

A. C. FAST.
SERVING TABLE FOR RESTAURANTS,
APPLICATION FILED JUNE 12, 1909. RENEWED MAY 13, 1910.

978,572.

Patented Dec. 13, 1910.

5 SHEETS-SHEET 1.

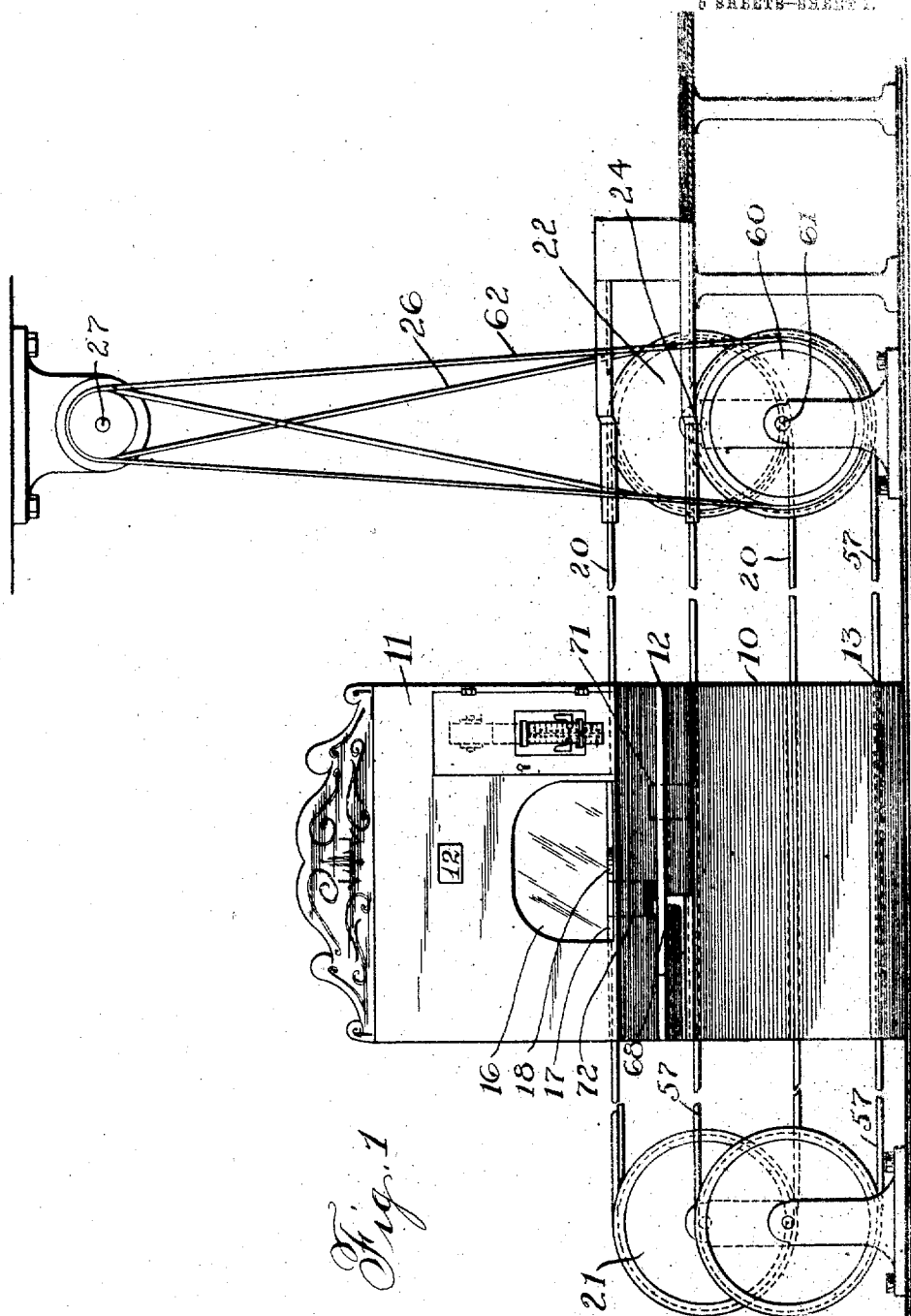


Fig. 1

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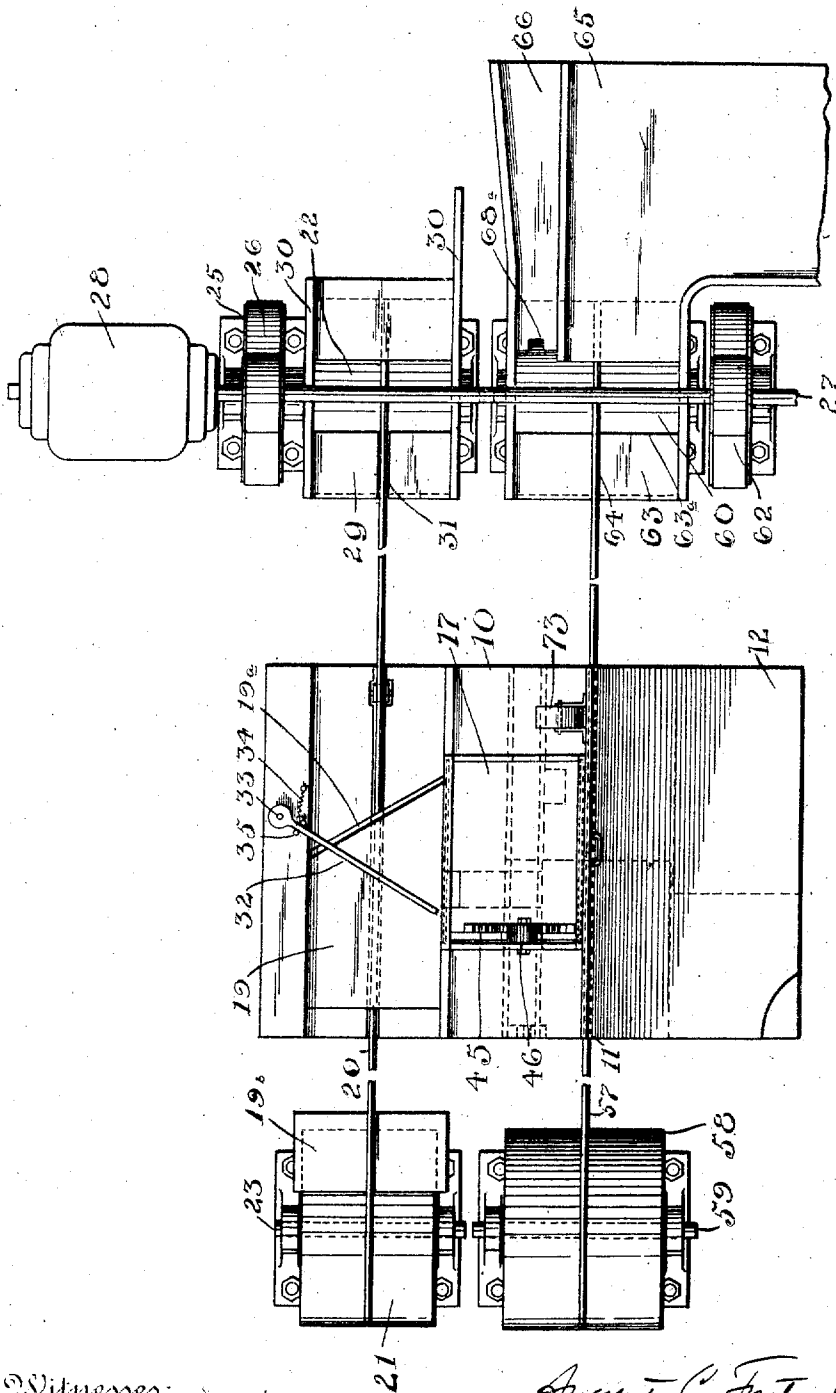


Fig. 2

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5 SHEETS--SHEET 3.

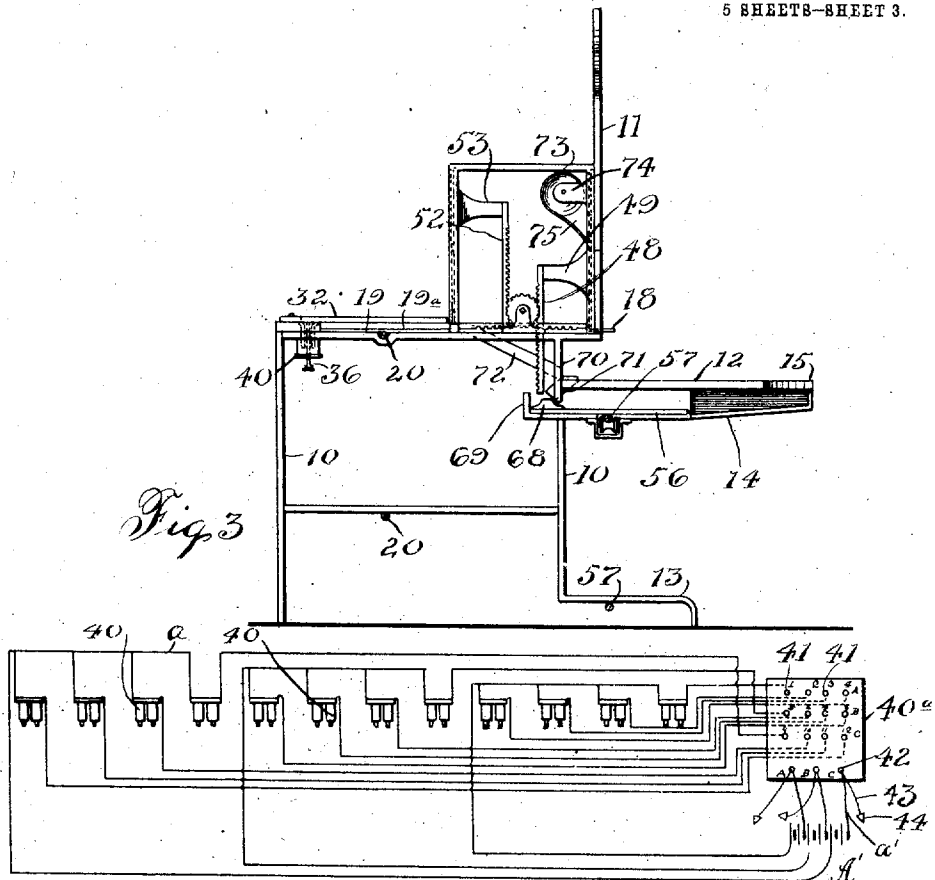


Fig 4

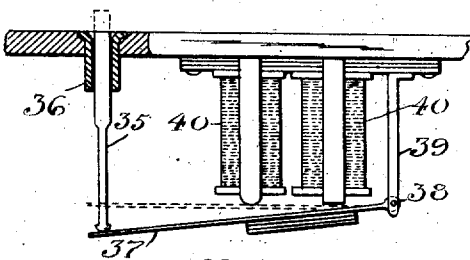


Fig 5

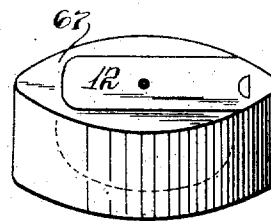


Fig 6

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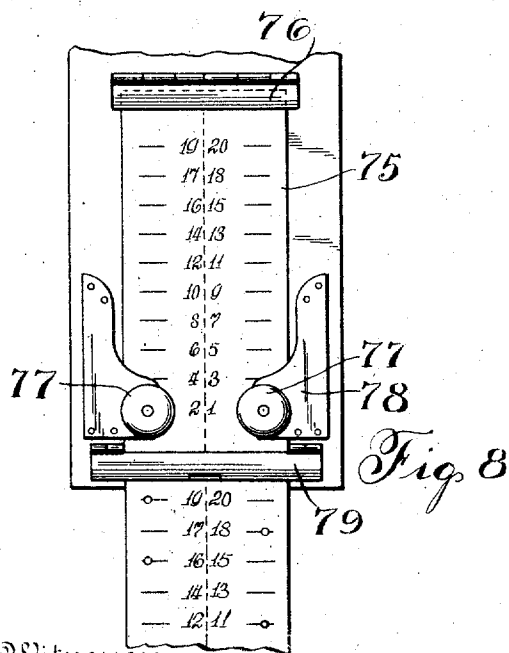
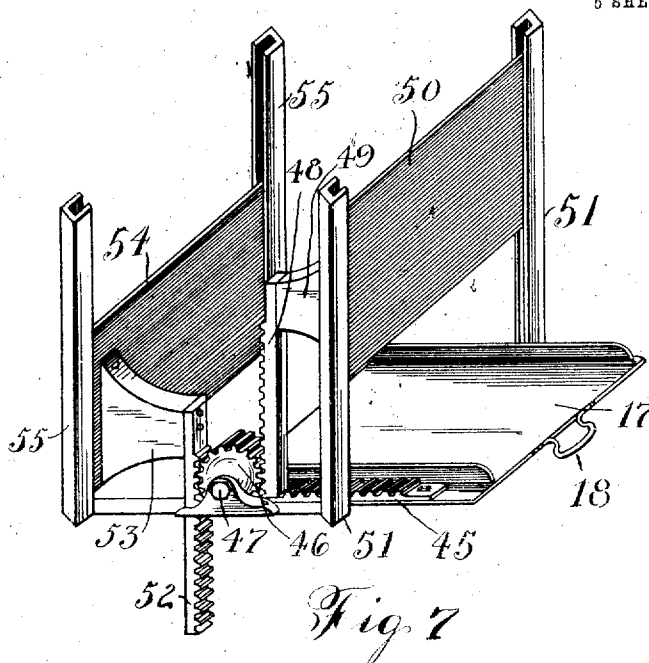
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5 SHEETS—SHEET 4.



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6 SHEETS--SHEET 5.



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UNITED STATES PATENT OFFICE.

AUGUST C. FAST, OF EAST ORANGE, NEW JERSEY.

SERVING-TABLE FOR RESTAURANTS.

978,572.

Specification of Letters Patent.

Patented Dec. 13, 1910.

Application filed June 12, 1909, Serial No. 501,760. Renewed May 13, 1910. Serial No. 561,177.

To all whom it may concern:

Be it known that I, AUGUST C. FAST, of East Orange, Essex county, New Jersey, have invented a new and useful Improvement in Serving-Tables for Restaurants, of which the following is a full, clear, and exact description.

My invention relates to improvements in serving tables for restaurants, and is especially intended as an improvement on the present usual system of service in quick lunch restaurants, although my invention is not limited to use in any particular class of places of this character.

The object of my invention is to produce a system by which a series of customers can sit down at the table, place their orders without assistance in an order box or money box, having the same with the price automatically delivered to the kitchen or other place from which the food is served, and then having the ordered materials delivered neatly and quickly and without the assistance of waiters. All this to the end that the service may be bettered, the use of waiters and other assistants dispensed with, the customer satisfied and well served without the need of tipping, and a consequent great economy to the restaurant keeper. In other words, a series of customers can be waited on by my improved device automatically, and the mechanism will do the work of a corps of assistants.

My invention is further intended to provide means whereby a customer can quietly give his order so that no one knows but himself what he is doing, and can have the same delivered to him without its being inspected or handled by any one except the party who places the food and tray on the delivery apparatus. This will be understood from the description which follows.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar reference characters indicate corresponding parts in all the views.

Figure 1 is a broken front elevation of the apparatus embodying my invention. Fig. 2 is a broken plan view thereof. Fig. 3 is a cross section of the apparatus. Fig. 4 is a development of the electrical switching device by which the food trays are switched to the appropriate customers. Fig. 5 is an enlarged detail of the switch controlling device. Fig. 6 is a perspective

of the form of money box suitable for the purpose of the apparatus. Fig. 7 is an enlarged detail perspective view showing the shutters operating in connection with the food slides. Fig. 8 is an enlarged detail front elevation of the order blanks and the punching apparatus used in connection therewith, and Fig. 9 is a detail of one of the punches. Fig. 10 is a detail view in perspective of the carriers attached to their respective cables and showing a carrier taking a tray from the serving table.

The apparatus is provided with a suitable framework 10 which can be made of any appropriate design and which can be continuous and of any necessary length, the framework serving to box in the operating mechanism and to make the device presentable. It will have the general appearance of an elongated counter or table, and it has preferably an upright portion 11 which is in the form of a partition and can be made ornamental, a table 12 on which the food is served and eaten, and a foot-stool 13. It also has a tray receiver 14 immediately beneath the table 12 and it has an opening 15 leading to it so that the tray and the dishes thereon can be readily inserted in the holder for delivery back to the kitchen. The partition 11 has at intervals and opposite to where a customer is seated, a suitable opening 16 through which a tray of food is delivered on the slide 17 which is provided with a suitable handle 18. All the above is indicated so that the device can be readily understood, but the form and materials of this general part of the structure are not essential, except that the food opening, table and tray receiver should be arranged in the general way indicated, for the convenience of the customer.

The food trays are delivered to the customers by means of an endless cable 20 which can be in the form of a belt, rope, or other carrying device, and it runs over suitable pulleys 21 and 22 carried by shafts 23 and 24, one of which should be turned by some suitable driving means, and for this purpose I have indicated a pulley 25 on the shaft 24 and a belt 26 connecting the pulley with the driving shaft 27 of a suitable motor 28. Obviously, however, the means for operating the carriers presently referred to, is not essential.

The carrying cable 20 is provided with a suitable number of carriers 19, which are

fastened to the cable so as to travel therewith, and each carrier has preferably a flange 19^a on the back edge so that a food tray will not readily slip off. The space between the pulley 21 and the first table and pulley 58 can be filled up with boards or plates 19^b if desired. The carriers 19 at one end of the apparatus come up through the slotted table 29 which has an opening for the purpose as shown in Fig. 2, and the said table has preferably side flanges 30 to prevent displacing of the trays, and is slotted as shown at 31 on one side for the passage of the cable 20. The party who is filling the order places a tray of food, that is the several dishes and tray, on a table 29 and pushes the same forward slightly so that when a carrier 19 comes around it will pick up the tray and carry it forward to the customer, where it is delivered by the following mechanism.

When the tray with the ordered dishes thereon reaches the appropriate table, the tray comes in contact with a switch arm 32 which extends obliquely across the path of the carrier 19 but a little above the carrier, and this switch arm is pivoted as shown at 33 and held firmly in place by a light spring 34. The several switch arms in the path of the carriers are readily pushed aside by the food trays, but mechanism which will be presently described locks the switch arm opposite the desired customer so that the food tray striking the inclined switch arm is pushed off through the opening 12 and upon the slide 17 already referred to, and the customer pulls the slide forward and has his desired order ready for use.

To lock the switch arm the following mechanism is used: A forked plunger 35 moves vertically through a guide 36 as shown in Fig. 5, and when this is raised it engages the switch arm and locks the latter securely, but when it drops, it falls out of the way of the switch arm and the latter turns freely. Obviously the plunger can be any engaging device operating in this general way indicated, but the form shown is preferred. As illustrated the plunger 35 rests at its lower end on a swinging armature 37 which is pivoted as shown at 38 to a support 39, and the armature is arranged opposite a magnet 40. There is a magnet opposite each slide 17, and they are all energized from a common switchboard 40^a, which can be located in the kitchen or wherever the orders are filled. This switchboard is divided into any number of sections or banks, which on the drawings are marked A, B and C. Each section has plug openings 41 forming connections with the wires *a* which are connected to the magnets and to a battery A. The battery also connects with the binding screws 42, there being one of these for each section A, B and C. Each binding

screw also has a loose wire 43 with a plug 44 thereon, which can be inserted in one of the plug openings 41 to close the desired circuit. The apparatus can be worked on either an open or closed circuit, but I have shown it provided with means for raising the plunger 35 when a magnet 40 is excited or energized. We will say, for instance, that a customer at table 11 is to be served. The operator in the kitchen fills the order, places the tray on the delivery table as already described, and then inserts a plug 44 in the plug opening numbered 11. This closes the circuit through the appropriate battery, lifts the plunger 35 and locks the desired switch arm 32, so that when the said arm is reached the food tray striking it will be deflected and delivered to the customer as already described.

It is desirable to have the food out of sight of other customers as it passes the respective openings 16, so that the sight of any particular dish will not be disagreeable, and further to prevent a customer from reaching through the opening and taking food which does not belong to him. To provide for this each slide 17 is provided with a rack 45 which meshes with a pinion 46 turning on a suitable support 47. The pinion slide meshes with a vertical rack 48 which connects by an arm 49 with the shutter 50, the latter sliding in suitable ways 51. The opposite side of the pinion 46 also connects with a rack 52 moving vertically and supported on an arm 53 of the shutter 54 which moves in ways 55. Normally the shutter 54 is up and the shutter 50 down or nearly closed. When, however, the customer pulls out the slide 17 to receive his food, the rack 45 turns the pinion 46, and this acting on the forward rack 48 raises the shutter 50 so that the food passes freely under it, while the rack 52 on the back side of the pinion 46 is moved downward, thus carrying down the shutter 54 and cutting off the other trays which may pass along with the cable 20. Obviously other means can be substituted for moving the shutters, or a single shutter can be used if desired, without affecting the principle of the invention.

After a customer has finished, he or an assistant deposits his tray with the dishes thereon, in the receiver 14, and the tray is pushed down or slides down upon the return carrier 56, and a necessary number of these are secured to a cable 57 which moves over a pulley 58 mounted on a shaft 59 and also moves over and is carried by the pulley 60 on the shaft 61. This latter pulley connects by a belt 62 with the driving shaft 27 already referred to, but as stated, it can be operated in any desired way. The table 57 moves in the opposite direction to the table 20 so as to return the dishes to the kitchen.

When a return carrier reaches the pulley 130

60, it passes through the opening 63^a in the table 63, and leaves the tray on the said table or rather on an extension 65 thereof, and the table is slotted at 64 to permit the cable 57 to pass through. The table has one division or extension 65 to receive the trays, and another division 66 to receive the money and order box 67, this being shown in Fig. 6. The floor of the division 66 has an opening 68^a next the pulley 60 so as to permit the abutment 68 on the carrier 56 to pass readily through. This abutment is for the purpose of pushing the money box 67 before it, and it is arranged opposite the division 66 already described and between the partitions or guide flanges 69 and 70 which are arranged opposite the several table sections. A chute 71 leads from each section of the table 12 and delivers on the carrier 56 and in the path of the abutment 68, while a return chute 72 catches the money box when it is swept off the carrier 19 by the switch arm 32, and delivers it upon the table 12 for the use of the customer. The form of this money box is not essential, but it should be sufficiently heavy to cause it to pass the free switch arms 32 and only be deflected by the rigid one. In connection with the apparatus I use order blanks which can be in the form of a paper roll 73, and the roll is supported on a bracket 74, and the paper sheet 75 is numbered in some appropriate way so that each number will represent a certain dish. By reference to Fig. 8 it will be seen that the numbers are consecutive on a series of connected blanks. The arrangement is like this. Fried eggs may be 19, boiled eggs 17, roast beef 12, etc. The customer then in placing his order simply punches the number representing the desired dish. The order blanks or paper sheets come out to the front of the apparatus beneath the swinging flaps 76, and pass beneath suitable punches 77 which are mounted on brackets 78, after which the blanks pass beneath a cut-off blade 79. The customer pulls down the blanks, stopping opposite a desired number as he does so, and strikes a punch so as to punch out the number desired; then he tears off a blank by means of the blade 79, deposits his order in the money box 67, places the necessary amount of money in the box, and then pushes the box into the chute 71 so that it is carried to the kitchen and delivered into the division 66 of the table. The operator then fills the order, places the tray with the desired dishes on the table 22, places the money box there also together with any change, if there is any change coming to the customer, then operates the desired switch arm to lock it, and the tray and money box are delivered to the customer as already described.

Having thus fully described my inven-

tion, I claim as new and desire to secure by Letters Patent:—

1. An apparatus of the kind described, comprising a table, a food carrier movable behind the table, swinging switch arms extending across the carrier, movable plungers to engage and lock the switch arms, and selective means for operating the plungers. 70
2. An apparatus of the kind described, comprising a table, a food carrier movable behind the table, spring retained but easily movable switch arms extending across the carrier, and electrically operated plungers to lock the switch arms. 75
3. An apparatus of the kind described, comprising a table, a food carrier movable behind the table, spring retained but easily movable switch arms extending across the carrier, a locking device for each switch arm, a magnet and armature for operating each locking device, and a switch-board by which a desired magnet can be energized. 80
4. An apparatus of the kind described, comprising a table, a food carrier movable behind the table, selectively operated means for deflecting a food tray from the carrier to the table, and movable shutters between the food carrier and the table to screen the food carrier. 85
5. An apparatus of the kind described, comprising a table divided into sections, a movable food carrier behind the table, slides opposite the several sections to receive the food from the carrier, and a shutter operated by the movement of the slide and arranged vertically between the table and the food carrier. 90
6. The combination with the movable food carrier and the table, of the movable food slide, the oppositely moving shutters arranged between the table and the food carrier, and means for moving the shutters by the movement of the slide. 95
7. The combination with the food carrier and the movable food receiving slide, of a shutter arranged in front of the carrier, and means for operating the shutter by the movement of the slide. 100
8. The combination with the food carrier and the movable slide adjacent thereto, of the oppositely moving shutters in front of the carrier, and a rack and gear mechanism for oppositely moving the shutters by the movement of the slide. 105
9. In an apparatus of the kind described, the combination with the delivery and return carriers moving independently and in opposite directions and a table in front of the delivery carrier and above the return carrier, of means on said table for delivering a money box to said return carrier, and means for delivering a money box from the delivery carrier to a desired part of the table. 110

10. The combination with the table and the delivery and return carriers arranged adjacent thereto, of the numbered order blanks arranged for delivery adjacent to the table, and means for punching and tearing off a blank.

11. The combination with the return carrier supported on an endless cable running over pulleys, of the cable and pulleys, a table at one end of said carrier and in aline-

ment therewith and extending partly over the pulley and essentially on the same level with the carrier, of means for retaining a money box on said carrier, and means for delivering said box into a division of said table.

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Witnesses:

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