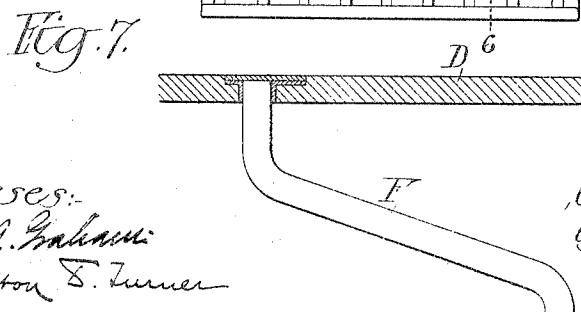
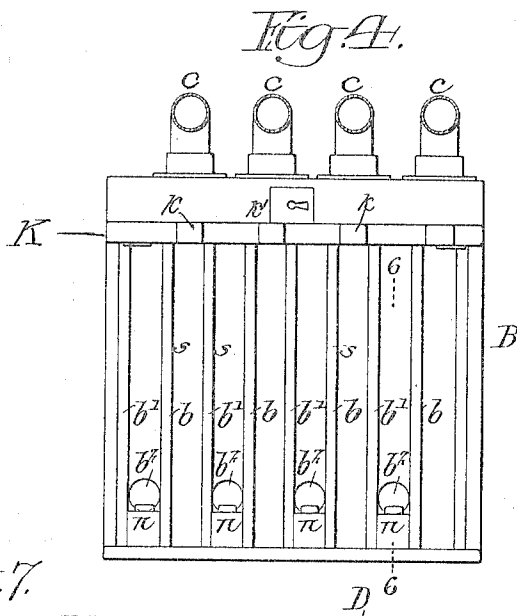
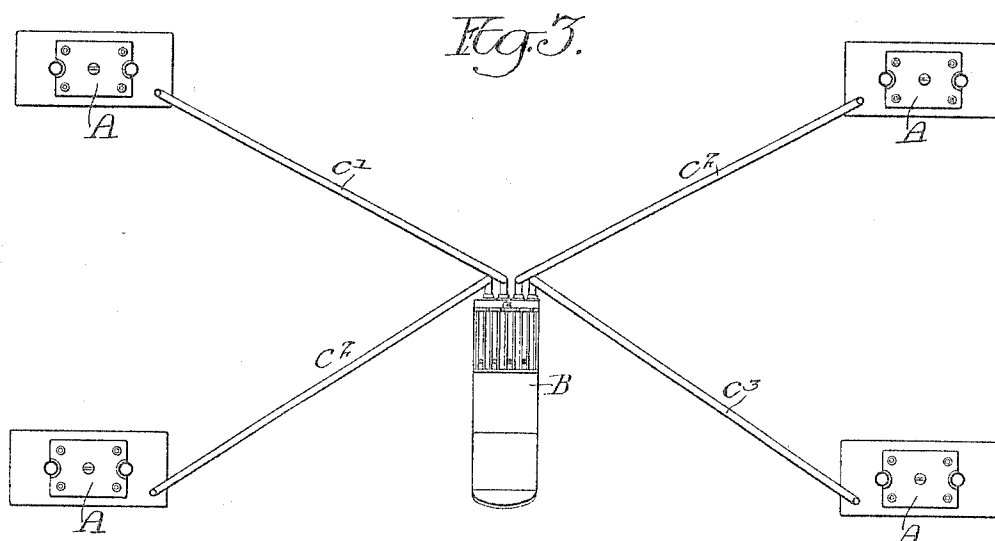




G. E. JENNINGS.  
CALL SERVICE APPARATUS.  
APPLICATION FILED JAN. 18, 1904.

2 SHEETS—SHEET 2.



Witnesses:  
Frank L. Graham  
Hamilton S. Turner

Inventor:  
Clara E. Jennings,  
by her Attorneys,  
H. M. & H. M.

# UNITED STATES PATENT OFFICE.

CLARA E. JENNINGS, OF PHILADELPHIA, PENNSYLVANIA.

## CALL-SERVICE APPARATUS.

No. 797,435.

Specification of Letters Patent.

Patented Aug. 15, 1905.

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*To all whom it may concern:*

Be it known that I, CLARA E. JENNINGS, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Call-Service Apparatus, of which the following is a specification.

My invention relates to certain improvements in call-service apparatus for restaurants in which different numbered and colored balls are used to indicate particular counters or other points in a restaurant and different articles of food.

The object of my invention is to simplify the construction of call-service apparatus of this type and so design the apparatus that the waiter at the counter need not handle the balls.

It will be understood that while my invention is especially applicable for use in restaurants for indicating articles of food it can be used in any place where it is wished to indicate a particular article at a particular place.

In the accompanying drawings, Figure 1 is a vertical sectional view of a portion of a counter and a portion of the receiving-desk, illustrating my invention. Fig. 2 is a face view of the apparatus, the receiving-desk being in section. Fig. 3 is a plan view showing in the present instance four elevators leading from a basement to an upper floor and showing the receiving-desk in the basement. Fig. 4 is a sectional plan view on the line 4 4, Fig. 1. Fig. 5 is a view of one of the valves for releasing the balls. Fig. 6 is a section on the line 6 6, Fig. 4; and Fig. 7 is a view of a modification.

I will describe my invention in connection with four counters or four places from which signals are to be made, which I term the "receiving end" of the system. Each of these counters in the present instance is connected to the kitchen by an elevator A. (Shown in diagram, Fig. 3.)

B is the receiving-desk, and  $c\ c'\ c''\ c'''$  are conveying-tubes leading from the several counters to the receiving-desk B, which is at the delivery end of the system.

Referring to Fig. 1, D is a counter made in any suitable manner, and under the counter is arranged the apparatus C, having a base or funnel portion E in the form of a trough provided with an inclined bottom  $e$ . In the lower portion of the bottom is an opening  $e'$ , extending through a nipple  $e''$ , to which the conveying-tube  $c$  is connected. Above the base or funnel portion E is a series of bent tubes F, forming a series of independent hop-

pers for balls  $i$ , the lower portion of each tube opening into the base portion E, as clearly shown in Figs. 1 and 2. The upper end of each tube is closed by a door  $E'$ , provided with one or more locks  $e^3$  (two in the present instance) and having a glazed section  $E''$ , so that the waiter at the counter can see at a glance the number of balls in the tubes. The tubes are slotted at  $f$  for a certain distance, so that the balls  $i$  can be readily seen through the glass portion, and  $f'$  is a number-plate placed directly under the upper openings of the tubes and numbered or lettered in any suitable manner in accordance with the numbers or letters on the balls in the several tubes.

In the restaurant each number or letter would indicate a particular article of food, and the balls of one number are placed in the tube with the corresponding indicating-number.

At the outlet end of each tube is a valve G, having bearings in the upper end of the base or funnel section E and having a cup-shaped portion  $g$ , in which rests the lowermost ball within the hopper-tube F. The handle  $g'$  of each valve is so formed that an indicating-number can be clearly marked thereon, so that when a certain order is given the waiter turns a certain numbered valve indicating the order and one ball is released from its tube, falling into the funnel portion E and rolling down the tube  $c$  to the receiving-desk B.

In order to space the valves sufficiently, I stagger them, as clearly shown in Figs. 1 and 2, showing two lines of valves; but it will be understood that a single line of valves may be used or more than two, as desired.

Instead of the tubes F being formed in the manner illustrated in Fig. 1 they may be made as shown in Fig. 6, being coupled to a plate let into the counter itself, and by removing this plate the tubes can be readily recharged when necessary, although I prefer to have the entire apparatus concealed where practicable, as shown in Fig. 1.

The receiving-desk B is made in the following manner: The upper portion B' is slightly inclined, as shown in Fig. 2, and provided with a series of partitions  $s$ , forming channels  $b\ b'$ , each alternate channel  $b$  communicating with one of the tubes  $c\ c'\ c''\ c'''$ , so that when the balls pass through the said tubes they will roll into the grooves of the desk directly in front of the receiving clerk, who takes the ball out of the groove, reads the number indicating the article of food, and tells by the color

of the number or the color of the ball itself the particular counter to which the order is to be sent. When the order is thus given and the receiver sees that the particular attendant is filling the order, then the ball is placed in the adjacent groove  $b'$ , which has an opening  $b''$  in the bottom, allowing the ball to fall into one of the compartments  $h$   $h'$   $h^2$   $h^3$  of the drawer H, which is preferably provided with a suitable lock, so that as the orders are given the balls accumulate in these drawers and a number of the balls can be returned to the counter when needed.

The apparatus is generally made of such a size that the tubes need not be replenished with balls during the rush dining-hours.

In order that the balls may collect in the several channels  $b'$  until the order is served, I provide a valve  $n$ , which in the present instance is simply a piece of leather, and use a stop-block  $n'$ , so that while the ball can roll down directly over the hole  $b''$  it cannot pass into the drawer until the clerk at the receiving-desk forces the ball through the opening, the leather valve being pliable enough for this purpose.

I provide the desk with a hinged section K, having projecting portions  $k$ , which when the said section is turned down, as shown by dotted lines in Fig. 2, close the passages  $b$  to prevent the balls if the valves at the counter are operated from rolling onto the receiving-desk without there is some one there to give the order. This section may be provided with a suitable lock  $k'$  to lock the apparatus when not in use.

In the rear of the drawer H are a series of openings  $2^3$ , one for each compartment of the drawer, and there is a valve  $2^5$  for each opening. The bottom  $2^4$  of the drawer is inclined, so that the ball is rolled to the rear of the drawer. When it is desired to recharge the tubes, the drawer is taken to the dining-room, and the balls in any one of the compartments can be discharged by raising the valve  $2^5$  of the particular compartment.

The operation of the device is as follows: If, for instance, there are four counters and tubes leading from each counter to the receiving-table B and where the kitchen is directly below the dining-room of the restaurant, a dumb-waiter is preferably used for each counter. There is a waiter at each counter and an attendant at each dumb-waiter directly under the counter, whose duty it is to prepare and serve the several articles of food called for from that counter. Each number indicates a separate article of food, and the balls are of four different colors or the numbers on the balls are colored. In this instance the balls are white and the numbers are of different colors. The waiter becomes thoroughly familiar with the numbers indicating different articles of food, so that if a certain article of food is called for the valve indicat-

ing that number is given a turn, discharging one of the balls  $i$  from one of the hopper-tubes F bearing the number of the article of food. This ball travels through the conveying-tube  $c$  into the channel  $b$  of the receiving-desk and the receiver calls out the number of the ball and also the particular counter to which the food is to be served. As soon as the order is given the ball is placed in the channel  $b'$  and the several balls collected there being held by the valve  $n$  until the receiving clerk knows that the particular order is delivered. Then if the ball is directly above the opening and held by the valve it is simply depressed by the receiving clerk and is forced into the drawer H, so that it will be seen by this means that the order is checked until delivered to the counter. By this arrangement the order is sure to be delivered to the kitchen and must be filled. The device is simple in construction, cannot readily get out of order, and can be cheaply installed.

The tubes may be made in any suitable manner, either of metal or wood, as desired, or in some instances they may be made in the form of troughs where the kitchen is arranged in such a position with respect to the dining-room that an inclined trough can be used.

I claim as my invention—

1. The combination in a call-service system, of a series of hopper-tubes and a funnel-section with which said tubes communicate, both at the receiving end of the system, a desk at the delivery end of the system, and a conveying-tube extending from the funnel-section to the desk, substantially as described.

2. The combination in a call-service system, of a series of hopper-tubes and a funnel-section with which the said hopper-tubes communicate, said funnel-section being at the receiving end of the system, a desk at the delivery end of the system and a conveying-tube communicating at one end with the funnel and at the opposite end with the delivery-desk, a valve in each of the hopper-tubes so that a ball in any one of the tubes can be released and be transferred to the desk, substantially as described.

3. The combination in a call-service system, of a series of hopper-tubes, and a funnel with which the hopper-tubes communicate, said hopper-tubes and funnel being at the receiving end of the system, a channeled desk at the delivery end of the system, and a conveying-tube extending from the funnel-section to the said desk, substantially as described.

4. The combination in a call-service system, of a series of bent tubes forming hoppers for indicating-balls, each of said hopper-tubes being numbered at the inlet end, a valve at the outlet end of each tube, a funnel-section common to all the hopper-tubes, the said hopper tubes and funnel being at the receiving end of the system, a table at the delivery end of the system, and a conveying-tube extending

from the funnel to the table, substantially as described.

5. The combination in a call-service system, of a series of bent hopper-tubes for the reception of indicating-balls, a number-plate at the inlet end of each hopper-tube, a valve closing the outlet end of each tube, each valve having an indicating-mark to correspond with the indicating-mark on the balls, a funnel-section common to all the hopper-tubes, said funnel-section and hopper-tubes being at the receiving end of the system, a receiving-desk at the delivery end of the system, and a conveying-tube extending from the funnel-section to the receiving-desk, substantially as described.

6. The combination of a counter, a funnel-section, a series of hopper-tubes bent substantially as shown and mounted between the counter and funnel-section, the lower end of the hopper-tubes communicating with said funnel-section, the upper ends of the hopper-tubes being open at a point directly under the counter, a number-plate at the inlet ends of the tubes, a glazed door in front of the said tubes, each tube being slotted so that the balls in the hopper-tubes can be seen through the glass door, a valve for each hopper-tube, a receiving-desk, and a conveying-pipe forming communication between the funnel-section and the receiving-desk, substantially as described.

7. The combination of two or more counters, conveying-tubes leading from the several counters, a receiving-desk with which the said conveying-tubes communicate, two or more channels in the receiving-desk communicating with said tubes, each alternate channel having an opening therein, a drawer with which the opening communicates so that a ball received through one of the tubes can be taken from one channel and placed in one of the alternate channels which communicates with the drawer, substantially as described.

8. The combination in a call-service apparatus, of a receiving-desk having tubes com-

municating with the desk, a drawer in the desk, partitions in said drawer dividing the drawer into compartments, ribs on the surface of the desk forming channels, each alternate channel communicating with a conveying-tube, the other channels communicating with compartments in the drawer, substantially as described.

9. The combination in a call-service apparatus, of a receiving-desk, tubes communicating with the desk, a drawer in the desk, partitions dividing said drawer into compartments, ribs in the desk forming channels, the alternate channels communicating with the several tubes, the other channels communicating with compartments in the drawer, with a pivoted section having projections which, when the section is turned down, cut off the tubes from their channels in the desk, substantially as described.

10. The combination of a receiving-desk, tubes communicating with the desk, said desk having two channels therein, one channel communicating with the tubes, the other channel communicating with the compartments under the desk through an opening, and a valve for said opening so that the balls placed in the channel will be held therein by the valve until forced past the valve, substantially as described.

11. The combination of a receiving-desk, one or more conveying-tubes leading to said desk, channels in the desk communicating with the conveying-tubes, a drawer having compartments therein corresponding with channels in the desk and communicating therewith, an independent outlet for each compartment of the drawer, and a valve for said outlet, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CLARA E. JENNINGS.

Witnesses:

WILL. A. BARR,  
JOS. H. KLEIN.