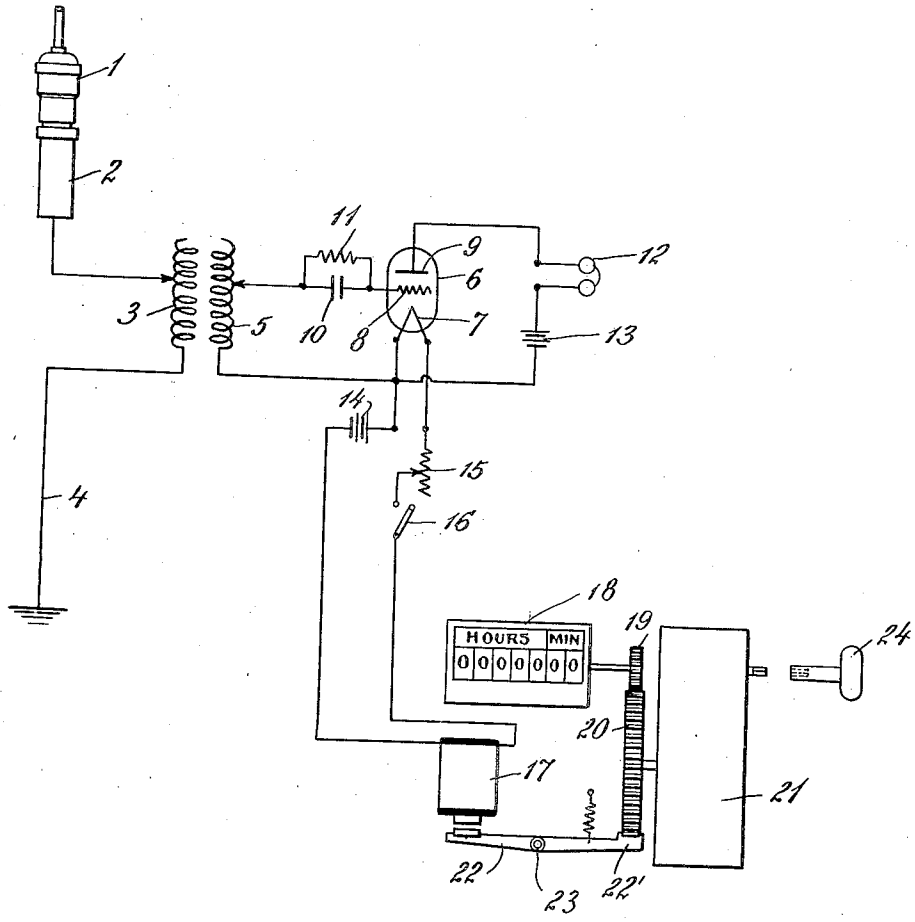
Aug. 19, 1924.

1,505,198

C. W. HOUGH

METERING DEVICE FOR RECEIVING STATIONS

Filed Sept. 19, 1922



INVENTOR

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BY

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UNITED STATES PATENT OFFICE.

CLINTON W. HOUGH, OF BOONVILLE, NEW YORK, ASSIGNOR, BY MESNE ASSIGNMENTS, TO WIRED RADIO INC., OF NEW YORK, N. Y., A CORPORATION OF DELAWARE.

METERING DEVICE FOR RECEIVING STATIONS.

Application filed September 19, 1922. Serial No. 589,061.

To all whom it may concern:

Be it known that I, CLINTON W. HOUGH, a citizen of the United States, residing at Boonville, in the county of Oneida, State of New York, have invented certain new and useful Improvements in Metering Devices for Receiving Stations; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

It has been proposed to utilize electric lighting and power lines of public service corporations for the dissemination of so-called broadcasted programs. As is now well known, this type of broadcasting involves the superimposition on the lines of high frequency carrier currents modulated in accordance with the signals to be transmitted, as for instance: speech or music.

The instrumentalities for carrying out this idea of public service corporation broadcasting or, as it is sometimes more briefly termed—"wired wireless" broadcasting—have now been quite satisfactorily developed and are familiar to those skilled in the art.

So far, however, as it has been possible to ascertain, little or no consideration has heretofore been given to the necessity of assuring some compensation to the public service corporations to offset the cost of the essential equipment and maintenance thereof and the cost of the oftentimes expensive programs.

The object of the present invention is therefore to make provision for such compensation in a way which is equitable to both the public service corporations and their customers.

The invention, generically, consists in the provision of a meter at each receiving station for recording the length of time the receiver is in operation.

According to the preferred form of the invention, a meter of the cyclometer type or other suitable time recording device is arranged to be operated by a spring driven motor such as a clockwork. Normally the motor is prevented from operating by means of a detent which engages its driving gear, but the detent is operable by a releasing electromagnet to disengage the driving gear whenever the receiving station is put into operation. The releasing electromagnet is preferably connected in series with the filament and source of current of a vacuum tube forming a part of the receiving apparatus, so that whenever the filament is lighted by reason of its circuit being closed, the releasing electromagnet is energized and the meter is promptly started to record the time.

The receiving apparatus and meter together with the releasing electromagnet may be, and are preferably, all assembled together in a sealed or locked box which is accessible only to authorized employees of the public service corporation.

A clearer understanding of the invention may be had from the accompanying drawing, in which 1 is an electric lamp socket connected to a lighting circuit, 2 is a plug inserted in socket 1 and having a condenser of suitable proportions to permit the passage of high frequency carrier currents but to impede low frequency or direct currents as employed for lighting or power purposes, 3 is a primary coil of a loose coupler, and 4 is a ground connection.

The receiving or detector circuit illustrated is one of the simplest type as employed with three-electrode vacuum tubes and comprises a secondary coil 5 of the loose coupler, vacuum tube 6 (including filament 7, grid 8 and plate 9), grid condenser 10, grid leak resistance 11, telephones 12, and plate battery 13. The operation of this detector circuit is so well known as to require no discussion.

The circuit of the hot cathode element or filament 7 includes a source of current 14 which may be a battery or generator, an adjustable resistance or rheostat 15, a switch 16, and the winding of the releasing electromagnet 17.

A cyclometer type counter 18 arranged to record hours and minutes is connected through pinion 19 and spur gear 20 to a suitable spring driven motor 21. The detent 22′, which is integral with armature 22, is normally engaged, as shown, with a tooth space of gear 20, thereby preventing rotation thereof. Armature 22 being pivoted at 23, operates upon energization of electromagnet 17 to withdraw detent 22′ from engagement with gear 20. Thus it will be seen the motor 21 is set into operation almost immediately upon the closure of switch 16.

Since the construction of meters of the

cyclometer type as indicated by 18 and of spring motors as indicated by 21 is well known, it is thought unnecessary to go into the details of construction of these devices.

A key 24 is shown for winding the motor 21.

The invention may take many forms widely differing from the arrangement described, and accordingly it should not be construed as limited except by the scope of the appended claims.

I claim:

1. In combination, an instrumentality for receiving and detecting high frequency signaling waves, said instrumentality including a thermionic detector having an electrically heated cathode element, a meter for recording the duration of operation of said instrumentality, an electromagnet for controlling the operation of said meter, and a circuit and source of current common to said cathode element and said electromagnet whereby said electromagnet is maintained energized when and only when said cathode element is energized.

2. In combination, an instrumentality for receiving and detecting high frequency signaling waves, said instrumentality including a thermionic detector having an electrically heated cathode element, a meter for recording the duration of operation of said instrumentality, a motor operable to drive said meter, a detent device normally operable to restrain said motor, an electromagnet for controlling the operation of said motor, and a circuit including a source of current common to said cathode element and said electromagnet, whereby said electromagnet is maintained energized when and only when said cathode element is energized.

In testimony whereof I affix my signature.

CLINTON W. HOUGH.