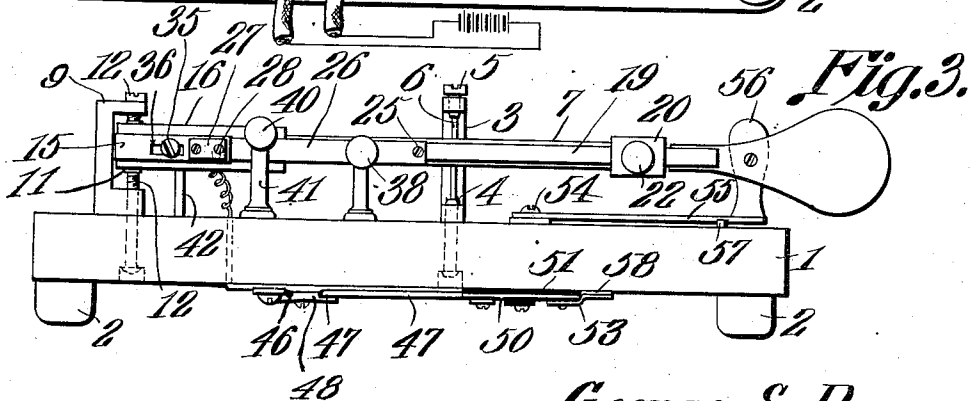
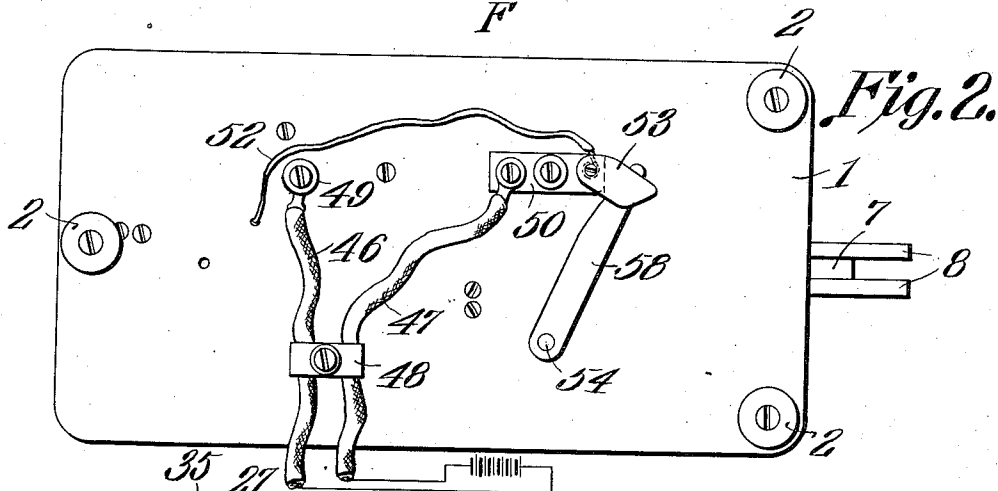


APPLICATION FILED JAN. 26, 1911.

Patented Dec. 26, 1911.



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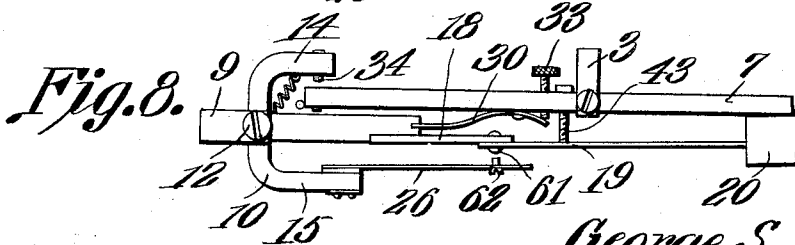
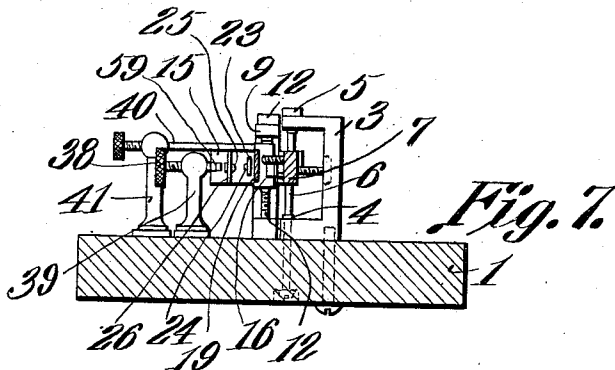
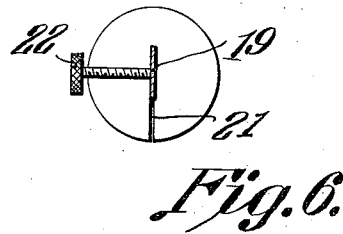
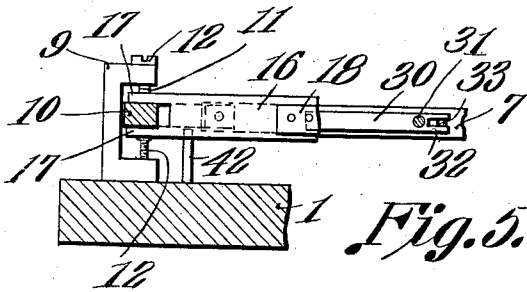
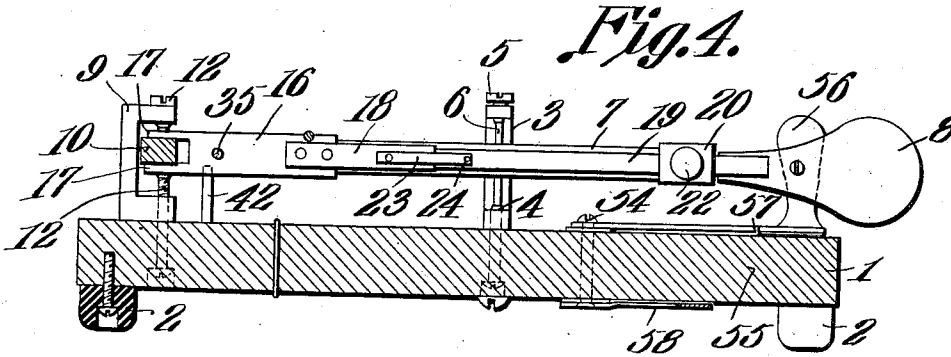
G. S. PERRY.
TELEGRAPH KEY.

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1,012,906.

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3 SHEETS—SHEET 2.



Witnesses

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1,012,906.

Patented Dec. 26, 1911.

3 SHEETS-SHEET 3.

Fig. 9.

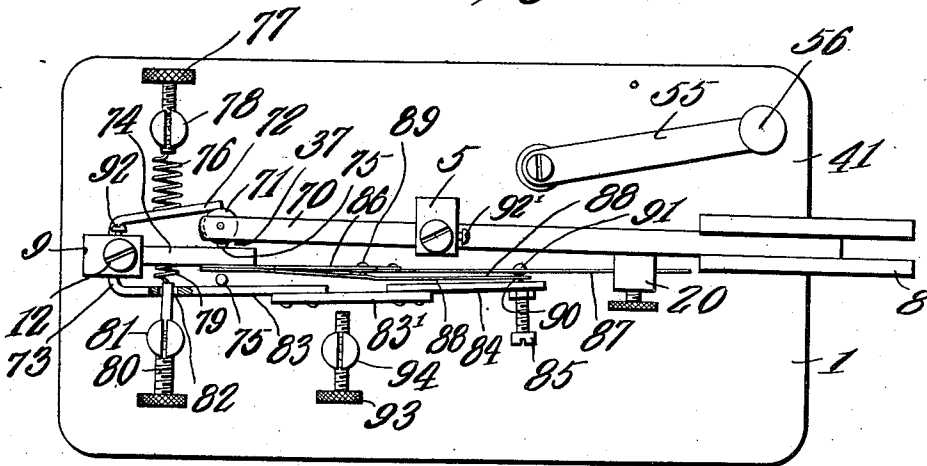
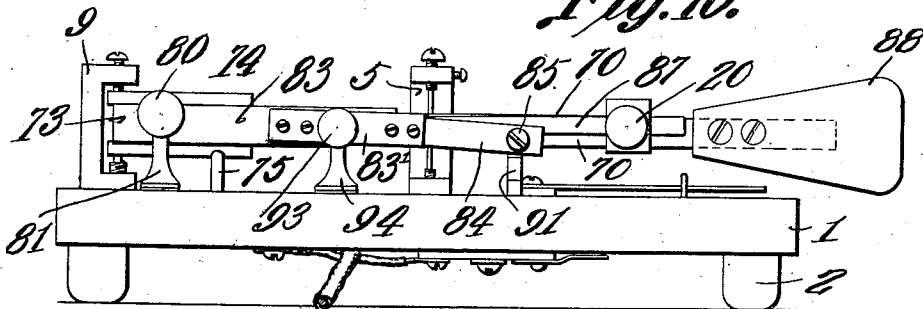


Fig. 10.



Witnesses

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UNITED STATES PATENT OFFICE.

GEORGE STAMPER PERRY, OF DUPONT, GEORGIA.

TELEGRAPH-KEY.

1,012,906.

Specification of Letters Patent.

Patented Dec. 26, 1911.

Application filed January 26, 1911. Serial No. 604,848.

To all whom it may concern:

Be it known that I, GEORGE S. PERRY, a citizen of the United States, residing at Dupont, in the county of Clinch and State of Georgia, have invented a new and useful Telegraph-Key, of which the following is a specification.

The device herein disclosed, is a telegraph key of the character shown and described in my former Patent, #935,164.

It is the object of this invention to provide a telegraph key, the construction of which is such that the sounding of a letter comprising a plurality of dots, may be effected by a single movement of the key lever.

Furthermore, the invention aims to improve the means whereby the circuit is intermittently broken; to provide novel means for maintaining the circuit normally open; and to provide novel mechanism which, in the operation of the device, operates to form the dashes and the dots which go to make up the Morse telegraphic alphabet.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

In the drawings,—Figure 1 is a top plan; Fig. 2 is a bottom plan; Fig. 3 is a side elevation; Fig. 4 is a vertical longitudinal section upon the line A—B of Fig. 1; Fig. 5 is a detail enlarged from Fig. 4, parts being broken away that sundry elements undisclosed in Fig. 4, may more clearly appear; Fig. 6 is a fragmental transverse section taken upon the line C—D of Fig. 1; Fig. 7 is a vertical transverse section upon the line E—F of Fig. 1; and Fig. 8 is a fragmental top plan showing a modification of the invention; Fig. 9 is a top plan showing a modified form of the invention; and Fig. 10 is a side elevation showing the structure depicted in Fig. 9.

The invention includes, as a primary and fundamental element, a metal base 1, provided with insulating studs 2, whereby the base 1 may be electrically separated from the support upon which it is mounted.

Disposed upon the base 1 adjacent the central portion thereof, is a U shaped standard 3. A screw 4 extended upwardly through the base 1 into engagement with the lower portion of the standard 3, serves as an auxiliary means for holding the standard 3 upon the base 1. Through the upper portion of the U shaped standard 3, a screw 5 is extended, these screws 4 and 5 cooperating to engage loosely between them, a pivot pin 6, extended through the key lever 7.

From the foregoing it will be seen that the construction of the device as thus far described, is such that the key lever 7 will have a tilting movement in a plane approximately parallel to the plane of the base 1. To one end of the key lever 7, finger pieces 8 are secured.

A U shaped standard 9 is mounted upon the base 1, adjacent the end thereof. Disposed between the arms of the standard 9, is a horizontally positioned, U-shaped head 10. A pivot pin 11 extends through the intermediate portion of the head 10 to form a pivotal mounting for the head. The ends of this pivot element 11 are engaged by screws 12, similar to the screws 4 and 5, one of the screws 12 being extended outwardly through the base 1 to serve as a means for holding the standard 9 in position, while the other of the said screws 12 is extended downwardly through the upper arm of the standard 9. It will of course be understood that the screws 4 and 5 may be adjusted to regulate the pivotal mounting of the key lever 7, the screws 12 being likewise adjustable to regulate the pivotal mounting of the U-shaped head 10.

The U-shaped head 10 consists of arms 14 and 15. It is between these arms 14 and 15 that the vibrator is located. This vibrator includes a bar 16, which, as most clearly seen in Figs. 4 and 5, is notched at one end to form arms 17, extending above and beneath the curved portion of the head 10. The pivot pin 11 extends through these arms 17, and thus the portion 16 of the vibrator is pivotally mounted. The vibrator further includes an extension 18, secured to the bar 16. This extension 18 is a relatively stiff spring, to the free end of which a tongue 19 is secured. A weight 20 is slidable upon this tongue 19, the weight 20, as clearly seen in Fig. 6, being slotted as at 21

to receive the tongue 19, the weight being held in place adjustably upon the tongue, by means of a set screw 22.

To one side of the member 18, an auxiliary tongue 23 is secured, this auxiliary tongue 23 being provided with a platinum contact 24, adapted to engage a platinum contact 25 secured to a spring arm 26, this spring arm being carried by the portion 15 of the head 10. Insulating plates 27 are shown in the drawing, one of these plates 27 being interposed between the spring arm 26 and the portion 15 of the head 10, the other of the insulating plates being located upon the outside of the portion 15 of the head 10, screws 28, extended through the portion 15 of the head, through the plates 27 and into the spring arm 26, constituting a means for securing the spring arms in place upon the head. The screws 28 are of course insulated from the portion 15 of the head, and by reason of this fact, together with the presence of one of the insulating plates 27 between the portion 15 of the head and the spring tongue 26, it will be seen that the spring arm 26 and the portion 23 of the vibrator are electrically separated, saying when the contacts 24 and 25 are brought together. The spring arm 26 may be considered as a part of the pivotally mounted head 10, and, as will be pointed out hereinafter, the vibrator, including the elements 16, 18, 23 and 24, and the pivotally mounted head including the elements 10, 26 and 25, form the terminals of an energized, normally open circuit.

By referring particularly to Fig. 1, it will be seen that a helical retractile spring 29 unites the arm 14 of the head 10 with the bar 16 of the vibrator. The effect of this spring is to maintain the contact elements 24 and 25 normally apart, and thus to hold the circuit open. This spring 29 will offer but little resistance to the movement of the bar 16 of the vibrator, by reason of the fact that one end of the spring 29 is secured to the bar 16 of the vibrator, relatively near to the pivotal mounting of the said bar. The spring 29, however, will exert a more forcible effect upon the arm 14 of the head 10 to tilt the head upon its pivotal mounting, and to hold the contact 25 at the end of the spring portion 26 of the head 10, spaced apart from the contact 24 which is upon the auxiliary spring tongue 23 of the vibrator.

In Fig. 1 it will be seen that one end of the key lever 7 is disposed between the bar 16 of the vibrator and the arm 14 of the pivoted head 10. The said end of the key lever 7 is normally held in close proximity to the bar 16 of the vibrator by means of a spring 30, secured between its ends by means of a screw 31 or the like to the key lever 7. One end of this spring 30 is forked, as de-

noted by the numeral 32 in Fig. 5, to receive one end of an adjusting screw 33, threaded into the key lever 7. Obviously, by rotating this screw 33, the tension of the spring 30 may be adjusted.

A screw 34 is threaded into the arm 14 of the head 10, as clearly seen in Fig. 1. This screw 34 engages the end of the lever 7 when the lever is tilted to move the head 10 upon its pivotal mounting. In one side face of the lever 7 there is a screw 37, and this screw may be moved to adjust the tilting of the key lever 7 when the same is operated to tilt the vibrator, the screw 37 bearing immediately upon the portion 16 of the vibrator.

Threaded into the portion 16 of the vibrator, is a screw 35, this screw being disposed in a slot 36 (see Fig. 3) in the arm 15 of the head 10. This screw 35 is headed to bear against the outer face of the arm 15 of the pivoted head 10, and by rotating this screw, the relative position between the portion 16 of the vibrator and the arm 15 of the head may be adjusted. A screw 38 is mounted in a post 39 secured in the base 1, the screw having a head 59 of insulating material, adapted to bear against the spring portion 26 of the pivoted head 10. By means of this screw 38, the movement of the member 26 may be limited and adjusted, but owing to the presence of the insulating portion 59 of the screw 38, there will be no electrical connection between the member 26 and the base 1 when the screw 38 is in contact with said member 26.

A screw 40 is mounted in a post 41 secured to the base 1, this screw 40 extending across the portion 26 of the pivoted head, to serve as a means for limiting the movement of the portion 16 of the vibrator. The movement of the vibrator in an opposite direction, is limited by a stop pin 42, fixed to and rising from the base 1. The movement of the resilient portion 19 of the vibrator is limited by a screw 43 which is threaded into the key lever 7. There is a post 44 in the base 1, and into this post 44 a screw 45 is threaded. This screw 45 constitutes an adjustable stop which, contacting with the key lever 7, serves to limit the movement of the key lever when the same is actuated to make a dash, as hereinafter explained.

Passing now to an explanation of the circuits, and noting in the first instance, Fig. 2, it will be seen that wires 46 and 47 are bound to the base 1 by means of a clip 48, these wires 46 and 47 being a part of the energized telegraphic circuit. The wire 46 is electrically connected with the base 1 by means of a binding screw 49. By means of the wire 46, the base 1 and all parts of the instrument will be charged, saving alone the spring arm 26 which, by means of one

of the insulating plates 27, is electrically separated from the arm 15 of the pivoted head 10. A plate 50 is secured to the bottom of the base 1, but is insulated therefrom, as shown at 51. It is to this plate 50 that the extremity of the wire 47 is secured. A wire 52 of comparatively small diameter is secured to the spring arm 26 adjacent the fixed end thereof. This wire 52 extends through an opening in the base 1, upon the lower face of the base, as a comparison of Figs. 1 and 2 will show, the wire 52 being, of course, insulated from the base 1. Secured to the plate 50 and spaced from the base 1 is an extension 53. Between this extension 53 and the plate 50, the end of the wire 52 may, if desired, be bound.

From the foregoing it will be seen that through the medium of the wire 46, the base 1 and the contact 24 upon the end of the auxiliary tongue 23 of the vibrator, will be charged. Recalling that the spring arm 26 is insulated from the portion 15 of the head 10, it will be seen that the other terminal of the circuit embraces the wire 47, the plate 50, the wire 52, the spring arm 26, and the contact 25. Noting the action of the springs 30 and 29 it will be seen that the contacts 24 and 25 will normally be held apart, and thus the circuit will remain open. Mechanism is provided for maintaining the circuit closed when the device is not in use. This mechanism embraces a shaft 54, rotatable in the base 1, and provided at its upper end with an arm 55, terminating in a finger 56, the arm 55, as it moves to and fro, being limited by engagement with stop pins 57 which upstand from the base 1. To the lower end of the shaft 54, a head 58 is secured. When the shaft 54 is rotated by means of the finger piece 56, the head 58 will engage between the extension 53 and the base 1, thus closing the circuit through the instrument.

The operation of the device is as follows. Let it be supposed that it is desired to transmit a letter involving several dots. To make these dots, the end of the key lever 7 to which the finger pieces 8 are attached, is moved in the direction of the arrow X of Fig. 1. The opposite extremity of the lever 7 will bear against the bar 16 of the vibrator, through the medium of the screw 37, tilting the vibrator. The spring tongue 19 of the vibrator, and the auxiliary tongue 23 will be put into motion, intermittently bringing the contacts 24 and 25 together, and forming a series of dots. The dots thus formed will be regulated by the position of the weight 20 upon the arm 19, the weight 20 being slidable, and being adjustably held in position by the set screw 22. The auxiliary tongue 23 which carries the contact 24, serves to make the instrument unusually sensitive in the formation of dots. As soon as the key lever 7 is released, the springs 29 and 30

will co-act to bring the key lever into its original position, and to separate the contacts 24 and 25 so that the circuit through the instrument will be open. Supposing, now, that it is desired to form a dash, the operation of the device in such instance, is as follows. When that end of the key lever 7 to which the finger pieces 8 are secured, is tilted in the direction of the arrow Y of Fig. 1, the opposite end of the key lever will, through the medium of the adjusting screw 34, tilt the head 10 upon its pivotal mounting 11. Recalling that the portion 16 of the vibrator is resting against the stop pin 42, it will be seen that there will be practically no movement of the vibrator. The tilting of the head 10 will cause the arm 26 to tilt, carrying with it the contact 25, and forcing the contact 25 into bearing upon the contact 24. The circuit will thus be closed, so long as the contacts 24 and 25 are together; and thus the dash will be formed. As soon, however, as the key lever 7 is released, the springs 29 and 30 will co-act to move the key lever into its original position, thus separating the contacts 24 and 25, terminating the dash, and again opening the circuit through the instrument. To recapitulate, briefly, when the end of the key lever 7 to which the finger pieces 8 are attached, is moved in the direction of the arrow X of Fig. 1 a series of dots will be formed without further movement of the key lever; while, upon the other hand, if the afore mentioned end of the key lever be moved in the direction of the arrow Y, a dash will be formed, terminating only when the key lever is released.

The manner in which the contacts 24 and 25 are introduced into the circuit, may be varied, and in this connection, attention is directed to Fig. 8 of the drawing. As there shown, the contact element 61 representing the contact 24 of Fig. 1, may be in the form of a platinum rivet, this rivet exercising at once, the function of a contact element, and serving as a means for securing the tongue 19 to the spring extension 18 of the vibrator. When this construction is carried out, the contact 62, representing the contact 25 of Fig. 1 will, of course, be properly positioned in the spring arm 26, to engage the contact 61.

The form of the invention shown in Figs. 9 and 10, differs but little from the form shown in the preceding figures. An extended description of that form of the invention appearing in Figs. 9 and 10, or a detailed explanation of the operation thereof is unnecessary. It may be stated, however, that in Figs. 9 and 10, the key lever 70 is equipped with a roller 71 adapted to engage one end 72 of the pivoted head 73, corresponding to the head 10 of Fig. 1. The tilting movement of the bar 74, corresponding to 130

the bar 16 of Fig. 1, is limited by means of spaced posts 75, mounted in the base 1. The head 73 is actuated to a tilting movement by means of a spring 76, bearing against the end 72 of the head, the spring being operatively connected with a screw 77, mounted in a post 78, inserted into the base 1. The bar 74 is thrust laterally by means of a spring 79, operatively connected with a screw 80, mounted in a post 81, carried by the base 1, the screw 80 extending through an opening 82 in one end 83 of the pivotal head 73. To the end 83 of the head 73, an insulating strip 83' is secured, the insulating element 83 carrying a relatively rigid metallic strip 84, provided with an adjusting screw 85. To the bar 74, a relatively stiff spring strip 86 is secured, the strip 86 carrying the spring tongue 87, corresponding to the tongue 19, the tongue 87 being equipped with the weight 20, as before. The spring 88, corresponding to the spring 23 of Fig. 1, is attached to the bar 74. In its intermediate portion, the spring 88 bears against a rivet 89, or like projection, carried by and uniting, the spring elements 86 and 87, the construction being such that when the spring 87 is vibrated, the spring 88 will be set in motion at its free end, the said free end of the spring 88 being spaced slightly from the spring tongue 87, in order to secure a proper vibration of the spring 88. The free end of the spring 88 and the adjusting screw 85 carry contacts 90, corresponding to the contacts 24 and 25 of Fig. 1. Noting that in Fig. 9, the key lever 70 is swung to one side, out of normal position, it will be seen that when the key lever is in normal position, the spring 88 will be received by a post 91, upstanding from the base 1. The screw 12 which pivotally supports the elements 74 and 73, may be held in place by a lock screw 92, a similar lock screw 92' being provided for holding the screw 5 which serves as a pivotal mounting for the key lever 70. Into the base 1 is inserted a post 94, carrying a screw 93, adapted to engage the insulating element 83, for purposes of adjustment.

Having thus described the invention, what is claimed is:—

1. In a device of the class described, an arcuate, pivoted head; a vibrator pivotally mounted between the ends of the head; a key lever movable in one direction to actu-

ate the vibrator to open and to close intermittently an energized circuit, one terminal of which is carried by one arm of the head; the lever being movable in an opposite direction to engage the other arm of the head and to actuate the head to close the circuit until the lever is moved.

2. In a device of the class described, a pivoted head having spaced arms; a pivoted vibrator operating between the arms; a key lever movable in one direction to actuate the vibrator to open and to close intermittently an energized circuit, one terminal of which is carried by one arm; the lever being movable in an opposite direction to engage the other arm and to actuate the head to close the circuit until the lever is released; and resilient means engaging the head and the vibrator to maintain the circuit normally open when the lever is released.

3. In a device of the class described, a pivoted head comprising spaced arms; a pivoted vibrator operating between the arms and including a spring tongue and an auxiliary spring tongue upon the first named tongue vibrating to open and to close intermittently an energized circuit, one terminal of which is carried upon one arm; a key lever movable in one direction to engage the vibrator to put the spring tongues thereof into vibration; the lever being movable in an opposite direction to engage the other arm and to actuate the head to close the circuit until the lever is released.

4. In a device of the class described, an arcuate, pivoted head; a vibrator pivotally mounted between the ends of the head; a contact element carried by one end of the head; a key lever disposed between the other end of the head and the vibrator, the key lever being movable in one direction to tilt the head and to bring the contact element and the vibrator together to close an energized circuit of which the contact element and the vibrator are terminals; the key lever being movable in an opposite direction to put the vibrator into oscillation to open and to close said circuit intermittently.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

GEORGE STAMPER PERRY.

Witnesses:

W. J. WHITAKER,
C. J. DOUGHERTY.