

Nov. 19, 1940.

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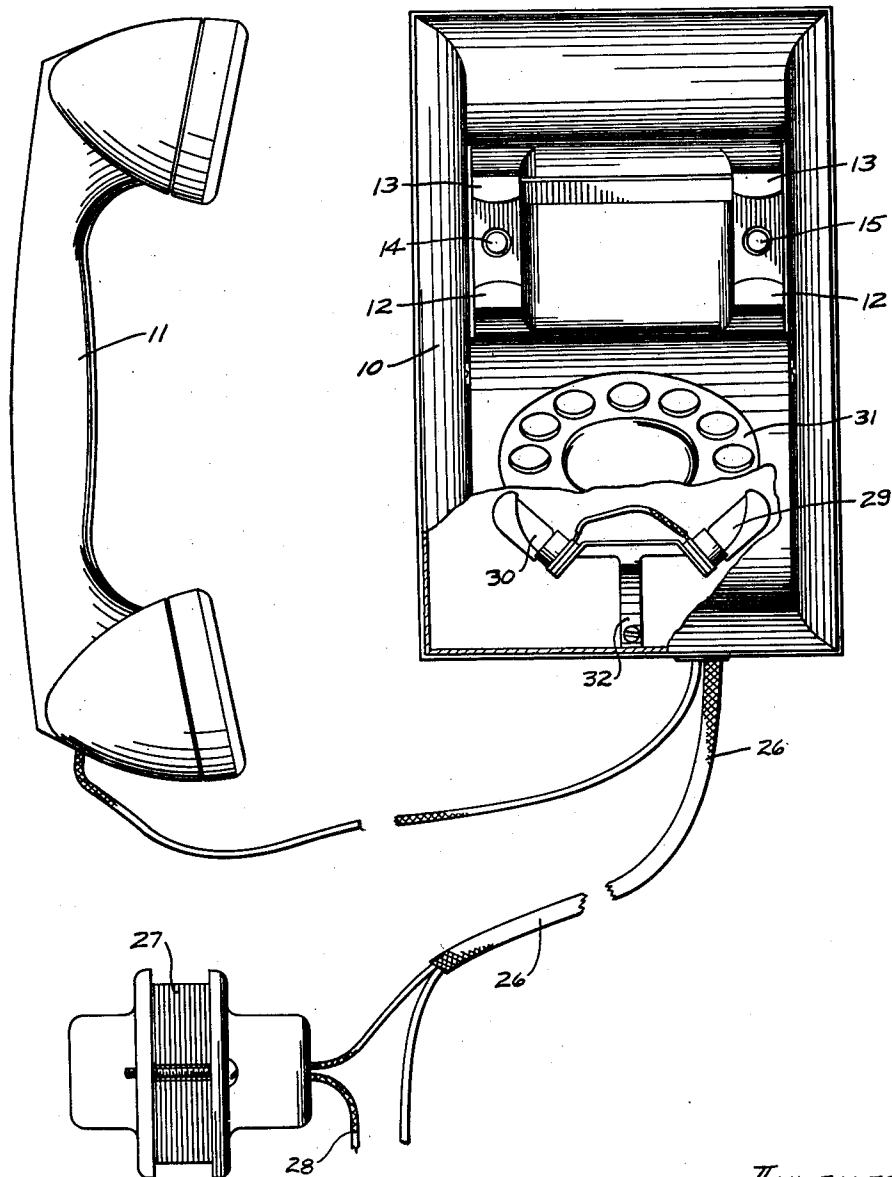
2,222,476

TELEPHONE DIAL ILLUMINATION

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2 Sheets-Sheet 1

Fig. 1



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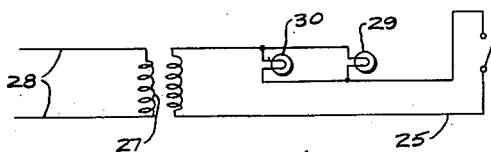
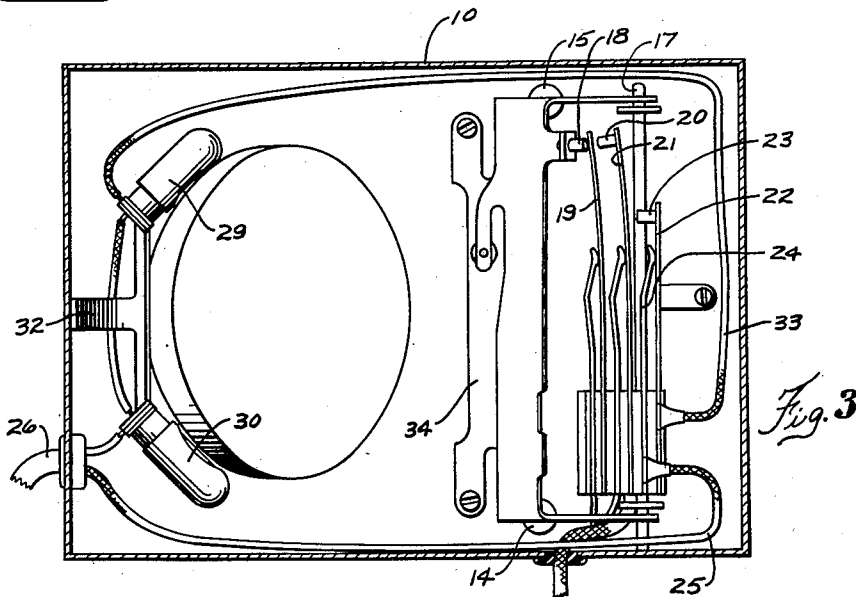
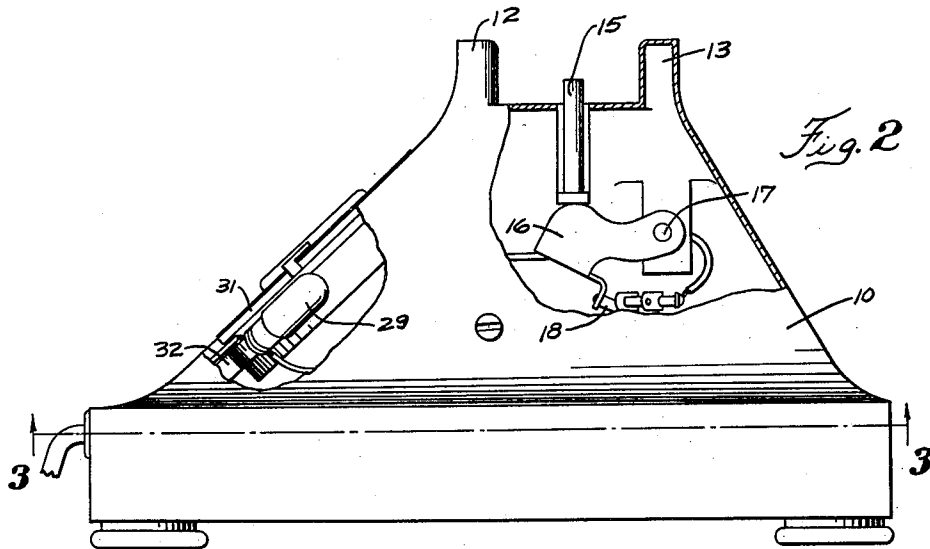


Fig. 4

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UNITED STATES PATENT OFFICE

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TELEPHONE DIAL ILLUMINATION

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2 Claims. (Cl. 179—81)

This invention relates to a dial signaling type telephone and particularly to means for illuminating the dial. A primary object of the invention is to provide means for automatically illuminating the dial of the telephone at all times when the receiver may be removed in such manner that the primary telephone circuit to the line is connected by that receiver in the usual manner. A further object of the invention is to provide means automatically giving a visual signal to indicate the fact that the circuit has not been interrupted by improper replacement of the receiver which may happen particularly in the hand set type of telephones now commonly being used.

In describing one particular form of the invention, reference is made to the accompanying drawings, in which

Fig. 1 is a top plan view of a structure embodying the invention;

Fig. 2, a side elevation in partial section;

Fig. 3, a transverse section on the line 3—3 in Fig. 2; and

Fig. 4, a wiring diagram.

Like characters of reference indicate like parts throughout the several views in the drawings.

In the particular form of the invention herein shown, a telephone hand set comprises essentially the base member 10 and the receiver transmitter unit 11 that is normally positioned between the cradle fingers 12 and 13 to carry the unit 11, hereinafter termed the receiver, transversely across the base in that cradle to have the receiver 11, by its own weight, pressed downwardly on the pair of push buttons 14 and 15 normally extending upwardly between the set of fingers 12 and 13, all in the usual manner. As indicated in Fig. 3, these buttons 14 and 15 rest by their lower ends against a switch rocker bar 16 that is pivoted by arms to the shaft 17.

The bar 16 carries a button 18 that is mounted to be in the path of a switch finger 19 which in turn is in the path of a button 20 on a second switch finger 21, these two fingers 19 and 21 controlling the telephone circuits in the usual manner.

Now in addition to those usual switch members is added a third switch finger 22 that carries a push button 23 thereon spaced normally a distance beyond the last standard finger 21. This spacing is essential in that it is desired that the finger 22 be not shifted until after the fingers 19 and 21 have been moved to open their respective circuits in the usual manner.

As indicated in Fig. 3, the added switch finger 22 is normally in contact with a switch tongue 24 to which the wire 25 is connected. This wire 25 leads from the telephone base 10 to any suitable source of current independently of the telephone circuit supply current. In the form herein shown, it is shown as leading through the cable 26 to a transformer 27 that is supplied with current through the cable 28 from the usual power line carrying current for illumination purposes at 110 volts, the purpose of the transformer 27 being to reduce the voltage down to some such voltage as six for use in miniature lamps 29 and 30 which are mounted about the periphery of the dial 31.

In the form herein shown, these lamps 29 and 30 are mounted on a Y-bracket 32 so that there is one lamp on each side of the dial so directed as to cast light rays directly over the dial surface on which the numbers or call characters are placed. As indicated, these lamps are within the housing of the base 10 to be fully protected thereby. Furthermore the lamps are so mounted as to prevent any interference thereby with the operation of the usual dialing mechanism in the telephone.

A wire 33 is connected with the added switch finger 22 and is interconnected in the circuit of the lamps 29 and 30 and carried out through the cable 26 to the transformer 27 to complete the circuit as indicated in Fig. 4. Thus it is to be seen that whenever the buttons 14 and 15 are pushed downwardly to open the circuits controlled by the switch fingers 19 and 21, the switch finger 22 will be pushed to its open position to interrupt the circuit through the lamps 29 and 30 and conversely when the receiver 11 is lifted from its cradle and the buttons 14 and 15 allowed to lift in the usual manner as controlled by the usual spring 34, the fingers 19 and 21 move to their usual closed circuit positions and so does the finger 22 to cause illumination of the lamps 29 and 30.

The lamps 29 and 30 will, therefore, remain illuminated until the buttons 14 and 15 are fully depressed to break the telephone circuits, a condition which occurs only when the receiver 11 is properly placed back on its cradle. It is frequently the case that the receiver 11 will be dropped longitudinally across the base 10 without being placed in contact at all with the buttons 14 and 15 so that the telephone remains connected and it is impossible for the central station to call that telephone. Any glance to-

ward the telephone will at once indicate by reason of the illumination of the dial that the telephone is still connected into the exchange circuit and that the receiver needs to be properly positioned.

While we have herein shown and described our invention in the one particular form, it is obvious that structural variations may be employed without departing from the spirit of the invention and we, therefore, do not desire to be limited to that precise form beyond the limitations as may be imposed by the following claims.

We claim:

1. In a telephone hand set having a relatively fixed signaling dial carrying indicia, a revolvable dial spaced above the fixed dial, said revolvable dial having a plurality of openings through which said indicia may be observed, a cradle to receive the receiver, a push button in the cradle normally depressed by the receiver when properly placed in the cradle, and telephone circuit control switch means opened by depression of the button, the combination of a lamp carried by said set and positioned at a level between both of said dials to illuminate the fixed dial, a switch, a circuit independent of the telephone circuit to supply power to said lamp through said switch, and actuating means between said switch and said button arranged to open the switch upon depression

sion of the button to the full rest position of the receiver in said cradle.

2. In a telephone hand set having a relatively fixed signaling dial carrying indicia, a revolvable dial spaced above the fixed dial, said revolvable dial having a plurality of openings through which said indicia may be observed, a cradle to receive the receiver, a push button in the cradle normally depressed by the receiver when properly placed in the cradle, and telephone circuit control switch means opened by depression of the button, the combination of a lamp carried by said set and positioned at a level between both of said dials to illuminate the fixed dial, a switch, a circuit independent of the telephone circuit to supply power to said lamp through said switch, and actuating means between said switch and said button arranged to open the switch upon depression of the button to the full rest position of the receiver in said cradle, said fixed dial being mounted below the face of said hand set to position said revolvable dial substantially at the face level of said set, and said lamp being within said set, whereby all of the illumination visible from said lamp from the interior of said set is that through the openings in said revolvable dial.

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