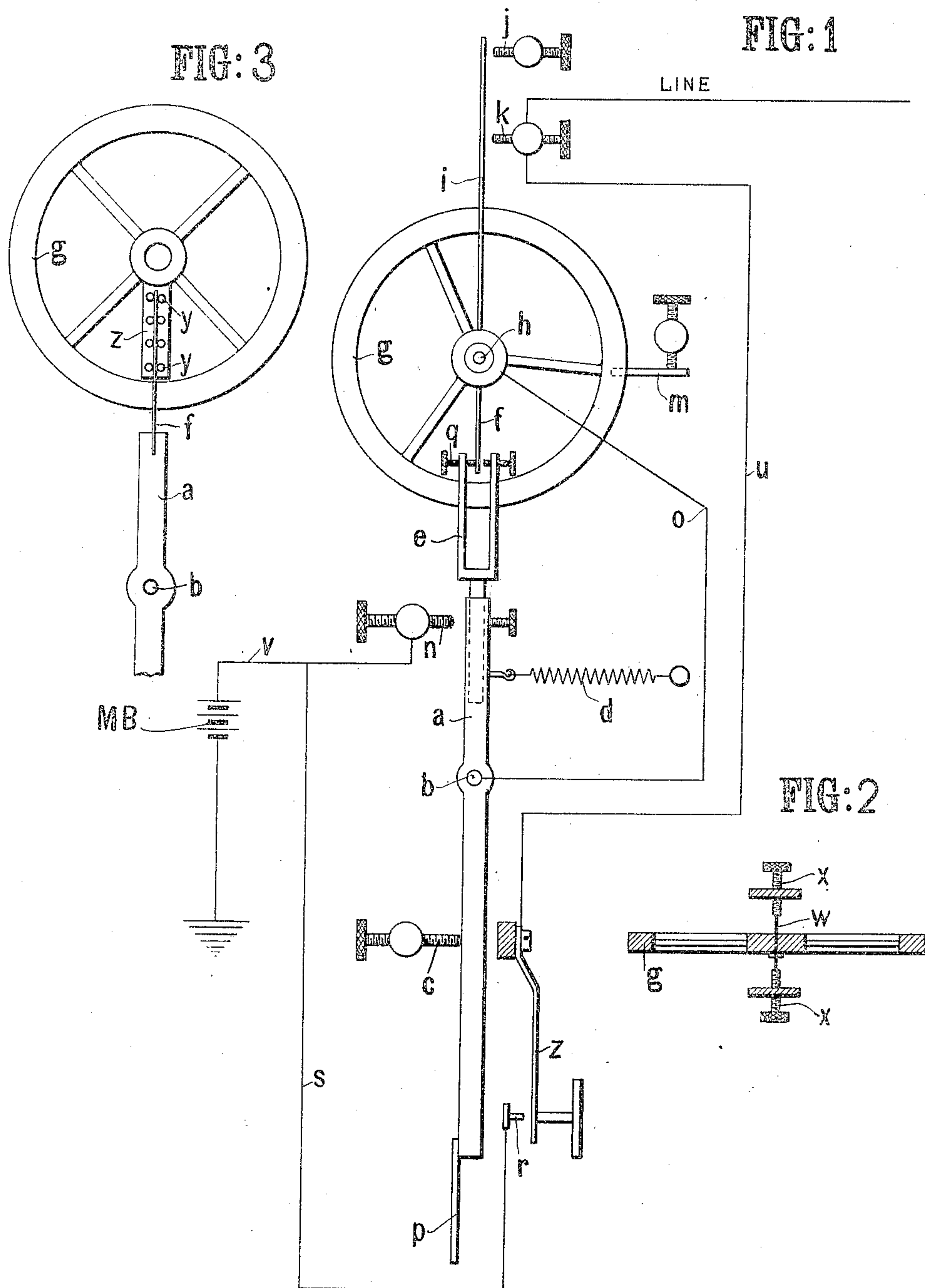


No. 877,915.

PATENTED FEB. 4, 1908.

P. B. DELANY.
TELEGRAPHIC TRANSMITTER.
APPLICATION FILED APR. 26, 1906.



WITNESSES

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TELEGRAPHIC TRANSMITTER.

No. 877,915.

Specification of Letters Patent.

Patented Feb. 4, 1908.

Application filed April 26, 1906. Serial No. 313,739.

To all whom it may concern:

Be it known that I, PATRICK B. DELANY, a citizen of the United States of America, residing in 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 belongs to that class of instruments adapted to transmission of the Morse, or like codes, and with which the dots are automatically formed during the time that a key lever is held in one position.

The invention relates more particularly to instruments of this class in which the dot forming devices are mechanically set into operation by the movement of the transmitter key by the operator.

The objects of the invention are to provide transmitters of simple and inexpensive construction provided with a key controlled mechanically actuating automatic device that forms good dot contacts of uniform character and interval, and that is relatively undisturbed by mechanical shocks or jars, or other surrounding influences, tending to disturbance. To this end there is employed a spring controlled counter-balanced device, the momentum of which coöperating with the spring reaction produces oscillation about an axis. This device is preferably set into operation by energy derived from the key when moved by the transmitting operator. The preferred form of such counter-balanced device is that of a peripherally weighted wheel, turning about a vertical axis, associated with a suitable spring or springs to effect the desired result.

In the accompanying drawings: Figure 1 is a plan view somewhat diagrammatic in character; Fig. 2, a detail sectional view showing a modified manner of mounting the counterbalanced device; and Fig. 3 shows a further modification.

The key lever *a*, pivoted at *b*, rests in normal position against its stop *c*, *d* being the key lever spring. The rear end of the lever has an endwise adjustable bifurcated member *e* between adjusting screws in the arms of which lies a plate spring *f* secured to the hub of a balance wheel *g* with a relatively heavy rim rocking about a vertical axis *h* and from the hub of which extends also a second plate spring *i* opposite which are arranged two adjustable stops or posts *j*, *k*, the latter being an electrical contact. Project-

ing from the periphery of the wheel is an arm *m* adapted to bear against a limiting stop when the oscillatory wheel is in normal position, as depicted in the drawing.

M B is the main battery, or source of energy, having one pole grounded and the other connected to an adjustable contact post *n* with which the key lever makes contact. The circuit is continued from the key lever by wire *o* to the hub of the oscillatory wheel and thence by spring *i* to line contact *k*.

When it is desired to transmit one or more dots, the operator throws the key lever to the right by pressure upon a thumb-piece *p*, causing the lever to strike its contact post *n*, and at the same time the bifurcated member *e* acts upon plate spring *f* to throw the balance wheel, or oscillator, in the direction indicated by the arrow. Owing to the momentum of the wheel the spring will pass to the adjustable post *q* of the bifurcated member, and, bearing against it, will yield. The longer spring *i* will first come against its stop *j* and then will yield until it comes against the line contact-post *k*. If one dot only is to be transmitted, the key is immediately allowed to return to normal position; but if two or more dots are to be sent the key is held to the right and the regular oscillations of the wheel will cause successive contacts, substantially uniform as to character and period, to be made between *i* and *k*. The weight of the wheel and the length and elasticity of springs *f*, *i*, are to be so related that the oscillation of the wheel will continue during a sufficient period to so automatically form any number of dots that may be required. When the key lever is released, reaction of spring *i* and pressure of adjustable post *q* upon spring *f* will return the wheel to normal position where it will be held at rest against its limiting stop.

A dash may be transmitted in any suitable manner. In the drawing there is shown a separate dash switch, or key, comprising a contact *r* connected by wire *s* to the transmitting battery and a spring key *t* connected by wire *u* to line.

The rate of oscillation of the wheel may be regulated by adjusting the bifurcated member *e* toward or from the center of motion or axis of rotation.

If the battery instead of being connected to contact post *n*, were connected to the

hub of the oscillation, the operation would be as already described. I prefer, however, to make the connections as shown in order that on the first movement of the key toward normal position, the dot transmitting circuit is positively opened. This is a feature, applicable to auto-dot transmitters generally. Of course, the oscillator may be mounted otherwise than as in Fig. 1; which contemplates that it shall turn upon a pivot or bearing. For instance, as shown in Fig. 2, it may be carried by a torsion spring *w* strained between adjustable supports *x*.

The modification shown in Fig. 3 consists in mounting the spring *f* in the end of the key-lever *a* and having it extend between lugs or projections on the wheel *g*. In this case the wheel may have a radial part or projection *z* in which are pairs of holes *y* to receive pins or plugs between which the spring will lie. The point of engagement of the spring with the wheel may therefore be shifted to different distances from its base or secured end thereby affording a means of adjustment of the device.

I claim as my invention:

1. In a telegraphic transmitter, the combination of a counterbalanced oscillator, a key lever controlling its movements, and circuit connection and contacts whereby when the oscillator is set into action, dot signals are automatically, successively transmitted.

2. In a telegraphic transmitter, the combination of a counterbalanced oscillator, a key lever, an operative connection between the key lever and oscillator whereby on movement of the key lever the oscillator is set into operation, and circuit connections and contacts whereby dots may be automatically successively transmitted by the movements of the oscillator.

3. In a telegraphic transmitter, the combination of a key lever, a circular weighted oscillator moving about a vertical axis, con-

tacts controlled by the circular oscillator and means controlled by the key lever for actuating the oscillator.

4. In a telegraphic transmitter, the combination of a counterbalanced rotatable member, transmitting contacts controlled thereby and means controlled by the key lever causing partial rotations of said member alternately in opposite directions.

5. In a telegraphic transmitter, the combination of a counterbalanced rotatable member, transmitting contacts controlled thereby, means controlled by the key lever causing partial rotations of said member alternately in opposite directions, and means also controlled by the key lever for arresting movement of the rotary member.

6. In a telegraphic transmitter, the combination of an oscillating wheel turning about a vertical axis, a pivoted key lever, a spring interposed between it and the wheel whereby on the movement of the key lever an impulse of rotation is imparted to the wheel, a second flat spring projecting from the wheel, a stop against which its outer end works, a line contact between said stop and the wheel and circuit connections whereby as the wheel oscillates the line circuit is automatically closed and opened at said contact.

7. In a telegraphic transmitter, the combination of a wheel adapted to oscillate about a vertical axis, a key lever having a bifurcated end, a plate spring attached to the wheel and extending between the arms of such bifurcation, a second plate spring carried by the wheel, a stop against which it works and a line contact between said stop and the wheel, a source of energy and circuit connections, the combination operating substantially as set forth.

In testimony whereof, I have hereunto subscribed my name.

PATRICK B. DELANY.

Witnesses:

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E. F. WICKS.