

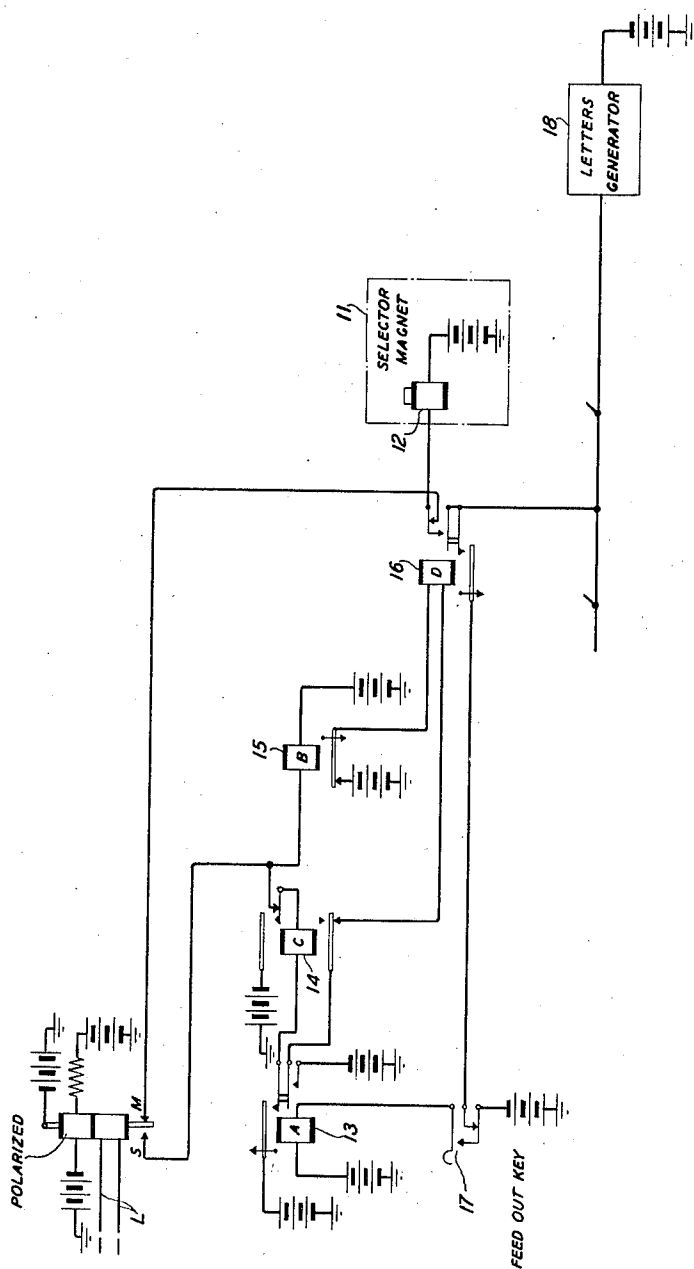
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TELEGRAPH RECORDER CONTROL

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TELEGRAPH RECORDER CONTROL

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2 Claims. (Cl. 178—92)

This invention relates to telegraph systems and more particularly to arrangements for controlling reperforators or other receiving recorders.

It is frequently desirable to manually or otherwise cause a reperforator to advance the recording medium through the machine during idle periods to enable the end of the last received message to be advanced out of the machine so that the entire message may be readily removed or detached from the machine. Attempts have been made in the past to provide such an arrangement and at the same time provide means for insuring that received signals after the first or some succeeding one of them will be properly recorded.

As shown in the systems described in both an application of Bacon Serial No. 509,537, filed November 9, 1943, and an application of Watson Serial No. 509,540, filed November 9, 1943, a single retarded relay is employed to interrupt the manually controlled circuit arrangement for advancing the record medium through the receiver when signals are received and also to prevent the advancing of the record medium through the instrument by means other than signals when signals are received. Tests have indicated that a suitable commercial relay cannot readily be designed to function equally well under both sets of circumstances.

Accordingly it is an object of the present invention to overcome this difficulty by providing two relays, one a fast relay for interrupting the connection upon the reception of the first received signals, and a second slow or retarded relay to hold operated during the reception of signals for preventing the establishing of connections to advance the record medium through the mechanism by means other than received signals.

The foregoing objects and features as well as other objects and features of the present invention, the novel features of which are set forth in the claims appended hereto, may be more readily understood from the following description when read with reference to the attached drawing.

In the drawing 11 represents a receiving instrument such as a reperforator or typing reperforator and may be of the type disclosed in patent application of Bacon et al., Serial No. 383,490, filed March 15, 1941, or any other suitable type. It should be noted that if the type disclosed in said application is employed the so-called feed-out magnet need not be supplied since no use is made of it in the exemplary embodiment of the present invention described herein.

Line relay 10 follows signals received from line

L and repeats them in the customary manner to the selector magnet 12 of the recording instrument 11. As shown in the drawing, the circuit from the marking contacts of relay 10 extends through the break contacts of relay 16 to the selector magnet 12. The selector magnet 12 therefore follows the received signals and causes the recording device 11 to record the signals in any suitable manner.

During the reception of signals the armature of line relay 10 is actuated between its M and S contacts in accordance with the signals. During the time the relay is in its spacing position, that is, during the time its armature is in contact with the S contact, a circuit is completed for the operation of a slow release relay 15. Relay 15 is a slow release relay of any suitable type which will maintain its armature actuated and thus the associated contacts open due to closures of the spacing contacts of relay 10 during the reception of signals. Relay 15 is designed so that it will maintain its contacts open during the time signals of any character, other than a marking or idle condition, are being received by relay 10.

In order to permit an operator to advance the record medium through the receiving device 11 during idle periods thereof a special key 17 has been provided which when operated completes an obvious circuit for the operation of relay 13. The operation of relay 13, however, during the time relay 15 is operated, is ineffective to operate relay 16. Furthermore, with relay 13 operated a circuit will be completed for the operation of relay 14 upon the reception of the first spacing signal received over line L. Relay 14 in operating will complete a circuit for maintaining itself operated under control of relay 13, that is, as long as key 17 is maintained operated.

With either relay 14 or 15 operated, the circuit through the winding of relay 16 is interrupted. Hence, it is impossible to operate relay 16 at these times. Consequently, even the accidental operation of key 17 during the time signals are being received will not in any way interfere with the reception of the received signals by the recording device 11.

However, if key 17 is operated during idle intervals, at which time relay 15 has released, the operation of relay 13 completes a circuit for the operation of relay 16 from positive battery through the lower operated contacts of relay 13 and the lower break contacts of relay 14 and the winding of relay 16 to ground through the break contacts of relay 15.

Relay 16 in operating connects a source 13 of any suitable predetermined code combination of pulses or signals or other suitable signals such as, for example, "letters signals" to the selector magnet 12 of the recording device 11. Thereupon the signals transmitted to the selector device 11 from said source will cause device 11 to advance the record medium out of the machine so that the entire previous message may be removed from the machine without any mutilation thereof and without removing the rest of the recording medium from the machine or from the paths which it follows through the machine. Upon the release of key 17, after sufficient tape has been perforated or advanced through the mechanism, a circuit is completed for maintaining the selector magnet 12 operated. This circuit extends from negative battery through the break contacts of key 17, both sets of operated contacts of relay 16 to positive battery through the winding of the selector magnet 12. This circuit causes the selector mechanism will come to rest. The release of key 17 also interrupts the operating circuit of relay 13 and relay 13 releases and in turn interrupts a circuit of the slow release relay 16. Relay 16, however, does not immediately release as will be described hereinafter. However, upon the release of relay 16, the circuit from the letters generator 13 and the circuit through the break contacts of key 17 are disconnected from the selector magnet 12. Hence, the selector magnet is again connected to the contacts of the repeating relay 10 and ready for reception of succeeding signals received from line L.

As set forth in the above-mentioned application of Watson, filed on even date herewith, relay 16 in an exemplary embodiment of the invention is designed to maintain its contact closed for an interval of time approximately equal to the time required for the reception of a single character. Hence, the selector magnet 12 is maintained operated during the reception of the entire first character. Consequently if any of the pulses of the first character, other than the start pulse, are spacing they will not in any way cause the release of the selector mechanism of the recording instrument 11. However, relay 16 will generally be released when the start pulse of the second character is received by relay 10. Consequently this pulse and the succeeding code combinations will be transmitted to the selector magnet 12 and recorded by the receiving device 11.

If signals are received during the time key 17 is operated the start pulse of the first signal will cause the armature of relay 10 to move to its spacing position where a circuit is completed for the operation of relays 14 and 15. As described above, relay 15 is a slow release relay and will operate with reasonable speed. However, in order to insure that only one character preceding the message will be required to properly condition the receiving equipment if it is in the process of advancing the record medium through it, it has been discovered that the operating time of the usual slow release relays is too long to permit satisfactory operation under these condi-

tions. In order to overcome this difficulty the operation of the armature of relay 10 to its spacing condition during the time the record medium is being advanced through the receiving device 11, a circuit is completed for the operation of relay 14 from negative battery through the armature and spacing contacts of relay 10, break contacts of the winding of relay 14, to positive battery through the upper operated contacts of relay 13. Relay 14 may, therefore, be made a very fast operating relay. Relay 14 in operating completes a circuit for maintaining itself operated under control of relay 13 as described above. By making relay 14 fast in operating the circuit of slow release relay 16 is interrupted sufficiently accurately after the reception of the first spacing signal so that this relay can be released at the end of the first code combination with sufficient accuracy to permit the recorder 11 to accurately respond to the second received code combination.

As shown in the drawing, the contacts and windings of the various relays extend either to positive or negative battery. It is to be understood that these positive and negative batteries may comprise a positive and negative terminal of a rectifier or a single battery. It will be further appreciated by persons skilled in the art that either of these two terminals may be grounded if it is so desired.

What is claimed is:

1. In combination, a telegraph reperforator for perforating tape in accordance with received telegraph signals, a magnet for controlling said reperforator, apparatus for transmitting received signals to said magnet, a source of predetermined signals for causing said reperforator to advance said tape therethrough independently of received signals, manually controlled switching apparatus for connecting said source of signals to said magnet, a slow release relay operative incident to the reception of signals for rendering said switching apparatus ineffective, other apparatus responsive to received signals for interrupting the connection between said source of signals and said magnet, and time delay equipment operated incident to the establishment of said connection for preventing the transmission of the first received code combination to said magnet.

2. In combination, a telegraph reperforator for perforating tape in accordance with received telegraph signals, a magnet for controlling said reperforator, apparatus for transmitting received signals to said magnet, a source of predetermined signals for causing said reperforator to advance said tape therethrough independently of received signals, manually controlled switching apparatus for connecting said source of signals to said magnet, a slow release relay operative incident to the reception of signals for rendering said switching apparatus ineffective, a fast operating relay responsive to received signals for interrupting the connection between said source of signals and said magnet, and time delay equipment operated incident to the establishment of said connection for preventing the transmission of the first received code combination to said magnet.

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