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06-218175-00003-0000
5218125

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO



No. 06-218175- -00003-0000

Fecha: 2008-01-03 09:42:04 Dep. 2020 NUECREACION
Tra. 2 PATENTES Eve: 1. REGDEPOSITO
Act. 538 PETICION Folios: 4

Medellín, 26 de diciembre de 2007

Señores
Superintendencia de Industria y Comercio
Bogotá D. C.

Cordial saludo:

Con la presente le solicito se realice el examen de patentabilidad para el radicado 218175. / 06

Adjunto recibo de consignación por el 25% del valor de dicho trámite, ya que este se ha venido realizando con los beneficios económicos que ofrece la nación a los nuevos inventores.

Por su amable atención muchas gracias.

Atentamente,

Sebastián Ceballos Vega

Sebastián Ceballos Vega
C. C. 8'125.235

Medellín, 26 de diciembre de 2007

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R/ Sebastián Ceballos Vega.

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Medellín - Antioquia.

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Superintendencia de Industria y
Comercio.

Carrera 13 # 27 - 00 Piso 2^{do}.

Edificio Bohica - Bogotá D.C.

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SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO



No. 06-218175- -00003-0000

Fecha: 2008-01-03 09:42:04 Dep. 2020 NUECREACION

Tra. 2 PATENTES

Eve: 1 REGDEPOSITO

Act. 538 PETICION

Folios: 4

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

NIT : 800176089-2

RECIBO OFICIAL DE CAJA : 07 - 106,076
FECHA : DICIEMBRE 31 DE 2007

***** CONSIGNACION *****

DEPOSITANTE	TIPO PAGO	BANCO	CUENTA	No. PAGO	FECHA PGO	Vr. PAGO
SEBASTIAN CEBALLOS	CONSIGNACION	BANCO POPULAR	050-00110-6	69907324	28/12/2007	101,000.00

***** CONCEPTO *****

CANT.	RENTISTICO	CONCEPTO	TOTAL CONCEPTO
50005-01-01	SOLICITUDES	*** 25% EXAMEN DE PATENTABILIDAD DE I	101,000.00
TOTAL :			\$ 101,000.00

N: CIENTO UN MIL PESOS

RESPONSABLE :

RECIBO DE CAJA APLICADO AL EXPEDIENTE No. _____

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SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

NIT : 800176089-2

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO



No. 06-218175-00003-0000

RECIBO OFICIAL DE CAJA : 08 - 285
FECHA : ENERO 3 DE 2008

Fecha: 2008-01-03 09:42:04 Dep. 2020 NUECREACION
Tra. 2 PATENTES Eje. 1 REGDEPOSITO
Act. 538 PETICION Folios: 4

***** CONSIGNACION *****

DEPOSITANTE	TIPO PAGO	BANCO	CUENTA	No. PAGO	FECHA PGO	Vr. PAGO
SEBASTIAN CEBALLOS	CONSIGNACION	BANCO DE BOGOTA	062754387	3869052	03/01/2008	4,000.00

***** CONCEPTO *****

CANT.	RENTISTICO	CONCEPTO	TOTAL CONCEPTO
1	50005-01-09	OTROS SERVICIOS DE PROPIEDAD I	
		998 VALOR COMPLEMENTO TARIFA A#0 ANTR	4,000.00
		TOTAL :	\$ 4,000.00

SON: CUATRO MIL PESOS

RESPONSABLE :

RECIBO DE CAJA APLICADO AL EXPEDIENTE No. _____

DIVISIÓN DE NUEVAS CREACIONES

RADICACIÓN EXPEDIENTE No. 06-218175

EL EXTRACTO DE LA PRESENTE SOLICITUD DE **PATENTE DE INVENCION**

FUE PUBLICADO EN LA GACETA DE PROPIEDAD INDUSTRIAL No **578** DE

FECHA **31 DE JULIO DE 2007** EL TÉRMINO HÁBIL SEÑALADO POR LA LEY

EXPIRA EL **26 DE OCTUBRE DE 2007**

NOTA: Dentro del plazo de los seis (6) meses siguientes a partir de la fecha de publicación en la gaceta de Propiedad Industrial, deberá solicitar y cancelar el examen de patentabilidad so pena de que la solicitud caiga en abandono, de acuerdo con lo establecido en el Artículo 44 de la Decisión 486/2000.

SE PRESENTARON OPOSICIONES POR PARTE DE TERCEROS.

SI _____

NO X



US006366196B1

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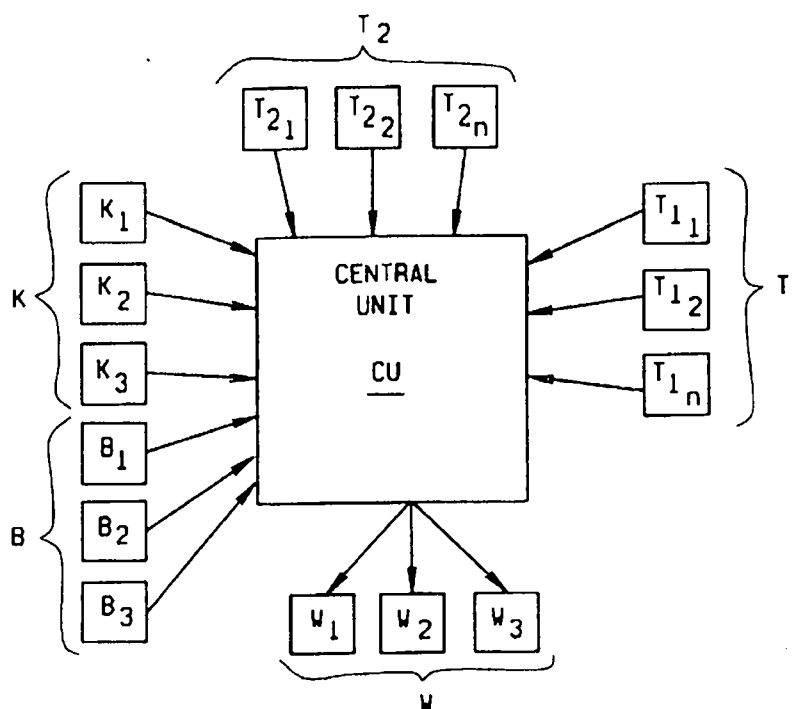
(12) United States Patent
Green et al.**(10) Patent No.: US 6,366,196 B1**
(45) Date of Patent: Apr. 2, 2002**(54) RESTAURANT WAITER PAGING SYSTEM****(75) Inventors:** Daniel Green, 1 Laughing Lake La.,
Ladue, MO (US) 63124; Jace Curtis,
Nashville, TN (US)**(73) Assignee:** Daniel Green, St. Louis, MO (US)**(*) Notice:** Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 0 days.**(21) Appl. No.:** 09/558,014**(22) Filed:** Apr. 25, 2000**(51) Int. Cl.⁷** G08B 5/00**(52) U.S. Cl.** 340/286.09; 340/326; 340/332;
340/825.69; 340/825.72; 340/7.2; 340/10.6;
705/15; 705/26**(58) Field of Search** 340/286.09, 286.01,
340/286.06, 326, 332, 10.6, 7.2, 825.69,
825.72; 705/15, 26**(56) References Cited****U.S. PATENT DOCUMENTS**

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5,828,294 A	10/1998	Shank et al.	340/326

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Primary Examiner—Julie Licu*(74) Attorney, Agent, or Firm*—Polster, Lieder, Woodruff &
Lucchesi**(57) ABSTRACT**

A waiter paging system is provided for use in a restaurant. The system includes a plurality of table transmitters (there being one transmitter at each table) which transmit a "waiter call" signal and a plurality of pager units (there being one pager unit for each waiter). The pager unit notifies the waiter via a vibrator or buzzer that a request has been received and displays the request. In one embodiment, the system includes a central unit which receives the "waiter call" signal from the table transmitter and which effectively relays the "waiter call" signal to the pager units. In a second embodiment, there is no central unit. Rather, the waiter pager units receive the "waiter call" signal directly from the table transmitters. Each pager unit is associated with a set of tables (and hence table transmitters), each set of tables being fewer than all the tables in the restaurant. In either of the two systems, the set of tables with which an individual pager is associated can be selectively altered. In the first (centralized) system, the central unit can be selectively switched between a programming mode and a non-programming mode and includes means for altering the pager/table associations. In the second (non-centralized) system, the pager units are programmable, and can be switched between a programming mode and an operational mode.

24 Claims, 8 Drawing Sheets

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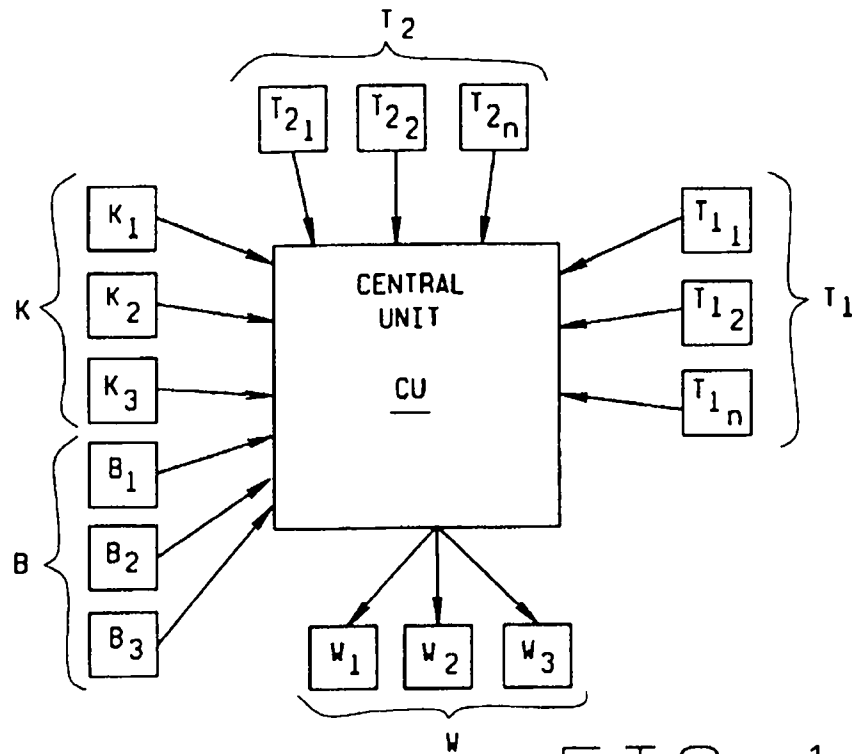


FIG. 1

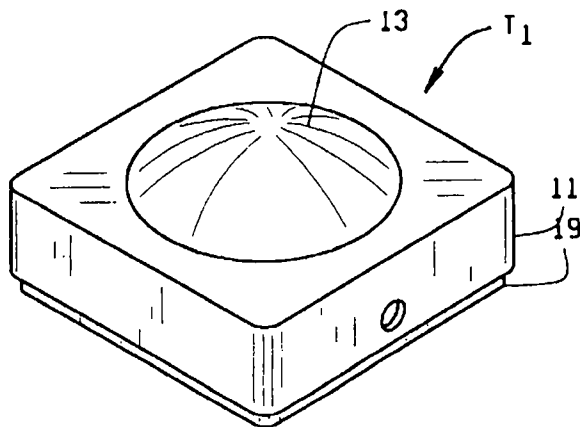


FIG. 2

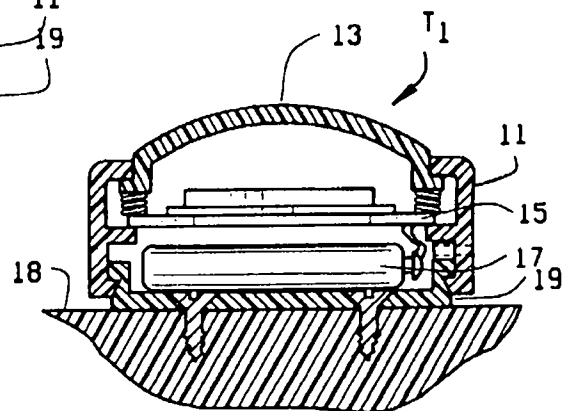


FIG. 3

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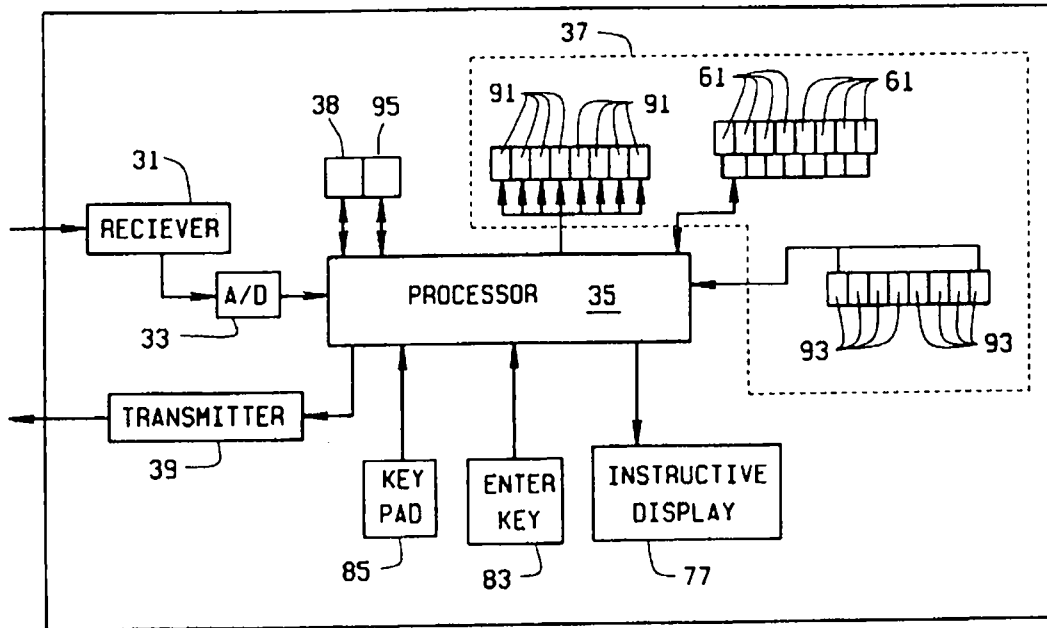


FIG. 4

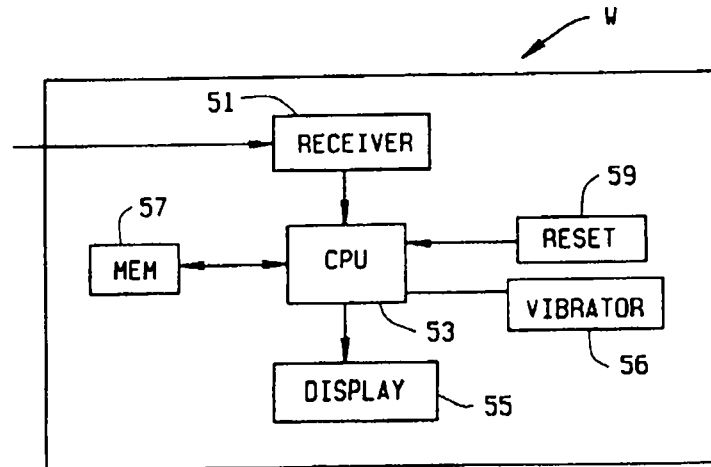


FIG. 6

1

RESTAURANT WAITER PAGING SYSTEM

CROSS-REFERENCE TO RELATED APPLICATIONS

Not Applicable

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

Not Applicable.

BACKGROUND OF THE INVENTION

This invention relates to waiter paging systems for use in restaurants, and, in particular, to a paging system for which allows diners to discreetly call for their waiters. The paging system can also enable a waiter to inform the restaurant hostess when a table is ready for new diners and allow for the kitchen or bar to inform a waiter when an order is ready for a particular table.

Waiters in restaurants are often very busy. It is thus often difficult for a diner to get a waiter's attention, for example, to request the bill, or to otherwise let the waiter know that his/her services are needed. Typically, a diner has to attempt to make eye contact with the waiter, hold up his or her hand to get the waiter's attention, or otherwise call out to the waiter as the waiter passes by the diner's table. These methods may not be discreet, and are often difficult to accomplish because the waiter is busy. It would thus be desirable to provide a diner with a method whereby he/she could easily notify the waiter that the waiter's services are requested. It would also be desirable to enable the bar or kitchen to notify the waiter when orders are ready, as well as to notify the hostess when a table is cleared and ready for new diners.

Several waiter call systems have been developed. However, many of these systems rely on a light at the table to notify the waiter that he/she is needed. Other systems are bulky, are not flexible in their operation, and suffer from other drawbacks.

BRIEF SUMMARY OF THE INVENTION

Briefly stated, my waiter paging system, in one embodiment, includes a plurality of table transmitters (there being one transmitter at each table) which transmit a "waiter call" signal, a central unit which receives the "waiter call" signal from the table transmitter and which effectively relays the "waiter call" signal, and a plurality of waiter pager units which receive the "waiter call" signal from the central unit. The pager unit notifies the waiter via a vibrator or buzzer that a request has been received and displays the request. In a second embodiment, there is no central unit. Rather, the waiter pager units receive the "waiter call" signal directly from the table transmitters.

The table transmitters preferably transmit an analog signal. The signal from each table transmitter can be at a different frequency or the signal from each transmitter can be on the same frequency but be modulated so that the signals from the different transmitters can be differentiated. Alternatively, the transmitters can emit a digital signal. No matter what type of signal is sent, the signal sent by each transmitter is different and contains data indicative of the particular transmitter activated (and hence the table requesting service). To avoid problems caused with potential scrambling of signals, for example by a piece of equipment being started, the table transmitters, when activated, preferably send a series of signals—i.e., it transmits its signal, for

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example, three times. The receiver of the signal (the central unit in the first embodiment and the pager unit in the second embodiment) samples the signal over specific time periods, and filters out background noise. By filtering out background noise, false requests will not be transmitted to, or received by, the pager units. Additionally, by having the table transmitters send three signals, an actual request will not be perceived as noise, and will be transmitted to, or received by, the pager unit, and displayed on the appropriate pager unit.

Each pager unit is associated with a set of tables (and hence table transmitters), each set of tables being fewer than all the tables in the restaurant. In either of the two systems, the set of tables with which an individual pager is associated can be selectively altered. In the first (centralized) system, the central unit includes a pager memory in which codes for selective pager units are stored and a pager/table association memory in which pager/table association information is stored. The central unit can be selectively switched between a programming mode and a non-programming mode and includes means for altering the pager/table associations. Thus, when the central unit is in its programming mode, and when the pager/table associations are changed, the pager/table association memory is altered. In the second (non-centralized) system, the pager units are programmable, the pager/table association being altered with the pager units themselves. The pager unit can be switched between a programming mode and an operational mode and includes a memory device in which table association information is stored; wherein, when the pager unit receives a signal from a "waiter call" transmitter when is in its programming mode, the pager stores the table information in its memory.

The pager units will preferably have certain features, no matter which system they are used with. As noted above, the pager unit display will display at least one request. The request information is stored in a request memory in the pager unit, and as requests are received by the pager unit, a vibrator or buzzer is activated for a short period of time to alert the waiter of the received request and the request information is stored in the unit's request memory. The displayed request is the request stored in the first memory address. The waiter pager unit also includes a reset button to clear a specific request from the request memory and from the display. When the reset button is pressed, a displayed request is cleared from the request memory, the requests stored in the request memory are advanced through the request memory addresses, and the display is updated.

Either system can also be provided with a kitchen and a bar transmitter, which are activated when a food or drink order is ready. The kitchen and bar transmitters are substantially the same, and operate substantially identically to the table transmitters. The kitchen and bar transmitters can comprise a single transmitter capable of sending out different signals, or they can comprise a plurality of transmitters corresponding to the number of pager waiter units. In the first instance, the signal sent by the transmitter is set, for example, by a dial, button, or similar means. The "order ready" signal sent by the kitchen and bar transmitters includes information relating to the source of the signal (i.e., from the kitchen or the bar) and of the waiter (pager) being paged to pick up an order. When a pager unit receives an "order ready" signal, its display is updated with a "K" or "B", for example, to show that an order is ready.

The two systems (centralized and non-centralized) can also include a hostess stand unit. In the centralized system, the hostess stand unit is preferably made part of the central unit, and the central unit is then located at the hostess stand.

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The hostess stand unit includes a display having indicia indicative of each table in the restaurant and a receiver responsive to a "table clear" signal from the table transmitters. When a "table clear" signal is received, the hostess stand display is updated to show that a respective table is ready for new diners. Additionally, the hostess unit includes a reset switch to alter the table status shown on the display once a party is seated at a table. This reset switch can be either a mechanical switch or a software switch.

In the centralized system, the hostess stand receiver is the central unit receiver and the central unit does not need a second receiver. The "table clear" signal can be sent by second transmitters at each table. Alternatively, the one transmitter at the table can be used to send the "table clear" signal. In this instance, the "table clear" signal would be differentiated from the "waiter call" signal by the duration of the signal sent. A signal longer than, for example, three seconds would be interpreted by the system to be a "table clear" signal and a shorter signal would be interpreted to be a "waiter call" signal.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

FIG. 1 is a block diagram of a first embodiment of a waiter paging system of the present invention;

FIG. 2 is a perspective view of a table transmitter;

FIG. 3 is a cross-sectional view of a table transmitter;

FIG. 4 is a block diagram of a central unit of the waiter paging system;

FIG. 5 is a flow chart of the operation of the central unit;

FIG. 6 is a block diagram of a waiter paging unit used in the waiter pager system;

FIG. 7 is a flow chart of the operation of the waiter pager unit;

FIG. 8 is a perspective view of a waiter pager unit designed to be worn as a watch;

FIG. 9 is a plan view of the waiter pager unit of FIG. 8;

FIG. 10 is an enlarged cross-sectional view of the pager display taken along line 10—10 of FIG. 9 and showing reset buttons for the individual display elements;

FIG. 11 is a plan view of a console for the central unit, including a display for the central unit;

FIG. 11a is a cross-sectional view of the central unit display taken along line 11a—11a of FIG. 11;

FIG. 11b is a schematic alternative waiter/table display for use with the console of FIG. 11;

FIG. 12 is a flow chart showing programming of the central unit;

FIG. 13 is a block diagram of a second embodiment of the waiter paging system;

FIG. 14 is a block diagram of a waiter pager unit for use with the system of FIG. 13; and

FIG. 15 is a block diagram of a hostess unit for use with the system of FIG. 13;

DETAILED DESCRIPTION OF THE INVENTION

The following detailed description illustrates the invention by way of example and not by way of limitation. This description will clearly enable one skilled in the art to make and use the invention, and describes what we presently believe is the best mode of carrying out the invention.

A typical restaurant has a plurality of tables at which diners eat, a kitchen, a bar, and a hostess station. To facilitate

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operation of the restaurant, and the paging of waiters, the restaurant can be provided with a paging system of the present invention. An illustrative embodiment of the paging system 1 of the present invention is shown in FIG. 1. The paging system 1 includes a central unit CU, transmitters T1 and T2 at each table, and a plurality of waiter pager units W. The system can also be provided with kitchen and bar transmitters K and B, respectively.

A table transmitter T1 for calling a waiter is shown in FIGS. 2 and 3. The table transmitter T1 includes a housing 11 having a spring loaded button 13 on its top. A transmitter 15 operated by a battery 17 is contained within the housing 11. As can be appreciated, when the button 13 is pressed, the transmitter 15 is activated and transmits. The transmitter T1 is mounted to a table 18 by screws which extend through the base 19 of the housing. Although the transmitter T1 is shown to be on top of the table surface in FIG. 9, it will be apparent that the transmitter T1 could be mounted to the table bottom surface, or even embedded in the table. The transmitter housing 11 is preferably easily removable from the base 19 to facilitate changing of the battery 17 when necessary.

Each table preferably includes two transmitters T1 and T2. The transmitter T1 is used to call the waiter and the second transmitter T2 is by the waiter or busboy to notify the hostess that the table has been cleared and that it is ready for new diners, as will be described below. The transmitters T2 are identical in structure to the transmitters T1, and hence, are not described.

The transmitters T1 and T2 can transmit either an analog or a digital signal. If the transmitters emit an analog signal, the transmitters T1 will each emit a signal of a different frequency in a first set of frequencies, and the transmitters T2 will each emit a signal of a different frequency in a second set of frequencies. Alternately, the transmitters T1 can all transmit a signal on one frequency and the transmitters T2 can transmit their signals on a second frequency. In this instance, the signals from the different transmitters T1 and the different transmitters T2 will be modulated (in height and/or shape) so that the signals from the different tables can be differentiated. If the transmitters emit a digital signal, then the signal can, for example, be a 7-bit word. The first six bits of the word would correspond to the table and the last bit would indicate which transmitter was being activated (i.e., the waiter call transmitter T1 or the table clear transmitter T2). Thus, for example, for a particular table, the transmitter T1 would transmit a signal of 0000111 and the transmitter T2 would transmit a signal of 0000110. The use of six bits to correspond to table numbers allows for up to sixty-four tables. The signal size could be increased or decreased to accommodate larger or smaller restaurants.

The kitchen and bar of the restaurant both include a plurality of transmitters K and B substantially identical to the table transmitters. The transmitters of the kitchen and bar are placed, for example, on an easily accessible board, as a bank of transmitters, for example. Alternatively, the kitchen and bar transmitters can each be a single transmitter in which the signal sent is set, for example, by a dial, button, or similar means. If analog signals are being sent, then the signal setting device (dial, button, etc.) would operate a rheostat, a series of switches, etc., which select the frequency or shape of the signal sent. On the other hand, if digital signals are sent, the signal setting device will select the signal sent by the kitchen and bar transmitters. The number of signals capable of being sent by the kitchen and bar transmitters correspond to the number of waiter pager units. When a food or drink order is ready for a particular waiter, the kitchen or bar activates the transmitter to send a

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signal corresponding to the appropriate waiter. The transmitter will send out a signal similar to the signal from the table transmitters T1 and T2. If the signal is an analog signal, the kitchen transmitter signals will all be different signals on a set of frequencies different from the table transmitters. The bar transmitters, B, will similarly all transmit signals at different frequencies on a set of frequencies different from both the kitchen transmitters and the table transmitters. Alternatively, the kitchen transmitters K could transmit on a third frequency and the bar transmitters B could transmit on a fourth frequency. The signal from the different kitchen and bar transmitters would then be modulated to differential between the signals.

The signal transmitted by the table transmitters T1 and T2, the kitchen transmitters K and the bar transmitters B are received by the central unit CU. (FIG. 4) The central unit CU includes a receiver which receives the signals from the various transmitters, and emits an output indicative of the signal received. If the signal is an analog signal, the receiver output is sent to an analog-to-digital (A/D) converter 33 which converts the analog signal to a digital signal and then sends the digital signal to a central processing unit (CPU) 35 of the central unit CU. If the transmitters send a digital signal, there is no need for the A/D converter and the signal from the receiver 31 is sent directly to the CPU 35. Preferably the table, kitchen, and bar transmitters T1, T2, K, and B, when activated, send out their respective signals in multiples. That is, when a waiter call transmitter T1 is activated, for example, it will send out its signal 3 times in short succession. The central unit monitors the frequencies and includes a filtering unit to filter out noise, for example by averaging signals received over a 1 second period. Thus, if one of the signals sent by a of the transmitter is scrambled, for example, by starting a piece of equipment, the central unit, the other signals will not be scrambled, and the central unit will receive the signal for processing, as described below. Additionally, by filtering or averaging the signals, the possibilities of receiving, and transmitting, a false signal is reduced.

The digital signal received by the CPU 35 is, for example, a 7-bit signal, as discussed above in connection with the table transmitters. If the signal is from a table transmitter T1 or T2, the signal will indicate from which table the signal was transmitted, as well as which transmitter (T1 or T2) was activated. If the signal was from the bar or kitchen, the signal will be indicative of the fact that the call came from the kitchen or bar, as well as indicate which waiter is being called. As seen in the flow chart of FIG. 5, the CPU reads the signal to determine if the signal is a "table-ready" signal from the transmitter T2, or if the signal is a "waiter call" signal from a table transmitter T1 or from the kitchen or bar transmitters K,B. If the signal is a "table ready" signal then the display 37 is update, as described below to show that the particular table is ready for seating.

If the signal is a "waiter call" signal from one of the table transmitters T1, the CPU determines which waiter (i.e., pager unit) is assigned to that table. The central unit CU includes a pager/table memory 38 in which pager codes are paired with table codes to form a look-up-table. The CPU 35 compares the received signal with the information in the look-up-table, and generates a signal to be transmitted by a transmitter 39. The signal is indicative of the table requested service; or if the "waiter call" signal is from the kitchen or bar, the signal is indicative of the fact that a food or drink order is ready at the kitchen or bar. As described below, the pager/table associations can be altered. The memory 38 is thus a programmable memory, and can reside on a computer

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disk, a PROM or, an EPROM, for example. Other types of programmable memory modules can also be used.

As noted, the signal transmitted by transmitter 39 is coded to be received by an individual one of the waiter pager units W and, as discussed below, will inform the waiter that a food or drink order is ready, or that a specific table is requesting service. The signal from transmitter 39 is preferably digital. The digital signal will contain two parts or two words. The signal's first word is a code for a specific pager unit. The length of the signal's first word depends on the number of pager units associated with the system. For example, a 5-bit word will accommodate 2^5 or 32 waiter pager units. This would be sufficient for nearly any large restaurant. For a smaller restaurant where there are, for example, ten waiters, the signal's first word need only be 4-bits long (which will accommodate up to 16 pager units). The second half (or second word) contains a code indicative of the caller (i.e., a table requesting service, the kitchen, or the bar). Preferably, the second word is the binary equivalent of the table number. The second word needs to be sufficiently long such that there is an individual code for each table, a code for the kitchen, and a code for the bar. An 8-bit word will accommodate 128 individual tables, the kitchen, and the bar (i.e., one bit for the kitchen and bar and 7 bits for table codes).

If the central unit signal is an analog signal, then the waiter pager units W each receive the signal on a different frequency, and the frequency would be modulated to indicate the appropriate table, or the bar or kitchen. In this instance, the central unit CU would use the look up-table of memory 38 to determine the appropriate frequency so that the signal will be received by the appropriate pager unit W as well as the manner in which the signal is to be modulated so that the appropriate information is transmitted to the pager W.

A waiter pager unit is shown in block form in FIG. 6 and the flow chart of the operation of the waiter pager unit is shown in FIG. 7. The waiter pager units W are identical. The waiter pager unit W includes a receiver 51, a processor 53, a display 55, and a vibrator or buzzer 56. The receiver 51 receives the signal from the central unit CU and generates an output which is sent to a processor 53 of the unit W. The processor checks the signal and compares it to its own preprogrammed identification number. This identification number is in the same format as the first word of the signal sent out by the central unit transmitter 39. The pager identification number can be hard coded or hard wired into the unit. Alternatively, it can be selectively set using for example, DIP switches or a series of prongs and jumpers. Preferably, the pager identification number is a binary equivalent to the waiter/pager number. If the first word of the central unit's signal does not correspond to the units identification number, then the signal is ignored (i.e., it is meant for another pager unit in the system). If the signal's first word does correspond to the pager's identification number, then the processor 53 activates the vibrator or buzzer 56 to alert the waiter that a new request has come in. The vibrator preferably is activated for a predetermined amount of time, i.e., a couple of seconds, and then turns off. When activated, the vibrator/buzzer will preferably vibrate, but could also emit a soft buzzing sound to alert the waiter to the fact that a request has been received. Of course, other means of notifying the waiter of a received request can also be used. For example, an alert light could blink on and off. The processor 53 also examines the signal's second word. As noted above, the second word contains a code indicative of the bar, kitchen, or of the table requesting service. The second word (which represents the requester) is stored in a



US005828294A

54

United States Patent [19] Shank

[11] Patent Number: **5,828,294**
[45] Date of Patent: **Oct. 27, 1998**

[54] **CUSTOMER ACTIVATED SIGNAL FOR SERVICE**

4,777,488 10/1988 Carlmen, Jr. et al. 340/825.72
5,355,115 10/1994 Goor et al. 340/321
5,594,409 1/1997 Shank 340/326

[76] Inventor: **Edward J. Shank**, 6401 Randy Dr.,
Charlotte, N.C. 28215

FOREIGN PATENT DOCUMENTS

1321598 12/1989 Japan 340/286.09

[21] Appl. No.: **780,809**

[22] Filed: **Jan. 9, 1997**

Primary Examiner—Edward Lefkowitz
Attorney, Agent, or Firm—Clifton Ted Hunt

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 194,474, Jan. 31, 1994, Pat. No. 5,594,409.

[51] Int. Cl.⁶ **G08B 5/00**

[52] U.S. Cl. **340/326; 340/286.06; 340/286.09; 340/332**

[58] Field of Search 340/326, 332,
340/286.06, 286.09

[56] References Cited

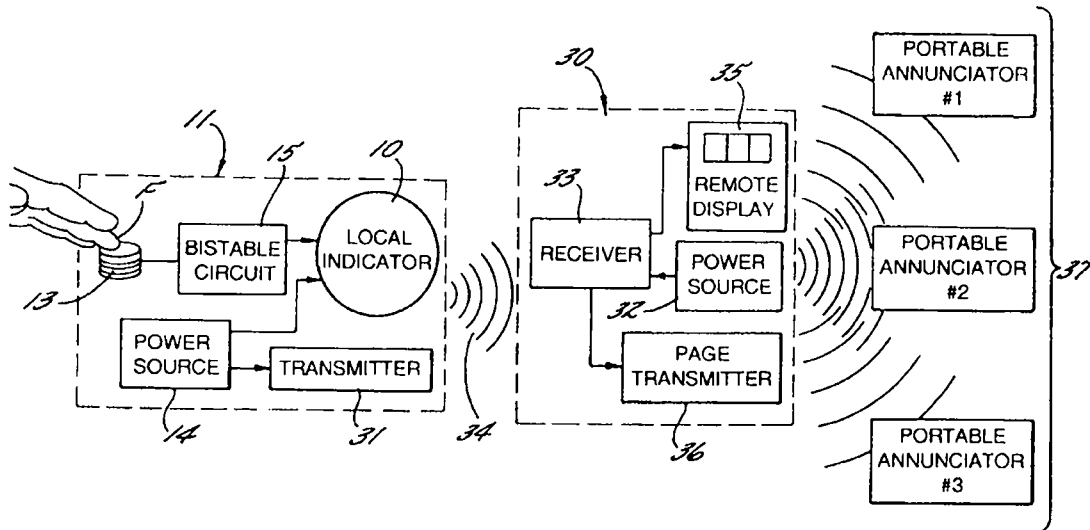
U.S. PATENT DOCUMENTS

1,796,668 3/1931 Sarfety 390/286.09
3,810,164 5/1974 Lambert 390/332
4,701,849 10/1987 Elden 364/401

[57] ABSTRACT

This invention relates to signaling systems of the type used by customers in a service facility, such as taverns, restaurants and stores, to alert service personnel that a specific customer desires service. One embodiment is limited to one or more local indicators used by customers to transmit signals for service to service personnel in the vicinity of the local indicators. Another embodiment uses local indicators and remote indicators. The local indicators have transmitters that transmit customers' signals for service to the remote indicators, that are equipped to alert service personnel anywhere on the premises that one or more specific customers desire service.

5 Claims, 3 Drawing Sheets



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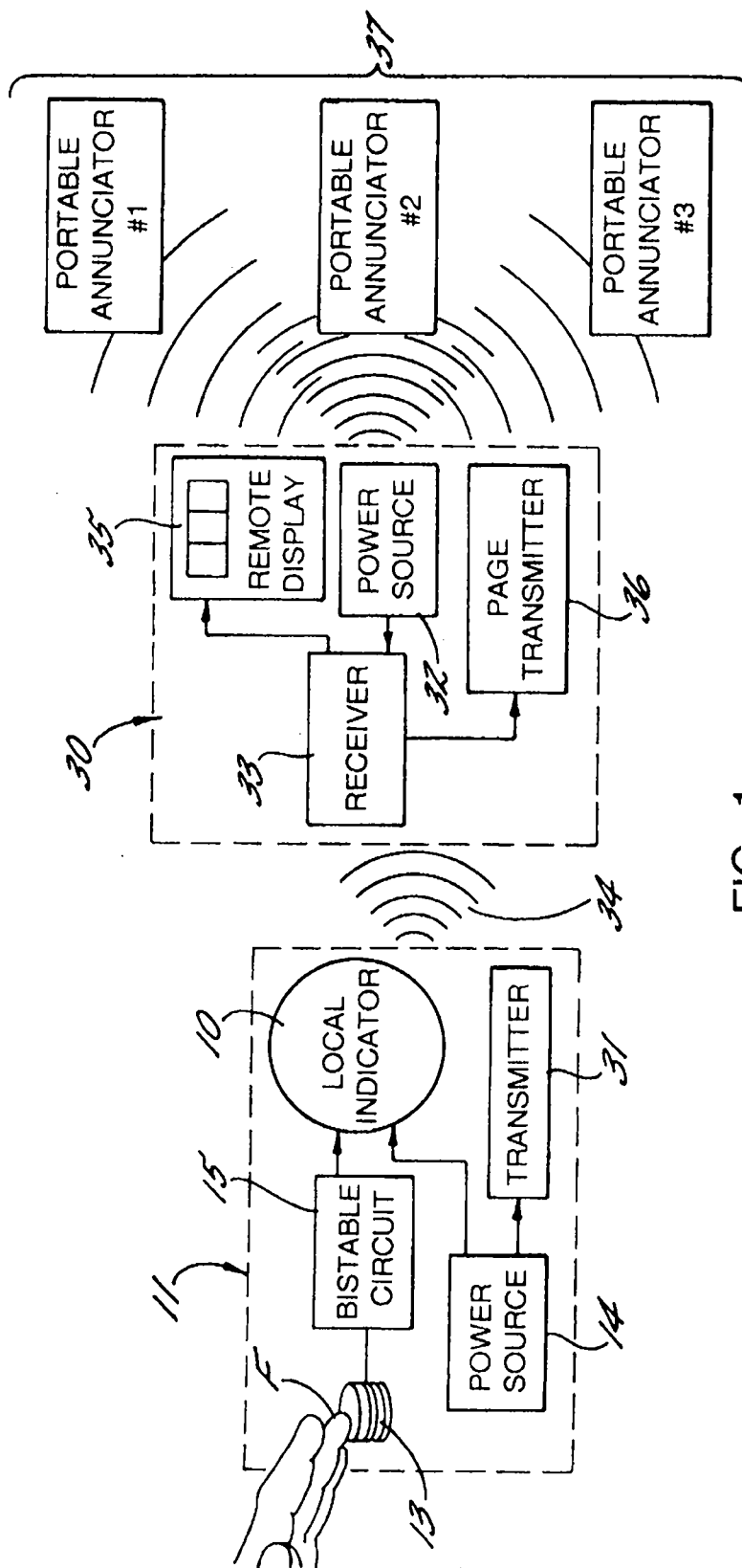


FIG. 1.

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CUSTOMER ACTIVATED SIGNAL FOR SERVICE

CROSS REFERENCE OF RELATED APPLICATIONS

This application is a continuation-in-part of my application Ser. No. 08/194,474, filed Jan. 31, 1994, now U.S. Pat. No. 5,594,709 for CUSTOMER ACTIVATED DEVICE.

FIELD OF THE INVENTION

This invention relates to signaling systems of the type used by customers in a service facility, such as taverns, restaurants and stores, to alert service personnel that a specific customer desires service.

BACKGROUND OF THE INVENTION

It is customary for service personnel, such as waiters in taverns and clerks in stores, to be anywhere within the premises and yet be responsible for responding to requests for service by specific customers. It is sometimes difficult for a customer desiring service to get the attention of service personnel.

The prior art has recognized this problem and presented several proposed solutions. See, for example, U.S. Pat. No. 3,810,164 issued May 7, 1974 to Adelor A. Lambert for COMBINATION SIGNALING AND ADVERTISING SYSTEM.

SUMMARY OF THE INVENTION

One embodiment of the invention comprises a customer activated local indicator including a signal light, a bistable circuit and a source of electric power, such as a battery, housed in any suitable enclosure that is available to customers. The enclosure may be a simulated product that serves a dual function of (1) advertising the establishment's merchandise, such as a simulated beer bottle in a tavern, and (2) serving as a housing for the signal light, the bistable circuit, and the battery.

Optionally, a remote indicator may be provided to alert service personnel located at a distance from the customer desiring service, and the local indicator may include a transmitter to transmit a customer's signal for service to the remote indicator.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a block diagram illustrating components of a local indicator in one embodiment of the invention;

FIG. 2 is an exploded perspective view of a local indicator, wherein the enclosure is a simulated beer bottle that houses the signal light, the bistable circuit, and the battery;

FIG. 3 is a perspective view of the simulated beer bottle shown in FIG. 2 in conjunction with a gratuity collection jar;

FIG. 4 is a block diagram illustrating the electronic circuitry used in the invention; and

FIG. 5 is an exploded perspective view illustrating the charging of a battery removed from a local indicator.

DETAILED DESCRIPTION OF THE INVENTION

The Local Indicator

Referring more specifically to the drawings, one embodiment of the customer activated signal is a local indicator 10

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comprising an enclosure 11 that houses a signal light 12, a proximity sensor 13, a battery 14, and a bistable circuit 15 operably connecting the signal light 12 with the proximity sensor 13 and the battery 14. The local indicator is preferably portable, but can be stationary, if desired.

A battery, either replaceable or rechargeable, is the preferred source of power but the invention can be used with an external power source, if desired.

The enclosure 11 may be of any desired form, ranging from a simple box to a simulated beer bottle 11 and its advertising label 11A (FIG. 2).

The proximity sensor 13 is responsive to objects coming within any predetermined range of the sensor 13, preferably being responsive to the touch of a customer's FIG. 22 (FIG. 1).

In the illustrated embodiment, the cap of the simulated beer bottle 11 functions as the proximity sensor 13, and the bistable circuit 15 and the signal light 12 are inside the bottle or enclosure 11. The battery 14 is in the lower portion 16 of the bottle 11 (FIG. 2), and is operably connected to the bistable circuit 15 within the bottle.

The battery 14 is preferably a rechargeable battery. A suitable battery charger is illustrated at 20 in FIG. 5. The battery charger 20 includes a substantially flat top surface 21 having a plurality of identical sockets 22 therein. Recharging a battery 14 requires that it be uncoupled from the circuitry 15 and removed from its enclosure 11. The battery to be recharged is then inverted to the position shown in FIG. 5 and inserted into a socket 22 in the battery charger 20. The charger 20 then provides a charging current to the battery.

Local indicators 10 may be spaced along a bar and combined with a gratuity jar G on trays T (FIG. 3), or placed on individual tables in a small tavern or other location where the service personnel are customarily present and can see the signal light glowing in an indicator after its proximity sensor has been touched to signal for service.

A remote indicator is desirable for larger establishments where the service personnel are sometimes located at a distance from the customers and cannot see the signals for service emitted by activated local indicators.

The Remote Indicator

Use of remote indicators, one of which is indicated at 30 in FIG. 1, requires that the circuitry in each of the local indicators 10 include a transmitter, one of which is indicated at 31 in FIG. 1. The remote indicator 30 is preferably positioned at a location to permit the service personnel to conveniently and efficiently determine which customer desires service. The remote indicator 30 thus provides a location accessible to service personnel and enables them to recognize a signal for service.

The remote indicator 30 includes a power source 32, a programmable receiver 33 for sensing waves 34 radiated from the transmitter 31 in local indicator 10, a remote display 35, and a pager transmitter 36.

The receiver 33 in the remote indicator 30 is programmable to sense the radiated signal 34, recognize the identification code of the local indicator 10 signaling for service, and activate the appropriate indicator in the remote display 35. The radiated signal 34 may be coded, using techniques that are similar to those used in conventional garage door openers. Thus, it is not believed necessary to describe the coding technique in detail.

Typical radiated waves 34 include conventional radio and optical signals. In establishments using a plurality of local

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indicators 10, each local indicator 10 has a unique identification code. When the sensor 13 for one of the local indicators 10 is touched to signal for service, the bistable circuit 15 energizes the transmitter 31 to radiate the wave 34 which is modulated to include the identification code for the specific local indicator 10 signaling for service.

One or more portable annunciators, collectively indicated at 37 in the remote indicator 30 of FIG. 1, may be selectively activated by the remote indicator 30. The portable annunciators 37, which may resemble pagers, include a suitable indicator to permit service personnel to independently determine which customer desires service without the service personnel having to receive that information from either the local indicator 10 or the remote indicator 30. Thus, in a system equipped with annunciators, the service personnel has three ways to learn that a customer desires service.

Referring to FIG. 4, touching the proximity sensor 13 activates the service. Activation of the bistable circuit 15 energizes the signal light or flashing circuit 12, and optionally activates the transmitter 31 to generate the radiated code signal 34.

Additionally, the output signal of the bistable circuit 15 is coupled to the input terminal of a time delay circuit 17 that generates a pulse after a predetermined time interval. This pulse resets the bistable circuit 15 to its inactive position, which disables the transmitter 31 and turns off the light 12 until the proximity sensor 13 is touched again.

Additionally, the output signal of the bistable circuit 15 is combined in a two input gate circuit 18 with the output signal of the proximity sensor 13 to permit the touching of the proximity sensor 13 to reset the bistable circuit 15. These features assure that the customer activated local indicator will not be left permanently in an energized state. This is especially important when the device is operated from batteries, either rechargeable or replaceable.

A bistable circuit is preferred but the invention is operable with an electric circuit that is not bistable. As used herein, the term bistable circuit means an electric circuit that has an "on" state and an "off" state, and in its "on" state activates the signal light, energizes a transmitter, if provided, to carry out its functions, and returns to the "off" state after a predetermined length of time.

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Conclusion

The foregoing embodiments of a customer activated signal for service are merely illustrative of the principles of the invention. The invention can be implemented using commercially available components and conventional construction techniques. Variations and modifications in the above-described invention will be readily apparent to those skilled in the art. Such variations can be made without departing from the spirit and scope of the invention, as expressed in the appended claims.

I claim:

1. A customer activated device for use by a customer to signal service personnel that the customer desires service, said device comprising:

(a) a portable local indicator, including:

(i) a signal light and

(ii) a bistable circuit connecting the signal light to a source of power;

(b) an enclosure;

(c) said signal light and said bistable circuit being mounted inside said enclosure; and

(d) said binary circuit including a proximity sensor, whereby a customer desiring service activates said device by positioning a portion of the customer's body within a predetermined distance of said proximity sensor to activate said bistable circuit to turn on said signal light to indicate to service personnel that said customer desires service.

2. The invention of claim 1 wherein the enclosure is a simulated beer bottle.

3. The invention of claim 2 wherein the simulated beer bottle has a circular bottom wall that is removable from the rest of the bottle and the power source is a rechargeable battery extending inwardly from the bottom wall of the simulated beer bottle.

4. The invention of claim 3 wherein the rechargeable battery is of less diameter than the removable bottom wall of the simulated beer bottle.

5. The invention of claim 4 which includes a battery charger having sockets shaped to receive the rechargeable battery when the bottom wall of the simulated beer bottle is removed from the bottle and inverted.

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United States Patent [19]

Elden

[11] Patent Number: 4,701,849

[45] Date of Patent: Oct. 20, 1987

[54] SYSTEM FOR SUMMONING SERVICE PERSONNEL AND MONITORING THEIR RESPONSE TIME

[76] Inventor: Michael G. Elden, 1405 Curlew Ave., Naples, Fla. 33962

[21] Appl. No.: 837,597

[22] Filed: Mar. 7, 1986

[51] Int. Cl.⁴ G06F 3/04; G06F 15/24

[52] U.S. Cl. 364/401; 364/406

[58] Field of Search 364/400-401, 364/405-406, 408, 200 MS File, 900 MS File; 235/7 R, 383; 186/35-36, 38-39, 41

[56] References Cited

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3,310,797	3/1967	Auger	340/286
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4,222,111	9/1980	Sloan et al.	364/900
4,225,852	9/1980	Waters et al.	340/286 R
4,392,119	7/1983	Price et al.	364/401 X
4,547,851	10/1985	Kurland	364/401
4,553,222	11/1985	Kurland et al.	364/900
4,569,421	2/1986	Sandstedt	186/39
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FOREIGN PATENT DOCUMENTS

WO82/02972 9/1982 PCT Int'l Appl. 364/401

Primary Examiner—Gary V. Harkcom

[57] ABSTRACT

System for summoning service personnel to a particular table in a restaurant or similar facility and for monitoring service personnel response time. Each table includes a transmitter selectively activated by a switch at the table operated by a customer requiring service. When activated, each transmitter generates a signal unique to its table. A central station includes a display panel having a plurality of individual sections each relating to one of the tables. Each individual section includes a visual indicator, an audible annunciator, and a digital timer. The central station also includes a plurality of receivers, each responsive to one of the table transmitters. When a transmitter is activated by a customer, the corresponding receiver activates the appropriate visual indicator to alert service personnel that service is required at that table. Simultaneously the receiver causes the digital timer to count at one count per second. If the count reaches a predetermined amount, indicating the customer has waited too long, the audible annunciator is activated to alert service personnel of their failure to respond to the customer. When service personnel respond to the customer's signal at the table, the transmitter is de-activated, thus de-activating the visual indicator, audible annunciator, and timer. The number contained in the digital timer at that time represents the total response time to the customer's signal. A microprocessor connected to each visual indicator, audible annunciator, and time, stores the data generated for compiling a record of the performance of service personnel for each table.

4 Claims, 4 Drawing Figures

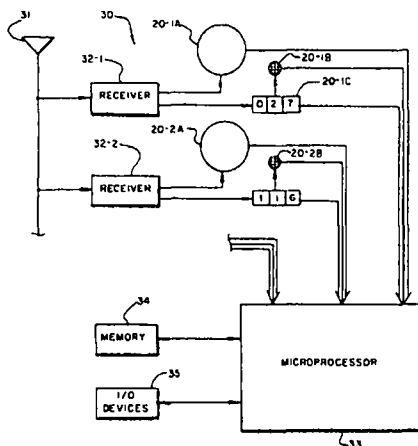


FIG. 3.

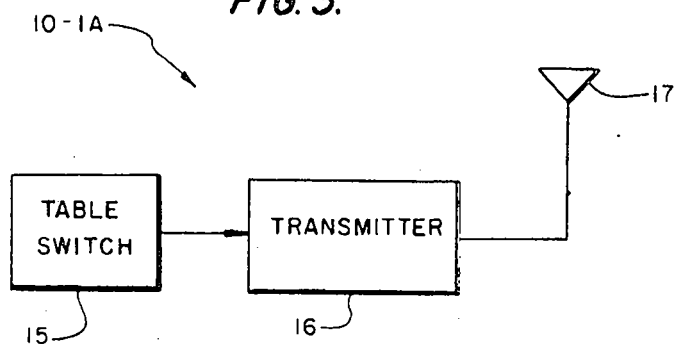
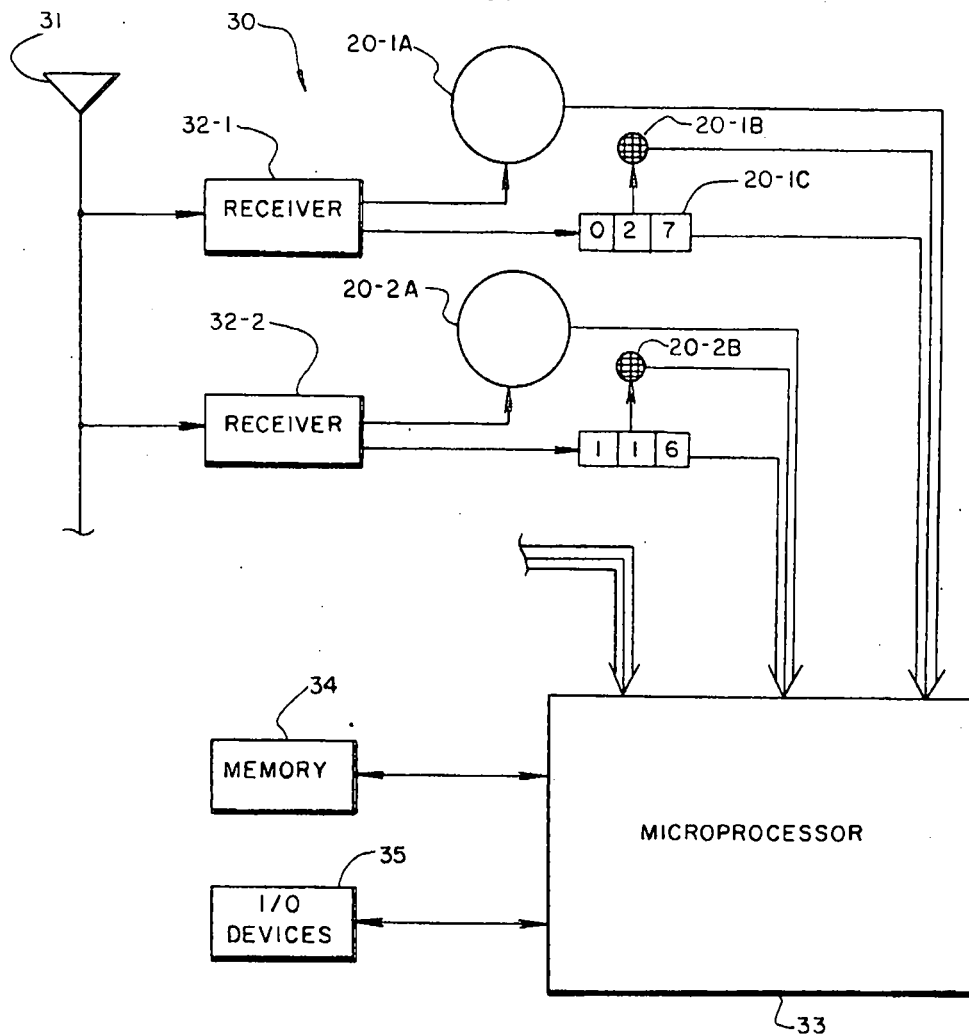


FIG. 4.



SYSTEM FOR SUMMONING SERVICE PERSONNEL AND MONITORING THEIR RESPONSE TIME

BACKGROUND OF THE INVENTION

1. Field Of The Invention

The present invention relates in general to signalling devices and in particular to a system for summoning service personnel to a particular location in a restaurant or similar facility and for monitoring their response time.

Many modern restaurants and similar facilities are designed to provide various unique and pleasant surroundings for their customers who dine or are otherwise attended to. Many times, such facilities are very large and have complex layouts of tables or booths. Also, various decorative dividers and other decorative objects may be placed throughout the facility to enhance the privacy and enjoyment of the customers. However, regardless of the amount and quality of the decorations and other advantageous features, it is essential for the continued success of the facility that the service personnel who attend to the various needs of the customers do so in a rapid and efficient fashion. Failure to so respond results in excessively long waiting periods for the customers, thereby causing dissatisfaction. Thus, there is a need for a system which provides a means for a customer in such a facility to summon service personnel when desired and further which provides a means for the facility to monitor and evaluate the performance of its service personnel in responding to its customers.

2. Description Of The Prior Art

U.S. Pat. No. 3,821,707 to Peters discloses a wireless waitress call system for a restaurant, cocktail lounge, or similar facility. A central transmitter is activated by the operation of any one of a plurality of switches, a switch being located at each one of a plurality of tables or booths at the facility. The operation of any one of the switches causes the transmitter to transmit a signal of a particular distinctive frequency corresponding to the individual table at which the switch was operated. A receiver is mounted on a tray carried by the waitress. The receiver responds to the signals transmitted by the transmitter. The receiver is coupled to a plurality of indicating lights mounted on the tray, each relating to a different table or booth. Selective means are included in the receiver circuit such that, when a particular switch at a particular table or booth is operated, a corresponding light on the tray of the waitress is energized so as to inform the waitress that service is desired at the designated table or booth.

U.S. Pat. No. 4,222,111 to Sloan et al. discloses a method and apparatus for monitoring the status of tables in a restaurant. A processor unit is coupled by means of a plurality of serial data busses to a host unit and also to a plurality of service units. The host unit includes a plurality of push buttons which correspond respectively to tables within a particular service area of the restaurant. The processor unit computes and stores the status of each table in the restaurant. The processor also periodically computes and transmits display information representative of the updated status of the tables to the host unit and to the service unit. The status of a particular table is updated by depressing a corresponding table button of either the host station or the respective service station. The processor unit computes the updated status information and stores the updated table

status in a memory of the processor unit. Running totals for each table can be stored in the processor unit and may be displayed after each meal, day, week, or month.

Other similar systems are disclosed in U.S. Pat. Nos. 1,796,668 to Sarfaty, 3,233,217 to Bost, Jr., 3,304,416 to Wolf, 3,310,797 to Auger, and 4,225,852 to Waters et al.

SUMMARY OF THE INVENTION

The present invention relates to an improved system for summoning service personnel to a particular location in a restaurant or similar facility and for monitoring their response time. The facility includes a plurality of tables at which customers are located. Each table includes an individual transmitter which is selectively activated by means of a switch at the table. The switch is operated by a customer at the table when service is required. When activated, each transmitter generates a signal which is unique to its corresponding table. A central station is provided which includes a display panel having individual sections designated therein relating to each of the tables. Each individual section includes a visual indicator, an audible annunciator, and a digital timer. A plurality of receivers are provided within the central station. Each of the receivers corresponds to an individual one of the transmitters at the tables. When a table transmitter is activated by a customer desiring service, the corresponding receiver at the central station activates the visual indicator of the appropriate individual section to alert the service personnel that service is required at that table. At the same time, the receiver also resets the digital timer to zero and causes the timer to count upwardly at a rate of one count per second. If the count of the timer reaches a first predetermined amount, indicating that the customer has waited too long for response by the service personnel, the audible annunciator is then activated to alert the service personnel of the unsatisfactory response to the customer's signal. When the service personnel does respond to the customer's signal at the table, the table transmitter is de-activated, thus deactivating the visual indicator, the audible annunciator, and the digital timer. The number contained in the timer at that time represents the total response time of the service personnel to the customer's signal. A microprocessor is connected to each of the visual indicators, audible annunciators, and digital timers for storing the data generated thereby and for generating a historical record of the performance of the service personnel for each table in the facility.

It is an object of the present invention to provide an improved system for summoning service personnel to a particular location in a restaurant or similar facility and for monitoring their response time.

It is another object of the present invention to provide such a summoning system which is economical and reliable in construction and operation.

Other objects and advantages of the present invention will become apparent to those skilled in the art from the following detailed description of the preferred embodiment, when read in light of the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a top plan view schematically illustrating a portion of a restaurant or similar facility having a plurality of tables located therein at which customers may be located.

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FIG. 2 is an elevational view schematically illustrating a portion of a central station, including a plurality of individual sections relating to each of the tables illustrated in FIG. 1, adapted for use in the facility illustrated in FIG. 1.

FIG. 3 is a block diagram of a transmitter means adapted for use at each of the tables illustrated in FIG. 1.

FIG. 4 is a block diagram of a receiver means adapted for use with the central station illustrated in FIG. 2.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to FIG. 1, there is illustrated a portion of a restaurant, indicated generally at 10, or similar facility. The restaurant 10 includes a combined entrance/exit 11 near which a cashier's table 12 or other similar stand may be located. Within the restaurant 10, a plurality of tables 10-1, 10-2, 10-3, and 10-4 are located. Frequently, a restaurant identifies each of the tables therein by a number for simplicity, and the tables 10-1, 10-2, 10-3, and 10-4 are so designated as tables 1, 2, 3, and 4, respectively. Customers may be seated at each of the tables 10-1, 10-2, 10-3, and 10-4 to receive service from the service personnel of the restaurant 10. Although the present invention will be described and illustrated in the context of a restaurant 10 having only four tables, it will be appreciated that the present invention can be utilized in a facility 10 having virtually any number of tables or other locations therein at which service may be requested.

Each of the tables 10-1, 10-2, 10-3, and 10-4 is provided with an individual transmitter means, indicated generally at 10-1A, 10-2A, 10-3A, and 10-4A, respectively. The structure of one of the transmitter means 10-1A is illustrated in FIG. 3 and is representative of each of the other transmitter means 10-2A, 10-3A, and 10-4A. As shown in FIG. 3, the transmitter means 10-1A includes a table switch 15 connected to a transmitter 16 having an antenna 17. The table switch 15 can be any type of commonly available mechanical or electrical switch which is operable by a customer seated at the table 10-1 when service is desired. When the table switch 15 is so operated, the transmitter 16 is activated to generate and radiate an electromagnetic signal from the antenna 17. The transmitter 16 and antenna 17 are conventional in the art. The signal generated by the transmitter 16 is predetermined to be unique to the individual table 10-1 at which it is located. The signal can be made unique in any one of several known fashions. For example, the signals generated from the tables 10-1, 10-2, 10-3, and 10-4 can differ from one another in frequency. Alternatively, the signals may be digitized and arranged to include different identifying codes. Other similar types of unique signals may also be generated. All that is required is that each signal be capable of distinguishing the individual table from which it was generated from the other tables.

A central station, indicated generally at 20, is provided to receive the signals generated by the various transmitter means 10-1A, 10-2A, 10-3A, and 10-4A. As shown in FIG. 1, the central station 20 may be located near the cashier's table 12 or other location where the service personnel of the restaurant 10 can see it frequently and conveniently. FIG. 2 illustrates only that portion of the central station 20 which corresponds to the tables 10-1, 10-2, 10-3, and 10-4 illustrated in FIG. 1. For each of the tables 10-1, 10-2, 10-3, and 10-4, an

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individual section 20-1, 20-2, 20-3, and 20-4, respectively, is provided at the central station 20. As with the tables 10-1, 10-2, 10-3, and 10-4 described above, the individual sections 20-1, 20-2, 20-3, and 20-4 may be designated by the numbers 1, 2, 3, and 4, respectively, for simplicity. Each of the individual sections, such as the individual section 20-1, includes a visual indicator 20-1A, an audible annunciator 20-1B, and a digital timer 20-1C. As will be explained in greater detail below, the visual indicator 20-1A, the audible annunciator 20-1B, and the digital timer 20-1C are provided to alert the service personnel of the restaurant 10 that service is requested by one of the customers at a particular table and to measure their response time.

Referring now to FIG. 4, a receiver means, indicated generally at 30, is illustrated which is adapted for use with the central station 20 of FIG. 2 or FIG. 1. The receiver means 30 includes an antenna 31 which is provided to receive all of the signals generated by the various transmitter means, such as the transmitter means 10-1A, described above. The antenna 31 is connected to a plurality of receivers, such as are indicated at 32-1, 32-2, etc. Each of the receivers 32-1, 32-2, etc., is designed to receive only the unique signal corresponding to a particular individual table and transmitter means. For example, the receiver 32-1 can be designed to receive only the unique signal generated by the transmitter means 10-1A located at the table 10-1. All other signals received by the antenna 31 are ignored by the receiver 32-1. When the unique signal generated from the table 10-1 is received, the receiver 32-1 generates a signal to activate the visual indicator 20-1A of the corresponding individual section 20-1 of the central station 20 so as to alert the service personnel, as described above. The visual indicator 20-1A provides a first indication to the service personnel that a customer has requested service. At the same time, the receiver 32-1 also generates a signal to the digital counter 20-1C, resetting the counter 20-1C to zero. The timer 20-1C then automatically counts upwardly from zero at a rate of one count per second so long as it remains activated by the receiver 32-1. The structure of the digital timer 20-1C is conventional in the art.

At any given moment, the number contained in and displayed by the digital timer 20-1C represents the amount of time (in seconds) which has elapsed since the customer's request for service was first made. The timer 20-1C is connected to the audible annunciator 20-1B such that the annunciator 20-1B is activated when a predetermined count is reached by the timer 20-1C. This predetermined count represents an amount of time which is considered by the restaurant 10 to be unduly long in responding to the customer's request. The audible annunciator 20-1B provides a second indication that a customer has requested service. Alternatively, the visual indicator 20-1A and the audible annunciator 20-1B may be simultaneously activated by the receiver 32-1 to generate the first indication. In either event, the combined activation of the visual indicator 20-1A and the audible annunciator 20-1B will quickly alert the service personnel that immediate attention is required at the particular table. The second receiver 32-2, as well as the other receivers not illustrated, are all identical in structure and operation to the first receiver 32-1.

When one of the service personnel of the restaurant 10 does respond to the customer's request, he or she operates the table switch 15 so as to de-activate the transmitter 16. Such de-activation of the transmitter 16

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interrupts the generation of the unique signal therefrom and, consequently, causes the corresponding receiver 32-1 to de-activate the visual indicator 20-1A, the audible annunciator 20-1B, and the digital timer 20-1C. The number contained in and displayed by the digital timer 20-1C at that time, representing the total response time, is stored therein until the next time a customer at the table 10-1 activates the transmitter 10-1A as described above, indicating another request. The above-described operations are repeated for each such request at each of the tables 10-1, 10-2, 10-3, and 10-4 in the restaurant 10.

A microprocessor 33 or other control means is connected to the visual indicator 20-1A, the audible annunciator 20-1B, and the digital timer 20-1C so as to receive information therefrom. The microprocessor 33 is conventional in the art and is adapted to sequentially interrogate the visual indicator 20-1A, the audible annunciator 20-1B, and the digital timer 20-1C in order to determine the status of the customer's requests at predetermined intervals. For example, the microprocessor 33 can first determine whether the visual indicator 20-1A has been activated by the receiver 32-1, indicating that a request has been made by a customer at the table 10-1. Next, the microprocessor 33 can determine whether the audible annunciator 20-1B has been activated by the digital timer 20-1C, indicating that an unduly long period of time has elapsed without a response to the customer's request. Lastly, the microprocessor 33 can determine the value of the number contained in the digital timer 20-1C so as to ascertain the current length of response time. The microprocessor 33 can be provided with a conventional memory device 34 for storing the data which it has received from the individual section 20-1. The information gathering process can be repeated as necessary with the individual section 20-1, as well as the other individual sections 20-2, 20-3, and 20-4, to continuously collect and update information from each of the tables 10-1, 10-2, 10-3, and 10-4 as to the status of the response time of the service personnel. One or more input/output devices 35 can be connected to the microprocessor 33 to permit an operator to communicate therewith in a conventional fashion.

The microprocessor 33 can be programmed to generate a history of the performance of the service personnel of the restaurant 10 in responding to the requests of the customers therein. For example, the average waiting time between a customer's request and a response by the service personnel can be calculated for each table or group of tables. Since each table is normally attended to by a single service person, a summary of the performance of that person can be generated over a period of time. Also, the number of times each of the audible annunciators was activated can be determined to reveal unsatisfactory performance. Many other types of information can be obtained with the data generated by the system. The computer program required to operate the microprocessor 33 in order to obtain such information is well within the scope of a person having ordinary skill in that field of art and, therefore, forms no part of the present invention.

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In accordance with the provisions of the patent statutes, the principle and mode of operation of the present invention have been explained and illustrated in its preferred embodiment. However, it must be understood that the present invention can be practiced otherwise than as specifically explained and illustrated without departing from its spirit or scope.

What is claimed is:

1. A system for summoning service personnel and monitoring their response time in a facility having a plurality of tables at which customers are located comprising:

an electromagnetic signal transmitter located at each table, each of said transmitters including switch means operable by a customer requesting service to selectively activate that transmitter so as to generate a signal which is unique to that particular table; a central station located within the facility having a plurality of individual sections therein, each of said individual sections corresponding to a particular table in the facility and including a visual indicator and an audible annunciator and a timer;

receiver means disposed within said central station and responsive to the generation of said unique signals from each of said tables for activating the visual indicator of the individual section corresponding to a particular table whose transmitter has been activated by a customer requesting service and for resetting the timer of said corresponding individual section to zero and subsequently activating said timer to count upwardly at a predetermined rate, said receiver means being adapted to deactivate said visual indicator and said audible annunciator and said timer when the receiver ceases receiving the signal unique to that particular individual section of the central station, and

a microprocessor connected to the visual indicators, the audible annunciators and the timers of the central station to store and compile the data generated by the central station.

2. A system for summoning service personnel and monitoring their response time in a facility having a plurality of tables at which customers are located as set forth in claim 1 wherein all the timers are digital timers adapted to count upwardly at a rate of one count per second.

3. A system for summoning service personnel and monitoring their response time in a facility having a plurality of tables at which customers are located as set forth in claim 1 wherein the audible annunciator of each individual section is activated simultaneously with activation of the corresponding visual indicator.

4. A system for summoning service personnel and monitoring their response time in a facility having a plurality of tables at which customers are located as set forth in claim 1 wherein the audible annunciator of each individual section is activated by the timer of that individual section recording a predetermined amount of time beyond the timer's activation.

* * * * *

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SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO
DIRECCIÓN DE NUEVAS CREACIONES

2020
Bogotá, D.C.,

Señor:
SEBASTIAN CEBALLOS VEGA

ASUNTO	Radicación	06-218175
	Trámite	002
	Evento	003
	Actuación	430
	Oficio	1214
	Folios	020

Patente de Invención	☒	Patente de Modelo de Utilidad	☐
Vía Nacional	☒		
Vía PCT (fase nacional)	☐	Cap. I	☐
		Cap. II	☐

Como resultado del examen de fondo, realizado con fundamento en el artículo 45 de la Decisión 486 de la Comisión de la Comunidad Andina, se le comunica:

1. Documentos estudiados

<u>Descripción:</u>	Folios: <u>16</u> a <u>20</u> como se radicó inicialmente
<u>Reivindicaciones:</u>	Folios: <u>21</u> a <u>23</u> como se radicó inicialmente
<u>Dibujos:</u>	Folio: <u>26</u> como se radicó inicialmente

2. Objeto de la invención

La presente solicitud se titula "APARATO BOTÓN REMOTO DE SERVICIO PARA SOLICITAR ATENCIÓN EN UN PUNTO DETERMINADO DE UN ESTABLECIMIENTO" Folio N° 1.

El objeto de la presente solicitud se refiere a un botón remoto de servicio que es un dispositivo inalámbrico que emite una señal desde una mesa hacia un centro de control, para así avisar que se solicita atención en dicha mesa.

De otra parte, el pliego reclama: un botón remoto de servicio relacionado en las reivindicaciones 1 a 2, y un procedimiento para la recolección de información del servicio prestado en la mesa, relacionado en la reivindicación 3.

El objeto de la solicitud definido anteriormente se clasificó en la IPC G05G 1/00.

3. De la solicitud de Patente

3.1. Reivindicaciones (artículo 30 D 486)

La materia contenida en el pliego reivindicatorio calificado no define el objeto a proteger por cuanto no es clara la diferencia ni el aporte de la solicitud con respecto al estado del arte.

En primer lugar, las reivindicaciones están conformadas por un preámbulo y por una parte caracterizante. El pliego calificado presenta un preámbulo para todas las reivindicaciones, lo cual no es aceptable dado que hay reivindicaciones tanto de producto como de procedimiento. De acuerdo a lo anterior, cada reivindicación debe tener su preámbulo.

Por otra parte, las reivindicaciones se numeran de manera simple, es decir, la colocación de numerales (1.1, 1.2.1, 3.1, etc.) no es necesaria por cuanto le resta claridad al pliego.

Adicionalmente, se debe especificar si la reivindicación se trata de una reivindicación independiente o de una reivindicación dependiente, dado que la omisión de esto le resta concisión al pliego.

Específicamente se encontró lo siguiente:

La reivindicación 1 presenta una serie de elementos tales como un botón, un receptor y un decodificador, y el uso que se da a estos elementos. La reivindicación debe especificar las relaciones funcionales o estructurales existentes entre tales elementos, no el uso individual de cada uno.

La reivindicación 2 no es aceptable ya que se refiere a la ventaja de usar el aparato reclamado sobre el estado de la técnica anterior. Los usos y ventajas no son características técnicas, de manera que la reivindicación de estos elementos no es admisible.

Finalmente, la reivindicación 3 se refiere a un procedimiento para la recolección de información, el cual se trata de un método para el procesamiento de datos, lo cual no se protege por medio de patente de invención.

En conclusión, el pliego reivindicatorio calificado no cumple los requisitos de claridad, exigidos en el Art. 30 de la Decisión.

4. No es una invención (artículo 15 D 486)

El método reclamado en la reivindicación 3 no puede considerarse una invención, dado que se refiere a un método de recolección de información basado en un software que interpreta, manipula y fusiona los datos y la información suministrada por el decodificador.

Un objeto caracterizado por medio de un programa de computador no puede ser aceptado por cuanto los programas de computador no se consideran invenciones de acuerdo a lo establecido en el literal e) del artículo 15.

En conclusión, la materia reclamada en la reivindicación 3 de la presente solicitud, no puede considerarse patente de acuerdo a lo establecido en el literal e) del artículo 15 de la Decisión.

5. Determinación del Estado de la Técnica

Considerando que la solicitud fue presentada el 11 de Julio de 2006, se buscaron

documentos del estado de la técnica relacionados, con fecha de publicación anterior a esta. Se realizó búsqueda de documentos relevantes dentro del estado de la técnica, entendiendo como estado de la técnica la definición provista en el Art. 16 D 486, y las excepciones fijadas en el Art. 17 de la misma.

Se encontró como anterioridades los documentos relacionados a continuación que afectan la patentabilidad del objeto de la presente solicitud

N°	Documento*	Título	Fecha de publicación
D1	US6366196	RESTAURANT WAITER PAGING SYSTEM	2002-04-02
D2	US5828294	CUSTOMER ACTIVATE SIGNAL FOR SERVICE	1998-10-27
D3	US4701849	SYSTEM FOR SUMMONING SERVICE PERSONNEL AND MONITORING THEIR RESPONSE TIME	1987-10-20

*El documento se anexa con el requerimiento.

6. Análisis de patentabilidad (artículo 14 D486)

En cumplimiento del Art. 14 D486 se procedió a evaluar los requisitos de novedad, nivel inventivo y aplicabilidad industrial, con el fin de establecer la patentabilidad de la invención reivindicada de la solicitud en estudio.

6.1. Novedad (artículo 16 D486)

El requisito de novedad se evaluó por comparación entre lo solicitado y los documentos encontrados en el estado de la técnica y que se relacionan con el objeto reivindicado. Para el examen de novedad solo se tuvo en cuenta las características técnicas de la invención.

La presente solicitud se refiere a un aparato que esta constituido por tres elementos separados:

- Un botón emisor o terminal independiente ubicado en las mesas o lugares donde se requiera el servicio. Donde esta terminal es inalámbrica.
- Un elemento receptor de señales que sirve de puente entre el primer elemento y un tercer elemento (decodificador).
- Un decodificador que recibe la señal de los anteriores elementos y las convierte en una señal visual o auditiva.

La anterioridad D1 se refiere a un sistema para el pedido de servicio en el cual los clientes pueden llamar de forma discreta a su mesero. El sistema también permite al mesero informar cada una mesa esta libre o informar al mesero cuando la orden de una determinada mesa esta lista. Este sistema presenta los siguientes elementos comunes a la materia reclamada:

- Una terminal independiente **T1** inalámbrica ubicada en las mesas donde se requiere el servicio, donde cada terminal comprende un botón **13** (Fig. 2).
- Un elemento receptor de señales **31** (Fig. 4) que sirve de puente entre las terminales y un elemento decodificador.
- Una unidad central **CU** que recibe las señales del transmisor **T1** y las convierte en señales de alerta tales como sonidos, vibración señales visuales (col. 6 líneas 55 a 64).

Como se puede ver, el documento D1 comprende todas las características reclamadas en la presente solicitud, lo cual afecta la novedad de la misma.

Por otro lado, la anterioridad D2 se refiere a un sistema de señalización usado para facilitar el servicio al cliente en lugares tales como tabernas, restaurantes y tiendas, para alertar al personal de servicio sobre un determinado cliente que requiere servicio. El sistema usa indicadores locales e indicadores remotos, donde los indicadores locales tienen transmisores para transmitir las señales de servicio a los indicadores remotos, los cuales están equipados con sistema de alerta para el personal de servicio. El sistema presenta las siguientes características:

- Un terminal independiente **11** que tiene un sensor **13** que se activa mediante el toque del cliente (col. 2 líneas 13 a 15) y que comprende un transmisor **31** para enviar las señales a un indicador remoto (Fig. 1).
- Un receptor de señales **33** que sirve de puente entre el terminal **11** y el un indicador **30** (Fig. 1)
- Un indicador remoto **30** que recibe la señal emitida desde el indicador local y la convierte en una señal luminosa mediante una pantalla **35** o una señal auditiva **37** (Fig. 1)

De lo anterior, queda claro que el documento D2 también comprende todos los elementos reclamado en la presente solicitud.

Finalmente, la anterioridad D3 se refiere a un sistema para llamar al personal de servicio a una ubicación en particular de un restaurante y también monitorear su tiempo de respuesta. El sistema presenta las siguientes características:

- Una pluralidad de mesas **10-1** a **10-4**, cada una con medios individuales de transmisión, conformados por un interruptor de mesa **15**, un transmisor **16** y una antena **17** (col. 3 líneas 36 a 58, Fig. 3).
- Un elemento receptor **30** conformado generalmente por una antena **31** y receptores individuales **32-1**, **32-2** (Fig. 4) que sirve de puente entre la mesa y la estación central **20**.
- Una estación central **20** conformada por unidades individuales **20-1** a **20-4**, donde cada sección individual incluye un indicador visual **20-1A**, un anunciador audible **20-1B**, y un cronometro digital **20-1C** (col. 4 líneas 5 a 10, Fig. 4)

Este documento al igual que los dos anteriores también comprende todas las características reclamadas en la solicitud de la referencia.

Cabe aclarar que la materia reclamada en la reivindicación 3 no fue analizada por cuanto se refiere a soporte lógico lo cual no es considerado una invención.

En conclusión, al hacer la comparación elemento por elemento entre lo solicitado y el estado de la técnica, se encuentra que las características esenciales del objeto de esta solicitud son idénticas a lo comprendido en los documentos D1, D2 y D3, razón por la cual la solicitud no cumple con lo requisitos de novedad establecidos en el artículo 16 de la Decisión.

7. Conclusión:

Los requisitos de patentabilidad de la presente solicitud se encuentran afectados así:

N°	Documento N°	Reivindicaciones afectadas	Requisito que afecta
D1	US6366196	1 a 2	Novedad
D2	US5828294	1 a 2	Novedad
D3	US4701849	1 a 2	Novedad

Se recomienda, que tenga en cuenta que el replanteamiento de esos apartes NO podrá implicar una ampliación de la protección que correspondería a la divulgación contenida en la solicitud inicial, de acuerdo a lo que establece el artículo 34 de la Decisión 486.

En cumplimiento del artículo 45 de la Decisión 486 de la Comisión de la Comunidad Andina, se le indica que debe dar respuesta dentro del término de sesenta días contados a partir de la fecha de notificación de la presente comunicación. En caso de no dar respuesta al presente requerimiento, o si a pesar de la respuesta subsistieran los impedimentos para la concesión, se denegará la patente.

Notifíquese el presente oficio conforme a lo dispuesto en el numeral 5.2, literal e), del capítulo quinto del título primero de la Circular Única N° 10 de 2001.


ALIX CARMENZA CÉSPEDES DE VERGEL
 Directora Nuevas Creaciones (C)

El anterior requerimiento fue notificado por fijación en lista, de fecha
04 FEB. 2010

CONCEPTO TÉCNICO No. 299

EXAMINADOR TÉCNICO
 Código No. 202082