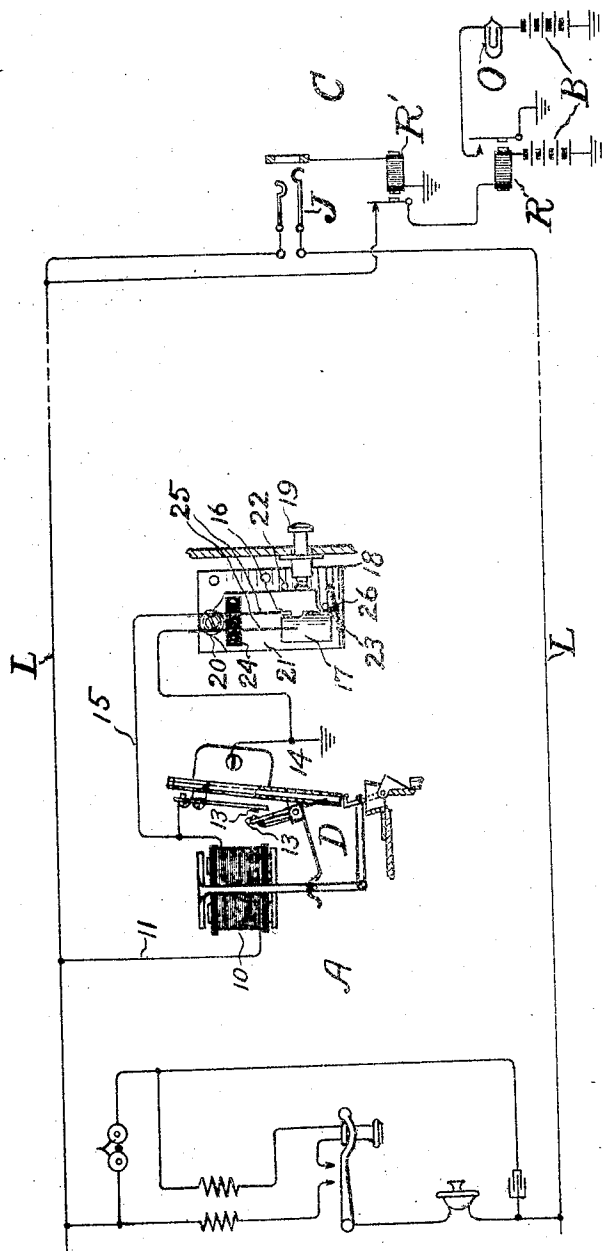


J. J. O'CONNELL.
 EMERGENCY SIGNALING SYSTEM FOR TELEPHONE TOLL COLLECTING APPARATUS.
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1,103,073.

Patented July 14, 1914.



Witnesses:
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UNITED STATES PATENT OFFICE.

JOSEPH J. O'CONNELL, OF CHICAGO, ILLINOIS, ASSIGNOR TO AMERICAN TELEPHONE AND TELEGRAPH COMPANY, OF BOSTON, MASSACHUSETTS, A CORPORATION OF NEW YORK.

EMERGENCY SIGNALING SYSTEM FOR TELEPHONE TOLL-COLLECTING APPARATUS.

1,103,073.

Specification of Letters Patent.

Patented July 14, 1914.

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To all whom it may concern:

Be it known that I, JOSEPH J. O'CONNELL, residing at Chicago, in the county of Cook and State of Illinois, have invented certain

5 Improvements in Emergency Signaling Systems for Telephone Toll-Collecting Apparatus, of which the following is a specification.

The prepayment type of coin box for telephone service, or that in which a coin or its equivalent must be deposited before communication can be had with the central station operator, is sometimes considered undesirable in limiting the calling ability of the subscriber to such times as he may have in his possession a coin or token of the denomination or size with which the box is designed to operate. This may be especially objectionable where it is desired to send an emergency signal, as to fire or police departments or for a doctor; not only because of the necessity for prompt action, but also since many telephone companies furnish such service without charge.

This invention provides means whereby the subscriber whose station is equipped with a prepayment coin box may display before the operator, through the distinctive action of the line signal, either normal service or emergency signals, the former being operable only by the usual coin or check and the latter being at all times available.

The accompanying drawing illustrates diagrammatically one form of my invention.

A substation A, having its telephone apparatus and circuit arranged in the customary manner, is connected by its line L to the central office at C, where it terminates in an answering jack J with which is associated the usual line relay R, cutoff relay R' and line lamp or signal O.

Current for the operation of the relays and signal and for talking purposes is furnished by the common battery B at the central station.

At the substation is a prepayment toll collecting apparatus D, the coin controlled portion of which may be of any well known or desired form, as that described in the patent to Bullard, No. 665,874, January 15, 1901. The collect and refund magnet 10 of the apparatus is connected by a conductor 11 between the tip side of the line and ground, in this conductor being included normally open service contacts 13, 13, closed by the

presence in the chute 14 of the proper coin or check.

In parallel with the contacts 13 in a conductor 15 are contacts 16, 17 of an emergency device. This device may consist of a back plate 18 secured to the interior of the coin box and having a key or button 19 projecting through said box.

Pivoted at 20 on the back-plate is a swinging plate 21, drawn into contact with the key and against a stop pin 22 by a spiral spring 23 or its equivalent. The contacts 16 and 17 are suspended from an insulating block 24 fixed to the plate 21 by vertical spring arms 25. Contact 16 is of little weight, tending if disturbed to quickly assume its normal position. Contact 17, on the other hand, is relatively heavy, its mass being such that, being started in motion, its tendency is to continue to oscillate like a pendulum. Energy may be stored in this weighted contact 17 by swinging the plate 21 upon its pivot as a result of the depression of the key 19, the release of the key allowing the plate to strike the stop pin 22, thus starting the weight in oscillation. In its travel toward contact 16, the lower portion of the weight 17 impinges against a stop pin 26 projecting from the back-plate. The supporting spring 25 yields and the upper extremity of the weighted contact 17 momentarily touches the companion contact. The weight 17 then rebounds from the stop pin, separating the contacts, and this movement continues until the stored energy is exhausted.

In the use of the system for calls for which payment is to be made, a coin is placed in the chute 14 and brings contacts 13, 13 together; whereupon current flows from the common battery B at the central station through the winding of relay R, back contact of cutoff relay R', the tip side of line L, conductor 11, winding of magnet 10 and contacts 13, 13 to ground. This battery current is not of sufficient strength to energize the magnet of the coin box, but the line relay operates and at its front contact completes the circuit of the central station battery through the line lamp O, causing its steady illumination. The operator answers with a suitable cord circuit, actuating the cutoff relay and extinguishing the line lamp and the call proceeds in the usual manner. If, instead of desiring a normal service call,

the subscriber wishes to call, say, the fire department, he depresses key 19 and quickly releases it. The weighted contact of the emergency device is started in oscillation
 5 and rapidly makes and breaks a circuit, which may be, as traced before, from battery B through magnet 10, and then on through conductor 15 and contacts 16 and
 10 tent illumination of the line lamp, giving a signal distinctive from that produced by the toll collecting device. It is the duty of the operator upon observing this emergency
 15 signal to use every effort to speedily obtain the aid needed by the subscriber. If it is found that a mistake has been made in the use of the emergency device, and the subscriber desires a connection for which a toll
 20 should be collected, he is instructed by the operator to deposit a coin as usual, the answering plug being withdrawn from the jack J to render the line lamp responsive.

I claim:

25 1. A circuit controlling device for giving emergency signals comprising a pivotally supported key-operated member yieldingly held against movement by operation of the key, a pair of normally open contacts
 30 yieldingly supported on said member, one of said contacts consisting of a pendulous

weight adapted to oscillate by an impulse given said key and thereby rapidly make and break the circuit.

2. A circuit controlling device for giving emergency signals comprising a pivotally
 35 supported member, a pair of normally open contacts supported by said member, one of said contacts consisting of a pendulous weight having a spring support, and a key acting on said support for setting said
 40 weighted contact into vibration to rapidly make and break the circuit.

3. A circuit controlling device for giving emergency signals comprising a key-actuated swinging contact supporting member,
 45 yielding means normally restraining said member from movement in one direction, vibratory contacts on said member one of which is weighted and has a spring support,
 50 and stop means in the path of said weighted contact and said supporting member.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses, this fifteenth
 55 day of July 1912.

JOSEPH J. O'CONNELL.

Witnesses:

J. D. DICKERSON,
 ARTHUR D. WHEELER.