

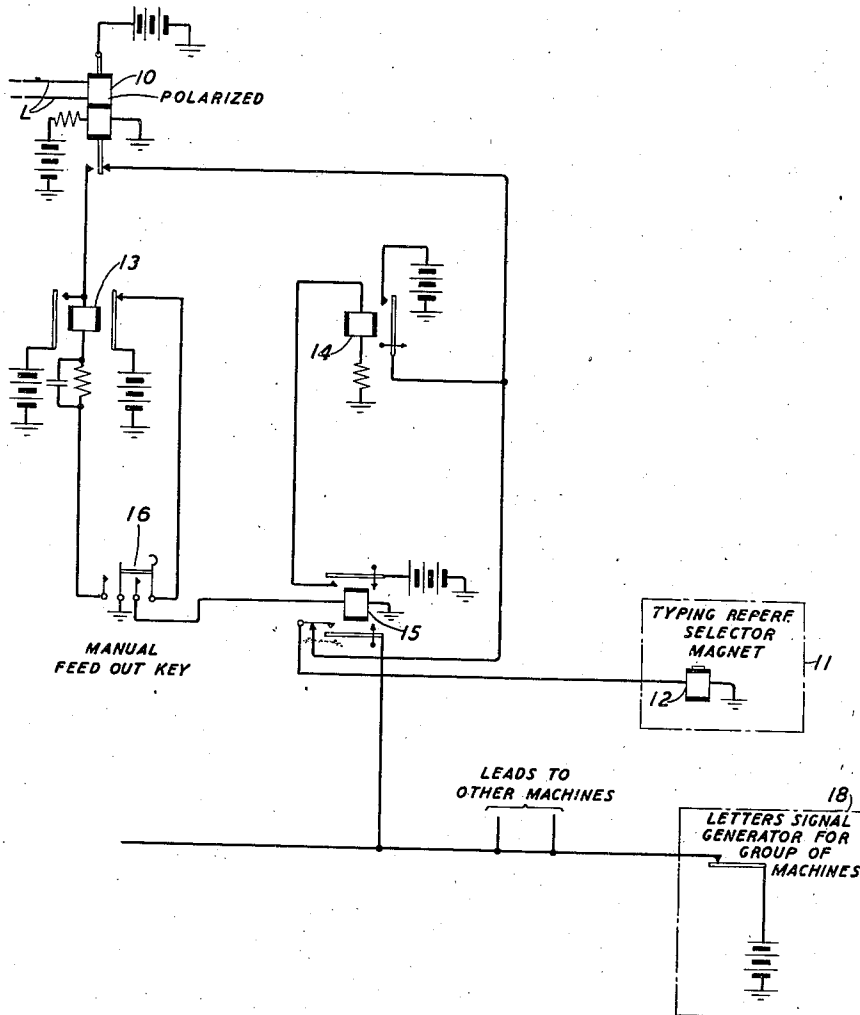
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E. F. WATSON

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TELEGRAPH RECORDER CONTROL

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INVENTOR
E. F. WATSON
BY
William F. Simpson

ATTORNEY

UNITED STATES PATENT OFFICE

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TELEGRAPH RECORDER CONTROL

Edward F. Watson, Larchmont, N. Y., assignor
to Bell Telephone Laboratories, Incorporated,
New York, N. Y., a corporation of New York

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This invention relates to telegraph systems and more particularly to circuits for cooperating with a receiving recorder such as a reperforator, typing reperforator or other type of receiving instrument.

In telegraph receiving instruments which record received signals on a recording medium, it is frequently desirable to permit an operator or attendant to advance the recording medium through the receiving instrument or reperforator while no signals are being received and at the same time prevent or interrupt such advancing of the recording medium through the receiving instrument upon the reception of received signals.

Numerous attempts have been made in the past to provide various arrangements for accomplishing these results. It has been proposed to provide a special magnet or other equipment for controlling the receiving instrument to cause it to advance the recording medium through it independently of the receiving selector magnet. Such arrangements require special recorders and are not applicable to existing instruments.

Another proposal has been to provide an auxiliary signal generator for generating predetermined signals which, when connected to the selector magnet, will cause the receiving device to advance the recording medium therethrough. In the latter type of circuit arrangement and in certain of the first-mentioned types, difficulty has been experienced in interrupting the operation of the feed-out mechanism upon the reception of signals because of the various phase differences between the received signals and the auxiliary source of signals. In the past it has been necessary to transmit several letters signals to the receiving instrument in order to insure that it will be in proper condition to receive the succeeding signals.

In addition, if other than letters signals are transmitted preceding the message with the systems of the prior art, additional signals will be required to insure that the receiving instrument will respond in synchronism to the received signals. In other words, a greater plurality of signals will be required in order to insure proper reception of the succeeding message.

It is an object of the present invention to overcome the difficulties experienced with the systems in the prior art as outlined above.

A feature of the present invention relates to a slow-release relay which maintains the circuit of the selector magnet closed for substantially a character length following the reception of the start pulse of the first received signal. By providing this relay, the character of the first code combination is immaterial. In addition, by causing the circuits to respond to the start pulse of this signal, it is possible to insure that the selector mechanism will be in a proper condition to

properly respond to the succeeding code combination.

The foregoing objects and features, as well as other objects and features in the present invention, the novel features of which are set forth in the claims appended hereto, may be more readily understood by reference to the attached drawing which shows an exemplary embodiment of the present invention arranged for cooperation with a typing reperforator mechanism.

Referring now to the drawing, 11 represents a typing reperforator of the type such as disclosed in an application of Bacon et al., Serial No. 383,490, filed March 15, 1941. It, of course, will be understood by those skilled in the art that any other suitable type of recording instrument suitable for recording telegraph signals may be employed in place of the typing reperforator such as disclosed in the above-identified application of Bacon et al. However, in accordance with the present invention, it is unnecessary to use the special magnet or to equip such a reperforator with the special magnet disclosed in that application for causing the mechanism to advance the tape out of the machine.

The selector magnet 12 is the only magnet required to control the reperforator 11 in order that it will properly cooperate with the communicating circuits of the exemplary embodiment of the invention disclosed herein. Normally, the line relay 10 follows signals received over line L and repeats them to the selector magnet 12 through the break contacts of relay 15. This operation of the receiving relay 10 and the selector magnet 12 is well understood by persons skilled in the art and causes the corresponding signals or symbols to be recorded on the tape or other recording medium of the receiving device 11.

In order to permit the operator or attendant to cause the receiving device 11 to advance the recording medium through it and thus advance the end of the last message out of it so that the entire message may be readily detached or else transmitted from an associated transmitter, a manual feed-out key 16 has been provided. If key 16 is operated during the time signals are being received, it will complete a circuit for the operation of relay 15 from battery through the break contacts of relay 13, the operated contacts of key 16 to ground through the winding of relay 15. Relay 15, however, is a relay which is slow to operate and is so adjusted that it requires longer to operate than the length of time required to receive an incoming code combination. Some time during the incoming code combination after manual key 16 has been operated, relay 10 will operate to its spacing position and thereupon complete a circuit for the operation of relay 13 from battery through armature and spacing contact of relay 10 and the winding of

relay 13 to ground through the operated contacts of key 16. Relay 13 thereupon operates and completes a circuit for maintaining itself operated under control of key 16.

The operation of relay 13 in addition interrupts the operating circuit of relay 15 and thus prevents relay 15 from operating at this time.

Consequently, the operation of the manual feed-out key 16 at a time during which signals are being received is ineffective to operate relay 15 and is thus ineffective to interfere with the reception of the signals and the repeating of these signals by a line relay 10 to the selector magnet 12 through the break contacts of relay 15.

However, if during other periods an operator wishes to cause machine 11 to automatically advance or feed-out the tape, key 16 upon operation thereof by the attendant or subscriber will complete a circuit for the operation of relay 15. Upon holding key 16 operated and in the absence of received signals, relay 15 will operate at the end of the above-mentioned predetermined time interval. The operation of relay 15 completes an obvious circuit for the operation of relay 14.

In addition, the operation of relay 15 transfers the circuit of the selector magnet 12 from the marking contact of the line relay 10 to the signal generator 18 which in the exemplary embodiment of the present invention continuously generates the letters signals. Of course, any other suitable or desirable code combination or other type of signals may be transmitted by the permutation code transmitter 18 so long as the signals so generated cause the recording device 11 to advance the record medium therethrough.

So long as key 16 is held operated and no signals are received, the above described circuit from the letters signal generator 18 to the selector magnet 12 will be maintained and the magnet will cause the receiving mechanism to advance the recording medium through the device independently of received signals so that the last entire message may be either retransmitted or detached from the machine by the operator and then sent over some other circuit direct to the addressee in any suitable manner. Upon the release of key 16, relays 15 and 14 will in turn release and restore the system to its idle condition.

However, if signals are received during the time key 16 is held operated and relay 15 is operated, the first break or start pulse of the first code combination received over line L when repeated by relay 10 will complete a circuit for the operation of relay 13. Relay 13 thereupon locks operated under control of key 16.

The operation of relay 13 in addition interrupts the operating circuit for the slow-operate relay 15 which relay thereupon releases and interrupts the connection from the letters signal generator 18 to the selector magnet 12.

Due to the fact that a slow-release relay 14 is maintained operated during the time the slow-operate relay 15 is operated, the slow-release relay 14 will maintain the selector magnet 12 of recorder 11 operated during a short interval of time after relay 15 releases. Consequently, magnet 12 is unable to respond to the first code combination received from line L. In addition, by maintaining a selector magnet 12 operated at this time the selector cam drum of the receiving de-

vice 11 will come to rest at the end of the revolution in progress at the time the first pulse of the code combination is received independently of any of the received signals or the characters thereof. In the exemplary embodiment of the present invention the slow-release relay 14 is adjusted to have a releasing time of approximately the time required for the reception of a complete code combination. In the exemplary embodiment of the present invention it is desired that relay 14 have a release time only very slightly shorter than the time required to receive an entire code combination. Hence, near the end of the first code combination received over line L relay 14 will release and render effective the connection between the selector magnet 12 and the contacts of the line or repeating relay 10. Thereafter, the signals will be repeated to the selector magnet 12 in the usual manner and in turn the selector will record and receive signals either by printing them on the recording medium or by perforating the recording medium in accordance with the received signals or in any other suitable manner.

Upon the release of key 16, relay 13 will release and restore the circuit to a normal operating condition.

The exemplary embodiment of the invention set forth herein shows two time delay devices or relays 14 and 15. These devices are shown as electromagnetic relays for convenience of the understanding of the present invention. It will be readily understood and appreciated by persons skilled in the art that these relays may comprise a plurality of relays or they may comprise other types of time delay devices such as an electron tube controlled by the charging or discharging time of a condenser. Likewise, these relays may represent any other suitable time delay apparatus for securing the necessary or desired time interval.

What is claimed is:

1. In combination, a telegraph receiver for recording telegraph signals on a record medium, a magnet for controlling said receiver, a circuit including said magnet for supplying signals to said magnet, switching apparatus for supplying predetermined signals to said magnet to cause said receiver to feed out record medium, apparatus responsive to received signals to prevent the supply of said predetermined signals to said magnet, and time delay apparatus for preventing the transmission to said magnet of the first signal received during the time said predetermined signals are supplied to said magnet.

2. In combination, a telegraph reperforator for perforating a recording medium in accordance with received telegraph signals, a magnet for controlling said reperforator, apparatus for transmitting signals to said magnet, a source of predetermined feed-out signals for causing said reperforator to feed out said record medium independently of received signals, manually controlled connections for connecting said source to said magnet, apparatus responsive to received signals for interrupting said connection, and time delay equipment operative incident to the operation of said last mentioned apparatus for preventing the transmission of the first received signal to said magnet, but causing the correct reception of succeeding received signals.

EDWARD F. WATSON.