

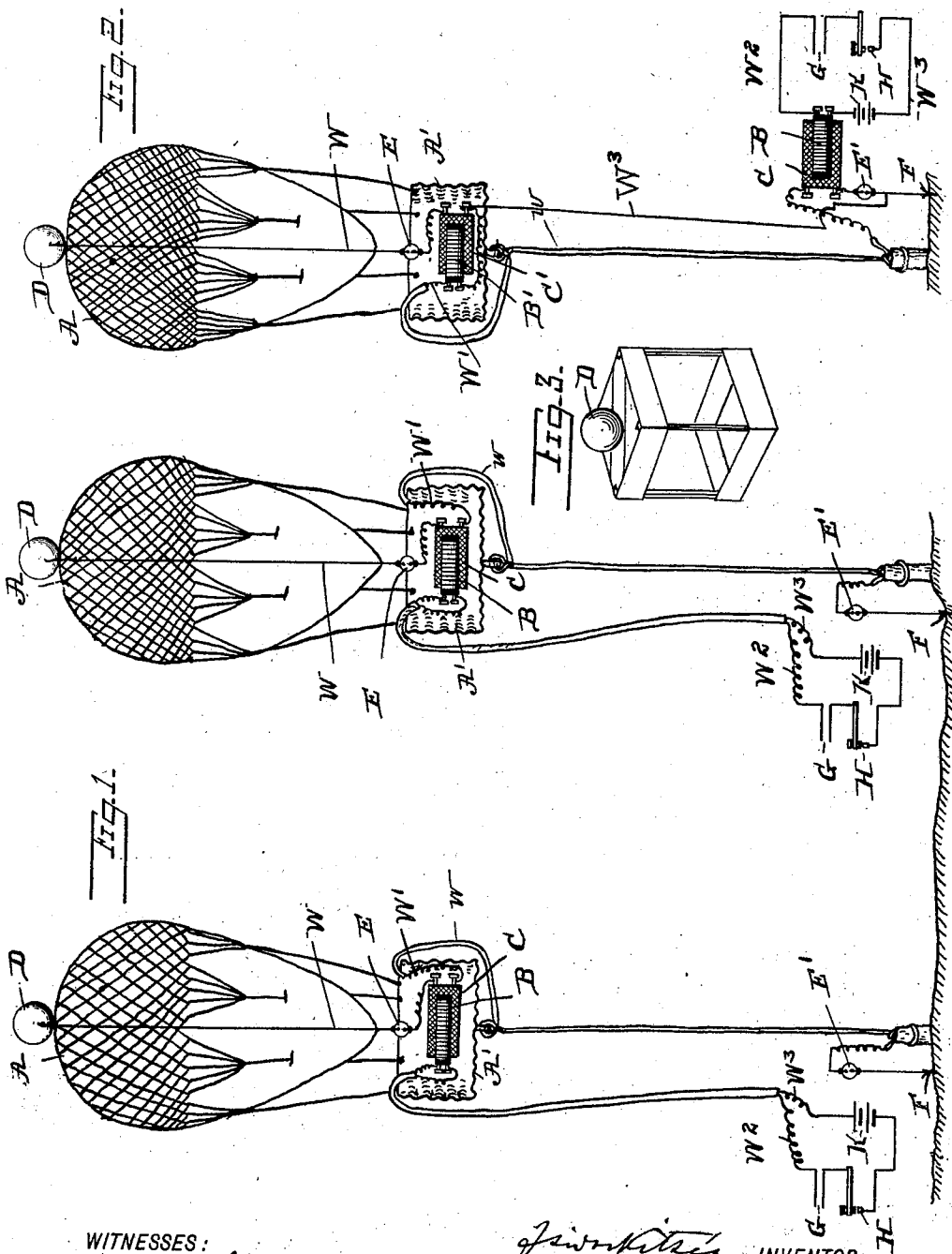
No. 651,361.

Patented June 12, 1900.

I. KITSEE.
ELECTRIC TELEGRAPHY.

(Application filed May 20, 1899.)

(No Model.)



WITNESSES:

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ELECTRIC TELEGRAPHY.

SPECIFICATION forming part of Letters Patent No. 651,361, dated June 12, 1900.

Application filed May 20, 1899. Serial No. 717,611. (No model.)

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 Telegraphy, of which the following is a specification.

My invention relates to telegraphic communications.

In wireless or space telegraphy the device generating rapidly recurring or alternating impulses of high tension consists, mostly, of an induction-coil, the primary of which is generally fed by low-tension batteries and the secondary of which is wound in such manner so as to produce the necessary high currents by induction. In my experiments I have always found that no matter to what height one terminal of this induction-coil is carried the terrestrial influence on the coil was such that the greater part of the generated electric energy was lost for the practical purpose of telegraphy, and the farther the coil was removed from the ground the better the result.

The object of my invention is to obviate these difficulties and to arrange a system of telegraphy in such manner that the coil, as well as the conducting parts leading from same, shall be shielded from the terrestrial influence as much as possible. To accomplish this aim, I have recourse to the arrangement as illustrated in the drawings, described in the body of the specification, and more particularly pointed out in the claims following the specification.

Referring to the drawings, Figure 1 is a diagrammatic view of a sending and receiving station embodying my invention. Fig. 2 is a similar view of a station in modified form. Fig. 3 is a view illustrating a modified form of the means for suspending part of the generating devices.

In Fig. 1, A A are two captive balloons, on which are placed such parts of the generating devices as are designed to be removed as far as possible from the terrestrial influence. If, however, it is desired, any suitable form of kites—such, for instance, as shown in Fig. 3—may be substituted for the balloons. The mode or method as illustrated and described

for sending and receiving messages in Letters Patent No. 550,510, dated November 26, 1895, is illustrated as employed in this my invention; but another method capable of communication without a metallic circuit may be employed. A' A' are the baskets or other receptacles of said balloons. In these receptacles are placed the primary coils B B and the secondary coils C C. From the secondary coils extend the wires W, preferably with the interposition of the vacuum-globe E, to the upper part of the balloons or kites, terminating on the outside in the conducting-balls D D. The other terminals of the secondary coils are connected, through the wires or cables W' W', with the interposition of the vacuum-globes E' E', to the ground F F. The terminals of the primary coils are connected, through the wires W² W² and W³ W³, with the interposition of the vibrators G G and the sending keys H H, to the batteries K K. The wires or cables W' W' are preferably so arranged and connected as to replace the usual ropes with which the balloons are usually held captive. It is advantageous to have the ropes or wires W' well insulated throughout their entire length, and this insulation is referred to in the drawings by the letter *w*. The wires W² and W³ are also insulated from each other and preferably contained in one insulating sleeve or cover. The primary wires should not be in contact with the wire-rope W'. I have omitted in this figure all necessary switches and other devices with which the system may be supplied, as the same form the subject-matter of my patent above referred to.

In Fig. 2 two sets of converting-coils are illustrated. The first set is at or near the operator and the second set is carried by the balloon or kite. The first set consists of a primary B, connected with the interposition of a vibrator and key to the battery and of a secondary C, connected with one terminal with the interposition of the vacuum-globe to the ground and with the other terminal through wire W' with one terminal of the primary of the second set, the other terminal of which connects through wire W³ with the ground. From one terminal of the primary of the second set a wire leads to one terminal

of the secondary of the second set, the other terminal of the secondary being connected to the aerial conductor. The flow of the current, therefore, will be as follows: Through the vibrator and battery interrupted impulses will flow in the primary B as soon as the key is depressed. These impulses will induce rapidly-recurring impulses in the secondary C, which impulses will flow from secondary C, with the aid of the conductor W' through the primary B' and will return to the ground by the aid of the conductor W³. The rapidly-recurring impulses generated in the primary B' will induce impulses in the secondary C', connected, respectively, through W³ to the ground and through W to the aerial conductor.

It is understood that in wireless or space telegraphy the generated impulses should be of as high intensity as possible; but as the coil in which such high impulses are generated or induced should be as far removed from the ground as possible I construct the first set of converting or induction coils in a manner so that the generated secondary impulses are of lower intensity than is necessary for practical telegraphy or glow in the vacuum-globe. These impulses of comparative low intensity are transmitted with the aid of metallic rope or cable to the primary in the basket of the balloon, the secondary of which is wound in a manner so as to translate the low-current waves into currents of such high intensity as is necessary for space telegraphy. This arrangement allows the employment of only one conducting-wire from the captive balloon or kite to the ground, a very important point in dealing with currents of the necessary high frequency and potential and one which does not need further explanation for persons versed in the art.

I have illustrated the circuits with only vacuum-globes as receivers; but other devices

may be employed without departing from the scope of my invention.

The vacuum-globes E E' are receivers; but I do not limit myself to the insertion of vacuum-globes, as any other suitable form of receivers may be employed.

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

1. A system of space telegraphy having part of the generating devices at or near the ground, and part of the generating devices at a point farther removed from the terrestrial influence.

2. In space telegraphy, a sending-station part of the generating devices of which are located at or near the ground, and adapted to generate impulses of comparative low intensity, the other part of said generating devices being located at a point farther removed from the terrestrial influence and adapted to transform the currents of low intensity into currents of high intensity.

3. In space telegraphy, a sending-station provided with two sets of converting-coils, one set of said coils being placed near the ground, and the other set of said coils being placed at a point farther removed from the terrestrial influence than the first set of the coils.

4. In space telegraphy, a sending-station provided with converting-coils suspended with the aid of a balloon or kite, and a ground connection for said coils, said ground connection being adapted to hold captive the balloon or kite.

In testimony whereof I sign my name in the presence of two subscribing witnesses.

ISIDOR KITSEE.

Witnesses:

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