

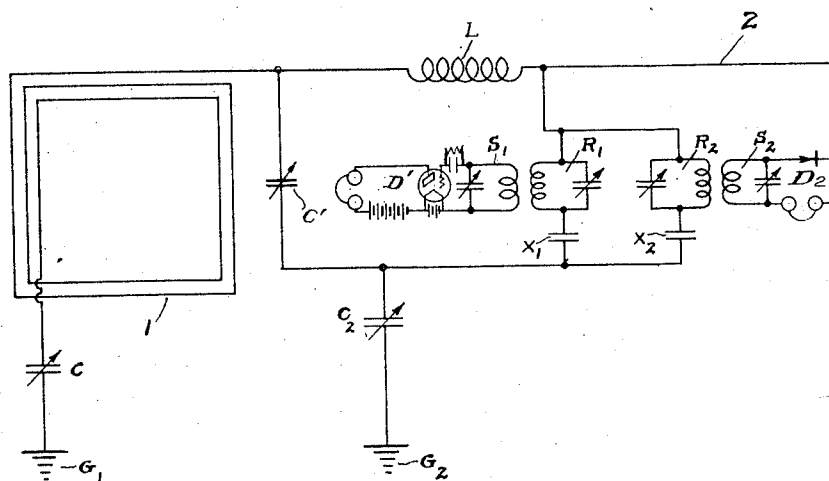
May 8, 1928.

1,668,630

L. M. E. CLAUSING

CIRCUITS FOR RECEIVING RADIO AND SIMILAR SIGNALS

Filed Aug. 16, 1923



Inventor

Leroy M. E. Clausing

Attorney

## UNITED STATES PATENT OFFICE.

LEROY M. E. CLAUSING, OF CHICAGO, ILLINOIS.

CIRCUITS FOR RECEIVING RADIO AND SIMILAR SIGNALS.

Application filed August 16, 1923. Serial No. 657,745.

My invention refers particularly to a system for receiving a number of radio or similar signals simultaneously on one collector system.

5 The figure of the drawing shows what is commonly known as an "antenna-loop barrage" collector of radio signals, comprising the loop 1 connected through an inductance L to a buried wire or other  
10 form of lineal collector of radio energy 2. The condensers C, C<sub>1</sub>, and C<sub>2</sub> provide for balancing the collecting system. The earth connections G<sub>1</sub> and G<sub>2</sub> provide grounds for the collecting system. The  
15 receivers R<sub>1</sub> and R<sub>2</sub>, conventionally shown, are coupled to secondaries S<sub>1</sub> and S<sub>2</sub> respectively, the receivers and the secondaries being tunable to any desired wave lengths by suitable capacities and inductances. Suitable  
20 detecting devices D<sub>1</sub> and D<sub>2</sub> are connected to the secondaries S<sub>1</sub> S<sub>2</sub>. The receivers R<sub>1</sub> and R<sub>2</sub> are very loosely coupled to the collecting system through very small capacities X<sub>1</sub> and X<sub>2</sub>, and it is this very loose capacity  
25 coupling that makes my system effective for the simultaneous reception of a plurality of high frequency signals on the same collector.

30 A preliminary to my invention is described in the 1919 edition of "Robinson's Manual of Radio Telegraphy and Telephony" article 210, at page 180 which discloses an antenna system in which a plurality of receivers are coupled to a single  
35 loop antenna. At the time of this publication it was not appreciated that the coupling condensers should be of very small capacity, and this accounts for the statement in this publication that the tuning of one  
40 circuit effects the tuning of the other circuits. By employing a very small coupling condenser the various receiving circuits can be manipulated for tuning without interference with the other circuits, and I have  
45 actually received signals from four European stations different in wave length by less than four percent, at wave lengths in the neighborhood of twelve thousand meters,

without any interference or "cross tuning" between the receiving circuits when manipulated for tuning. In this instance the capacities of the coupling condensers X were of the order of one hundred micro microfarads.

It is preferable that the collector should be aperiodic, or detuned to a frequency outside of the range in which the various receivers are operating.

While I have illustrated a complicated form of collector, the collector used is not a part of my invention, and it is to be understood that any desired form may be used without departing from the spirit of the invention.

Having described my invention, I claim:

1. In a system for the simultaneous reception of high frequency signals of different frequency, the combination of a capacity antenna, an inductance and a loop antenna connected in series, a variable condenser between the free end of the loop antenna and the ground, a plurality of variable condensers in series with each other and connected between one end of the inductance and the ground, a plurality of resonant circuits between the other end of the inductance and a point between the series condensers and a plurality of receivers coupled to the resonant circuits.

2. In a system for the simultaneous reception of high frequency signals of different frequency, the combination of a capacity antenna, an inductance and a loop antenna connected in series, a variable condenser between the free end of the loop antenna and the ground, a plurality of variable condensers in series with each other and connected between one end of the inductance and the ground, a plurality of resonant circuits and a corresponding number of small capacity condensers, each of said resonant circuits and its corresponding condensers being connected in series between the other end of said inductance and a point between the series condensers.

LEROY M. E. CLAUSING.