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A Calling Aid for Disabled Subscribers

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Trunking changes at some automatic exchanges have made it necessary to provide new arrangements to assist subscribers who, through some disability, are unable to dial for themselves. A device that can be associated with the telephone to enable the assistance code 100 to be signalled is described.

A SUBSCRIBER connected to an automatic exchange who, due to some physical disability, is incapable of dialling, has hitherto been enabled to obtain direct access to an operator by an exchange relay-set that connects his line to the manual switchboard. However, as a result of the revised trunking arrangements consequent upon the introduction of the dialling code 100 for obtaining the assistance of an operator, the existing relay-sets are no longer suitable in all instances. Where the present relay-set is unsuitable, it has been decided to provide service for disabled subscribers by a device (Sender No. 1) that can be fitted alongside the telephone. This device enables the code 100 to be signalled simply by pressing a button.

Description

The sender is housed in a steel case approximately 6 in. × 4 in. × 3 in. high having a grey hammered finish; its appearance is shown in Fig. 1. The sender can stand beside the telephone with which it is to be used, or it can be wall-mounted.

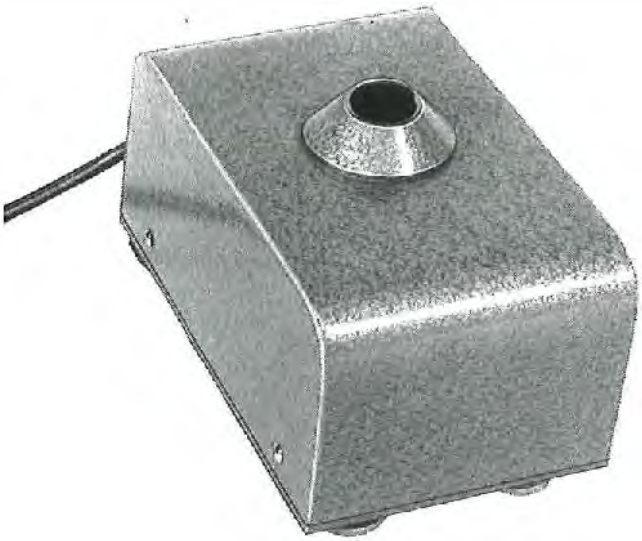


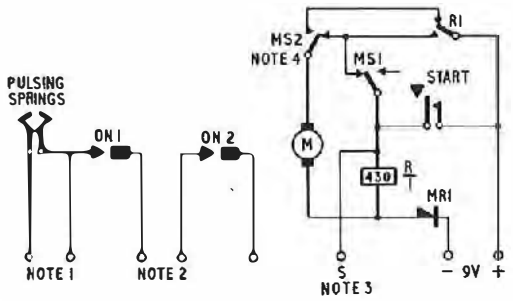
FIG. 1—DISABLED SUBSCRIBER'S CALLING AID

The mechanism consists of a pulsing wheel which, by means of a movable mask, can be arranged to signal 100 or 0, and which is driven, through gearing, by an electric motor. When the start button is pressed the motor is energized, and simultaneously a relay is locked-in to maintain the motor drive until one cycle of operation has been completed. A mechanically operated microswitch is used to halt the mechanism at this point, so that only one complete cycle takes place whether or not the start button is held down continuously. In addition to the pulsing contacts, off-normal spring-sets are fitted, and the sender is connected to the telephone in such a way that the pulsing contacts are in series with, and the off-normal contacts are in parallel with, the corresponding contacts on the dial.

The sender is supplied with power from a 9-volt battery, and the motor, which is governed, maintains the correct pulsing rate until the battery voltage on load falls below 7·5 volts.

Electrical Operation

A circuit diagram of the device is shown in Fig. 2 and the operation of the sender is described below.



Notes:
1. The pulsing contacts are in series with the corresponding contacts of the telephone dial.
2. The off-normal contacts, ON1 and ON2, are in parallel with the corresponding contacts on the dial.
3. Terminal S can be used for the connexion of a separate push-button.
4. Switch MS is operated mechanically after the pulse train is transmitted and is restored when the pulse wheel reaches its home position.

FIG. 2—CIRCUIT OF CALLING AID

The user lifts the receiver, waits until dial tone is heard and then presses the start button. This causes relay R to operate and lock itself via contact R1 operated and microswitch contact MS1 normal. Contact R1 also connects the battery to the motor, which commences to drive the pulsing wheel. The off-normal contacts ON1 and ON2 operate to short-circuit the telephone receiver and provide a loop for dialling. The pulsing contacts are then opened and closed by the pulsing wheel, and dial pulses are sent to line. At the end of the pulse train the microswitch MS is operated mechanically; contact MS1 changes over and relay R releases, provided that the start button has already been released. Contact MS2 changes over and maintains the motor-drive circuit via contact R1 released until the microswitch is restored to normal when the pulsing wheel reaches its home position.

Should the start button be held down by the user during the whole of the pulsing train, relay R remains operated and, when contact MS2 changes over, the motor drive is disconnected and the pulsing wheel comes to rest a few degrees short of its home position. When the button is finally released, the motor-drive circuit is re-established via contact MS2 operated and contact R1 released until the home position is reached and the microswitch is restored to normal.

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Usage

The sender is primarily intended to enable the existing disabled subscribers' service to be continued when the assistance code 100 is introduced. However, if an able-bodied person uses the same telephone as the disabled user, the sender does not preclude calls being dialled in the normal way. Where this facility of dual use is required the new sender will also be provided in areas where the assistance code 0 is in use.

The sender will be supplied, without charge, in cases of genuine need; it will not be provided on rental terms.

Acknowledgements

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