Aug. 13, 1935. F. L. CURRIE 2,011,145

SECRET TELEGRAPH RECEIVER

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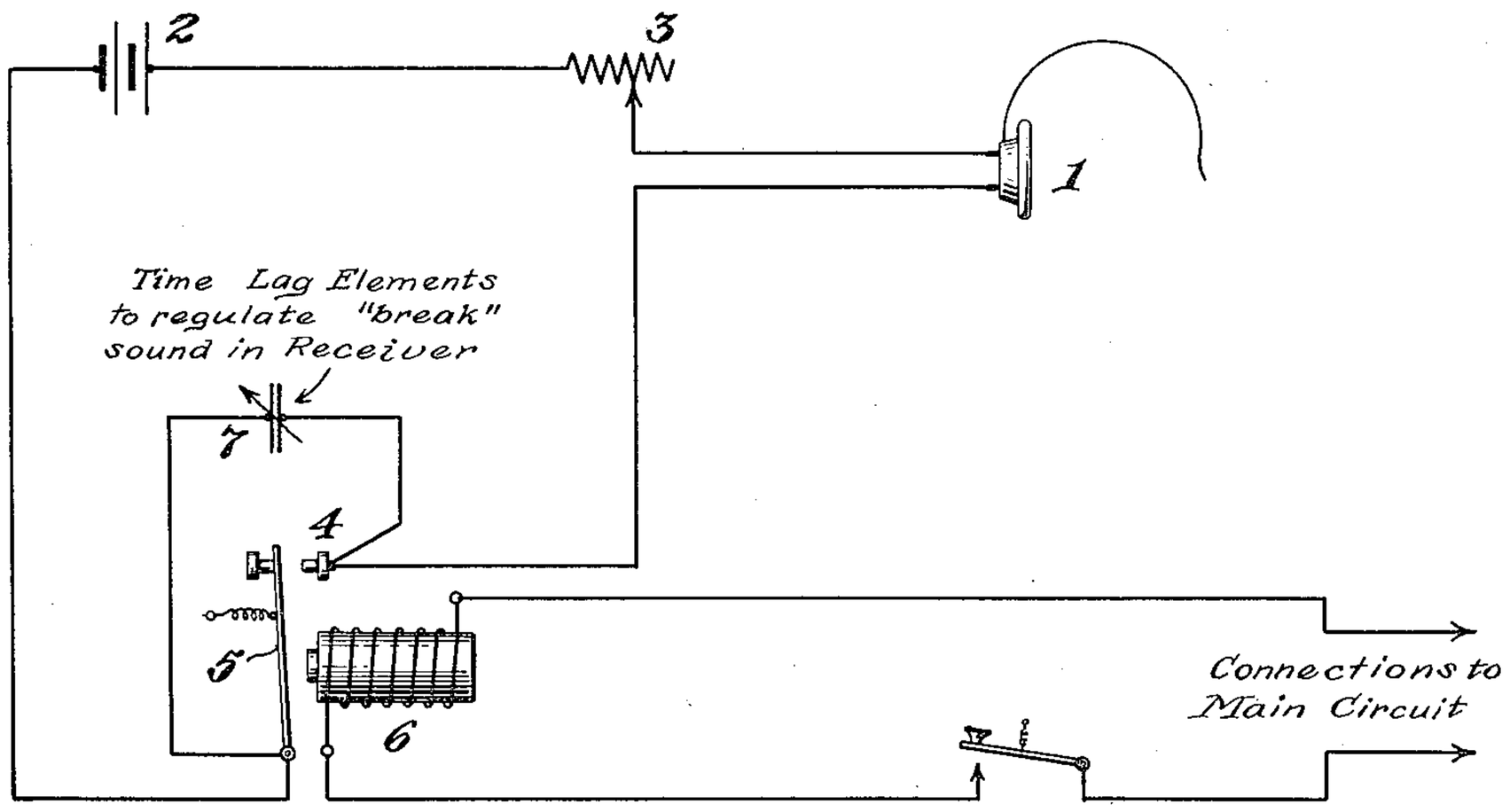

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SECRET TELEGRAPH RECEIVER

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4 Claims. (Cl. 178—88)

This invention relates to telegraph receivers and particularly to silent sounders or receiving instruments by means of which messages may be received without depending upon the usual audible signals. It is intended primarily for use in those places where the noise of the ordinary sounder is objectionable.

The ordinary telephone receiver has been used as a telegraphic receiver either connected directly in circuit with the sounder or in a local circuit controlled by the contacts of a telegraph relay. Receiving sounders of telegraph single current sets are normally adjusted so that a distinct contrast exists between the sounds produced by the downward and the upward movement of the sounder lever in response to the "make" and "break" operations of the relay contacts. Telegraph operators find that this contrast is a decided assistance in the reading of the Morse characters. For the purpose of emulating this contrast it has been proposed to actuate the telephone receiver by means of a local circuit including a microphone responsive to sounds emanating from a telegraph sounder, the microphone being tuned particularly to the sound of the lever striking the anvil for a "make" in the telegraph circuit.

My invention provides for the actuation of the telephone receiver under the direct control of the relay contacts, the contrast between the "make" and "break" operations being effected by means of a time-lag element which controls the rate of decrease of the local circuit current from a maximum to a minimum value when the relay contacts are separated.

The particular means that I may employ to secure the time-lag effect will now be described in connection with the accompanying drawing which illustrates one embodiment of the invention. It is to be understood that I do not intend to be limited to the precise details shown or described except as the same are set out in the accompanying claims.

In carrying out my invention I connect a standard telephone receiver 1, in a local circuit, including a battery 2, and adjustable resistance 3, to the front contact 4 and armature 5 of the usual telegraph relay 6. In shunt to said contact and armature I connect an adjustable condenser 7. When the relay armature engages its front contact in response to a signal impulse, the telephone receiver will respond to current from battery 2 with a quick sharp click, the condenser 7 being short-circuited at the contact 4. When the armature 5 is retracted in response to a "break" telegraph signal, a charging current will flow from the battery 2 into the condenser in accordance with the well known exponential law. Inasmuch as the intensity of sound in a telephone receiver is dependent upon the rate of change of the current flowing through its windings, it will be apparent that the sounds produced in the telephone receiver will differ in intensity in a manner to clearly distinguish between the "make" and "break" operations of the relay. The capacity of the condenser may be adjusted to produce the proper time-lag in the local circuit so that the rate of change of the current from a maximum to a minimum produces the desired contrast in sound in the telephone receiver in response to the "make" and "break" operations of the relay.

I claim:—

1. In combination, a telegraph relay, a telephone receiver, a circuit including said receiver and a source of current adapted to be closed and opened by the operation of the contacts of said relay and a time-lag element controlling the flow of current in said circuit only upon the opening of said contacts.

2. In combination, a telegraph relay, a telephone receiver, a circuit including said receiver and a source of current adapted to be closed and opened by the operation of the contacts of said relay and a condenser connected in parallel to said relay contacts only when the contacts are separated.

3. In combination, a telegraph circuit having means adapted to make and break the current therein, a telephone receiver, means to cause said receiver to respond to the "makes" and "breaks" in said circuit, and a time-lag element operating to delay the rate of change of current flowing in the receiver only during response to said "breaks".

4. In combination, a telegraph circuit having means to make and break the current therein, a telephone receiver operating in a local circuit, a condenser connected to said circuit, means to cause said receiver to respond to the "makes" and "breaks" in said circuit, said means operating to short circuit said condenser during the "make" operations.

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