

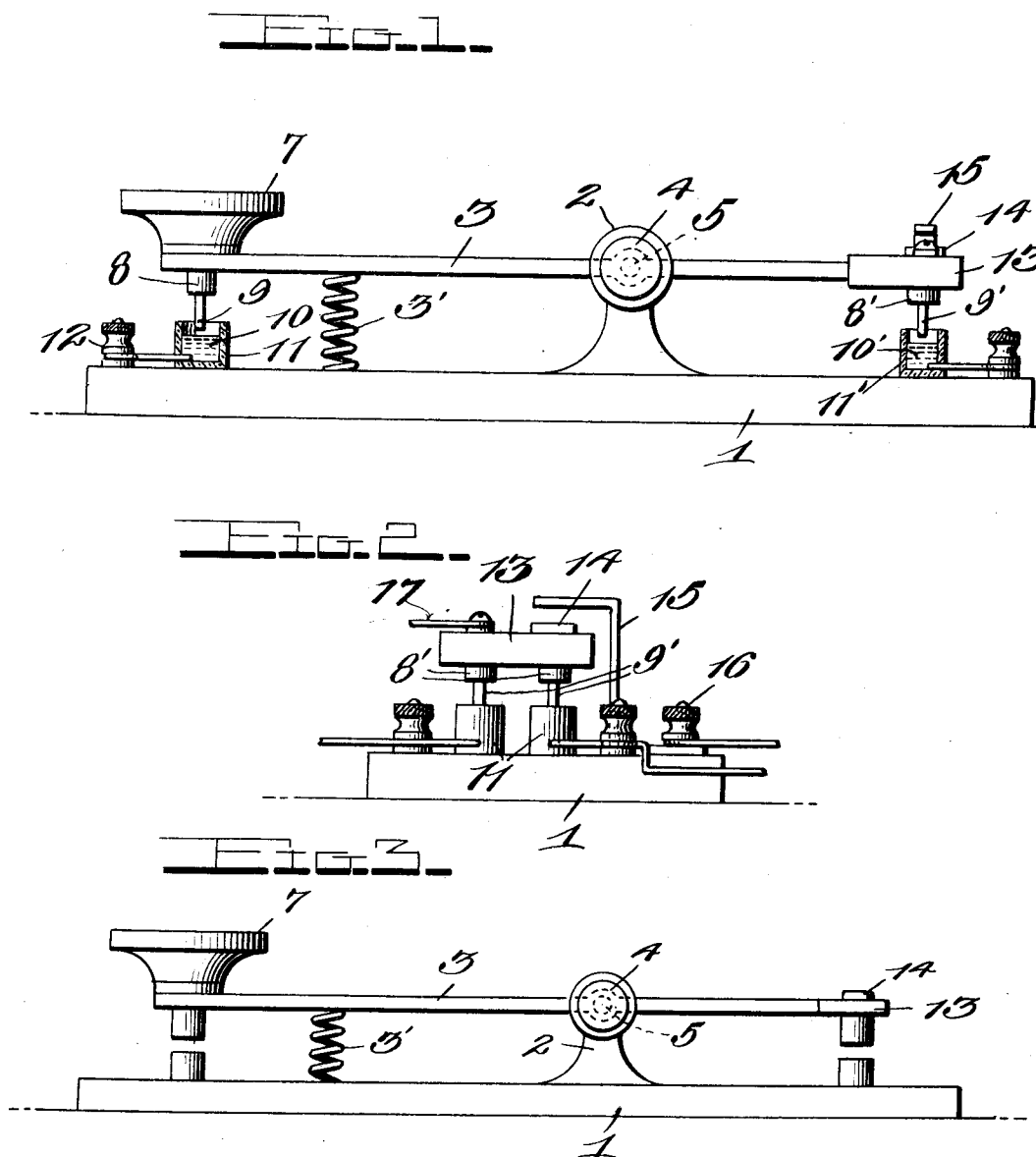
G. P. MOBLEY.
WIRELESS BREAK KEY.

APPLICATION FILED JULY 10, 1911. RENEWED NOV. 19, 1912.

1,048,849.

Patented Dec. 31, 1912.

2 SHEETS—SHEET 1.



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Witnesses

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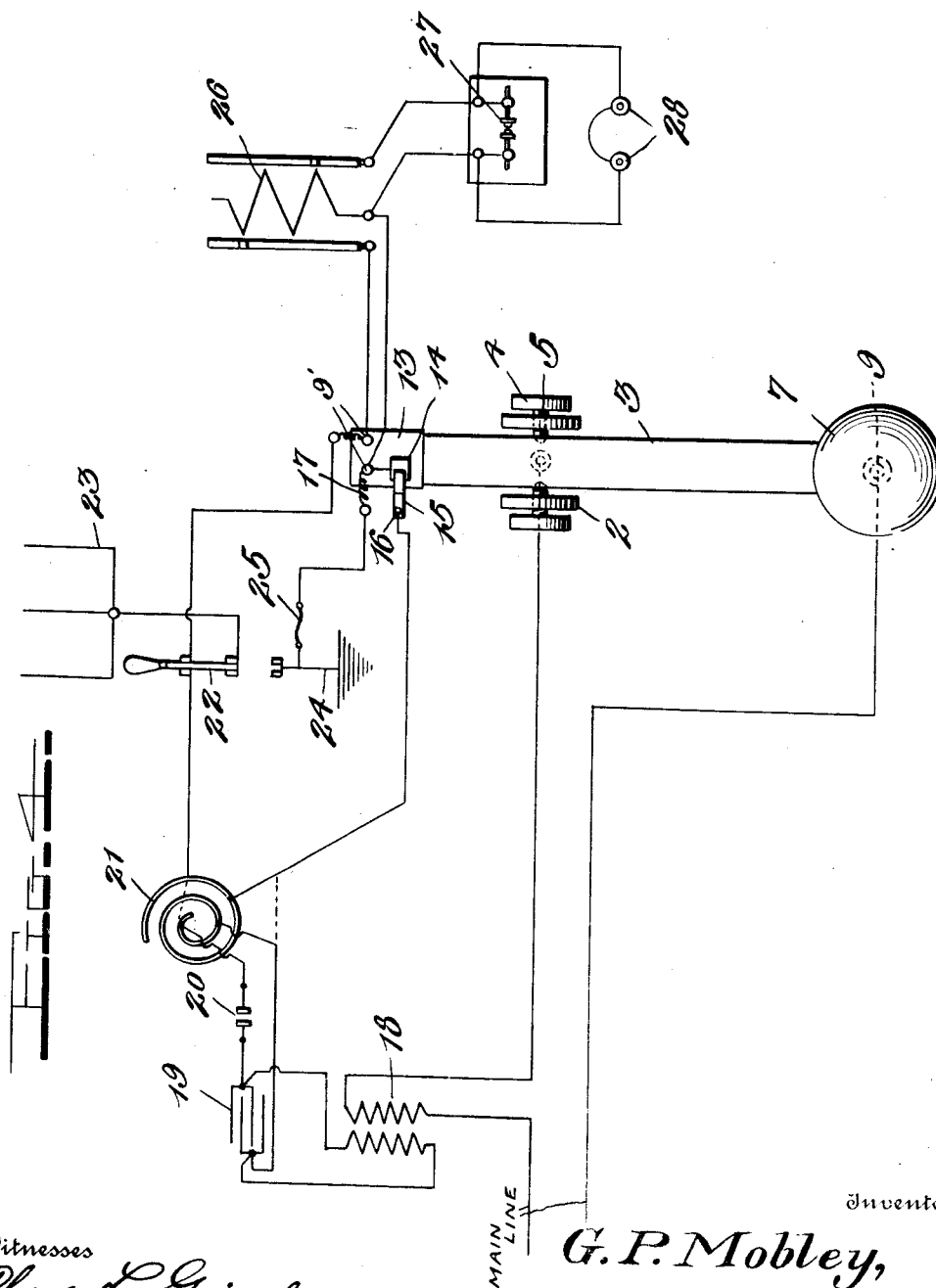
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UNITED STATES PATENT OFFICE.

GRIER P. MOBLEY, OF SAN ANTONIO, TEXAS.

WIRELESS BREAK-KEY.

1,048,849.

Specification of Letters Patent.

Patented Dec. 31, 1912.

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(DEDICATED TO THE PUBLIC.)

To all whom it may concern:

Be it known that I, GRIER P. MOBLEY, a citizen of the United States, residing at San Antonio, in the county of Bexar and State of Texas, have invented certain new and useful Improvements in Wireless Break-Keys, of which the following is a specification, reference being had to the accompanying drawings.

The invention herein described, if patented, may be used by the Government or any of its officers or employees in the prosecution of work for the Government, or by any other person in the United States, without the payment of any royalty thereon.

This invention relates to wireless apparatus, and more particularly to a break key for the same.

The object of this invention is to provide a break key which will obviate the necessity of having more than one aerial for the transmission and receiving of wireless messages at one station.

A further object of this invention is to provide a key which will eliminate the necessity of providing a disconnecting detector, and the removal of the telephones from the head when sending a message.

Another object of this invention is to make it possible for both sending and receiving stations to instantly detect any interference from a third party.

A further object of this invention is to make it practically impossible for the operator to receive a shock, and to prevent the burning out of the receiving instruments, as is often the case with the present apparatus. And in general it is desired to provide a break key dependable in design, and such as can be readily manufactured, and which in use will increase the rate of transmitting messages by wireless telegraphy, together with many other objects which will become apparent to those skilled in the art, as this invention is more fully set forth.

There have been several types of break keys manufactured and put on the market, which are intended for wireless telegraphy and to increase the rate of transmission of messages. These instruments are usually so intricate in design, so uncertain because of the multiplicity of parts, the use of relays, etc., that they are objectionable, which with

their uncertainty, as well as because of their high cost, prohibits their use in practice.

This invention is in general so simple that it avoids all these objections and at the same time eliminates the necessity of separate aerials being provided for the receiving and transmitting circuits of a wireless station, which have been provided in the past in order to avoid the objections herein stated. At the same time it will be noted that the simplicity of the design of the apparatus is such that it practically eliminates any possibility of uncertainty in its action and at the same time permits it to be made very cheaply. Further the parts are readily accessible for inspection and repair, whenever the same will be necessary, which increases the reliability of the apparatus and its value in this class of work.

In the drawings; Figure 1 is a view in elevation of a break key embodying this invention; Fig. 2 is an end elevation of Fig. 1; Fig. 3 is a modification of the contact points used in this invention, and Fig. 4 is a diagrammatic view of the break key as applied to a wireless transmitting and receiving circuit. Dotted lines i. e. helix indicate wiring when helix is not used.

Similar reference characters refer to similar parts throughout the drawings.

In the accompanying drawings which illustrate the construction of this invention 1 represents a suitable insulating base block for a break key on which is mounted a journal 2 for pivotally securing a key lever 3. This journal is preferably provided with the usual type of holding screws 4, so that the frictional resistance on the pins 5 disposed within them, that support the lever 3, can be varied to suit the conditions.

7 is a cap or head on which the operator can suitably play to actuate the key. Beneath the cap portion of the lever is a contact member 8 which is provided with a platinum pin 9 which actuates in mercury or other suitable substance 10 disposed within the cup 11 provided therefor, which is disposed on the base 1 and provided with a suitable terminal connection 12 arranged for the securing of the circuit wires thereto.

At the other end of the lever 3 is provided an insulating block 13 that is provided with a pair of contact blocks 8' which are pro-

vided with platinum points 9' and mercury 10' and a suitable cup therefor 11'. The mercury cups being suitably secured to the insulating base 1 and provided with terminals for the connection of the circuit wires, as is clearly shown in the drawings.

Mounted on the upper portion of the insulating block 13 is a strip of metal 14 electrically connected with one of the contact members. This strip of metal being arranged to come in contact with a Z-shaped conductor 15 fastened to the base, and slightly to one side of this portion of the key, and so that the piece 14 will come in contact therewith when the head 7 is depressed by the operator.

16 is a suitable binding post disposed on the Z shaped member 15 so that the latter can be electrically connected to the circuit wires.

Electrically connected to the other contact member which is disposed on the block 13 is a flexible connection 17 that is suitably connected with the line wires of the circuit.

Referring to the modification shown in the contact points, which are merely solid pieces of metal, and arranged for those conditions where the mercury contact is not desirable and might prove objectionable, or where it is desired to cheapen the instruments.

While platinum has been referred to as the metal particularly desirable for the purpose of making the contact, it is of course understood that there are metals of a similar nature that can be used for the same purpose, and also that various other contacts can be arranged for, as is well known to those familiar with the art.

Referring particularly to Fig. 4, 18 is a transformer, 19 a condenser, 20 represents a sparkgap, 21 a helix, 22 a suitable single-pole double-throw switch, that is suitably connected to an aerial 23, 24 is a ground wire that has a conductor connected to it that runs to the flexible contact 17, through the fuse 25. 26 denotes the tuning coil and 27 a detector, that has suitable telephone receivers 28 connected thereto, in the usual manner.

From the diagram shown, it is understood, that the connections are made in the usual manner and that it is not necessary to go into details and describe each particular part of the apparatus, as this invention does not cover them in any way, otherwise than described above, and in the appended claims, and also that this particular system is only shown by way of example, in order to explain more fully the operation of this device. By suitably modifying the connections to this break key it can be connected to practically any wireless system, and prove advantageous to use in them all. The connections arranged for the various parts of the

key are preferably made so that they will be inconspicuous or concealed, or in any way suitable for the conditions arising. The general connections, however, being made to the various parts of the key, as is noted in the diagrammatic drawing.

In operation the operator depresses the head 7 of the key and causes the current to flow through the terminal 2 of the lever 3 thence to the contact member 8 and thence to the circuit connected with the transformer, so on back to the source of current. This depression of course, energizes the transformer and sends the messages to the aerial and to the space beyond it. As this depression of the key is made, contact is broken between the points 9' and 10' in the members disposed at the other end of the key, these break the receiving circuit and prevent the operator from receiving the messages that he is sending out, which often is the cause of burnt up instruments, or injury to the former, at the same time any other messages being sent by another party are cut off from the operator. As the outer portion of the key arises, the strip of metal 14 comes in contact with the Z shaped member 15 and the current therefrom flows through the latter, through the circuit wire, attached thereto, which can be easily followed in the diagram, and which assists in the transmission of the message to the aerial.

When the operator permits the key head to rise under the action of the spring 3' which is disposed adjacent to the head 7, it brings the contact members 8' and 10' together and completes the circuit for receiving, and at the same time the circuit that receives the current from the main source of current at this station is opened and does not flow through the transformer thus enabling the operator to receive any messages being sent to him, and eliminating any possibility of his transmitting apparatus interfering therewith.

Obviously while there is shown but one modification of the construction of this invention in the drawings, it is not desired to limit this application for a patent in any way, otherwise than is necessitated by the prior art, as many modifications in the construction of this invention may be made without departing from the principles thereof.

Having thus described this invention it is claimed:

A key for wireless telegraphy comprising in combination a lever for opening and closing the transmitting and receiving circuit and a cap disposed on said lever for the convenient actuation of said lever and a contact member disposed at one end of said lever and arranged to make and break a contact under said cap, an insulating piece disposed at the other end of said lever, a plurality of

contact members disposed thereon and insulated from one another, a Z shaped member disposed above said last mentioned contact members and arranged to come in electrical
5 contact with one of them when the key lever is depressed, a base for supporting the various parts of said key and provided with binding posts thereon, electrically connected with the various contact points and the journal
10 nal that supports the lever, said connections being arranged to open and close the main energizing circuit when the key is depressed so that messages will be transmitted to the

aerial when the key is depressed, and at the same time the receiving apparatus will be
15 open circuited, and when the key assumes its normal position the connections will put the receiving apparatus in circuit with the aerial and open the transmitting circuit.

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

GRIER P. MOBLEY.

Witnesses:

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HARRY CLAWSON.