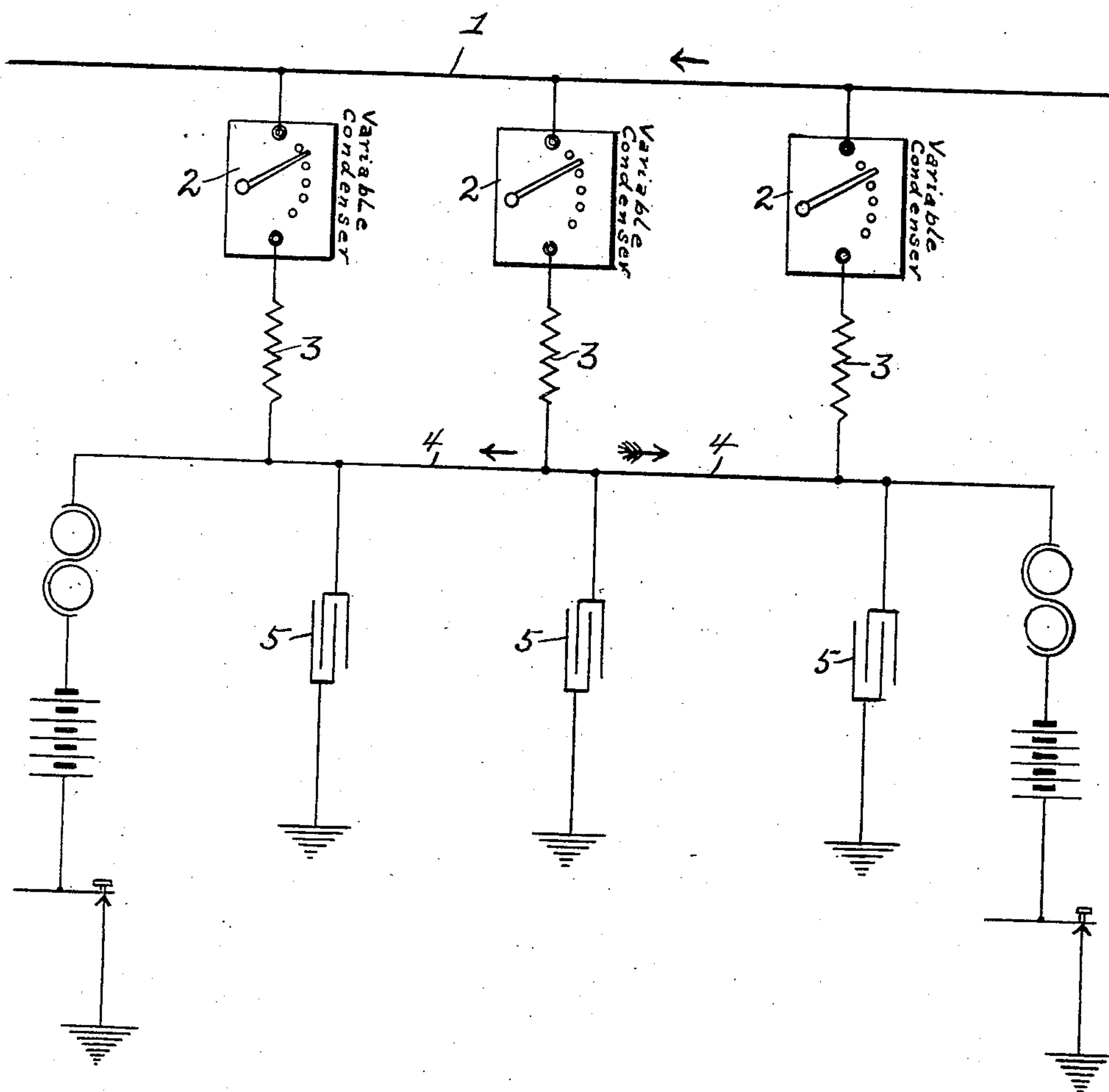


No. 879,651.

PATENTED FEB. 18, 1908.

I. KITSEE.
ELECTRIC TRANSMISSION OF INTELLIGENCE.
APPLICATION FILED JAN. 26, 1907.



Inventor

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Witnesses

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ELECTRIC TRANSMISSION OF INTELLIGENCE.

No. 879,651.

Specification of Letters Patent.

Patented Feb. 18, 1908.

Application filed January 26, 1907. Serial No. 354,209.

To all whom it may concern:

Be it known that I, ISIDOR KITSEE, citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Electric Transmission of Intelligence, of which the following is a specification.

My invention relates to an improvement in the electric transmission of intelligence. Its object is, to provide means for the purpose of eliminating or counteracting the inducing effect of wires carrying a current for light or power on wires useful for electric transmission of intelligence.

It is well known, that a wire carrying a variable current of considerable strength induces impulses on neighboring circuits. These impulses are in direct proportion to the strength and variation of the current and in inverse proportion to the distance between the two wires. It is also well known that if the prime current is alternating or phase, the impulses induced are flowing in a direction opposite from the direction of the primary source.

In practice, when the electro-motive force of the inducing current is comparatively great, even ordinary Morse telegraphy cannot be carried on in the region of the inducing field.

To obviate this difficulty is, as said above, the aim of my invention; and I have, in the accompanying drawing, illustrated my method as applied to a telegraphic line, provided with a ground return; but it is obvious that instead of the ground, a metallic return may be substituted, and instead of the telegraphic devices, telephonic devices or other devices useful for the transmission of intelligence may be substituted.

In this drawing, 1 is the line carrying the current useful for light or power; that is, the electric energy which through its variation or change in the direction of flow, is capable of inducing impulses on the neighboring circuit, here shown as the telegraphic circuit and designated by the numeral 4. The means to accomplish my purpose are illustrated in the drawing as to consist of a condenser and resistance; the condenser is here shown as one, the capacity of which can be varied; and I have designated this variable condenser by the letter 2 and the resistance by the letter 3. In combination with this

condenser and resistance connecting the wire 1 to the circuit 4, I also make use of the circuits 5 grounded with the interposition of condensers.

The operation of the device is as follows: It is supposed that wire 1 carries a single phase current. It is also supposed that the phase current is flowing in the direction of the unfeathered arrow. This flow of the current will induce in the neighboring telegraphic circuit an impulse flowing in opposite direction, or in the direction of the feathered arrow. If now, the power wire is connected with the interposition of suitable devices, such as condensers and resistances, to the telegraphic circuit, a slight current will flow from this power wire directly into and through the telegraphic circuit and this current will be in the same direction as the primary source; that is, in opposite direction from the induced impulses. When now, in connection with the resistance, the capacity of the condenser is varied, it is possible to so adjust the flow of the prime current, that the same is equal to the energy of the induced current; and as both oppose each other, it is obvious that the effect of the induced current can be entirely neutralized through the effect of the slight proportion of prime force flowing in the telegraphic circuit.

It is unnecessary for me to give detailed advice as to how to manage the devices, so that the strength of the prime force shall be just sufficient to overcome the strength of the induced force on the line of transmission of electric energy. It suffices to say that at the start, before any batteries are connected to the line of transmission, a suitable instrument, such as a galvanometer, may be inserted in said line and the connection between the power wire and the line of transmission through the variable condenser and variable resistance made, and both the resistance and condenser varied till the galvanometer needle remains at zero or nearly so.

I have illustrated in the drawing, the power wire as being connected to the telegraphic line at different points, but in some cases it is inconvenient and impractical to multiply such connections; and in such cases, one single connection of the power wire with the line of transmission will suffice, provided that enough current can pass over the connection for the purpose of neutralizing the inducing impulses. Where the line of trans-

mission is for telephonic purposes, it is best to provide the ground or return connection with an impedance.

Having now described my invention, what
5 I claim as new and desire to secure by Letters Patent is:

1. The method of nullifying the effect of power wires on neighboring wires, which consists in producing a leak between the power
10 wire and neighboring wire, said leak adapted to allow the flow of prime energy in said neighboring wire of about equal power as the induced energy.

2. The method of making immune devices inserted in telegraphic lines from neighbor- 15
ing power wires, which consists in causing to flow in said telegraphic lines a prime current of the power wire of a force about equal to the induced current but of opposite direction. 20

In testimony whereof I affix my signature in presence of two witnesses.

ISIDOR KITSEE.

Witnesses:

EDITH R. STILLEY,
MARY C. SMITH.