No. 760,132. PATENTED MAY 17, 1904.

J. W. LEECH.

CIRCUIT CLOSER.

APPLICATION FILED OCT. 10, 1903.

NO MODEL.

Fig. 1.

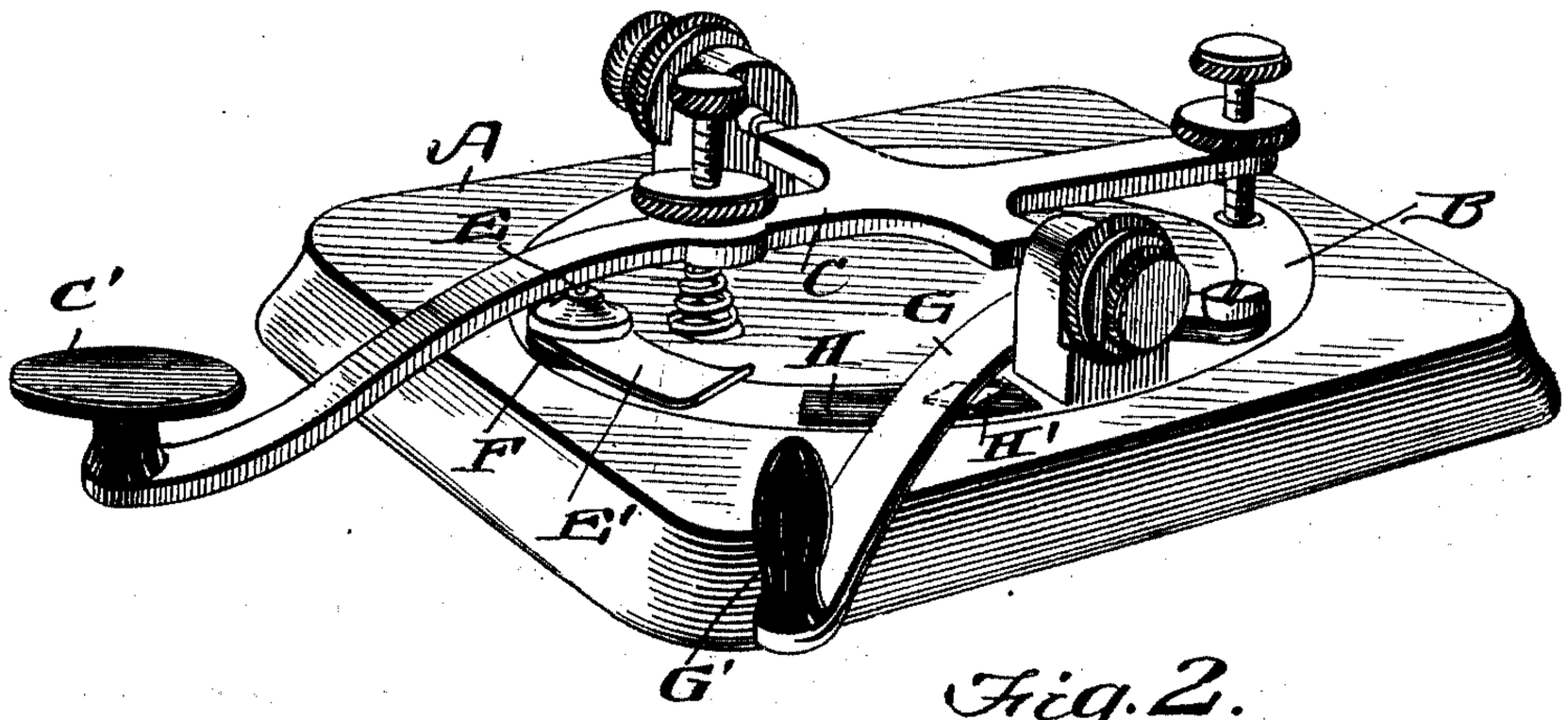


Fig. 2.

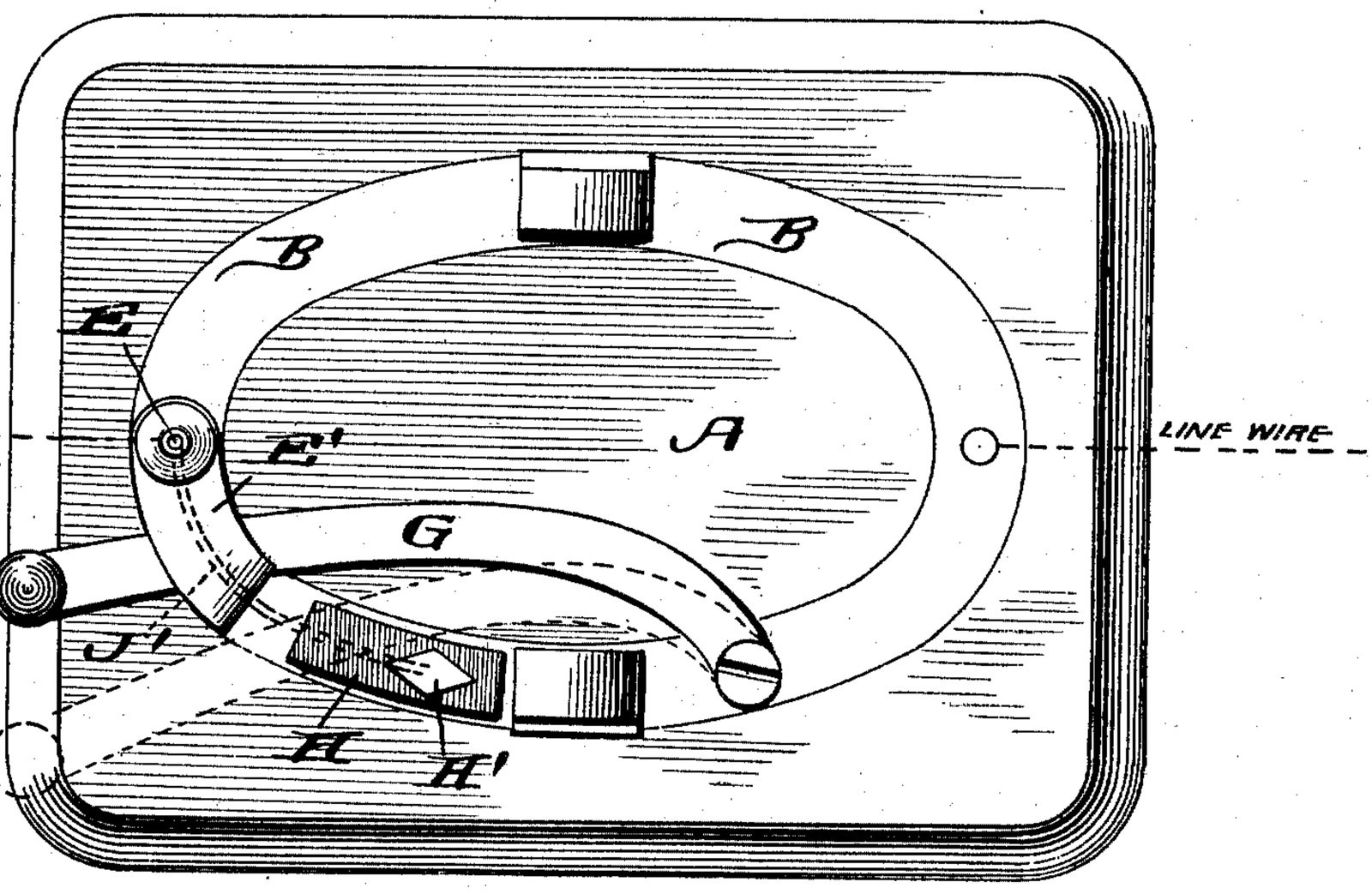
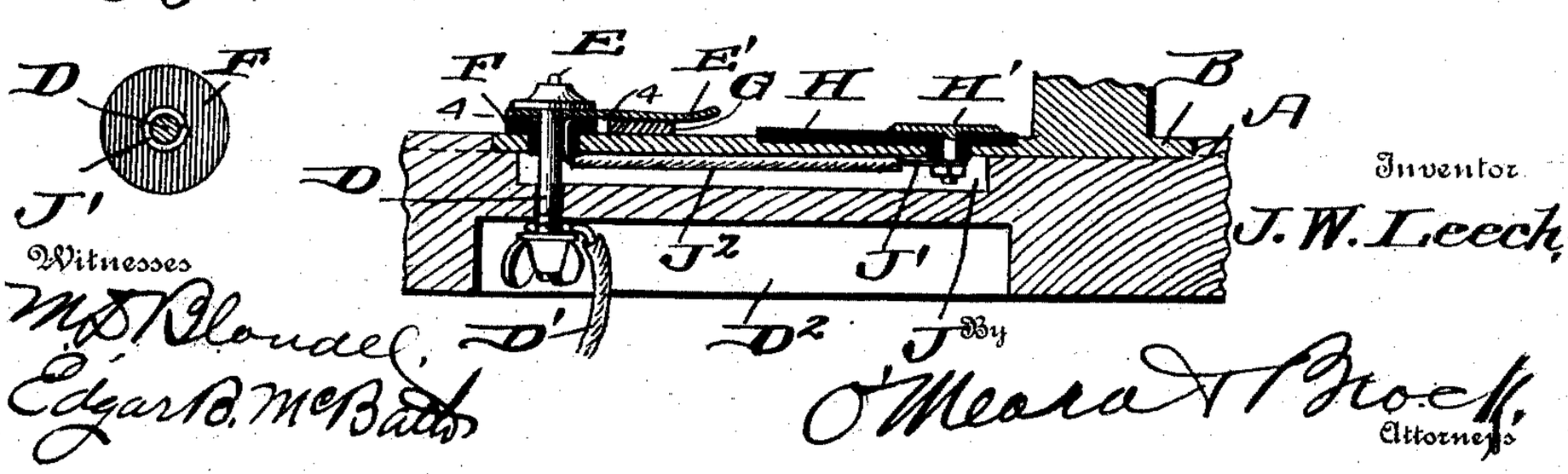


Fig. 3

Fig. 4.



Witnesses

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No. 760,132. Patented May 17, 1904.

UNITED STATES PATENT OFFICE.

JAMES WILSON LEECH, OF STAUNTON, VIRGINIA.

CIRCUIT-CLOSER.

SPECIFICATION forming part of Letters Patent No. 760,132, dated May 17, 1904.

Application filed October 10, 1903. Serial No. 176,513. (No model.)

To all whom it may concern:

Be it known that I, JAMES WILSON LEECH, a citizen of the United States, residing at Staunton, in the county of Augusta and State of Virginia, have invented a new and useful Circuit-Closer, of which the following is a specification.

My invention is an improvement in circuit-closers for telegraph-keys, and is designed to be used with the usual form of key now in common use.

The object of my invention is to decrease the chances of the key being left by the operator on an open circuit, thereby breaking the circuit between different points on the line. Open keys are the source of a great annoyance, especially in railroad offices, where the operator is often also depot agent and uses his table for general clerical work and frequently unknowingly knocks the key open, destroying the circuit, which remains open until the testing office can locate the break and have it closed.

My invention tends to obviate this difficulty and will be hereinafter described.

My invention consists in the novel features of construction and combination of parts hereinafter described, particularly pointed out in the claims, and shown in the accompanying drawings, in which—

Figure 1 is a perspective view of a telegraph-key and stand with my improvement attached thereto. Fig. 2 is a plan view of the stand and my attachment, the key being removed. Fig. 3 is an irregular section through the portion of the conductor-plate over which the switch swings. Fig. 4 is a section on the line 4 4 of Fig. 3.

In constructing my device I use a wooden stand A, in which is embedded the circuit-plate B, forming the key-base, and on which are mounted in the usual way the key-lever C and key C′, the lever and key being of ordinary construction. A metal tube D passes up through the stand and carries one of the line-wires D′, the under side of this stand being recessed at E^2, the lower end of the tube D extending into such recess. The upper end of the tube carries the contact-point E, from which extends a spring-plate E′, which is arranged parallel to the conductor-plate B and is turned slightly upward at its outer end.

The contact-point, spring-plate, and tube D are all insulated from the plate B, as shown at F. A switch G is pivoted to the conductor-plate B on the sides of the trunnions opposite the key C′ and is curved so as to swing transversely to the plate B and between the key-trunnions and at its free end carries the usual insulated handle G′. To close the circuit, this switch G is adapted to be moved along the conductor-plate B until it rests under the plate E′. As, however, the accidental swinging of the plate of the switch G from under the plate E′ would cause an open circuit, I arrange on the plate B a strip of insulating material H, which is preferably hard rubber and is partially embedded in the plate B and projects slightly above it. On the plate H is arranged a small diamond-shaped metal plate H′, having a depending stem extending downward through the base B and insulated from same by an extension of the insulating-plate H. A recess J is formed in the stand below the base-plate B and parallel with same, the recess extending from the tube B to and beyond the plate H′, and in this recess is arranged a wire J′, carried in a tube of insulating material J^2 and connected at one end to the depending stem of the plate H′ and at the other end carried up and bent around the tube D below and in contact with the spring-plate E′. When it is desired to open a circuit, the lever G is swung out from under the spring-plate E′ until it touches the front edge of the slightly-elevated insulating-plate H, which contact the operator will become aware of through the sense of touch and without looking at the stand will know that a slight further movement of the switch will carry it onto the plate H, when the circuit will be opened. Should, however, the key be struck accidentally, as by the elbow of the operator upon writing at his table or in piling books upon the table, and the switch be knocked from under the spring-plate E′, it will be thrown in all probability far enough to rest upon the metal plate H′, and the circuit will be closed again through the wire J′. It will be noted, therefore, that when in either its first position, under the

spring-plate, or in its third position, over the plate H′, there is a closed circuit, and it is only when the key is carefully placed exactly between these two positions that the circuit is open. It will be understood that this arrangement of parts for closing the circuit can be used with forms of keys other than the forms shown herein and that any suitable insulating material can be used in the construction of the apparatus that is most suitable or desirable, and, further, that such insulating material can be placed wherever required.

It is understood that the base-plate B may be placed on a table or secured to any suitable stand and need not necessarily be used with such a stand A as is shown.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A device of the kind described comprising a telegraph-key and stand, a base-plate on the stand, a switch pivoted to the base-plate, a strip of insulating material on the base-plate intermediate the pivotal point of the switch and the key, a contact-plate arranged on the insulating-strip adjacent the end opposite the key, and means for closing the circuit when the switch is thrown off the insulating-strip toward the key, or on the strip in contact with said contact-plate.

2. The combination with a telegraph-key and base-plate, of a switch pivoted on said base-plate, an elongated strip of insulating material arranged on the base-plate between the point of contact of the key and the pivotal point of the switch, a contact-plate arranged on the insulated strip adjacent one end of the strip and adapted to be engaged by the switch when moved away from the key, and an electrical conductor leading from the said contact-plate to a main wire, as and for the purpose set forth.

3. The combination with a telegraph-key and a base-plate having main line-wires connected thereto, of a switch pivotally connected to the base-plate and having a limited swinging movement, a strip of insulating material arranged on the base-plate and slightly elevated above said base-plate and adapted to be engaged by the switch and produce an open circuit, and means whereby a closed circuit is produced when the switch is swung to the extreme limit of its movement in either direction.

4. A device of the kind described comprising a stand, a base-plate and a telegraph-key thereon, said stand being recessed on its upper surface below the base-plate, insulating material carried by the base-plate, a contact-point supported by and extending downward through said insulating material and projecting into the recess, a wire extending from said contact-point to a point adjacent the key, said wire lying in the recess, a switch pivotally connected to the base-plate, and means whereby a closed circuit is formed when the switch rests upon said contact-point.

5. The combination with a telegraph-key, of a stand recessed on its upper side, a base-plate arranged on the stand and covering the recess, a contact-plug extending through and projecting above the stand and base-plate and extending through and transverse to the recess, a main line-wire connected to said plug, a similar wire connected to the base-plate, the plug being insulated from said plate, a spring-plate connected to the contact-plug and extending over the base-plate, a switch pivotally connected to the base-plate and adapted to be moved under and in contact with the spring-plate, a strip of insulating material arranged on the base-plate intermediate the pivotal point of the switch and the spring-plate, a contact-plate arranged on said strip of insulating material, said plate having a stem projecting downward into the recess in the stand, and a wire lying in said recess and connected at one end to the stem of the contact-plate and at the opposite end contacting with the spring-plate.

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Witnesses:
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