

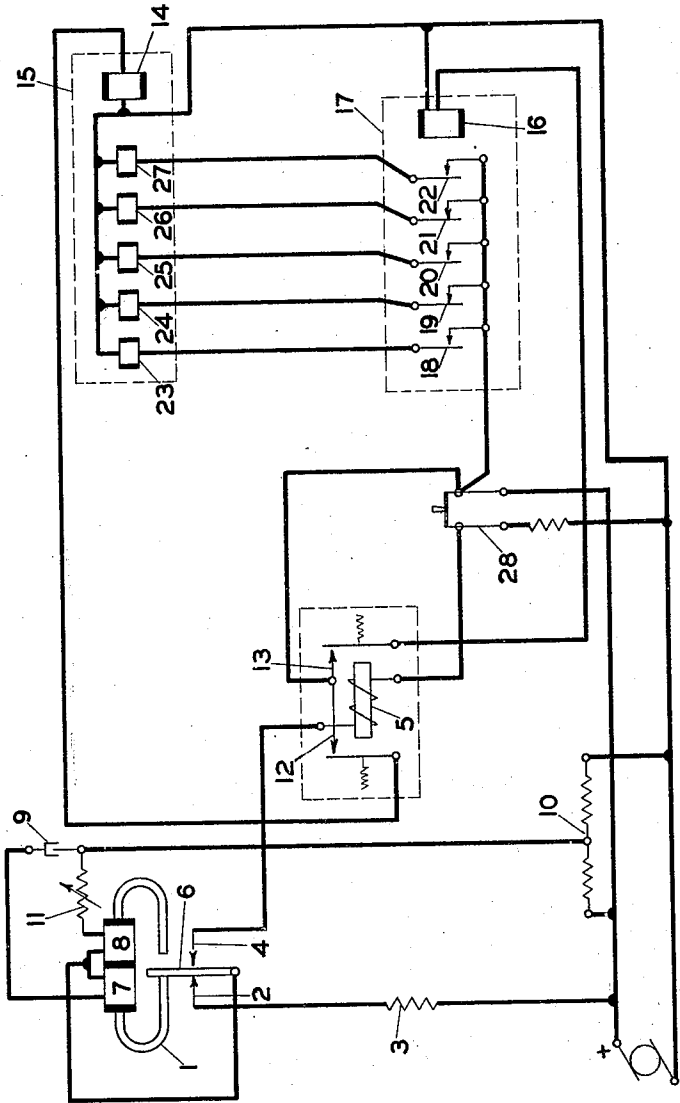
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PRINTING TELEGRAPH SYSTEM

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PRINTING-TELEGRAPH SYSTEM.

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This invention relates to printing telegraph systems and more particularly to means for the local operation or testing of printing telegraph apparatus.

5 The principal object of this invention is to provide an inexpensive and simple means of testing tape controlled transmitters and printers of the well-known five-unit code type such as are commonly used in multiplex printing telegraphy.

10 Another object of this invention is to provide an inexpensive and simple means of checking the accuracy of perforated tapes.

15 Devices heretofore used for the testing of transmitters and printers have included a rotary motor driven distributor. This rotary distributor is expensive to manufacture and requires considerable attention to maintain in good running order.

20 My invention does not require any rotary distributing apparatus. I am able to eliminate the rotary distributor by substituting for it a vibrating relay system and arranging that each combination of impulses set up in the transmitter is transferred to the printer magnets simultaneously instead of consecutively.

25 Other objects of this invention will be apparent from the following description when read in connection with the accompanying drawing which shows schematically one embodiment of the invention.

30 The polarized vibrating relay 1 is connected so that it functions in a manner similar to the well-known Gulstad relay. Positive potential is applied to contact 2 through resistance 3, and negative potential is applied to contact 4 through the winding of marginal relay 5. The armature 6 is connected to the junction of relay windings 7 and 8. When
40 armature 6 for example, makes contact with 2 a current flows momentarily through winding 7, condenser 9 and to the midpoint of potentiometer 10 and the direction of the current flow is such as to hold the armature firmly against the contact while the condenser is charging. A smaller current also flows through winding 8, resistance 11 to potentiometer 10. The current flows through winding 8 in such direction as to tend to move
45 the armature 6 away from contact 2 but the influence of winding 8 does not become effective until the charging current through condenser 9 is reduced in value. When the opposing current through winding 8 finally

starts to move armature 6 the condenser 9 dis- 55 charges through winding 7, winding 8 and resistance 11 in series and the armature is quickly moved to the opposite contact. When the tongue reaches contact 4 the same cycle of operation is gone through except that the 60 direction of all currents is reversed. The period of vibration of the armature may be altered by changing the value of resistance 11 or condenser 9, as is well-known in the art.

Relay 5 is marginally adjusted so that it 65 operates only during the peak of the charging current to condenser 9 when armature 6 is resting on contact 4.

From the foregoing it will be apparent that if relay 1 is vibrating at, say, six cycles per 70 second then relay 5 also operates at the same frequency and that the duration of each operation of relay 5 is brief as compared to the time that armature 6 of relay 1 is resting on contact 4.

75 Contacts 12 and 13 of relay 5 are both connected to negative potential. Each operation of relay 5 energizes the operating magnet 14 of printer 15 and operating magnet 16 of tape transmitter 17. Magnet 16, being momentarily energized moves the perforated 80 tape ahead one letter and the new letter combination is set up in the transmitter contacts 18, 19, 20, 21 and 22 when magnet 16 is de-energized. Magnet 14 being energized trips 85 the operating mechanism of the printer which then proceeds to print the letter combination previously set up in selector magnets 23, 24, 25, 26 and 27.

Each succeeding operation of relay 5 90 initiates the cycle of operations of the transmitter and printer.

The double-pole single-throw switch 28 is for the purpose of starting and stopping the complete testing device. 95

Although the invention has been disclosed and described in conjunction with a particular type of printing telegraph apparatus it is, of course, obvious that various departures may be made from the embodiment described 100 without departing from the spirit or narrowing scope of the present invention.

I claim:

1. In a local recording system, a tape controlled transmitter, a receiver controlled by 105 said transmitter, a vibrating relay system, said vibrating relay system initiating the operations of said transmitter and receiver.

2. An electrical device comprising, a tape controlled transmitter, a printer controlled by said transmitter, a vibrating relay system, said vibrating relay system initiating the
5 operations of said transmitter and printer.

3. An electrical device comprising, a tape controlled transmitter, a printer controlled by said transmitter, a polarized vibrating relay, means for altering the vibratory rate of
10 said polarized vibrating relay, a secondary relay operated from said polarized vibrat-

ing relay, said secondary relay initiating the operations of said transmitter and printer.

4. An impulse generator comprising a vibrating relay, means for altering the rate
of vibration of said relay, a marginal relay
controlled by said vibrating relay, said mar-
ginal relay operating once for each cycle of
operation of said vibrating relay, and con-
tacts on said marginal relay for supplying
impulses.

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