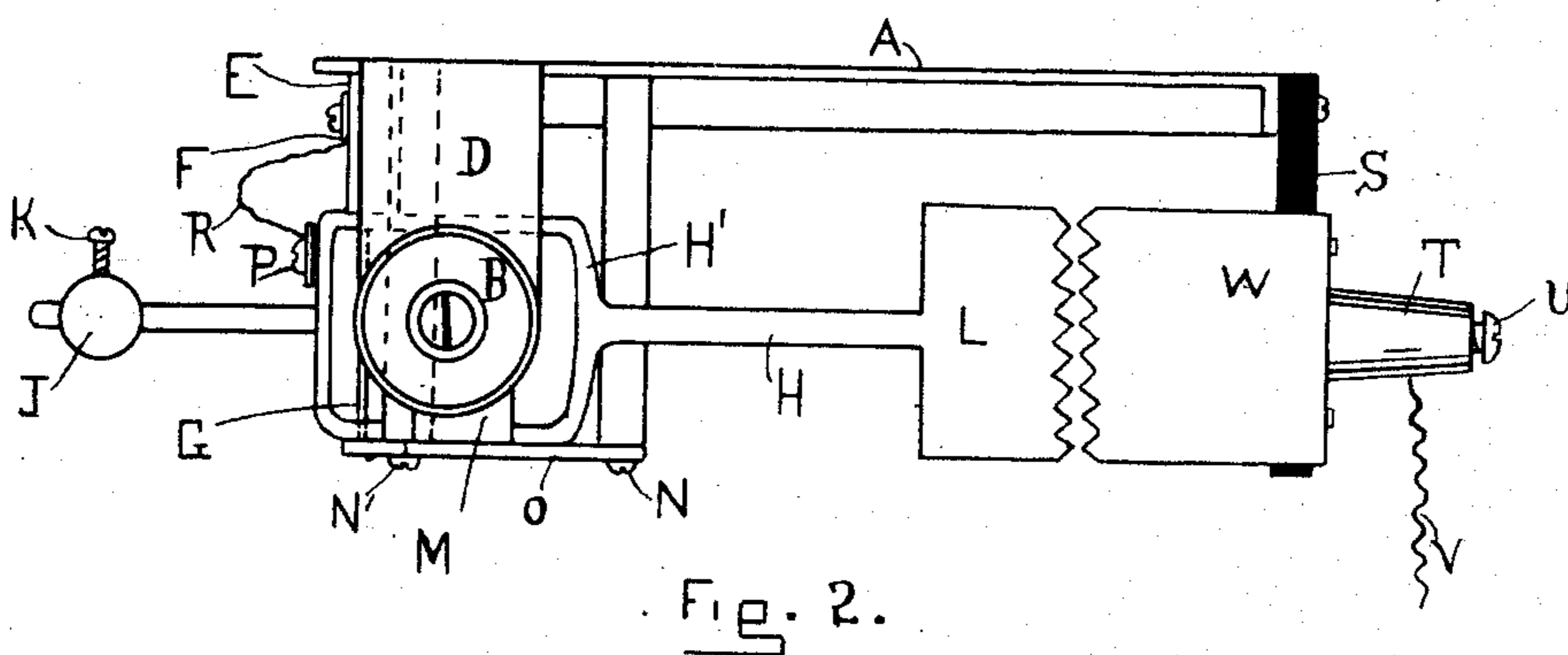
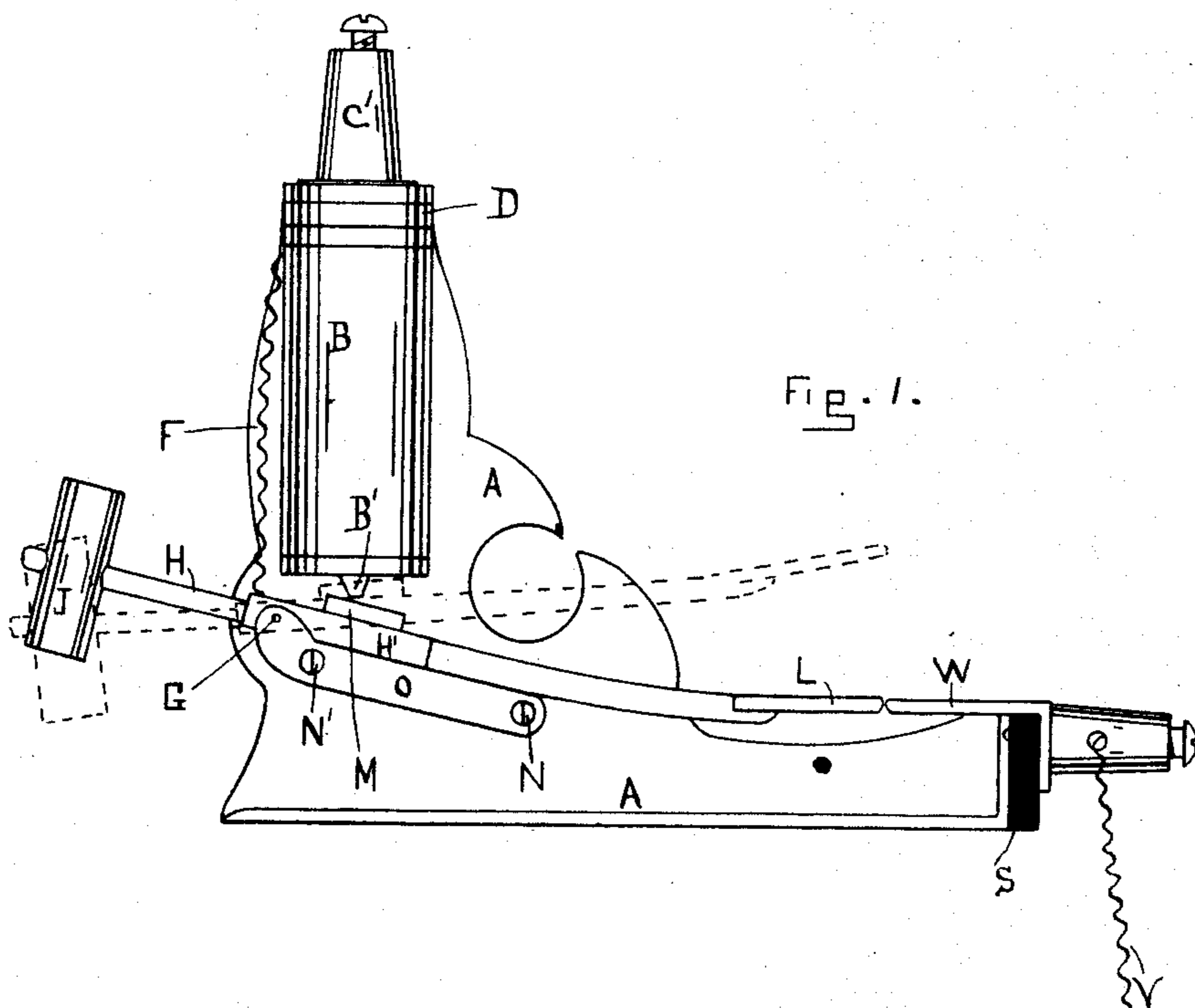


(No Model.)

C. A. PFLUGER.
LIGHTNING ARRESTER.

No. 420,096.

Patented Jan. 28, 1890.



WITNESSES:

Celeste P. Chapman.

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CHARLES A. PFLUGER, OF CHICAGO, ILLINOIS, ASSIGNOR TO DAVID P. PERRY, OF SAME PLACE.

LIGHTNING-ARRESTER.

SPECIFICATION forming part of Letters Patent No. 420,096, dated January 28, 1890.

Application filed May 27, 1889. Serial No. 312,228. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. PFLUGER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Lightning-Arresters, of which the following is a full, clear, and exact specification.

My invention relates to lightning-arresters, and has for its object to provide a simple and cheap lightning-arrester.

My invention is illustrated in the accompanying drawings, wherein—

Figure 1 is a side view of my device, and Fig. 2 is a plan view of the same.

Like parts are indicated by the same letter in both views.

A is a supporting-frame, to which the parts are secured. B is an electro-magnet thereon. C is a binding-post on such magnet, whereby it is connected to the line to be protected, or the earth, as preferred.

D is an arm from the body A, whereon the electro-magnet and binding-post are supported.

E is an arm from the body A, to which the conductor F from the coil of the electro-magnet B is secured. On a rod G projecting from this arm E is pivoted the lever H, having at one end the weight J, adjustably held in position by the set-screw K, and at the other end the serrated discharge-plate L. The two ends of this lever are connected by the yoke H', and the lever carries the armature M and rests, when it is in the position shown in full lines, upon the two bars N and N', which project from the body A, and which are connected at their outer extremities by the strip O, which also connects with the pivoted rod G and gives a firm support to the various parts.

B' is the projecting core of the electro-magnet.

P is a binding-screw on the yoke H', from which leads the flexible wire R to the binding-screw to which the conductor F is attached. Projecting from the other end of the body A is the insulation-piece S, on which is secured the binding-post T, having the set-screw U, from which binding-post leads the wire V to

ground or to the line to be protected, and secured to this same binding-post and supported on the insulation-strip S is the fixed serrated discharge-plate W. These parts might be altered somewhat in respect to each other in shape and manner in which they are supported without departing from the principal idea of my invention.

The use and operation of my invention are as follows: The device is fixed upon the wall and connection made with the wire to be protected from the binding-posts T or C, or the device may be connected with the wire by the binding-posts C or T. The parts will then hang in the position indicated in full lines in Fig. 1. The wire V or wire from post C should then lead to ground. If, now, the line to be protected received a charge of lightning, the lightning will flash through the electro-magnet, along wire F, along lever H, and across the space between the serrated discharge-plates L and W, and thence along the ground-wire V to the ground, or in an opposite direction, if so arranged. Should this operation be long continued, or should the dynamo-current follow this charge and seek the ground also, the electro-magnet will be energized and the armature H' will be drawn toward the core B' in aid of the action of the weight J until the discharge-plate L is drawn into the position indicated in dotted lines, in which position the serrated plates are widely separated, and hence no further current can flow. The stoppage of the current, however, de-energizes the electro-magnet, and the lever is permitted to drop back into the position shown in full lines, where the device is again ready for operation. The object of the adjustable weight, which slides along and can be fixed at any desired position on the lever H, is to vary the force by which such lever or armature is retracted from the magnet.

I claim as new and desire to secure by Letters Patent—

A lightning-arrester consisting of an electro-magnet with a fixed core, supported armature in front of such magnet provided at one end with a weight adjustable therealong and at the other with a discharge-plate, a fixed discharge-plate normally in close proximity

to the first-mentioned discharge-plate, a sup-
porting-frame on which the several parts are
secured, a stop to limit the downward motion
of such pivoted armature when released by
5 the magnet, and conducting-wires leading, re-
spectively, to the ground and the wire of the
line to be protected, one of such conductors
connected with the fixed discharge-plate, the
other with the movable discharge-plate

through the electro-magnet, substantially as is
shown.

Signed at Chicago this 17th day of May,
1889.

CHARLES A. PFLUGER.

In presence of—

CELESTE P. CHAPMAN,
FRANCIS M. IRELAND.