C. D. ENOCHS.

APPARATUS FOR TELEPHONE LINES.

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946,528.

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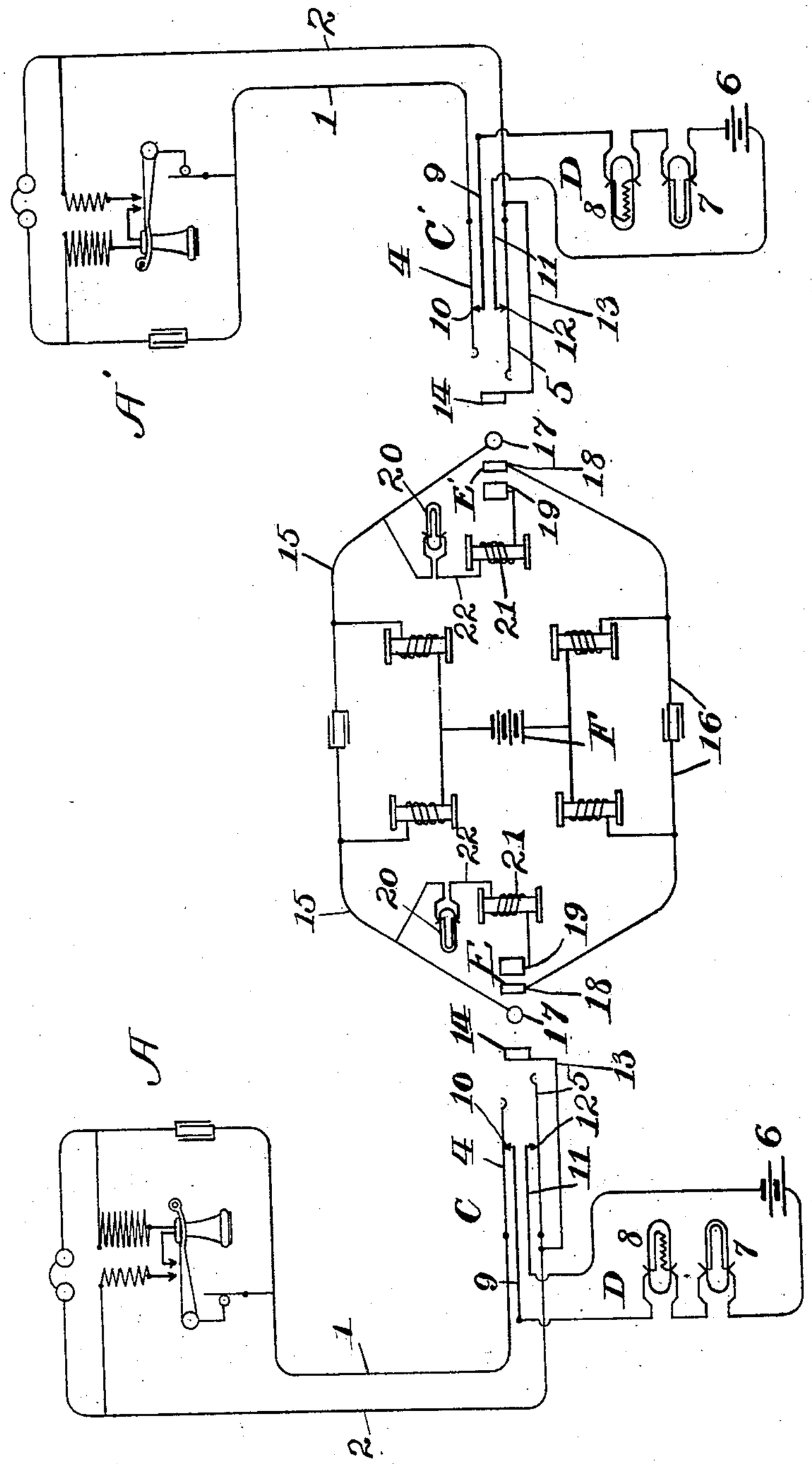

Witnesses:

N. L. Fischer.

M. G. Lichtscheidl

Inventor:

Claude D. Enochs,

by: F. G. Bradbury.

Attorney.

UNITED STATES PATENT OFFICE.

CLAUDE D. ENOCHS, OF LA CROSSE, WISCONSIN, ASSIGNOR TO THE VOTE BERGER COMPANY, A CORPORATION OF WISCONSIN.

APPARATUS FOR TELEPHONE-LINES.

946,528. Specification of Letters Patent. Patented Jan. 11, 1910.

Application filed November 12, 1906. Serial No. 342,934.

To all whom it may concern:

Be it known that I, CLAUDE D. ENOCHS, a citizen of the United States, residing at La Crosse, in the county of La Crosse and State of Wisconsin, have invented a new and useful Improvement in Apparatus for Telephone-Lines, of which the following is a specification.

My invention relates to improvements in apparatus for telephone lines and more particularly, although not exclusively to the operation of the supervisory circuit in which the signal lamp is controlled automatically when the receiver at the subscriber's station is hung up or taken down. In the system thus organized I bridge an impedance coil and supervisory lamp across the line during conversation, the line including the subscriber's set being adapted to shunt out the lamp which is lighted when the subscriber hangs up his receiver.

I have shown my invention applied to a ballasted telephone system, although it is equally applicable to other forms of telephone circuits, in use.

The accompanying drawing forming part of this specification is a diagrammatic view of my invention, in which A—A′ are the usual sub-stations and 1 and 2 the lines leading to the central station where they terminate at the springs 4 and 5 of jacks C—C′. It will be understood that the spring jacks and the apparatus coöperating therewith are similar in construction and this description is equally applicable to either one or the other of the subscriber's circuits described. The lines 1 and 2 include a loop D containing in series the line battery 6, line signal lamp 7 and ballast 8. This loop has a branch 9 extending to a contact point 10 and a leg 11 extending to a contact point 12. The latter point makes connection with the spring 5 which is tied by the wire 13 to the jack sleeve 14. The jack springs rest normally against the points 10 and 12.

The supervisory or cord plug circuit F is provided with lines 15 and 16 which are connected respectively with the tips 17 and rings 18 of the plugs E—E′. The tips 17 and rings 18 are respectively adapted to lift the jack springs 4 and 5 off of the points 10 and 12 and alter the path of the current through the telephone circuit when the plugs are inserted in the jacks. The plugs are provided with rings 19 which connect with the jack sleeves. Between the sleeve of each plug and the lines 15 of the supervisory circuit, a signal lamp 20 and an impedance coil 21 included within a local line 22 are bridged. The battery feed for the transmitter is obtained in the usual manner.

The operation of my system as described is as follows: Assuming that subscriber A desires to converse with subscriber A′ he removes his receiver from the hook and thereby closes his line circuit. His line lamp 7 at the central office will thereupon be illuminated by a current flowing through the line from the main battery 6. Upon perceiving the line signal the subscriber's operator whose telephone set and ringing key are not shown inserts the answering plug E in the jack C of the calling line and ascertains the number wanted. As soon as the plug E is inserted current flows through the cord plug circuit and the sleeve 19 of the plug is tied to spring 5 of the jack by means of the tie wire 13 which throws the supervisory signal 20 and impedance coil 21 across the line. It will be noted that the sleeve of the plug is free from any connection other than the local circuit containing the lamp 20 and impedance coil 21. During conversation this lamp and impedance coil remain bridged across the line but the shunt of the subscriber's circuit is low enough including all practical lengths of lines to prevent the lamp from illuminating. When the receiver at station A is hung up the lamp 20 is illuminated as the shunt is thus removed.

It is obvious that the construction above set forth may be variously modified to produce substantially the same results as stated, and I wish to be understood as not limiting myself to the construction described and to the exact language in the claims.

Having described my invention, what I claim as new and desire to protect by Letters Patent is:—

1. A telephone circuit including a subscriber's set having a receiver and switch hook, a jack having jack springs and a sleeve, one of said springs being tied to said sleeve, lines between the subscriber's set and jack springs, a cord plug having a ring adapted to connect with the sleeve of said jack, a circuit connected with said plug, and a signal lamp and impedance coil between one side of the cord plug circuit and the

ring of said plug, said lamp and coil being bridged between said lines and the lamp illuminating when the receiver is on its hook, and said subscriber's set and the lines being adapted to shunt out the lamp when the receiver is off of said hook.

2. A telephone circuit including a subscriber's set having a receiver and switch hook, a jack, having jack springs and a sleeve, one of said springs being tied to said sleeve, lines between the subscriber's set and jack springs, a cord plug having a ring adapted to connect with the sleeve of said jack, a circuit connected with said plug, and a signal lamp between one side of the cord plug circuit and the ring of said plug, said lamp being bridged between said lines and the lamp illuminating when the receiver is on its hook, and said subscriber's set and the lines being adapted to shunt out the lamp when the receiver is off of said hook.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CLAUDE D. ENOCHS.

Witnesses:
P. J. RIEGGER,
C. SCHOLBERG.