Aug. 18, 1931. B. H. ALLEN 1,819,806

SERVICE STAND AND SERVING APPARATUS

Filed May 25, 1929 4 Sheets-Sheet 1

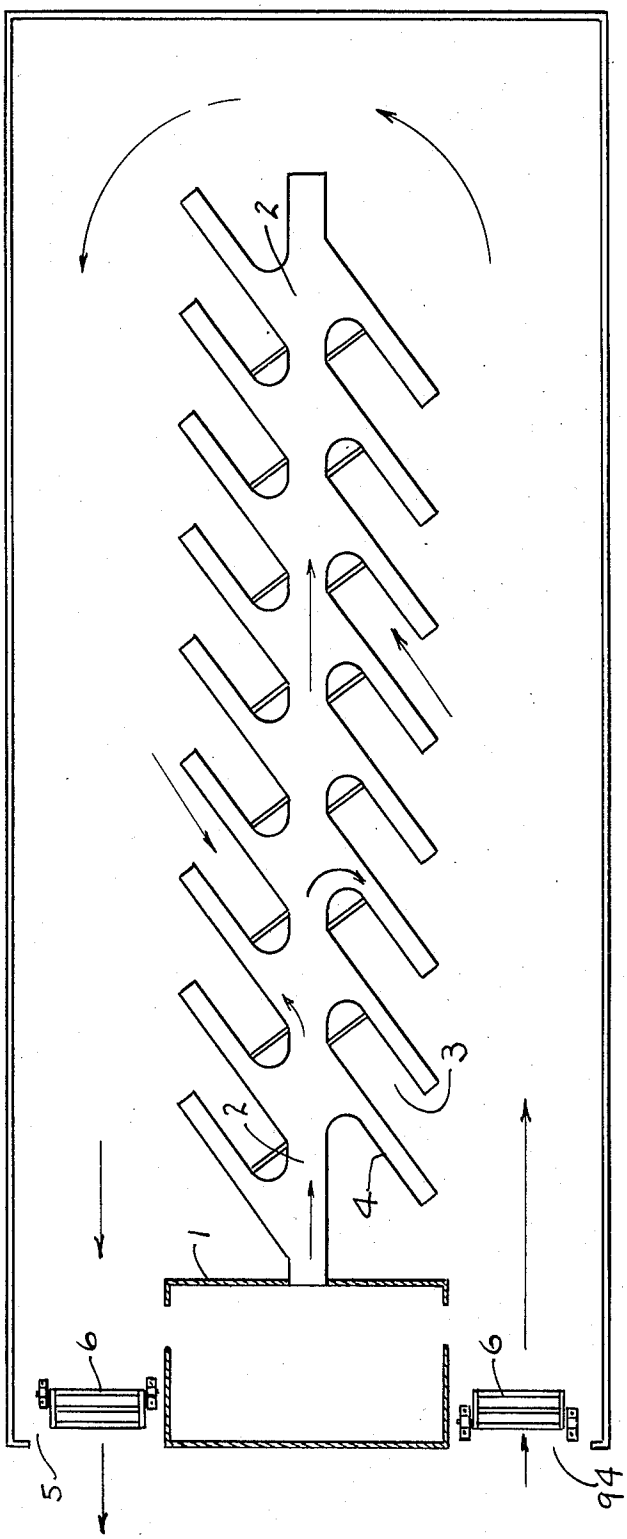


Fig. 1.

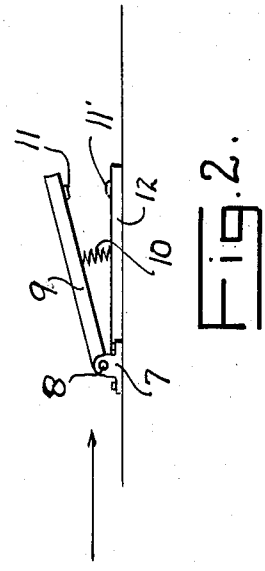


Fig. 2.

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SERVICE STAND AND SERVING APPARATUS

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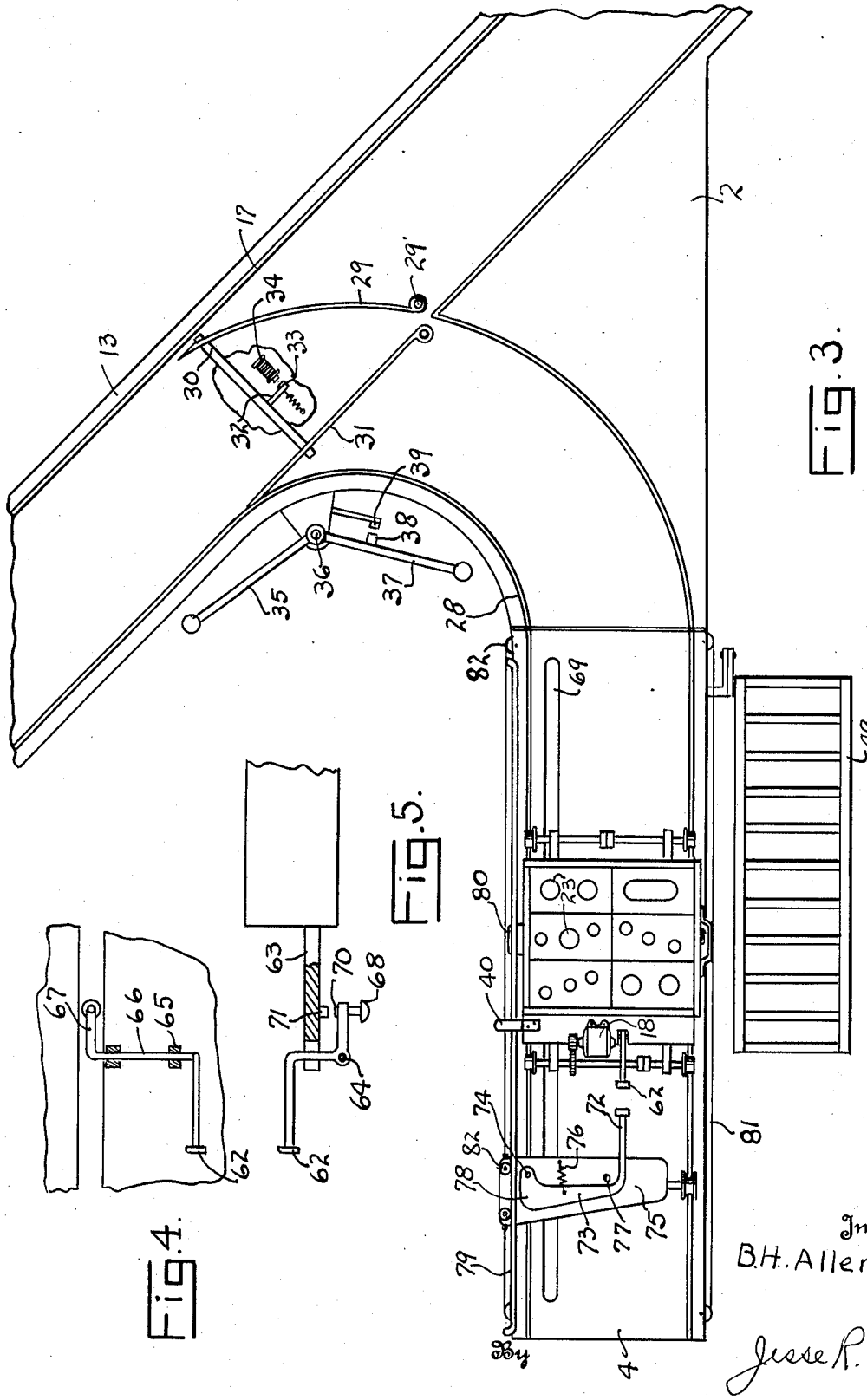


Fig. 3.

Fig. 5.

Fig. 4.

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SERVICE STAND AND SERVING APPARATUS

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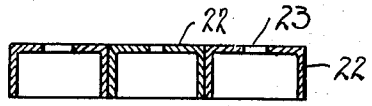


Fig. 10

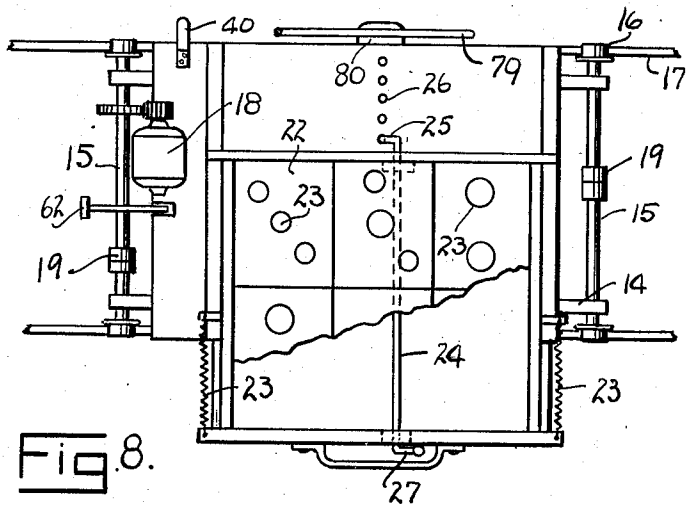


Fig. 8.

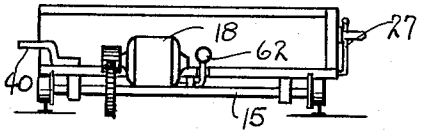


Fig. 9.

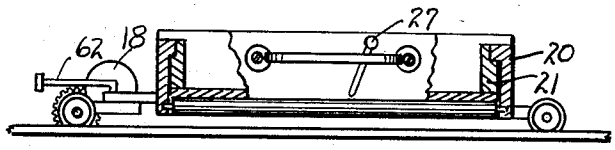


Fig. 7

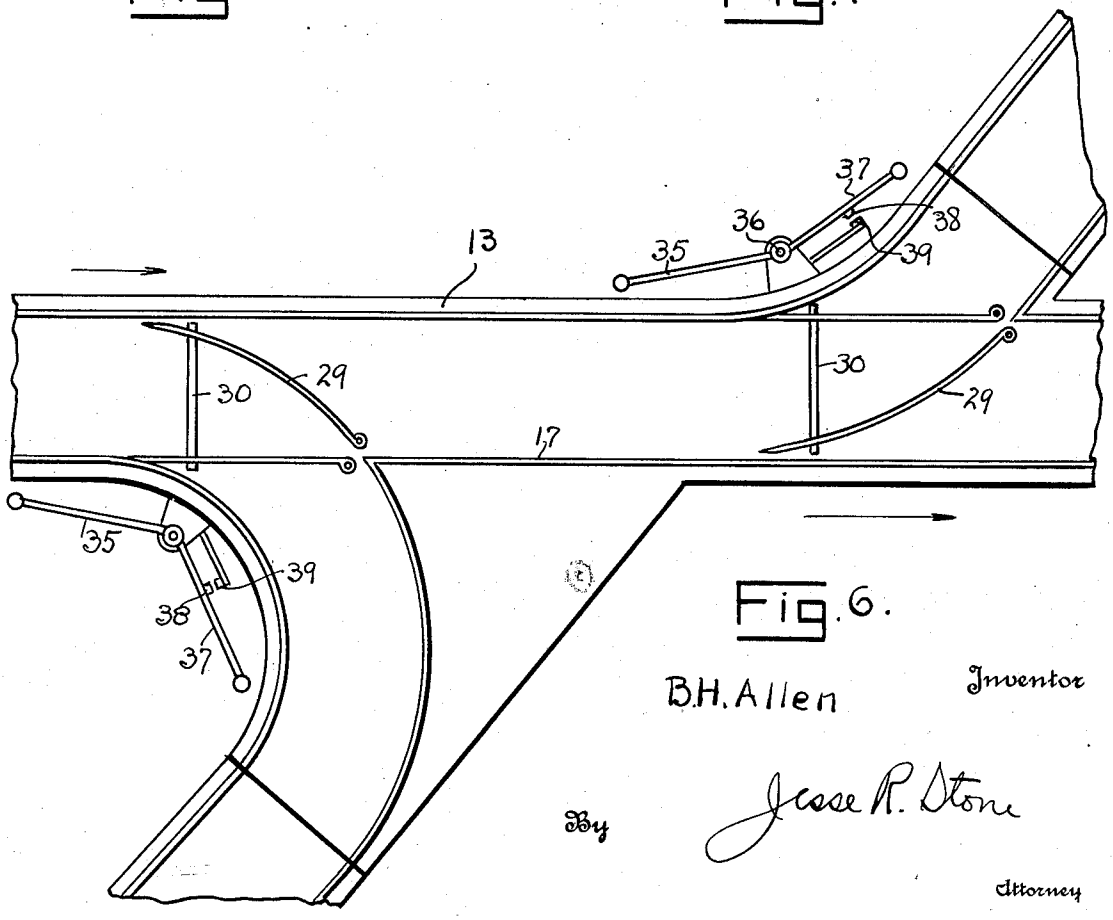


Fig. 6.

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SERVICE STAND AND SERVING APPARATUS

Filed May 25, 1929 4 Sheets-Sheet 4

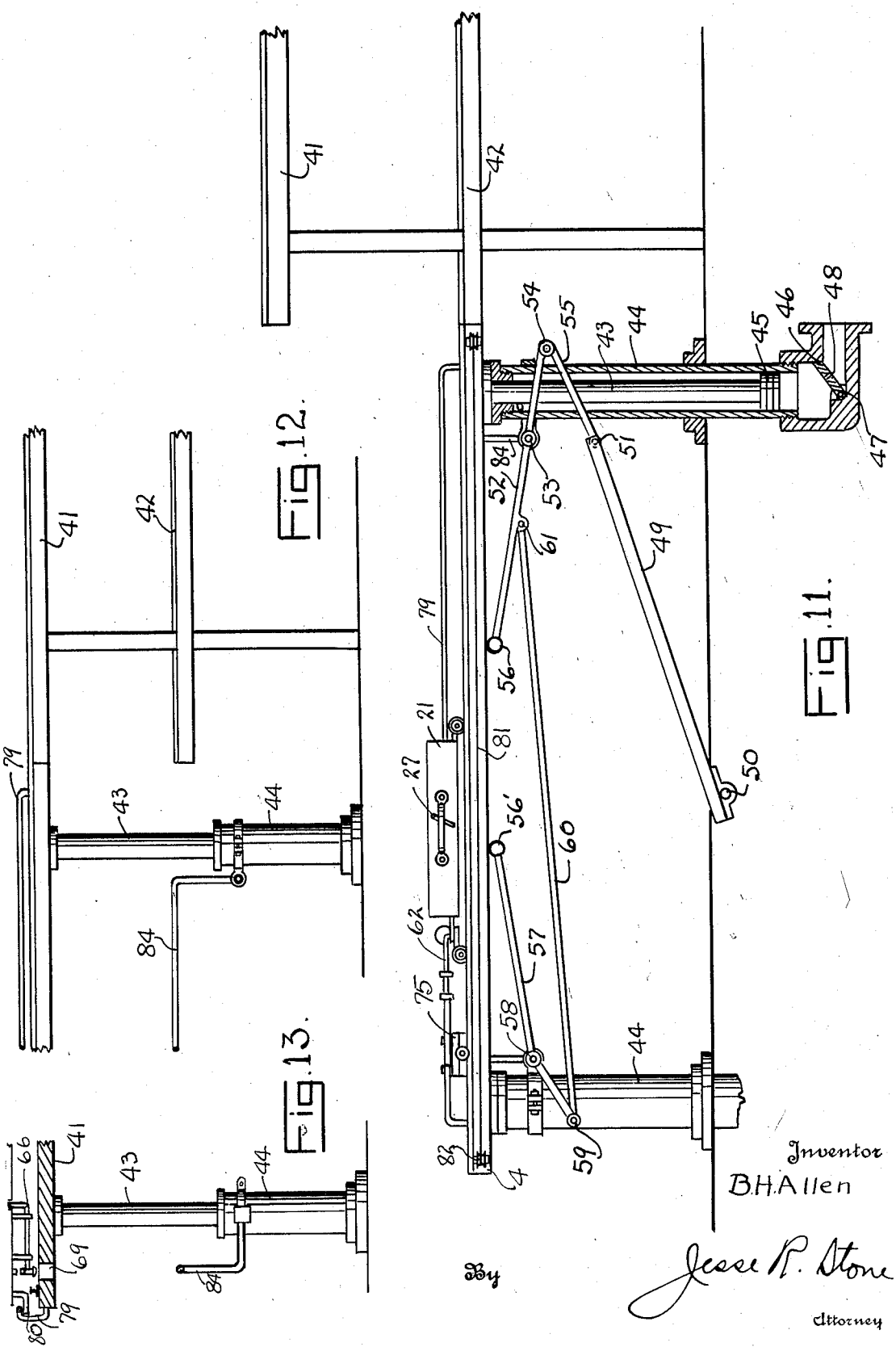


Fig. 12.

Fig. 11.

Fig. 13.

Patented Aug. 18, 1931 1,819,806

UNITED STATES PATENT OFFICE

BENJAMIN H. ALLEN, OF BEAUMONT, TEXAS

SERVICE STAND AND SERVING APPARATUS

Application filed May 25, 1929. Serial No. 365,839.

My invention relates to an apparatus whereby foods or drinks may be served to customers from a service stand while said customers are seated in their automobiles.

In the serving of drinks and food from a service stand to customers in automobiles it is quite a problem to arrange for the parking of the vehicles in such manner that a maximum number may be served from a parking place of limited area, and it is an object of my invention to provide a stand in which the parking places for the vehicles are arranged in the most convenient and compact manner and to provide a driveway aproaching and leaving the parking spaces whereby the vehicles are forced to drive in at a proper entrance and leave by a separate exit so as to force the drivers to drive their cars in the proper direction.

It is another object of the invention to provide a means for automatically serving food or drink to those in the vehicles when they are parked in one of the spaces along the serving stand. I contemplate the provision of a trackway along the stand with means to move trays along the trackway and upon a table adjacent to the car in which the patrons are sitting.

I desire to provide automatic means for returning the tray when the vehicle has moved out from the stall in which it was served so that the said tray with the dishes thereon may be received at the central stand.

The invention contemplates the provision of automatic means for guiding each separate tray to the stall in which the car is parked and to deliver the same upon the table adjacent the said car and the invention therefore consists in automatic devices whereby the tray is properly guided and stopped at the proper place and is again started and moved back to the central stand by automatically operated devices.

Referring to the drawings herewith, Fig. 1 is a plan view illustrating the arrangement of parking stalls along a serving stand and showing the route of the vehicles into and from the area upon which the stand is placed.

Fig. 2 is a side elevation of a one-way gate, which may be placed at the entrance and exit from the lot upon which the stand is placed so as to guide the traffic in one direction only.

Fig. 3 is a broken plan view of a portion of the serving stand showing the means by which the tray may be guided onto the table adjacent one of the parking places.

Figs. 4 and 5 are broken plan and side views respectively of an automatically operated switch, by means of which the current controlling the movement of the trays is turned on or off as the case may be.

Fig. 6 is a plan view similar to that shown in Fig. 3 but illustrating the arrangement of the adjacent tracks upon which the trays may be moved along the stand.

Fig. 7 is a side view partly in section showing one of the movable trays mounted to ride along the tracks upon the stand.

Fig. 8 is a top plan view of the said tray, a portion thereof being broken away for greater clearness.

Fig. 9 is a front view of the said tray mounted upon its supporting carriage.

Fig. 10 is a transverse section thru a portion of the tray.

Fig. 11 is a side view partly in section showing the table on which the food is delivered adjacent the car and illustrating the means by which the table is moved from one track to another.

Fig. 12 is a broken side elevation showing the forward support for the table upon which the tray is delivered.

Fig. 13 is a broken view of the tables shown in Fig. 12 and showing a part of the tray adapted to operate on the table, certain parts being in section for greater clearness.

The service stand which I contemplate constructing is arranged approximately as shown in Fig. 1. There is a central stand 1, which will be equipped for the preparation and delivery of the food and drinks to the customers. This stand is preferably toward the forward or street side of the lot upon which the stand is constructed. Extending inwardly from the central service stand 1 is a delivery stand 2. The general shape of the stand 2 is disclosed in Fig. 1 although the tracks upon which the trays are moved are not shown herein.

The stalls indicated at 3, on each side of the stand, are arranged so that the automobiles driving in the front gate 94 will freely move into the said stalls which are arranged on an angle to the stand for easy parking. At one side of each stall is a table 4, upon which the tray may be moved. It will be noted that the stalls on one side of the stand are arranged in a direction opposite to that of the stalls on the opposite side, thus allowing for the drivers of cars to enter the stalls on either side of the stand. When the cars drive from the lot they will pass out thru the exit gate 5.

The gates 6 at each end of the driveway are constructed preferably to allow traffic in one direction only, and in Fig. 2 I have shown a construction of the gate for this purpose which I prefer. It comprises a base block 7 at each side of the driveway, furnishing a mounting for a shaft 8 upon which the gate member 9 is pivoted. Said gate is held upwardly from a horizontal position by means of a spring 10. The gate is inclined away from the direction in which the car approaches said gate and it will be seen that with a gate such as is shown in Fig. 2, arranged at the entrance to the driveway, that the car will easily move inwardly onto the gate, depressing it so that it will form no obstruction to the entrance of the car. A similar gate 6 at the outlet will be inclined in the opposite direction to permit the car to move outwardly but preventing the entrance of cars at the exit gate, because of the direction of inclination of the gate relative to cars approaching the exit gateway. I may, if desired, provide electrical contacts 11 and 11′ between the lower side of the gate and a base member 12, so that, if desired, electrical signals may be given indicating the entrance or exit of vehicles from the lot upon which the stand is placed. This, however, forms no part of the present invention.

In carrying out my invention I contemplate the provision of a central track shown at 13 in Figs. 3 and 6. These tracks are similar to toy railways and run from the serving station at the forward end to the outer end of the service stand. It is to be understood that the tracks, and the electrical connections connected therewith, and with the moving trays mounted on the said rails, may be of ordinary construction such as are in common use in toy railway trains and the like, and as I contemplate no new features connected with the propelling of the trays along the track this feature has not been illustrated.

With reference to Figs. 7, 8 and 9, the construction of the tray may be noted. I provide a longitudinal frame 14 having transverse shafts 15 at the forward and rearward ends. These shafts constitute axles upon which the wheels 16 are mounted, said wheels being provided with flanges as in the case of railway car wheels and are adapted to ride along the rails 17 upon the track. The tray is mounted upon the frame work 14. At one end of said tray is mounted an electric motor 18 geared up to one of the shafts 15 to rotate said shaft and drive the tray along the track. It is to be understood that this motor is a reversible type motor and will operate in either direction according to the direction in which the current is delivered to the motor. As the circuit is made from the rail 17 thru the axle of the car to the motor an insulating connection 19 in the axle is provided to prevent shortcircuiting of the electrical connection.

The tray itself may be of any desired construction. I have shown a tray of approximately rectangular shape, the sides being extended upwardly at 20 and the dish-receiving receptacle on the tray is mounted upon a drawer 21, which is slidable to and from the body of the tray 20. Upon this drawer or moving portion of the tray may be mounted a plurality of supports indicated at 22 in Figs. 8 and 10. These supports are box-like structures having the upper side formed with a series of openings 23 therein, into which dishes of the desired kind may be placed and supported so that they will not be jarred from position while the tray is operating. Springs 23 tend to hold the sliding drawer 21 in position within the tray. The said drawer may be held in extended position, however, by a latching rod 24 mounted in the base of the sliding member and having a hooked end 25 adapted to engage in any one of a series of openings 26 in the base of the tray. An operating handle 27 at the forward side of the tray enables the operator to move the latch so as to lock the tray in the desired position and to again release it and allow the springs 23 to move the tray into closed position.

The tray thus constructed is adapted to move along the main track 17 of the stand. The tables 4 along the sides of the stalls also have tracks upon which the trays may be moved. A switch, shown best in Fig. 3, is provided to direct the tray from the main track onto the side track indicated at 28. Said switch comprises a curved section of track 29 pivotally connected at one end 29′ to the stand. The free end is secured to a cross bar 30. The other end of said cross bar is connected to a second pivoted section of rail 31. Said section is adapted to be moved with the bar 30 so as to switch the tray from the main track onto the side track.

The manner in which the switch is moved will be seen from Fig. 3. There is a laterally extending arm 32 on the cross bar 30, said arm having a piece of soft iron 33 at its forward end placed adjacent to an electrical magnet 34 and adapted to be moved when said magnet is energized so as to throw the

switch and move the tray onto the side track in an obvious manner.

This operation of the switch is provided thru a contact lever at the side of the track. Said lever has an arm 35 extending along the main track and pivoted at 36 to a supporting bracket. Another arm 37 rigidly connected with the lever 35 extends outwardly along the side track 28 and has a contact 38 theron. Said contact is adjacent a stationary contact 39, which is connected thru wires, not shown, with the electro-magnet 34. There is an arm 40 on the tray which extends laterally from the tray so as to engage the arm 35 of the lever, and when such contact is made the lever arm 35 is thrown outwardly, closing the switch 38—39 and throwing the control bar 30 of the track switch directing the tray onto the side track.

The table 4 has tracks thereon connecting with the side track and this table is operated thru mechanism shown best in Figs. 11 to 13, inclusive. It is to be noted that the stand upon which the trays are operated has an upper deck 41 and a lower deck 42. The trays are moved outwardly along the upper deck and are returned to the central stand by way of the lower deck and it is to be understood that the trackway upon the two decks of the stand are arranged approximately the same except that the return of the tray to the central stand will not necessitate the operation of an automatic switch. The table 4 is mounted at each end upon posts 43 which are adapted to telescope within upright cylinders 44. The posts 43 have pistons 45 fitting closely within said cylinders 44 and the movement of the posts in the cylinders is controlled as to rate of movement by a valve 46 at the lower ends of the cylinder. Said valve is pivoted at 47 and has a constricted orifice 48 therethru. It will be noted that when the post 43 is moved upwardly the valve 46 will open, allowing free movement of air or other fluid following the piston 45 so that its action will not be impeded. However, when the table is dropped downwardly the pistons 45 force the fluid in front of them, closing the valve 46 and allowing a small outlet thru the orifice 48 so as to absorb the shock of the falling table. This will allow the table to move slowly downward to bring the table into registration with the lower deck 42.

The table is equipped with a plurality of levers on its lower side by means of which it may be elevated. These levers are operated thru a pivoted ramp or gate 49. Said ramp is pivoted at 50 so that when the car drives into the stall it will move up this ramp, depressing the same so as to move the forward end 51 downwardly to operate the levers. The said levers comprise a main arm 52 pivoted at 53 upon a bracket secured to the leg of the table. The end of the lever is pivotally connected at 54 to a link 55 connected to the forward end 51 of the ramp. The other end of the lever 52 has a rounded member 56 thereon to engage the lower side of the table. There is a second arm 57 on the opposite leg of the table pivoted at 58 and extending beyond said pivot for connection at 59 to a connecting bar 60, which connects at its forward end at 61 to the lever 52. It will be seen that the movement of the lever 52 thru connection of the bar 60 will move the lever 57 so as to exert an upward pressure of the end 56′ upon the lower side of the table. Thus when the car enters the stall it will depress the ramp 49, moving the levers to raise the table from registration with the lower deck 42 to registration with the upper deck 41 of the stand. When the tray is moved outwardly to be received upon the table 4, said table will be in position, as shown in Fig. 12, to receive the tray.

The tray is automatically stopped at the proper place upon the table 4 by means of an arm 62 mounted upon the forward end of the base 63 of the tray. The construction of the arm 62 will be seen from Figs. 4 and 5. The arm is curved downwardly from above the tray 63 and is pivoted at 64 upon a transverse member supported in bearings 65 on the underside of the tray. The other end of the member 64 is provided with a contact arm 67 which has a pin 68 projecting downwardly above a longitudinal slot 69 in the table. The pin 68 has a contact member 70 on its upper side adapted to engage with a contact 71 upon the tray, and it is to be understood that these contact members when closed throw the motor into the circuit so that the said motor will be operated.

The arm 62 is adapted to engage against an arm 72 formed upon a lever 73 pivoted at 74 upon a stop plate 75. Said lever 73 is engaged by a spring 76 which tends to hold said lever forwardly against a stop member 77, as shown in Fig. 3. The said lever is formed with a shoulder 78 adjacent the pivot point 74 so that when said lever is pushed backwardly by contact with the arm 62 upon the tray, the said shoulder will engage against a guide rod 79 upon the table and act as a brake to prevent movement of the stop plate 75.

The rod or rail 79 upon the edge of the table is secured to each end thereof at one side and is curved inwardly at each end to bring the said rail above the supporting plate 80 upon the tray, and it will be seen from Fig. 3 that said arm 80 will move in beneath said rail as the tray is moved onto the table. Thus when the movable portion of the tray is drawn laterally toward the car in which the guests are seated, the plate 80 will engage beneath the rail and prevent unbalancing of the tray upon the track.

The tray may be moved by the guests in the car along the table by means of a line or cable

81 mounted upon the table and running freely about pulleys 82 at each corner of the table and secured to one end of the stop plate 75. Said plate at this end is provided with upwardly extended rollers 82 which engage against the rail 79 and assist in guiding the same along the table. By movement of the cable 81 the stop member may be adjusted in position on the table and the position of the tray may be also controlled.

When the vehicle is backed off of the ramp 49 the table will be free to drop by gravity to its lower position, registering with the lower deck 42 of the table. Due to the dash pot effect of the cylinder 44 and the valve 46, this movement will be gradual and the table will move slowly from one position to the other. When the table moves downwardly into its power position the pin 68 will be engaged by a rod 84. Said rod is shown best in Figs. 12 and 13. It is secured to the legs of the table and is curved from its engagement with the legs so as to be positioned directly below the slot 69 in the table.

When the table is lowered into the position shown in Fig. 11, said rod 84 will project upwardly thru the slot 69 into contact with the pin 68 upon the lever 62 and move said lever to close the contact between the points 70 and 71, thus actuating the motor 18. It is to be understood that the current running in the rails of the lower deck of the table is in a direction opposite to that in the upper deck of the stand so that the motor will be rotated in a direction reverse of that which carried the tray to the table. This will, therefore, start the train on its return along the lower deck 62 to the service stand.

In the operation of my device it is to be understood that each stall along the stand will be provided with a separate tray, and the arm 40 on each tray, which engages the switch lever 35, will be positioned relative to the said lever 35 of each of the stalls so that it will engage none of the levers 35 but the correct one in which the particular tray is intended to move. Thus the operator may receive an order from the car as it drives in, or by telephone from the stall in which the car is parked, and the order may be placed quickly upon the proper tray to serve the stall in which the car is parked, and the tray may be moved outwardly by the motor and switched onto the track leading to the table of the stall in which the car is parked. The occupants of the car may move the tray to the proper position and pull out the sliding drawer from the tray so as to move the dishes and their contents into position where they may be taken from the tray. This operation has been previously described. The tray will be automatically stopped and the current shut off from the motor when the arm 62 on said tray engages the arm 72 on the stop member. The engagement will throw open the switch 71 and stop the motor and the movement of the arm 72 on the stop plate 75 will bring the shoulder 78 of the lever 73 against the rail 79 and act as a brake to stop the tray. It will be obvious that the stop plate 75 may be positioned at any point along the table.

When the occupants of the stall have been served the vehicle will be backed out of the stall, allowing the table to drop into its lower position and the motor will be again started to return the tray. The vehicle will drive out thru the exit gate 5 and will pass the service stand where the check may be paid.

It will be seen that I have provided an automatic service stand whereby personal attendance upon the patrons will be reduced to a minimum. The occupants of the car will have the orders filled promptly and will not be interrupted in their conversation by the presence of an attendant. The arrangement of the stalls relative to the stand will accommodate a maximum of cars within the space in which the stand is placed, and it will be possible to attend to a large number of patrons and each separate tray may be operated upon the stand without interference with patrons in adjacent stalls. The advantages of this construction will be apparent without further description.

What I claim as new and desire to protect by Letters Patent is:

1. A service installation including a service stand, a laterally extending delivery stand connected therewith, said delivery stand having stalls connecting therewith on each side at a convenient parking angle, a table adjacent each of said stalls, and means to deliver trays from said service stand along said delivery stand on to any selected one of said tables.

2. A service installation including a service stand, a laterally extending delivery stand connected therewith, said delivery stand having stalls connecting therewith on each side at a convenient parking angle, a table adjacent each of said stalls, and means to deliver trays along said delivery stand on to any selected one of said tables, and means automatically actuated by the movement of a car from a stall to return the tray adjacent thereto to said service stand.

3. A service installation including a service stand, a delivery stand extending laterally therefrom, tables set at an acute angle to said delivery stand, a main trackway along said delivery stand, side tracks on each of said tables, trays adapted to move on said tracks, electric motors on said trays to propel said trays along said tracks, electrically operated switches to direct each tray on to a particular side track, and means on each tray to engage and actuate its particular switch.

4. A service installation including a service stand, a delivery stand extending laterally therefrom, tables set at an angle to said delivery stand, a main trackway along said delivery stand, side tracks on each of said tables, trays adapted to move on said tracks, electric motors on said trays to propel said trays along said tracks, electrically operated switches to direct each tray on to a particular side track, and means on each tray to engage and actuate its particular switch, and means on each table to stop said motors and said trays thereon.

5. A service installation including a service stand, a delivery stand extending laterally therefrom, tables set at an angle to said delivery stand, a main trackway along said delivery stand, side tracks on each of said tables, trays adapted to move on said tracks, electric motors on said trays to propel said trays along said tracks, electrically operated switches to direct each tray on to a particular side track, and means on each tray to engage and actuate its particular switch, and a stop lever on each table adapted to engage means on said trays and stop the motor thereon and limit the movement of the tray.

6. A service stand, upper and lower trackways extending laterally from said stand, tables adjoining said trackways, trackways on said tables, and means adjacent each of said tables adapted to be depressed or released to raise or lower the adjacent table to the level of the upper or the lower trackway respectively.

7. A service stand, upper and lower trackways extending laterally from said stand, tables adjoining said trackways, trackways on said tables, and means adjacent each of said tables adapted to be depressed or released to raise or lower the adjacent table to the level of the upper or the lower trackway respectively, trays movable on said upper trackways to said tables and backward from said tables on said lower trackways.

8. A serving device including delivery stands, upper and lower trackways on said stands, tables extending at an angle to said stands, and levers for raising or lowering said tables to register with either of said stands said levers being operable through the weight of a vehicle thereon.

9. A service device including a service stand, an outgoing trackway on said stand, a return trackway on said stand, tables connecting with said stand, trays movable on said trackways to said tables and elevator means actuated by the weight of a vehicle to bring said tables to register with either of said trackways.

10. A serving device including upper and lower delivery stands, tables extending laterally from said stands, trackways along said stands and on said tables, said tables being mounted to register with either said upper or lower stands and means actuated by a vehicle adjacent one of said tables to raise that table to the level of said upper stand.

11. A service stand, a delivery stand connected therewith, outward and return trackways at different levels on said delivery stand, tables extending laterally from said delivery stand, lateral tracks on said tables connecting with said trackways on said stand, trays mounted to move on said trackways, electric means to propel said trays, means to switch each of said trays to its selected table, brakes on said tables engaged by said trays to stop said trays, means to move said tables, and means actuated by the movement of said tables to start said trays on their return movement along said trackways.

12. A service stand, a delivery stand connected therewith, outward and return trackways on said delivery stand, tables extending laterally from said delivery stand, lateral tracks on said tables connecting with said trackways on said stand, trays mounted to move on said trackways, electric means to propel said trays, means to switch each of said trays to its selected table, means on said tables to stop said electrical means and trays, means to automatically move said table vertically to register with either the outward or return trackway, and means actuated by the movement of said tables to start said trays on their return movement along said trackways.

In testimony whereof I hereunto affix my signature this 18th day of May A. D. 1929.

BENJAMIN H. ALLEN.