Western Electric Co., Incorporated,
Engineering Dept.,
New York.

Issue 2 - BT-431242.
Replacing all previous issues.
April 27, 1921.

METHOD OF OPERATION
TELEPHONE CIRCUIT

Without Incoming Call Circuit And Checking Multiple - Arranged To Trip Machine Ringing - Full Mechanical Switching System.

GENERAL DESCRIPTION.

1. This circuit is used at the special A switchboard in connection with the intercepting operator's cord circuits for communicating with subscribers or other operators. It is arranged for tripping machine ringing on incoming calls.

DETAILED DESCRIPTION.

2. When the plug of a cord of the associated cord circuit has been inserted in the jack and the talking key is operated, battery is connected through the 18-G resistance to lead R to trip the machine ringing current in the local incoming circuit. The operation of the talking key connects ground to the inner winding of the TR-3 relay which operates. When the plug of the calling cord is inserted in an outgoing trunk jack a circuit is completed also through the outer winding of the TR-3 relay over lead L. The TR-3 relay operated operates the TR-1 relay which in turn causes the TR-2 relay to operate and lock under control of the TR-3 relay. The TR-2 relay operated releases the TR-1 relay and operates the TR relay. The TR-1 relay is made slow in releasing to allow the machine ringing current in the incoming trunk circuit to be tripped before the operation of the TR relay, in order to prevent objectionable clicks in the receiver. The operation of the TR relay closes the tip and ring through to the repeating coil and disconnects the 24 volt battery through the 18-G resistance from the ring side of the line.

3. When a test is made on a busy line by touching the tip of the cord to the sleeve of a jack, the T relay operates, producing a click in the receiver. When the tip of the cord is removed from the jack a second click is produced. If a busy test is made on a line which is out of order a tone is connected to lead TR and is produced in the receiver through the 2 M.F. condenser.

4. When the talking key is restored to normal, the TR-3 relay releases, in turn releasing the TR-2 and TR relays, and restoring the circuit to normal.

CIRCUIT REQUIREMENTS.

	OPERATE	NON-OPERATE	RELEASE
162-R	Test .023 Amp.	Test .016 Amp.	
TR-1	Readj. .021 amp.	Readj. .017 amp.	
B-24	Test .0017 amp.		Test .0002 amp.
T	Readj. .0008 amp.		Readj. .0003 amp.

CIRCUIT REQUIREMENTS.

	OPERATE	NON-OPERATE	RELEASE
E34 TR	Test .030 amp. Readj. .020 amp.	Test .015 amp. Readj. .016 amp.	
E200 TR-2	Test .028 amp. Readj. .016 amp.		Test .0028 amp. Readj. .003 amp.
E392 Tr-3 Inner wdg. 1000 ohms	Test .011 amp. Readj. .010 amp.		Test .0007 amp. Readj. .0014 amp.
Outer Wdg. 1000 ohms	Test .020 amp.		

Eng.--HTW-JO. CHK'D.--RAP-CWP. Approved C.L.SLUYTER, G.M.L.

5/19/21.