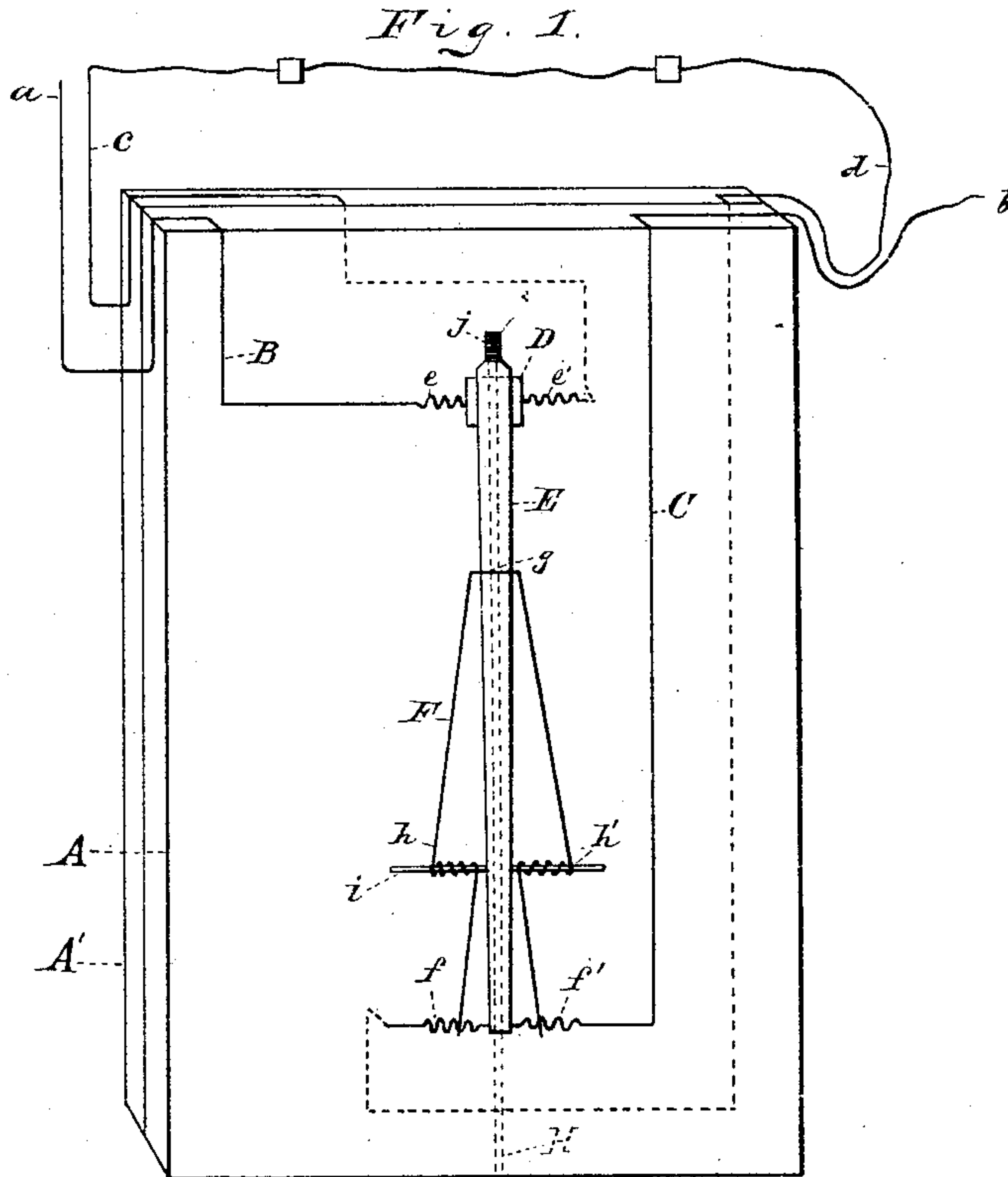


(No Model.)

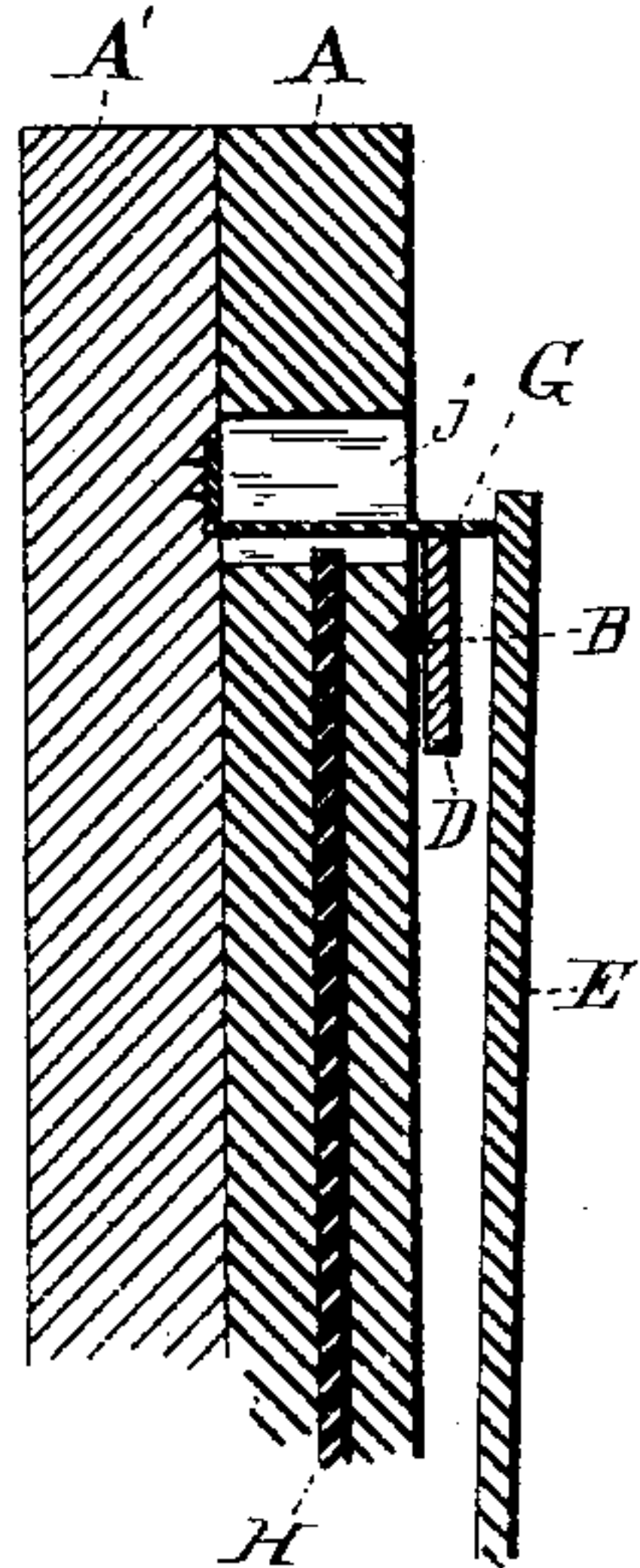
E. M. AVERY.  
ELECTRIC CUT-OUT.

No. 276,328.

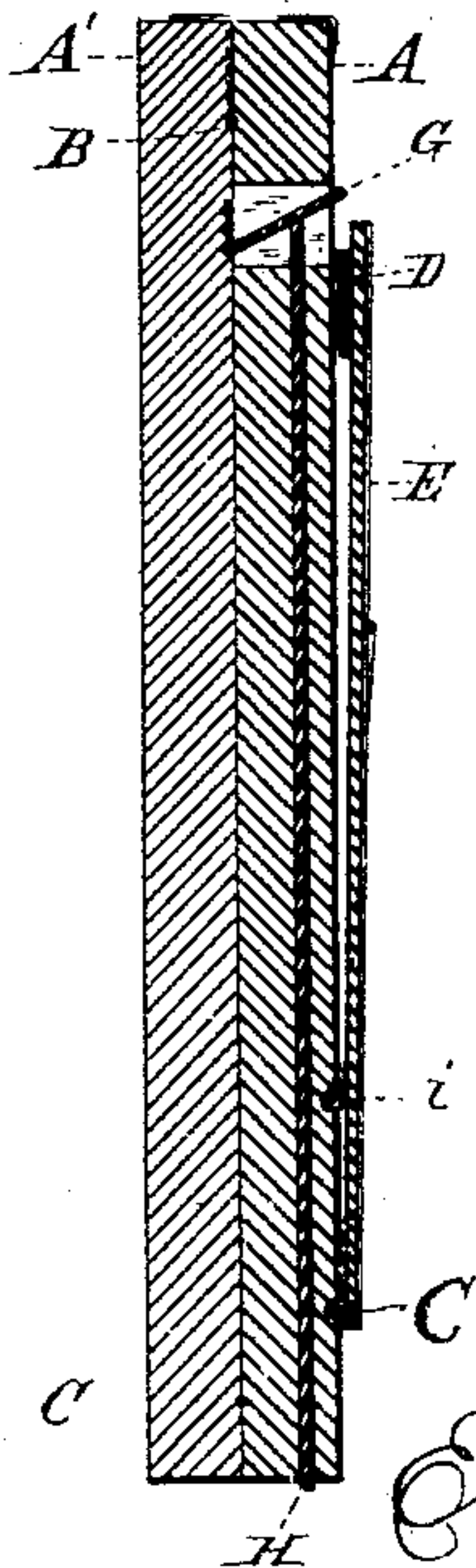
Patented Apr. 24, 1883.



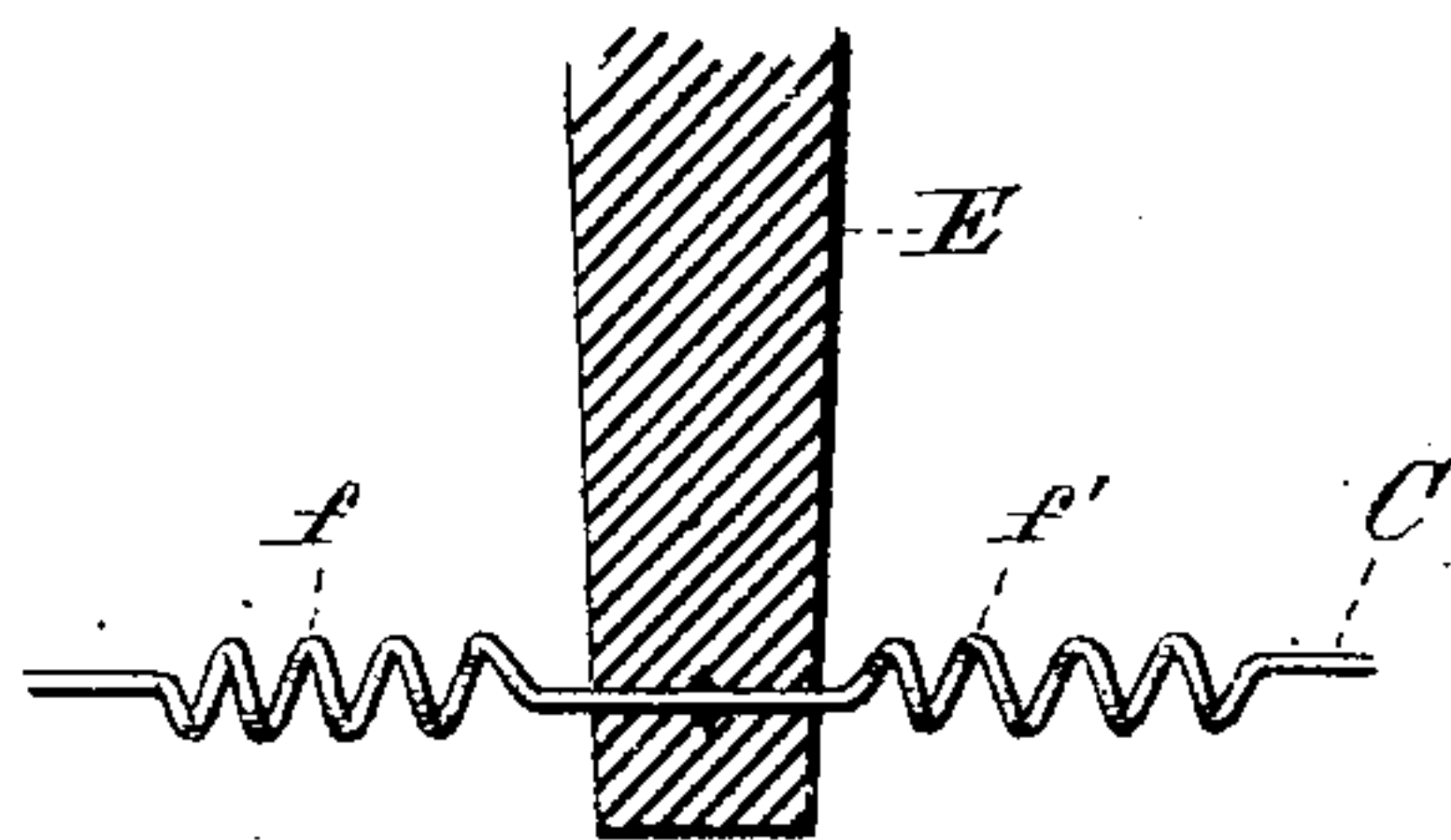
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



WITNESSES

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INVENTOR

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*By Leggett & Leggett* ATTORNEYS



# UNITED STATES PATENT OFFICE.

ELROY M. AVERY, OF CLEVELAND, OHIO.

## ELECTRIC CUT-OUT.

SPECIFICATION forming part of Letters Patent No. 276,328, dated April 24, 1883.

Application filed October 10, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, ELROY M. AVERY, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Electric Cut-Outs; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to cut-out devices for use in connection with electric-light and like apparatus; and it consists in the peculiar construction of the same, as will be hereinafter fully set forth and claimed.

In the drawings, Figure 1 is a view in elevation of a cut-out device constructed according to my invention. Figs. 2 and 3 are vertical cross-sections taken through the same. Fig. 4 is a sectional view of the cut-out bar, showing the manner of securing it at one end to one of the conducting-wires, and also showing more clearly the manner of forming the wire at this point to allow of the free vibrating movement of the free end of the said cut-out bar.

A A' are two pieces of well-seasoned board, which are preferably secured together in such a manner that the grain of the wood runs in opposite directions, so as to render them less liable to split or warp.

B C are the conducting-wires, which are to be connected to the main wire at *a* and *b* and to the wires leading to the lamps or other apparatus at *c* and *d*.

D is a flat plate or disk of metal of low electric resistance, which is firmly secured on its under side to the wire B, between two spirals, *e e'*, which are formed on the wire B, so as to allow the upper face of the piece D, which is carefully surfaced, to adapt itself to the under face of the cut-out bar E.

E is a cut-out bar, which is made of low-electric-resistance metal. The upper end of this bar E is surfaced on its under face at that point where it is to come in contact with the piece D, and the lower end is secured to the wire C between two spirals, *f* and *f'*, formed on the said wire C. The object of forming the spirals *f* and *f'* is to allow of the upper end of the bar E being vibrated or moved to and from the plate D, as is desired.

F is a spring, which is preferably formed of metal wire of low electric resistance. The wire forming the spring F is bent upon itself at *g*, Fig. 1, and from thence extends downward on both sides to *h h'*, where it is formed into a spiral, which embraces a rod, *i*, said rod *i* being in turn secured to the upper piece of wood, A, under the bar E. The wire from thence extends downward until it rests on the spirals *f* and *f'* of the wire C. The function of this spring F is to keep the bar E snugly in contact with the plate D when it is desired to cut off the lights or other apparatus. The object in extending the ends of the spring F to the spirals *f f'* is to make doubly sure of a contact being formed between the bar E and wire C, and to obviate the danger that would result should the bar E become detached in any manner from the said wire C. The current would then pass through the spring F, thence to the bar E.

G is a hinged or pivoted brace of non-conducting material, one end being pivotally secured to the board A', and from thence the brace extends through a slot or opening, *j*, in the board A. This brace is so located that it will act when down, as shown in Fig. 2, to hold the bar E out of contact with the plate D, and when thrown up, as shown in Fig. 3, it will allow of the contact of the plate D and bar E, as shown. This brace may be operated in any suitable manner. One manner is shown more clearly in Fig. 3, which consists of a rod, H, which passes vertically through the board A in such a manner that its upper end is adapted to engage with the brace G and lift it, as shown. It will fall to the position shown in Fig. 2, where the bar E is pulled outward and the rod H lowered.

The operation of my device is as follows: When the line is in its normal condition—viz., when the cut-out is in the position shown in Fig. 2—the current passes from the main line through the wire B from *a* to *c*, thence to the lamps or other apparatus to the end *d* of the wire C, through the wire C, and out at *b* to the main line again. To cut out the lamps or apparatus the brace G is lifted, as shown in Fig. 3, which allows the under face of the bar E to come in contact with the plate D, and the current passes through the bar E instead of through the lamps or other apparatus, on account of the lower electric resistance of the



plate D and bar E. I pass a portion of the wires B and C between the boards, as shown by dotted or broken lines, Fig. 1. My object in doing this is to insulate the said wires where they pass, and thus obviate any accidental connection.

What I claim is—

1. In an electric cut-out, the combination, with a cut-out bar for short-circuiting the current, of a spring electrically connected with the cut-out bar, and with the conductor to which the cut-out is secured, substantially as set forth.

2. The combination, with the circuit having the loop, including the translating devices, of the plate D, arranged in the circuit at one end of said loop, the bar E, having one end arranged to bear upon said plate and the other end in contact with the conductor at the other end of said loop, a spring arranged to press said bar in contact with said plate, and suitable means for raising said bar from said plate, substantially as described.

3. In an electric cut-out, the combination, with an insulating base-board, of the electric-

loop terminals arranged upon said board, and the main-circuit terminals leading from said loop-terminals, the cut-out bar E, of low resistance, arranged to connect said loop-terminals, and the insulating-brace G and rod H, arranged to force one end of said bar away from one of said loop-terminals or permit it to come in contact therewith, as desired, substantially as described.

4. The electric cut-out consisting of the insulating-base having loop-wires embedded therein and connected with terminals on the outer face of said base, the main-line terminal connected with said loop-terminals, the cut-out bar E, of low resistance, arranged to connect said loop-terminals, and suitable means for disconnecting said bar from one of said terminals, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ELROY M. AVERY.

Witnesses:

C. H. DORER,  
ALBERT E. LYNCH.