

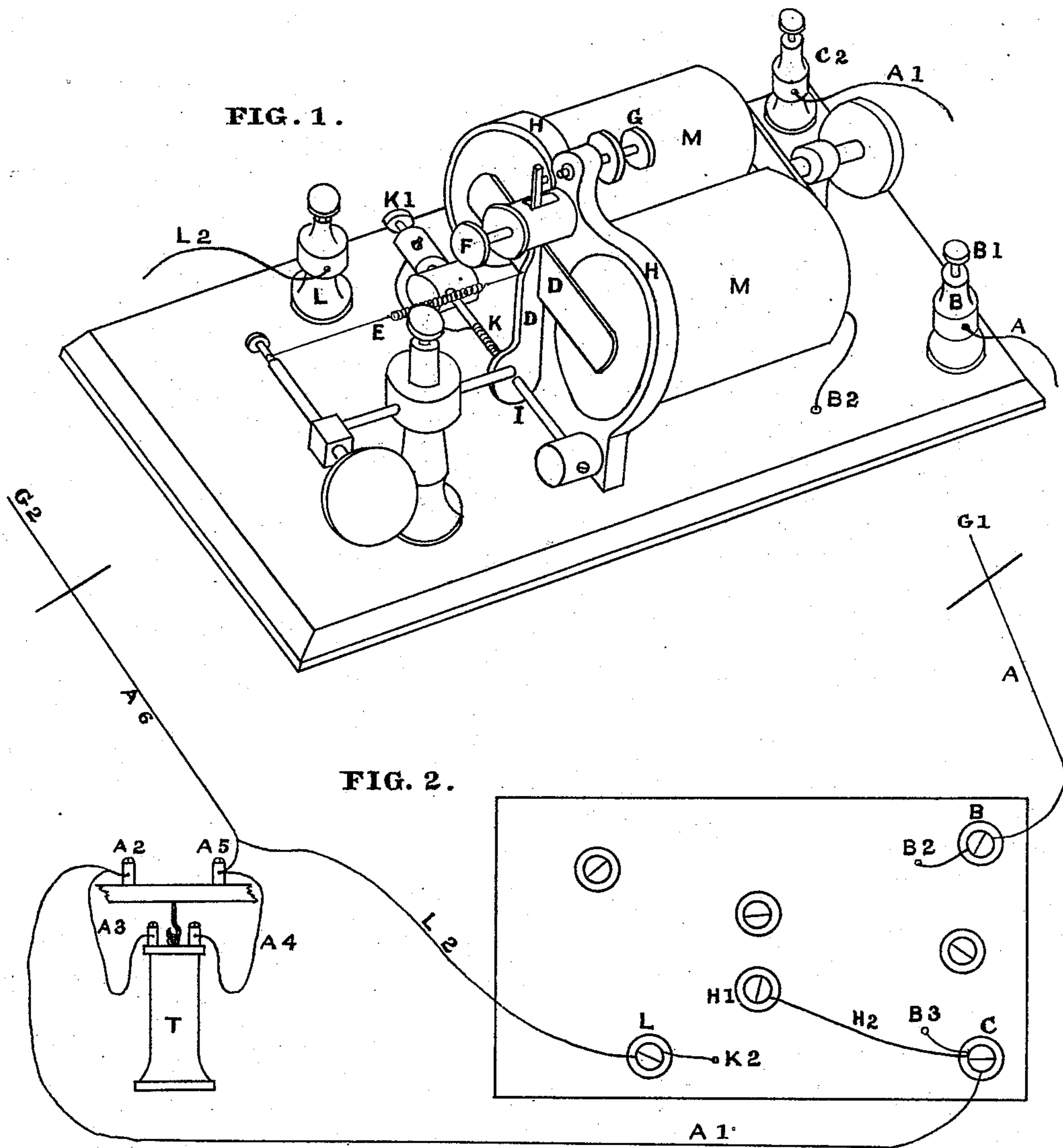
(No Model.)

C. C. DRAKE.

TELEPHONE AND TELEGRAPH PROTECTOR.

No. 280,916.

Patented July 10, 1883.



Witnesses :

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CHARLES C. DRAKE, OF TRENTON, NEW JERSEY.

TELEPHONE AND TELEGRAPH PROTECTOR.

SPECIFICATION forming part of Letters Patent No. 280,916, dated July 10, 1883.

Application filed March 27, 1883. (No model.)

To all whom it may concern:

Be it known that I, CHARLES C. DRAKE, a citizen of the United States, residing at Trenton, in the county of Mercer and State of New Jersey, have invented a new and useful Improvement in Telegraph and Telephone Protectors, of which the following is a specification.

My invention relates to improvements in telegraph and telephone protectors, by means of which any abnormal current of electricity passing over the wires connected with any telegraphic, telephonic, or signaling instrument is shunted off, thus preventing any danger of injury to such instrument. The mechanism I employ for this purpose is shown in the accompanying drawings, in which similar letters of reference indicate similar parts. This mechanism I place in the main-line circuit, as shown in the drawings.

Figure 1 shows a view in perspective of my invention, and Fig. 2 shows the bottom of Fig. 1 reversed to show the connections.

In Fig. 2, A shows the main-line wire, which passes through the post B, thence through the opening B² to the magnet or magnets M M. To form such magnet or magnets is wound a coarse copper wire with as few convolutions as possible, and then such copper wire passes through the opening B³ in the base to the screw 3 in the bottom of the post C², through which screw and post the current flows to the main-line wire A', thence to the binding-screw A², thence through the electric cord A³ to the binding-post of telephone T, thence through the magnet of the telephone, thence through the cord A⁴ to binding-post A⁵, and thence to main line A⁶ to G² ground. Should the wire A become charged with an abnormal amount of electrical current through contact with electric-light or other wires conveying a heavy current of electricity, or should the same accident happen to wire A⁶, such current, if not shunted, would destroy the telegraphic and telephonic or signaling instruments. To shunt such abnormal current, thereby protecting the telegraphic, telephonic, and signaling instruments, and which is the main object of my invention, I employ the devices shown in the drawings, and which I now particularly describe.

The armature D is insulated, and, standing

in normal condition, is in contact with the insulated screw F, and is held there by insulated spring E, which spring is of sufficient tension to overcome any normal current of the lines of telegraphic, telephonic, or signaling instruments, thereby not interfering with the ordinary working of said lines. Should any electric-light wire or other wire carrying heavy currents of electricity come in contact with the lines of telegraphic, telephonic, or signaling instruments, the magnets M M would become thereby charged with sufficient energy to overcome the tension of the spring E, and thereby attract armature D to contact-screw G. This screw G is in connection, through the brass band H, with screw H'. (Shown in Fig. 2.) This in turn is connected by wire H² with screw C. Upon the axis I of armature D, and connected with the armature, is wound a contact-wire, K, which is in connection with contact-screw K', and thence connects, through opening K², Fig. 2, with post L, which connects with wire L², joining the main-line wire A⁶. Thus upon the contact of armature D with contact-screw G a circuit shorter than the main circuit and with less resistance is established, and being thereby a better conductor it carries all the excess of current of electricity and part of the normal current, leaving the main line in nearly its normal state.

By means of my mechanism I am enabled to protect the telegraphic, telephonic, and signaling instruments automatically, without cutting or interrupting the main line, from the effects of abnormally-powerful currents of electricity coming from either direction, the excess of current being shunted around the telegraphic, telephonic, or signaling instrument to the terminal grounds G' and G². I also thereby protect either loops or terminals.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. Means for protecting telephonic, telegraphic, and signaling instruments from injury by abnormally-powerful currents of electricity, such means consisting of the armature D, the connecting-wire K, screw K', post L, wire L², and wire A⁶, in combination with the contact-screw G, band H, magnet M M, screw H', wire H², screw C and post C², and wire A', all substantially as shown and described.

2. A device for protecting telephonic, tele-

graphic, and signaling instruments from injury by abnormally-powerful currents of electricity, consisting of the armature D, provided with the spring E, the connecting-wire K, 5 screw K', post L, wire L², and connections, in combination with the contact-screw G, band H, screw H', wire H², screw C and post C²,

and wire A', all substantially as shown and described.

CHARLES C. DRAKE.

Witnesses:

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