THE VINCENT RARE GAS RELAY INSTRUCTIONS

1.—The Vincent Rare Gas Relay is **not** intended for use on single wire system with ground return and no benefit will result from its use in such a circuit.

2.—In order to derive any benefit from the use of the Vincent Rare Gas Relay, it is imortant to note that one must be installed in **each** and **every** grounded bell circuit on the line.

3.—The installation of Vincent Rare Gas Relays will make the line quiet, or there is a defect present in the line. This may be either a large leakage to ground or improper transposition. Such a condition must be remedied if the line is to be made quiet. The presence of such a defect is indicated if, with Vincent Rare Gas Relays in series with each bell, or with all the bells disconnected from the ground, the line remains noisy.

4.—Vincent Rare Gas Relay is not intended to replace any condensers in telephone circuits.

5. Ringing voltage for all selective bells should be adjusted to a 100 volt minimum, to compensate for the small voltage drop across the Vincent Rare Gas Relay. Without the Vincent Relays in the circuit, this value of ringing voltage might produce cross ringing, but with the Vincent Relays installed no cross-ringing will occur.

6.—Ringing voltage for non-selective bells should be at least 90 volts.

7.—In isolated instances the bells may need a slight adjustment to compensate for the resistance of the Vincent Relay, in order to obtain satisfactory ringing quality.

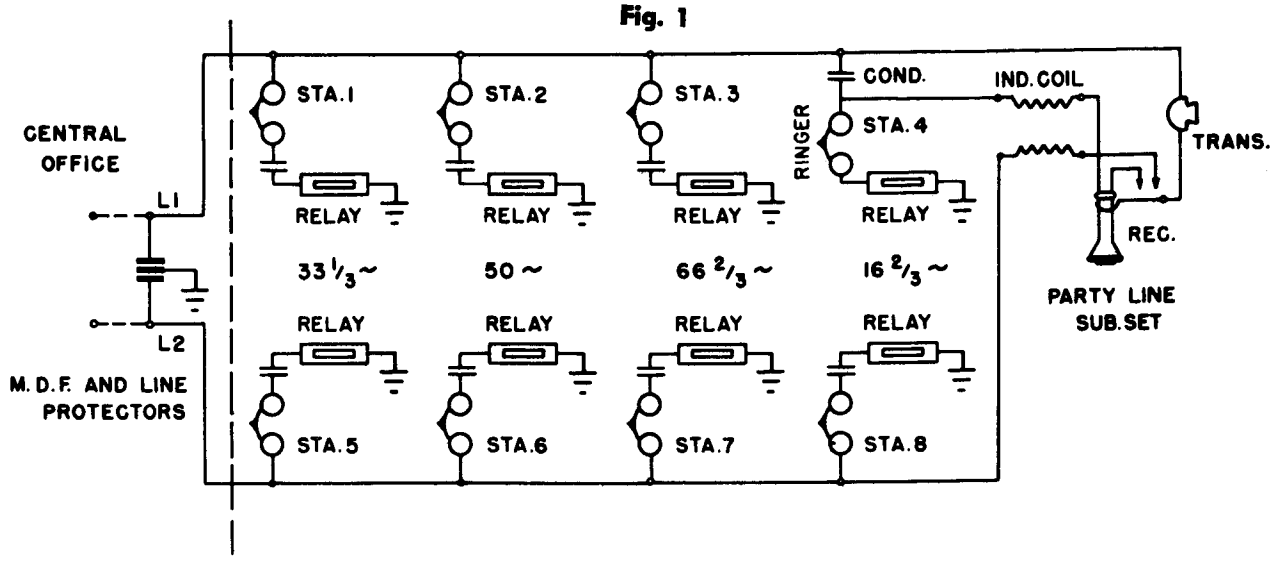
8.—Metallic circuits using push button selection for calling operator may be freed from ground by installing a Vincent Rare Gas Relay between the central office drop and ground.

9.—Metallic circuits with bells connected to ground permit divided or selective ringing but the fact that the lines are grounded through the bells allows audio frequency interference from power lines or other sources to produce noise in the line. This noise will be eliminated by installing a rare gas relay in **each** and **every** bell circuit as indicated in Fig. 1, and thus isolating the line from ground during speech transmission. In the case of divided ringing, the use of the Vincent Rare Gas Relay permits the separation of frequent and infrequent users without the possibility of the resulting unbalance making the line noisy. In order to derive any benefit from the use of the Vincent Rare Gas Relay, it is important to note that one must be installed in **each** and **every** grounded bell circuit on the line.

10. There are several desirable features of the Vincent Rare Gas Relay compared with the Mechanical relay. It is the intention of either relay to isolate the lines from ground during speech transmission. When mechanical relays are used the coils are bridged across the lines. This makes necessary a close and delicate adjustment of the central office ringing relay and premature tripping is frequent especially in wet weather. Mechanical relays require adjustment, contact cleaning and frequent maintenance. Vincent Rare Gas Relays do not require any of these things. They are not connected across the lines, they require no adjustments, they are fool-proof and rugged, and should give practically unlimited service. The cost of Vincent Rare Gas Relays is low, much less than mechanical relays.

11. If it is desired to test the continuity of a Vincent Rare Gas, a protective resistance of a value sufficient to limit the current to twenty-five milliamperes should be inserted in series with the relay.

Fig. 1



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