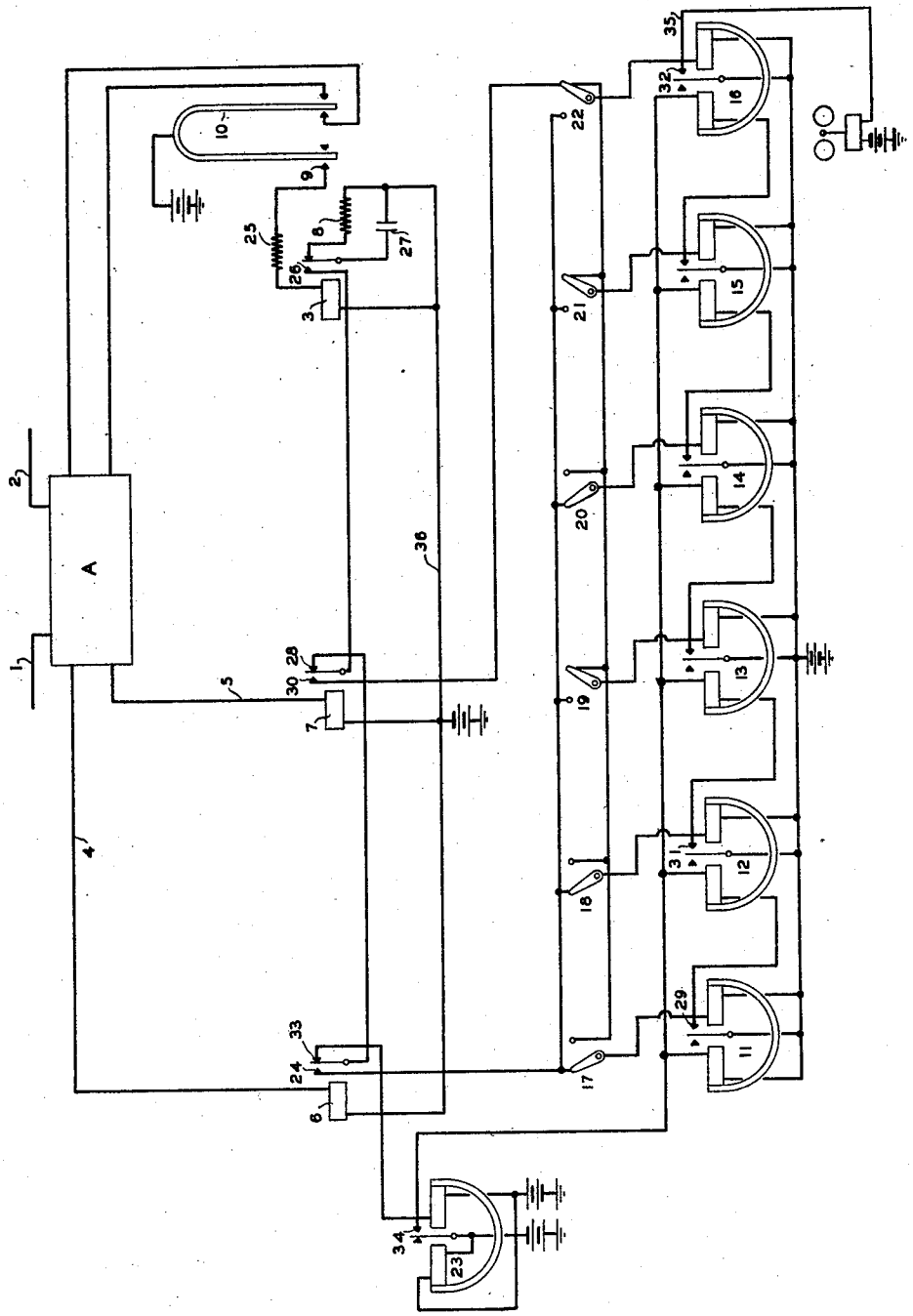
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TELEGRAPH SYSTEM

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TELEGRAPH SYSTEM

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This invention relates to telegraph systems and more particularly to a type of selector for use with regenerative repeaters.

As is well known in the art there are certain times when repeater stations on a cable desire to communicate with one another and the terminal stations. For this purpose selectors such as the Gill selector have been used but they have the disadvantage of requiring careful maintenance and a certain lengthy time factor to operate successfully.

Heretofore it has been the practice to assign an operator at each repeater station to watch the tape recording the traffic for messages assigned to that particular station. This system provides a signal which will attract an attendant when a message for that station is being sent.

It is therefore the principal object of this invention to provide a selector which will operate on a predetermined code series of impulses of a greater number than that required for the regular signals, and give a signal on an incoming message.

A further object is to provide a system which will require a minimum of maintenance and be simple in operation.

A more clear conception of the operation and further features may be had from the following description in conjunction with the accompanying drawing in which the circuit is shown in schematic form.

As is well known in the art, cable code signals comprise permutations of four or five units; for instance, F is a dot dot dash dot and 3 is a dot dot dot dash dash. In the proposed system signals of this character would not affect the selector as there are six selecting relays which are operated in sequence until all six are operated, at which time a signal is given to the attendant that there is an incoming message on the tape. It is therefore obvious that ordinary traffic will not affect the selector.

The incoming line is designated by 1 and the outgoing line by 2. The rectangle A encloses a regenerative repeater circuit of any conventional form in which the signal is divided into dots and dashes. Fork 10 synchronizes the repeater with the incoming signals and also operates the control relay 3. Connected to the repeater circuit A by conductors 4 and 5 are dot relay 6 and dash relay 7.

The six selector relays, namely 11, 12, 13, 14, 15 and 16 are operated by any permutation of positive and negative impulses of six units of time. These relays are so connected that the first, in operating, closes an operating circuit for the second, the second closes an operating circuit for the third, etc., until the sixth relay is operated, the operation of which gives an audible or visual signal to the attendant. These relays are polarized relays having their windings connected in the circuit in such a manner that one winding tends to draw the relay tongue to the right where it remains until drawn to the left by the other winding.

Six two-point switches 17–22 inclusive are provided by means of which a certain predetermined code may be set up, thereby selecting the particular repeater station called by a terminal station or another repeater station.

During ordinary traffic, the selector relays will operate in accordance with the incoming signals, but as only four or five relays will be operated, therefore a signal will not be given and the reset relay 23 will restore the operated relays to their left hand contacts.

In the drawing the switches 17–22 inclusive are shown positioned to receive a signal comprising dot, dot, dash, dot, dash, dash, which is the call signal for this particular selector.

The circuit operates as follows: the fork 10, on its movement to the left, closes a circuit for operating relay 3 from positive battery through the fork 10, contact 9, resistance 25, winding of relay 3, conductor 36 to negative battery, thereby closing contact 26, and preparing an operating circuit for the selecting relays 11–16 inclusive.

The circuit for the first impulse, that is, a dot, operates relay 6 over conductor 4, closing contact 24 which in turn closes a circuit from negative battery over conductor 36 through condenser 27, contact 26, contacts 28

and 24, switch 17, operating winding of relay 11 to positive battery, causing relay 11 to close contact 29. The fork 10 now opens contact 9 releasing relay 3 and discharges condenser 27 through resistance 8 and relay 6 releases at the end of the impulse.

The next impulse, namely, a dot, will again operate relay 6, closing a similar circuit from negative battery, conductor 36 through condenser 27 to switch 18 and through the operating winding of relay 12, contact 29 to positive battery. Relay 3 will again be released by the fork, the condenser discharged and relay 6 released as before.

The next impulse, namely, a dash, is received over conductor 5 and operating relay 7, thereby closing contact 30 and opening contact 28. The circuit for selector relay 13 is now traced from negative battery, conductor 36 through condenser 27, contact 26, contact 30, switch 19 through the operating winding of relay 13, contact 31 which was closed by the operation of relay 12, to positive battery.

The next impulse, namely, a dot, will operate relay 6 and close a similar circuit to that described above through switch 20 and relay 14.

The next two impulses, namely, dashes, will operate relays 15 and 16 and thereby close contact 32 and operate the signal circuit over conductor 35.

During regular traffic periods if, for instance, a letter such as "F" were transmitted, relays 11, 12, 13 and 14 would be operated. At the end of the signal, however, a spacing signal would occur, during which time relays 6 and 7 would restore to normal and a circuit would then be closed from negative battery, conductor 36, through condenser 27, contacts 26, 28 and 33 through operating winding of relay 23 to positive battery, thereby operating relay 23 and closing contact 34. A circuit is now closed from positive battery through the differential reset windings of relays 11, 12, 13 and 14 to negative battery through contact 34, thereby causing these relays to close their left hand contacts and thereby open their successive operating circuits.

It is obvious from the above that ordinary signals, which as a rule in cable code do not consist of more than five impulses, would not operate the selector relays and therefore no signal will be given for the attendant.

It is also apparent that the selector relays will only be operated when certain signals containing any or part of the permutations of the call signal is received during regular traffic due to the positioning at switches 17–22 inclusive.

What is claimed is:

1. In a communication system, a repeater circuit, a pair of relays selectively operated thereby, a plurality of switches set to accord with a predetermined signal, and means operated by said relays through said switches for signalling an attendant.

2. In a communication system, a repeater circuit, a pair of relays selectively operated thereby, a plurality of switches set to accord with a predetermined signal, and a series of relays operated by said first mentioned relays through said switches for signalling an attendant.

3. In a communication system, using a five unit code, a repeater circuit, a pair of relays selectively operated thereby, a vibrating member controlling the operation of said repeater, a control relay under control of said member, a plurality of switches set to accord with a predetermined signal, and a plurality of selector relays operated in sequence by said first mentioned relays through said switches, by a signal of more than five units, said selector relays closing a signalling circuit.

4. In a communication system, a repeater circuit, a pair of relays adapted to be operated selectively by said repeater, a plurality of relays, and means for successively operating said plurality of relays when the sequence of operation of said pair of relays conforms to a predetermined sequence.

In witness whereof I hereunto subscribe my name this 29th day of September, 1930.

RONALD GEORGE GRIFFITH.