

No. 838,787.

PATENTED DEC. 18, 1906.

I. KITSEE.
TELEPHONY.

APPLICATION FILED JUNE 8, 1901.

2 SHEETS—SHEET 1.

Fig-1

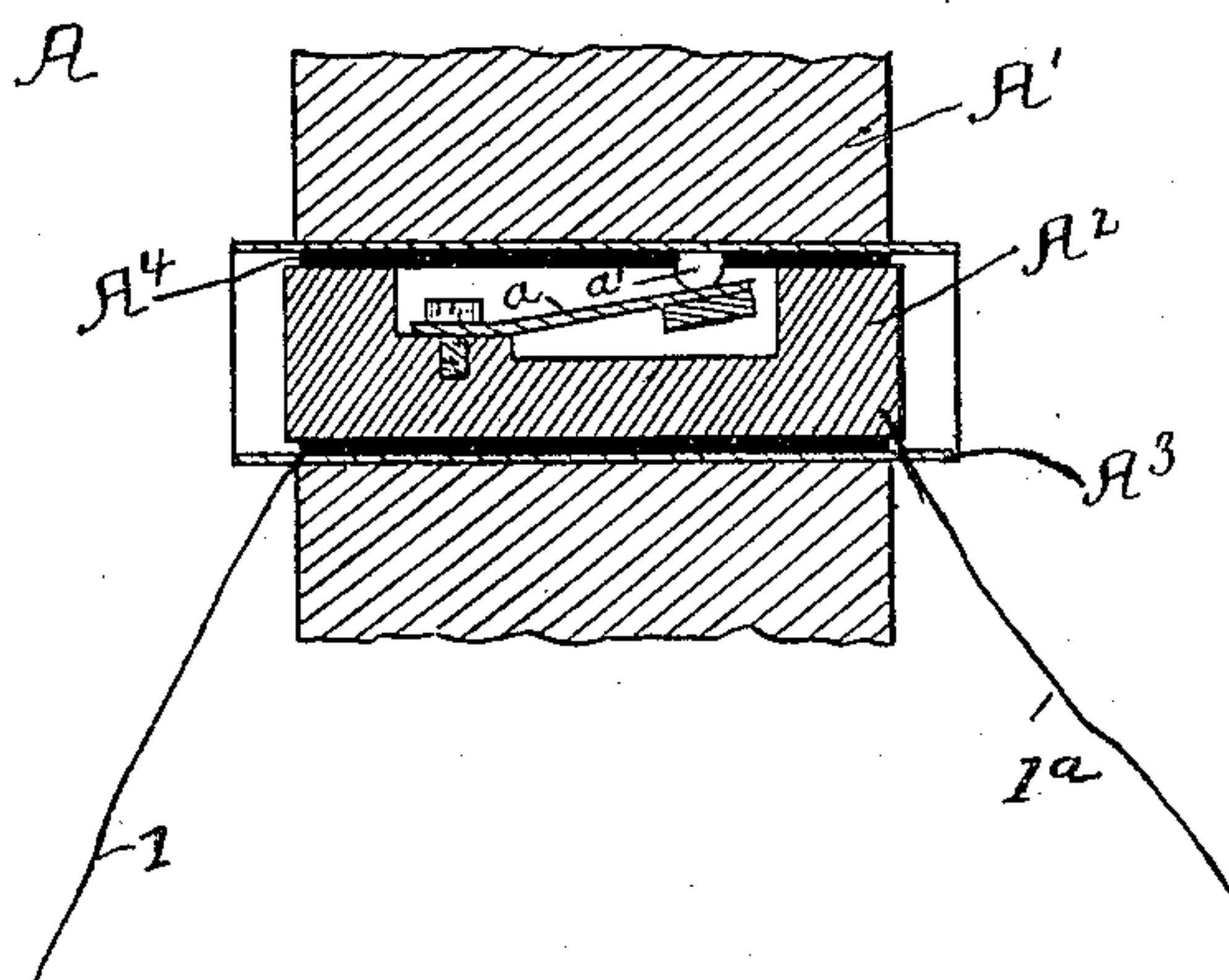


Fig-2

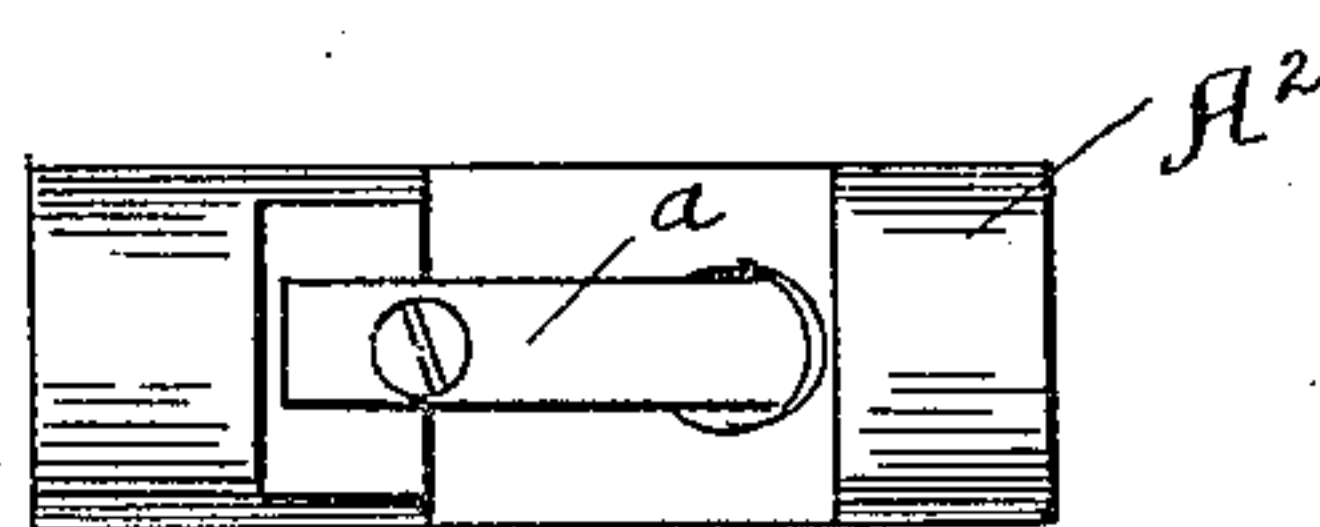


Fig-3

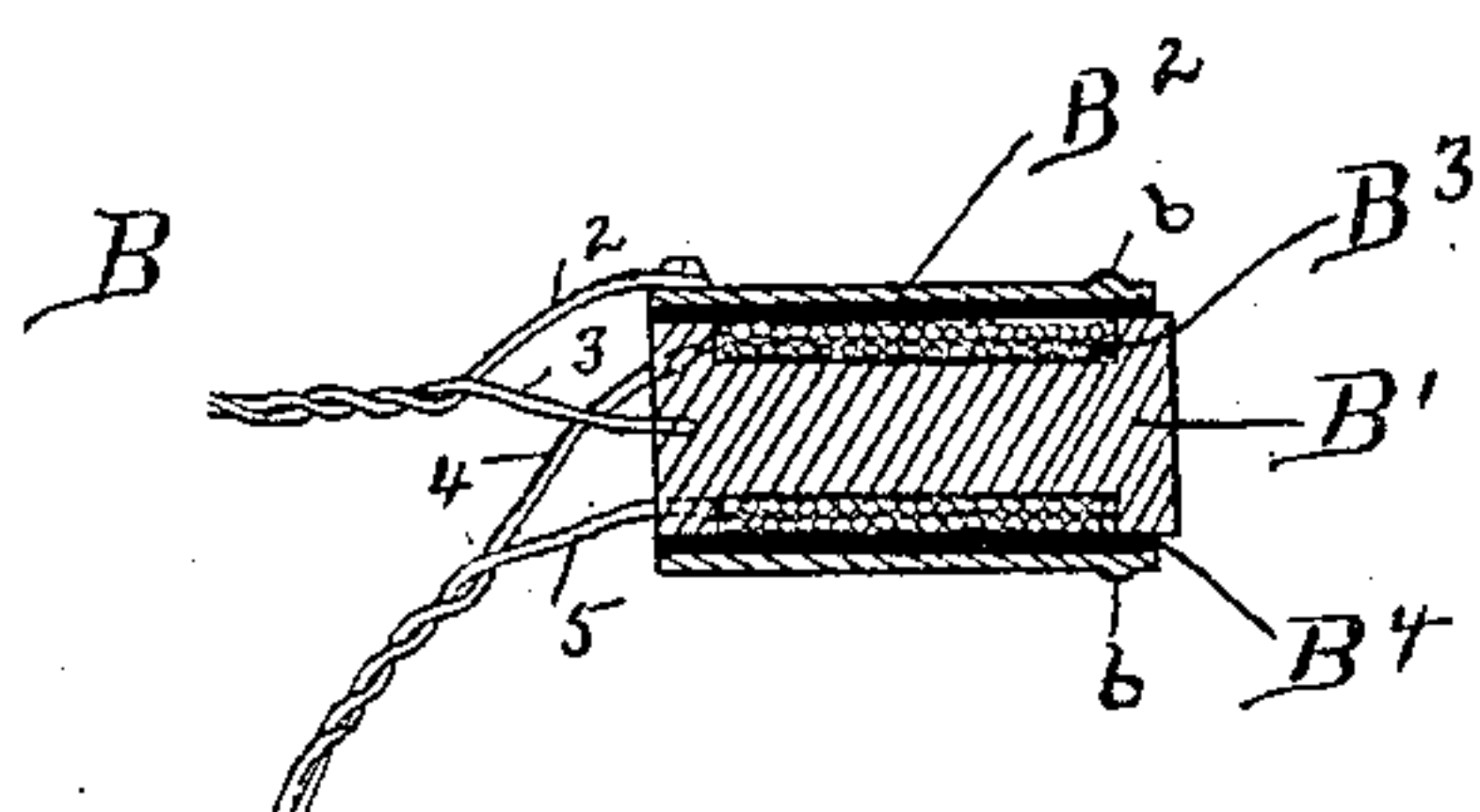
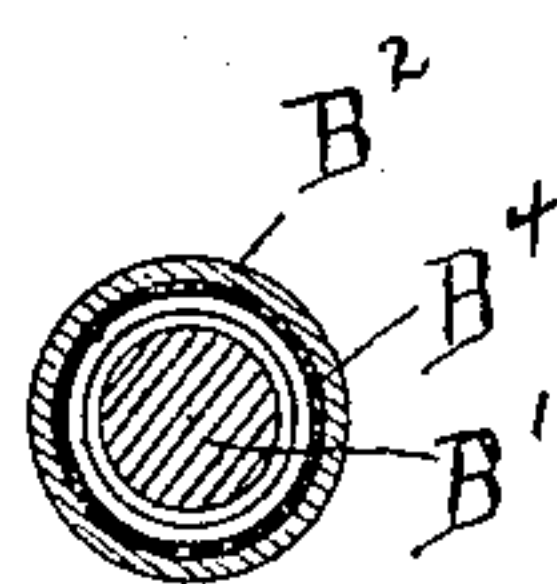


Fig-4



WITNESSES:

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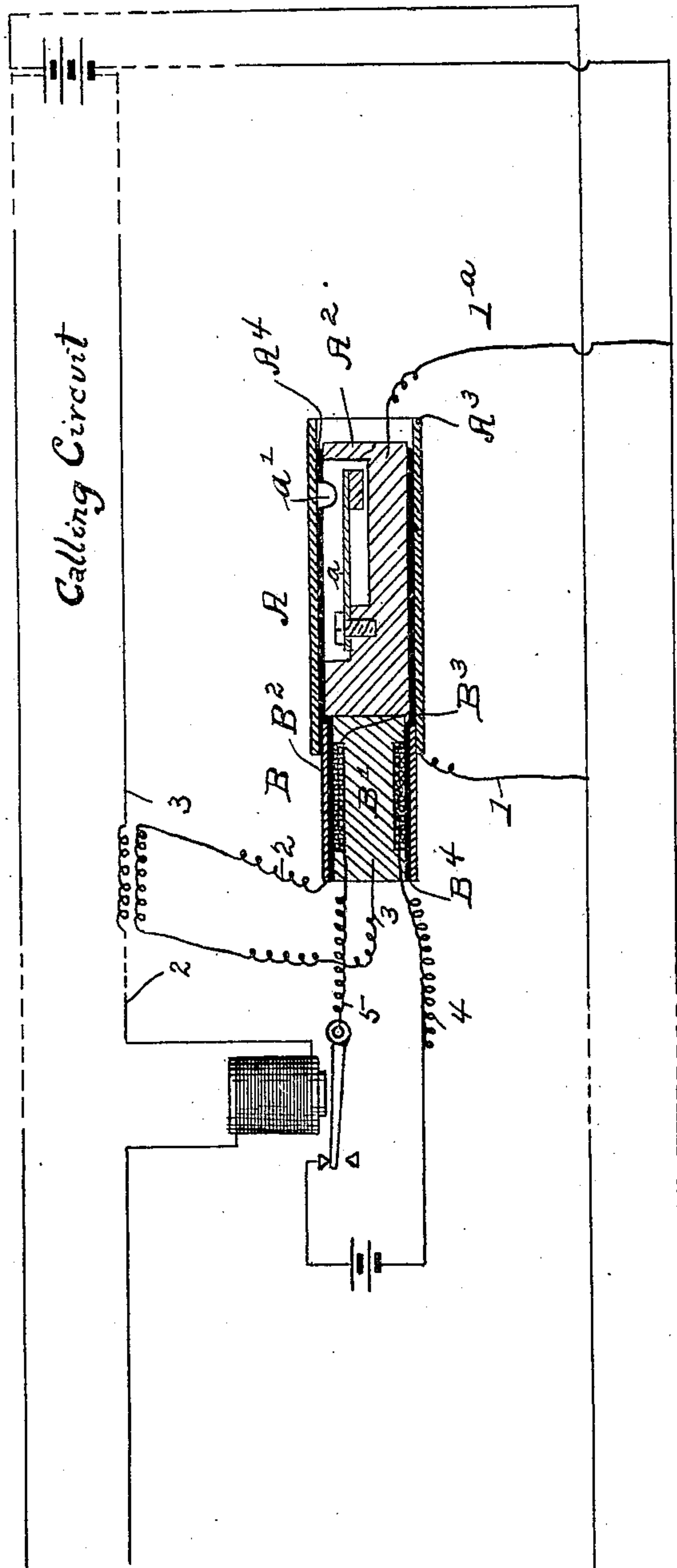
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2 SHEETS—SHEET 2.

Fig. 5.



Witnesses
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UNITED STATES PATENT OFFICE.

ISIDOR KITSEE, OF PHILADELPHIA, PENNSYLVANIA.

TELEPHONY.

No. 838,787.

Specification of Letters Patent.

Patented Dec. 18, 1906.

Application filed June 8, 1901. Serial No. 63,749.

To all whom it may concern:

Be it known that I, ISIDOR KITSEE, of the city and county of Philadelphia, State of Pennsylvania, have invented certain new and useful Improvements in Telephony, of which the following is a specification.

My invention relates to an improvement in telephony, and has more special reference to the switchboard and connecting-plug at the central station.

The aim of my invention is to cause the plug to be automatically disconnected from the circuit with which it was formerly brought in contact.

It is unnecessary for me to dwell on the importance of a device capable of automatically "clearing" the switchboard, and it is only necessary for me to add that the device, as will later on be described and illustrated, can be practiced with nearly all existing systems.

Referring now to the drawings, Figure 1 is a section of part of a switchboard provided with the device adapted to be used in place of spring-jacks. Fig. 2 is a plan view of the connecting device inserted in the switchboard. Fig. 3 is a section of one of the connecting-plugs to be used. Fig. 4 is a cross-section of same. Fig. 5 is a diagrammatic view showing one method of securing the connection of one of the plugs to one of the calling-circuits, it being understood that in any of the systems to which my invention is applicable each circuit in charge of an operator may be provided with a plug connected thereto normally in series.

A is the switchboard proper, of which A' is the support.

A² is a connecting device placed in the hole of the switchboard. This connecting device I call the "stationary plug." A⁴ is a non-conducting material around said stationary plug.

A³ is a conducting material in proximity to the non-conducting material.

It is preferred that the stationary plug A² should be of such shape as to entirely fill with its envelops A³ and A⁴ the hole of the switchboard. It is also preferred that the non-conducting material A⁴ should tightly envelop the stationary plug and that the conducting material A³ should tightly envelop the non-conducting material, separating the stationary plug A² from the conducting material A³.

The stationary plug should consist of soft

iron, for the reason as will hereinafter be set forth. The non-conducting material may consist of a thin layer of rubber, and the outer conductor may consist of very thin copper or brass. As the holes in the switchboard are always circular, the stationary plug should also be circular, and the conducting and non-conducting envelops may then consist of very thin tubes of copper and rubber, respectively. The stationary plug is preferably of such a length so that the ends of the same shall be flush with the surface of the switchboard. The conducting-tube A³ should be of a length greater than the length of the plug and should protrude from the switchboard about one-half of an inch on each side.

The plug A² is provided with the armature *a*, and the conductor A³ is provided with the contact *a'*. Normally the armature *a* connects with the contact *a'*. The conductor A³ is therefore normally in electrical contact with the plug, and as one leg of the subscriber's circuit is connected to the stationary plug and the other leg of this circuit is connected with the outer conducting-envelop it follows that both legs of this circuit are normally in electrical connection with each other.

B is the connecting-plug in its entirety. B' is the inner conductor of this plug. This inner conductor consists of an electromagnet—that is, the soft-iron core B' is provided with the helix B³. Around the core and helix is the non-conducting material B⁴, and the whole is inclosed in the conductor B². This conductor is preferably provided with the protrusion *b*.

The outer conductor B² is connected with the wire 2, and the inner conductor B' is connected with the wire 3. These wires are connected either direct to the circuit of the subscriber calling or to the device placed inductively to the circuit of the subscriber calling. The helix B³ is connected to the wires 4 and 5, which wires may receive their electric energy either direct from the circuit calling or from a source of electricity controlled by the circuit calling.

In the drawings the devices are illustrated in their actual size; but it is understood that the form and size may differ according to requirements.

The *modus operandi* of practicing my invention is as follows: Normally the plug rests on its place near the annunciating-

lamp. The circuit consisting of the wires 4 and 5 and the source of electricity is broken. The core B', which, as said above, consists of soft iron, is therefore not energized. As soon
 5 as the subscriber calls and the annunciating-lamp is lighted the operator removes the plug from its resting-place and inserts the end provided with the spring protrusion *b* in the conducting-tube A³, taking care to press the
 10 conductor B' against the conductor A². Through the closing of the circuit calling the circuit consisting of the source of electricity connected to the wires 4 and 5 is actuated in a manner so as to close the same and to send
 15 the current through the coil B³, thereby energizing the core B'. The core B' is therefore in reality now a magnet, and if the same is placed in contact with the stationary soft-iron core A² it is obvious that, first, both
 20 cores will adhere to each other; second, the stationary soft-iron core A² will also become magnetized and the armature *a* will be drawn away from the contact *a'*, thereby breaking the circuit between A² and A³; but
 25 at the same time the wire 2 of the calling-circuit will connect with wire 1 of the circuit to be called and the wire 3 of the circuit calling will connect with the wire 1^a of the circuit to be called, thereby placing the circuit consist-
 30 ing of wires 2 and 3 in series with the circuit to be called. As long as the circuit calling is closed—that is, as long as the subscriber of this circuit wishes to communicate with the subscriber of the other circuit—the core B'
 35 will remain magnetized and will adhere to the stationary coil A² and all the electrical connections made will remain; but as soon as the subscriber calling replaces his receiver, breaking his circuit, the soft-iron core of the
 40 movable plug will be demagnetized, its property to adhere to the stationary soft iron ceases, and the whole plug devoid of its magnetic property will break its contact with the stationary plug and will drop out of the
 45 switchboard, and as each plug-cord is, as usual, provided with a movable weight the plug will drop back into its normal position.

Having now described my invention, what

I claim as new, and desire to secure by Letters Patent, is—

1. In telephony, a switchboard and a connecting-plug, the switchboard provided with soft-iron connectors, one of said connectors being stationary and the second of said connectors being movable and adapted to act as
 55 the armature of the stationary part, one part of the circuit connected to the stationary part and one part of the circuit connected to the movable part of said connectors, and the plug provided with a soft-iron core and helix. 60

2. In telephony, a switchboard, and connecting-plugs for same, the switchboard provided for each of the circuits pertaining thereto with two connectors, each of said
 65 connectors adapted to become magnetic through the insertion of the plug, one of said connectors being stationary and the other of said connectors being movable, each of said connectors adapted to have attached thereto
 70 part of the circuit to which it pertains.

3. In telephony, a connecting-plug consisting of an electromagnet adapted to be actuated by the circuit of the calling subscriber, in combination with means at the
 75 switchboard adapted to attract and hold said plug as long as said electromagnet remains energized, said means consisting of a stationary soft iron and a movable soft iron, both connected to parts of the circuit to
 80 which they pertain.

4. In telephony, a connecting-plug provided with a core and helix, means to energize said core and means to connect the terminals of a circuit thereto, in combination
 85 with a jack comprising a stationary soft-iron plug and a movable armature attached thereto and terminals of a circuit connected to same.

In testimony whereof I hereby sign my name, in the presence of two subscribing witnesses, this 7th day of June, A. D. 1901. 90

ISIDOR KITSEE.

Witnesses:

WALLACE B. ELDRIDGE,
 EDITH R. STILLEY.