

Feb. 24, 1931.

C. L. STICKNEY, JR

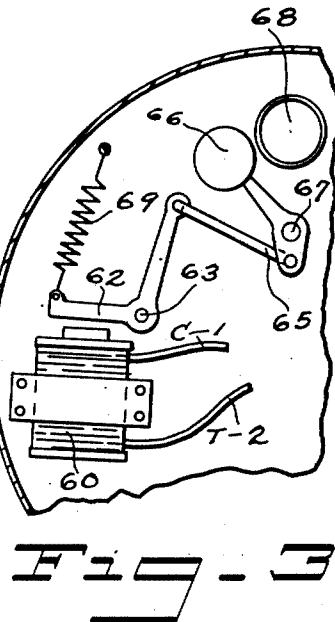
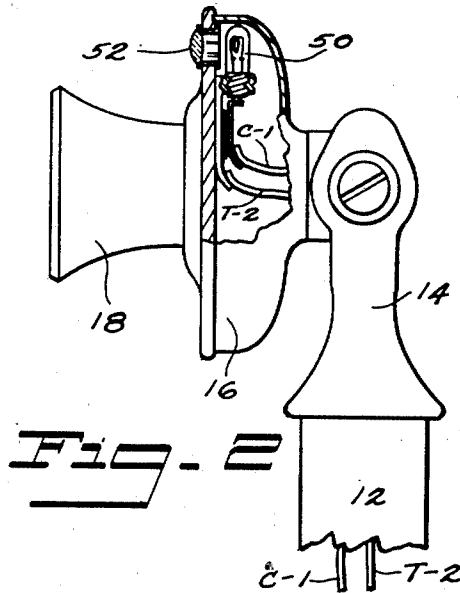
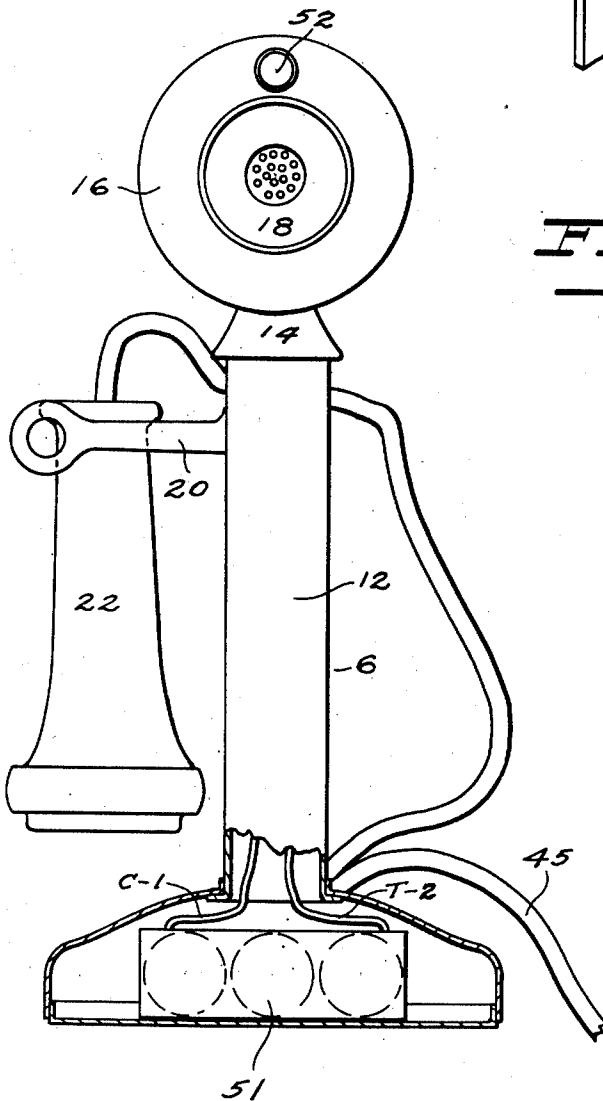
1,794,040

CALL INDICATING DEVICE

Filed Oct. 14, 1929

2 Sheets-Sheet 1

FIG - 1



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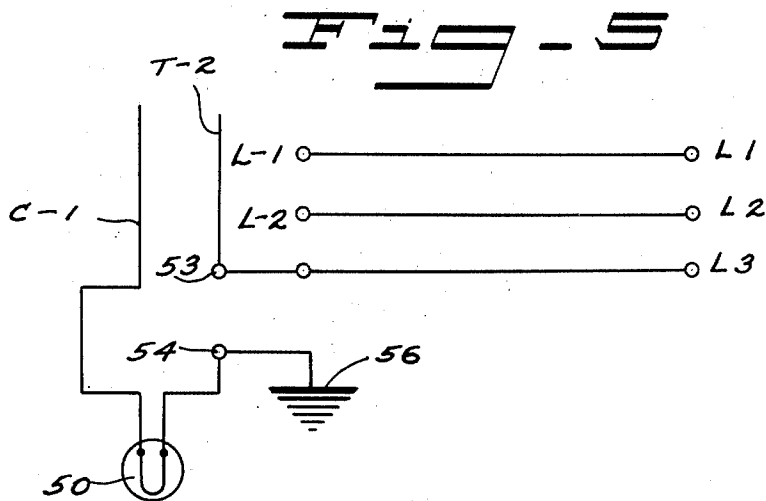
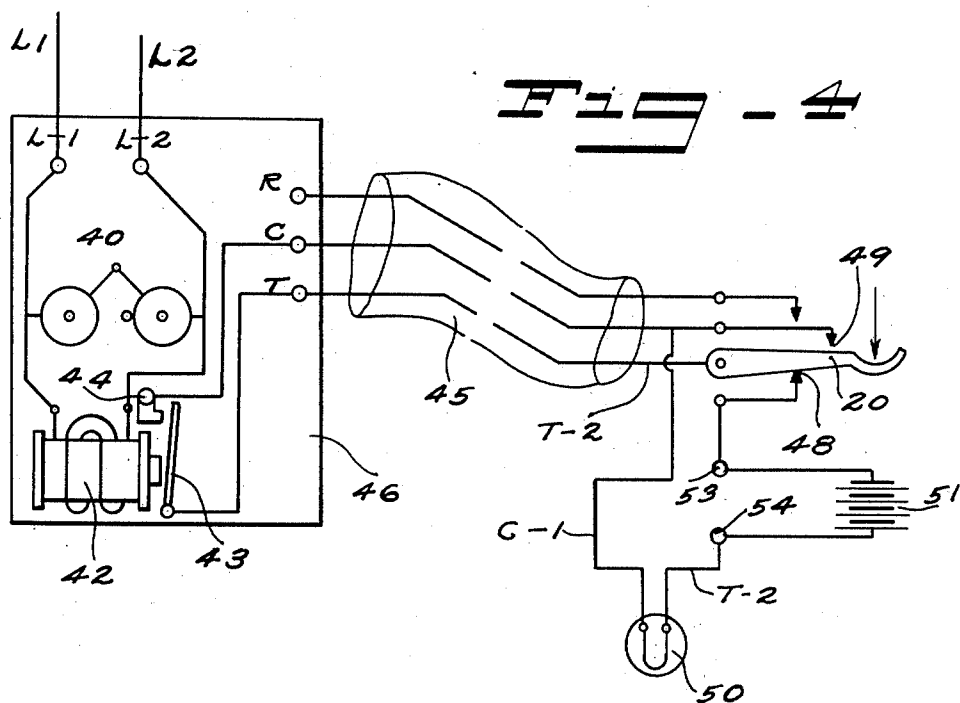
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CALL INDICATING DEVICE

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

CHARLES L. STICKNEY, JR., OF SEATTLE, WASHINGTON

CALL-INDICATING DEVICE

Application filed October 14, 1929. Serial No. 399,497.

My invention relates to the telephone art and more particularly to a call indicating device for use on telephone receivers. In the past few years it has become quite customary for the larger offices to maintain a large number of trunk lines. These may be several lines for general use or they may be direct lines connecting one office with another. This often makes it necessary for a number of phones to be grouped upon one desk, or in a limited area, and it has been found that it is very difficult to tell which phone is ringing, as most of the offices use the so-called desk type of phone where the call bell is usually located at some distance from the hand set itself.

It is possible to change the pitch of the bell slightly and thus make it possible to distinguish between two phones but when more than two phones are used, and in some offices to my knowledge it is necessary to use as many as a dozen phones, it is impossible to distinguish the phone that is ringing merely by the tone of its bell. It is to overcome these general deficiencies in our present phones that I have provided my device, therefore:

The principal object of my invention is to provide means whereby it will be easy to identify a phone upon which a call has been placed even though it may be among a number of other phones.

A further object is to provide indicating means that will identify a live phone for a short period after its bell has stopped ringing.

A further object is to provide means which will operate the indicating device after the call bell has stopped ringing.

A further object is to provide a convenient source of electrical current to energize the indicating device.

Other and more specific objects will be apparent from the following description taken in connection with the accompanying drawings.

The above general objects together with others inherent in the same will be obtained by the devices illustrated in the following drawings, throughout which like numerals indicate like parts, wherein:

Figure 1 is a front elevation of a typical desk phone shown partly in section.

Figure 2 is a fragmentary elevation, certain parts being shown in section.

Figure 3 indicates a modification of my indicating device.

Figure 4 is a schematic wiring diagram of my device using a local battery.

Figure 5 is a schematic wiring diagram which is offered as an alternate form.

Referring to the drawings, 6 designates the main body portion of a conventional desk telephone which is composed of the base member 8, a bottom sealing member 10, and the upright standard 12, a yoke cap 14 having pivotally secured thereto the transmitter 16 to which is in turn secured the mouth piece 18.

Pivoted within the standard 12 is the receiver hook 20, which is adapted to support the receiver 22. Somewhere upon the telephone I provide a visible part of my indicating device. This, I have found is most conveniently placed on the upper part of the transmitter as is indicated in Figures 1 and 2.

I have further found that a small electric light is the most satisfactory indication of a live phone. I believe it will be understood that instead of my electric light I might use a small buzzer or some visible signal such as a small flag indicated in Figure 3. I feel that these latter two modifications are for all intents and purposes the equivalent of my electric light and in the following description will speak only of the electric light as an inclusive term.

It will be apparent, to those versed in telephone work particularly, that any one of a number of circuits might be employed to energize my indicating device. I have shown in Figure 4 a circuit that I have found to be very satisfactory wherein:

L—1 and L—2 represent the binding posts to which are attached the incoming telephone lines of a two-wire circuit. A standard type of ringing bell 40 is shown connected to these two wires. These wires continue on to the retarded relay 42 which is connected in parallel with the bell 40. The movable relay bar 43 is connected to the binding post T to which the transmitter wire of the telephone system is also connected. The bar contact

44 is connected to the binding post C which is the common line of the transmitter and receiving circuits. After leaving the binding posts C and T, the connecting wires C—1 and T—2 form part of the three-wire cable 45 running between the bell box 46 and the desk phone 6.

In Figure 4, the receiver hook 20 is indicated with the receiver in place, thus closing the contact 48 and opening the contact 49. The line running from binding post C has an open gap at 49 and is connected to one side of the signal light 50. The wire running from binding post T connects with the receiver hook 20, through the hook 20, and the contact 48 to one side of the local battery 51, the other side of the local battery is connected to the indicating light 50.

In Figure 2 I have shown a convenient method of mounting my signal light, which I normally prefer to have directly behind a small lens as 52. This protects the light globe and may be of any color desired, thus making it easy to distinguish between different phones, which is particularly desirable where a number of private lines are used as it enables the party answering to know which line is calling him. I have shown a conventional type of mounting socket with the two wires C—1 and T—2 leading therefrom.

I have indicated two binding posts 53 and 54 to which the battery 51 is connected. I believe it will be apparent that any suitable current might be supplied to these points and operate my device as well as the battery shown.

In Figure 5, I have shown a single wire current supply which I have found can usually be supplied by the company supplying the telephone service. In most modern cities telephone lines are laid in conduits and it is correspondingly easy to bring the extra wire as L3 which parallels lines L1 and L2 from the central station. This wire L3 need only be attached to binding post 53 and binding post 54 attached to ground 56 to complete a lighting circuit.

In Figure 3 I have shown a visual signal which might be substituted for the signal lamp. In this arrangement the two current carrying wires C—1 and T—2 instead of going to a lamp go to an electro-magnet 60 which is adapted when current passes through it to draw the bar 62 downwardly as it is pivoted at 63, the bell crank of which bar 62 is a part moves the connecting link 65 to the left. This will cause the flag indicator 66, which is pivoted at 67, to move to the right where it will be visible through the port 68. Port 68 may have a glass lens in front of it or be left open as is most desired. As soon as the current supply is broken the tension spring 69 will operate the mechanism in the reverse order restoring the device to the position indicated in Figure 3.

Method of operation

In operating my device, as soon as a call is placed upon a given phone, equipped with my device, the first action is to ring the bell 40 by sending over lines L1 and L2 an electrical current of the proper kind.

This also energizes the relay 42 which is in parallel with the bell 40. On energizing the relay, bar 43 contacts the contact 44. This completes a circuit through lines C and T permitting the source of current, connected to 53 and 54, to energize the indicating device 50. The relay 42 must be chosen with such characteristics that it will hold the bar 43 against contact 44 as long as it is desired to have the indicator operate. This may be for quite a little period in the case of hand ringing phones, and may be of shorter duration where the bells are rung automatically. The duration in any event must be long enough to at least span the interval between successive ringings of the same call.

There is available a wide variety of relays suitable for this circuit, consequently I will not describe them in detail as the only requirement is that they be so designed as to work satisfactorily in parallel with the call bell and will keep the contact closed for the proper length of time.

As soon as the phone is answered the receiver hook raises up and closes the talking circuit and breaks the contact 48, thus putting the indicator out of operation.

The foregoing description and accompanying drawings clearly disclose a preferred embodiment of my invention but it will be understood that this disclosure is merely illustrative and that such changes in the invention may be made as are fairly within the scope and spirit of the following claims.

What I claim is:

1. A call indicator of the class described, adapted to be placed upon a desk telephone having a base member and a spring controlled receiver support, comprising; a visual signal, a source of electrical current to operate said signal, a switching means adapted to connect said current to said signal when a call is placed upon the telephone to which the device is attached, means actuated by the ringing current of the telephone circuit adapted to operate said switching means, and a second switching means which will be operated by receiver support, when the receiver is raised to disconnect the visual signal from its current supply.

2. A call indicator of the class described adapted to be placed upon a telephone, consisting of, a visual signal; a source of electrical current to operate said signal; a switching means adapted to connect said current to said signal when a call is placed upon the telephone, to which the device is attached; and means actuated by the ringing current

of the telephone circuit adapted to automatically operate said switching means.

3. A call indicator of the class described adapted to be placed upon a telephone, consisting of, a visual signal; a source of electrical current to operate said signal; a switch controlling said current; a relay adapted to automatically close said switch when a call is placed upon the telephone, the device is installed upon, and so constructed that it will keep the switch closed for a limited period after the call has been made.

4. A call indicator of the class described, adapted to be used with a telephone, having a spring controlled receiver support, consisting of, a visual signal; a separate source of current for the operation of said signal; a switch adapted to connect said current to said signal when a call is placed upon the telephone and the receiver is on its support; means actuated by the ringing current of the telephone circuit adapted to operate said switch; a second switching means which will be operated by the receiver support, when the receiver is raised, to disconnect the visual signal from its current supply.

5. A call indicator of the class described, adapted to be used with a telephone, having a spring controlled receiver support, consisting of, a visual signal; a separate source of current for the operation of said signal; a switch adapted to connect said current to said signal when a call is placed upon the telephone and the receiver is on its support; means actuated by the ringing current of the telephone circuit adapted to operate said switch, said means being in the form of a retarded relay so arranged that it will retain the switch in its closed position for a short period and then allow the same to open; a second switching means which will be operated by the receiver support, when the receiver is raised, to disconnect the visual signal from its current supply.

In witness whereof, I hereunto subscribe my name this 31st day of August, A. D. 1929.
CHARLES L. STICKNEY, JR.