May 3, 1932. J. O. CADIEUX 1,857,107

APARTMENT HOUSE TELEPHONE

Filed June 4, 1930 2 Sheets-Sheet 1

Fig. 1.

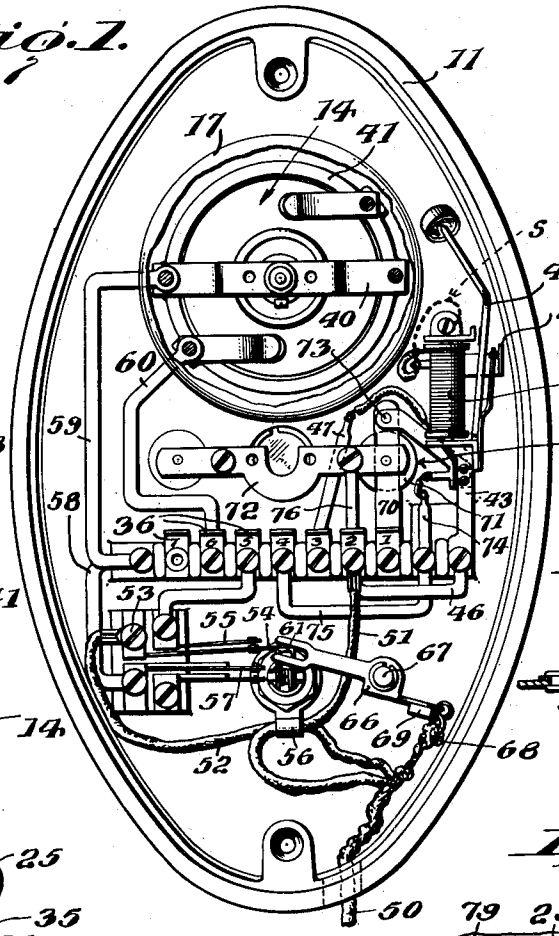


Fig. 2.

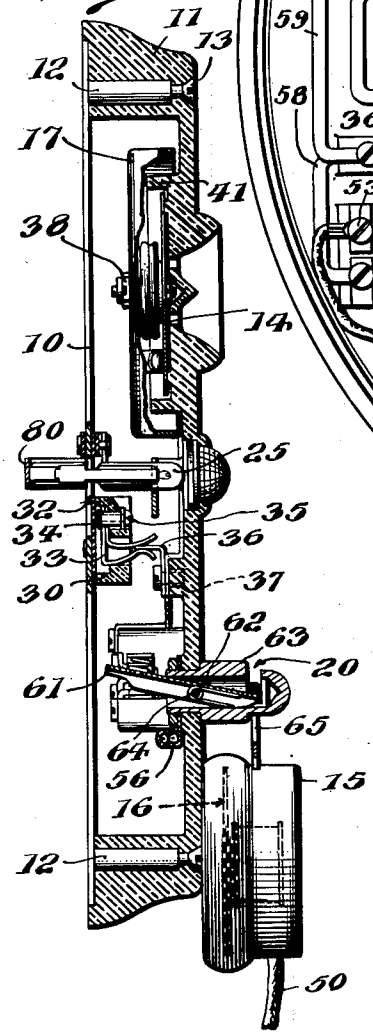


Fig. 4.

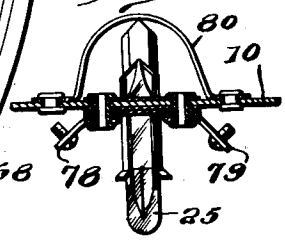
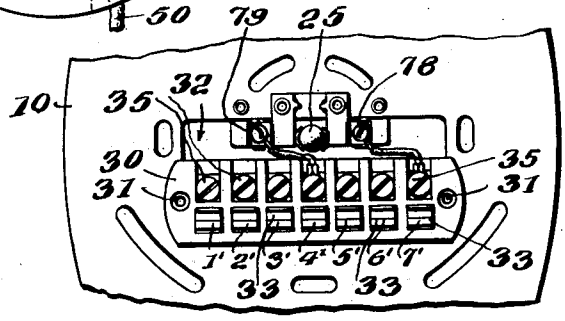


Fig. 3.



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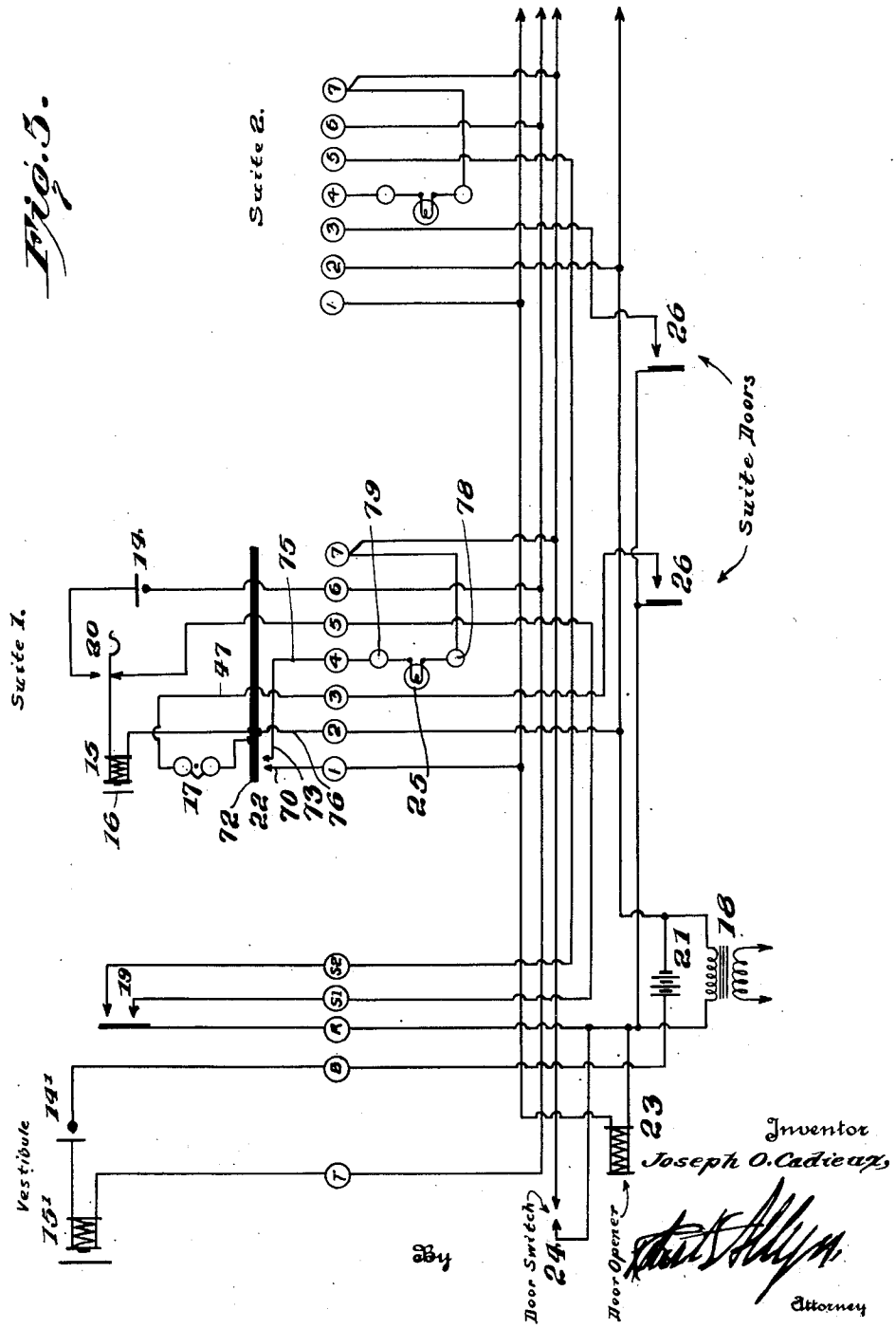
By Robert S. Allyn.

Attorney

May 3, 1932. J. O. CADIEUX 1,857,107

APARTMENT HOUSE TELEPHONE

Filed June 4, 1930 2 Sheets-Sheet 2



Patented May 3, 1932 1,857,107

UNITED STATES PATENT OFFICE

JOSEPH O. CADIEUX, OF MERIDEN, CONNECTICUT, ASSIGNOR TO CONNECTICUT TELEPHONE & ELECTRIC CORPORATION, OF MERIDEN, CONNECTICUT, A CORPORATION OF DELAWARE

APARTMENT HOUSE TELEPHONE

Application filed June 4, 1930. Serial No. 459,143.

My invention relates to systems and apparatus particularly for use in what are commonly termed "apartment houses", where it is customary to have the telephone transmitter and receiver in the vestibule connected to transmitters and receivers of the respective apartments. The push buttons are located in the vestibule for controlling the signal devices in the various apartments. It is also customary to provide push buttons at the tradesmen's entrance for attracting the attention of the occupants of the various apartments. It is also customary to employ push buttons at the entrance to each individual apartment for ringing the bell or other signal in the corresponding apartment.

One of the objects of my invention is to combine features such as above mentioned and provide a different character of signal to indicate the approach of the visitor to the vestibule and to the apartment door.

Another object is to provide means for automatically connecting and disconnecting the signal devices so that there is no possibility of interference between them in the normal and expected use of such a system.

Another object is to provide means for enabling the occupant of the apartment to determine when the vestibule door is open.

In carrying out the invention I utilize the diaphragm of the apartment receiver as one of the signal devices which is operable by pressing one of the vestibule buttons when the receiver is on the hook in the apartment. A separate bell or buzzer is provided operated by a push button at the apartment door.

Separate sources of current are preferably provided for the two signal devices and the hook switch is so connected that the apartment receiver is in circuit with one source of power and its vestibule push button when the hook switch is down and the apartment receiver is in circuit with the apartment transmitter and the other source of current and the vestibule transmitter and receiver when the hook switch is up. The apartment bell is in circuit with one source of current without interfering with the telephone talking circuit.

I have also combined with these circuits a door release or opener device actuated by push buttons in the various apartments and a signal light in each apartment adapted to be lighted by the depressing of a push switch in the apartment when the vestibule door is open.

In the drawings Fig. 1 is an interior view of the part of the apparatus to be installed in an individual apartment.

Fig. 2 is a vertical sectional view of the parts of an apartment unit showing the receiver and the hook switch.

Fig. 3 is a fragmentary front view showing the wall connecting plate and signal light.

Fig. 4 is a detail plan view.

Fig. 5 is a diagrammatic view showing the circuits of a typical system embodying my invention.

The instrument in each apartment preferably consists of a casing having a back plate 10 and a front portion 11 secured together with tubular studs 12—12 which are secured to the back plate and the screws 13—13 which pass through the front plate into these studs. The transmitter 14 may be of any suitable type preferably mounted inside the casing. The receiver 15 may be of any suitable construction having a diaphragm 16.

The vestibule instrument is preferably of the type of my Patent #1,181,947 having a transmitter 14′ and a receiver 15′ which are preferably of the the so-called cordless type connected in the circuit in any satisfactory manner.

The bell 17 is also preferably mounted in the casing and surrounds the transmitter element 14.

The current for operating the diaphragm 16 as a buzzer and for ringing the bell 17 is furnished by the secondary of the transformer 18 from ordinary power lines or otherwise. The push button switch 19 in the vestibule has its contacts connected in circuit with the secondary of the transformer 18 and with the coil of the receiver 15 and the hook switch 20 when the receiver is in the position shown in Fig. 2.

The battery 21 is in series with the vestibule transmitter and receiver and the apartment transmitter and receiver when the hook

switch is released, as will be understood hereinafter.

The switch 22 in the apartment controls a circuit through the door opener coil 23 and also a circuit through the door controlled switch 24 and a signal light 25.

The circuit for ringing the bell 17 is controlled by the switch 26 and includes the secondary of the power transformer 18.

When the switch 19 is closed the current from the transformer 18 passes through the coil of the receiver 15 and thus actuates the diaphragm 16 as a signal buzzer. When the receiver is removed from the hook switch 20 the circuit through the power transformer is opened and the circuit through the transmitter 14 and the talking battery 21 is closed. When the switch 26 is pressed the circuit is closed through the secondary of the power transformer 18 and through the circuit of the signal bell 17. When the switch 22 is pressed the circuit is completed through the magnet of the door opener 23 and the secondary of the transformer 18 so as to permit the vestibule door to be opened. If this switch 22 is held closed the light 25 will flash as soon as the door opens and closes the circuit through the door switch 24.

The numbers and letters within the circles in Fig. 5 represent the markings of the respective terminals of the instruments for the purpose of tracing circuits when installing the apparatus. T indicates the transmitter connection in the vestibule instrument; B indicates the talking battery connection; R, the ringing circuit; S1 represents the connection to suite 1, etc.

In the practical form of apartment instrument shown an insulating block 30 is secured to the back plate 10 by rivets 31. The circuit wires are led into the casing through the opening 32, spring contacts fingers or sockets 33 are secured to the block 30 by rivets 34 and provided with binding screws 35 for convenience in wiring.

The front member of the casing is provided with a series of plug-in blades 36 serving as terminals for the casing electrical connections shown in Fig. 1. These blades 36 may be anchored to inserts 37 moulded into the casing part.

The bell 17 is secured by screws 38 to cross piece 40 supported on the flange 41 in the casing. The coil 42 of the vibrator for actuating the bell is supported by a bracket 43 which is suitably secured in the casing. The vibrator armature 44 serves as a striker for the bell and actuates make and break vibrator switch 45. A conductor strip 46 connects the plug-in blade No. 2 with the bar 43 which is electrically connected to the armature and the movable contact of the vibrator switch 45. The stationary contact of the vibrator switch is connected to one end of the coil 42 and the other end of the coil is connected by the conductor strip 47 to the plug-in blade No. 3.

The cord 50 which carries the conductor to the receiver 15 has one end 51 connected to the plug-in blade No. 2 and the other end 52 connected to the binding post 53 and the switch contact spring 54. Another switch contact spring 55 is electrically connected to plug-in blade No. 5. The two conductor members 51 and 52 may be conveniently mechanically anchored to clip 56 in the casing. The hook switch contact spring 57 is electrically connected by conductor strips 58 and 59 to one terminal of the microphone transmitter 14 whose other terminal is connected by strip 60 to plug-in blade No. 6.

The switch actuating lever 61 is pivoted on the pin 62 within the tube 63 and under tension of the spring 64 so that the front end of the lever 61 tends to rise under pressure of the spring and is depressed by the weight of the receiver 15 which has a loop 65 adapted to be hung on the lever.

A secondary lever 66 mounted on the stud 67 has a receiver cord attached to it by the extension 68 so that when the receiver is left off the hook its weight will pull the lever 66 into the position shown in Fig. 1 where it is supported by the lug 69. The inner end of the lever 66 is forked and embraces the inner end of the lever 61 so that the pull on the receiver cord automatically restores the hook switch to its normal position shown in Figs. 1 and 5,—that is, with the transmitter circuit open and the receiver circuit closed at this point.

The push button switch 22, previously referred to, has a spring arm 70 connected to the plug-in blade No. 1 and is actuated by push button 71. The bus bar 72 serves as a stationary contact of the switch 22. The movable or spring contact member 70 is also arranged when depressed to engage a stationary contact 73 which is connected by conductors 74 and 75 to the plug-in blade No. 4. The bus bar 72 is connected by conductor 76 to the plug-in blade No. 2.

The signal lamp 25 has terminal clips 78 and 79 connected respectively to the wall socket terminals 7′ and 4′ which receive the plug-in blades 7 and 4 respectively. The lamp 25 may conveniently be of the type frequently used in telephone practice for signaling and a guard loop 80 may be secured to the back of the wall plate to protect the same.

It will be seen that the construction herein shown and described is substantially of the plug-in type of my Patent #1,717,091 but it should be understood that the present invention is not limited to this type of construction.

It will be understood that the invention is of course applicable to any number of suites or apartments and that the circuits may be connected to annunciators not shown, as is

customary in apartment house telephone practice.

It will be seen that this system provides for two distinctive types of signals without adding to the parts ordinarily employed. The receiver and its diaphragm provide for a buzzing type of signal actuated by alternating current from the transformer to notify the occupant of the apartment that someone is waiting at the vestibule. The bell 17 signal indicates that someone is waiting at the door to the particular apartment. When the receiver is taken from the hook to listen the signal circuit to the receiver is disconnected and the talking circuit completed so that it becomes impossible for anyone to energize the receiver diaphragm with the signaling current when the receiver is in use for telephone reception.

The bell circuit through coil 42, however, is in condition for operation at all times and preferably derives its circuit from the same transformer which supplies the receiver signal energy. When A. C. is used for the ringing circuit, of course the make and break switch 45 is not necessary and if desired it may be shunted by a connection S, as shown by the dotted line in Fig. 1, so that current passes from 43 through the magnet frame, through shunt S direct to the coil 42 and thence to conductor strip 47.

The transformer 18 also preferably furnishes the current for actuating the door opener 23 and the signal light 25. For convenience in installation and operation it is preferred that the transformer for signaling and the talking battery be both located adjacent the vestibule or janitor's suite and arranged to supply current for the apparatus for all the apartments as well as the vestibule devices.

Broadly considered, it should be understood that various forms of hook switches might be employed as shown herein or as shown in Fig. 13 of my application #442,010 filed April 5, 1930, in which I have claimed certain features of the visual signal system. It should also be understood that broadly considered the apartment telephone transmitter may be located within the casing as shown herein or in combination a hand instrument as shown in Fig. 12 of my application #442,010. in which case of course the switch actuated by the receiver is located in the base of the portable instrument or such a combination hand receiver and transmitter may be employed with a wall type casing containing the signal bell and hook switch as shown in my Patent 1,824,705.

I claim:

1. An apartment house telephone system comprising vestibule and apartment transmitters and receivers and circuits therefor including a source of current, a vestibule switch and an apartment hook switch for connecting the apartment receiver in circuit with the source of current when the receiver is on the hook and the vestibule switch is closed, said hook switch having contacts for opening the circuit through the vestibule switch and closing the talking circuit, a signal bell connected with the source of current and a local apartment switch for controlling the circuit through the signal bell.

2. An apartment house telephone system comprising vestibule and apartment transmitters and receivers, a talking battery and circuits therefor, a source of signalling current, a vestibule switch and an apartment hook switch for connecting the apartment receiver in circuit with the source of signalling current and the vestibule switch when the receiver is on the hook switch, said hook switch having contacts for opening the signalling circuit and closing the talking circuit when the hook switch is up.

3. An apartment house telephone system comprising a vestibule transmitter and receiver, a series of apartment transmitters and receivers, a talking battery and circuits therefor, a source of signalling current, an apartment hook switch for connecting the apartment receiver in circuit with the source of signalling current, vestibule switches with connections to energize the apartment receivers when the receivers are hung up, said hook switches having contacts for opening the respective signalling circuits and closing the respective talking circuits.

4. In an apartment house telephone system, a transmitter, a receiver, and circuits therefor including a source of current, a vestibule switch and an apartment hook switch for connecting the apartment receiver in circuit with the source of current, said hook switch having contacts for opening the circuit through the vestibule switch and closing the talking circuit, a signal bell connected with the source of current and a local apartment switch for controlling the circuit through the signal bell without interfering with the receiver.

5. In an apartment house telephone system, a transmitter, a receiver, a talking battery therefor, a source of signalling current, a vestibule switch and an apartment switch for connecting the apartment receiver in circuit with the source of signalling current and the vestibule switch, said apartment switch having contacts for opening the signalling circuit and closing the talking circuit.

6. In an apartment telephone system, an apartment transmitter and receiver, an audible signal device, a visual signal device, an interior manually operable switch, an exterior local switch for controlling the signal device, a manually operable vestibule switch, a door actuated switch for flashing the visual signal device, a door release device controlled by the interior manually operable switch, a source of

signalling current for all of said devices, a talking battery, for the transmitter and receiver and an apartment switch for connecting the receiver in circuit with the vestibule switch and the source of signalling current and for connecting the talking battery to the receiver and cutting out the signalling current.

7. In an apartment house telephone system, the combination of a receiver, a transmitter and an audible signal device, a source of alternating current for actuating the receiver as a buzzer, a source of direct current for the talking circuit and a switch for disconnecting the receiver from the source of alternating current and connecting it to the source of direct current.

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