

No. 630,453.

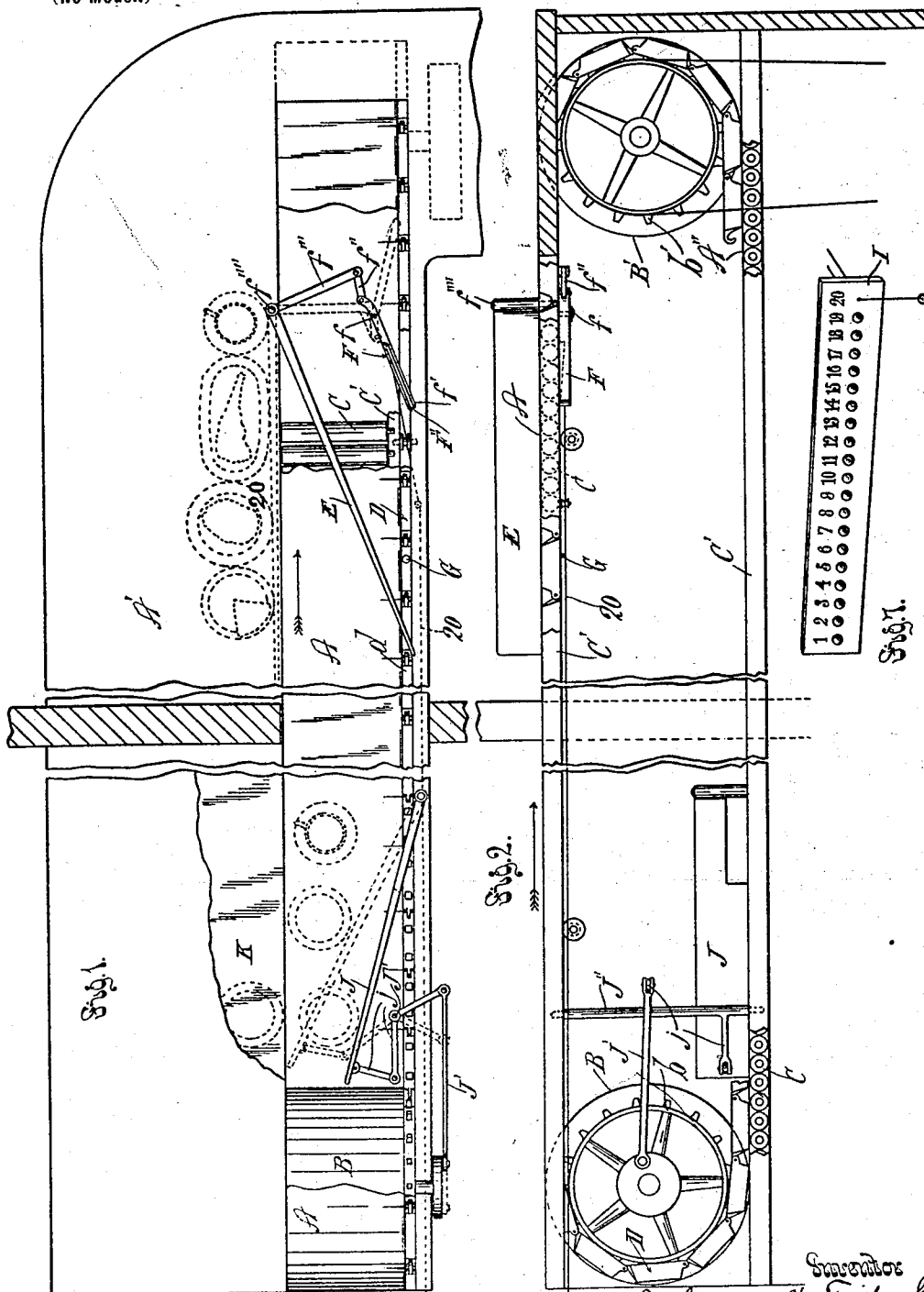
Patented Aug. 8, 1899.

E. W. FAIRBANKS.
CARRIER, SERVER, AND DISH UNSHIPPER.

(Application filed Sept. 28, 1898.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses
Seymour S. Ingman.
E. A. Waterman.

Signed
Ephraim W. Fairbanks
by Townsend Bros.
his attys.

Store service.
Dining room service.

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2 Sheets—Sheet 2.

Fig. 3.

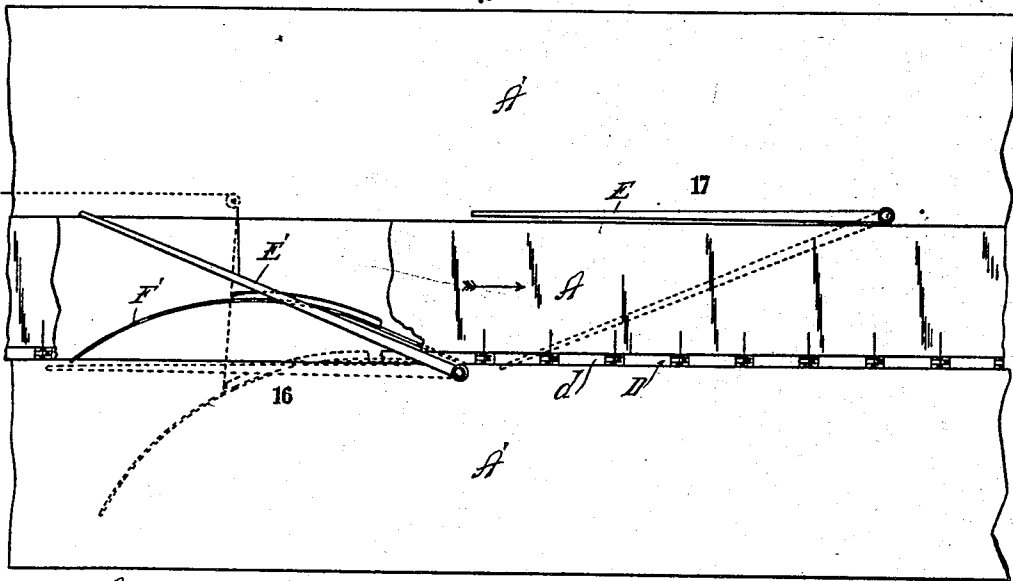


Fig. 4.

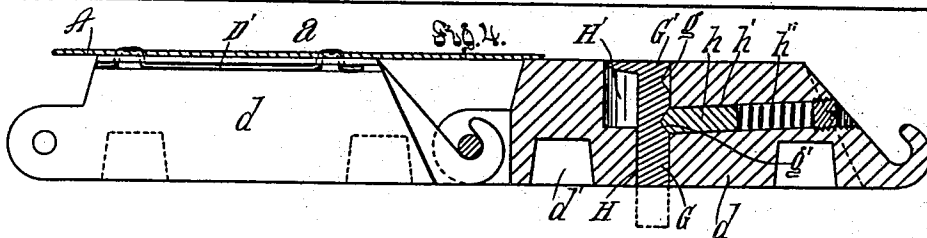


Fig. 6.

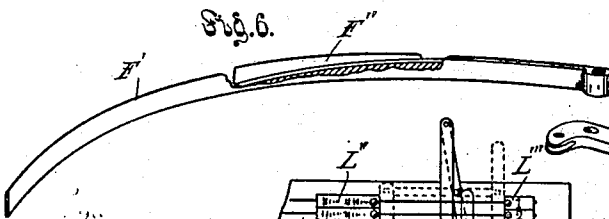


Fig. 5.

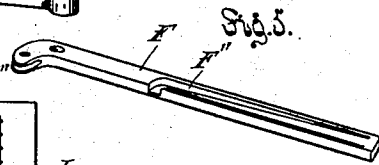
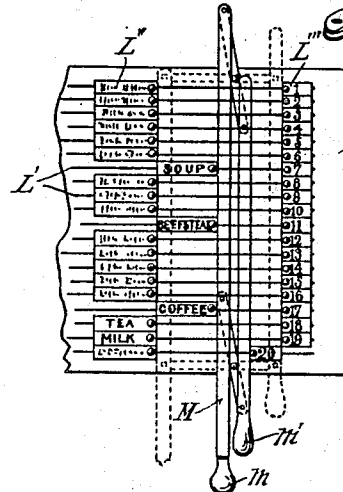


Fig. 8.



Witnesses
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UNITED STATES PATENT OFFICE.

EPHRAIM W. FAIRBANKS, OF LOS ANGELES, CALIFORNIA.

CARRIER, SERVER, AND DISH-UNSHIPPER.

SPECIFICATION forming part of Letters Patent No. 630,453, dated August 8, 1899.

Application filed September 28, 1898. Serial No. 692,127. (No model.)

To all whom it may concern:

Be it known that I, EPHRAIM W. FAIRBANKS, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Carrier, Server, and Dish-Unshipper, of which the following is a specification.

The object of my invention is to provide a device whereby the labor and cost of waiting upon a table or lunch-counter may be reduced to a minimum and the efficiency of the service greatly increased.

The particular object of my invention is to place the serving of the food to each customer entirely under the control of the cook, so that when the cook has received an order to be served to a customer seated at a certain designated place he can, after he has dished the food, without possibility of mistake and without any delay whatever, serve the same to the customer in a rapid and thoroughly satisfactory manner, the operation being entirely performed by machiney under control of the cook.

A further object of my invention is to provide means whereby the soiled dishes may be returned from the dining-room to the dishwasher and automatically unshipped upon a table provided for their reception.

My invention comprises the various features of construction and combinations of parts hereinafter fully set forth and claimed.

An important part of my invention consists in a belt or chain having pins arranged therealong and adapted to be temporarily projected beyond the plane of the chain to operate the servers and to be pushed back into their non-operative position.

The accompanying drawings illustrate my invention.

Figure 1 is a fragmental plan view of a kitchen and dining-room, showing the extreme ends of the carrier and one server. Portions are broken away in order to expose the unshipping mechanism. Fig. 2 is a fragmental side elevation of the same. Fig. 3 is a fragmental plan view showing a server arranged to serve dishes toward the right-hand side of the belt and a server arranged to serve the dishes toward the left-hand side of the belt. The right-hand server is in its intercepting

position, while the left-hand server is in its non-intercepting position. Fig. 4 is a fragmental side elevation, partly in section, showing one link of my improved sprocket-chain with the server-operating pin in its retracted position. Dotted lines indicate its operating position. This view is taken looking from the side of the chain which is at the rear in Fig. 2. Fig. 5 is a side elevation of the operating-arm which operates the left-hand server shown in Fig. 3. Fig. 6 is a like view of the operating-arm which operates the right-hand server shown in Figs. 1, 2, and 3. These two views illustrate the means whereby the operating-pin is returned to its inoperative position. Fig. 7 is a perspective view of the station-indicating board upon which is indicated the stations at which the food is to be served. Fig. 8 is a fragmental view of a bill or tally board whereby the cook keeps tally of the various orders and the stations at which they are to be served.

In the drawings, A represents a traveling belt which may be of any desired form. In the drawings I have shown a form which I consider particularly effective and desirable for the purposes for which I employ it in that one portion is formed by a sprocket-chain which insures positive movement. This belt may be made of canvas, rubber, leather, or any other material jointed or made sufficiently flexible for the purpose and is trained around suitable drums B B', arranged the drum B in the kitchen and the drum B' at the front end of the dining-room. A suitable support is provided for the belt, such as the anti-friction-rollers C, which are journaled in a suitable frame C' and operate to hold the belt in a horizontal position. The lower member of the belt is also supported by rollers C, so that the upper member of the belt is adapted to carry the food out into the dining-room, while the under member serves to return the soiled dishes to the kitchen. In effect this produces a double-deck table. At one end of these rollers, and preferably at one side of the belt, is arranged a sprocket-chain D, which is composed of links d, having sockets d' in their under faces to receive the sprockets upon the sprocket-wheels b b', which are respectively secured at the ends of the drums B B'. The belt is secured to the sprocket-chain D by

wire stitching *a*, as shown in Fig. 4, a groove *D'* being provided in each link to chamber the stitching and to prevent it from wearing out by rubbing against the frame *C'*.

5 A table or lunch-counter *A'* is arranged at one side of the belt, as shown in Fig. 1, or on both, as shown in Fig. 3, and at suitable distances along the table are arranged stations which may be numbered, as indicated by 20
10 in Fig. 1 and by 16 and 17 in Fig. 3. When the serving is all to be done upon one side, as in a lunch-counter, (indicated in Fig. 1,) enough space is given at each station to accommodate a single customer, usually about
15 twenty-eight inches being sufficient for this purpose, and an interceptor or server *E E'* is arranged at each station. Each interceptor or server is adapted to be adjusted above the belt, as shown in solid lines by *E* in Fig. 1
20 and by *E'* in Fig. 3, into the path of things upon the belt to intercept the passage of things traveling upon the surface of the belt or to be removed from its intercepting position, as indicated in dotted lines by *E* in Fig.
25 1 and by *E'* in Fig. 3, so that things carried by the belt may then pass without interference. Any convenient means for accomplishing this purpose may be used; but in the drawings I have shown means which I consider simple and effective. The device which
30 I have shown for serving the dishes toward the left consists of an operating-arm *F*, which is pivoted at *f* to a fixed support, which may be the framework *C'*, and has one end *f'* arranged to be projected into the path of an
35 operating pin or lug *G*, carried by the traveling belt. This intercepting position of the arm *F* is indicated in solid lines in Fig. 1. The other end of the arm is by means of a
40 link *f''* attached to a lever *f'''*, which is secured to a shaft *f''''*, to which the interceptor is secured. The link *f''*, which connects the end of the arm *F* with the lever *f'''*, allows the lever to freely operate and to be swung by
45 the operating-arm into the position shown in dotted lines in Fig. 1 and in solid lines in Fig. 3.

In Fig. 3 I have shown a device adapted for serving in dining-rooms. In this device a single belt *A* is arranged, extending through
50 the center of the dining-room, and each waiter is assigned one or more stations, as may be necessary, and orders delivered by any particular waiter will be served to the particular
55 waiter designated and by him served to the customer. By this device the food may be served alternately upon the right and left hand sides of the belt, the server *E'* (shown in Fig. 3) being provided with an operating-arm *F'*, which is curved and arranged to extend into the path of the operating-pin *G*,
60 carried by the sprocket-chain and to be engaged thereby and pushed to one side, as indicated in dotted lines in Fig. 3, thus swinging the server, to which it is operatively secured, into its non-intercepting position.

65 The pins *G*, which I have provided for operating the servers, are arranged at suitable

distances along the chain. Each pin is arranged within a link, as shown in Fig. 4, and this link is provided with a guideway or opening *H*, through which the pin reciprocates.
70 This guideway is enlarged at its upper end, as indicated by *H'*, to receive and chamber the head *G'* of the pin. A spring-pressed dog *h* is arranged within a socket *h'*, provided in the link, and by means of a spring *h''* is operatively forced against the pin, which is provided with two notches *g g'*. When the dog
75 is pressed into the notch *g'*, the pin is then in its non-operative position and is there held until the pin is forced downward to spring the dog out of the notch and to allow it to enter the notch *g* and to hold the pin in its
80 operative position until force is applied to retract it. In Figs. 5 and 6 I have shown the means whereby this pin is forced into its retracted position. This means comprises the operating-arms *F F'*, respectively, which are each provided with a guide-groove *F''*, which is deepest at its front end and gradually slopes
85 upward toward the rear end.

We will now suppose that the arm *F* is arranged in the position shown in solid lines in Fig. 1. When the pin *G* is pushed into its
90 operative position, as indicated in dotted lines in Fig. 4, as the chain travels along the pin engages with the arm, carries it forward until the pin enters the inclined slot, and as it carries the operating-arm forward it also
95 slides upward along the slot until when it finally leaves the arm by reason of the incline along which it has passed it will be forced into its non-operative position, as shown
100 in solid lines in Fig. 3. When the arm *F'* is swung into the path of the pin, it is engaged thereby and pushed to one side, until finally the pin enters the slot *F''* and by traveling
105 therealong is forced upward into its non-operative position.

In Fig. 7 I have shown the switch or station-indicating board *I*, which is arranged in
110 the kitchen and is under the control of the cook or the person dishing the meals. Each board is provided with a series of knobs or pulls 1 2 3, &c., and each pull is attached, by means of a cord or wire, to one of the servers
115 at a station which bears the corresponding number. For instance, the carrier arranged at station 20 (shown in Fig. 1) will be thrown into its intercepting position when the pull 20 is drawn outward by the operator. Likewise the interceptors arranged at stations bearing corresponding numbers will be operated by operating the correspondingly-numbered pulls.
120

In Fig. 8 I have shown a bill or tally board by means of which the cook or meal-server can keep track of the various orders and the stations at which they are to be served. This
125 comprises a board *L*, provided with a series of parallel wires *L'*, upon which are threaded series of blocks *L''*, having printed thereupon the various items constituting the bill of fare. As many of these series of blocks represent-

ing the bill of fare may be provided as the case may require. In the drawings I have shown but one series, since the other series will be duplicates of the one shown. At one end of the board is arranged a series L'' of blocks, having thereon the numbers of the various stations provided along the counter or table. These blocks are all movable, sliding easily along the wires, so that as an order is delivered to the cook he can push the number of station, such as 20, out from its non-indicating position and can upon the series of blocks L' keep track of the various items ordered. When the order is served, by pulling down upon the knob m of the pivoted frame M the frame will be thrown into the position shown in dotted lines in Fig. 8 and the blocks all pushed back into their non-indicating position. A weight m' returns the frame to its normal position. (Shown in solid lines in Fig. 8.)

In practical operation the device being arranged as shown in Figs. 1 and 2 power is applied to continuously rotate the drum B , and to thus continuously drive the chain D and the belt A in the direction indicated by the arrows in Figs. 1, 2, and 3, the intercepting devices all being arranged in their non-intercepting position. When it is desired to deliver an order, the order may be transmitted to the cook either by a speaking-tube, telephone, or any other suitable means of transmission, and the station at which it is desired to serve the meal is at the same time designated. As the order is delivered the cook keeps tally thereof upon the tally-board, (shown in Fig. 8,) and the cook then proceeds to dish the food ordered, and when dished places the dishes upon the traveling belt. Then he pushes one of the pins G into its operating position, after which he grasps and draws outward the pull bearing the number corresponding to the number of the station at which it is desired to serve the food. This throws the server, which is arranged at the station indicated, into the position shown in solid lines in Fig. 1, with the operating-arm F extending across beneath the sprocket-chain and in the path of the pin G , carried by the chain.

The dishes which have been placed upon the traveling belt are carried rapidly outward from the kitchen into the dining-room, where they are intercepted by the interceptor, and by reason of its diagonal arrangement across the belt the dishes are carried forward along the interceptor, the first one of the series being carried entirely off of the belt and the others banking up thereagainst. When the dishes are all banked against the server, the pin G engages with the operating-arm F , first swings it outward and forward, the pin sliding along the arm until it enters the notch F'' , then carrying the arm still farther toward the front and sliding upward in the inclined slot, so that by the time the pin has carried the arm into the position shown in

dotted lines in Fig. 1 the pin will be forced into its non-operative position, or, in other words, will be chambered within the link. This movement has swung the server out of its intercepting position and sweeps the dishes from the traveling belt onto the station in front of the customer.

When a second order is delivered, the server arranged at the proper station is in like manner operated and the food is served with neatness and despatch. The device shown in Fig. 3 is designed for use in dining-rooms where one waiter will attend to several tables, and in this case the waiter will give his or her number and the cook will serve the food to the station indicated, from which station it will be taken by the waiter and placed before the customer.

The soiled dishes are placed upon the under member A'' of the belt and by it are returned to the kitchen, where an unshipper (indicated by J in Figs. 1 and 2) is arranged above such lower member of the belt and by means of a pitman-rod J' , shaft J'' , and operating-arms j is adapted to be continuously reciprocated or swung upon its pivot back and forth across the belt to push the dishes from the belt onto a receiving table or shelf, (indicated by K), from which they are removed by the dish-washer.

In the claims I have designated the stations as being arranged along the belt, since the stations may be separated from each other and not made in the form of a lunch-counter or continuous table, as shown, and it is not to be understood that the stations are arranged upon the belt itself.

The pins G are arranged at suitable intervals along the chain D and may be pushed into the operative position by the cook either by the finger or a suitable implement.

Various modifications may be devised without departing from the spirit of my invention, and I do not limit my claims to the exact construction shown.

Now, having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a carrier and server, the combination set forth of a traveling belt; stations, each provided with a movable interceptor or server, adapted to be projected above the belt into the path of things traveling upon the belt; means arranged at a distance from the interceptor and adapted to operate such interceptor to cause it to project across the belt; and means adapted to be operated to remove the interceptor from its intercepting position.

2. In a carrier and server, the combination set forth of a traveling belt; stations arranged along the belt; a movable interceptor or server arranged at each station and adapted to be projected above the belt into the path of things carried upon the belt; and means carried by the belt and adapted to operate to remove the interceptor from its intercepting position.

3. In a carrier and server, the combination set forth of a traveling belt; stations arranged along the belt; an interceptor or server arranged at each station and adapted to be projected diagonally above the belt into the path of things carried by the belt; means for actuating each interceptor independent of the others to throw it into its intercepting position; and means for operating the interceptors to remove them from their intercepting position.

4. In a carrier and server, the combination set forth of a traveling belt; stations arranged along the belt; an interceptor or server arranged at each station and adapted to be projected diagonally across the path of things on the belt and to be removed therefrom; means adapted to actuate each interceptor independent of the others to carry it into its intercepting position; and means carried by the belt to operate to remove each interceptor from its intercepting position.

5. In a carrier and server, the combination set forth of a traveling belt; stations arranged along the belt; an interceptor or server arranged at each station and adapted to be projected above the belt into the path of things carried upon the belt; an actuating-arm arranged below the belt and operatively connected with the interceptor; and means carried by the belt to engage such actuating-arm to operate it and to cause the interceptor or server to be removed from its intercepting position.

6. In a carrier and server, the combination set forth of a traveling belt; stations arranged along the belt; means arranged at each station and adapted to be operated to intercept the passage of things carried upon the belt; an actuating device attached to each inter-

ceptor and arranged to be projected into the path of operating means carried by the belt; and means arranged at a single station for operating any of said interceptors and to throw them into the intercepting position independent of each other.

7. In a carrier and server, the combination set forth of the interceptor; the operating-arm secured to the interceptor and provided with the operating-pin-receiving slot inclined from its rear upward toward the front; and the sprocket-chain provided with the operating bolt or pin adapted to engage with the arm and to enter the slot and to be pushed upward out of its operating position as it rides upward along the slot.

8. A carrier, server, and unshipper comprising an endless belt; servers arranged along the upper member of the belt to intercept things carried by the belt; and an unshipper arranged to reciprocate across the lower member of the belt to unship the soiled dishes returned by the lower member of the belt.

9. In a carrier and server, the sprocket-chain set forth having arranged along its length, pins adapted to be projected beyond the plane of the chain and to be retracted and chambered within the chain-links; and an intercepting device arranged to be operated by the pins.

10. The carrier and server chain set forth having arranged along its length pins fully chambered within the chain-links and adapted to be projected beyond the plane of the chain and to be retracted within the chain-links.

EPHRAIM W. FAIRBANKS.

Witnesses:

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