

(No Model.)

H. A. LEWIS.  
FUSE HOLDER AND ELECTRIC CUT-OUT.

No. 587,217.

Patented July 27, 1897

FIG. 1.

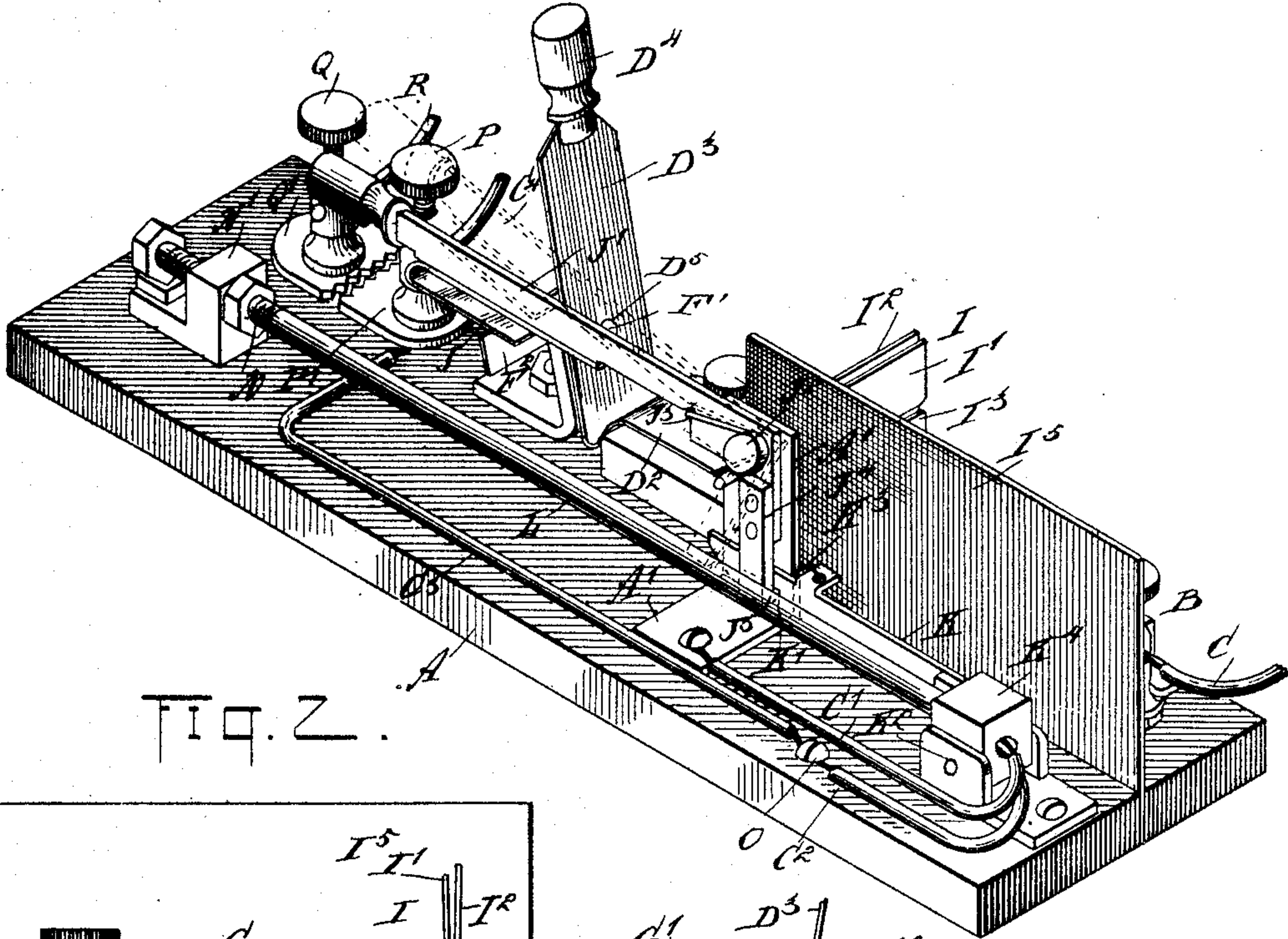


FIG. 2.

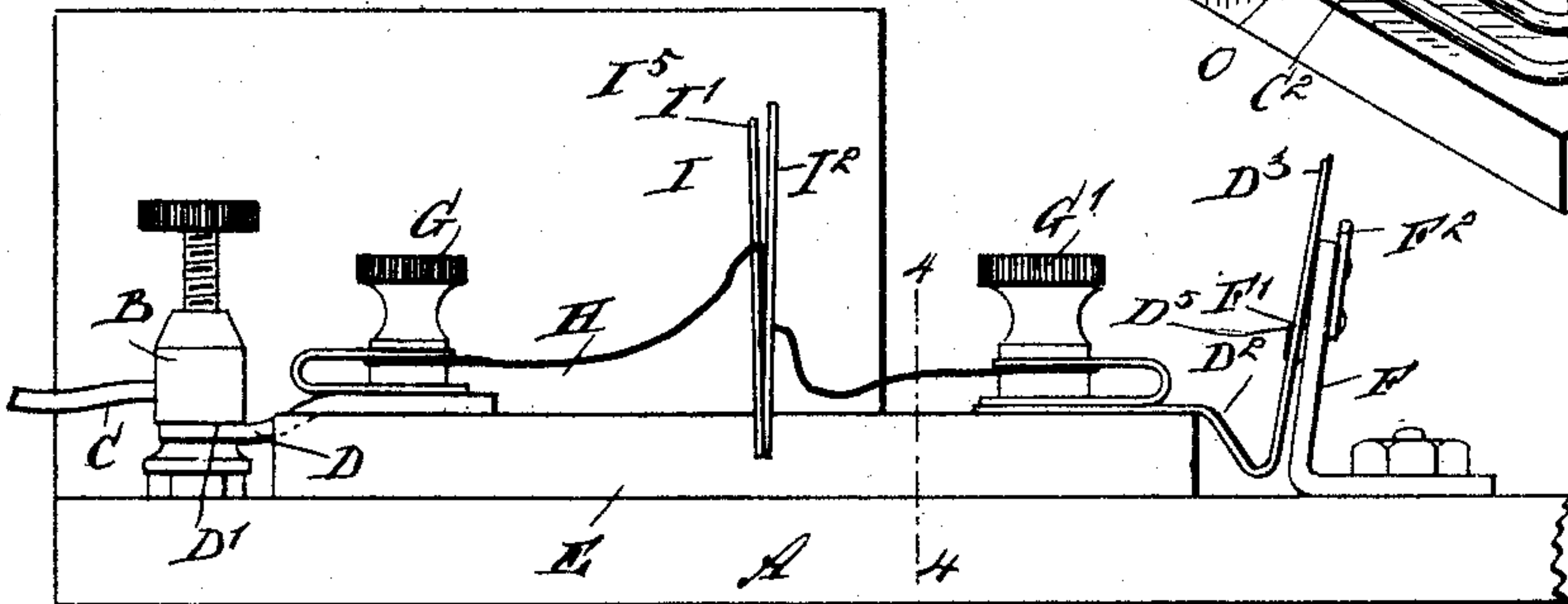


FIG. 3.

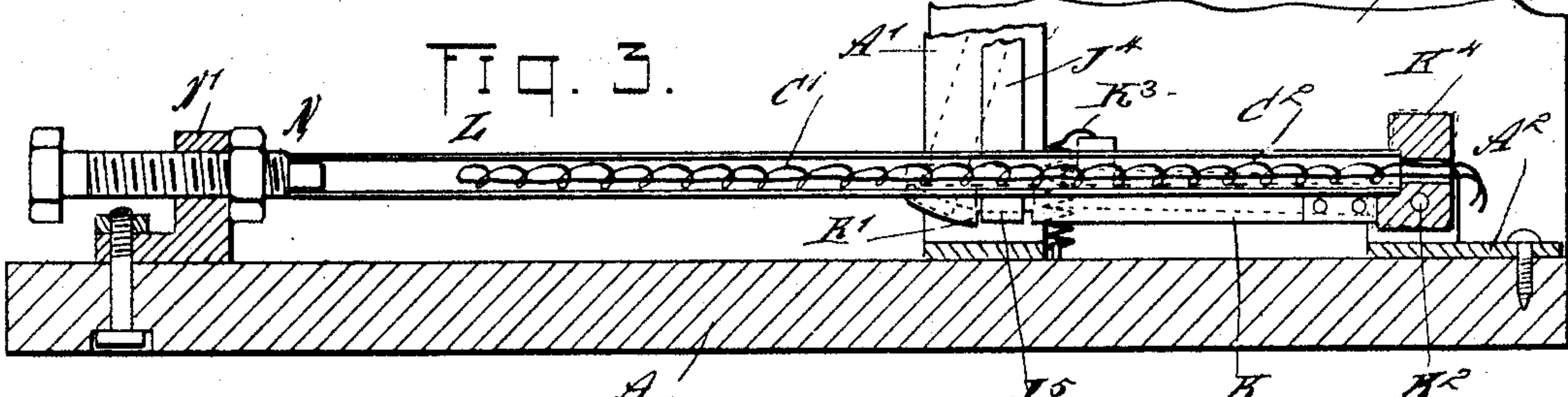
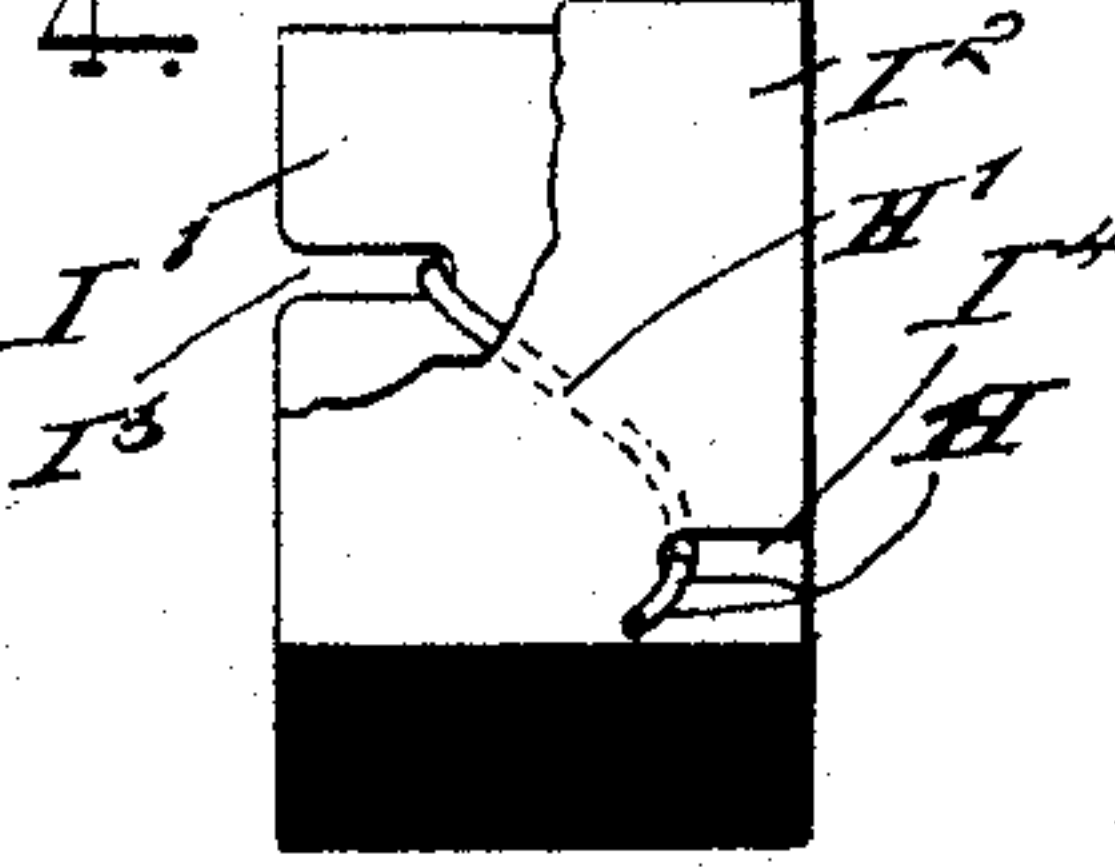


FIG. 4.

WITNESSES:

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ATTORNEYS.



# UNITED STATES PATENT OFFICE.

HARRY A. LEWIS, OF NORRISTOWN, PENNSYLVANIA, ASSIGNOR OF THREE-FIFTHS TO JOHN T. DYER, OF SAME PLACE.

## FUSE-HOLDER AND ELECTRIC CUT-OUT.

SPECIFICATION forming part of Letters Patent No. 587,217, dated July 27, 1897.

Application filed January 11, 1897. Serial No. 618,759. (No model.)

*To all whom it may concern:*

Be it known that I, HARRY A. LEWIS, of Norristown, in the county of Montgomery and State of Pennsylvania, have invented a new and Improved Fuse-Holder and Electric Cut-Out, of which the following is a full, clear, and exact description.

The invention relates to fuse-holders and lightning-arresters, such as shown and described in Letters Patent of the United States No. 554,130, granted to me on February 4, 1896.

The object of the present invention is to provide a new and improved fuse-holder and electric cut-out arranged in the line-wire and adapted to relieve the building or other place into which leads the said wire from the danger of a strong or excessively-charged current by breaking the latter and diverting the electric fluid from the building.

The invention consists of certain parts and details and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a perspective view of the improvement. Fig. 2 is a side elevation of a portion of the same. Fig. 3 is a longitudinal section with parts broken away; and Fig. 4 is a transverse section of the fuse-block, showing the bridge, the section being on the line 4 4 of Fig. 2.

The improved device is mounted on a suitably-constructed base A, carrying at one end a binding-post B, in which terminates one end of the line-wire C. The binding-post B is adapted to be engaged by the forked end D' of the metallic plate D, secured to the fuse-block E, made of hard rubber or other suitable insulating material and secured to the base A. The other end of the fuse-block E is provided with a metallic plate D<sup>2</sup>, terminating in an upwardly-extending spring-arm D<sup>3</sup>, having a handle D<sup>4</sup>, and formed with an opening D<sup>5</sup>, adapted to engage a pin F', secured on a block F, attached to the base A.

The plates D and D<sup>2</sup> are connected with binding-posts G and G', respectively, con-

nected with each other by a fusible wire H, carried at its middle by a bridge I, composed of two plates I' and I<sup>2</sup>, secured at their lower ends on the fuse-block E, made of an infusible and non-conducting material—such, for instance, as mica. The plate I' is formed near its front edge with a slot I<sup>3</sup>, and the plate I<sup>2</sup> is provided at its rear edge with a slot I<sup>4</sup>, the slots I<sup>3</sup> and I<sup>4</sup> being located at different heights from the fuse-block E, as plainly shown in Fig. 4. The fusible wire H from the binding-post G is passed through the slot I<sup>3</sup> and then in a downward and transverse direction between the plates I' and I<sup>2</sup> to and through the other slot I<sup>4</sup>, to then extend to the other binding-post G'.

The bracket F is provided with a transversely-extending arm F<sup>2</sup>, normally engaged by the free end of a spring J, secured to the metallic lever J', fulcrumed at J<sup>2</sup> on a bracket A', attached to the base A. The lever J' is pressed up by a spring J<sup>3</sup> and is formed with a downwardly-extending arm J<sup>4</sup>, carrying at its lower end a transversely-extending foot-piece J<sup>5</sup>, adapted to engage a shoulder K', formed on the forward end of a lever K, fulcrumed at K<sup>2</sup> on a bracket A<sup>2</sup>, attached to the base A. A spring K<sup>3</sup> presses on the lever K to hold the same normally downward to engage the shoulder K' with the foot-piece J<sup>5</sup>. (See Fig. 3.) Now when the lever K is caused to swing upward the shoulder K' moves out of engagement with the foot-piece J<sup>5</sup> to free the arm J<sup>4</sup> of the lever J' and to cause the spring J<sup>3</sup> to swing the said lever J' upward into the position shown in dotted lines in Fig. 1, so as to disengage the spring J from the arm F<sup>2</sup>. The fulcrum end of the lever K is provided with an upwardly-extending block K<sup>4</sup>, engaged by one end of a metallic tube L, forming part of an electric thermostat, the said tube being fixed at its outer end on a screw N, held adjustable on a suitable bracket N', attached to the base A.

A wire C' leads from the bracket A' into the tube L to form a coil therein, the return-wire C<sup>2</sup> connecting with a binding-post O, held on the base A and connected by an insulated wire C<sup>3</sup> with a binding-post P, connected with the line-wire C<sup>4</sup>, leading to the house or other building. The binding-post



P is provided with a lightning-plate P', opposite a lightning-plate Q', held on a binding-post Q, carrying a wire R, making a ground connection.

5 The operation is as follows: When the several parts are in the position illustrated in the drawings, the ordinary current can pass from the line-wire C through the binding-post B and plate D to the binding-post G and  
10 through the fusible wire II to the binding-post G', from which the current passes through the spring-arm D<sup>3</sup> to the bracket F', the arm F<sup>2</sup> and the spring J to the lever J', and from the latter to the binding-post A',  
15 to the wires C' C<sup>2</sup>, the binding-post O, the wire C<sup>3</sup>, the binding-post B to the line-wire C<sup>4</sup>, leading to the apparatus in the building. Now in case a strong or excessively-charged current passes through the wire C to the  
20 fusible wire II the latter is fused or blown out, and consequently the current cannot pass to the apparatus. When this takes place, the plates I' I<sup>2</sup> will be thrust together by the shock, so that the part of the wire between the plates will not be fused, and arcing  
25 thereby effectually prevented. Should the current be a sneaking one, it will pass along the fuse block E, spring-arm D<sup>3</sup>, spring J, lever J', and bracket A' to the coil contained in the  
30 tube L, so that the wire and the tube become heated, and the tube consequently expands and presses on the block K<sup>4</sup>, so as to impart an upward swinging motion to the lever K. When this takes place, the lever J' is re-  
35 leased, as above described, and swung upward by the action of the spring J<sup>3</sup> to move the spring J out of engagement with the arm F<sup>2</sup>, so as to break the circuit. Thus a highly-charged or a sneaking current is prevented  
40 from passing to the wire C<sup>4</sup>, leading to the apparatus in the building, and consequently all danger incident to such highly-charged current is avoided. The rear ends of the bridge-plates I' I<sup>2</sup> abut against a longitudi-  
45 nally-extending plate I<sup>3</sup>, likewise made of an infusible and non-conducting material, the said plate preventing the current from passing from the fusible wire II to the wires C' C<sup>2</sup> in case a highly-charged current passes to  
50 the fusible wire. By having the plates I' and I<sup>2</sup> arranged as described it is evident that when the fuse is blown out the two plates come in firm contact with each other and prevent arcing, so that the current does not  
55 pass to the binding-post G' and to the rest of the parts connecting with the wire C<sup>4</sup>.

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

60 1. A device of the class described, provided with a bridge formed of infusible and non-conducting plates arranged in close proximity

to each other, and formed in their opposite edges with spaces or non-registering slots for the entrance and exit of the fusible wire, the  
65 latter extending between the plates and in contact with the sides thereof, whereby when the wire is fused by an excessive current, the portion of the wire between the plates will not be fused, substantially as and for the pur-  
70 pose set forth.

2. A device of the class described, provided with a circuit-breaker interposed in the line-wire, and a thermostat comprising a tube fixed at one end, and a line-wire passing  
75 through the tube to heat the same, and intermediate mechanism for connecting the said tube with the said circuit-breaker, substantially as described.

3. A device of the class described, provided  
80 with a circuit-breaker having a spring-pressed lever adapted to make contact with an arm connected with the line-wire, a lever having a shoulder adapted to lock the said first-named lever in a contact position, a ther-  
85 mostat having a tube fixed at one end and pressing at its other end on the said second lever, and a coil of wire forming part of the line and extending into the said tube, substantially as described.  
90

4. In a device of the class described, the combination with a pivoted and spring-pressed lever adapted to make contact with an arm connected with the line-wire, said  
95 lever being provided with a depending arm having a foot at its end, of a second pivoted and spring-pressed lever provided with a shoulder engaging the foot of the first lever and with an upwardly-extending projection at its pivot end, a tube having one end abut-  
100 ting against the projection of the said second lever, and a coil forming a part of the line and extending into the tube, substantially as herein shown and described.

5. A device of the class described, com-  
105 prising a bracket having a laterally-projecting arm and adapted to be connected with the line-wire, a pivoted and spring-pressed lever provided with a spring at its free end adapted to engage the said arm, and with a depending  
110 arm at its pivoted end, said arm terminating in a foot, a second pivoted and spring-pressed lever provided with a shoulder at its free end engaging the foot of the said first lever and with an upwardly-extending projection at its  
115 pivoted end, a tube having one end secured in a support and its other end engaging the projection of the second lever, and a coil forming a part of the line and extending into the tube, substantially as described.

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Witnesses:

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F. RYNICK.