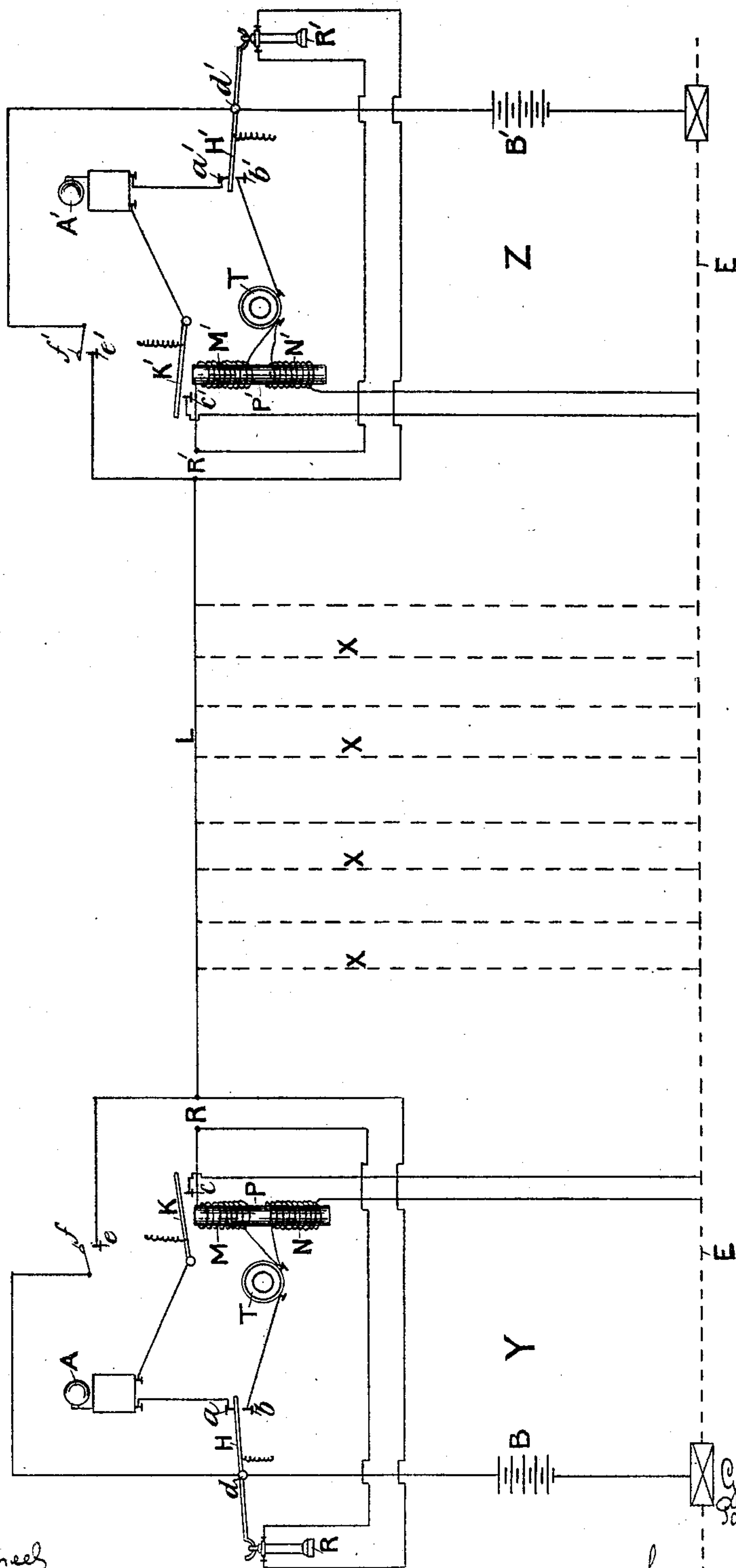


(No Model.)

G. DILLBERG & P. RABBIDGE.
TELEPHONE SYSTEM.

No. 586,993.

Patented July 27, 1897.



Witnesses
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UNITED STATES PATENT OFFICE,

[GUSTAF DILLBERG AND PARNELL RABBIDGE, OF SYDNEY, NEW SOUTH WALES.

TELEPHONE SYSTEM.

SPECIFICATION forming part of Letters Patent No. 586,993, dated July 27, 1897.

Application filed September 9, 1895. Serial No. 562,001. (No model.)

To all whom it may concern:

Be it known that we, GUSTAF DILLBERG and PARNELL RABBIDGE, subjects of the Queen of Great Britain, and residents of Sydney, New South Wales, have invented certain new and useful Improvements in Telephonic Instruments Designed for Use on Poorly-Insulated Lines, such as the existing wires of an ordinary wire fence, of which the following is a specification.

The object of this invention is to produce a simple and effective telephonic instrument whereby loud and satisfactory speaking may be obtained. To accomplish this object we proceed as follows and as shown in the accompanying drawing, in which—

Y Z represent two separate telephonic stations connected together by line-wire L.

A and A' represent calling apparatus; B and B', batteries; E, earth; H and H', rocking lever-switches and receiver-hooks; K and K', relay-armatures; M N and M' N', coils of wire surrounding iron cores P and P'; R and R', receivers; T and T', transmitters; *a b c e* and *a' b' c' e'*, contact-points; *d* and *d'*, centers for H and H'. *f* and *f'* are press-buttons connected to H and H', respectively.

When Y desires to call Z, the button *f* is pressed against contact *e*, thereby bringing battery B in circuit with line L. The current after passing along same travels through receiver R' into coils M' and N' to earth, thereby magnetizing core P', which attracts armature K', and consequently connects K' with contact *c'*, thereby establishing a local circuit at Z—viz., battery B' is enabled to supply current through *d' h' a'* and bell A' K' and *c'* to earth, consequently ringing the bell A'.

When Y has called Z by ringing his bell A', as already described, Z will press his button *f'*, thereby notifying Y that he is in attendance by ringing bell A, as already described. When Y and Z lift their respective receivers R and R' off the respective receiver-hooks H and H', the bells A and A' are cut out of the circuits and the speaking circuit is established, because H and H' leave contacts *a* and

a' and make contact with *b* and *b'*, respectively. The current from battery B will now pass through H, *b*, T, and N to E, and from B', through H', *b'*, T', and N', to E, consequently forming two separate local circuits, as no current can flow through M to L or through M' to L, the batteries B and B' being of equal strength and opposing each other. When T is spoken to, the current is varied, therefore the current through N to E varied, thus inducing a current into M, which passes through R L R' M' N' to E, reproducing in R and R' the sound-vibrations given to T. The same takes place when transmitter T' is spoken to.

We have found this system to be particularly efficient on a leaky line—such, for instance, where the wires of fences have been utilized as the line-wires, the current leaking away at the parts X X, where the wires are attached to the fence-posts.

Having now described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a telephone, the combination of the speaking-circuit, a core, the two coils thereon, the call-circuit, one of said coils being connected in the speaking-circuit and the other in the local-battery circuit, the armature of the call-circuit being arranged to be attracted by the said core to close the call-circuit, the said coils acting as an induction-coil for the speaking-circuit and as a relay for the call-circuit, substantially as described.

2. In a telephone, the combination of the speaking-circuit, the call-circuit, an induction-coil having its primary and secondary coils in series in the speaking-circuit and an armature controlled by said induction-coil to control the call-circuit, substantially as described.

In witness whereof we have hereunto set our hands in the presence of two witnesses.

GUSTAF DILLBERG.

PARNELL RABBIDGE.

Witnesses:

W. WALKER,

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