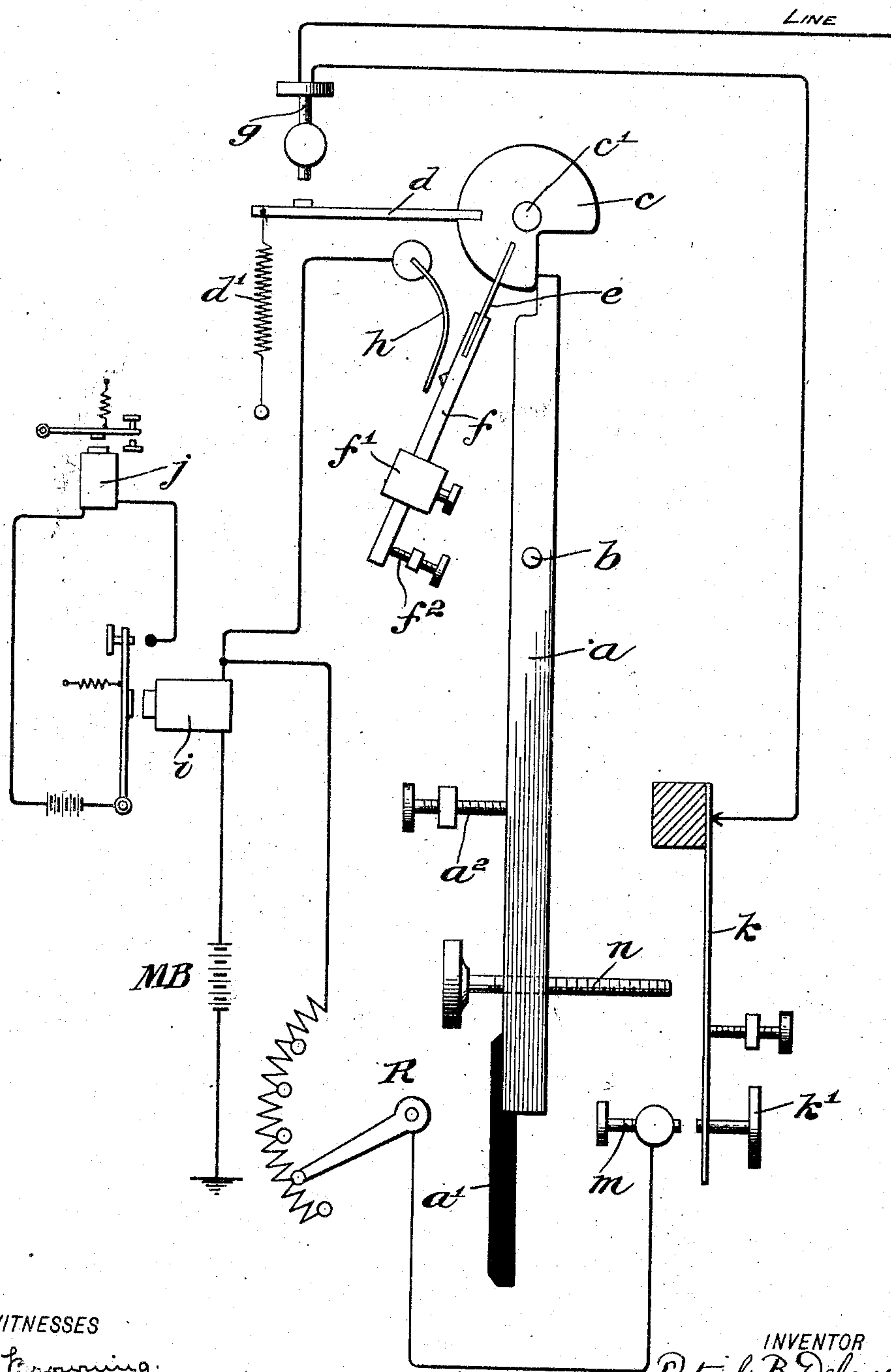


947,224.

Patented Jan. 25, 1910.



WITNESSES

WITNESSES
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TELEGRAPHIC TRANSMITTER.

947,224.

Specification of Letters Patent. Patented Jan. 25, 1910.

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To all whom it may concern:

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

This invention relates to a class of hand operated telegraph keys which I designate as auto-dot keys for the reason that upon movement of the key into dot position, it will automatically transmit dots up to the maximum number required as long as it is so held, thereby relieving strain upon the operator and improving the quality of the transmitted signals. Telegraph keys of this general character are now comparatively well known.

This invention comprises certain features of novelty hereinafter set forth in detail.

The accompanying drawing is a diagram illustrating the invention.

The dot key lever *a* pivoted at *b* and having a thumb piece *a'* engages at its outer end a shoulder or projection on a rocking part or block *c* having rigidly attached to it an arm *d* to which is applied a spring *d'* the reaction of which tends to carry the shoulder upon the block against the end of the key lever and hold the latter against its adjustable limiting stop *a²*. The block *c* also has rigidly attached to it a spring blade *e* carrying at its end a rigid rod *f* upon which is mounted an adjustable sliding weight *f'* and cooperating with which is an adjustable limiting or muffling stop *f²*. When the key lever is thrown to the right which is dot position, an impulse of rotation is imparted to the block *c* and impact of the arm *d* upon the line contact post *g* sets the parts *e, f*, in vibration causing it to successively make, at uniform periods, contact with a spring finger *h* connected through the transmitting battery M B to earth, the circuit being completed to line at each completion of the contact with *h* through the parts *f, e, c, d, g*. The maximum number of dots required for the Morse alphabet is six and vibration of the part *e, f*, will produce with relatively perfect uniformity and precision such number of dots as may be required. In order that the operator may know what signals are passing to line and govern the use of his key accordingly, the circuit wire from *h* passes through a relay *i* in the local circuit of which is a sounder *j*.

To transmit dashes a separate key is provided. This key is indicated in the form of a laterally movable flat spring supported at one end in a suitable post or block and at the other end, equipped with a finger piece *k'*. When moved to the left, it makes contact with a contact post *m* connected through a resistance R, that may be and preferably is adjustable, and the coil of relay *i* to earth through the main battery. Key *k* is connected by wire with the line contact post *g*.

Experience has shown that the key for transmitting dots constructed in the general manner described,—that is equipped with the rocking pivoted block *c* acted upon by the key lever and carrying the impact arm *d* and vibrating member *e, f*,—produces highly satisfactory and efficient results. This is believed to be largely because of the arrangement of leverages, the mounting of the vibrator being very firm, and the vibrations not being felt at the thumb piece of the key lever.

The introduction of the resistance in the circuit of the dash lever is an important feature. If a circuit has much capacity, the dash impulses leave a charge in the line causing the signals to run together and requiring a higher adjustment of the receiving relay than is necessary for the dot signals,—that is, ordinarily, in order to make the dashes clear, the dots are made unnecessarily light. This trouble is particularly noticeable on long circuits using repeaters and on underground and composite circuits. By using weaker current for dash signals than is used for dot signals, the receiver may be adjusted for the best dot condition and both kinds of impulses be equalized in clearness. The line discharge from a dash impulse of diminished strength does not deplete the next succeeding dot to anything like the same degree as it would were the dash impulses of the same strength of current required for effective transmission of the dots. By using a resistance R, which is preferably adjustable, the most satisfactory conditions for any given circuit may be readily attained. It has been found in practice that a resistance of about five hundred ohms affords excellent results for substantially all circuits.

A further feature of this invention is the employment of a non-interfering device, shown in this instance as an adjustable screw bolt *n* mounted in and passing through

the key lever into the path of and into suitable proximity to the dash lever *h*. With this device properly adjusted, the dash lever cannot make contact with *m* until by movement of key lever *a* the anti-interference pin or bolt *m* has been withdrawn from the path of the dash key. Similarly, the dot key lever *a* cannot be moved to its limit until the dash lever has returned to its normal retracted position.

A controlling feature of construction of the dot transmitting devices described is the impact arm *d* and vibrator *e* projecting from, or radial to, the axis *c'* of the rocking part or block *c*. As shown, the parts *d* and *e* are secured in the body of the block. This is a suitable arrangement but is not an essential one.

I claim:

1. In a telegraphic transmitter, means for sending dot signals by current impulses of uniform strength and means for transmitting dash signals by current impulses of uniform strength but of less strength than that used for the dot signals.

2. The combination of an auto-dot Morse telegraphic transmitter, a dot transmitting lever controlling it, a dash transmitting lever and means for preventing the closing of the circuit by one of said levers until the circuit has been opened by the other lever.

3. In a telegraphic transmitter, a part pivoted upon a vertical axis, a dot transmitting key lever adapted to impart impulses of rotation thereto, an impact or limiting arm rocking with said part about the said axis, an impact stop therefor and a circuit controlling vibrator also mounted to rock with said part about its axis.

4. A manually operated auto dot transmitter, a lever controlling said transmitter, a dash transmitting lever and means for preventing said levers from closing the circuit at the same time.

In testimony whereof, I have hereunto subscribed my name.

PATRICK B. DELANY.

Witnesses:

EDWARD C. DAVIDSON,
L. F. BROWNING.

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