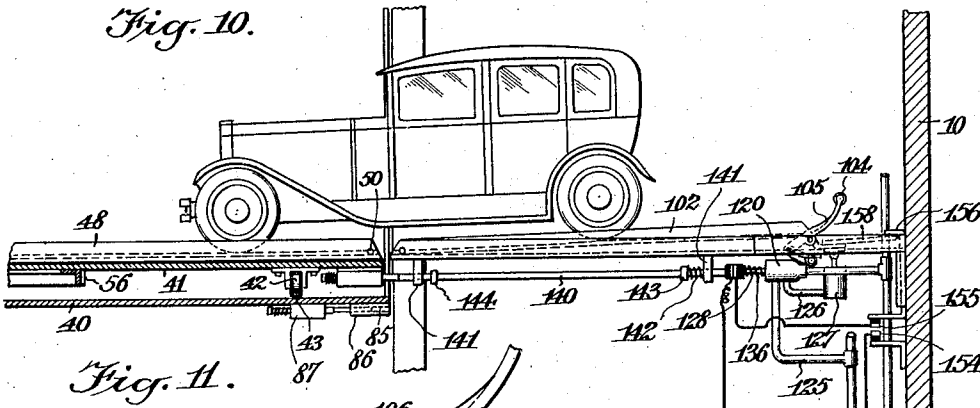
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WITNESSES

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Fig. 13.

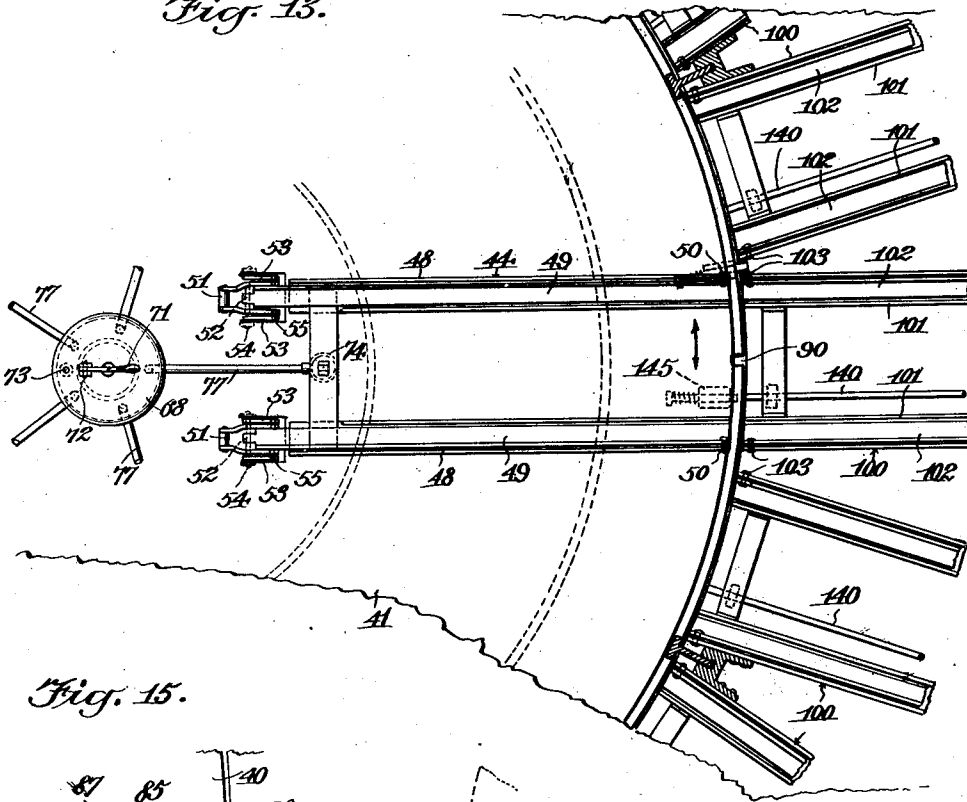


Fig. 15.

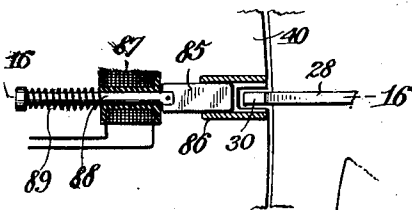


Fig. 16.

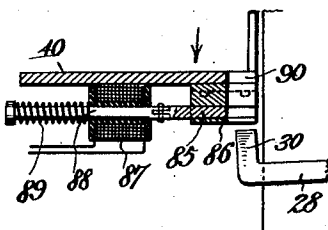
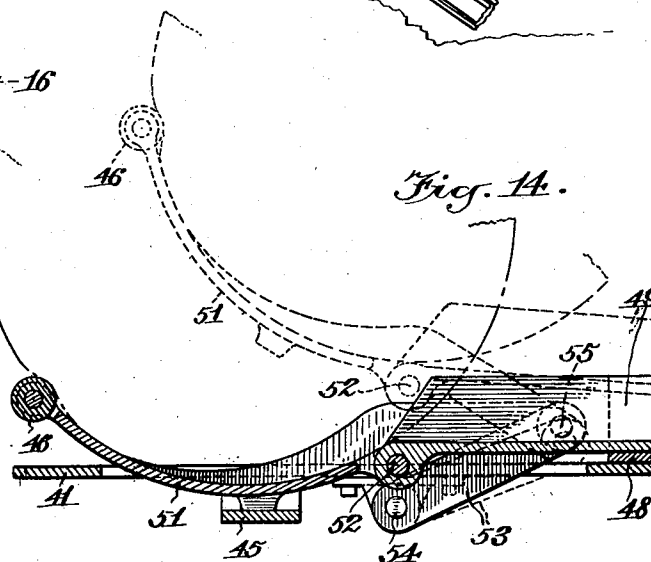


Fig. 14.



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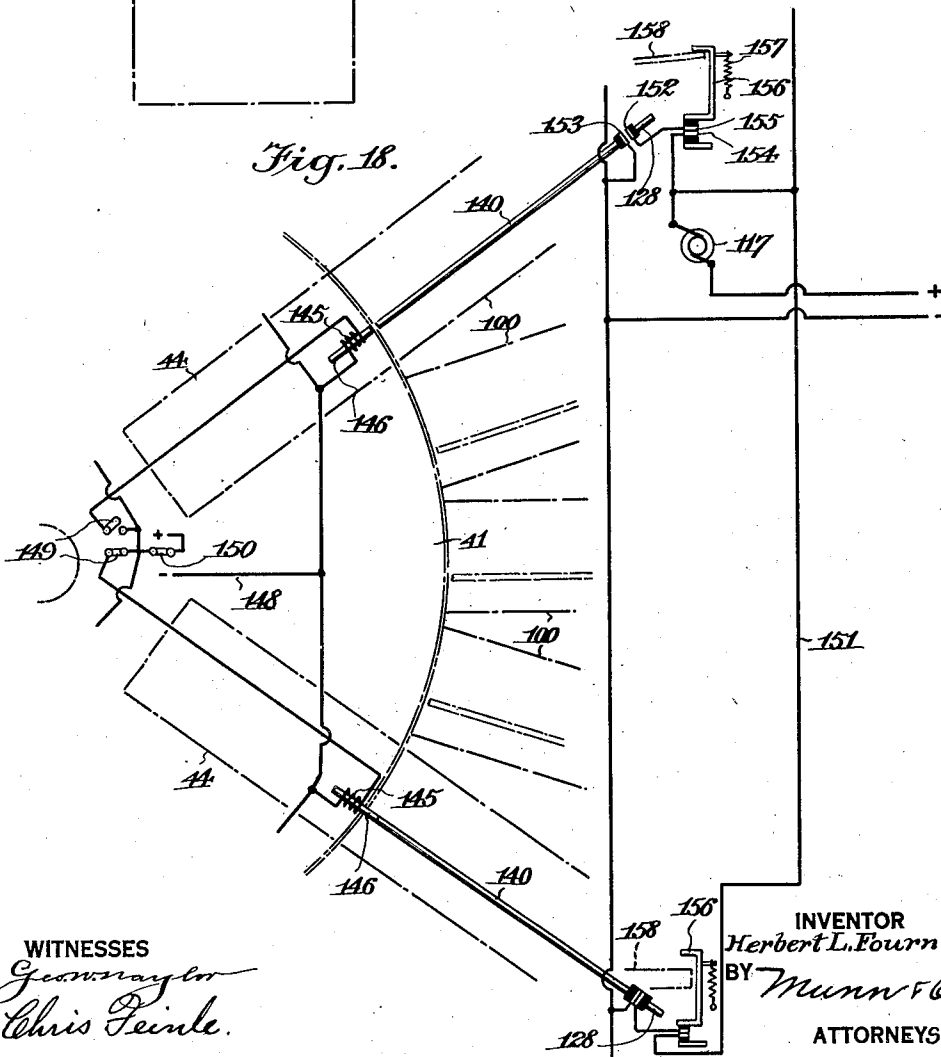
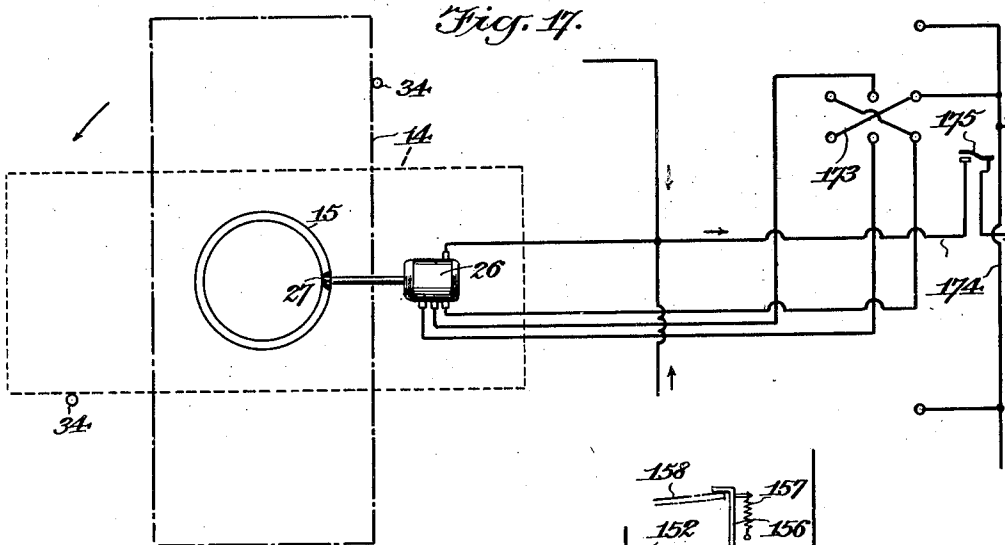
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Fig. 19.

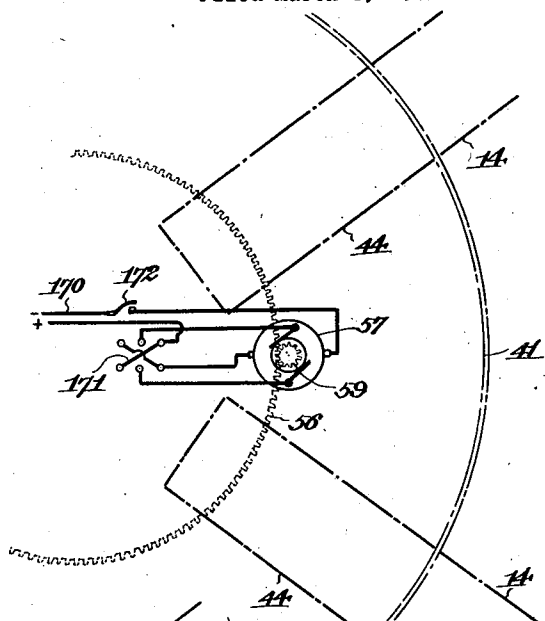


Fig. 20.

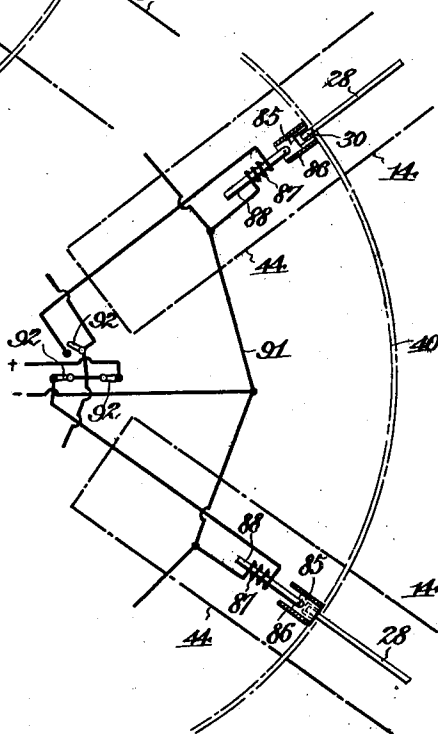
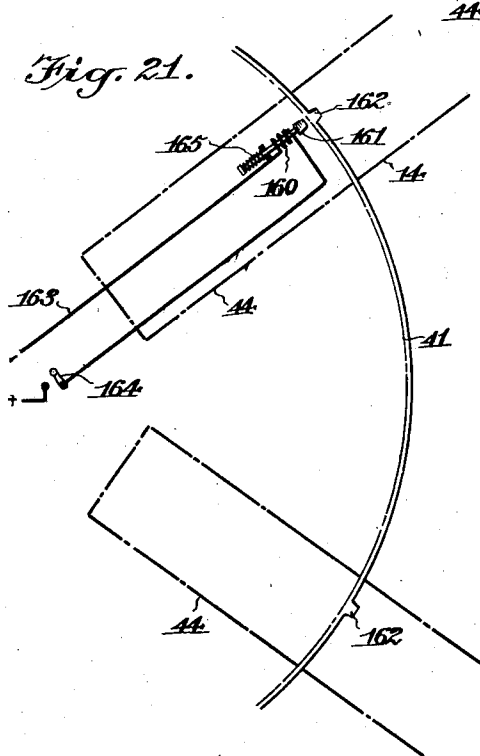


Fig. 21.



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UNITED STATES PATENT OFFICE

1,925,442

GARAGE

Herbert L. Fournier, Nutley, N. J.

Application March 1, 1932. Serial No. 596,104

14 Claims. (Cl. 214—16.1)

This invention relates to a power automobile garage system.

One of the objects of the invention is the provision of a power system garage for receiving, transferring, parking and delivering the automobiles in an expeditious manner.

Another object of the invention is to be able to expedite the movement of automobiles into the garage during rush hours.

Another object of the invention is the provision of a power system garage in which the minimum of power is used in handling the automobiles.

Another object of the invention is to so store or park a relatively large number of automobiles as to conserve space.

With the foregoing and other objects in view, the invention resides in the combinations, construction and operation of the parts hereinafter fully described and illustrated in the accompanying drawings, in which

Figure 1 is a side elevation of a garage from sub-street level to a point short of the top thereof, portions being broken away to show certain features;

Figure 2 is an enlarged floor plan of the garage or building showing the arrangement of automobile parking, receiving and transferring cradles, and also showing the elevator with its assembly of automobile receiving and transferring units;

Figure 3 is a sub-street level plan of the garage or building, showing its arrangement of the automobile receiving and transferring units, and also showing the elevator with its assembly of automobile receiving and transferring units.

Figure 4 is an enlarged section on the line 4—4 of Figure 3; an automobile being shown in dot and dash lines about to be transferred to the elevator;

Figure 5 is an enlarged transverse section of the type of track of the receiving and transferring units used.

Figure 6 is a view similar to Figure 4, but showing the automobile being transferred to the elevator;

Figure 7 is a plan view of the automobile receiving and transferring unit and a portion of the elevator shown in Figures 4 and 6;

Figure 8 is an enlarged fragmentary vertical section of the elevator showing an automobile in place on one of the receiving and transferring turnable assembly units;

Figure 9 is an enlarged fragmentary vertical section showing an automobile parked in one of the floor receiving and transferring cradles, and

also showing the relation of the elevator to either receive or transfer the automobile;

Figure 10 is a fragmentary vertical section showing an automobile being transferred from one of the floor cradles onto one of the receiving and transferring units of the turnable assembly on the elevator;

Figure 11 is an enlarged fragmentary section showing the means for giving impetus to the movement of an automobile in moving or being transferred from one of the receiving and transferring units on each floor or the elevator;

Figure 12 is a section of the control valve shown as a part of the means appearing in Figure 11;

Figure 13 is an enlarged fragmentary plan of one of the floors and the elevator showing certain features;

Figure 14 is an enlarged longitudinal section of one of the automobile boosters;

Figure 15 is a detail section showing the means for controlling the operation of the outgoing automobile receiving and transferring units;

Figure 16 is a section on the line 16—16 of Figure 15;

Figure 17 is a diagrammatic view of the means for controlling the operation of the turntable of the receiving and transferring units situated in relation to the street level;

Figure 18 is a diagrammatic view of the means for controlling the operation of the floor cradles;

Figure 19 is a diagrammatic view of the means for operating the assembly of receiving and transferring units on the elevator;

Figure 20 is a diagrammatic view of the means for controlling the devices shown in Figures 15 and 16;

Figure 21 is a diagrammatic view of the means for holding the assembly of receiving and transferring units on the elevator in place.

Stated, generally, the invention consists of an automobile garage system comprising a building or tower having floors, an elevator operable within the building or tower, means on the elevator to receive and transfer incoming automobiles, means situated in relation to the street level to receive and transfer the incoming automobiles to said first means when brought in relation thereto, and means on each of said floors to receive the incoming automobiles from the means on the elevator, when brought in relation thereto, and also serving to transfer said automobiles as outgoing automobiles to said means

on the elevator, when in receiving relation thereto, and said means on the elevator also serving to transfer the outgoing automobiles to the means situated at the street level of the building or tower, to thus deliver the automobiles to their respective owners.

The garage will include a building or tower 10 which may be of any exterior type of architecture. This building or tower is subdivided to provide a plurality of floors 11. The building or tower 10 may be of any preferred height so as to provide the desired number of floors 11. The automobiles enter the building 10 from the street level to the first floor, which is below the street level, through an entrance indicated at 12. The outgoing automobiles leave the building from the second floor, which is above the street level, as illustrated in Figure 1 of the drawings. It is to be understood that suitably inclined runways leading from the street level to the first and second floors of the building will be provided. An exit for the outgoing automobiles similar to the entrance 12 will be provided and may be situated above the entrance 12 or at a point remote therefrom.

In accordance with the invention, incoming automobile receiving and transferring units are situated at regular intervals within the building 10 at the first floor. These units are designated 13. Each of the units 13 includes a structure or turntable which rotates on a vertical axis. The said structure comprises a frame 14, gear 15 and shaft 16. The frame 14 consists of channel beams 17 connected together and spaced in parallel relation by transverse tie members 18. The two intermediate members 18 are rigidly secured to the gear 15 on the top thereof and in this manner the frame 14 is turnable with the gear 15. The shaft 16 is secured to the gear 15 and depends downwardly therefrom into a bearing 19 anchored in the bottom of a pit 20. The unit 13 also includes beams 21 in the form of angle irons which are respectively supported by the beams 17. Each beam 21 is pivotally connected at one end with the related beam 17 as at 22 so as to move up and down from a position at rest on the beam 17 to a position in which it is disposed at an angle in relation to the beam 17. The beams 21 constitute a track for the wheels of each automobile driven thereon. If desired, each track beam 21 may be provided with means 23 to receive one of the front wheels of the automobile and thus prevent unintentional movement of the automobile when it is brought to a standstill on the turntable. The beams 17 have traction rollers 24 which travel on a circular track 25 laid on the floor in order to facilitate the turning of the turntable. The turntable is operated by a motor 26 positioned in the pit 20; the shaft of the motor having a pinion 27 which meshes with the gear 15. The means for controlling the operation of the motor 26 will be described hereinafter. The turntable of each unit 13 is turned approximately 90° in opposite directions. When the turntable frame 14 is in the position indicated by dotted lines in Figure 7 it will be disposed to receive an automobile which will be driven on the track beams 21, which are then resting on the beams 17. The turntable frame 14 is then turned by operating the motor 26 to bring the frame 14 to the position shown in full lines in Figure 7, in which position the frame is disposed for transferring the automobile onto means to be hereinafter described for conveying the automobile to any one of the floors 11 for parking same until wanted. The automobile is

transferred from the turntable frame 14 by elevating the track beams 21 to inclined position. This is accomplished by any practical means and in the present instance it consists of a bifurcated lever 28 arranged in the pit 20 below the gear 15, the fulcrum or pivot 29 of the lever being positioned on the bottom of the pit 20. One end of the lever 28, the actuated end, is upturned as at 30, and the opposite ends, the actuating ends, are upturned as at 31. The end 30 of the lever 28 is actuated by means to be hereinafter described to rock the lever 28 on its fulcrum and to cause its ends 31 to push upwardly on a transverse member 32 connecting adjacent ends of the track beams 21 thereby causing them to move upwardly on their pivots 22. This will cause the automobile to move forwardly under the action of gravity to travel on the beams 21, and the said beams 21 will also guide the automobile. The track beams 21 may be inclined 10° or 15° which will cause an automobile to travel a distance greater than its own length under the action of gravity. It is to be understood that the brakes of the automobile will be fully released after it has been driven to a position on the track beams 21.

The pit 20 is closed at the top by a closure plate 33, to protect the operating parts within the pit 20. This plate 33 occurs directly below the frame 14. Removable stops 34 limit the movement of the turntable frame 14 to desired positions.

In order to convey automobiles between the floors 11 there is provided an elevator or hoist. The term elevator or hoist is to embrace the platform 40, and also the means for raising and lowering the platform 40, and also suitable control means which will be arranged on the platform conveniently accessible to an attendant who will ride on the platform. Inasmuch as the elevator platform raising and lowering means and the control means therefor may be of any well known standard type, these features have been omitted from the drawings. The building or tower 10 has a centrally located shaft or well in which the elevator platform 40 travels. The platform 40 is circular, and each of the floors 11 has a circular opening to accommodate the platform, and the said openings define the shaft for the platform 40. An assembly of automobile receiving and transferring units is arranged on the platform 40, and this assembly turns or rotates for a purpose to appear. The assembly includes a turntable 41 having rollers 42 on the under side thereof which travel on circular tracks 43 secured to the elevator platform 40. The automobile receiving and transferring units or devices designated 44 are arranged on the turntable 41 and are disposed radially and are spaced equidistantly to correspond to the arrangement of the units 13 so as to be brought into registration with the tracks 21 of the units 13. Each unit 44 comprises channel beams 48 arranged in spaced parallel relation and secured to the turntable 41, and angle irons which constitute tracks 49. These tracks 49 are arranged respectively for pivotal movement into and out of the channel beams 48 and are pivotally connected as at 50 to the outer ends of the beams 48, so that the tracks may be moved from a normal horizontally disposed position within the beams 48 to an inclined position in which the tracks incline downwardly toward the circumferential edge of the turntable 41. The tracks 49 have means to give impetus to the movement of the automobile in response to the tilting of the tracks 49 in transferring the automobile therefrom. The said

means is in the form of an arcuate booster 51 pivotally connected as at 52 with the inside end of each of the tracks 49. Each booster 51 normally rests on a support 45 on the turntable 41.

The booster 51 is arcuate to conform to the shape of the wheel of the automobile which it receives when the automobile is received by the tracks 49. Each booster 51 may have a roller 46 on its free end so as not to injure the tires. A link 53 is pivotally connected at one end with the turntable 41 as at 54, and its other end is pivotally connected with the booster 51 beyond its point of pivotal connection 52 as at 55. It will now be understood that when the tracks 49 are moved upwardly to bring them to inclined positions, the boosters 51 will be caused to move on their pivots 52 thereby acting on the wheels of the automobile causing impetus to the movement of the automobile in moving off the units 44.

In order to turn or rotate the turntable 41 together with the assembly of units 44, there is provided a ring gear 56 which is secured in place on the under side of the turntable 41. An electric motor 57 is mounted on a bracket 58 on the under side of the elevator platform 40. A pinion 59 on the shaft of the motor 50 meshes with the gear 56. It will be apparent that the motor 57 serves for rotating the turntable 41 through the intervention of the gear 56 and pinion 59. The means for controlling the motor 57 will be described hereinafter. It is to be understood that the elevator platform will be brought to a desired level in relation to the lower floor having the units 13 so that the tracks 49 of the units 44 may be brought into registration with the tracks of the units 13. The tracks 49 of the units 44 may be brought into alinement with the tracks 21 of the units 13 by virtue of the turntables 41 and 14, respectively, of the units 44 and 13.

The tracks 49 of the units 44 are severally tilted to transfer the automobiles therefrom by means under the control of an attendant on the elevator turntable 41. The said means may be of any suitable power type. In the present instance the means employed is a pneumatic-mechanical means. On reference to Figure 8, it will be apparent that this pneumatic-mechanical means includes an air cylinder 60 disposed centrally of the elevator platform 40 and extending beneath the same. A smaller cylinder 61 is mounted on the cylinder 60 and provides an air reservoir 62. This reservoir 62 is in communication with the interior of the cylinder 60 at the top thereof by a check valve 63. The cylinder 60 has a check valve 64 at the top thereof to permit air to enter the cylinder 60 and to prevent air from flowing out of the cylinder 60. A piston 65 is arranged for operation in the cylinder 60 and has a rod 66 which extends through a guide 67 on the lower end of the cylinder 60. A casing 68 is arranged on top of the cylinder 61. This casing 68 provides an air chamber 69 which may receive air from the reservoir 62 by operating a control valve 70 which is normally closed. The valve 70 includes a handle 71 pivoted as at 72. The handle 71 may be swung to operate a check valve 73 to release air from the chamber 69. A small cylinder 74 is secured to the under side of the turntable 41 in relation to the tracks 49 of each of the units 44. A piston 75 operates in the cylinder 74 and is provided with a rod 76 which is connected with the tracks 49. The cylinder 74 has air delivered thereto by a pipe 77 connected with the casing 68, and in communication with the chamber 69. When the elevator

platform 40 descends to its lowermost level, the lower end of the rod 66 will encounter a block 78 on the subbasement floor. This will cause the air in the cylinder 60 above the piston 65 to be forced into the reservoir 62 through the valve 63. The lower end of the rod 66 has a head 79 which is engaged by spring actuated jaws 80 pivotally connected with the block 78. These jaws 80 engage the head 79 in the downward movement of the elevator platform 40. As the elevator platform 40 moves upwardly, the jaws 80 in engagement with the head 79 hold the rod 66 and its piston 65 against movement until the piston 65 encounters the guide 67, whereupon the jaws 80 will be forced to release the rod 66. Under this action air will be drawn into the cylinder 60 through the check valve 64. This air is then forced into the reservoir 62 when the elevator platform 40 is brought down to its lowermost level, as will be understood. It will now be apparent that when the attendant presses downwardly on the handle 77 to actuate the valve 70, air will flow from the reservoir 62 into the pipes 77 thereby tilting or moving the tracks 49 to inclined positions, as shown in Figure 9. In this way the automobile on the tracks 49 of the units 44 may be transferred from the elevator platform. In this connection it will be obvious that air flowing through the pipes 77 will force the pistons 75 upwardly causing the tilting of the tracks 49. The air in the cylinders 74 below the pistons 75 will be released by swinging the handle 71 to a position to operate the valve 73.

When the tracks 21 of the units 13 are disposed radially with respect to the vertical axis of the elevator platform, and therefore in alinement with the tracks 49 of the units 44, the said tracks 21 will be tilted in response to the downward movement of the elevator platform 40. To this end there is provided an actuator 85 for each lever 28. Each actuator 85 is in the form of a block and has guided movement in a guide 86 secured to the under side of the platform 40 near the circumferential edge thereof. The actuator 85 is moved into and out of an actuating position by a solenoid 87 secured to the under side of the platform 40. The core 88 of the solenoid is connected with the actuator 85. The core 88 is under the influence of a spring 89 which has a normal tendency to urge the core 88 in one direction to retain the actuator 85 in a retracted non-actuating position. The circumferential edge of the elevator platform 40 has a notch 90 therein in alinement with each of the actuators. The cores 88 are disposed radially, consequently the actuators 85 will be moved radially outward and inward. Each actuator 85 is moved outwardly to its actuating position by allowing current to flow through the coil of the related solenoid and this is accomplished by connecting the coil in series with any electric circuit 91 having a suitable source of electrical energy, and a control switch 92 arranged on the elevator platform above the turntable 41 for the convenience of the attendant. See diagram Figure 20. By closing each switch 92, the particular actuator 85 will be moved to its actuating position so as to encounter the end 30 of the related lever 28 to rock the latter causing the tilting elevation of the particular track beams 21, to cause the automobile to be transferred onto the track beams 49 in alinement therewith.

In accordance with the invention each floor 11 has a suitable number and arrangement of automobile parking, receiving and transferring units,

devices or cradles 100. These units 100 are arranged radially in order to aline with the track beams 49 of the units 44 on the elevator platform. The units 100 are substantially similar to the units 44. Each unit 100 includes channel beams 101 arranged in spaced parallel relation and these beams are rigidly secured to the floor 11, and may also be connected together by transverse members such as those designated 18 in Figure 5. Track beams 102 in the form of angle irons are tiltable respectively in relation to the beams 101, and each is therefore pivotally connected at one end with the related beam 101 as at 103. The beams 102 are connected together to move in unison by a transverse member 104. Each of the beams 102 has means thereon to give impetus to the movement of the automobile when being transferred onto the elevator units 44. This means is substantially similar to that applied to the beams 49 of the units 44, shown in Figure 14. On reference to Figure 11 it will be apparent that each beam 102 has an arcuate booster 105 pivotally connected, as at 106, with one end thereof. The booster is limited in its downward movement by the member 104. The free end of the booster has a roller 107 engageable with the tire of the wheel of the automobile. A link 108 has one end thereof pivotally connected with an extension 109 on the beam 100, as at 110, and the opposite end of the link is pivotally connected with the booster 105 at one side of its pivot 106, as at 111. It will be apparent that when each booster 105 is in its down position, it will receive one of the wheels of the automobile, and will prevent unintentional movement of the automobile. It will be apparent that when the track beams 102 are tilted, each booster 105 will be caused to move relatively to the beams 102 thereby giving impetus to the movement of the automobile as it rolls by gravity along the beams 102.

The track beams 102 of each unit 100 will be tilted by any practical means under the control of an attendant on the turntable 41. The said means, by way of example, in the present instance consists of a hydraulic-mechanical means. Referring now more particularly to Figures 10, 11 and 12, it will be apparent that said hydraulic-mechanical means includes a pump 115, and a water tank 116 connected with the pump. The pump 115 is operated by an electric motor 117 through the intervention of a belt 118. A pipe 119 leads to a valve 120 for each unit 100. The valve 120 includes a casing 121 with which the pipe 119 is connected by a branch pipe 122. The casing 121 has an outlet 123 which is connected with a return flow pipe 124 by a branch pipe 125. The pipe 124 is connected with the tank 116. The casing 121 has an outlet connection 126 which leads to the lower end of a cylinder 127. A rod 128 forming a part of the valve 120 has sliding movement in relation to the casing 121. The rod has an opening 129 therein which may be brought into and out of registration with the outlet 123. A valve member 130, on a stem 131 connected with the rod 128, controls an orifice or port 132 within the valve casing 121. It will be apparent that when the rod 128 is moved to its in position, the valve member 130 will be off the seat surrounding the port 132, and the opening 129 will be out of registration with the outlet 123. This will allow liquid to enter the valve casing from the tank 116 through the pipes 119 and 122. The liquid will flow through the port 132 into the outlet connection 126 into the lower end of the cylinder 127. A piston 133 operates in the cylinder 127 and has

a rod 134 which is pivotally connected as at 135 with the member 104 connecting the related track beams 102. It will now be understood that the fluid entering the cylinder 127 will force the piston 133 upwardly causing the track beams 102 to tilt or move to an inclined position for transferring the automobile. The rod 128 of the valve 120 is under the influence of a spring 136 which returns it to a normal position causing the valve member 130 to close the port 132 and bringing the opening 129 in registration with the outlet 123, so that the liquid in the cylinder 127 may flow out of it back into the tank 116 through the pipes 125 and 124.

Mechanism is provided for operating the valves 120, and also to start the motor 117 to selectively cause the tilting of the track beams 102 of the units 100. The said mechanism includes push rods 140 for operating the valve rods 128. Each rod 140 is mounted for axial movement in guides 141 depending from the floor 11. The rod 140 is under the influence of a spring 142 arranged between a collar 143 on the rod 140 and one of the guides 141. The spring 142 returns the rod 140 to a retracted position. The rod 140 is limited in its movement to the retracted position by a collar or stop 144 on the rod which encounters the other guide 141. Solenoids 145 are employed for operating the rods 140 and are secured in place on the under side of the turntable 41 at its circumferential edge. The core 146 of the solenoid 145 is moved to a retracted position by a spring 147 surrounding the core and in engagement with the coil of the solenoid and the core itself. When the turntable 41 is brought to a position so that its units 44 will be in registration with the units 100, each of the solenoid cores 146 will be in axial alinement with a certain one of the push rods 140. In the present instance there are five units 44, and there will be five solenoids 145 to operate a corresponding number of rods 140. The coils of the solenoids 145 are connected in series in an electric circuit 148 having a suitable source of electric energy. The circuit 148 includes selecting switches 149 and a master switch 150. It is to be understood that there will be five switches 149, one for each solenoid 145. By closing any number of the switches 149 any number of the solenoids 145 may be energized by closing the switch 150, to effectuate the movement of the selected rods 140. The motor 117 is connected in a circuit 151. Each valve rod 128 has a contact 152 insulated therefrom on one end, and each rod 140 has a contact 153 insulated therefrom on one end. The contacts 152 and 153 are electrically connected in series in the circuit 151. It will now be understood that when the master switch 150 is closed to energize any selected number of solenoids 145, the cores 146 will be moved from their retracted positions to cause the movement of the selected rods 140. In this manner current will be caused to flow to the motor 117 which will operate the pump 115 causing the liquid in the tank to flow to the valves 120 which are opened and perform the functions hereinabove described to cause tilting of the particular track beams 102. In this manner certain automobiles may be transferred from the parking units or cradles 100 to the units 44 in registration therewith. The circuit 151 includes a pair of contacts 154 and 155 for each unit 100. The contact 154 is fixed in any suitable manner, whereas the contact 155 is carried by a switch member 156 for up and down movement in relation to the track beams 102 of the related unit 100. The member 156 is un-

der the influence of a spring 157 which yieldingly holds the member 156 in a position in which its contact 155 is in engagement with the contact 154. As the related track beams are moved upwardly by the piston 134, the member 156 will be moved upwardly by an arm 158 connected with the beams 102 causing disengagement of the contact 155 with the contact 154 and the stopping of the motor 117. As the track beams 102 return to the normal horizontally disposed position, the related switch member 156 will be drawn down by the spring 157 to reengage the contact 155 with the contact 154 to close the circuit 151 at this point. When the master switch 150 is opened, the springs 142 will return the rods 140, and as a consequence the particular valve rods 128 which were under the influence of the rods 140 will be returned to their retracted positions by the springs 136, thereby allowing return flow of the liquid from the cylinders 127 to the tank 116. It is to be understood that the switches 149 and the switch 150 will be positioned above the turntable 41 on the elevator platform within easy and convenient reach of an attendant to control the movement of the automobile.

In accordance with another feature of the invention, the turntable 41 is retained in different positions around its axis to prevent unintentional turning movement thereof when automobiles are being transferred from the units 44 to certain of the units 100, and when they are transferred from the units 100 to the units 44. To this end there is provided a solenoid 160 carried by the turntable 41 on the under side thereof. The core 161 of the solenoid 160 is in the form of a latching bolt to be received in any one of five notches 162 in the circular wall of each of the floors 11 surrounding the elevator shaft. The coil of the solenoid 160 is connected in an electric circuit 163 to include a control switch 164 under the control of the attendant. The core 161 is moved to a retracted position by a spring 165. When the switch 164 is closed, the coil of the solenoid 160 will be energized, causing the core to move outwardly to engage in the adjacent notch 162, thus preventing rotation of the turntable 41.

The motor 57 which operates the turntable 41 is controlled by an electric circuit 170 which includes a pole changing switch 171 and a control switch 172. The provision of the switch 171 makes it possible to turn the turntable 41 in either direction by closing the switch 172. These switches 171 and 172 will be in reach of the attendant on the turntable.

In order to selectively control the operation of the motors 26 of the units 13 to move the frames 14 and their track beams 21 to the receiving and transferring positions, there is provided means presently to be described. A pole changing switch 173 for each motor 26 is connected in a main circuit 174, and this circuit also includes a master switch 175 operated by the attendant. The switch 175 will be disposed at a convenient location at the floor 11 of the units 13. It will be apparent that by setting each of the switches 173 its related motor 26 may be caused to rotate in one direction or the other to cause the related turntable frame 14 to move to a receiving position as shown in dot and dash lines, and to a transferring position as shown in dotted lines, Figure 17.

In accordance with the invention there are provided on the second floor, a half story above the street level, automobile receiving and trans-

ferring units 180, which are similar to the units 13. In the present instance, there are five units 13 and five units 180 to correspond to the number and arrangement of the units 44 on the turntable 41. The units 180 are intended principally for receiving outgoing automobiles from the units 44 on the turntable 41. However, in rush hours when numerous automobiles are being brought for parking in the garage, the units 180 will be used for incoming automobiles in addition to the units 13. It will be apparent that the actuators 85 may be brought into use for operating the levers 28 of the units 180 as well as the levers 28 of the units 13; and that, when said actuators 85 are retracted, the elevator platform 40 will clear the projecting ends 30 of the levers 28 of the units 180.

On reference to Figure 3 it will be apparent that the building or tower 10 of the garage has a horizontal entrance or exit for the automobiles disposed approximately at street level extending around the elevator shaft. When the track beams 21 of the units 13 are disposed in the receiving positions, automobiles may pass thereover to the rearmost units 13. The automobiles may then be transferred to the units 44 on the elevator which may be used to convey the automobiles to any floor 11. The automobiles may then be transferred to any selected parking units 100, and to this end the turntable 41 may be turned to select any vacant units 100. It will also be obvious that the automobiles may be transferred from the units 100 to the units 44 on the turntable 41 of the elevator to be conveyed down to the floor level of the units 180 for delivery to the owners.

It is to be understood that the units 13 may be used for discharging outgoing automobiles as well as the units 180 to expedite delivery during rush hours. Accordingly exits may be provided in addition to the passage 12. Also a similar provision may be made for the units 180.

What is claimed is:—

1. In a vehicle parking garage, the combination of a building having provision through which incoming and outgoing vehicles may pass, a hoist operable within said building, an assembly of radially disposed vehicle receiving and transferring devices turnable on a vertical axis on said hoist, and an arrangement of vehicle receiving and transferring devices within said building at different levels with which said assembly may register, said devices on the hoist being adapted to receive vehicles from or to transfer them to the devices within the building at each level.

2. In a garage, in combination, a hoist, a turnable structure on the hoist including a radial arrangement of rockable automobile tracks, and apparatus to rock said tracks to deliver incoming automobiles therefrom to park them in the garage.

3. In a garage, in combination, an elevator, an arrangement of rockable tracks each adapted to receive an automobile and to transfer it to the elevator under the action of gravity by rocking the tracks, means on each of said tracks acted on by separate means on the elevator in its downward movement to a certain level to rock said tracks.

4. In a garage, in combination, an elevator, an arrangement of rockable tracks each adapted to receive an automobile and to transfer it to the elevator under the action of gravity by rocking the tracks, each of said tracks having its axis on which it rocks at or near one end thereof, a lever arranged in operative relation to each of said

tracks, and said lever being acted on by separate means on the elevator in its movement to a certain level, to rock its track.

5. In a garage, in combination, a hoist, a turn-
able structure on the hoist including a radial ar-
rangement of rockable automobile tracks, appara-
tus to rock said tracks to deliver incoming auto-
mobiles therefrom to park them in the garage, and
means operable to cause said structure to turn
to different positions so that the tracks may re-
ceive and also transfer the automobiles.

6. In an automobile garage, means for elevat-
ing and lowering the automobiles within the
garage, said means including a turnable structure
having radially disposed rockable pairs of auto-
mobile supporting beams, said beams being con-
nected in spaced relation; mechanism to turn
said structure, and mechanism to rock said beams
to cause the automobile to travel along the beams
off the same.

7. A vehicle receiving and transferring appara-
tus including a cradle mounted to rock on a trans-
verse horizontal axis, and means on one end of
said cradle and movable relative thereto which
is operated by the rocking movement of the cradle
to give impetus to the movement of the vehicle in
moving it from the cradle by rocking the latter.

8. An automobile receiving and transferring ap-
paratus including a cradle mounted to rock on a
transverse horizontal axis, said cradle consisting
of interconnected beams in the form of angle
irons constituting rails on which the wheels of the
automobile travel, and means on the cradle and
movable relative thereto which are operated by
the rocking movement of the cradle, and which
act on certain of said wheels, to give impetus to
the movement of the automobile in moving it
from the cradle by rocking the latter.

9. A vehicle receiving and transferring appara-
tus including a cradle mounted to rock on a trans-
verse horizontal axis, and relatively movable
means on one end of said cradle adapted to act on
certain of the wheels of the vehicle and which is
operated by the rocking movement of the cradle
to give impetus to the movement of the vehicle
in moving it from the cradle by rocking the latter.

10. A vehicle receiving and transferring ap-
paratus including a cradle mounted to rock on a
transverse horizontal axis, a booster pivoted on
one end of the cradle, means connected with the
booster at one side of its pivotal connection,
whereby the booster will act on the vehicle in re-
sponse to the rocking movement of the cradle to
give impetus to the movement of the vehicle in
moving it from the cradle by rocking the latter.

11. An automobile receiving and transferring
apparatus including a cradle mounted to rock on a
transverse horizontal axis, said cradle consisting
of interconnected beams in the form of angle irons
constituting rails on which the wheels of the au-
tomobile travel, a booster pivoted to one end of each

beam, means connected with each booster at one
side of its pivot, whereby each booster will act on
one of the wheels of the vehicle in response to the
rocking movement of the cradle to give impetus
to the movement of the vehicle in moving it from
the cradle by rocking the latter.

12. In a garage, in combination with a build-
ing having a horizontal entrance passage dis-
posed approximately at street level extending
around in the building, a plurality of similar
automobile receiving and transferring devices,
each device including a track tiltable on a hori-
zontal axis and turnable on a vertical axis, said
track being turnable on the vertical axis to a
receiving position and a transferring position,
said track in its transferring position being dis-
posed radially with respect to a central point in
the building, and said track when tilted causing
an automobile disposed thereon to travel there-
from by the action of gravity.

13. In a garage, in combination with a build-
ing having a horizontal entrance passage dis-
posed approximately at street level extending
around in the building, a plurality of similar
automobile receiving and transferring devices,
each device including a track tiltable on a hori-
zontal axis and turnable on a vertical axis, said
track being turnable on the vertical axis to a
receiving position and a transferring position,
said track in its transferring position being dis-
posed radially with respect to a central point in
the building, and said track when tilted causing
an automobile disposed thereon to travel there-
from by the action of gravity, an elevator oper-
able within the building to convey the automobiles
up and down to different floor levels, and means
on the elevator to receive the automobile from
said devices for conveyance by the elevator.

14. In a garage, in combination with a build-
ing having a horizontal entrance passage dis-
posed approximately at street level extending
around in the building, a plurality of similar
automobile receiving and transferring devices,
each device including a track tiltable on a hori-
zontal axis and turnable on a vertical axis, said
track being turnable on the vertical axis to a
receiving position and a transferring position,
said track in its transferring position being dis-
posed radially with respect to a central point in
the building, and said track when tilted causing
an automobile disposed thereon to travel there-
from by the action of gravity, an elevator oper-
able within the building to convey the automobile
up and down to different floor levels, and means
turnable about a vertical axis on said elevator
adapted to receive the automobiles from said
devices, and for transferring the automobiles
therefrom when the elevator is stopped at any
one of said levels.

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