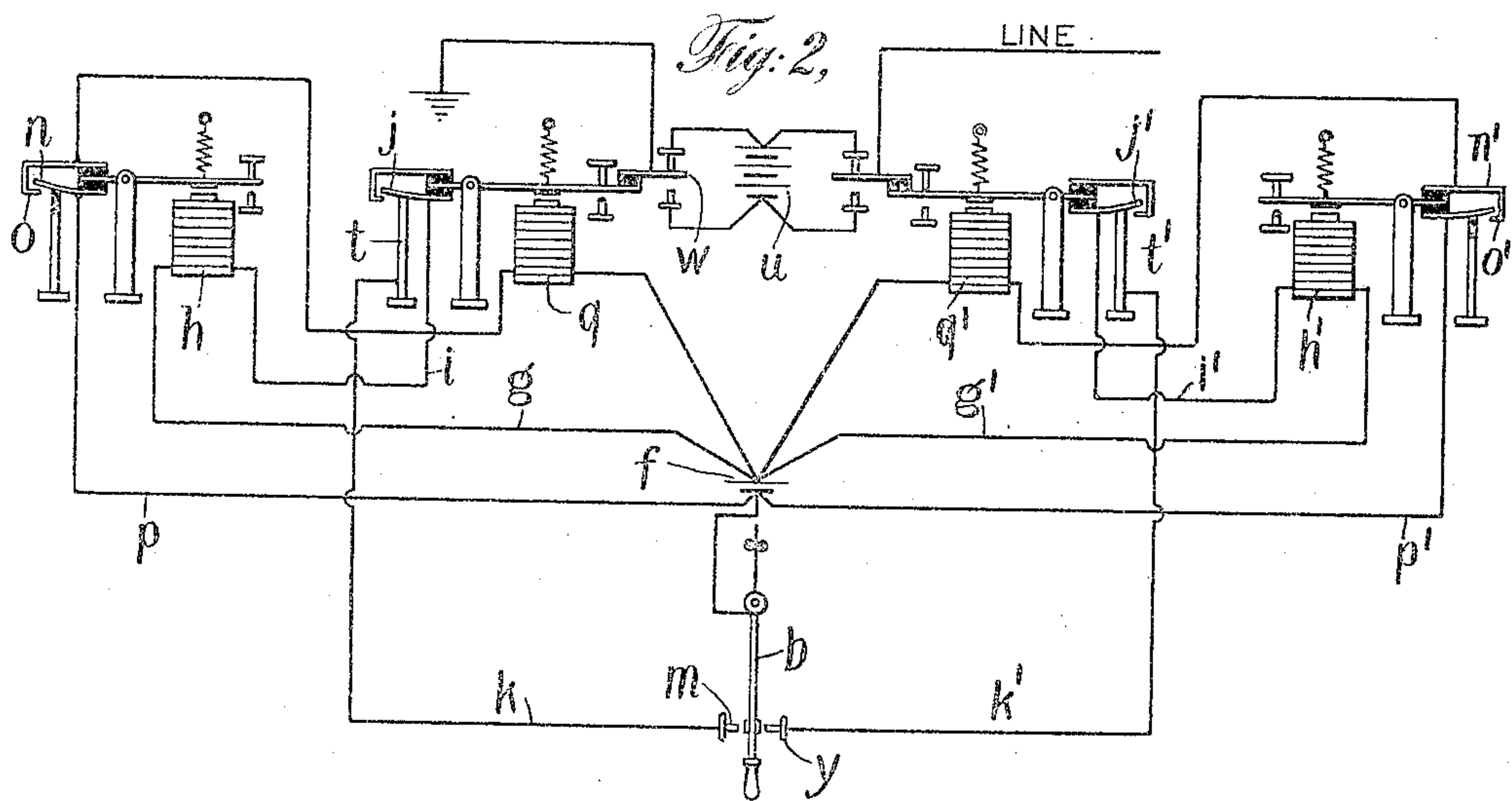
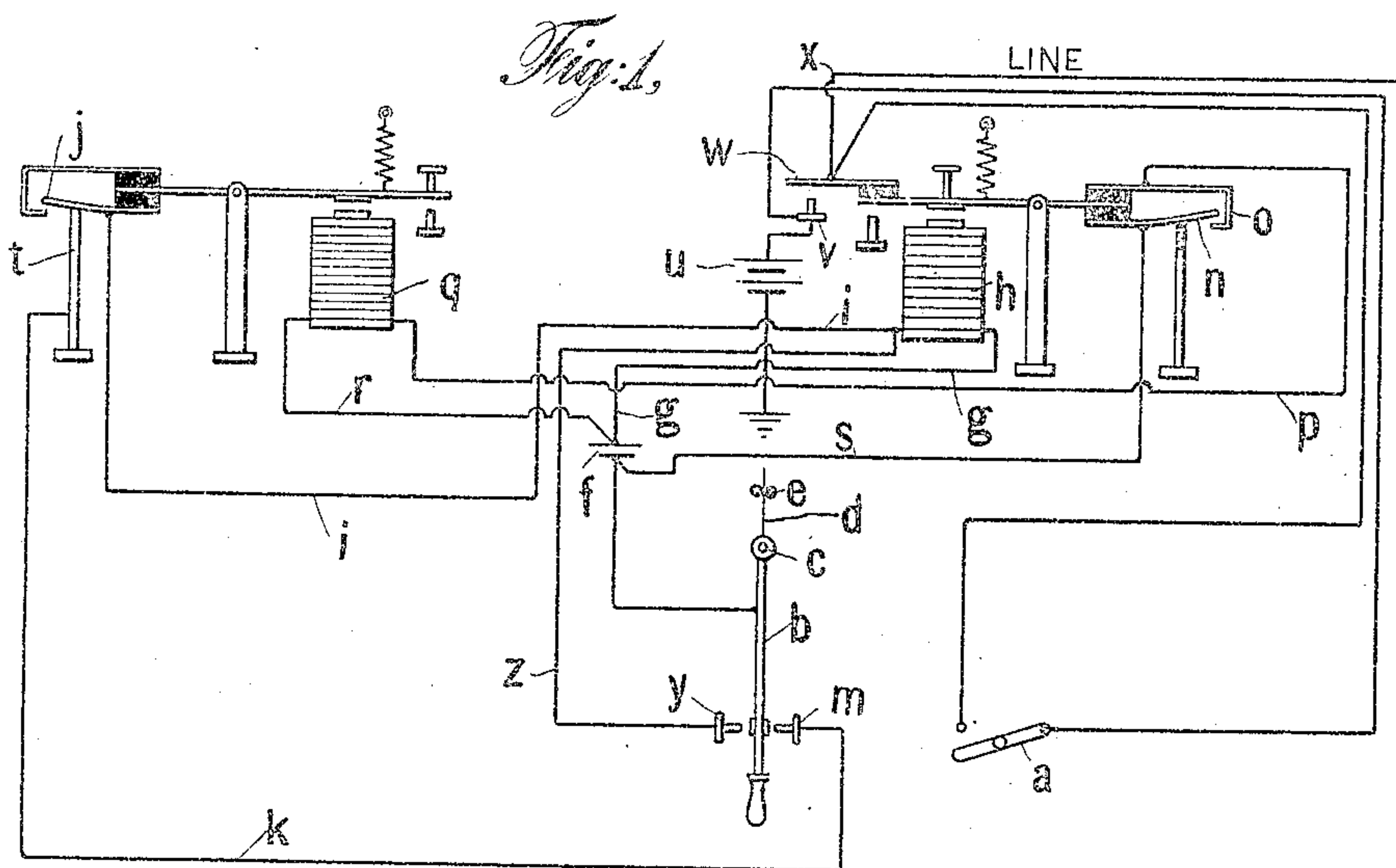


No. 877,914.

PATENTED FEB. 4. 1908.

P. B. DELANY.  
TELEGRAPHIC TRANSMITTER.  
APPLICATION FILED MAR. 31, 1906.



Witnesses  
L. F. Browning  
E. H. Hicks

Patrick B. Selby, Inventor  
By his Attorney  
Edward C. Burdow.



# UNITED STATES PATENT OFFICE.

PATRICK B. DELANY, OF SOUTH ORANGE, NEW JERSEY.

## TELEGRAPHIC TRANSMITTER.

No. 877,914.

Specification of Letters Patent.

Patented Feb. 4, 1908.

Application filed March 31, 1906. Serial No. 309,042.

*To all whom it may concern:*

Be it known that I, PATRICK B. DELANY, a citizen of the United States, residing at South Orange, county of Essex, State of New Jersey, have invented certain new and useful Improvements in Telegraphic Transmitters, of which the following is a specification.

This invention relates to that class of transmitters in which a neutrally disposed key is moved in one direction for transmission to line of dots, formed automatically by transmitting devices, the number of dots transmitted being dependent upon the length of time that the key is so held by the operator: and, when the key is moved in opposite direction a dash is transmitted during the period the key is so held: or in cable working, dots automatically formed may be transmitted when the key is in the latter or dash position.

The present invention comprises an improvement upon the organization shown in my application No. 262,097, filed May 24, 1905 which discloses and claims a transmitter of the general character herein described.

The claims in this application are limited to such improvement, or detail structure and arrangement, any broader subject matter that may be read upon the transmitter herein disclosed being claimed, or to be claimed, in said application Serial No. 262,097.

The improvement constituting the subject matter of the present application is an arrangement of the apparatus by which a single local battery may be used in conjunction with two magnets one for sending signal impulses into the line, and the other for controlling the circuit of the first one.

In the accompanying drawings: Figure 1 is a diagrammatic view showing an organization of transmitting devices for sending, in the manner stated, dot and dash signals according to the Morse or other similar code: Fig. 2, a similar view showing an organization for cable transmission in which uniform impulses are transmitted, those of one polarity representing dots, and those of the other dashes.

Referring to Fig. 1, the various parts of the apparatus are shown in normal or inactive position, the line *x* being closed at two-point switch *a*, as conveniently located for the operator as is the switch of an ordinary Morse key. The key *b* rocks about an axis *c* but is normally maintained in central or neutral position by a spring *d* attached to the key and held between pins or posts *e*. If the key

be moved to the right, current from local battery *f* will pass by wire *g* to magnet *h*; thence by wire *i* to contact *j* carried by the armature lever of another magnet, and by contact *t* and wire *k* to key contact *m*. Magnet *h* is energized and its armature lever being attracted, its insulating contacts *n*, *o* come together, thereby closing, through wire *p*, the circuit of magnet *q*, whose circuit is by wire *r*, to local battery *f* and by wire *s* to contact *n*. The armature lever *q* being attracted, contact *j* carried thereby passes out of engagement with stationary contact *t*, the circuit of magnet *h* is opened and its armature lever returning to normal position breaks the circuit of magnet *q*. In this way automatic actuation of both armature levers at uniform rate or speed is set up and will be maintained as long as the key is held to the right or dot side.

*u* represents a main battery or source of energy having one pole grounded, and its other pole connected with a contact stop *v*, against which bears an insulated contact *w*, carried by armature lever of *h*, and connected to line *x*, so that automatically uniformly spaced or formed dots will be transmitted from the battery *u* into the line during the period that the key is held against its contact *m*, the number of dots so transmitted being dependent upon the period of time during which the key is so held. Since the dot signals are locally audibly manifested to the operator by the action of the apparatus, he knows how long the key should be held in position to effect transmission automatically of the desired number of dots.

When the key is moved to the left, the circuit of magnet *h* is closed through the key contact *y*, wire *z*, winding of magnet *h* and wire *g* to local battery *f* and thence to the key. A dash signal of any desired period or length may therefore, at will, be transmitted into the line through contacts *v*, *w*. When the operator desires to practice manipulation of the key without transmission of the signals into the line, switch *a* is closed; and when he desires to transmit a message to line, the switch is opened, thereby putting the line and battery contacts *w*, *v*, in transmitting circuit.

It is contemplated that with the exception of the finger piece of key *b*, and knob of switch *a*, all of the apparatus, with its single cell of dry battery, will be inclosed in a suitable box, making it compact and portable.



Of course, when convenient, the transmitter may be connected with an ordinary source of regular sounder current, and the dry cell of battery *f* be dispensed with, or disconnected. It will be apparent that the impulses made by this transmitter will be as firm as those from the best style of electro magnetic transmitter; and that will be entirely independent of the operator's style of Morse manipulation so far as dots are concerned. All of the connections of the devices when the key is closed to one side or the other are effected with precision and uniformity, both as to each signal and as to the regularity and precision of the formation of a series thereof.

The speed of automatic formation of dots may be regulated by changing the play of one of the armature levers, preferably that of magnet *g*, leaving the gap between the transmitting contacts *v*, *w*, unchanged. The impulses transmitted to line by this instrument, formed with such precision and uniformity, will carry further and at greater speed of transmission than those of ordinary Morse key working. Moreover the operator is relieved from muscular and nervous strain since he is required to make forty-eight less movements in the formation of the Morse alphabet than are required with ordinary Morse key working. Obviously the lever of either electro-magnet may carry the line transmitting contact.

Fig. 2 shows diagrammatically an organization, in accordance with this invention, for cable transmission in which all of the impulses sent to line are dots. The local connection for both sides are the same as those for the dot side illustrated in Fig. 1, except that the armature lever of magnet *g* carries the line transmitting contact *w*, and key *b* is moved to the left for transmitting short signals representing dots, and to the right for transmission of short signals of opposite polarity representing (according to the cable code) dashes. The connections for the dot side are lettered the same as in Fig. 1, and those for the dash side have the same lettering with the exponent 1 added in each instance. The pole changing arrangement for the main or transmitter battery, or source 4, is that usually employed in cable working.

I claim as my invention:

1. A telegraphic transmitter comprising the combination of a transmitting key, a single local battery, its circuit, an electro-magnet connected in the local circuit with the battery and key, said magnet being energized when the local circuit is closed by the key, and a second electro magnet also connected in local circuit with the battery, and contacts and circuit connections whereby when the first named magnet attracts its armature lever the circuit of the second magnet is closed, and on attraction of its armature lever, the circuit of the first mag-

net is opened, and line transmitting contacts controlled by one of such magnets, whereby so long as the key closes the local circuits of the first magnet the circuits of both magnets are automatically opened and closed at a regulated uniform rate and transmission of a succession of dot signals effected.

2. A telegraphic transmitter comprising the combination of a transmitting key, a single local battery, its circuit, an electro magnet connected in the local circuit with the battery and key, said magnet being energized when the local circuit is closed by the key, and a second electro magnet also connected in local circuit with the battery, normally separated contacts included in the circuit of the second magnet and controlled by the armature lever of the first magnet, adapted to automatically close when the armature lever of the first magnet is attracted, normally closed contacts controlled by the armature lever of the second magnet included in the local circuit of the first magnet; and automatically opened when the armature lever of the second magnet is attracted, and line contacts controlled by one of said magnets.

3. A telegraphic transmitter comprising the combination of a local transmitting member, a local battery, its circuit, an electro magnet connected in said local circuit with said battery and transmitting member, said magnet being energized when the said local circuit is closed by said transmitting member, a second electro magnet also connected with the said battery, line transmitting contacts controlled by one of said electro magnets, contacts and circuit connections whereby when the first electro magnet attracts its armature lever the circuit of the second electro magnet is closed, and on attraction of its armature lever the circuit of the first electro-magnet is opened, whereby, so long as the local transmitting member closes the local circuit of the first electro-magnet, said electro-magnet and the second electro-magnet are automatically opened and closed and a succession of impulses sent into the line by the line connected contacts.

4. A telegraphic transmitter comprising the combination of a local transmitting member, a source of electric energy connected thereto, two electro magnets also connected to said source of electric energy, contacts in the path of said transmitting member whereby the circuit of said source of electric energy may be completed through either of said electro magnets separately, two other electro-magnets also connected to said source of electric energy, contacts controlled by the first two electro-magnets, whereby said source of electric energy is completed through the second two electro-magnets and contacts controlled by the second two electro-magnets for opening the circuits of the



first two electro magnets, whereby automatic vibration of the armature levers of one of the first two electro-magnets and one of the second two electro magnets is produced and maintained so long as the local transmitting member is held against one of its contacts, and whereby automatic vibration of the armature levers of the other of the first two electro-magnets and the other of the second two electro-magnets is produced and maintained so long as the local transmitting mem-

ber is held against its other contact, and line connected contacts controlled by two of said armature levers for sending automatically made signal impulses to a distant station. 15

In testimony whereof, I have hereunto subscribed my name.

PATRICK B. DELANY.

Witnesses:

L. F. BROWNING,

E. F. WICKS.