March 9, 1926. 1,575,824

C. H. EIFFERT

RECEIVING ANTENNA FOR WIRELESS TELEGRAPHY OR TELEPHONY

Filed Oct. 27, 1922

Fig. 1.

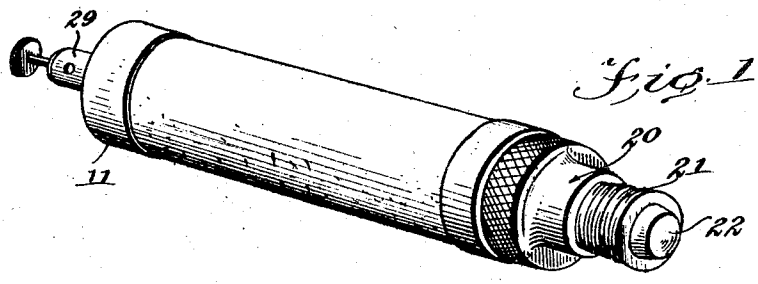


Fig. 2.

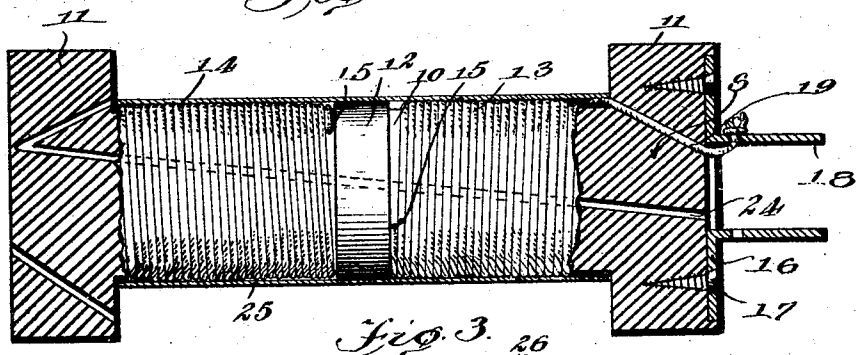


Fig. 3.

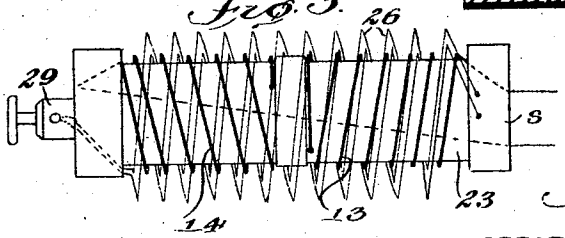


Fig. 4.

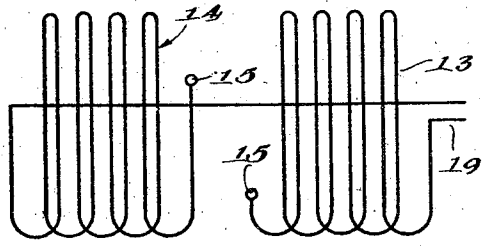
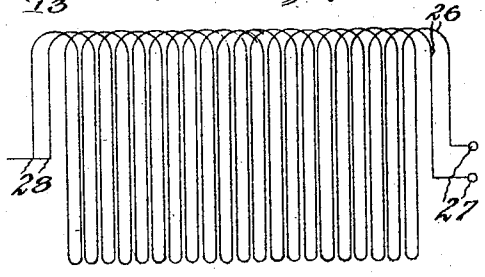


Fig. 5.



WITNESSES

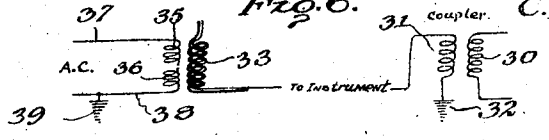
INVENTOR

C. H. Eiffert,

BY Munn & Co

ATTORNEYS

Fig. 6.



Patented Mar. 9, 1926. 1,575,824

UNITED STATES PATENT OFFICE.

CHARLES H. EIFFERT, OF ROANOKE, VIRGINIA.

RECEIVING ANTENNA FOR WIRELESS TELEGRAPHY OR TELEPHONY.

Application filed October 27, 1922. Serial No. 597,387.

To all whom it may concern:

Be it known that I, CHARLES H. EIFFERT, a citizen of the United States, and a resident of Roanoke, in the county of Roanoke and State of Virginia, have invented certain new and useful Improvements in Receiving Antennæ for Wireless Telegraphy or Telephony, of which the following is a specification.

This invention relates to wireless telegraphy or telephony.

The present invention more particularly relates to a receiving antenna for wireless telegraphy or telephony.

The object of the invention is to provide a connecting plug whereby an apparatus for receiving wireless communications may be connected to an electric lighting power circuit in a highly efficient manner.

It is also an important object of the invention that the connecting plug be adapted to strengthen the current waves passing from the electric lighting or power circuit to the receiving apparatus and greatly reduce static, or atmospheric interference.

Other objects and objects relating to details of construction will hereinafter appear.

The invention is illustrated by way of example in the accompanying drawings, in which,

Figure 1 is a perspective view of the plug embodying the present invention.

Figure 2 is a longitudinal sectional view of the same with the secondary windings removed.

Figure 3 is a diagrammatic view of the plug illustrating the manner in which the secondary winding of the same may be placed thereon.

Figure 4 is a diagrammatic view of the primary winding plug.

Figure 5 is a similar view of the secondary winding plug.

Figure 6 is a diagrammatic view showing the manner in which the plug may establish connection between a lighting circuit and a receiving apparatus.

Referring to the drawings more particularly, the plug may consist in a spool S, said spool comprising a cylindrical body portion 10 terminating at each end in an enlarged portion 11 and having formed upon its body portion intermediate the ends thereof an enlargement or band 12.

The primary winding of the plug should consist in the two continuous wires 13 and 14. The wire 13 is wound upon the spool S upon one side of the band 12, while the wire 14 is wound upon the other side of the band 12. The wires are wound in opposite directions and each wire has its one end free as at 15 and this end in each instance terminates adjacent the associated side of the band 12, as illustrated to advantage in Figure 2.

Upon one end of the spool there is secured a base plate 16 by the means of screws or the like as at 17, said base plate being formed with a nipple 18. The remaining end of the wire 13 is extended as at 19 and electrically connected to the nipple 18 as shown in Figure 2. Upon the nipple 18 there is mounted a plug 20 (Figure 1) which may be similar in construction to the usual screw plug employed in connection with electric lights used for illuminating purposes or the like and in this instance the nipple 18 is electrically connected to the one electrode 21 of the plug while the other electrode 22 of said plug is connected through a suitable wire 23 (Figure 5) with the end of the wire 14 occurring adjacent the other end of the spool S. The wire 23 may be extended through a suitable duct 24 formed in the spool S. As is obvious with this construction the screw plug 20 may be connected with a lamp socket and thus to connect the wire 13 with one wire of an electric lighting circuit and the wire 14 with the other wire of said electric lighting circuit. When this connection is made the wires 13 and 14 are separate for the reason that the ends 15 thereof are spaced from one another.

About the wires 13 and 14, or in other words the primary coil plug, there is placed suitable insulating material as shown at 25 (Figure 2). This insulating material may be of mica or similar material.

The secondary winding of the plug preferably constitutes two wires 26 and in winding these or placing the same upon the spool S the two wires are simultaneously wound in a similar direction about the insulation 25. The ends 27 of the secondary wires 26 are free from each other while the other ends are connected to a common wire as at 28 and this wire in turn connected to a binding post 29 carried upon the other end of the spool S. It should be here noted that the secondary wires 26 may be more than two in number, however, it is found that by using two wires best efficiency is obtained.

Also, if desirable, one wire may be used and the device will operate.

Referring to Figure 6 there is shown a coupler which comprises the secondary winding 30 and the primary winding 31. The primary winding is grounded as at 32 in the usual manner and the terminals of the secondary winding are connected with the usual means for receiving the pulsations or waves transmitted thereto from the primary winding 31. The primary winding 31 has its other end connected to the terminal post 29, that is to the connected ends of the secondary windings 26 of the present device. In this view the secondary windings 26 are indicated at 33 and the primary windings of the device, 13 and 14, are indicated at 35 and 36, respectively. At 37 is shown the line wires to which the coil or wire 35 is connected and at 38 the winding to which the wire 36 is connected. The wires 37 and 38 are connected to a source of alternating current supply and the wire 38 is grounded as at 39.

In the use of the present device the same may be connected with a wireless receiving apparatus as illustrated in Figure 6 of the drawings and the plug connected with a suitable socket which in turn is connected to a source of electric current supply. It has been found that by connecting a wireless receiving apparatus by a device of this character with an electric lighting circuit that wireless signals may be received in a highly efficient manner. It is believed that the waves by which the wireless signals are carried are brought in upon the primary windings 13 and 14 and from thence transmitted by induction to the secondary windings 26. The secondary windings 26 being of the length shown tend to increase the strength of these signals or waves and the same then proceed to the primary coil of the receiving apparatus into the ground. It has been found that the device is particularly adapted to be used on alternating current circuits and as is well known in circuits of this character one of the phases is usually ground as shown in Figure 6. This particular ground for the alternating current circuit is usually placed upon the neutral phase and this supplies a ground to the remainder of the phases and it is believed that in the operation of the present device the waves of radio oscillations occurring in the primary windings of the plug will feed to the common ground of the lighting circuit.

While I have shown and described the preferred form of my improvement, it is to be understood that various changes and modifications may be made herein without departing from the spirit of the invention or the spirit and scope of the appended claim.

What I claim is:

A device for coupling a radio receiving apparatus to an electric power system comprising a primary winding consisting of two disconnected sections arranged in axial alinement and wound in opposite directions, means whereby the remote ends of said coil sections may be connected to an electrical power system, a secondary winding about the two primary winding sections, and means whereby one end of the secondary winding may be connected to a radio receiving apparatus.

CHARLES H. EIFFERT.