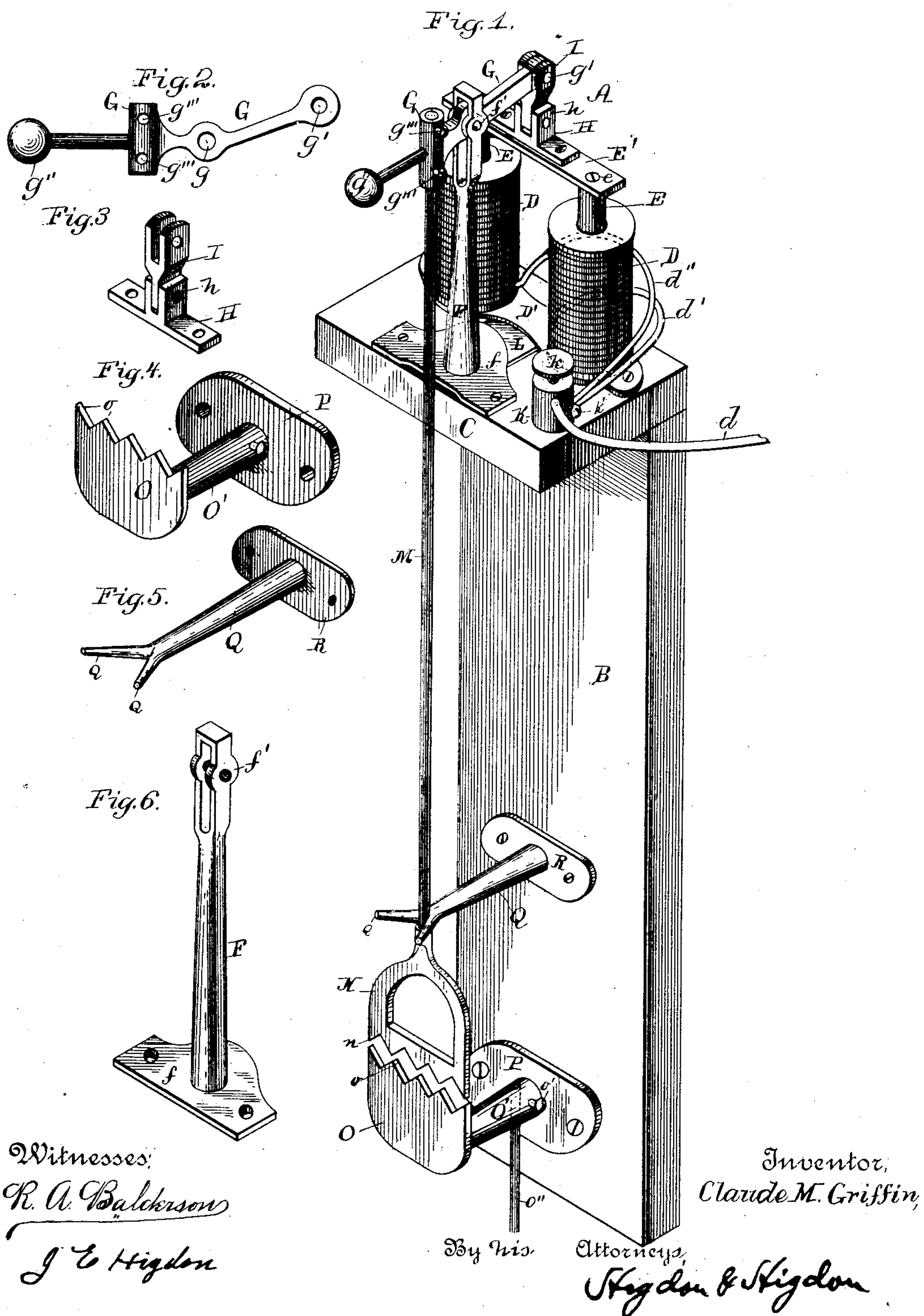


(No Model.)

C. M. GRIFFIN.
AUTOMATIC LIGHTNING ARRESTER.

No. 427,984.

Patented May 13, 1890.



UNITED STATES PATENT OFFICE.

CLAUDE M. GRIFFIN, OF KANSAS CITY, KANSAS.

AUTOMATIC LIGHTNING-ARRESTER.

SPECIFICATION forming part of Letters Patent No. 427,984, dated May 13, 1890.

Application filed January 18, 1890. Serial No. 337,345. (No model.)

To all whom it may concern:

Be it known that I, CLAUDE M. GRIFFIN, of Kansas City, Wyandotte county, Kansas, have invented certain new and useful Improvements in Automatic Lightning-Arresters, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to improvements in automatic lightning-arresters; and it consists in the novel construction and arrangement of the different parts, hereinafter fully set forth and described.

In the drawings, which illustrate the manner of carrying out my invention, Figure 1 is a perspective view of my improved automatic lightning-arrester, showing the position of the different parts. Fig. 2 is a detail view of the movable lever. Fig. 3 is a detail in perspective of the bearing and connecting-link which is secured on the yoke E', said bearing and connecting-link being composed of insulating material. Fig. 4 is a detail in perspective of the casting O, showing the perforations, in which is secured the earth-wire o''. Fig. 5 is a detail in perspective of the casting Q, provided with arms which receive the conducting-rod M; and Fig. 6 is a detail in perspective of the upright column or standard F, which conducts the current from the solenoid-magnets to the conducting-rod M.

Referring to the drawings by letter, A represents my invention; B, a suitable bed which is provided with a platform C, on which are secured the solenoid-magnets, binding-post, upright columns, &c.

D are the solenoid-magnets, heretofore referred to, in which operate the movable cores E.

E' is a yoke connecting the movable cores E, and is secured to them by suitable screws e. On said yoke E is properly secured a bearing H, which is provided with jaws h. Between said jaws h is pivotally secured a clip I, said clip I being pivotally secured to the movable lever G by a suitable pin g. The bearing H and clip I are composed of insulating material for the purpose of keeping the current from passing from the shell or frame of magnet to the lever G through the yoke E'.

F is the upright column having a base f,

which is secured by suitable screws to the platform C, said column or standard F being provided at its upper end with a loop, through which passes the movable lever G, which is intermediately pivoted by a fulcrum-pin f'. Said lever G has a casting G', in which the connecting-rod is secured by means of suitable set-screws g''. The poise-weight g'' is for the purpose of bringing the connecting-rod M back in position after it has been thrown out by the force of the current, thus making the movement automatic.

K is a binding-post, in which the line-wire d is secured by means of a suitable thumb-screw k, and k' is a set-screw which secures the smaller wires d' and d'' in said binding-post, as illustrated in Fig. 1. Said wires d' and d'' are coiled one around each of solenoid-magnets in opposite directions and in such a manner as to project from said solenoid-magnets at their base, as illustrated in Fig. 1. The inner ends of these coils are connected to shell or frame of magnets.

L is a copper plate which rests on platform C. On said copper plate rests the base D', on which is secured the solenoid-magnets D. On plate L the upright column F is also secured, thus making the connection from the solenoid-magnets D to the lever G and conducting-rod M.

N is a casting of suitable material, secured on the lower end of connecting-rod M, said casting N being provided with notches n, which, when in the normal position, is suspended directly above the stationary casting O. Said stationary casting O being also provided with notches o, is secured in such a position as to leave a small space between the casting N and O, across which the current leaps when it is of unusual electro-motive force.

P is a suitable flange which forms part of casting O, and is for the purpose of securing it to the bed B.

Q is a casting provided with prongs q, which receive the conducting-rod M and hold it in position.

Lightning, static, or other current of unusual high electro-motive force establishes a path across castings N and O. This path is followed by the electric-light current, which

energizes the solenoid - magnets, causing the movable iron cores E to enter magnets D, thus operating the lever G, to which the cores are suspended, thereby increasing the space
5 between the castings N and O until the resistance is sufficient to separate the electric-light current from the earth connection at said points N and O. When the current is thus broken, the solenoid-magnets lose power,
10 and lever G with its conducting-rod M and casting N descend at once by gravity to their normal position. These automatic lightning-arresters are suitable for direct alternating or pulsating currents.

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

20 1. A lightning-arrester having the solenoids D, connected to line and provided with vertically-movable cores E, which are connected by a suitable yoke E', the bearing H, resting on said yoke and provided with a clip I, pivotally secured to the lever G, mounted on the

standard F, said bearing H and clip I being composed of insulating material, the rod M, 25 carrying the plate N and attached to lever G, and the plate O, connected to ground, substantially as shown and described.

2. In a lightning-arrester, the combination, with solenoids D, connected to line, of the 30 cores E, the yoke E', connecting the cores, the plates D' and L, the bearing H, and clip I, of insulating material, the standard F, having the base f, the weighted lever G, pivoted in the end of standard F, the rod M, connected 35 to lever G, the conducting-plate N, the guide Q, and plate O, connected with the ground, all adapted to operate substantially as shown and described.

In testimony whereof I affix my signature 40 in presence of two witnesses.

CLAUDE M. GRIFFIN.

Witnesses:

J. E. HIGDON,

R. A. BALDERSON.