

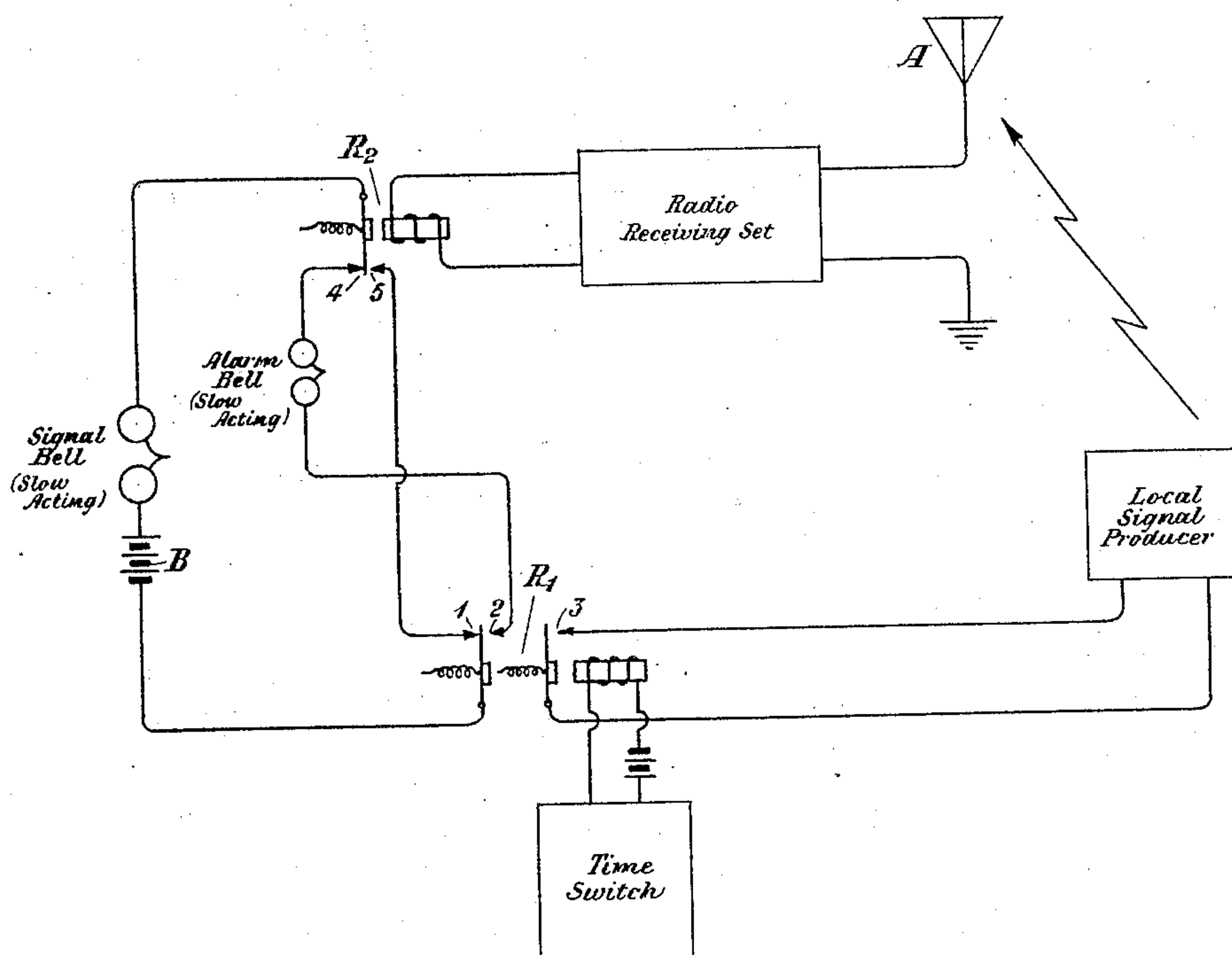
April 26, 1927.

1,625,823

R. K. POTTER

RADIO RECEIVER AND TROUBLE ALARM

Filed July 15, 1926



INVENTOR

R. K. Potter

BY

Car M. Thomas

ATTORNEY

Patented Apr. 26, 1927.

1,625,823

UNITED STATES PATENT OFFICE.

RALPH K. POTTER, OF NEW YORK, N. Y., ASSIGNOR TO AMERICAN TELEPHONE AND TELEGRAPH COMPANY, A CORPORATION OF NEW YORK.

RADIO RECEIVER AND TROUBLE ALARM.

Application filed July 15, 1926. Serial No. 122,637.

My invention relates to radio receiving sets, and more particularly to radio receiving sets equipped with so-called "trouble alarms."

5 It is the principal object of the invention to provide, in connection with a radio receiving set, improved and simplified means for continually and automatically testing the set and giving an alarm in case the set for
10 any reason becomes inoperative.

The invention is applicable to any radio receiving set which may need to be kept in continuous operation, but more particularly to sets which are to be kept in such operation
15 without attendance.

Briefly, the desired result is attained by the use of slow acting annunciators, a local signal producer, means for periodically and simultaneously setting in operation this local
20 signal producer and making extremely simple local circuit connections—this latter operation causing an alarm to be given unless the circuit through the annunciators is re-broken, and means for re-breaking this
25 circuit if the receiving set is operative, thus preventing the announcing of the alarm under such a condition.

It is proposed to describe more fully for the purpose of illustration the application
30 of the invention to a receiving set designed to receive distant signals, an alarm bell being employed in addition to a signal bell. It is to be understood that the scope of the invention is not limited by this illustrative
35 description of a specific application but is defined by the appended claims. The following detailed description is to be read with reference to the accompanying drawing, which shows diagrammatically this desirable arrangement of the circuits.

With reference to the details of the drawing, the radio receiving set is associated with the antenna A and is connected in circuit with the winding of a relay R_2 . Contacts
45 4 and 5 are associated with this relay, contact 4 being closed and contact 5 open in the released position of the relay, and contact 4 being open and contact 5 closed in the operated position of the relay. An automatic time switch is arranged to close periodically—say, for ten seconds every five minutes. In circuit with this time switch
50 are a battery and the winding of a second relay R_1 . Associated with relay R_1 are the
55 contacts 1, 2 and 3. Contact 1 is closed and

contacts 2 and 3 are open in the released position of relay R_1 , and contact 1 is open and contacts 2 and 3 are closed in the operated position of the relay.

The signal bell, the alarm bell and the
60 battery B are placed in the system as shown in the drawing. Both these bells are slow acting. If the receiving set is operated normally in response to a distant signal, the relay R_1 being unoperated and contact 1 be-
65 ing closed, a circuit is completed through the signal bell and the battery B upon the closing of contact 5 at relay R_2 . Since the relay operation which makes contact 5 also opens contact 4, the alarm bell is unaffected
70 by the distant signal.

When contact 3 is closed at relay R_1 in response to the closing of the time switch, a circuit is completed through a local signal
75 producer, which thereupon sends a local signal to the receiving set. The nature of this signal is such that the signal will traverse the selective circuits of the receiving set and produce at the output of the set a
80 detected component of current for the operation of the relay R_2 .

It has been seen that the closing of the time switch results in the closing of contact 3 and the operation of the local signal
85 producer. At the same time contact 2 is closed and a circuit completed through the battery B and both the signal bell and the alarm bell. Since both bells are slow acting, they will not operate at once. If the receiving
90 set is in an operative condition and responds to the local signal, relay R_2 will operate and break the circuit traced above at 4 before the bells are sounded. Since contact 1 is open, the closing of contact 5 will not close the
95 circuit through the signal bell. When the time switch opens again, releasing relay R_1 and reclosing contact 1, the local signal is removed, relay R_2 releases and contact 5 is broken.

If, on the other hand, the radio receiving
100 set is not in operative condition and fails to respond to the local signal, contact 4 at relay R_2 remains closed, and since contact 2 is closed by the operation of the time switch and is held closed during the period of that
105 operation, a circuit is completed through the battery and the bells and is not re-opened until after the slow acting bells have had time to operate, resulting in the sounding
110 of an alarm along with the sounding of the

signal bell, to indicate trouble in the receiving set.

It is readily understood from the above description of the operation of my circuits that I provide a trouble alarm system which is extremely simple, requiring in addition to the slow acting bells only two relays.

I claim:

1. In association with a radio receiving set, a signal producer designed to transmit a local signal to the receiving set, a normally open circuit, a slow acting annunciator therein, means for periodically setting in operation said signal producer and simultaneously therewith closing the circuit through said annunciator, and means—responsive to the local signal when the receiving set is in operative condition—for re-opening said circuit.

2. In association with a radio receiving set, a normally open alarm circuit, a slow acting annunciator therein; a normally open local circuit, a signal producer therein designed to transmit a local signal to the re-

ceiving set, means for periodically closing said local circuit and simultaneously therewith closing said alarm circuit, and means—responsive to the local signal when the receiving set is in operative condition—for re-opening said alarm circuit.

3. In association with a radio receiving set responsive to distant and local signals, a signal annunciator, means for actuating said signal annunciator in response to distant signals, a normally open circuit, a slow acting alarm annunciator therein, a signal producer designed to transmit a local signal to the receiving set, means for periodically setting in operation said signal producer and simultaneously therewith closing the circuit through said alarm annunciator, and means—responsive to the local signal when the receiving set is in operative condition—for re-opening said circuit.

In testimony whereof, I have signed my name to this specification this 14th day of July, 1926.

RALPH K. POTTER.