I. KITSEE.

TELEGRAPHY.

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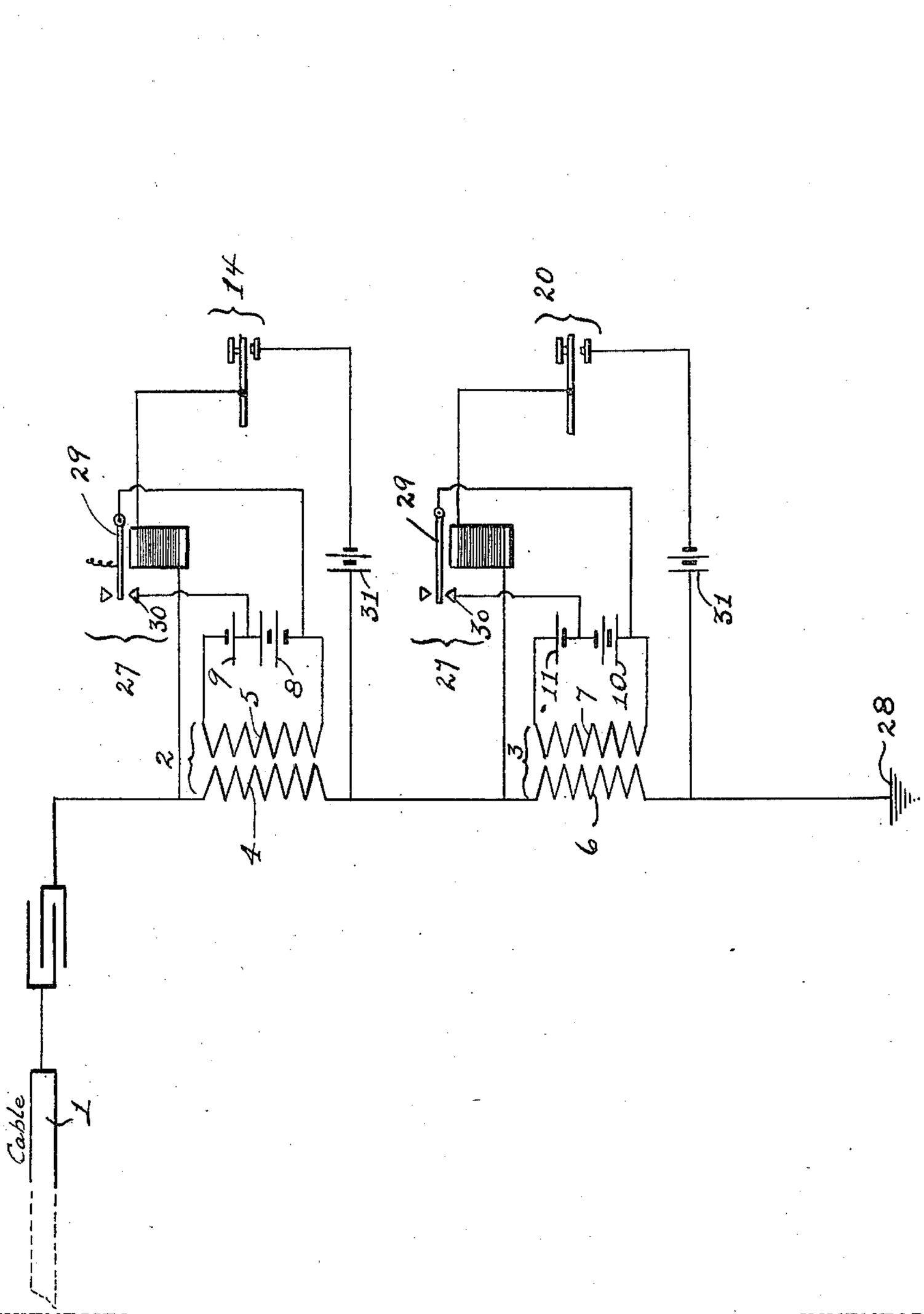
1,093,001. Patented Apr. 14, 1914.



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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 Telegraphy, of which the following is a specification.

My invention relates to an improvement in telegraphy and has more special reference to telegraphing over lines with great capacity, such for instance as submarine cables. In cable telegraphy, the impressing upon the line of an impulse of one polarity denotes a dot and the impressing upon the line of an impulse of opposite polarity denotes a dash. I have found through experiments, that if the impulse impressed upon the line is sharply defined and of very short duration, the far off receiver is not as much subject to the surging of the current, as is the case in the usual telegraphing.

For this purpose, my invention consists of an arrangement, whereby such impulses may be transmitted with the aid of the usual double key.

To accomplish the object of my invention, I make use of a converter or inductorium, the secondary connected to the line and the primary connected locally to a transmitting mechanism.

As stated above, in cable telegraphy, the dot is represented by an impulse of one polarity,—say a negative,—and the dash by an impulse of opposite polarity,—say a positive,—and as in the telegraphic alphabet, often two or more dots, or two or more dashes follow each other, it is necessary to so arrange matters that one of the induced impulses for each key manipulation has to be depressed, and in the drawing I illustrate means to depress the impulse due to the closing of the key.

In the drawing, I have illustrated two transmitting keys, one key adapted to impress upon the line an induced impulse of positive polarity and the second key adapted to impress upon the line an induced impulse of negative polarity.

In this drawing, 1 is the cable; 2 and 3 are two converters or inductoriums. Of the inductorium 2, 4 is the secondary and 5 the primary and of the inductorium 3, 6 is the secondary and 7 the primary. The primary 5 is provided with sources of current 8 and 9 and the primary 7 with the sources of current 10 and 11. The sources 8 and 10 are provided with the shunt arrangement designated as an entirety by the numeral 27. Each shunt arrangement includes the armature 29 and the lower stop 30 of an electro-magnet. The shunt of inductorium 2 is provided with a transmitting key 14 and the shunt of inductorium 3 is provided with the transmitting key 20. Each shunt has the source of current 31. The cable is grounded at 28.

The manipulation and result are as follows:—The operator depresses the key, thereby shunting the secondary and energizing the coil of the electro-magnet and compelling the armature to connect with the forward contact, thereby closing the shunt around one source of the primary. The operator then releases the key, thereby opening first the shunt around the secondary and then, through the deënergizing of the electro-magnet, opening the shunt around the primary. In a great many cases, this arrangement would be preferred.

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

1. A telegraphic transmitting organism comprising two converters, the secondaries connected in the line; the primary of each of said converters connected normally to two opposite sources of current, and means for each of said converters to shunt one of said primary sources after its secondary has been shunted; and means to open first the shunt of the secondary and immediately thereafter the shunt of the primary in accordance with the characters to be transmitted.

2. In cable telegraphy, a transmitting organism comprising two converters, the secondary of each converter connected in the line, the primary of each converter connected with two sources of current; one source of higher electro-motive force than the second source; both sources in opposition as to each other; a shunt for the source of higher electro-motive force; and a shunt for the secondary; and means operatively related to the transmitting key to shunt the secondary and primary source through the

depression of the lever of the key, and open both shunts through the releasing of said lever.

3. In cable telegraphy, a transmitting organism comprising two converters and two transmitting keys, and means for each converter to localize the induced impulse due to the depression of its own key and to impress upon the line the impulse due to the opening of said key, the secondaries inserted in the line.

4. In telegraphy, a transmitting organism comprising two converters and two transmitting keys, the secondary of each converter inserted in the line; the primary of each converter connected normally to sources of current, and means to impress upon the line an impulse of one polarity through the manipulation of the key operatively related to one converter and an impulse of opposite polarity through the manipulation of the key related to the second converter.

5. In telegraphy, a transmitting organism comprising two converters, the secondary inserted in the line, means for each converter to localize alternate impulses generated therein and to impress upon the line the impulse not localized; the impulse impressed upon the line through one secondary of a polarity opposite to the impulse impressed upon the line through the other secondary.

6. In a telegraphic transmitter, a converter comprising a primary and secondary; the primary connected normally to two sources of current in opposition as to each other, a shunt for the secondary, an electromagnetic device and source of current in said shunt; a transmitting key adapted to operate said shunt; a shunt for one of the primary sources and means to open said shunt through the operation of said key.

7. In telegraphy, a converter, two sources of current therefor, the converter secondary connected in the line and the converter primary connected to said sources, a shunt for said secondary; an electromagnet, a source of current and transmitting key for said shunt, an armature for said electromagnet, a contact for said armature, a shunt for one of the sources of current connected to the primary, said armature adapted to open and close said shunt.

8. In cable telegraphy, two converters, source of current for the primary of each converter, the secondaries of said converters connected to the line, a transmitting key for each of said converters, and means for each key to localize one impulse and impress upon the line the other impulse generated in the secondary through each manipulation of the key.

9. In cable telegraphy, means to impress upon the line induced impulses in accordance with the signals to be transmitted, said means comprising two converters, the converter secondaries thereof connected in the line of transmission, sources of current for the converter primaries, transmitting means operatively related to each of said secondaries and primaries and means, dependent on the position of each of said keys, to depress the induced impulse of one polarity for each of said converters and impress the induced impulse of opposite polarity on the line of transmission.

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

ISIDOR KITSEE.

Witnesses:
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