

No. 684,506.

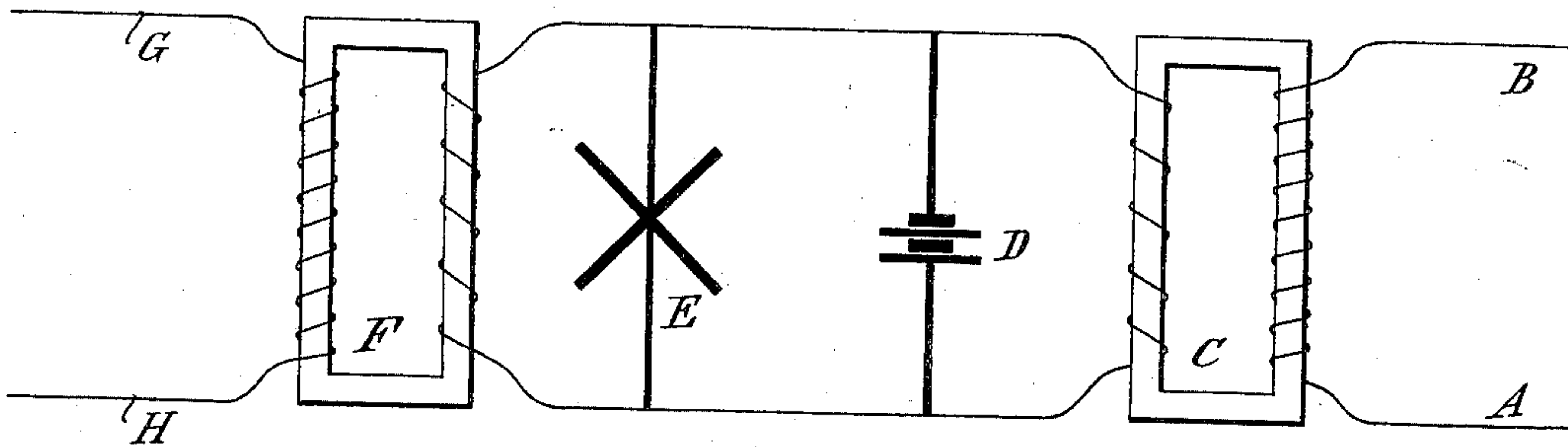
Patented Oct. 15, 1901.

B. GÁTI.  
TELEPHONE RELAY.

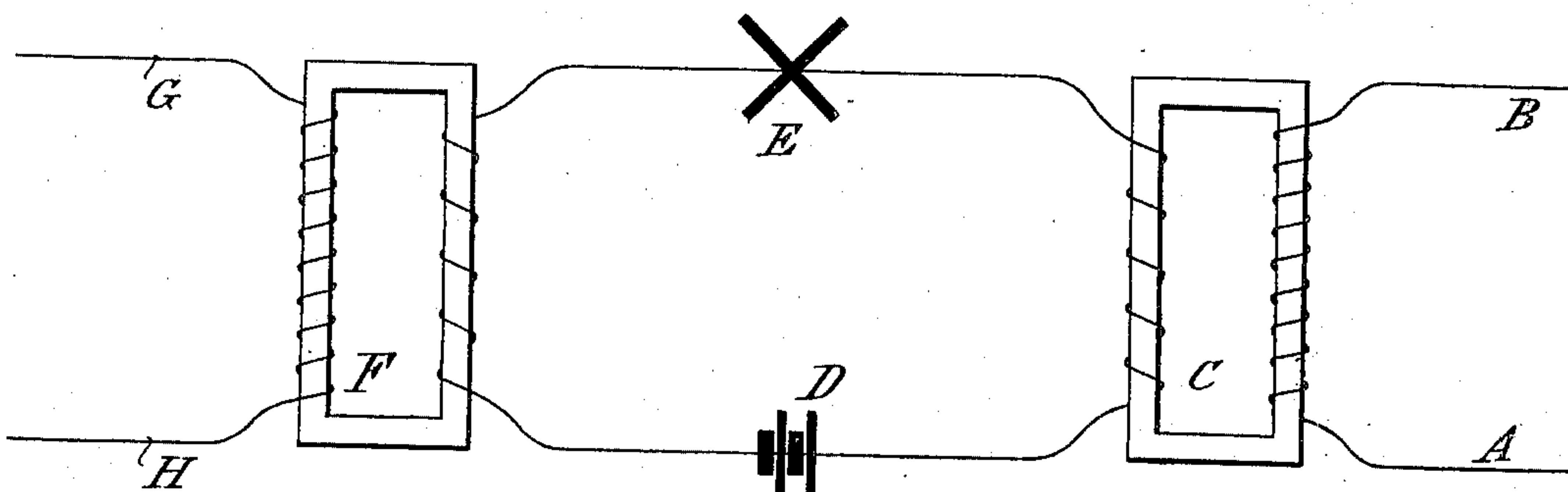
(Application filed Mar. 22, 1900.)

(No Model.)

*Fig. 2.*



*Fig. 1.*



Witnesses:

Frank S. Ober  
Waldo M. Chapin

Inventor

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by *Wm. A. Rosenbaum*  
att'y.

# UNITED STATES PATENT OFFICE.

BÉLA GÁTI, OF TEMESVAR, AUSTRIA-HUNGARY.

## TELEPHONE-RELAY.

SPECIFICATION forming part of Letters Patent No. 684,506, dated October 15, 1901.

Application filed March 22, 1900. Serial No. 9,671. (No model.)

*To all whom it may concern:*

Be it known that I, BÉLA GÁTI, a subject of the King of Hungary, residing at Temesvar, in the Empire of Austria-Hungary, have invented certain new and useful Improvements in Telephone-Relays, of which the following is a specification.

The object of this invention is to produce a telephone-relay; and the invention consists in general in causing the telephonic currents to modify the current feeding the arc of an arc-lamp, thus causing the lamp to magnify such modifications and transferring such magnified modifications of current by induction to another circuit containing telephonic receiving apparatus.

In the accompanying drawings, Figure 1 represents, diagrammatically, the telephone-relay, in which the arc is indicated in series with its generator; and Fig. 2 is a similar illustration with the arc connected in parallel with its generator.

A and B are the conductors leading from the transmitting-telephone.

C is a transformer or induction-coil, the primary winding of which is in the circuit A B. The secondary winding of this induction-coil is located in a circuit which includes the generator D and an arc-lamp E, as well as the primary winding of another induction-coil F.

G and H are the wires leading to a telephone-receiver, and they include the secondary winding of the induction-coil F. The arc-lamp E is preferably of the continuous-current type, requiring about forty-five volts electromotive force and from three to ten amperes. The function of the generator D is to supply the normal arc in the lamp E.

The operation is as follows: The weak telephonic currents traversing the transmitting-circuit A B act by induction upon the lamp-circuit, causing corresponding increases and

decreases of current therein. An increasing impulse of current will cause the carbons of the lamp E to approach each other, which will result in a corresponding decrease of resistance in the lamp-circuit, and, according to Ohm's law, this decrease in resistance will result in an increase of current from the generator D. This resulting increase of current will be much greater than the impulse from the telephonic circuit which originated it or was responsible for it, and this amplified current, flowing in the circuit connecting D and E, will correspondingly affect the induction-coil F and send out to the receiving-telephone in the circuit G H a much stronger impulse than was created by the voice in the circuit A B. Likewise every impulse traversing the circuit A B affects the arc in the lamp E and is proportionately magnified by the lamp and sent out onto the receiving-circuit G H through the induction-coil F. Lesser impulses act with less effect upon the arc, and a wider difference takes place in the induction-coil F. The same results will take place when the circuits are arranged as in Fig. 2, as will be obvious.

I claim as my invention—

The method of relaying telephonic currents, which consists in modifying the current flowing in a circuit containing an arc-lamp in operation, by passing currents corresponding to the voice-currents, through said lamp, then inducing currents in a receiving-circuit by means of said modified current, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two witnesses.

BÉLA GÁTI.

Witnesses:

LOUIS VANDORY,  
RAYMOND WITTHY.