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HELD WIRE REMINDER FOR TELEPHONES

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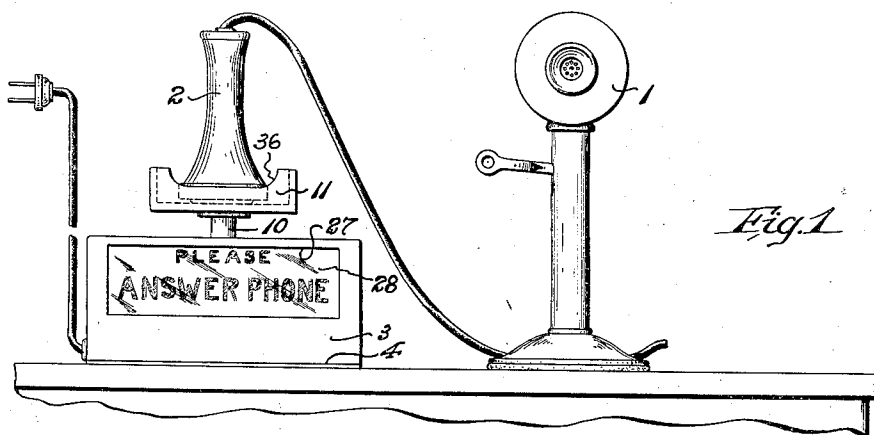


Fig. 1

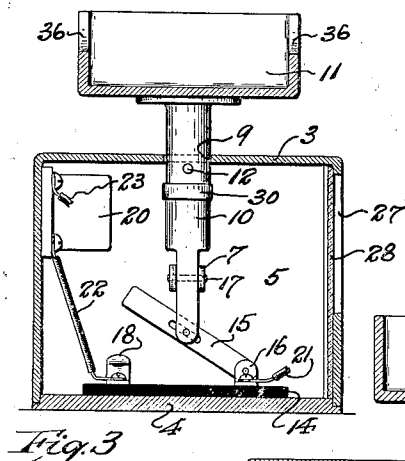


Fig. 3

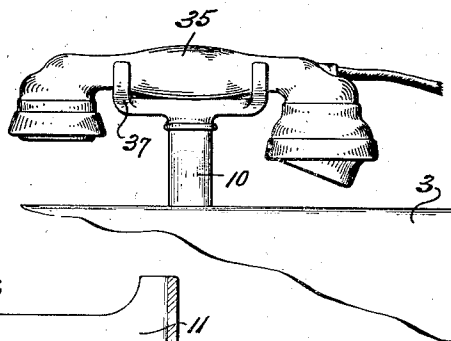


Fig. 4

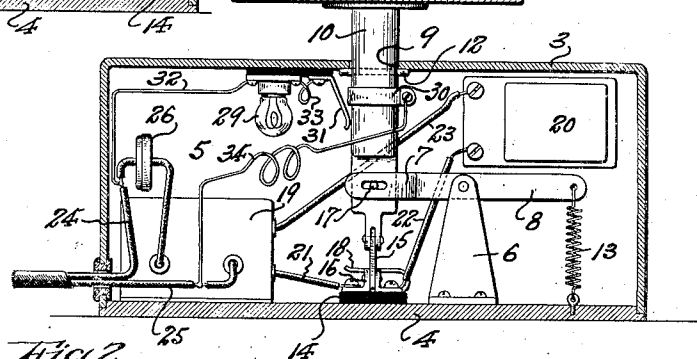


Fig. 2

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HELD WIRE REMINDER FOR TELEPHONES

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2 Claims. (Cl. 179-84)

This invention relates, generally, to an instrumentality adapted to give warning that a telephone connection or wire remains open or, in other words, is being held.

5 It is of quite frequent occurrence that incoming telephone calls for a desired given party are first received by a third party whereby it is necessary to "hold the wire" until the desired party can be found and notified to respond to the call. Under such conditions, if delay occurs in locating the desired party, or if located he neglects to respond, the telephone circuit remains open for unduly long periods of time, and such open condition may even be forgotten. By reason of this, not only is the caller put to unnecessary delay and inconvenience but normal telephone service is unduly interrupted and subsequent incoming calls, because they cannot be received, may be prevented with risk of loss of timely communication.

20 The present invention has for an object to provide a simple apparatus which is independent of the telephone transmitter and receiver but which is adapted to be so used in conjunction therewith that the receiver of a held telephone may be deposited thereon, whereby the weight of the receiver upon the apparatus causes the latter to be automatically activated to give forth a signal indicative that the telephone connection is being held pending a response, and whereby such condition is not forgotten or abnormally prolonged.

30 Other objects of this invention, not at this time more particularly enumerated, will become apparent in the following detailed description of the same.

35 An illustrative embodiment of this invention is shown in the accompanying drawing, in which:

40 Fig. 1 is an elevational view showing the relation in use of the novel signaling apparatus to a telephone instrument; Fig. 2 is a longitudinal vertical sectional view of the novel signaling apparatus according to this invention, said view being drawn on an enlarged scale; Fig. 3 is a transverse vertical sectional view of said apparatus; and Fig. 4 is a fragmentary elevational view showing a modification of the apparatus.

45 Similar characters of reference are employed in the above described views, to indicate corresponding parts.

50 Referring to the drawing, the reference character 1 indicates an ordinary telephone transmitter and 2 its associated receiver.

The novel signal apparatus comprises a main casing or housing 3 having a base 4, these parts 55 being associated and arranged to provide an en-

closed or interior chamber 5. Pivotally connected with a suitable standard 6 fixed within the chamber 5 is a supporting lever having a bifurcated arm 7 extending in one direction and a tail-piece 8 extending in the opposite direction. 5 Vertically movable through an opening 9 in the top wall of said casing or housing 3 is a column or pedestal member 10 to the lower portion of which is pivotally connected the bifurcated arm 7 of said supporting lever. Affixed to the upper external end of said column or pedestal member 10 is a horizontal cradle or tray member 11. 10 Connected with said column or pedestal member 10 is a transverse stop means 12 which, by abutment upon the under side of the top wall of the casing or housing 3, limits the upward movement of said column or pedestal member 10 thus determining the normal upwardly projected limit of the exterior cradle or tray member 11. Said column or pedestal member 10 and the cradle or tray member 11 carried thereby are yieldably sustained in normal uplifted position by spring means 13 anchored to and between the base 4 20 of casing or housing 3 and the tail-piece 8 of said supporting lever.

25 Affixed to the base 4 of casing or housing 3 beneath the lower extremity of the column or pedestal member 10 is the insulation base 14 of an electrical control switch. This switch comprises a switch arm 15 pivoted by one end to fulcruming means 16 affixed to said base 14. The lower extremity of said column or pedestal member 10 is connected by a pivotal connection 17 with said switch arm 15. Secured to said insulation base 14, to lie in the path of movement 30 of the free end portion of said switch arm 15, is a switch contact element 18, preferably arranged to provide a resilient or yieldable portion for engagement by said switch arm.

35 Mounted within the casing or housing 3 in a suitable location is a suitable step-down transformer 19. Also mounted within the casing or housing 3 in a suitable location is an audible signal means 20, preferably in the form of an electrically actuated buzzer, bell or the like. The secondary coil of transformer 19 is connected 40 through said control switch with said signal means 20. For example, one pole of the transformer secondary coil is connected by the wire or conductor 21 to the fulcruming means 16 and thus to switch arm 15. The switch contact element 18 is connected by the wire or conductor 22 45 to one pole of the signal means 20, while the opposite pole of the latter is connected back to the opposite pole of the transformer secondary 55

coil by the wire or conductor 23. The primary coil of transformer 19 is connected with a source of electrical current by a wire or conductor 24 leading from one side of the service circuit thereof to one pole of the transformer primary coil, and then from the opposite pole of the latter by a wire or conductor 25 leading back to the other side of said service circuit. The transformer 19 is adapted to step down a relatively high voltage to a comparatively low voltage suitable for operating a low voltage audible signal means. For example, the usual D. C. house lighting circuit of 110 volts may be used as the source of electrical energy for operating the device of this invention, the transformer 19 serving to step down the voltage to 10 volts desired to be delivered to the low voltage signal means 20. It will also be understood that the transformer may be designed to serve with either a D. C. or A. C. service circuit.

In a preferred form of my invention, I desire to provide for a delayed signal, followed by an intermittent actuation of the signal means. To this end I provide a circuit breaker 26 preferably in the circuit serving the primary coil of the transformer. This circuit breaker is of the well-known sign or lamp flasher type, and operates on thermostatic principles now well known in the electrical art.

In place of or in addition to the audible signal means I may employ a visual signal means whereby illumination of signal elements or means is effected when the apparatus is activated. In the drawing I have shown, for the purposes of illustration, one manner and means for effecting a visible signal. Preferably this arrangement is shown in a form whereby the visible signal is produced in a continuous manner and in addition to the audible signal. For this purpose at least one wall of the casing or housing 3 is provided with an opening 27 which is covered by a light transmitting means. For example, a glass or like panel 28 may be inscribed with an appropriate phrase, such as "Please answer phone"; in which case either the letters may be rendered luminous against an opaque background, or the letters may be made opaque upon a luminous background; or in lieu of this any light transmitting means may be mounted in one or more walls of the casing or housing 3. Mounted within the casing or housing 3, in suitable location, is an incandescent electric lamp 29 of suitable size and wattage. A lamp circuit switching means is provided preferably in form adapted to be actuated by movements of the column or pedestal member 10. Illustrative of such switching means a contact member or ring 30 is affixed on the column or pedestal member 10, and suitably mounted for cooperation with said contact member or ring 30 is a contact brush 31. The lamp 29 and said switching means are connected in a shunt circuit relative to the circuit serving the transformer primary coil; and may comprise a wire or conductor 32 leading from the ingoing wire or conductor 24 of the service circuit to one pole of the lamp 29, the other pole of said lamp being connected, as by wire or conductor 33 with said contact brush 31, while the contact member or ring 30 is connected by wire or conductor 34 back to the outgoing wire or conductor 25 of said service circuit. This lamp shunt circuit arrangement by-passes the circuit breaker 26, so that the lamp 29 is continuously illuminated during activation of the apparatus. It will be understood, however, that should it be desired to effect

intermittent illumination of the lamp, the shunt circuit therefor may be connected inside the circuit breaker 26, so that the operation of the latter is also effective upon the lamp circuit.

In use, the operation of the novel signal apparatus is as follows:

When an incoming call for a given party is answered by some other person so as to necessitate notification of the desired party, or if for any other reason it is desired to "hold the wire", the person answering the call places the receiver 2 upon the cradle or tray member 11. The weight of the receiver 2, as thus deposited upon the cradle or tray 11, causes a descending movement of the column or pedestal member 10. This descending movement of column or pedestal member 10 is transmitted to the switch arm 15, whereby the latter is swung downwardly about its pivotal connection 16 so that its free end portion is carried into contact with the contact element 18. The current output of transformer 19 is, upon such closing of switch means 15-18, delivered through the audible signal means 20, whereby an audible signal sound is emitted. When the circuit breaker 26 is employed there will occur a delay in the current delivery output of the transformer until the action of the circuit breaker 26 closes the service circuit. When the service circuit is closed, then current is delivered to the audible signal means and the same is actuated. The operation of the circuit breaker is such that an intermittent opening and closing of the service circuit occurs, and consequently the audible signal effected will be intermittent in character. It will be obvious, however, that while such delayed and intermittent emission of audible signal is deemed desirable, it is not essential, and consequently the use of the circuit breaker 26 may be eliminated, in which case the current flow will be continuous and consequently the audible signal will be continuous. In either event emission of the signal sound, whether intermittent or uninterrupted, will continue until the receiver 2 is lifted from the cradle or tray 11, whereupon the spring means 13, acting on the supporting lever 7-8, will uplift the column or pedestal member 10, to normal initial position, thus opening switching means 15-18, whereby delivery of current to the audible signal means 20 ceases.

When the visible signal means is employed, the deposit of the receiver 2 upon the cradle or tray 11 pushes downwardly the column or pedestal member 10 so that the contact ring 30 carried by the latter is moved into engagement with the brush contact 31, thus closing the shunt circuit serving the lamp 29, which is thereupon illuminated so as to transmit light to and through the visible signal panel 28 or other illuminable means used in place thereof. When the receiver 2 is removed from the cradle or tray 11, and the column or pedestal member is thereupon returned to normal initial uplifted position, the contact ring 30 will be carried away from engagement with contact brush 31, and illumination of the lamp 29 and consequently the visible signal means will cease.

If the novel signaling apparatus is desired to be used with the combined transmitter-receiver member of the so-called French type of telephone instrument, indicated by reference character 35 in Fig. 4, such transmitter-receiver may be laid across oppositely arranged upstanding walls of the cradle or tray, which walls may be notched or indented, as shown at 36 in Figs. 1 to 3 inclusive, so that accidental displacement of the transmit-

ter-receiver is guarded against; or, if desired, a forked holder bar 37 may be attached to the column or pedestal member 10 to receive, fit and embrace the transmitter-receiver 35, as shown in Fig. 4.

While I have shown signal apparatus as equipped and designed to be served from an external source of electrical energy, such e. g. as a house lighting circuit, it will nevertheless be understood, that in its broader aspects my invention is not necessarily limited to such arrangement, and that, if desired, a self-contained source of current may be used in the form of dry battery cells or the like, in which case the transformer 19 would not be used and the batteries would replace the same.

It will also be understood that the detail arrangement, grouped relation, and specific form of the devices and parts making up the invention are subject to wide variation, and that many widely different embodiments of this invention could be made without departing from the scope thereof; it is therefore intended that all matter contained in the above description and shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

I claim:—

1. In an apparatus of the class described having electrically actuated audible and visible signal means, a casing, a column vertically movable through the upper wall of said casing, a pivoted lever means to one end of which the in-

ner portion of said column is connected, spring means connected with the other end of said lever means to yieldably swing the latter to hold the column in normal initial uplifted position, means on the exterior portion of said column to hold a telephone receiver deposited thereon when the latter is removed from the receiver suspension hook of a telephone instrument, a control switch to govern delivery of electric current to said audible signal means, and a second switch to govern delivery of electric current to said visible signal means, and both said switches being closed by downward movement of said column under the weight of the deposited telephone receiver.

2. In an apparatus of the class described having an electrically actuated signal means, a casing, a column vertically movable through the upper wall of said casing, a pivoted lever means to one end of which the inner portion of said column is connected, spring means connected with the other end of said lever means to yieldably swing the latter to hold the column in normal initial uplifted position, means on the exterior portion of said column to hold a telephone receiver deposited thereon after removal from the receiver suspension hook of a telephone instrument, and a control switch to govern delivery of electric current to said signal means, said switch being closed by downward movement of said column under the weight of the deposited telephone receiver.

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