1E-TYPE COIN TELEPHONE SET

DETAILED DESCRIPTION

POSTPAY SERVICE—THEORY OF OPERATION

DIAL POSTPAY (FIG. 1)

Note: This detailed description is based on the operation of a 50A hopper (MD). The new 51A hopper has the same effect on the set circuit, the difference being that the hopper trigger (HT) and 4480 ohm resistor in the 50A hopper has been replaced by an electronic delay circuit in the 51A hopper.

1.01 In Postpay service, the central office (CO) supplies -48 volt to ring with tip grounded.

1.02 When the handset is lifted, switchhook contacts operate and current flows from the ring lead to tip. The path is through the normally closed T2 contact, DP, operated SH2 and SH4, through the speech network, through normally closed T1 [parallel with hopper trigger (HT)] to tip.

1.03 The called number is then dialed and the called party must answer before a coin deposit is made. When the called party answers, the CO automatically opens (splits) the transmission path and sends a ***deposit-coin*** tone to the calling party.

Note: The "deposit-coin" tone is a low frequency tone to inform the calling party that the called party has answered and the initial rate deposit should be made immediately.

1.04 During the time the connection is split, the CO ***S*** relay operates and reverses the loop to the set (negative on tip, ground on ring). This reversed loop prepares the set to receive the initial rate by causing the ring lead to be more positive than tip. With the loop reversed, the totalizer will not restore because diode CR4 is forwarded biased and SH3 (NO) is closed, thus shorting the totalizer and allowing an accumulation of deposits up to, or more than, the initial rate.

1.05 If the totalizer is set for more than 5-cent initial rate, and the calling party deposits a nickel, the HT will operate but is shorted by the normally closed totalizer contact T1. Any time the initial rate requirement is satisfied, totalizer contact T1 will open.

1.06 With HT and T1 both open, the 4480 ohm resistor, located on the 50A hopper, is momentarily placed in series with the loop which creates essentially a low current pulse.

Note: This momentary pulse must have a minimum width of 100 milliseconds and a maximum of 300 milliseconds. The CO recognizes the pulse by use of two relays with different release currents.

1.07 When the CO recognizes this pulse, the CO margin relay will release, thus removing the split connection and establishing the talking circuit. This marginal relay is critical to loop length. Over range will cause improper operation.

1.08 When the switchhook is restored, SH3 (NO) contact opens, and the short around the totalizer is removed. Current now flows through the totalizer, operating the S relay, and the totalizer steps back to ***home*** position.

Note: Unlike a Coin-First or Dial-Tone-First set, the totalizer in a postpay set remains off ***home*** through the total call period for local calls.

1.09 In cases of toll calling, when the customer dials the operator, the CO recognizes the toll call, will not reverse tip and ring, thus the ring lead remains negative throughout the call.

Note: When operator call back is required, negative battery must be supplied on the ring lead.

1.10 With negative on ring, diode CR4 is reversed biased, thus allowing the totalizer to ***read out*** all coin deposits requested by the operator. In addition, the 446F diode across HT contact is forward biased, shorting the HT contact, thus reducing the noise (caused by opening and closing of HT) transmitted to the operator.

MANUAL POSTPAY (FIG. 2)

1.11 The manual coin telephone set consists of the talking and signaling circuitry of a standard 500-type telephone set but also provides coin signaling upon deposit of coins.

1.12 The manual set is usually connected directly to an operator circuit, and the operator will hear all coin deposit tones.

1.13 As in dial postpay service, it is necessary that the CO provide negative battery at all times when the set is connected to an operator circuit.

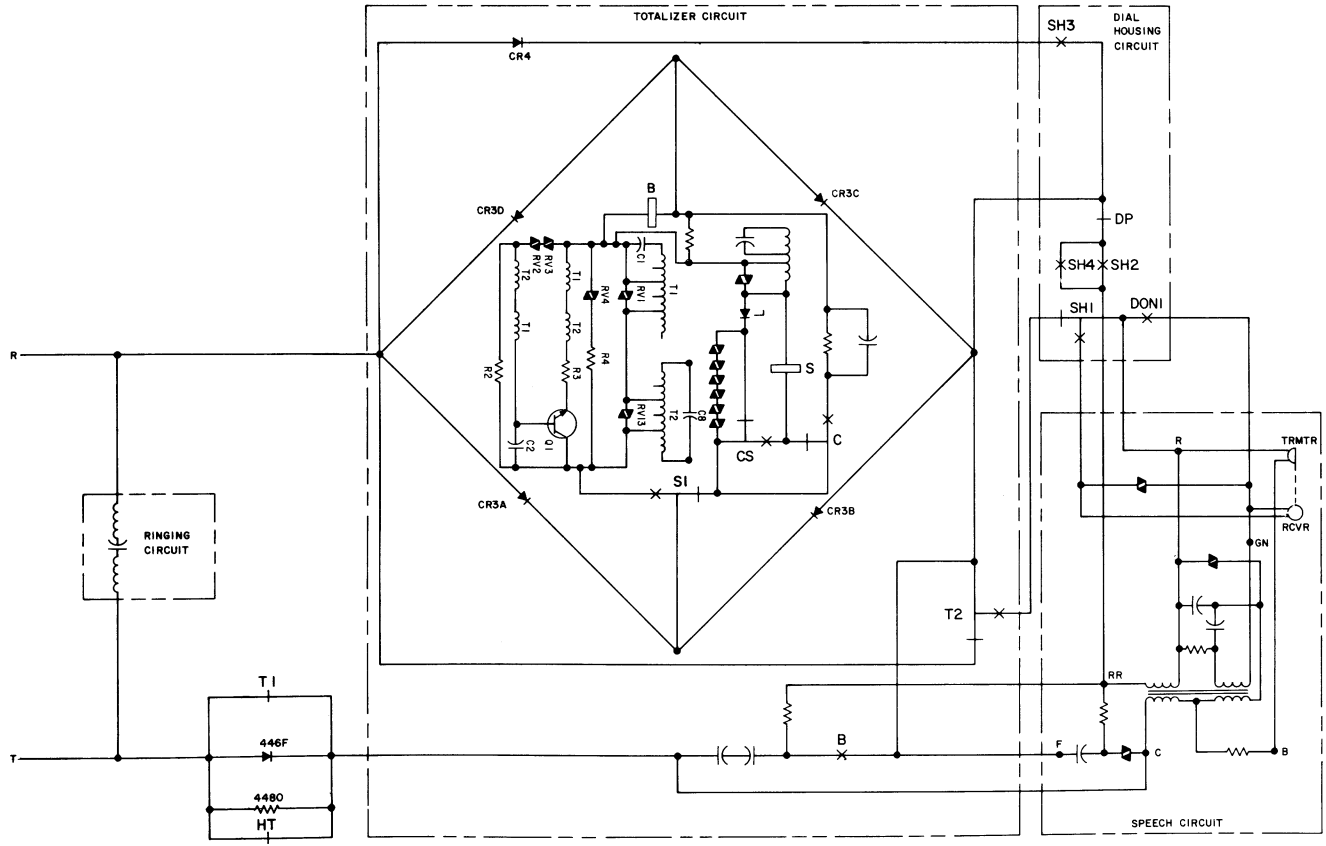

Fig. 1—1E1 Coin Telephone Set, Schematic

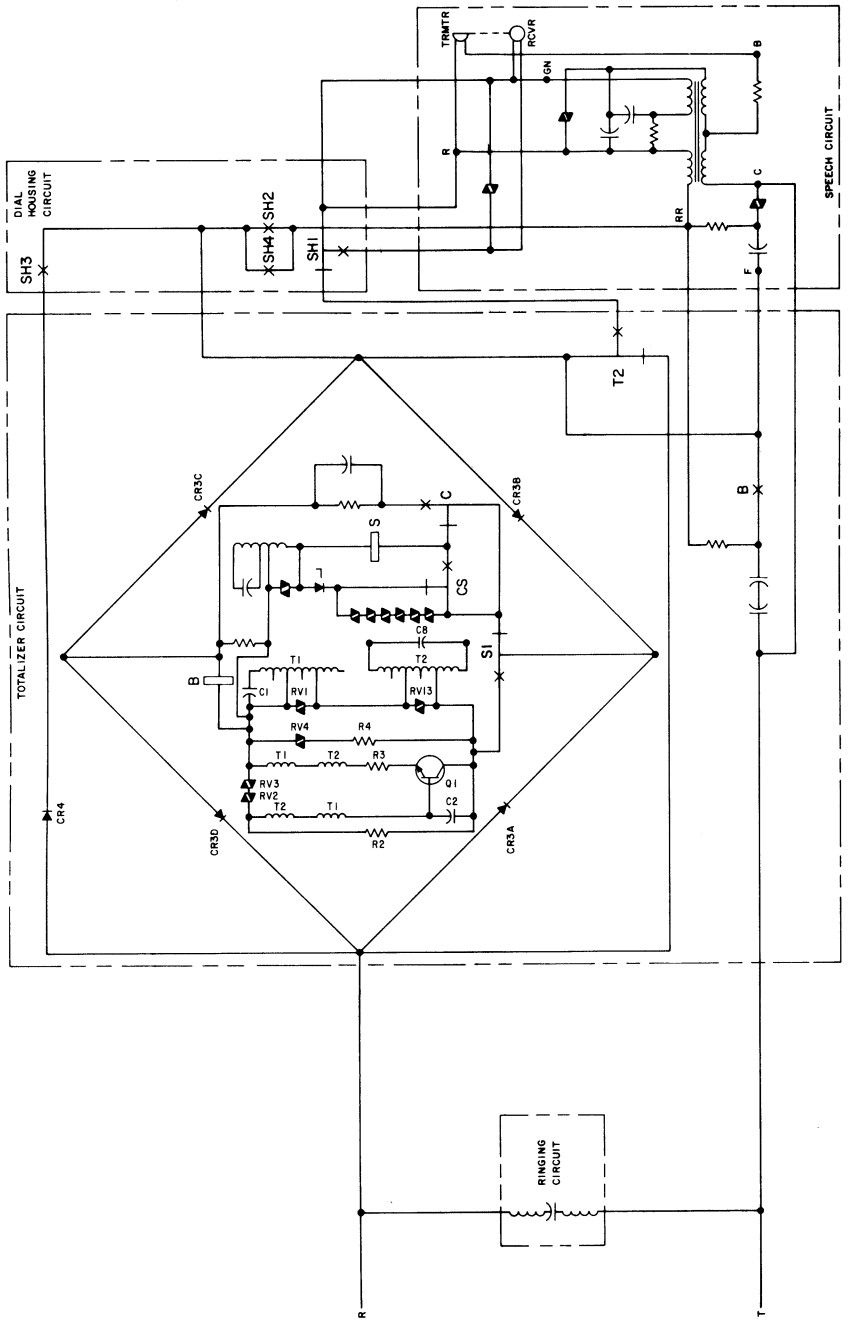

Fig. 2—1E3 Coin Telephone Set, Schematic